Redevelopment of Porthcawl Waterfront

Environmental Statement

Volume 3 – Appendices

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Produced by The Urbanists for Bridgend County Borough Council and the Welsh Government.

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Appendix 2.1 - Request for EIA Screening Opinion

PROPOSED REDEVELOPMENT OF PORTHCAWL WATERFRONT, BRIDGEND

TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) (WALES)

REGULATIONS 2017

REQUEST FOR EIA SCREENING OPINION

Version - Final 1.0 – 15/04/25

Request for an EIA Screening Opinion



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1. Introduction

This request for an Environmental Impact Assessment (EIA) Screening Opinion is provided for the reference of the Local Planning Authority, to provide an EIA screening opinion. The request is made for a forthcoming planning application for a mixed-use development scheme at the Porthcawl Waterfront ("the proposed development"). The Porthcawl Waterfront is a brownfield site, and the proposed development would include the provision of a new highway scheme and renewal and enhancement of local flood defence works, which would secure the suitability of the site's reuse at the proposed scale.

The proposed development is not considered to be any of those described in Schedule 1 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017

The proposed development is considered to be at least one of those types set out within Schedule 2, part 2, subsection (b) or (m) of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017:

(10) Infrastructure Projects –

- *"(b) Urban Development" comprising*:
    - "*(i) development of more than 1 hectare of development which is not dwellinghouse development*"; and
    - "*(ii) the development includes more than 150 dwellinghouses*"; and, also,
    - "*(iii) the overall area of the development exceeds 5 hectares.*"
- *"(m) Coastal work to combat erosion…. excluding the maintenance and reconstruction of such works*".

Schedule 2 of the Regulations provides thresholds beyond which it is more likely that the project would require an Environmental Impact Assessment (EIA). Development proposals below these thresholds may still be EIA development if they are likely to have significant environmental effects. Conversely, projects above these thresholds may not be considered EIA development if they are not expected to have likely significant environmental effects.

In making a judgement on whether Schedule 2 development warrants an EIA, the Authority must have regard to Schedule 3. The effect of this is that not all Schedule 2 development would trigger an EIA to be required, should the overall consideration of Schedule 3 criteria suggest no likely significant effects would occur. These screening criteria include the characteristics of development as set out in Schedule

3, Paragraph 1, the environmental sensitivity of the location of the development as set out in Schedule 3, Paragraph 2, and types and characteristics of the potential impact as per Schedule 3, Paragraph 3.

The proposed development has the potential characteristics and geography that could create likely significant environmental effects if not subject to and informed by comprehensive environmental assessments that can identify mitigation and enhancement and guide the design. **As part of the future planning application for the development, such assessments would be prepared and shape the development, ensuring that likely environmental effects are minimised while sustainable design opportunities are exploited.** However, it is noted that given the scale of the development and characteristics of the site, the Authority may be minded to require an EIA to ensure that all potential effects are fully documented to inform the design and brought together to be considered cumulatively.

The information provided in this request for an EIA Screening Opinion is therefore that required by the Planning Authority, as per the Regulations 2017, to allow it to provide a screening opinion. Information includes a plan sufficient to identify the land (see Section 7 Appendix One); a description of the development (including a description of the location of the development and the physical characteristics of the development); a description of the aspects of the environment that are likely to be affected by the development; and, a description of the likely significant effects of the proposed development on the environment, including from (i) residues, emissions and waste and (ii) the use of natural resources including soil, land, water, biodiversity.

2. The Site and the Proposed Development

2.1. Site Description

The site is the Porthcawl Waterfront development area. It is a large site of 43.6ha and is mostly brownfield. The key local areas of the site are summarised below:

- **Salt Lake -** A large brownfield site located east of The Portway and the new bus station, north of the Harbour, and west of the Eastern Promenade. An Aldi store has recently been built on the northern part of the Salt Lake site. Part of this area is an infilled dock.
- **Hillsboro Car Park -** The surface-level car park is west of The Portway, opposite the new bus station. The site is directly accessible from The Portway and has good pedestrian connections west into Porthcawl town centre.
- **Griffin Park -** The park is located north of the Salt Lake site and is a key local outdoor amenity asset with a children's playing area, sports courts, greens, and the Griffin Park Pavilion. Pedestrian access to Griffin Park is provided from New Road and the Eastern Promenade.
- **Coney Beach Pleasure Park -** The Pleasure Park is located in the heart of the site and is due to remain an operational visitor attraction until the end of 2026. The Park fronts onto and has direct access to Sandy Bay Beach; it is accessible from the west via the Eastern Promenade and the east via Mackworth Road.
- **The High Tide and the former Buccaneer and Wimpey -** These are located immediately east of the Coney Beach Pleasure Park. They also have direct access to Coney Beach and are in private ownership. The High Tide land ownership includes a series of buildings that provide a vibrant retail and leisure offer. These properties are accessible off Mackworth Road.
- **The Monster Park -** Located north of the High Tide site, this is a former outdoor amenity and leisure facility that accommodated a dinosaur park and other outdoor seasonal attractions. The land is not currently accessible to the general public.
- **Sandy Bay -** The site is located east of the High Tide and Monster Park in the eastern area of the Masterplan. It is currently utilised as a seasonal campsite. The Sandy Bay Bowl is located in this part of the site and is used for informal recreational purposes. A pedestrian connection runs through the southern part of Sandy Bay, providing access to Trecco Bay from Coney Beach and the Eastern Promenade. The Relic Dunes are located directly south of this pedestrian route. To the north, Sandy Bay is bordered by residential properties and Newton Primary School sits at its

edge. Vehicular access into the site is from Rych Avenue and Sandy Lane, which both connect to New Road.

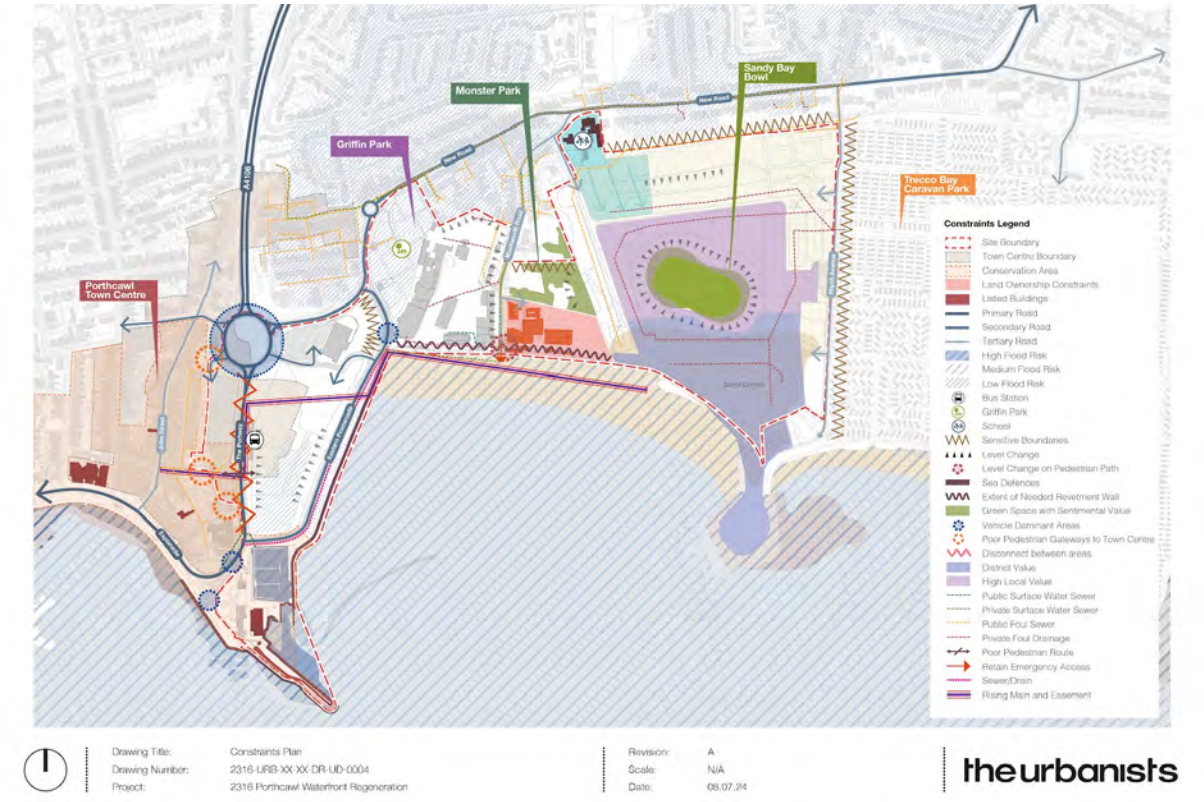


Figure 2-1-1 Constraints Plan - Indicating some of those named areas, and providing reference to locate others

Recent engagement boards prepared for the development provide further information on the site: https://porthcawlwaterfront.co.uk/wp-content/uploads/2025/02/Exhibition-Boards_EN.pdf

2.2. Replacement Local Development Plan Allocation

The Waterfront development area is allocated in the recently adopted Replacement Local Development Plan (RLDP) for mixed-use redevelopment under policies PLA1 and SP2(1). These policies allocate the Waterfront for the following land uses / purposes:

- 1,100 residential units;
- 30% affordable housing;
- 1.8ha 1 Form Entry Welsh Medium Primary School and 4 classroom block extension at existing English Medium Primary School;
- Approx. 2,000sqm food store (now delivered);
- Outdoor Recreation Facilities and Public Open Space; and

- Active Travel Routes.

Policy PLA1 and SP2(1) also identifies more detailed design information regarding the expectations of how these land uses should be brought forward. This information has shaped the masterplan to date and would continue to do so as the masterplan is subject to assessment and refinement associated with the planning application stage.



Figure 2-2-1 Porthcawl SP2 (1) Allocation, Bridgend LDP, https://www.bridgend.gov.uk/media/izcfgp1f/written-statement.pdf pg.297, Appendix 7

2.3. Statutory Constraints Mapping

The development site and local area are subject to a series of statutory constraints that need consideration as the development progresses. These are summarised below and include coastal erosion and flood risk.



Figure 2-3-1 NRW mapping - Coastal Erosion and Management - management policy in place on the site



Figure 2-3-2 NRW mapping - Flood Maps for Planning - the site has a small area at risk of surface water flooding

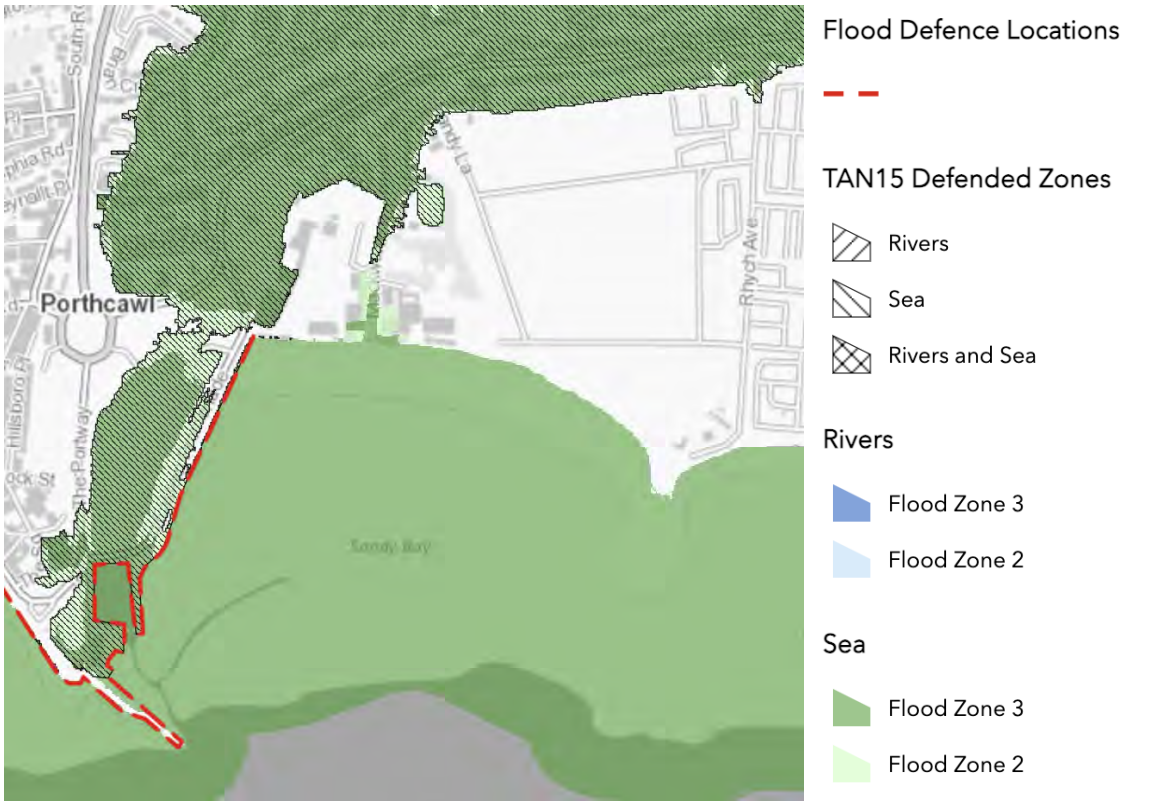


Figure 2-3-3 NRW mapping - Flood Maps for Planning - the site is a defended area, but has risk from sea and also localised small watercourses

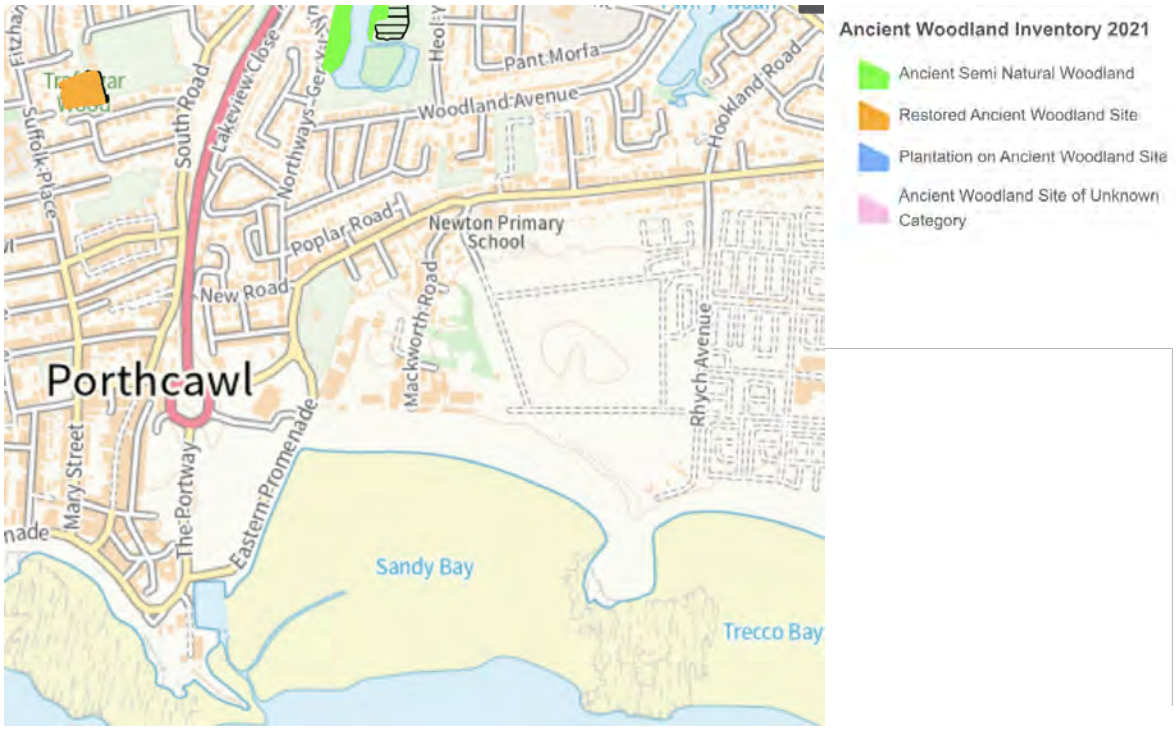


Figure 2-3-4 NRW mapping - Ancient Woodland - none present on or adjacent to the site

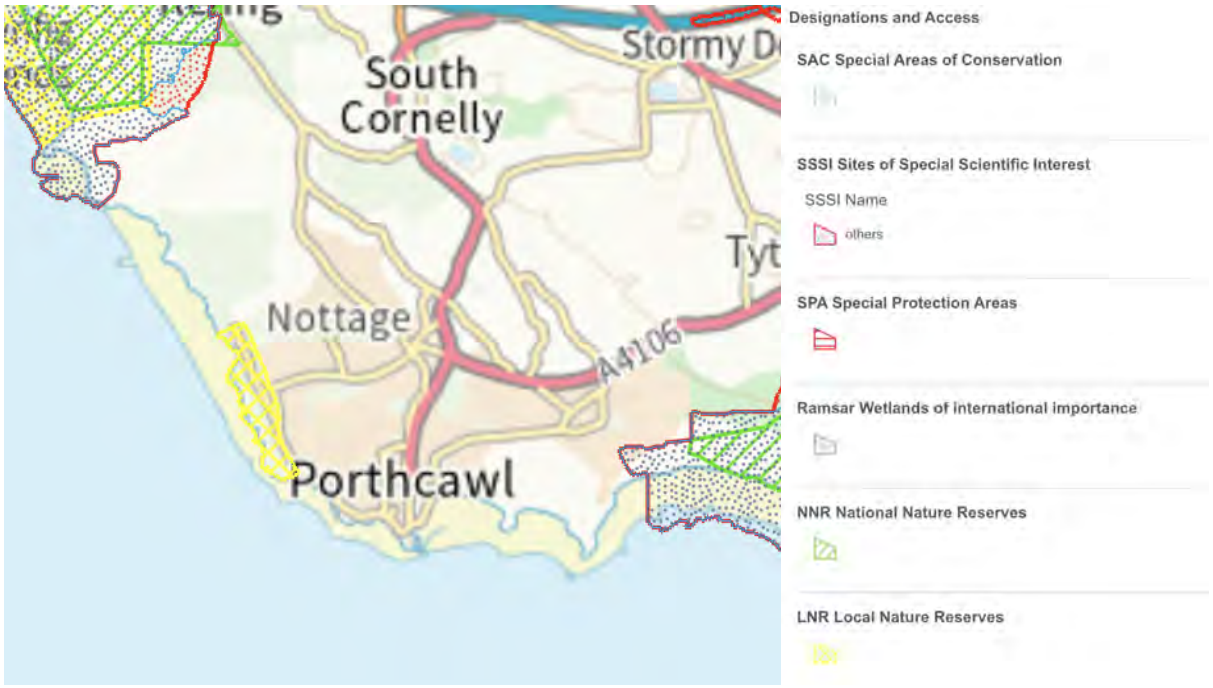


Figure 2-3-5 NRW mapping - Designated Sites - none on, or immediately adjacent to the site

2.4. Other Known Constraint Mapping

To date, a series of technical assessments have already been undertaken as part of the site's allocation in the RLDP, and the ecology appraisal provides helpful information on site habitats. A snapshot of these is provided below with mapped habitat types included:

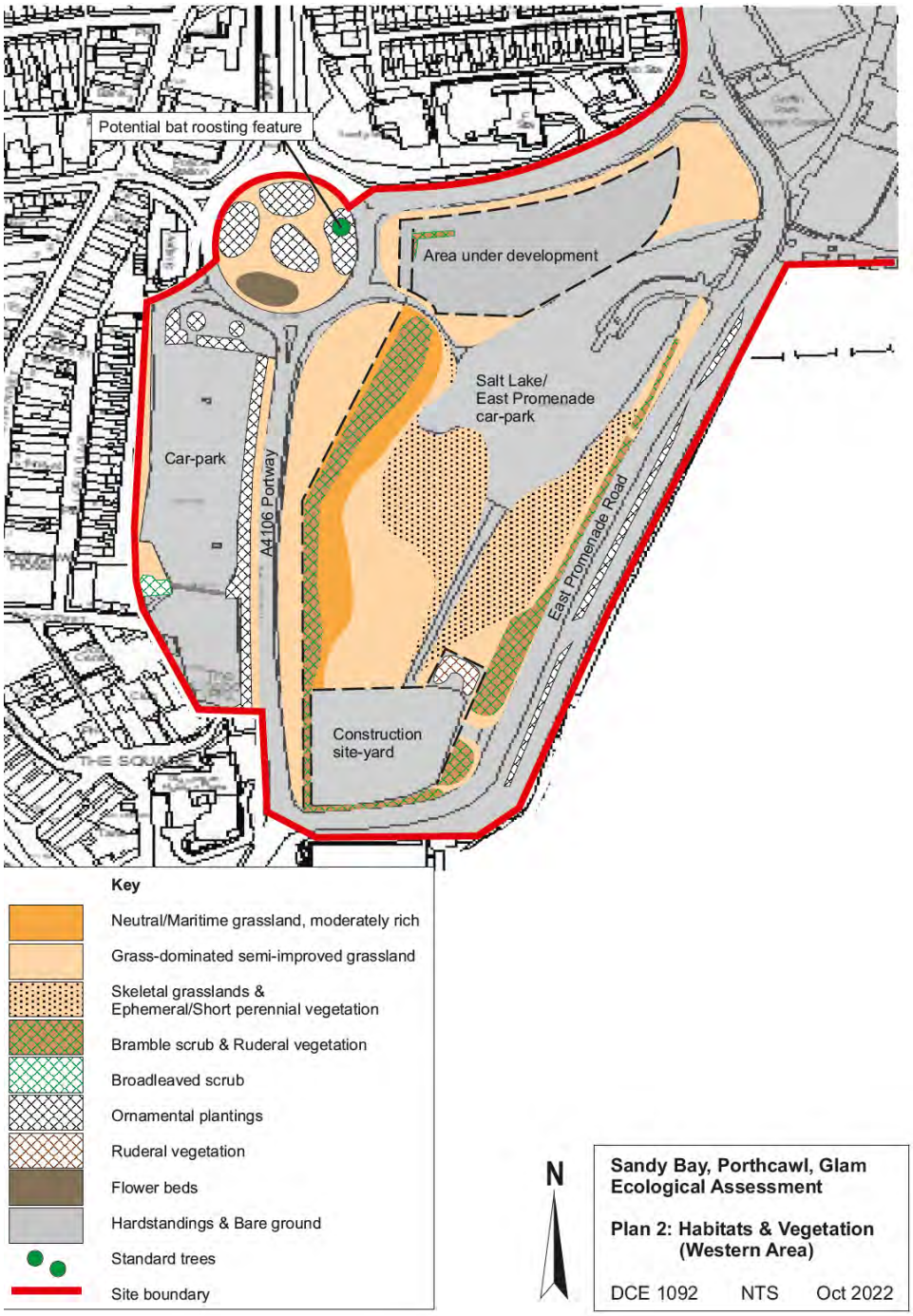


Figure 2-4-1 Ecological Appraisal - Phase 1 mapping of western site area



Figure 2-4-2 Ecological Appraisal - Phase 1 mapping of central site area

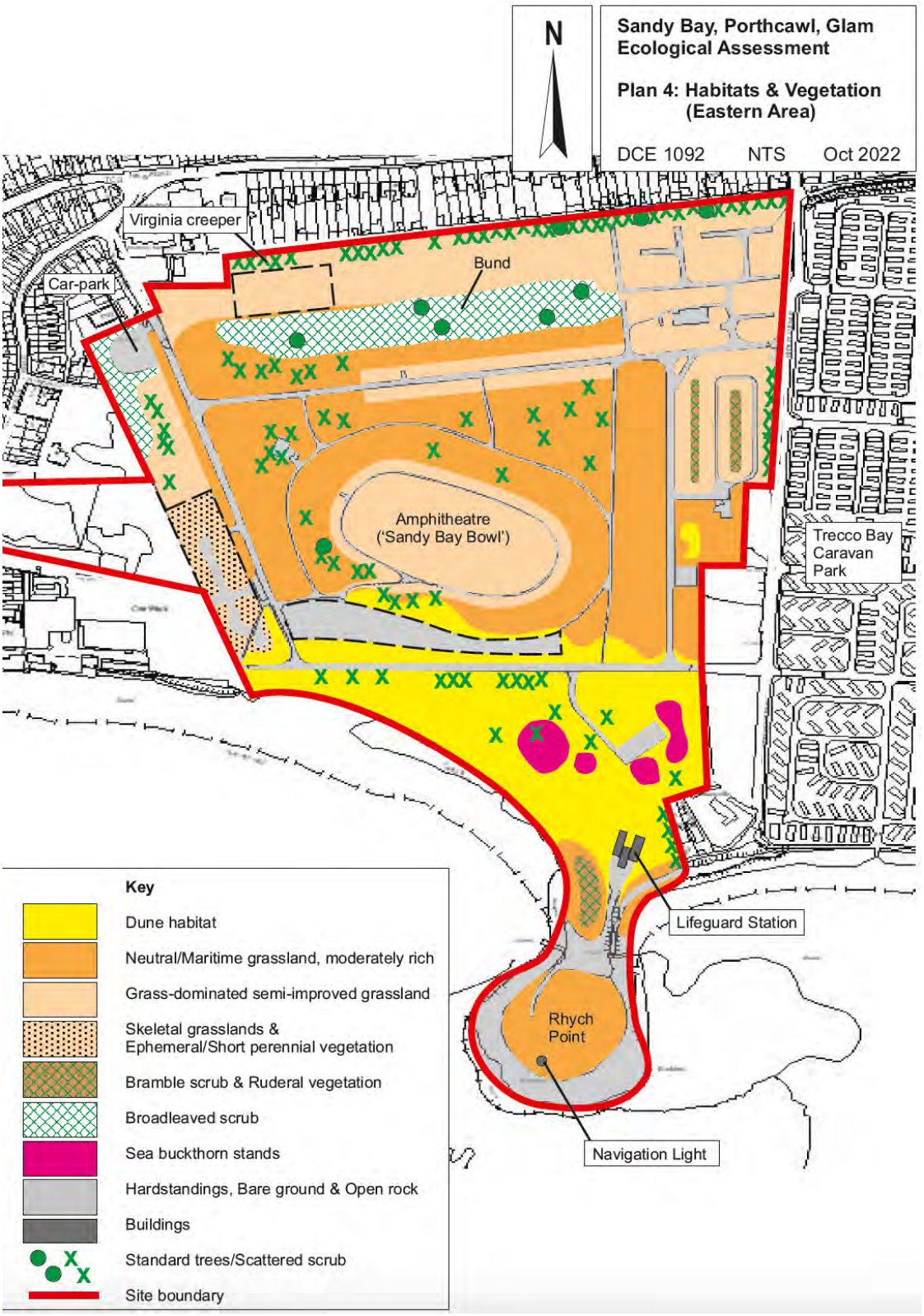


Figure 2-4-3 Ecological Appraisal - Phase 1 mapping of eastern site area

2.5. The Site's Planning History

The site's planning history is extensive and varied, the vast majority is associated with the site's current and previous leisure or amenity uses.

2.6. The Proposed Development

The proposed development is for the redevelopment of Porthcawl Waterfront. A draft masterplan has been prepared and is included with this request (see Section 7 Appendix Two). While this would change as the planning application progresses, it provides a high-level plan for how the Waterfront could be sustainably developed.

In the planning application for the development, the details of how the proposed development would finally be delivered, such as the layout, scale, appearance, landscape, drainage, and exact number of homes, would be reserved, to be agreed via future reserved matters applications or planning conditions. Although details for some aspects of the access and possibly the flood defence works could be provided, should they be identified as enabling infrastructure, as the application is prepared.

The development is to be built out in phases, and this could involve different developers. To set a consistent high-quality design, a Design Code is to be prepared alongside the planning application and would be part of any future planning permission. This would set the design quality approaches that future developers delivering the Masterplan must be sensitive to.

The Masterplan currently includes the following, which is considered to fully align with the allocation of the RLDP and land uses identified - refer to Section 2.2:

- Up to 1,100 new homes, which would be a combination of houses, maisonettes, and apartments.
- A 2ha (20,000 sqm) site for the future expansion of Newton Primary School, including the existing school site.
- Space for new cafes and restaurants, leisure uses, shops, arts, community facilities, and a hotel.
- Enhanced Porthcawl Harbour facilities.
- Enhancement of the Griffin Park play facilities with a MUGA.
- Up to 21 ha (210,000 sqm) of open space for use by the public and future residents.
- Creation of a continuous active promenade from the Esplanade and Cosy Corner in the west to Trecco Bay in the east. This would connect with the Wales Coast Path.

- Three separate areas of play space where multiple play facilities would be provided to cater to young people of different ages. Including space for a pump track and skate park.
- A new green park that would provide up to 4 ha (40,000 sqm) of green space for recreation, health, wellbeing, and biodiversity between the existing Griffin Park and the Relic Dunes.
- Flexible public realm areas that could be used to provide space for holiday motorhomes and accommodation.
- New public parking areas and the enhancement of the Hillsboro Car Park could provide over 600 parking spaces without making the Hillsboro Car Park a multi-storey facility.

Further information on the proposed development and the key design approaches of the masterplan is provided on the engagement boards recently prepared for the Porthcawl Waterfront: https://porthcawlwaterfront.co.uk/wp-content/uploads/2025/02/Exhibition-Boards_EN.pdf

The proposed development constitutes the following parts:

- Demolition:
    - The demolition of the Coney Beach amusement Park and several other waterfront buildings, as well as the permanent closures of some roads. The scheme of proposed demolition and stopping-up of roads can be seen in Figure 2-1 below.
- Groundworks:
    - Cut and fill and movement of soils within the overall development site.
    - Stabilisation of the dune rear (coastal protection / development security)
    - Other protection of the coastal edge.
    - Piling or other foundational works.
- Phased Construction:
    - Infrastructure:
        - Highways - Including non-vehicular routes.
        - Services – Including electrical, communications, water, and foul.
    - Buildings and Structures – Including residential and mixed-use buildings, areas, and structures with a mixture of private and/or public use.
    - Landscaping – A mixture of private and/or public space landscaping, including ecological mitigation and enhancement, and areas for play and health and wellbeing.



Figure 2-6-1 - Proposed Demolition and Stopping-up plan, The Urbanists, January 2025

2.7. The Proposed Development and Strategic Allocation

As referenced in Section 2.2, **the proposed development is allocated as strategic development in the RLDP. Various strategic environmental assessments of the site and the principle of development (as now proposed) have therefore already been undertaken.**

Under Section 62(6) of the Planning and Compulsory Purchase Act 2004, emerging LDPs need to be subject to Sustainability Appraisal (SA). Under the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004 (as amended), the emerging RLDP also required an assessment of the *likely significant environmental effects* of implementing relevant plans and programmes; this comprising a Strategic Environmental Assessment (SEA). Both SA and SEA share a common focus on the assessment of the environment and wider sustainability performance, and, for the now-adopted RLDP (2018 to 2033), the SA and the SEA were considered together.

The combined SA and SEA reporting was comprehensive for the RLDP and would have included the principal acceptability of the Porthcawl Waterfront strategic site allocation, including on environmental grounds. **The proposed development, subject to this EIA screening, aligns with the land uses and**

development approach of the RLDP allocation and the wider policies of the RLDP. It should also therefore be seen as acceptable in principle, and it is requested that the Authority consider this in its screening opinion.

The SEA regulations also introduce a link between SEA and Habitat Regulation Assessment (HRA), under The Conservation of Habitats and Species Regulations 2017 (as amended), and the potential requirement for an associated HRA appraisal of the LDP (an Appropriate Assessment (AA)). This AA was considered necessary for the now adopted LDP, and it concluded…"*the RLDP is not likely to have a significant effects on any of the identified European sites, either alone or in combination with other plans or projects*"[1]; although, importantly, this does not exempt individual development proposals from the need to carry out their own HRA considerations (screening, and potentially then scoping and AA for a proposal).

Specifically, the nearest Special Area of Conservation (SAC) of any likely significance for the proposed development (Kenfig / Cynffig SAC) was considered as part of the LDP's AA; "*findings of the AA indicate that the policies and proposals in the RLDP have the potential to generate LSE [Likely Significant Effects] to Kenfig SAC from a range of sources including air quality, habitat loss, changes in hydrology, recreation and pollution*"[2]…however… "*these potential effects are effectively mitigated… through Policies SP4, SP5, SP16, SP17, DNP8 and DNP9*" and that consequently the plan and its contained allocations (in principle)… "*would not have a significant effect on the SAC, either alone or in-combination with other plans or projects*"[3]. **While supportive of development, the above doesn't necessarily preclude the proposed development from needing an AA when a planning application is submitted. The view of the Authority on this matter is therefore welcomed, either as part of the EIA screening opinion supporting analysis, or in separate correspondence.**

[1] https://www.bridgend.gov.uk/media/linjkeau/ad2-inspector-s-report.pdf
[2] https://www.bridgend.gov.uk/media/linjkeau/ad2-inspector-s-report.pdf
[3] https://www.bridgend.gov.uk/media/linjkeau/ad2-inspector-s-report.pdf

3. Aspects of the Environment that Could be Affected by the Development

As required by the Regulations, the below are aspects of the environment that could be affected by the development:

- Ecology
- Landscape Character and Visual
- Water: supply, foul, surface water management, and flood risk
- Heritage
- Local Highway Network
- Air Quality
- Noise
- Ground Conditions

However, none of these matters are likely to produce adverse significant effects that could not be adequately mitigated by following the advice of technical assessments to be prepared as part of the planning application, or by conducting good design. The next section evidences this by considering the potential effects for each aspect of the environment.

4. Potential Likely Environmental Effects

As required by the regulations, the following analysis identifies the potential environmental effects that could arise from the development. In line with local and national policy, and/or other legislative processes and requirements, should appropriate mitigation be ensured, none are considered likely or significant enough to warrant development not to progress.

- Ecology –
    - General site - Based on ecological appraisals of the site that were undertaken to support the allocation of the site in the RLDP, the general ecology at the site is deemed to be relatively limited in value. There are pockets of value or high potential for improvement, for example, the Monster Park and the dune habitats, which could suffer adverse effects if the development is not delivered sensitively. However, both of these areas are to be retained in the development and enhanced through management and supplementary landscape planting. The presence of protected species on the site is not yet fully quantified as targeted species surveys are being undertaken in the current seasonal window, but the presence of bats and reptiles is assumed, and the surveys and the associated advice of the consultant ecologist will shape the evolution of the masterplan and development design. To provide the opportunity to deliver ecological mitigation and achieve biodiversity net gain, the development masterplan includes the provision of an extensive network of public open space with green infrastructure and habitat areas, and as the planning application is prepared, this resource will be further articulated to demonstrate how individual species can be mitigated for, and how overall ecosystem resilience can be enhanced. This new habitat would be subject to appropriate landscape and ecological management as required by Planning Policy Wales Edition 12. **The findings of the ongoing ecological surveys will be presented in the planning application as part of an Ecological Impact Assessment, and the Green Infrastructure Statement and supporting application landscape drawings shall demonstrate how mitigation and biodiversity net gain are factored into the delivery of the development. Based on an enhancement-led approach, it is considered that significant adverse ecological effects on the site can be avoided.**
    - The ‘Mobile Dune’ priority habitat - This is present in the site, and is protected under the Environment (Wales) Act 2016. The development could impact directly through its built form, indirectly by the escape of introduced landscape species, or

potentially through increased recreational impacts. To avoid direct impacts, no built form is proposed in the dunes as part of the development, with all new homes offset appropriately. The escape of landscape species can be avoided by appropriate habitat provision on the remainder of the site, which is proposed, and includes the provision of a new sandy park that can act as a buffer and transition habitat to the dunes and built development. The amount of public space in the development area, including the new sandy park, should also help to offset over recreational use of the dunes. **Should all LDP and national policy guidance regarding priority habitat be followed, it's likely the proposed development would have a neutral residual effect on this priority habitat.**

- The 'Maritime Grassland' priority habitat - This is present in areas of the Sandy Bay Bowl and south of this around Rhych Point of the Sandy Bay area, as well as in the Salt Lake area. Of those, there is likely to be a loss of extent at both Sandy Bay Bowl and Salt Lake. The quick establishment of these habitats since past development helps reassure that they could become reestablished relatively easily in other areas of the site, as part of the proposal. It is highly likely that both natural re-establishment of new areas and improved conditions of retained areas would be ensured under better management practices; which could be secured under planning. **Given the relative ease of re-establishment within the site, suitable mitigation and compensation including improved management, would be considered likely to deliver a neutral residual effect on this priority habitat.**
- Kenfig / Cynffig SAC - Although the Kenfig / Cynffig SAC dunes are located some distance away, they are in the locality and may be sensitive to increased recreational use. The development would increase the local population, and while the development would provide significant recreational spaces and resources that would make it self-sufficient, there is a potential for the development to lead to increased recreational use of the SAC, which could lead to significant adverse effects. **This potential and associated effects should be considered, although this would naturally be considered as part of an HRA screening associated with an Appropriate Assessment. The matter would also have been considered during the preparation of the RLDP, where allocation of the development proposed on the site was deemed to be sound. Residual adverse effects are deemed unlikely.**

- Landscape Character and Visual – The proposed development is large in scale and its delivery would inevitably result in changes to localised coastal views and the local landscape character of the site and the immediate environs. However, given the brownfield nature of

most of the site, such a change would likely be deemed positive, subject to good design. The masterplan sets the basis for good design and to integrate the proposed development into the existing Porthcawl settlement townscape. For example, storey heights would be modest; the vast majority of development buildings would be at or below 4 storeys. Where greater storey height is proposed, this would be restricted to key masterplan areas where greater height would add visual interest and design quality, and the heights would be fully justified through the planning application, notably the Landscape and Visual Impact Assessment (LVIA). Meanwhile, the appearance of future development would respect existing buildings, taking inspiration from interesting facade design and paying homage to present materials, while applying a contemporary and sustainable finish. That the site is allocated in the RLDP for the scale of development proposed by the masterplan also demonstrates its capacity to absorb landscape and visual change. The allocation submission included an LVIA to evidence this. **On this basis, it is considered that significant adverse landscape and visual effects are unlikely to arise through the development.**

Note: If reference is made to the engagement boards, it will be noted that storey heights exceed four on the Salt Lake parcels and in parts of Sandy Bay. Post engagement, a design decision has been taken to reduce storey heights with an excess of four storeys only in select parts of the site to add architectural interest. These locations will be agreed in the planning application and demonstrated to be acceptable through the LVIA process.

- Water –
    - Supply – The supply of clean freshwater to an increased local population is a key consideration. Engagement would take place directly with Dwr Cymru Welsh Water to confirm the supply and any required upgrades to enable it. Appropriate sustainable water management techniques to reduce the supply requirement would be considered at the detailed design stage. **Given Porthcawl is an existing urban area with an established population, it is not considered at this stage that there would be significant adverse water supply effects.**
    - Foul – Similarly to the clean water supply, foul requirements and any required foul infrastructure upgrades would be agreed with Dwr Cymru Welsh Water as part of the planning process. No development connection would come forward without a rigorous process having been followed, whereby an acceptable level of sewerage treatment of foul flows from the site has been agreed. **As such, while a route forward for a sewerage connection is currently unknown, this would not be likely to produce any significant adverse foul water effects.**

- Surface Water Management - A scheme of this size would be legally required to satisfy the Sustainable Drainage Approval Body (SAB) alongside the Local Planning Authority. As such, two approval processes would be required, and both of these would have a high regard for the environmental sustainability and management credentials of the drainage design. The masterplan as prepared included an appropriate area for SuDS and supporting infrastructure, and as the design of the masterplan progresses through the two approval processes, it would be demonstrated that surface water that falls within the site can be sustainably managed. No run-off, which could potentially have pollutants, would be allowed to travel to any sensitive areas without treatment during any construction or operation. **As such, while the details are yet to be progressed, there is unlikely to be significant adverse surface water environmental effects.**
- Flood Risk - Parts of the development site are located in Flood Zone 3 for sea flood risk on the Flood Maps for Planning, but these areas are also Defended Zones as identified in TAN 15. Furthermore, as part of the Masterplan and development delivered, there would be an enhancement to the existing flood defences along the front of Coney Beach, providing further security against sea flooding, including for increased sensitivity from the climate crisis. **On this combined basis, it is considered that significant adverse flood risk effects are unlikely.** Pockets of localised surface water found in small areas of the masterplan would be fully addressed through the surface water design and SAB process.

- Heritage –
  - Known heritage assets - Some grade II listed heritage assets are present within the site's northern boundary and the site's southern boundary. However, the proposed development would not directly impact these assets. Cumulatively, the proposed development could bring about a change to the setting of those listed assets, although given the brownfield nature of large parts of the site, and subject to high-quality design, this would not necessarily be harmful. These listed assets would not be immediately adjacent to the proposed development of buildings or physically impacted in any way; so, while there may be some setting effects, none would likely be considered significantly adverse. A large regard for the existing heritage of the surrounding area, including listed buildings, would be a key consideration of any final scheme design where the interaction between the new and the existing heritage assets would need to be sensitively designed. This approach would be used to evidence compliance with the RLDP's policies regarding heritage and

design. **On this basis, it is considered that significant adverse effects on known heritage assets are unlikely.**

- Unknown heritage assets - Given the former industrial and leisure uses on the site, the potential for finding unknown heritage assets is deemed unlikely, however, appropriate due diligence and mitigation actions will be undertaken in the planning application through a desktop heritage report. This will fully quantify the risk of finding unknown heritage assets and identify the strategy for minimising risk and managing the asset during construction. Should unknown assets be found, they would be officially documented and opportunities for interpretation implemented before appropriate storage or display. **As unknown assets are deemed unlikely and could be fully mitigated if found, it is not expected that there will be adverse significant effects on unknown heritage assets.**

- Local Highway Network –
  - The Network - There could be relatively large effects from the proposed development on the Local Highway Network, but this has the potential to be positive and negative. Positive effects would arise from the new active travel infrastructure delivered, which would encourage the modal shift of travel in the local area, as required by national and local planning policy, and reduce local congestion. Increasing the local population also increases the viability for better local bus provision, a factor that would build on the investment already made in delivering the Metrolink. The proposed closure of the Eastern Promenade for vehicle use would create more public space for local people and green infrastructure opportunities. Negative effects could arise from the scale of the development, but this would only likely be severe if appropriate infrastructure upgrades are not accounted for. The development masterplan includes appropriate new infrastructure that would serve the development, and the details of this will be further progressed through the planning application with dialogue with the Highway Authority. As part of the planning application preparation, a Transport Assessment and Framework Travel Plan are to be prepared, and these documents would set the basis for evidencing the need and safety of the new infrastructure proposed and providing a guide to how the modal travel shift can be delivered. **It is anticipated that, subject to appropriate design and the implementation of active travel for local journeys, the future development can operate without significant adverse effects on the local highway network.**

- Car parking - The proposed development would result in the loss of existing local car parking bays and car parks on parts of the site, which are used in periods of peak seasonal demand. Significant adverse effects on local parking supply could therefore arise if no mitigation is undertaken. To address this, the Masterplan includes replacement public parking. This includes reconfiguration and surface enhancement of Hillsboro car park to make it more efficient and accommodate approximately 400 vehicles, and space for new public car parking that could provide approximately 250 spaces in the Coney Beach area of the development site. Further opportunities to accommodate public parking as part of the future development parcels also exist. This approach does not fully address the loss of parking spaces from Salt Lake and the closure of the Eastern Promenade to private vehicles, but it does meet the existing typical summertime peak use of the public car parks in the site. The typical existing summertime peak use of these car parks has been identified through repeat annual parking surveys of the public car parks. In addition to the public parking provision included in the Masterplan, work is currently underway on preparing a sustainable public parking strategy, and this will identify further opportunities for seasonal overflow parking areas in edge-of-town locations. **Given the priority given in national and local planning policy to enabling a modal travel shift, this is a reasonable and sustainable approach, and would likely mean that significant adverse parking effects can be avoided.**

- Air Quality – In line with the increase in vehicular movements associated with the development, there is potential for air quality effects surrounding the development site. However, the delivery of the development would also increase the viability of sustainable travel (as discussed above), and the closure of roads near the beachfront and the new active travel routes would help prioritise active travel and enable low emissions in large public spaces. A further consideration is the increase in low-emission vehicles, including electric. The future homes in the development would heat and cool, by electric or passive means, and the extensive new green spaces provided would improve sequestration and air quality. **As such, while air quality effects are an important consideration for the Authority, it is not considered likely that significant adverse effects would arise.**

- Noise – None of the uses proposed in the development would likely create any non-controlled and therefore significant noise levels. Leisure uses would have operational requirements that require evening activity and plant, but subject to licensing and designing the plant to modern specifications, the associated noise effects are likely to be minimal.

Such uses also already operate around the site and the local area. The amenity of future residents is a consideration, but with appropriate ventilation and layout design, which includes appropriate buffers and orientation of properties where required, amenity levels are not likely to be impacted. **Significant noise effects would therefore not be generated by the development, nor would they be experienced by future residents.**

- Ground Conditions - Parts of the site, notably the Salt Lake parcel, where there is an infilled dock, have been previously used for industrial-related uses. There is thus a high potential for adverse ground conditions on the site that would not be suitable for the end uses proposed in the development, or for disturbance which could have a detrimental effect on the site environment. Should these not be remediated as part of the development, then there is a high potential for significant adverse effects, however, this would not be the case. The future planning application will include a robust ground conditions desktop review of site conditions and recommend a scope of site investigation works that will quantify the ground conditions across the site, and any contamination or features that need to be factored into the design of the development. This work would frame a remediation strategy and verification approach that would ensure that present contamination is fully mitigated before any sensitive development commences on the site. **Subject to this approach being followed, it is considered that significant adverse effects can be avoided.**

5. Conclusion

The proposed Porthcawl Waterfront development falls within the threshold for EIA screening under Schedule 2, category 3(a) development. This does not mean an EIA is required, but instead that an EIA screening is required. This request provides all the information for the Authority to provide a screening opinion for the development.

The proposed development on the site is allocated as strategic development in the RLDP. It has therefore been part of a Sustainability Appraisal and Strategic Environmental Assessment, and the allocation of the uses proposed in the location is sound, including for environmental effects.

The development masterplan has been prepared to respond sensitively to the site's environmental characteristics. As the technical assessments associated with the masterplan are undertaken, the masterplan shall continue to evolve to respond to the site's characteristics, ensuring a sustainable development, where adverse environmental effects are likely to be minimal. This screening opinion request provides the context for this judgement across key aspects of the site's environment. However,

it is for the Authority to provide *the* opinion on whether an EIA is required. This will ensure that all potential effects are documented, their likelihood and significance considered, to inform the design including mitigations, and this all fully brought together to be considered cumulatively.

Should the Authority be minded to request an EIA, then it is proposed that the consequent Environmental Statement include the following content:

- Environmental Statement, Vol.1:
    - Chapter 1 - Introduction
    - Chapter 2 - Legislative Context
    - Chapter 3 - Site Description
    - Chapter 4 - Development Description
    - Chapter 5 - Assessment of Alternatives
    - Chapter 6 - Ecology
    - Chapter 7 - Landscape and Visual
    - Chapter 8 - Highways
    - Chapter 9 - Flood Risk
    - Chapter 10 - Heritage
    - Chapter 11 - Air Quality
    - Chapter 12 - Noise
    - Chapter 13 - Cumulative Assessment
- Environmental Statement, Vol.2, Technical Appendices
- Environmental Statement Vol.3, Non-Technical Summary:

We would welcome the Authority's view on this scope, although detailed scoping of the technical assessments would be undertaken at a later date. The technical chapters relating to highways, flood risk, air quality, and noise will address likely physical effects on human health.

6. Appendices

Appendix One - Site Location Plans



Appendix Two - Illustrative Masterplan



Appendix 2.2 – EIA Screening Opinion

Is the project Schedule 1 Development?		No
Does the project change or extend development described in schedule 1?		No
Is the project listed as a description of development under column 1 of Schedule 2?		Yes 10 infrastructure projects (b) Urban development projects including the construction of shopping centres. (m) Coastal work to combat erosion and maritime works capable of altering the coast through the construction, for example, of dykes, moles, jetties and other sea defence works, excluding the maintenance and reconstruction of such works.
Are the applicable thresholds/criteria in column 2 exceeded/met?	The application site measures 43.6ha and is for 1100 dwellings, 1 Form Entry Welsh Medium Primary School and 4 classroom block extension at existing English Medium Primary School a primary school set within 1.8ha, 2000sqm food store (delivered) outdoor recreation facilities, public open space and active travel routes flood defences.	Yes all the below are exceeded (b) Urban development projects including the construction of shopping centres. (i) The development includes more than 1 hectare of urban development which is not dwellinghouse development and (ii) the development includes more than 150 houses and (iii) (iii) the overall area of the development exceeds 5 hectares. (m) Coastal work to combat erosion… All development
Does the project change or extend development described in column 1 of schedule 2?		No
Is the Project located wholly or partly within a 'Sensitive area'? Sensitive Areas are: - SSSI. - National Park. - World Heritage Site. - A scheduled Ancient Monument. - ANOB. - A European Site – SAC, CSAC etc.		No
Have the Welsh Ministers issued a screening Direction?		No
Has an ES been submitted?		No

Based on the above information a Detailed Screening Opinion Required see below

Will the design, Construction, Operation or decommission of the project involve actions which will cause physical changes in the locality (topography, land use, changes in waterbodies etc)?	The proposal is for 1100 dwellings, 1 Form Entry Welsh Medium Primary School and 4 classroom block extension at existing English Medium Primary School a primary school set within 1.8ha, 2000sqm food store (delivered) outdoor recreation facilities, public open space and Active travel routes on a site that measures 43.6ha.	It is considered that a development of this size and scale in this location in a prominent location along the Porthcawl coastline which consists of Salt Lake and Hillsboro Car Park, Griffin Park recreational area, the former monster park, sand bay dunes open space, Coney Beach fun fair and some commercial buildings such as the High Tide, the former Buccaneer and Wimpy. The proposal would cause a physical change in the locality taking it from relatively low-density open area to a dense urban development whist also providing flood defence works and enhancements.
Are there any other factors which should be considered such as: • Consequential development which could lead to Environment effects? • The Potential for cumulative impacts with other existing approved development or planning activities in the locality? • Any plans for future land uses on or around the location which could be affected by the project?	No	

• Transfrontier impact?		
Question 1c Use of Natural Resources, in particular land, soil, water and biodiversity;		
Will construction or operation of the project use natural resources, in particular land, soil, water and biodiversity etc. which are non-renewable or in short supply?	There is dune habitat present within the site which is protected under the Environment (Wales) Act 2016. It's not clear from the information provided what classification the entire sandy bowl and surrounding area is. No surveys have been provided, as such this area could also be potential dune habitat which is considered a non-renewable resource.	The development has the potential to remove and impact dune habitat which is a non-renewable resource. The submitted information does not provide adequate detail to conclusively determine that the development would not have a significant effect upon a non-renewable recourse, as such it is not possible at this time to conclude anything other than the proposed development is
Question 1d. Production of Waste		
Will the project produce solid wastes during construction or operation or decommissioning?	The project will produce solid waste from the construction and its operation.	The impacts are unlikely to be significant and are likely to be those normally produced from construction sites and can be dealt with via a waste management plan as part of the planning process. Part of the site also has known ground contamination and can be addressed with appropriate contamination assessments.
Question 1e. Pollution and Nuisances.		
Will the project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?	No	
Will the project cause noise and vibration or release of light, heat energy or electromagnetic radiation?	Yes, the project has the potential to create noise and vibration through the construction phase. There is also potential external lighting during construction and also permanent	The potential impacts are unlikely to create any significant issues, and any issues can be appropriately assessed at the planning stage with appropriate assessments.

	lighting relating to the residential development, school and flood defences. The residential development and school also have the potential to generate a level of noise and disturbance, Finally, a residential development of this scale and a new school has the potential to create heat energy.	
Will the project release pollutants or any hazardous, toxic or noxious substances to air, or lead to risks of contamination of land or water (including surface waters, groundwater, coastal waters or the sea)?	There is potential for dust during construction works and risks to of pollutants such as contamination from the Salt Lake area being released into the sea during the construction process.	This is unlikely to be significant and could be controlled via a Construction Phase Dust assessment, Construction Environmental Management Plan, and appropriate land contamination assessments as part of the planning application.
Question 1f Risk of accidents and/or disasters relevant to the development concerned, including those caused by climate change, in accordance with scientific knowledge.		
Will there be any risk of accidents and/or disasters relevant to the development concerned, including those caused by climate change, in accordance with scientific knowledge during construction or operation of the project?	Yes, there is always a potential for accidents during construction.	This is unlikely to be significant and could be appropriately controlled through Construction Method Statement as part of the planning application.
Are there risks to human health for example due to water contamination or air pollution?	Yes. There is known ground contamination on parts of the site.	This is unlikely to be significant and could be appropriately controlled through Construction Environmental management plan and appropriate land contamination assessment as part of the planning application.
Criterion 2 Location of development.		
Question 2a Existing and approved land use.		
Will the project result in social changes for example, in demography, traditional	No.	

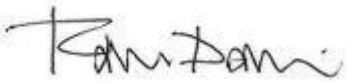
lifestyles employment?		
Are there any routes or facilities or approved facilities on or around the location, which are used by the public for access to recreation or other facilities, which could be affected by the project?	There is a public right of way that crosses the site POR/23/2.	The rights of way can be fully integrated into the proposal as such there is Unlikely to be any significant effect. this can be dealt with vis the planning process.
Are there any transport routes or approved routes which are susceptible to congestion or which cause environmental problems, which could be affected by the project?	Yes.	There could be relatively large effects from the proposed development on the Local Highway Network and public parking, for a development of this scale , whilst there may be some positives from the development this is dependent on new infrastructure. The submitted information does not provide adequate detail to conclusively determine that the development would not increase congestion and environmental issues, as such it is not possible at this time to conclude anything other than the proposed development is
Is the project located in a previously undeveloped area where there will be loss of greenfield land?	No, the majority of the site is brownfield previously developed land.	
Are there any areas on or around the location occupied by land uses or approved land uses which could be affected by the project, particularly sensitive land uses e.g. hospitals, schools, places of worship, community facilities?	The site is within Porthcawl with the Town centre just to the Northwest, where there are several schools places of worship and community facilities.	There are unlikely to be any significant issues in this regard However any issue that arise could be dealt with via the planning process.
Question 2b Relative Abundance, Availability, Quality and Regenerative Capacity of Natural Resources (including soil, land, water and biodiversity) in the area and its underground;		
Are there any areas on or around the location which contain important, high	Kenfig SSSi/SAC and Methyr Mawr SSSi/SAC are within 2km.	Any application would have to fully assess its potential impact upon these designated sites and identify suitable mitigation enhancement

quality or scarce resources e.g. groundwater, surface waters, forestry, agriculture, fisheries, tourism, minerals, soil, land, water and biodiversity, which could be affected by the project?		and management measures to ensure that any likely impacts are not significant. In accordance with regulation 63(1) of the conservation and habitat regulations 2017 (as amended) the Authority is likely to have to carry out a Test of likely significance.
Question 2c Absorption Capacity of the Natural Environment		
Are there any other areas on or around the location which are important or sensitive for reasons of their ecology, or are used by protected, important or sensitive species of fauna or floras which could be affected by the project?	Whilst the majority for the site would be considered to have low sensitivity, there are high sensitivity areas such as the dune and plant species within certain areas of the site.	Whilst its noted surveys are ongoing and will be presented later, limited information has been provided as part of this screening, as such based upon the current level of information provided, it is not possible at this time to conclude anything other than the proposed development is
Are there any inland, coastal, marine, river mouths, riparian area or underground waters on or around the location which could be affected by the project?	Yes, the site is adjacent to the coastline and flood defence works and improvement will be included as part of the proposal. The site is also located within a costal flood zone (although the majority defended) and patches surface water flood area.	based upon the current level of information provided, it is not possible at this time to conclude anything other than the proposed development is
Are there any areas or feature of high landscape or scenic value on or around the location which could be affected by the project?	No, however there is a conservation area in Porthcawl Town centre.	It is noted that this site is a candidate site under the Replacement Local Development Plan. The impact could be comprehensively addressed through the submission of landscape and visual impact assessment.
Is the project in a location where it is likely to be highly visible to many people?	Yes, the proposal has the potential to been seen by many people.	Issues are unlikely to be significant and can be assessed as part of the planning application, including the submission of street view elevations and visualisations.
Are there any areas on or around the location which are densely populated or built-up, which could be affected by the	Yes, the proposal is within Porthcawl, and construction could cause disruptions.	Issues are unlikely to be significant and can be assessed as part of the planning application and a construction method statement.

project?		
Are there any areas, landscapes, sites or features of historic, archaeological or cultural importance or significance on or around the location which could be affected by the project?	Some Grade II listed heritage assets are present within the site's Northern boundary and the site's Southern boundary.	The proposed development would not directly impact these assets as such the impact would unlikely be significant, as such these assets could be assessed as part of the usual planning process.
Are there any areas on or around the location which area already subject to pollution or environmental damage e.g where existing legal environmental quality standards are exceeded, which could be affected by the project? Or in which it is considered there is such a failure? Such as AQMA?	No, there are not any areas currently where standards are exceeded.	The increase in vehicle movement associated with the development has the potential to impact air quality, however this can be considered during the planning process and not considered to be significant.
Is the project located susceptible to subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions, which could cause the project to present environmental problems?	Yes.	Parts of the site are located within Rivers and Seas flood zones 2 and 3, the majority being defended however some areas that are not, and some small areas of surface water flood zones 2 and 3, part of the proposal is also to provide and enhance flood defences. Based on the information provided the uses proposed together with the location it not possible at this time to conclude anything other than the proposed development is

In coming to this decision, the Authority has had due regard to all information submitted by the developers; the available results of other environmental assessments as well as the criteria set out within schedule 3. The Authority's main reasons for coming to this decision are set out within the above table. In conclusion, the Authority is of the opinion that the proposed development, either alone or in combination, is likely to have a significant adverse effect on the environment. This is on the understanding that the above identified effects could be avoided or prevented as specified within the table. As such, the likely effects of the development are likely to be significant enough to warrant EIA development.





The information provided by the applicant is quite comprehensive and highlights most of the factors to be considered.

The largest concerns which I would have, with regard to environmental impacts would be: -

The form and type of coastal/flood defence proposed at Coney Beach, which will have its own requirements for Environmental Impact Assessment.

The proposed sustainable surface water drainage could have environmental implications if infiltration drainage was proposed within the infilled harbour at Salt Lake, this will need to be factored into any design. The Information submitted does not include the presence of the Wilderness Outfall, which runs through Salt Lake, as a constraint this is an important part of the wider flood risk management within Porthcawl and will need to be factored into any design.

Appendix 2.3 – Scoping Report

Redevelopment of Porthcawl Waterfront



This statement has been prepared by The Urbanists for Bridgend County Borough Council and the Welsh Government to provide planning consultancy services, in respect of the EIA process for the Redevelopment of the Porthcawl Waterfront.

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1. Introduction

This report sets out the proposed scope of the Environmental Statement that will accompany the forthcoming outline planning application for a mixed-use development scheme at the Porthcawl Waterfront ("the proposed development"), located at the Porthcawl Waterfront development area.

This request for a scoping opinion is submitted in accord with the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (Part 4, Reg.14). This states that a request must include:

"*(i) a plan sufficient to identify the land;*

(ii) a A brief description of the nature and purpose of the development including its location and technical capacity; and

(iii) its likely significant effects on the environment; and

(iv) such other information or representations as the person making the request may wish to provide or make" - (par.(2)(a)).

The structure of the request includes the following:

Section 2 identifies and describes the development site;

Section 3 briefly describes the proposed development and potential effects;

Section 4 provides the planning and Environmental Impact Assessment context;

Section 5 identifies the proposed scope of the Environmental Statement;

Section 6 identifies how the assessments included in the Environmental Statement will be undertaken;

Section 7 identifies the supporting technical reports and statements that will be included in the application, but which will not be included in the Environmental Statement;

Section 8 sets out the conclusions of the scoping requires; and

Section 9 comprises appendix documents and plans, to support the statement.

2. The Development Site

2.1 Site Location

The site is located within Porthcawl, on the south coast of Wales, between Cardiff and Swansea. The site is within 5 miles of M4 Junction 37 and is connected to it by the A4229. Its area spans between the historic Harbour in the south, The Portway road to the west, and ultimately 'Trecco Bay' holiday park in the east; also bounded by residential and mixed use areas to the north. It is located approximately 380 metres east of Porthcawl town centre, and the site lies immediately north of Porthcawl's Sandy Bay beach and Rhych Point peninsula.

Transport in Porthcawl in general, and especially in and around the site area, is dominated largely by vehicle traffic, with less formal-provision for active travel. There are some notable exceptions of active travel routes for cycles along the coast to the west, and the Wales Coastal Path runs along the edge of the site, continuing both east and west. There is an existing new bus station already located on the western edge of the site, along The Portway.

Figure 2-1-1 Location Plan



2.2 Site Description

The site is the Porthcawl Waterfront development area. It is a large site of 43.6ha and is mostly brownfield. The key local areas of the site are summarised below:

Salt Lake - A large brownfield site located east of The Portway and the new bus station, north of the Harbour, and west of the Eastern Promenade. An Aldi store has recently been built on the northern part of the Salt Lake site. Part of this area is an infilled dock.

Hillsboro Car Park - The surface-level car park is west of The Portway, opposite the new bus station. The site is directly accessible from The Portway and has good pedestrian connections west into Porthcawl town centre.

Griffin Park - The park is located north of the Salt Lake site and is a key local outdoor amenity asset with a children's playing area, sports courts, greens, and the Griffin Park Pavilion. Pedestrian access to Griffin Park is provided from New Road and the Eastern Promenade.

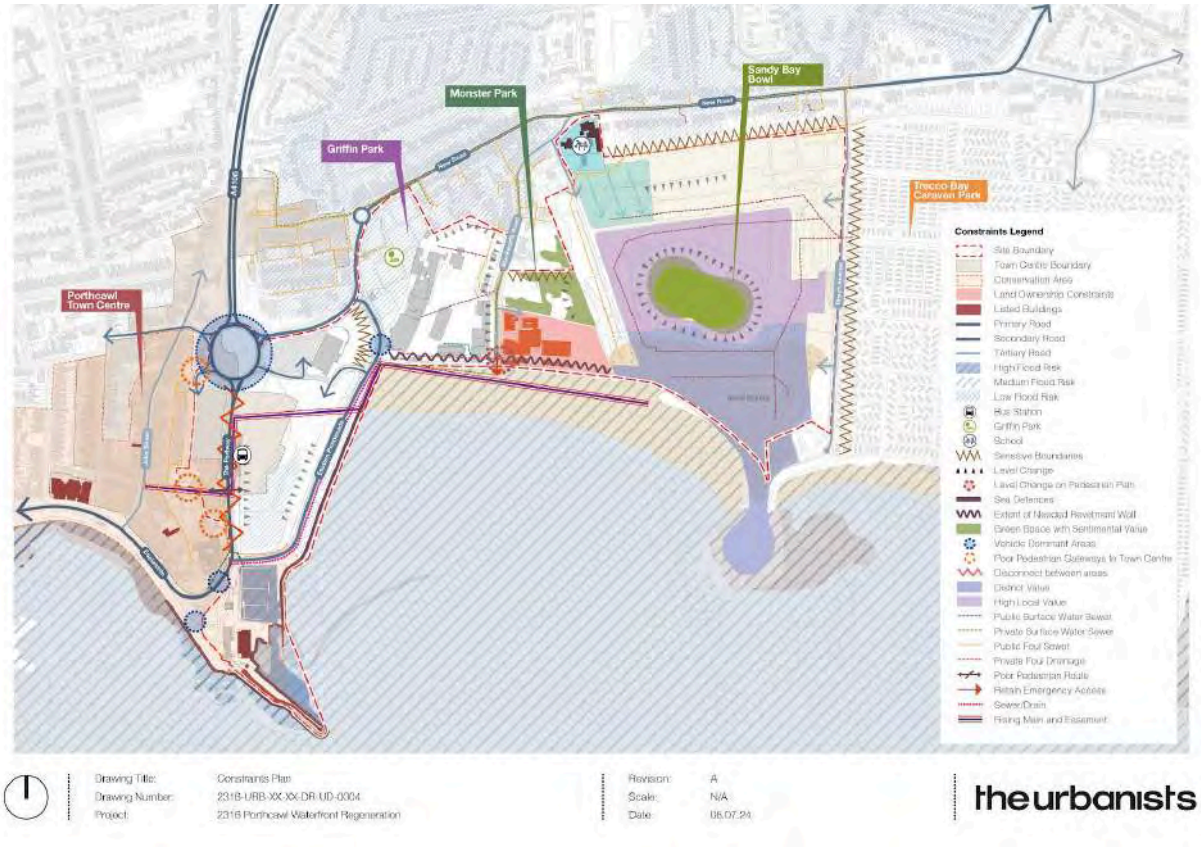
Coney Beach Pleasure Park - The Pleasure Park is located in the heart of the site and is due to remain an operational visitor attraction until the end of 2026. The Park fronts onto and has direct access to Sandy Bay Beach; it is accessible from the east via the Eastern Promenade and the west via Mackworth Road.

The High Tide and the former Buccaneer and Wimpey - These are located immediately west of the Coney Beach Pleasure Park. They also have direct access to Coney Beach and are in private ownership. The High Tide land ownership includes a series of buildings that provide a vibrant retail and leisure offer. These properties are accessible off Mackworth Road.

The Monster Park - Located north of the High Tide site, this is a former outdoor amenity and leisure facility that accommodated a dinosaur park and other outdoor seasonal attractions. The land is not currently accessible to the general public.

Sandy Bay - The site is located west of the High Tide and Monster Park in the eastern area of the Masterplan. It is currently utilised as a seasonal campsite. The Sandy Bay Bowl is located in this part of the site and is used for informal recreational purposes. A pedestrian connection runs through the southern part of Sandy Bay, providing access to Trecco Bay from Coney Beach and the Eastern Promenade. The Relic Dunes are located directly south of this pedestrian route. To the north, Sandy Bay is bordered by residential properties and Newton Primary School sits at its edge. Vehicular access into the site is from Rych Avenue and Sandy Lane, which both connect to New Road.

Figure 2-2-1 Constraints Plan - Indicating some of those named areas, and providing reference to locate others



2.3 Replacement Local Development Plan Allocation

The Waterfront development area is allocated in the recently adopted Replacement Local Development Plan (RLDP) for mixed-use redevelopment under policies PLA1 and SP2(1). These policies allocate the Waterfront for the following land uses / purposes:

1,100 residential units;

30% affordable housing;

1.8ha 1 Form Entry Welsh Medium Primary School and 4 classroom block extension at existing English Medium Primary School;

Approx. 2,000sqm food store (now delivered);

Outdoor Recreation Facilities and Public Open Space; and

Active Travel Routes.

Policy PLA1 and SP2(1) also identifies more detailed design information regarding the expectations of how these land uses should be brought forward. This information has shaped the masterplan to date and would continue to do so as the masterplan is subject to assessment and refinement associated with the planning application stage.

Figure 2-3-1 Porthcawl SP2 (1) Allocation, Bridgend LDP, https://www.bridgend.gov.uk/media/izcfgp1f/written-statement.pdf pg.297, Appendix 7



2.4 Statutory Constraints Mapping

The development site and local area are subject to a series of statutory constraints that need consideration as the development progresses. These are summarised below and include coastal erosion and flood risk.

Figure 2-4-1 NRW mapping - Coastal Erosion and Management - management policy in place on the site

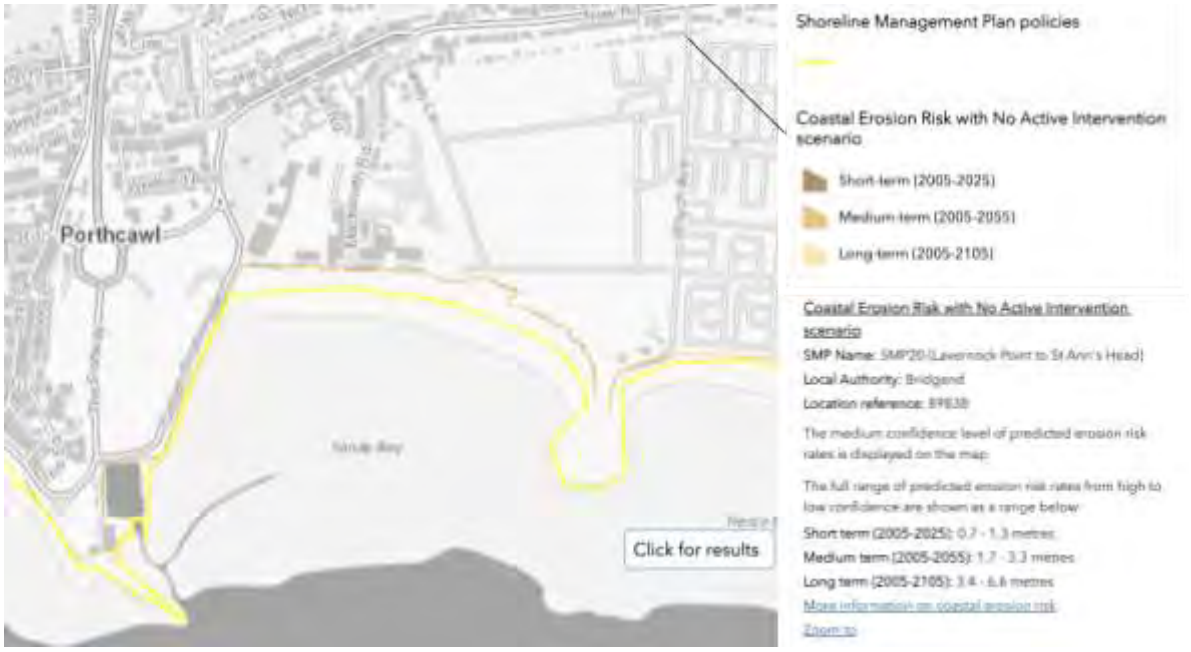


Figure 2-4-2 NRW mapping - Flood Maps for Planning - the site has a small area at risk of surface water flooding



Figure 2-4-3 NRW mapping - Flood Maps for Planning - the site is a defended area, but has risk from sea and also localised small watercourses



Figure 2-4-4 NRW mapping - Ancient Woodland - none present on or adjacent to the site

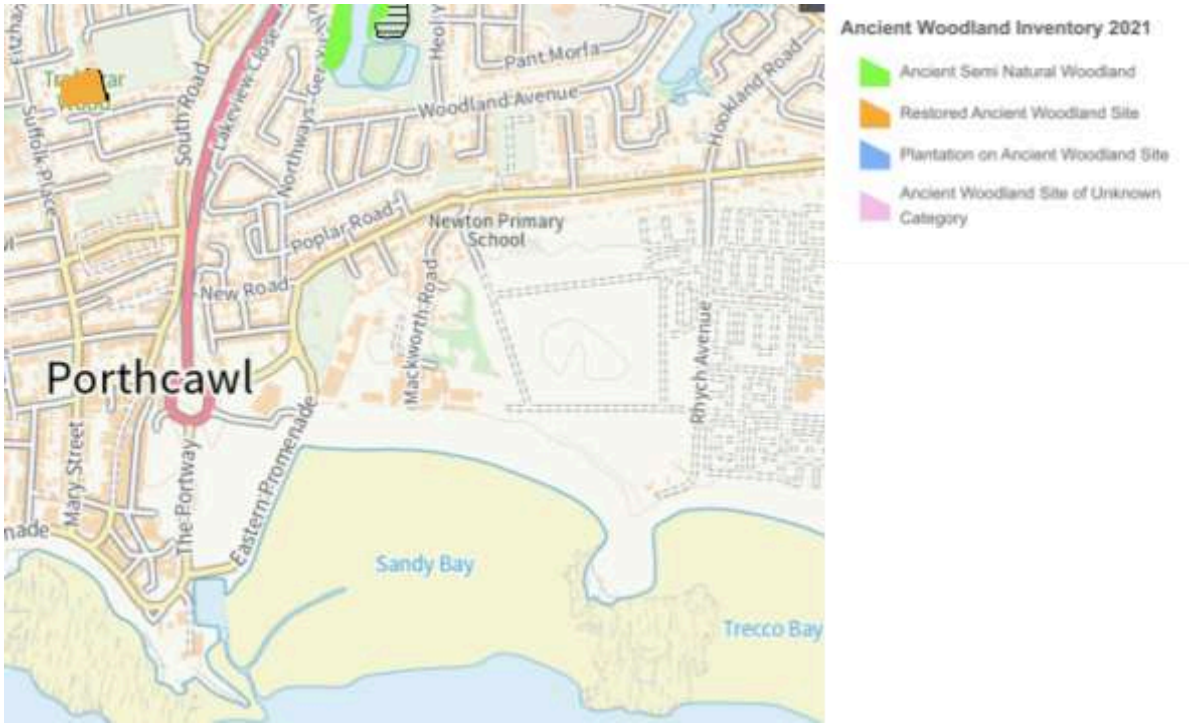
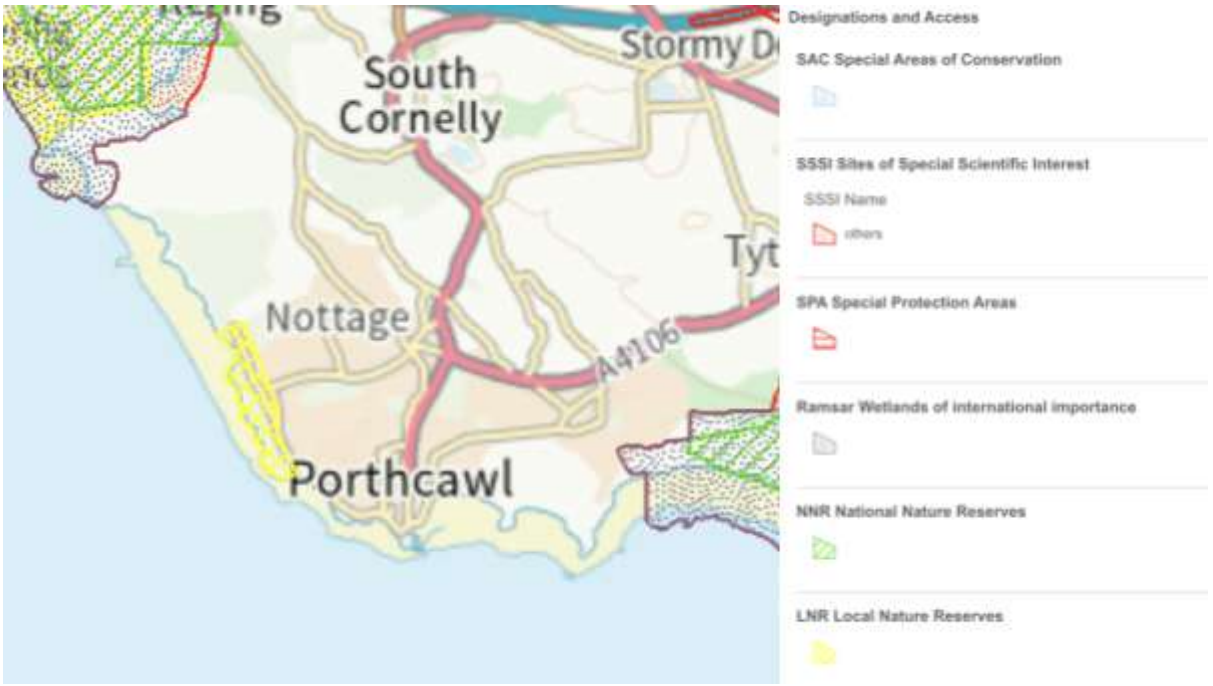


Figure 2-4-5 NRW mapping - Designated Sites - none on, or immediately adjacent to the site



2.5 Statutory Constraints Mapping

To date, a series of technical assessments have already been undertaken as part of the site's allocation in the RLDP, and the ecology appraisal provides helpful information on site habitats. A snapshot of these is provided below with mapped habitat types included:

Figure 2-5-1 Ecological Appraisal - Phase 1 mapping of western site area



Figure 2-5-2 Ecological Appraisal - Phase 1 mapping of central site area



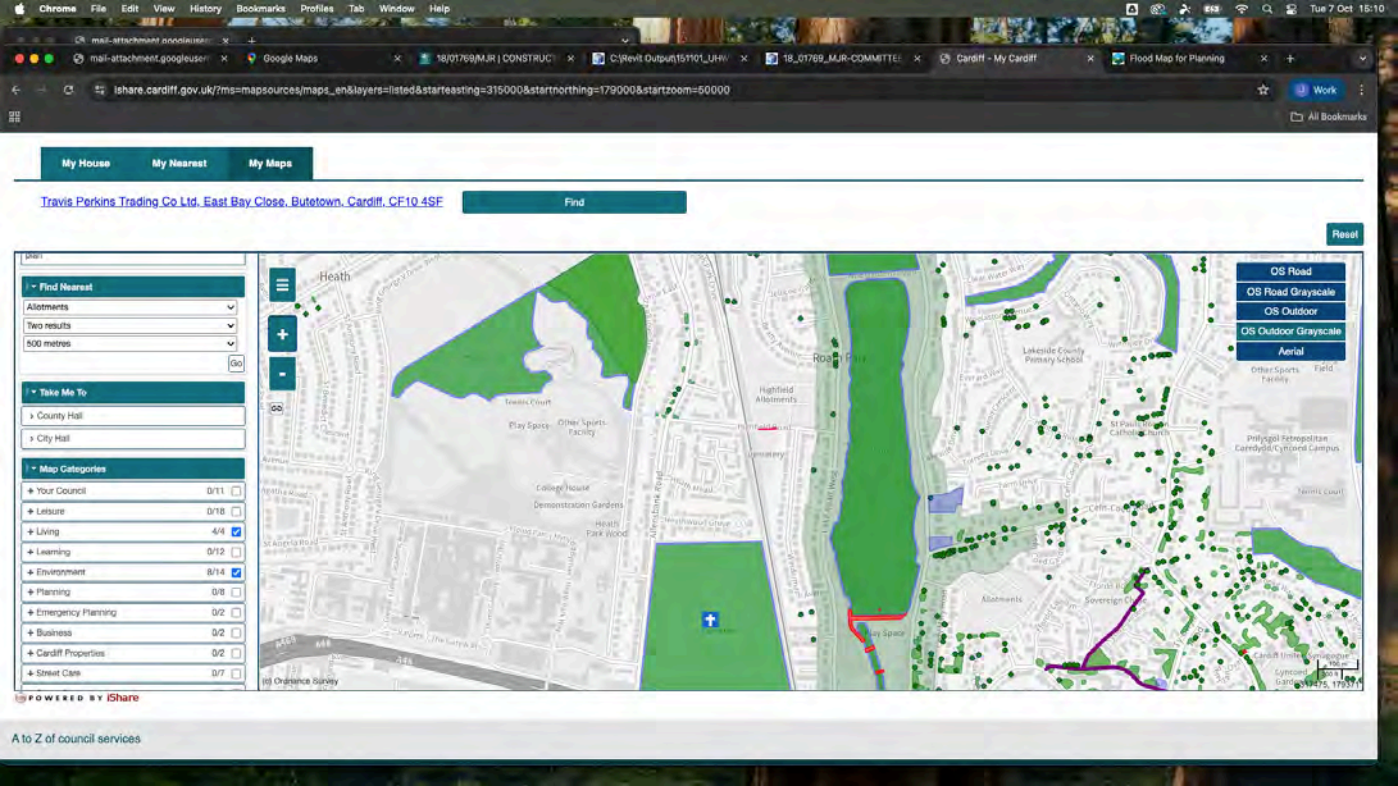
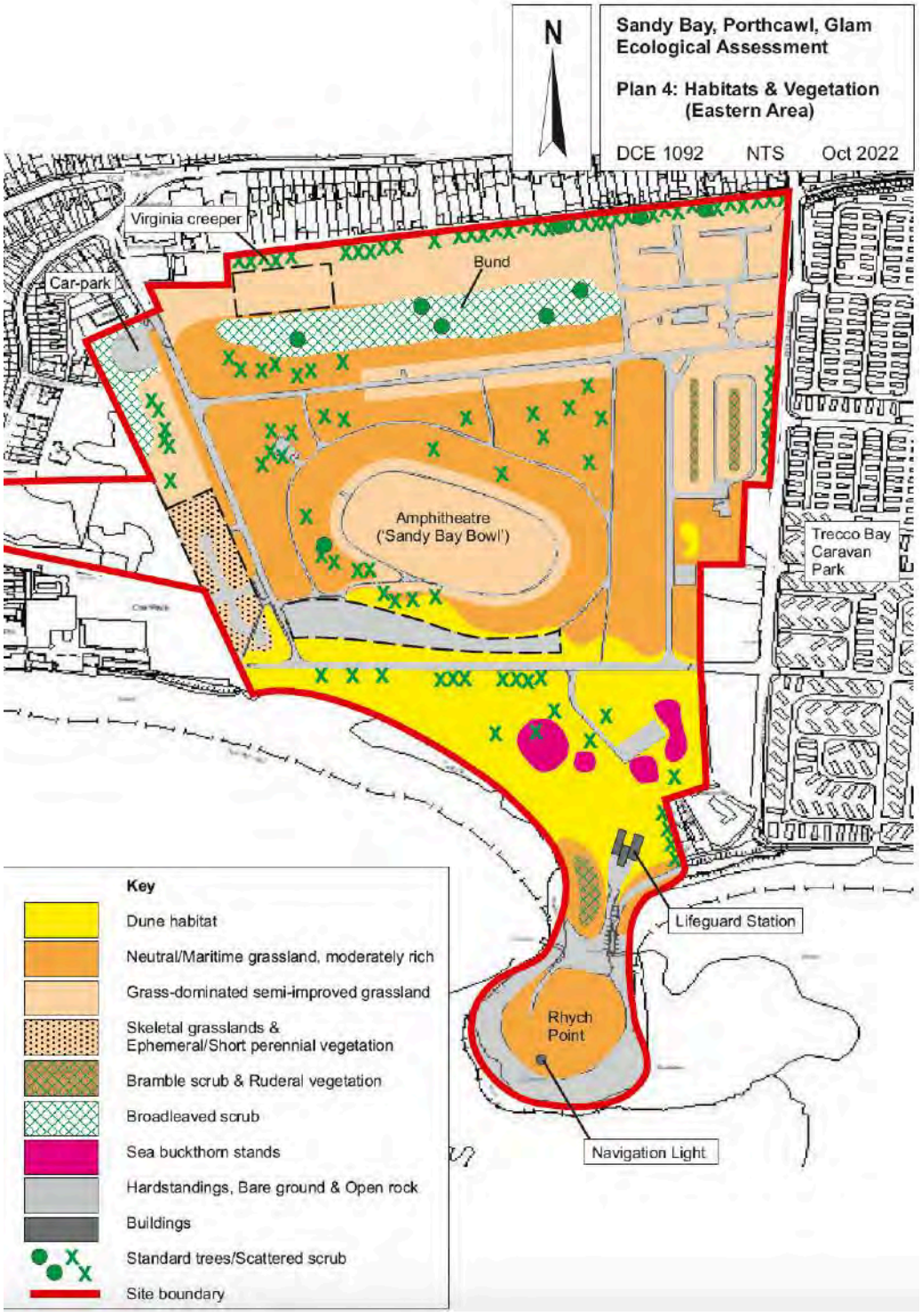

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Leisure 0/18
Living 4/4
Learning 0/12
Environment 8/14
Planning 0/8
Emergency Planning 0/2
Business 0/2
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Street Care 0/7
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Lakeside County Primary School
Other Sports Facility
Play Space
Tennis Court
Allotments
College House
Demonstration Gardens
Heath Park Wood
Scaitcliffe Road
Allensbank Road
Lake Road West
Llanishen Reservoir
Penylan Pond
Roath Brook
Roath Park Primary
Hightfield Allotments
St Paul's Roman Catholic Church
Prifysgol Fetropolitan Caerdydd/Cyncoed Campus
Cefn Coed
Sovereign Close
Canton United Synagogue
OS Road
OS Road Grayscale
OS Outdoor
OS Outdoor Grayscale
Aerial
© Ordinance Survey
A to Z of council services

Figure 2-5-3 Ecological Appraisal - Phase 1 mapping of eastern site area



3. The Proposed Development

3.1 Development Description

The development is proposed to meet a demand for the mix-use residential and retail regeneration of Portchawl's Waterfront, integrated with the local area's natural assets and seaside location, and which seeks to maintain, preserve and where possible enhance those existing qualities as part of the proposed development.

A draft masterplan has been prepared and is included with Appendices. While this would change as the planning application progresses, it provides a high-level plan for how the Waterfront could be sustainably developed.

In the planning application for the development, the details of how the proposed development would finally be delivered, such as the layout, scale, appearance, landscape, drainage, and exact number of homes, would be reserved, to be agreed via future reserved matters applications or planning conditions. Although details for some aspects of the access and possibly the flood defence works could be provided, should they be identified as enabling infrastructure, as the application is prepared.

The development is to be built out in phases, and this could involve different developers. To set a consistent high-quality design, a Design Code is being prepared alongside the planning application and would be part of any future planning permission. This will set the design quality approaches that future developers delivering the Masterplan must be sensitive to.

The Masterplan currently includes the following built or landscaped elements, which is considered to fully align with the allocation of the RLDP and land uses identified:

Up to 1,100 new homes, which would be a combination of houses, maisonettes, and apartments.

A 2.2ha site for the future expansion of Newton Primary School, including the existing school site.

Space for new cafes and restaurants, leisure uses, shops, arts, community facilities, and a hotel.

Enhanced Porthcawl Harbour facilities.

Enhancement of the Griffin Park play facilities with a MUGA.

Approximately 19 ha of open space for use by the public and future residents. Key parts of this will provide space for seasonal attractions and events.

Creation of a continuous active promenade from the Esplanade and Cosy Corner in the west to Trecco Bay in the east. This would connect with the Wales Coast Path.

New coastal defence works to Sandy Bay.

Three separate areas of play space where multiple play facilities would be provided to cater to young people of different ages. Including space for a pump track and skate park.

A new green park that would provide up to 4 ha (40,000 sqm) of green space for recreation, health, wellbeing, and biodiversity between the existing Griffin Park and the Relic Dunes.

Flexible public realm areas that could be used to provide space for holiday motorhomes and accommodation.

New public parking areas to provide up to 250 spaces and the enhancement of the Hillsboro Car Park to increase capacity up to 400 spaces (without making the Hillsboro Car Park a multi-storey facility).

The proposed development constitutes the following parts:

Demolition:

The demolition of the Coney Beach amusement Park and several other waterfront buildings, as well as the permanent closures of some roads. The scheme of proposed demolition and stopping-up of roads can be seen in Figure 2-1 below.

Groundworks:

- Cut and fill and movement of soils within the overall development site.
- Stabilisation of the dune rear (coastal protection / development security)
- Other protection of the coastal edge.
- Piling or other foundational works.

Phased Construction:

- Infrastructure:

Highways - Including non-vehicular routes.

Services – Including electrical, communications, water, and foul.

- Buildings and Structures – Including residential and mixed-use buildings, areas, and structures with a mixture of private and/or public use.
- Landscaping – A mixture of private and/or public space landscaping, including ecological mitigation and enhancement, and areas for play and health and wellbeing.

Figure 3-1-1 - Proposed Demolition and Stopping-up plan, The Urbanists, January 2025



3.2 Potential Likely Environmental Effects

The potential effects of the proposed development, its construction, and likely operational effects are considered below. These include relevant areas with varying potential to be 'significant', and therefore require some further consideration as to need to have them within the scope of an Environmental Statement for the proposed development. This section therefore acts as an introduction to what will be reviewed in more detail in later sections.

3.2.1 Ecology

General site - Based on ecological appraisals of the site that were undertaken to support the allocation of the site in the RLDP, the general ecology at the site is deemed to be relatively limited in value. There are pockets of value or high potential for improvement, for example, the Monster Park and the dune habitats, which could suffer adverse effects if the development is not delivered sensitively. However, both of these areas are to be retained in the development and enhanced through management and supplementary landscape planting. The presence of protected species on the site is not yet fully quantified as targeted species surveys are being undertaken in the current seasonal window, but the presence of bats and reptiles is assumed, and the surveys and the associated advice of the consultant ecologist will shape the evolution of the masterplan and development design. To provide the opportunity to deliver ecological mitigation and achieve biodiversity net gain, the development masterplan includes the provision of an extensive network of public open space with green infrastructure and habitat areas, and as the planning application is prepared, this resource will be further articulated to demonstrate how individual species can be mitigated for, and how overall ecosystem resilience can be enhanced. This new habitat would be subject to appropriate landscape and ecological management as required by Planning Policy Wales Edition 12. The findings of the ongoing ecological surveys will be presented in the planning application as part of an Ecological Impact Assessment, and the Green Infrastructure Statement and supporting application landscape drawings shall demonstrate how mitigation and biodiversity net gain are factored into the delivery of the development.

The 'Mobile Dune' priority habitat - This is present in the site, and is protected under the Environment (Wales) Act 2016 Section 7. The development could impact directly through its built form, indirectly by the escape of introduced landscape species, or potentially through increased recreational impacts (potentially beneficially). To avoid direct impacts, no built form except walkways are proposed in the dunes as part of the development, with all new homes offset appropriately. The escape of landscape species can be avoided by appropriate habitat provision on the remainder of the site, which is proposed, and includes the provision of a new sandy park that can act as a buffer and transition habitat to the dunes and built development. The amount of

public space in the development area, including the new sandy park, should also help to offset over recreational use of the dunes.

The 'Maritime Grassland' priority habitat - This is present in areas of the Sandy Bay Bowl and south of this around Rhych Point of the Sandy Bay area, as well as in the Salt Lake area. Of those, there is likely to be a loss of extent at both Sandy Bay Bowl and Salt Lake. The quick establishment of these habitats since past development helps reassure that they could become reestablished relatively easily in other areas of the site, as part of the proposal. It is highly likely that both natural re-establishment of new areas and improved conditions of retained areas could be ensured under better management practices; which could be secured under planning. It is also relatively certain that these areas would decline in condition without active management, as can be seen occurring at Salt Lake where scrub is slowly taking over.

Kenfig / Cynffig SAC - Although the Kenfig / Cynffig SAC dunes are located some distance away, they are in the locality and may be sensitive to increased recreational use. The development would increase the local population, and while the development would provide significant recreational spaces and resources that would make it self-sufficient, there is a potential for the development to lead to increased recreational use of the SAC.

3.2.2. Landscape and Visual

The proposed development is large in scale and its delivery would inevitably result in changes to localised coastal views and the local landscape character of the site and the immediate environs. However, given the brownfield nature of most of the site, such a change would likely be deemed positive, subject to good design. The masterplan sets the basis for good design and to integrate the proposed development into the existing Porthcawl settlement townscape. For example, storey heights would be modest; the vast majority of development buildings would be at or below 4 storeys. Where greater storey height is proposed, this would be restricted to key masterplan areas where greater height would add visual interest and design quality, and the heights would be fully justified through the planning application, notably the Landscape and Visual Impact Assessment (LVIA). Meanwhile, the appearance of future development would respect existing buildings, taking inspiration from interesting facade design and paying homage to present materials, while applying a contemporary and sustainable finish. That the site is allocated in the RLDP for the scale of development proposed by the masterplan also demonstrates its capacity to absorb landscape and visual change. The allocation submission included an LVIA to evidence this.

3.2.3. Local Highway Network

The Network - There could be relatively large effects from the proposed development on the Local Highway Network, but this has the potential to be positive and negative. Positive effects would arise from the new active travel infrastructure delivered, which would encourage the modal shift of travel in the local area, as required by national and local planning policy, and reduce local congestion. Increasing the local population also increases the viability for better local bus provision, a factor that would build on the investment already made in delivering the Metrolink. The proposed closure of the Eastern Promenade for vehicle use would create more public space for local people and green infrastructure opportunities. Negative effects could arise from the scale of the development, but this would only likely be severe if appropriate infrastructure upgrades are not accounted for. The development masterplan includes appropriate new infrastructure that would serve the development, and the details of this will be further progressed through the planning application with dialogue with the Highway Authority. As part of the planning application preparation, a Transport Assessment and Framework Travel Plan are to be prepared, and these documents would set the basis for evidencing the need and safety of the new infrastructure proposed and providing a guide to how the modal travel shift can be delivered.

Car parking - The proposed development would result in the loss of existing local car parking bays and car parks on parts of the site, which are used in periods of peak seasonal demand. Significant adverse effects on local parking supply could therefore arise if no mitigation is undertaken. To address this, the Masterplan includes replacement public parking. This includes reconfiguration and surface enhancement of Hillsboro car park to make it more efficient and accommodate approximately 400 vehicles, and space for new public car parking that could provide approximately 250 spaces in the Coney Beach area of the development site. Further opportunities to accommodate public parking as part of the future development parcels also exist. This approach does not fully address the loss of parking spaces from Salt Lake and the closure of the Eastern Promenade to private vehicles, but it does meet the existing typical summertime peak use of the public car parks in the site. The typical existing summertime peak use of these car parks has been identified through repeat annual parking surveys of the public car parks. In addition to the public parking provision included in the Masterplan, work is currently underway on preparing a sustainable public parking strategy, and this will identify further opportunities for seasonal overflow parking areas in edge-of-town locations.

3.2.4 Air Quality

In line with the increase in vehicular movements associated with the development, there is potential for air quality effects surrounding the development site. However, the delivery of the development would also increase the viability of sustainable travel (as discussed above), and the closure of roads near the beachfront and the new active travel routes would help prioritise active

travel and enable low emissions in large public spaces. A further consideration is the increase in low-emission vehicles, including electric. The future homes in the development would heat and cool, by electric or passive means, and the extensive new green spaces provided would improve sequestration and air quality.

3.2.5 Noise

None of the uses proposed in the development would likely create any non-controlled and therefore significant noise levels. Leisure uses would have operational requirements that require evening activity and plant, but subject to licensing and designing the plant to modern specifications, the associated noise effects are likely to be minimal. Such uses also already operate around the site and the local area. The amenity of future residents is a consideration, but with appropriate ventilation and layout design, which includes appropriate buffers and orientation of properties where required, amenity levels are not likely to be impacted.

3.2.6 Ground Conditions

Parts of the site, notably the Salt Lake parcel, where there is an infilled dock, have been previously used for industrial-related uses. There is thus a high potential for adverse ground conditions on the site that would not be suitable for the end uses proposed in the development, or for disturbance which could have a detrimental effect on the site environment. Should these not be remediated as part of the development, then there is a high potential for significant adverse effects, however, this would not be the case. The future planning application will include a robust ground conditions desktop review of site conditions and recommend a scope of site investigation works that will quantify the ground conditions across the site, and any contamination or features that need to be factored into the design of the development. This work would frame a remediation strategy and verification approach that would ensure that present contamination is fully mitigated before any sensitive development commences on the site.

3.2.7 Water and Flood Risk

Flood Risk - Part of the site is included in Zones 2 and 3 (Rivers and Sea). This is notably the case for the Salt Lake area of the site, land west of the Eastern Promenade) but this land is also designated as a Defended Zone (works completed in 2023). The southern extent of Mackworth Road is also located in Flood Zones 2 and 3 (Rivers and Sea) but is undefended, and no vulnerable development is proposed in this area as part of the development. Ongoing works are also now being explored at the feasibility stage for a new sea wall in Sandy Bay, subject to a hydraulic modelling study and optioneering process. The risk of surface water flooding is shown to be largely very low according to the NRW dataset. The site is also removed from the extent of flooding from reservoir failure. A Flood Consequences Assessment will be undertaken in accordance with TAN 15 to fully quantify flood risk and any mitigating actions required. The details

of this will be presented in the future planning application, and followed to ensure that the development proposed is not subject to flood risk.

Drainage - From the beginning of planning for the development, drainage requirements have been accounted for either through embedding drainage provision into the masterplan, or planning ahead for the diversion of key existing infrastructure and connecting to the foul network. In respect of surface water, it is proposed to discharge via several hierarchical approaches including to ground via infiltration, to existing surface water bodies and to existing surface water sewers/drains. Surface water discharges will be subject to the results of infiltration testing and agreements with statutory consultees. For foul, it is anticipated the proposed development will be served by a connection to the existing public foul sewer network, however, previous correspondence with Dwr Cymru Welsh Water has highlighted capacity issues within the existing network. A hydraulic modelling assessment is needed to confirm available capacity in the network and/or identify solutions and points of communication to ensure the development can be accommodated within the system. The drainage design will be accounted for in the illustrative masterplan layout and also in the drainage strategy included in the planning application.

4. Planning Context

4.1 Environmental Impact Assessment

The requirements for when a development needs to be subject to EIA are set out in the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017. Schedule 1 of the Regulations provides a list of those projects which will always be required to be subjected to EIA, such as nuclear power stations, integrated chemical installations, and metal smelting works. Schedule 2 of the Regulations sets thresholds for development, over which it is more likely that a proposal will require EIA.

Schedule 2 of the Regulations provides a list of projects where EIA is only required if the project is considered likely to give rise to '*significant*' environmental effects. The Schedule provides thresholds beyond which it is considered more likely that the project will require EIA. Development proposals below these thresholds may still be held to be EIA development if they are considered to still have significant environmental effects. Conversely, projects above these thresholds may not be considered to be EIA development if they are not expected to have '*significant*' environmental effects.

An EIA screening opinion was sought from the Local Planning Authority in April 2025, and a screening opinion (P/25/239/SOR) was received in June 2025. This confirmed the proposed development would warrant an EIA due to the potential for 'significant' environmental effects.

Where an EIA is deemed to be warranted a request can be made to the Planning Authority to state their opinion as to the scope and level of detail of the information to be provided in the Environmental Statement (ES). This report seeks that opinion from the Planning Authority and includes the content required for the Planning Authority to make that request. In making the request, it is proposed to have a focused ES, which addresses issues with reasonable potential for '*significant*' environmental effects and accounting for suitable mitigation. The following section sets out the proposed approach and accounts for the EA screening advice provided by the Planning Authority.

5. Proposed Scope of the Environmental Statement

This section sets out the proposed structure and content of the Environmental Statement. Key assessment to be scoped in, include:

Alternatives, including sites and development approaches
Ecology, including assessment of impact on the dune habitat and nearby designations.
Water
Transport

Each of the above can consider the human effects of the development as part of the assessment process.

In addition to the above, the Environmental Statement will include the following supporting information:

Introduction
EIA legislation context
Site description, including other cumulative development
Development description
Supporting technical appendices - Vol.2
Non Technical Summary - Vol.3

Based on the screening opinion received it is proposed to **scope out cumulative effects from the Environmental Statement, as the screening opinion identified no existing development, and / or approved development that was deemed likely to have cumulative effect alongside the proposed development (refer to Question 1B of the assessment - P/25/239/SOR).**

It is also proposed to scope out waste, air quality, noise, ground conditions, lighting, utilities, energy, landscape and visual and land uses from the Environmental Statement. This is again based on the screening opinion received. The proposed rational, based on the screening advice provided is set out below:

Waste - the screening opinion concluded waste impacts are unlikely to be significant and likely to be those normally produced from construction sites and can be dealt with via a waste management plan as part of the planning process. **Refer to Question 1D - P/25/239/SOR.**

Pollution and nuisance (noise, vibration, air quality, lighting, heat and radiation) - the screening opinion identified the development would be unlikely to create any significant

issues, and that any issues can be fully quantified through appropriate impact assessments for each of these environmental aspects. **Refer to Question 1E - P/25/239/SOR.**

Contamination - the screening opinion identifies that ground contamination is known to be present on the site, however, it notes this is likely to be able to be addressed through contamination assessments as part of the planning process. Further, it can be managed through a remediation strategy and appropriate construction methods undertaken in accordance with a Construction Environmental Management Plan and Construction Phase Dust assessment. **Refer to Questions 1D and 1E - P/25/239/SOR.**

Landscape and Visual - the screening opinion notes that the site is allocated in the Replacement Local Development Plan, is not a designated landscape site and would not impact on any designation. While the screening opinion notes the site would be visible it is judged that the effects are unlikely to be significant and can be managed through good design. The screening opinion thus concludes that landscape and visual effects can be fully set in a bespoke landscape and visual impact assessment included in the planning application. **Refer to Questions 2C - P/25/239/SOR.**

Land Uses - the screening opinion identifies that there are unlikely to be significant effects on adjacent land uses, notably community uses. The screening opinion notes that any effects considered later in the planning process can be managed through the planning application. **Refer to Questions 2A - P/25/239/SOR.**

Heritage - the screening opinion notes that while there are grade II listed heritage assets in the development site, and a conservation adjacent to the site boundary, the proposed development would not directly impact the assets and significant effects would likely be avoided. The opinion states that heritage effects can be considered as part of the wider planning application. **Refer to Questions 2C - P/25/239/SOR.**

Should the Planning Authority wish to reconsider the scope, an outline of scope for other technical matters, including ground conditions, air quality, noise, lighting, utilities, and landscape and visual are included in the appendices - appendix 9.5.

6. Scoping the Environmental Statement Assessments

This section outlines how the assessments to be included in the Environmental Statement will be undertaken.

6.1 Alternatives

6.1.1 Introduction to topic

This chapter will assess the alternative approaches considered for the development The chapter will be authored by The Urbanists.

The EIA regulations require an applicant to provide a *"description of the reasonable alternatives studied by the applicant or appellant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the significant effects of the development on the environment"*.

At Stage 1 – an HRA Screening was undertaken as part of the Candidate Sites Assessment (CSA) and Sustainability Appraisal (SA) process for the Replacement Local Development Plan (RLDP). This identified Likely Significant Effects on three of the identified National Site Network Sites: Blackmill Woodlands Special Area of Conservation (SAC). Glasswell Trioedd Cefn Cribwr / Cefn Cribwr Grasslands SAC and; Kenfig / Cynffig SAC.

All alternative sites were greenfield sites located outside of the settlement boundary of Porthcawl, which is identified as a Regeneration Growth Area. These greenfield sites were considered to undermine the Preferred Strategy, representing an unacceptable incursion into the open countryside. As such, they were discounted at Stage 1.

At Stage 2 – Taking into account the information available and the level of detail appropriate for RLDP policies and proposals, together with the measures incorporated into the RLDP to protect European sites and provide improvements in air quality, the Appropriate Assessment concluded that "the RLDP is not likely to have a significant effect on any of the identified European sites, either alone or in combination with other plans or projects".

The HRA did not undertake Stage 3 (Assessment of Alternatives), as this stage is only required if and when it is not possible to identify suitable measures to address identified effects (i.e. to demonstrate the avoidance of adverse effects).

The allocation of Porthcawl Waterfront was seen to maximise the use of a previously developed, under-utilised site to regenerate Porthcawl Waterfront and deliver a wide range of sustainable, placemaking-led regeneration benefits to the existing settlement. This was also consistent with the Preferred Strategy, met the findings of the Settlement Assessment and would make a

significant contribution to the local housing need identified in the LHMA. It was also consistent with the site search sequence outlined in Planning Policy Wales.

6.1.2 Legislation, Policy and Guidance

No single legislation, policy or guidance consistently sets out the requirements or scope of considerations for an alternative site assessment; rather it is to be particular to the context of the proposed development. However, one of the commitments established by the Institute of Environmental Management and Assessment in its EIA Quality Mark scheme is that practitioners commit to ensuring that EIAs refer to any development alternatives considered during the process and that the influences of such alternatives on the proposed development are transparently set out. The regulations only require Environmental Statements to present a discussion of alternatives, however, good practice encourages applicants to include the following in the discussion:

Alternative locations and scales of development;
Alternative site layouts and access arrangements;
Different approaches to scheme design; and
Alternative processes and alternative phasing of construction.

6.1.3 Methodology

In light of the requirements of the regulations and guidance and considering the context to the proposed development at the proposed location, it is considered reasonable to approach the alternative site assessment as follows:

Location and scale of development - The chapter will explain why the proposed site is the selected site. As set out above, due to the planning and RLDP history relating to the site this will not include a consideration of alternative sites. However, it will explain how the site is deemed to be the optimum location based on a series of key site requirements. These will include land ownership; use of brownfield land; delivering a historical strategic regeneration allocation; meeting local housing needs; accessibility to the M4 corridor; access to local services in the nearby centres; and, proximity to other leisure assets. The chapter will also explain why the development needs to be to the scale proposed; which is a requirement to deliver a commercially viable development and most importantly meet housing needs.

Alternative site layouts and access arrangements - Detail the alternative site layout approaches that have been considered in the design of the proposed development, including access arrangements.

Different approaches to scheme design - Detail the alternative design approaches that have been considered for key elements of the proposed development.

Alternative processes and alternative phasing of construction - Construction techniques are not yet known, so it is not proposed to cover alternatives, however, the chapter could discuss why the operations included in the development are proposed and considered to combine to create a distinctive and viable development.

6.2 Ecology

6.2.1 Introduction to topic

This chapter will assess the likely ecological effects of the proposed development on the site and the surrounding area. The chapter will be authored by Bioscan UK.

The consideration of likely ecological effects will be based on a review of the site's existing habitats, and the species likely present. The assessment will consider the degree of change the development would create, as well as the significance of any resultant change to habitats and species.

As part of that consideration of suitable scope and potential effects, this chapter will also review the findings of habitat and species surveys that have been undertaken, including for protected and priority species. The surveys will include:

Desk study (data obtained October 2024). Data obtained for a 5km buffer around grid reference SS823769 (taken as the site centre). The findings of the desk study have informed the scope of the below surveys.

Habitat surveys (completed September 2024). To provide an inventory of the basic habitats present, mapped in accordance with the UK Habitat Classification System (version 2, 2023).

Searches for evidence of protected species (completed September 2024). The findings of this survey have further informed the scope of our survey programme.

Wintering bird survey (early December 2024 to late January 2025, 2 visits). The proposed 2 visits represent an attenuated survey effort, but this is considered appropriate for this site in the context that it has high levels of public disturbance and a paucity of high-quality habitat for wintering birds.

Check all affected buildings within the site for bat roosting potential (completed January 2025; applicable only to a complex of fairground buildings towards the centre of the site).

No evidence of bat roosting recorded, and buildings all assessed to have minimal bat roosting potential.

Check of affected buildings (within the fairground) for nesting birds (completed January 2025). Occasional bird nests noted within the complex, mostly pigeons.

Exploratory strimming along several animal trails noted extending into dense bramble scrub to search for any potential obscured badger setts (late winter 2025). Strimming team under instruction of a supervising ecologist.

Investigation of sea wall for bat roosting potential, with searches of any crevices which may be noted which are within reach of a ladder and endoscope (early March 2025).

Ground-based survey of trees for bat roosting potential (early March 2025).

Reptile survey (mid-March to mid-June 2025, 7 visits). Due to high levels of public access and potential interference with reptile refugia, this survey will by necessity be restricted to the 'Monster Park' (a fenced off area of grassland encircled by trees just east of the Fairground, within the central part of the site), and its results extrapolated as necessary. This area is fenced off from public access, and as such has longer grass and is one of the better areas of potential reptile habitat onsite.

Breeding bird surveys (March to July 2025, 5 visits). Reduced slightly from 6 survey visits recommended by Bird Survey Guidelines due to the paucity of high-quality breeding habitat onsite and high degree of public disturbance.

Bat activity transects (April to October 2025, 3 visits: spring, summer & autumn). The site is assessed to be at the lower end of the scale of moderate suitability for bats based on the habitats present (a mixture of grassland and hardstanding, with some small areas of trees and scrub).

Bat remote surveys (April to October 2025, monthly periods of 5 days coverage each). High levels of public access are a significant restriction on where remote bat detectors can be placed without risking theft / damage. The attached sketch plans show in orange the proposed locations of 9 tree-mounted remote bat detectors (coverage is restricted to those areas where trees are available).

Invertebrate survey (late April to end June 2025, 1 visit). Focusing on mobile sand dunes adjoining the south-eastern part of the site. The intention is for the mobile sand dunes to be retained by design, though some of its invertebrate interest may extend into nearby maritime grassland.

Climbing surveys of any trees identified as having significant bat roosting potential which are anticipated to potentially be impacted by the proposals (spring-autumn 2025).

Emergence surveys of any potential bat roosting features (in trees or sea wall) which could not be fully investigated by previous inspections (spring-autumn 2025).

This chapter shall consider the likely permanence of the habitats and species and their existing conditions, with and without the proposed development (likely scale of effects). It should also consider both the positive and negative effects of the proposed development (balance of effects), when appraising the significance of effects on the habitats and species.

The chapter will also consider the habitat mitigation and enhancement proposed, and suggest any further requirements to ensure that no significant effects would be had on any habitat or species. Those would be implemented as part of any final scheme, to ensure a Net Benefit for Biodiversity and Ecological Resilience enhancement would occur, and so would be relied upon in any assessment. The resultant level of 'residual' effects would be an outcome of this assessment, used to understand the acceptability of the scheme. The consideration will include any scale of those residual effects that are considered likely. There will also be a consideration of their potential cumulative effects, in tandem with other proposed schemes, if relevant.

Ecology effects from the proposed development beyond the site shall be considered. Specifically in relation to the Kenfig Dunes Special Areas of Conservation (SAC), and Site of Special Scientific Interest (SSSI). The nearby proximity of this protected site, and its potential vulnerability to recreational impacts from the proposed development, means that a Habitat Regulation Assessment (HRA) will need to be provided by the Local Authority. This should consider if a further Appropriate Assessment of the scheme's impacts on this protected site is required because of a risk to it from the proposed development. It should also consider the scope of that Assessment (what is 'Appropriate'). The scheme's consultant ecologist will produce a 'shadow' HRA to draw their own conclusion if an Appropriate Assessment is required. The HRA will look at the likely significant effects, and thereafter any required scope of an Appropriate Assessment (if any). Should an Appropriate Assessment be required, it is considered that the findings of that should be considered within this chapter of the Environmental Statement. Whilst the two routes of environmental assessment require different approaches it's considered that their conclusions should align with regard to the protected site.

6.2.1 Legislation, Policy and Guidance

In addition to the EIA Regulations, the assessment will consider the following legislation and planning policy:

The Wildlife and Countryside Act (1981);
The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019;
The Natural Environment and Rural Communities Act (2006);
Protection of Badgers Act (1992);
Countryside and Rights of Way Act (2000);

Wild Mammals (Protection) Act (1996); and

Environment (Wales) Act (2016)

Planning Policy Wales Edition 12 (2024)

Technical Advice Note (TAN) 5: Nature Conservation and Planning (2009)

Biodiversity Action Plans (BAP)

Bridgend Local Development Plan 2018 to 2033

Supplementary Planning Guidance: SPG 07 - Trees and Development (2008); and SPG 19 - Biodiversity and Development (2014).

6.2.3 Potential Impacts

Potential impacts from the construction and operation of the development could include:

Direct and indirect loss of or harm to habitat, with the potential to be of significant ecological importance through site clearance and construction activities;

Damage to habitats through pollution events;

Isolation and fragmentation of habitats;

Changes in baseline noise and vibration, air quality and light levels;

Increased disturbance during the construction and operation of the development;

Consequential impacts to and effect on protected species, species of principal importance, and notable species; and

Ability to increase negative effects on areas protected for their conservation value, beyond the development, directly, indirectly and individually or cumulatively.

Where necessary, the suitable protection of habitats or features commensurate to their assessed importance, will be implemented.

6.2.4 Methodology

The site's ecology context and the potential proposed development are to be reviewed, to comprise the following sections, aligning with the guidance on EIA produced by the Chartered Institute of Ecology and Environment Management (CIEEM):

Executive Summary - Setting out an appraisal of the process in brief, highlighting key considerations and outcomes.

Introduction - This section sets out the use of guidelines, the differing scales of Ecological Impact Assessment, the need for a proportionate, rigorous, and transparent approach, key principles and the EcIA process of which has been undertaken with regard to the outline development proposal.

Scoping - This will outline the high-level consideration of what should be scoped into the assessment, considering the site but also areas at a relevant distance nearby or connected to site, in tandem with the sensitivity of habitats / features / species, and the likelihood of effects from development proposed. By this it is possible to scope out those elements of potential effects which are not likely, or which are likely but clearly non-significant.

Legislation, Policy and Guidance - The scope of the assessment is also informed by the relevant policy and legal frameworks, which inform the concern to be had for habitats and species, as well as promote their vulnerability or relative importance.

Establishing the Baseline - This will be a consideration of the existing site's ecological context and that of other relevant areas, by way of both desk-based study and any surveys of the site. It includes assessing the future changes to the site or interim impacts, any potential changes / impacts to other areas, and a review of these together with other proposed developments that may affect the same areas (cumulatively). It will summarise what is to be scoped out of the assessment based on the above.

Important Ecological Features - Definition and consideration of what is an 'important' ecological habitat / feature / species presence in the context of the site, and therefore scoped into the assessment by scale of its significance (sensitivity); should the scale of effects be anything but negligible or none.

Impact Assessment - A review of the procedure for impact assessment itself in an ecological context. The assessment of potential effects of the development, both by design, implementation and operation consideration, on each relevant habitat / feature / species.

Mitigation Hierarchy - The above impacts are to be reviewed with regard to any mitigation proposed, and the resultant level and form of effects. These can take the form of mitigation integrated and inherent to the design, a feature of management during construction or post-development and any responsive actions as part of that. Those 'residual' effects are then able to be discussed individually and cumulatively with each other within the site and outside the site

Consequences for Decision-Making - This final section will consider legal as well as national and local policy implications. Following this, a review of the mechanisms by which detailed design and implementation can be assured is to be produced. This will ensure that the competent authority can positively consider this ES chapter.

6.3 Water

6.3.1 Introduction to topic

This chapter will assess the likely significant effects of the proposed development on the environment with respect to flood risk and drainage. This chapter will be authored by Stantec.

The chapter will account for the flood risk present on the site. Following a review of the NRW Flood Map for Planning, the site is located predominantly within Flood Zone 1 (land identified as having a low risk of flooding from rivers or the sea). Flood Zones 2 and 3 are evidenced within the parcel of land adjacent to the Eastern Promenade, and the area of land surrounding Mackworth Road, indicating the risk of flooding raises to within a 0.5% chance of annual flooding from the sea. Climate change is also included within the Flood Map for Planning. The parcel of land adjacent to the Eastern Promenade is shown to benefit from flood defences. Flood defence works were completed for this area in 2023 and ongoing works are being prepared by Arup with regards to a new sea wall in Sandy Bay, subject to a hydraulic modelling study and optioneering process.

The risk of surface water flooding is shown to be largely very low according to the NRW risk of flooding from surface water and small watercourses dataset. The site is also removed from the extent of flooding from reservoir failure. The existing site may suffer from failure of the drainage system serving the site, however, given the surface water mapping shows limited flood risk, there are unlikely to be significant consequences associated with any sewer flooding.

The chapter will account for the potential for the development to increase flood risk and the proposed drainage solutions to address this. Disposal of surface water will take place by sustainable drainage systems (SuDS) to be designed in accordance with the national standards and be approved by the SuDS approval body (SAB). It is proposed that surface water will be discharged via several hierarchical approaches including to ground via infiltration, to existing surface water bodies and to existing surface water sewers/drains. Surface water discharges will be subject to the results of infiltration testing and agreements with statutory consultees. Surface water destinations following the hierarchical approach will need to be fully explored and exhausted at each level before deferring to a lower level, at this stage it is prudent to assume that surface water connections to the Welsh Water public sewer system will not be feasible/permitted.

Foul water drainage shall also be accounted for to consider the effects on the existing foul network. It is anticipated the proposed development will be served by a connection to the existing public foul sewer network, however, previous correspondence with Welsh Water has highlighted capacity issues within the existing network. A hydraulic modelling assessment is needed to confirm available capacity in the network and/or identify solutions and points of communication to ensure the development can be accommodated within the system. At the time of writing DCWW

Welsh Water have been asked to provide a fee to prepare a quote to undertake the hydraulic modelling assessment.

Finally, the development will consider water quality, including the effects on groundwater and the relevant Water Framework Directive (WFD). In respect of groundwater the flow is south to Sandy Bay, although groundwater was not encountered at any of the trial pits undertaken in Site Investigation undertaken to date. In respect of WFD, the site sits within the coastal water body operational catchment known as 'Bristol Channel Outer North', which achieved an overall status of "moderate" in the interim 2024 Water Cycle Study. It is anticipated that water quality benefits and pollutant mitigation will be solely dealt with through the implementation of suitable SuDS features (green roofs, bioretention areas, rain gardens, swales, attenuation basins and permeable paving will treat and attenuate surface water). These features will provide the pollution mitigation requirements as set out in the national standards.

6.3.2 Legislation, Policy and Guidance

Planning Policy Wales Edition 12 2024

Technical Advice Note 15 (TAN15) 2025

National Standard for SuDS 2018

South West Wales Stage 1 Strategic Flood Consequence Assessment 2022

6.3.3 Potential Impacts

Sensitive receptors include the development proposed, but also the existing residential and commercial properties located beyond the site boundary. Controlled waters such as surface water features, groundwater and the coastal water bodies are also receptors, and in respect of foul, the existing foul network.

6.3.4 Methodology

A detailed Flood Consequence Assessment (FCA) will be produced in accordance with guidance provided within TAN15. This will review and assess all sources of flood risk to the site, including any available hydraulic modelling data of the risk of coastal flooding to the site, or breach of flood defences.

The aim of the FCA will be to demonstrate that the site is safe from any of the flood risks identified, and that it will not increase flood risk elsewhere/off site. In addition to this, a Drainage Strategy will be provided in accordance with the National Standards for SuDS and through consultation with the local SuDS Approval Body (SAB). The Drainage Strategy will be outlined in detail for the masterplan area, but with detail provided for the Spine Road (surface water only as no foul requirement will be created.

These potential impacts will be considered alongside any mitigation to reduce predicted impacts. The structure of the chapter will be consistent with that taken in the ecology chapter, covering the following:

Executive Summary.

Introduction - Outlining the use of guidelines, the need for a proportionate, rigorous, and transparent approach, and key principles applied.

Scoping - This will outline the high-level consideration of what should be scoped into the assessment, considering the site but also the local area connected to the site.

Legislation, Policy and Guidance - The scope of the assessment informed by the relevant policy and legal frameworks.

Establishing the Baseline - This will be a consideration of the existing site's water and drainage context and that of the local area, by way of desk-based study and modelling.

Impact Assessment - A review of the procedure for impact assessment in a water and drainage context. The assessment of potential effects of the development, both by design, implementation and operation consideration.

Mitigation Hierarchy - The above impacts reviewed with regard to mitigation proposed, and the resultant level and form of effects. These can include mitigation integrated and inherent to the design, and a feature of management during construction or post-development. Those 'residual' effects are then to be discussed individually and cumulatively with each other within the site and outside the site

Consequences for Decision-Making - This final section will consider legal as well as national and local policy implications. Following this, a review of the mechanisms by which detailed design and implementation can be assured is to be produced. This will ensure that the competent authority can positively consider this ES chapter.

6.4 Transport

6.4.1 Introduction to topic

This chapter sets out the proposed scope, methodology and key data sources for the Traffic & Movement chapter of the Environmental Statement (ES) that will be produced to assess the outline planning application for the proposed development. This chapter will be authored by Transport Planning Link. The approach will follow the Institute of Environmental Management & Assessment (IEMA) Environmental Assessment of Traffic and Movement Guidelines (July 2023).

The chapter will consider the impact of the development on the existing transport network, which were earlier noted to have potential for positive and negative impacts. This would include the positive effects from the new active travel that is proposed as part of the development, which would help to enable modal shift in the local area and reduce any existing congestion on the highway, and also the benefits that an increased population can have in increasing the viability for better local bus provision. On bus provision the chapter will consider the development's approach to bus access. A Framework Travel Plan is being prepared for the development and the chapter will be able to reference the sustainable transport initiatives proposed for enabling walking and cycling, but also encouraging sustainable use of vehicles, including bus access, but also other measures like car clubs.

In respect of potential negative network effects, the chapter will consider the highway congestion safety effects of introducing more vehicle trips, associated with the development, onto the existing local highway. The chapter will consider this in the context of infrastructure upgrades proposed as part of the development, which will include a new spine road access from the Eastern Promenade and a network of internal streets and access points. The extent of the highway assessed and the approach to collection of survey information is being scoped directly with the Highway Authority as part of the preparation of the Transport Assessment that will be included in the planning application. The effects of increased vehicles in respect of local air quality and noise is not considered a significant issue due to the scale and nature of the development proposed, but reference can be made to these factors in the chapter.

The chapter will also consider the effects of local parking reductions that will be required to enable the development. This will be undertaken in the context of the replacement parking strategy included in the planning application. This replacement parking offered as part of the development would not fully address the loss of existing parking spaces in the development site, but it would meet the existing typical summertime peak use of the public car parks in the site, and work is currently underway on preparing a sustainable public parking strategy, which will identify further opportunities for seasonal overflow parking areas in edge-of-town locations. The

assessment will be able to have reference to this in assuming in considering parking effects. The approach to parking required by the development should also be considered, with judgements drawn on the proposed provision and potential for effects on the local highway network.

6.4.2 Legislation, Policy and Guidance

Well-being of Future Generations (Wales) Act 2015.

Active Travel (Wales) Act 2013.

Planning Policy Wales (Edition 12, 2023).

Future Wales: The National Plan 2040 (2021).

Llwybr Newydd: The Wales Transport Strategy (2021).

Bridgend County Borough Local Development Plan 2018-2033 (Adopted March 2024)

Good practice guidance:

IEMA Environmental Assessment of Traffic and Movement (2023).

Active Travel Act Guidance (2021).

Planning Policy Wales (TAN18) (2007).

Manual for Street 1 (2007) and Manual for Streets 2 (2010).

Design Manual for Roads & Bridges (DMRB).

Wales Transport Appraisal Guidance (WelTAG).

DfT Transport Appraisal Guidance.

6.4.3 Potential Impacts

Impacts shall be explored through the operation of the existing highway network and the safety of its users, existing parking capacity, and the potential effects on the local area and residential receptors in respect of noise and air quality. Opportunities to improve active travel infrastructure, public transport provision and sustainable travel behaviours will also also be included.

6.3.4 Methodology

It should be noted that a detailed Transport Assessment (TA) is underway, which will provide much of the evidence base to support the ES Traffic and Movement chapter. A Framework Travel Plan is also in preparation.

Separate scoping discussions with Bridgend County Borough Council (BCBC) and other stakeholders will continue as the Transport Assessment progresses to ensure proportionality of the Environmental Statement and to refine datasets and assumptions. The assessment will reflect the emerging and evolving site masterplan. This will include due consideration of a new spine road, stopping up orders, and relocated public parking.

As part of the Transport Assessment scoping exercise, a series of junctions have been identified as being potentially sensitive to traffic increases. The magnitude and sensitivity will then be assessed to determine the significance. Where significant effects are predicted, mitigation will follow the sustainable transport hierarchy and will seek to avoid or reduce the impact before further interventions are identified.

Any identified requirement for mitigation will be progressed with due reference to the sustainable transport user hierarchy, as defined in the Wales Transport Strategy and acknowledging the shift from 'predict and provide' to 'decide and provide' in transport planning.

The chapter will follow the same structure as the ecology and water chapters, including the following:

Executive Summary.

Introduction - Outlining the use of guidelines, the need for a proportionate, rigorous, and transparent approach, and key principles applied.

Scoping - This will outline the high-level consideration of what should be scoped into the assessment, considering the site but also the local area connected to the site.

Legislation, Policy and Guidance - The scope of the assessment informed by the relevant policy and legal frameworks.

Establishing the Baseline - This will be a consideration of the existing site's highways context and that of the local area, by way of both desk-based study and surveys.

Impact Assessment - A review of the procedure for impact assessment in a highway context. The assessment of potential effects of the development, both by design, implementation and operation consideration.

Mitigation Hierarchy - The above impacts reviewed with regard to mitigation proposed, and the resultant level and form of effects. These can include mitigation integrated and inherent to the design, and a feature of management during construction or post-development. Those 'residual' effects are then to be discussed individually and cumulatively with each other within the site and outside the site

Consequences for Decision-Making - This final section will consider legal as well as national and local policy implications. Following this, a review of the mechanisms by which detailed design and implementation can be assured is to be produced. This will ensure that the competent authority can positively consider this ES chapter.

7. Supporting Reports and Statements

In addition to the Environmental Statement, the planning application will include a suite of technical documents that either: a) ensure the environmental effects at the site level are fully assessed and recorded, or, b) set out those further works required which may only impact non-significantly, with or without standard Mitigations. These are summarised below and include those necessary to address the topics proposed to be scoped out of the Environmental Statement in suitable detail.

Table 3: Summary of the wider planning application content.

Drawings	Technical Reports
Site Location Plan	Design and Access Statement
Existing Site Plan	Planning Statement
Demolition Plan	Pre-application Consultation Report
Illustrative Masterplan	Arboricultural Impact Assessment
Phasing Plan	Transport Assessment
Site Parameter Plan	Ecological Impact Assessment
Building Parameters Plan	Outline Green Infrastructure Statement
Illustrative Masterplan Site Sections	Landscape and Visual Appraisal
Model Views	Phase 1 Ground Conditions Desk Study
Topographic Survey	Drainage Strategy
Illustrative Site Levels	Archaeological Desk Based Assessment
Strategic Cut and Fill	Energy Feasibility Report
Illustrative Long Sections	Preliminary Ecological Assessment

Spine Road Levels	Species Surveys and Habitat Reports
Existing Drainage Infrastructure	Ecological Impact Assessment
Spine Road Drainage Design	Habitats Regulation (Appropriate) Assessment Shadow Report
Masterplan Vehicle Tracking	Tree Survey
Masterplan Visibility Splays	Noise Survey
Spine Road General Arrangement	Noise Statement
Spine Road Vehicle Tracking	Air Quality Impact Assessment
Spine Road Visibility Splays	Flood Consequence Assessment
Spine Road Lighting Design	Lighting Strategy
Spine Road Hard Landscape Plans	Arboricultural Impact Assessment
Spine Road Soft Landscape Plans	Utilities Technical Statement
Planting / Tree Details	Masterplan Drainage Strategy
Spine Road Landscape Sections	Flood Wall Feasibility Report
Spine Road Utilities Design	
Existing Utilities Infrastructure	
Utilities Strategy	

8. Conclusion

The scope of the Environmental Statement proposed in this Scoping Report shall ensure the likely *'significant'* environmental effects of the proposed development are comprehensively considered. The scope proposed is considered reasonable and proportionate to the nature of the proposed development and the *'significant'* effects that may arise. Other environmental areas not deemed to warrant inclusion in the Environmental Statement will be fully considered in comprehensive technical reports that will be included in the planning application. The Scoping Report identifies these for reference.

Summary of the chapters which will be included in the Environmental Statement (Vol.1):

1. Introduction
2. Legislative Context and EIA Process
3. Site and Surroundings
4. Proposed Development
5. Alternatives
6. Ecology
7. Water
8. Transport

In addition, technical appendices for each chapter will be provided in Vol.2 of the Environmental Statement and a Non-Technical Summary will be included in Vol.3 of the Environmental Statement.

Should the Planning Authority wish to reconsider the scope, an outline of scope for other technical matters, including ground conditions, air quality, noise, lighting, utilities, and landscape and visual are included in the appendices - appendix 9.5.

9. Appendices

9.1 Site Location Plan (attachment)

9.2 Illustrative Site Masterplan (attachement)

9.3 Height Parameters Plan (attachment)

9.4 Open Space (attachment)

9.5 Potential Scope for other Environmental Matters

9.5 Potential Scope for Other Environmental Matters

Section 5 proposed to scope out **waste, air quality, noise, ground conditions, lighting, utilities, energy, landscape and visual and land uses from the Environmental Statement.** This was proposed on the basis of the screening opinion received. However, if the Planning Authority was minded to revisit these areas, the technical scope for ground conditions, lighting, air quality, noise, utilities, energy and landscape and visual are set out below.

9.5.1 Ground Conditions

9.5.1.1 Introduction to topic

This chapter would assess the likely significant effects of the proposed development on the environment with respect to ground conditions. This chapter would be authored by Stantec.

9.5.1.2 Legislation, Policy and Guidance

Environmental Protection Act 1990, Part 2a

Construction (Design and Management) Regulations 2015

Contaminated Land (Wales) (Amendment) Regulations 2012

Control of Asbestos Regulations 2012

Town and Country Planning Act 1990

Planning Policy Wales Edition 12 2024

Environment Agency (2004). The Model procedures for the management of land contamination. Contaminated Land Report 11. The Environment Agency.

BRITISH STANDARDS INSTITUTION. 2015. Code of practice for ground investigations. BS 5930. BSI London

BRITISH STANDARDS INSTITUTION. 2011. Code of practice for investigating potentially contaminated sites. BS 10175. Incorporating Amendment NO.1:2013. BSI London.

NHBC (2016) NHBC Standards. NHBC Milton Keynes. Stone, K., Murray, A., Cooke, S., Foran, J. and Gooderham, L. (2009) Unexploded Ordnance (UXO), a guide to the construction industry. CIRIA Report C681. CIRIA, London, 141 pp

9.5.1.3 Potential Impacts

Sensitive receptors that may be affected by the proposed development include residential and commercial properties located beyond the site boundary, as well as controlled waters such as surface water features and groundwater.

9.5.1.4 Methodology

An updated site wide Phase 1 Ground Conditions Desktop Study would be produced, with review of Opensource data, environmental databases and previous geo-environmental reports on the site.

A Phase II Ground Investigation would be carried out to address the 'Possible Contaminant Linkages' along with 'Geotechnical Hazards' that have been highlighted within the Ground Conditions Desk Study report. The full scope of Phase II Ground Investigation (GI) is not required to be undertaken at the same time and can be undertaken in multiple phases. The information gained from this GI would feed into the preliminary conceptual model and ground model and determine if any further, more detailed works are required.

The preliminary conceptual model that was developed in the Ground Conditions Desk Study report will be carried through to the Phase II report and further consider the source-pathway-receptor linkages that were highlighted as present on site. This model would be used to identify and assess the potential effects of the identified sensitive receptors and to outline mitigation measures to manage risks identified in the assessment, if required.

Dependent on the results of the Phase II Site Investigation, and if required, the mitigation measures would include measures to inform a suitable Remediation Strategy to support the planning application which will be appended to the Environmental Statement.

9.5.2 Noise and Vibration Assessment

9.5.2.1 Introduction to topic

This chapter would assess the likely significant effects of the proposed development on the environment with respect to noise and vibration effects during the construction and operation of the development. This chapter would be authored by Stantec.

Stantec proposes to carry-out noise surveys at representative locations of the site. These will identify the major noise sources around the development, to enable an assessment of site suitability for each intended use and also the likely noise climate for surrounding affected receptors. Observations would be made during the survey and a review of audio recordings shall identify the noise sources contributing to the prevailing sound climate at the site.

9.5.2.2 Legislation, Policy and Guidance

Planning Policy Wales (PPW)
Noise and Soundscape Plan for Wales (NSPW)
Environment Act (Wales) 2024 (EAW)

Bridgend Local Development Plan (BLDP)

Future Wales: National Plan 2040 (FWNP)

Technical Advice Note 11: Noise (TAN11)

ProPG:2017 Supplementary Document 2 (ProPG)

WHO Guidelines for Community Noise (WHO)

Calculation of Road Traffic Noise (CRTN)

Design Manual for Roads and Bridges - LA 111 (DMRB)

BS 8233:2014 (BS8233)

BS 4142:2014 + A1 2019 (BS4142)

BS 5228:2009 +A1 2014 - Parts 1 and 2 (BS5228)

Building Regulations Part O (Wales) (BRO)

AVO Residential Design Guide: 2020 (AVO)

BB93 Acoustic Design of Schools (BB93)

9.5.2.3 Potential Impacts

Sensitive receptors that may be affected by the proposed development include residential properties located beyond the site boundary, as well as non-residential uses such as educational, commercial and recreational facilities within the surrounding area. Measures to mitigate the potential impacts of the proposed development works would be considered as part of the ES. Mitigation measures that are embedded within the development would be taken into account in the assessment of likely significant effects and will be identified in the ES. The ES would also outline mitigation measures that are identified to prevent, reduce or offset likely significant adverse environmental effects arising from the development, as assessed.

9.5.2.4 Methodology

An assessment of construction noise would be made and an outline strategy for the control and mitigation of construction noise proposed in accordance with BS5288, part 1. An assessment of construction vibration would be made in accordance with part 2 of the standard.

An assessment of traffic noise would be made in accordance with CRTN and DMRB. An outline strategy for the control and mitigation of traffic noise would be proposed if calculations show a significant increase in traffic noise from the proposed site.

Acoustic treatments to the building envelopes and ventilation strategies would be assessed in order to control environmental noise break-in sufficient to achieve internal ambient noise criteria contained within BS8233, BRO and AVO, for residential accommodation; and BB93 for educational facilities.

Noise levels experienced by external amenity areas would be assessed against the noise criteria contained within BS8233.

An assessment of noise emissions from fixed plant installations associated with the Proposed Development would be undertaken in accordance with the methodology provided in BS 4142.

Noise prediction modelling would be undertaken using the proprietary software package SoundPLAN®, which implements the noise prediction framework set out in ISO 9613-2 17 .

9.5.3 Air Quality Assessment

9.5.3.1 Introduction to topic

This chapter would assess the likely significant effects of the proposed development on the environment with respect to air quality during the construction and operation of the development. This chapter would be authored by Stantec.

The potential air quality impacts from the construction phase would primarily be due to dust and Particulate Matter generation. Potential impacts from the construction phase traffic would also be considered. The main air quality impacts associated with the operational phase of the proposed development are expected to be associated with an increase in emissions generated by additional traffic. This may result in changes in concentrations of air pollutants at human and ecological receptors.

9.5.3.2 Legislation, Policy and Guidance

The European Union (EU) Directive 2008/50/EC 1 on ambient air quality and cleaner air for Europe

The Air Quality Strategy (AQS) for Scotland, Wales and Northern Ireland (AQS) 2 which local authorities are required to work towards achieving

The AQS objectives are implemented in the Air Quality Standards (Wales) Regulations 2010

The EU (Withdrawal Agreement) Act 2020 sets out arrangement for implementing air quality limit values that are included in the EU Directive on ambient air quality and cleaner air for Europe (2008/50/EC)

The Clean Air Plan for Wales

The Environment (Air Quality and Soundscapes) (Wales) Act 2024

The Local Air Quality Management in Wales Policy Guidance 2017

The Well-being of Future Generations Act

Planning Policy Wales sets out the national policy and guidance for making planning decisions in Wales. Section 6.7 relates to air quality

Future Wales: the National Plan 2040

Policy DNP9: Natural Resource Protection and Public Health, of the Bridgend Count Borough Local Development Plan 2018-2033

Defra's Local Air Quality Management Technical Guidance (LAQM.TG(22)) 11

Environmental Protection UK (EPUK) & Institute of Air Quality Management (IAQM) Land-Use Planning & Development Control: Planning for Air Quality 12

The IAQM's Guidance on the assessment of dust from demolition and construction and,

The IAQM's A guide to the assessment of air quality impacts on designated nature conservation sites.

9.5.3.3 Potential Impacts

The main impacts associated with the operational phase of the proposed development are expected to be associated with an increase in emissions generated by additional traffic resulting in changes in concentrations of ambient Nitrogen Dioxide (NO2), and Particulate Matter (PM10 and PM2.5) at sensitive human receptors. There is also a potential for an increase in emissions generated by additional traffic resulting in changes in concentrations of ambient Nitrogen Oxides (NOx), and Ammonia (NH3) at sensitive ecological receptors.

9.5.3.4 Methodology

Whilst the proposed methodology is set out below, further consultation is proposed with the BCBC Environmental Health Officer (EHO) to agree the proposed methodology and determine the study area / level of assessment that is required.

A summary of baseline air quality at the site and surrounding area using existing air quality monitoring and modelling data to determine the risk of exceedance of the Air Quality Standard (AQS) objectives. This will include data from the National Atmospheric Emissions Inventory (NAEI), Defra's Pollution Climate Model, Defra UK-AIR background mapping and BCBC monitoring data.

It is noted that the Bridgend 2024 Air Quality Progress Report 16 shows there is only one air quality monitoring location in Porthcawl. It is proposed that the need for a site-specific air quality NO 2 survey using diffusion tubes is agreed directly with the BCBC EHO.

The above will be summarised in the chapter, detailing the assessment undertaken, magnitude of impacts, sensitivity of receptors, and significance of effects, plus methods for mitigation.

9.5.4 Lighting

9.5.4.1 Introduction to topic

This chapter would assess the likely significant effects of the proposed development on the environment with respect to lighting during the construction and operation of the development. This chapter would be authored by Stantec.

Lighting, both during construction and operation, could affect local amenity, ecological receptors, and the character of the surrounding environment if unmitigated. The assessment would consider artificial lighting sources, their intensity, direction, duration, and potential for light spill, glare, and sky glow.

The design objective is to ensure that lighting is designed and managed to minimise adverse effects on human health, biodiversity (particularly nocturnal species), and the visual environment, while supporting safety and functionality.

9.5.4.2 Legislation, Policy and Guidance

Planning Policy Wales (Edition 12, 2024)
Environment Act (Wales) 2016
Future Wales: National Plan 2040
Institute of Lighting Professionals (ILP) GN01: Guidance Notes for the Reduction of Obtrusive
Light (2021)
Institute of Lighting Professionals (ILP) GHN08: Bats and Artificial Lighting At Night (2023)
Institute of Lighting Professionals (ILP) PLG04: Guidance on Undertaking Environmental Lighting Impact Assessments (2013)
SLL Lighting Guide 6: The Exterior Environment (2016)
SLL Lighting Guide 21: Protecting the Night-Time Environment (2021)
SLL Code for Lighting (2022)
Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended)
BS EN 12464-2:2014 – Provides standards for lighting of outdoor workplaces.
UK Ecodesign Regulations for Lighting Products (2023 update)

9.5.4.3 Potential Impacts

There is the potential for occupants or wildlife to be adversely impacted by external lighting both during construction and operation phase. This includes both within and potentially outside of the development site.

9.5.4.4 Methodology

Consultation would be carried out with the Highway Authority and design team to agree the methodology and scope of the lighting assessment. This will collate the particular requirements from each discipline relating to lighting requirements (such as ecological requirements, highways, outdoor amenity spaces) throughout the proposed development masterplan.

In accordance with the relevant legislation and industry guidance, external lighting scenes would be agreed which serve to provide an outline strategy for lighting performance. A site-wide masterplan is to be produced highlighting which scenes are to be applied to each area. This would indicate performance parameters such as lux levels, uniformity, luminaire type and operational control which shall be specific to the type of area being illuminated. The type of scenes applied to each area shall incorporate feedback from the aforementioned design team members and Highways, ensuring their requirements are satisfied.

9.5.5 Utilities

9.5.5.1 Introduction to topic

This chapter would assess the likely significant effects of the proposed development on existing utility infrastructure. It considers both the requirements for new utility connections and the implications of additional demand on local networks. The chapter would be authored by Stantec.

The proposed development will require new permanent water and electricity supplies, which will be provided by the relevant utility companies currently serving the area. The provision of supplies to the proposed development will add load onto the existing infrastructure in the area, which will need to be considered with regards to any site constraints and potential upgrades or reinforcement requirements, subject to network capacity.

Early engagement with the relevant utility providers would be undertaken to identify any constraints within the existing networks and to determine the scope of any required infrastructure upgrades. The utilities strategy shall include an assessment of the anticipated water and electricity demands of the development, which will be submitted to the utility providers to inform their capacity assessments and technical feedback.

The Utilities Strategy shall assess the expected water and electrical load of the proposed development, the results of which are then to be submitted to the utility companies for early stage advice and infrastructure assessments. The utility companies shall provide early stage confirmation on the capacity of their existing infrastructure, and what upgrade works are required to service the proposed development. The feedback of these discussions and applications shall be reflected in the Utility Strategy. The strategy shall also give indication of any predicted utility service diversions foreseen to facilitate the proposed development.

9.5.5.2 Legislation, Policy and Guidance

Planning Policy Wales (Edition 12, 2024)
Environment Act (Wales) 2016
Future Wales: National Plan 2040
Infrastructure Act (Wales) 2025
National Infrastructure Strategy UK 2020
CIBSE Guide G: Public Health and Plumbing Engineering (2014)
CIBSE Guide K: Electricity in Buildings (2004)
CIBSE Guide L: Sustainability (2020)
BSRIA BG86: Rule of Thumb: Electrical Criteria (2024)

9.5.5.3 Potential Impacts

There are several potential impacts associated with the provision and modification of utilities to serve the proposed development. During the enabling works phase, there is the potential for existing utility services (including water, electricity, gas, and telecommunications) to require diversion or protection to facilitate construction activities. These works may involve excavation, temporary service downtimes, and localised disruption to access and traffic flow, particularly where services cross public highways or sensitive areas.

In addition to diversions, early engagement with utility providers may identify the need for infrastructure upgrades to accommodate the increased demand generated by the development. These upgrades could include the up-sizing of buried cabling or water mains, and the installation of new infrastructure such as electrical substations or pumping stations. Depending on the scale of the required works, these interventions may extend beyond the site boundary and could result in similar impacts to those experienced during the enabling phase, including further excavation, service interruptions, and traffic management requirements.

Furthermore, the cumulative effect of utility works—both on-site and off-site—may contribute to broader infrastructure pressures in the region, especially in areas experiencing concurrent development. These impacts will be carefully considered in coordination with utility providers and

statutory consultees to ensure that the development is supported by robust and sustainable infrastructure solutions.

9.5.5.4 Methodology

The Utilities chapter would follow best practice guidance as set out by the Chartered Institute of Building Services Engineers (CIBSE) and the Building Services Research and Information Association (BSRIA) to provide a feasibility level estimate of the site wide electrical and water loads. The loads would be estimated based on the varying size and building types of the proposed development. These loads would then facilitate pre-planning stage applications and conversation with both National Grid and Dwr Cymru Welsh Water (DCWW) for power and water respectively, who can then assess the infrastructure impact of these loads. Following discussions with the utility companies, they would inform of required infrastructure upgrades required to service the proposed development. These requirements and other feedback from the utility companies shall be included in the Utilities Strategy report.

In addition to the above, the latest utility asset record maps shall be obtained from the relevant providers. These maps would be overlaid with the proposed site layout plans to identify potential clashes with existing buried infrastructure. This analysis would inform a high-level review of anticipated utility diversions, including to water, electricity, gas, and telecommunications. The recommendations of these diversions shall be reported in the Utilities Strategy.

9.5.6 Landscape and Visual

9.5.6.1 Introduction to topic

This chapter would consider the potential for related landscape and visual impacts in the context of the site and its proposed development. The chapter would be authored by The Urbanists.

A Landscape and Seascape Visual Appraisal was previously undertaken by Soltys Brewster in March 2021 to support the allocation of the site in the Replacement Local Development Plan and this would be used to frame the landscape and visual assessment of the proposed development. This would include the use of the accepted viewpoints, including:

Viewpoint 1 - Marina and Harbour
Viewpoint 2 - Eastern Promenade
Viewpoint 3 - Dock Street
Viewpoint 4 - A4106
Viewpoint 5 Eastern Promenade (Adjacent to Griffin Park)
Viewpoint 6 (Rhych Avenue); Viewpoint 7 (Rych Point)

The assessment and chapter would be undertaken in accordance with Guidelines for Landscape and Visual Impact Assessment, 3rd edition, the current best practice guidelines for Landscape and Visual Impact Assessment, published by the Landscape Institute.

9.5.6.2 Legislation, Policy and Guidance

Guidelines for Landscape and Visual Impact Assessment, 3rd edition (2013)
Well Being of Future Generations (Wales) Act (2015)
The Planning (Wales) Act 2015 (relevant to DNS)
Environment Act (Wales) (2016)
Environmental Impact Assessment (Wales) Regulations (2017)

9.5.6.3 Potential Impacts

Potential impacts, both adverse and beneficial, from the construction and operation of the development could include:impacts from the proposed development in respect of scale and appearance; loss or modification of habitats; amended visual context of the site because of habitats proposed, from their form as well as their ongoing management; visual amenity changes from proposed use, in the site and the wider area nearby; and visual amenity changes to the setting of public routes, in the site and wider area nearby.

9.5.6.4 Methodology

The chapter will primarily follow the best practice guidance produced by the Institute of Landscape Architects (IEMA as set out above), and comprise the following stages:

Familiarisation - Presenting a review of the background desktop information available, and establishing the study area relevant to the site and the proposed development's context, including landscape constraints and opportunities. To include review of planning policy and use of LANDMAP and Seascape assessments.

Field assessment - A comprehensive review of the site and its context, including character and viewpoint review and assessment.

Design inputs - A consideration of the Mitigation that has been integrated into the design, whereby avoidance, minimisation, mitigation, or compensation for any potential harm by the proposed development.

Assessment methodology - A review of the predicted effects on the landscape resource arising from the proposed development, in the context of the site and surrounding area, both without and with mitigation proposed (within the design). Following this, a conclusion can be drawn on the likely (significant or otherwise) effects on the landscape character

and visual amenity (as separate concerns). This assessment will be by way of a consideration of the sensitivity, magnitude of impact, and significance of the outcome.

Supporting illustrative material would include photo viewpoint locations, Zone of Visual Influence plan (if required); viewpoint and context photos, LANDMAP data, landscape planning context, and strategic landscape mitigation.

Appendix 2.4 - Scoping Opinion

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Chapter on Alternatives, including sites and development approaches

Chapter on Ecology, including assessment of impact on the dune habitat and nearby designations.

Chapter on Water

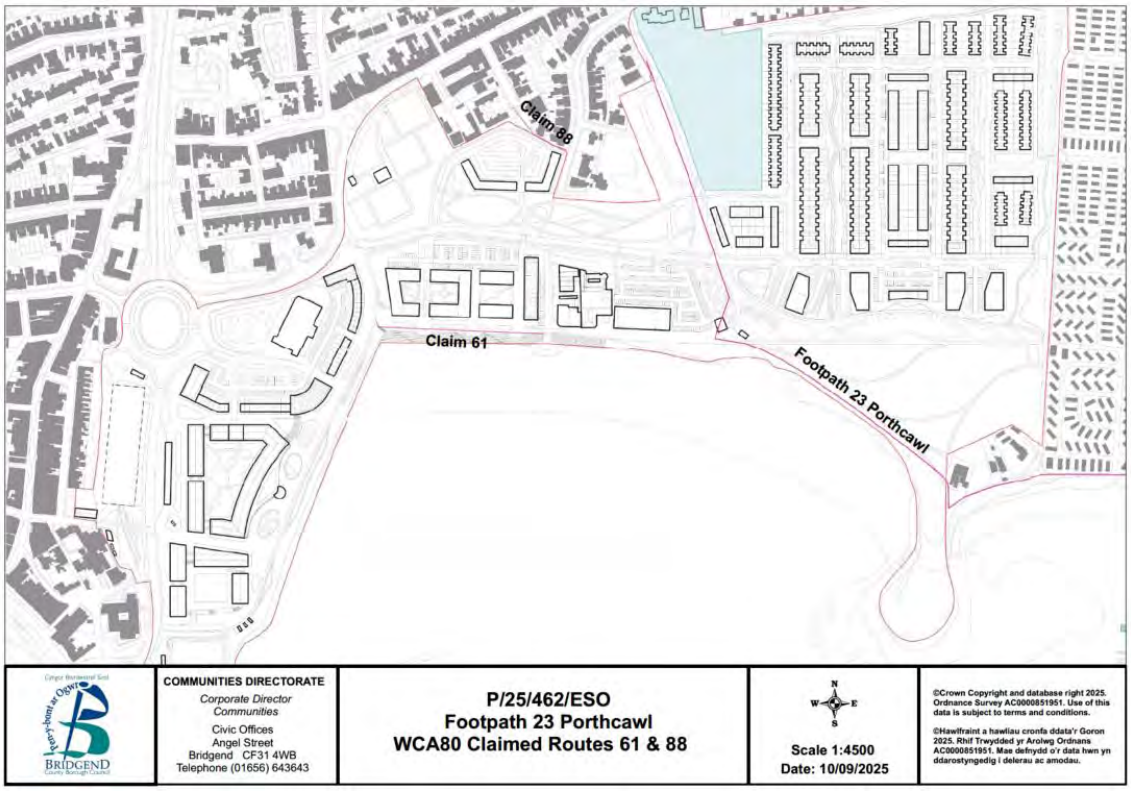
Flood Risk

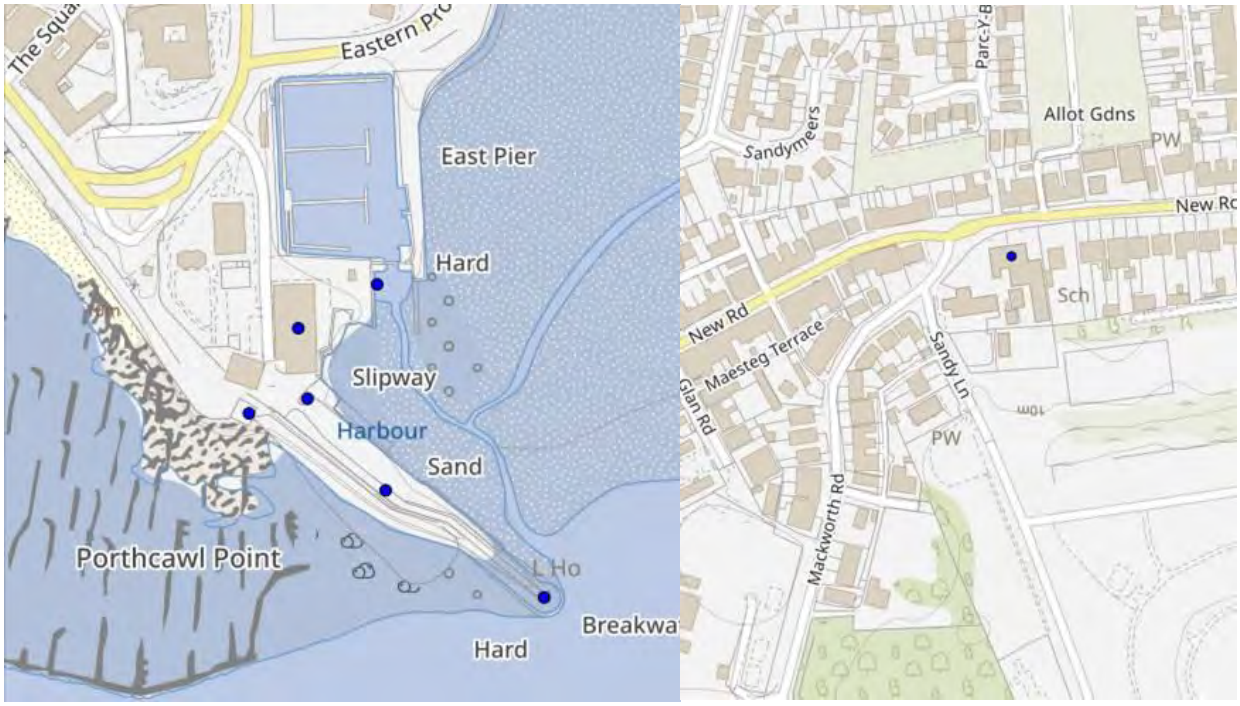
Marine & Coastal Physical Processes

Chapter on Transport






Claim 88
Claim 61
Footpath 23 Porthcawl
COMMUNITIES DIRECTORATE
Corporate Director Communities
Civic Offices
Angel Street
Bridgend CF31 4WB
Telephone (01656) 643643
P/25/462/ESO
Footpath 23 Porthcawl
WCA80 Claimed Routes 61 & 88
N
W
E
S
Scale 1:4500
Date: 10/09/2025
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Eastern Prc
East Pier
Hard
Slipway
Harbour
Sand
Porthcawl Point
Breakwa
Hard
Allot Gdns
PW
Sandymeers
New Rd
Sch
New Rd
Maesteg Terrace
Sandy Ln
Glan Rd
PW
Mackworth Rd

Appendix 5.1 - Key Design Iteration 2 Consultation Boards

Project Introduction

Website

This is an exciting time for Porthcawl, with the town earmarked for significant funding and regeneration.

To maximise the long-term benefits for residents and visitors, Bridgend County Borough Council and Welsh Government have formed a landowner's agreement to see the Waterfront progress as one, harmonious development.

The Porthcawl Waterfront Regeneration project is now entering a key phase as the Council and Welsh Government collaborate on a comprehensive Masterplan for the Waterfront.

This is the final stage of the non-statutory consultation process where we are looking to hear from the community about the Masterplan for the site.

The Masterplan proposals have been shaped by previous community engagement, including the Placemaking Strategy and the Open Space Concept Design consultations, ensuring that they reflect the needs of the local community.

Previous Consultations

The proposals you see today are the product of consultation with the local community over a number of years to ensure they have shaped the emerging proposals and the policies and principles behind them.

WINTER 2021

Porthcawl Placemaking Strategy

The community was invited to provide feedback on key strategies and emerging opportunities for the regeneration of the Porthcawl Waterfront. The consultation included a two-day public exhibition at the Porthcawl Pavilion, attended by over 1,000 residents.

SUMMER 2022

Appropriation of Land at Griffin Park and Sandy Bay

The consultation took place over three weeks in June 2022, during which 679 representations were received by letter and email.

SPRING 2023

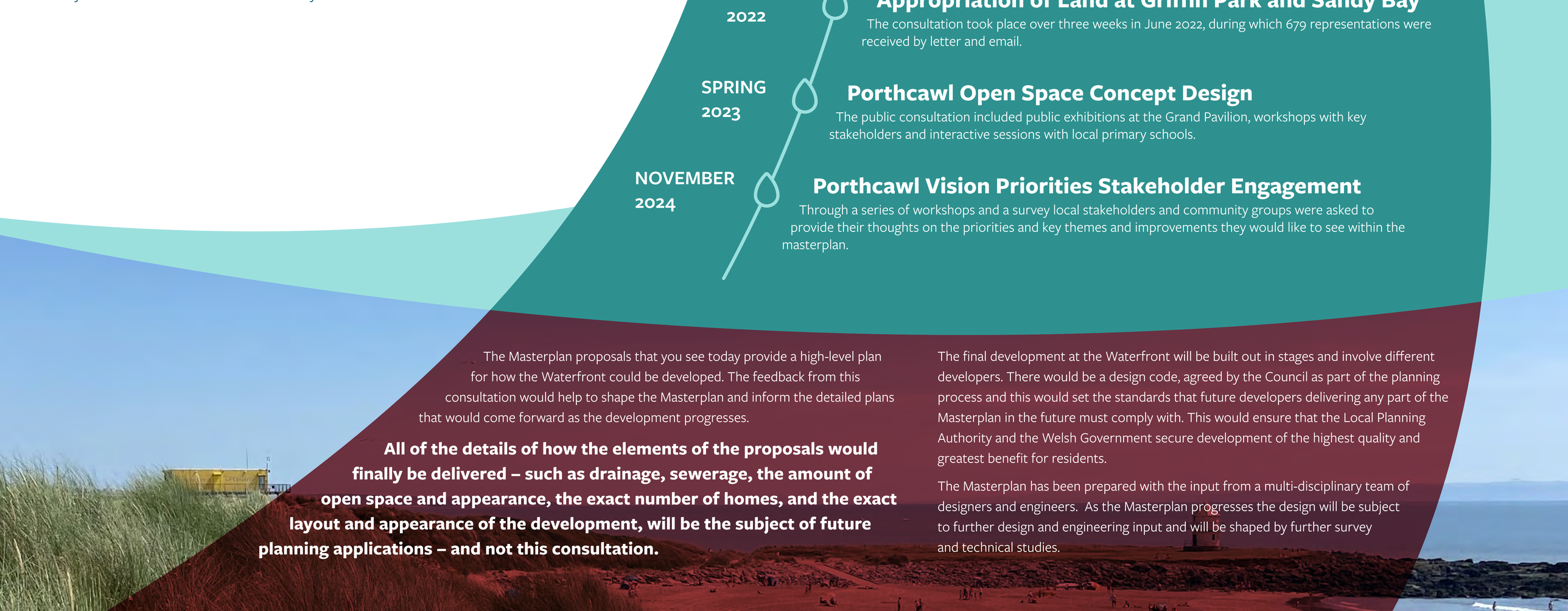
Porthcawl Open Space Concept Design

The public consultation included public exhibitions at the Grand Pavilion, workshops with key stakeholders and interactive sessions with local primary schools.

NOVEMBER 2024

Porthcawl Vision Priorities Stakeholder Engagement

Through a series of workshops and a survey local stakeholders and community groups were asked to provide their thoughts on the priorities and key themes and improvements they would like to see within the masterplan.



The Masterplan proposals that you see today provide a high-level plan for how the Waterfront could be developed. The feedback from this consultation would help to shape the Masterplan and inform the detailed plans that would come forward as the development progresses.

All of the details of how the elements of the proposals would finally be delivered – such as drainage, sewerage, the amount of open space and appearance, the exact number of homes, and the exact layout and appearance of the development, will be the subject of future planning applications – and not this consultation.

The final development at the Waterfront will be built out in stages and involve different developers. There would be a design code, agreed by the Council as part of the planning process and this would set the standards that future developers delivering any part of the Masterplan in the future must comply with. This would ensure that the Local Planning Authority and the Welsh Government secure development of the highest quality and greatest benefit for residents.

The Masterplan has been prepared with the input from a multi-disciplinary team of designers and engineers. As the Masterplan progresses the design will be subject to further design and engineering input and will be shaped by further survey and technical studies.

Waterfront Vision Statement

Website

Masterplan Vision

Porthcawl Waterfront would be a vibrant coastal community where the sea and natural setting are central to everyday life. The Waterfront would be a dynamic, year-round destination built upon the playful essence of Porthcawl's seaside location.

Thoughtfully considered public spaces that connect the town to the coast would define the Waterfront. The spaces would enhance wellbeing, create opportunities for play, and encourage the community to come together. Moving between the spaces would be easy, with each part of the Waterfront offering unique experiences and activities throughout the day and evening.

The new buildings would be attractive and sensitive to the identity of Porthcawl. They would provide new homes that meet local needs and leisure spaces that create new business and visitor opportunities.

The Waterfront would support seasonal attractions and activities on the water and land ensuring 'Life on the Sea' would be central to the offer. Porthcawl would remain a place people want to come and visit, and existing businesses would continue to thrive.

Natural Setting
Enhancing Porthcawl's unique setting

People and Community
Encouraging social integration in Porthcawl

Connections
Improving permeability across Porthcawl

Identity
Building on Porthcawl as a place

Destination
Positioning Porthcawl as a seaside town

Placemaking Strategy

Website

The Waterfront Masterplan builds upon the Placemaking Strategy and shows how new homes, leisure space, public space and play facilities can be delivered in the Waterfront.

The Placemaking Strategy for the waterfront identifies the key areas for development that will shape and create a sense of place at the Waterfront. The masterplan shown today reflects previous feedback from the consultations outline on the first board and fully aligns with the Placemaking Strategy shown below.



PRINCIPAL STRATEGIES:

1. Create a rich mix of use and activity which has long term viability, attracting new residents, visitors and investors. Those uses include leisure, commercial, retail, community, recreation and housing.
2. The blend of residential to other uses should graduate east-west across the site with the primary usage being residential to the east and primarily leisure and commercial to the west and town centre.
3. Build upon the successful leisure development around the marina and increase the variety of high quality offer for residents and tourists.
4. Compliment the commercial, leisure and cultural facilities of the town centre.
5. Residential development to the east will be characterised largely by family housing and to the west by apartments located next to and above other uses such as commercial and community.
6. Blend home living, work and play activities to successfully co-exist and meet the needs of a wide range of people.
7. Create a stunning place to live with a wide range of homes and tenures that are genuinely affordable.
8. Create flexible spaces whose uses can change over short, medium or long term as the development is realised.
9. Create spaces for community use, for clubs, for co-working, for artists and craftspeople, for performance, for celebrations, for education, for entrepreneurs, for charities.
10. Enable the expansion of Newton Primary School.
11. Provide space that could accommodate healthcare facilities whether that is a full time primary healthcare surgery or a drop-in satellite facility.
12. Provide shelter.
13. Create a place which is exciting, forward looking, inspiring, aspirational, innovative and memorable.
14. Create the scale of development required to ensure it is viable and deliverable which is permeable and welcoming with excellent amenity spaces and access to fresh air and nature.

Leisure
Commercial / retail
School
Future development opportunity
Metro link
Green infrastructure
Public realm
Key community use opportunity
Residential
Residential areas with mixed uses at ground floor
Car parking

N

Site Overview

Llywodraeth Cymru
Welsh Government

ARDAL ADFYWIO GLANNAU PORTHCAWL
PORTHCAWL WATERFRONT REGENERATION

Cyngor Bwrdeistref Sirol Pen-y-bont ar Ogwr
BRIDGEND County Borough Council

Website

The Waterfront Masterplan is a large site that covers approximately 43 ha of Porthcawl and includes a number of different areas of the Waterfront that are well-known to the local community and visitors.

Griffin Park
Located north of the Salt Lake site, a key local outdoor amenity with a children's playing area, sports courts and greens, and the Griffin Park Pavillion. Pedestrian access to Griffin Park is from New Road and the Eastern Promenade.

Coney Beach Pleasure Park
Located in the heart of the Masterplan, due to remain open until the end of 2026. The Park fronts onto and has direct access to Sandy Bay Beach and is accessible from Eastern Promenade and Mackworth Road.

Sandy Bay
Located east of the Hi Tide and Monster Park in the eastern area of the Masterplan. Currently a seasonal campsite. The Sandy Bay Bowl is a key feature of the site and is used for recreational purposes. A pedestrian connection runs through the southern part of Sandy Bay, providing access to Trecco Bay from Coney Beach and the Eastern Promenade. The Relic Dunes are located directly south of this pedestrian route. To the north, Sandy Bay is bordered by residential properties and Newton Primary School. Vehicular access into the site is from Rych Avenue and Sandy Lane, which both connect to New Road.

Hillsboro Car Park
Surface-level car park west of The Portway, opposite the new bus station. Directly accessible from The Portway roundabout and has good pedestrian connections west into Porthcawl town centre.

Salt Lake
New metrolink. Large brownfield site, east of The Portway and west of Eastern Promenade. An Aldi store has recently been built on the northern part of the Salt Lake site.

The Hi Tide and the former Buccaneer and Wimpey
Located immediately east of the Coney Beach Pleasure Park. They also have direct access to Coney Beach and are in private ownership. The Hi Tide land ownership includes a series of buildings providing a vibrant retail and leisure offer. These properties are accessible off Mackworth Road.

The Monster Park
Located north of the Hi Tide, a former outdoor amenity and leisure facility that previously accommodated a dinosaur park and other outdoor seasonal attractions. The land is not currently accessible to the general public.

GRIFFIN PARK
CONEY BEACH
MONSTER PARK
HI TIDE
SANDY BAY
TRECCO BAY
PORTHCAWL TOWN CENTRE
HILLSBORO CAR PARK
SALT LAKE
HARBOUR
SANDY BAY BEACH
DUNES

New Road
Victoria Avenue
Mackworth Road
Sandy Lane
Rhych Avenue
Mary Street
John Street
Dock Street
The Portway
Eastern Promenade

EXISTING SITE PLAN

Total Site Area = Approximately 43ha

Masterplan

Website

The Masterplan includes:

- Up to 1,100 new homes, which would be a combination of houses, maisonettes, and apartments.
- Up to 2.2 ha (22,000sqm) area for the creation of future education provision.
- Space for new cafes and restaurants, leisure uses, shops, arts, community facilities, and a hotel.
- Extended Porthcawl Harbour facilities.
- Enhancement of the Griffin Park play facilities with a MUGA.
- Up to 21 ha (210,000 sqm) of open space for use by the public and future residents.
- Creation of a continuous active promenade from the Esplanade and Cosy Corner in the west to Trecco Bay and Rhych Point in the east. This would connect with the Wales Coast Path.
- Three separate areas of play space where multiple play facilities would be provided to cater to young people of different ages. Including space for a pump track and skate park.
- A new green park that would provide over 4 ha (40,000 sqm) of green space for recreation, health, wellbeing, and biodiversity between the existing Griffin Park and the Relic Dunes.
- Flexible areas that could be used to provide space for holiday motorhomes and accommodation.
- New public parking areas and the enhancement of the Hillsboro Car Park could provide over 600 parking spaces without making the Hillsboro Car Park a multi-storey facility.

How these elements come forward would be shaped by further design and the input of development partners.

The Masterplan shows how the Waterfront Vision can be delivered to create a vibrant coastal community and dynamic year round destination.



Character Areas

Website

In preparing the Masterplan a series of different character areas have been identified. The character areas reflect the existing features and uses of the Waterfront and its rich history.

The character areas would shape the future design of development and the type of activities that take place across the Masterplan. The character areas include:

Salt Lake Harbour
Leisure and community, enclosure, extension of the Harbour

Salt Lake Promenade
Open views, homes, leisure and play activity, connectivity

Salt Lake Crescent
Long views, gateway and connecting space, homes

Hillsboro
Car park, gateway space, town centre connectivity

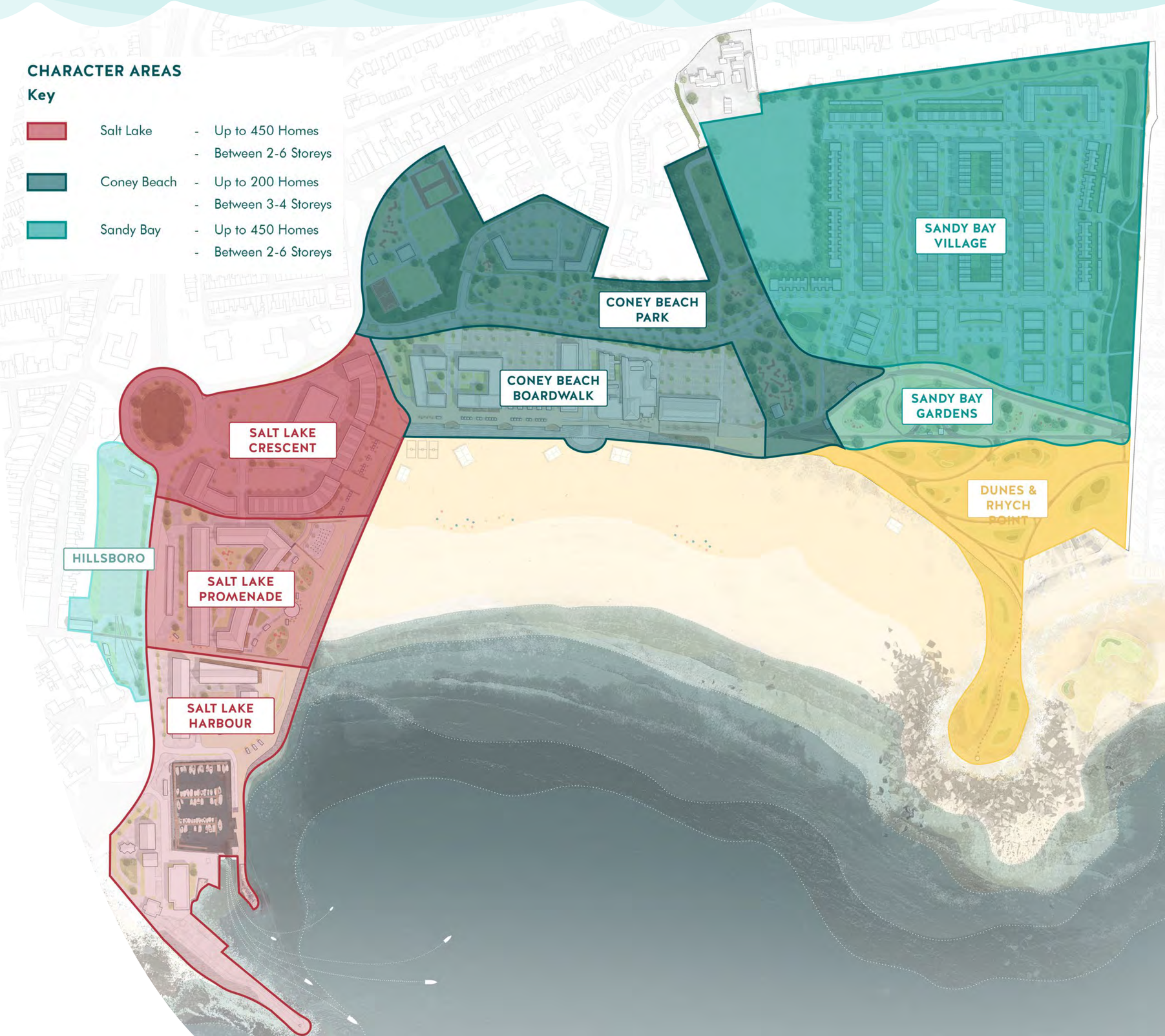
Coney Beach Park
Green woodland park, health and wellbeing, play, connectivity

Coney Boardwalk
Connectivity, direct beach access, homes, leisure

Sandy Bay Village
Residential village, green natural setting

Sandy Bay Gardens
Sandy park, health and wellbeing, play, connectivity

The Dunes and Rhych Point
Natural, tranquil, health and wellbeing



Where could I access open space?

Llywodraeth Cymru
Welsh Government

ARDAL ADFYWIO GLANNAU PORTHCAWL REGENERATION
PORTHCAWL WATERFRONT

Cyngor Bwrdeistref Sirol Pen-y-bont ar Ogwr
BRIDGEND County Borough Council

Website

Providing high-quality public open space is a critical requirement of the Waterfront Masterplan. Due to new site opportunities, the Masterplan can provide an increase in public open space of over 65% to the amount that could be provided in the Placemaking Strategy.





Coney Beach Park
A green park connecting Griffin Park and The Promenade space with Sandy Bay and the beach, merging into Sandy Bay Park to create a continuous natural corridor, including play spaces, visitor attractions, quieter spots for health and wellbeing, and biodiversity enhancement, also integrating play and recreation with the enhanced woodland. Woodland and adventure play spaces, the skate park and pump track and mini golf could be located in this area.

Salt Lake: The Promenade
Multi-purpose flexible area of seasonal events and attractions, including seafront park. Planting and water features around the space for people to gather and socialise and use play facilities.

Salt Lake: The Harbour
Hard flexible landscape, public space, enclosed by the new buildings, available to occupiers, community groups, residents and visitors.

Coney Beach Boardwalk
A hard landscape public space that would front directly onto Coney Beach. Direct access between the Boardwalk and Sandy Bay Beach via new flood defence works, which would significantly improve access down to the beach.

Sandy Bay Gardens
South of Sandy Bay, connecting Coney Beach Park and the Relic Dunes, Sandy Bay Gardens provides a seaside park and gardens, more space for play, recreation and quiet relaxation. The appearance of the Park would transition from the green character of Coney Beach Park to the sandy character of the Relic Dunes and be directly accessible from the new continuous boardwalk connecting to Trecco Bay.

What could I find at Salt Lake?

Llywodraeth Cymru
Welsh Government

ARDAL ADFYWIO GLANNAU PORTHCAWL
PORTHCAWL WATERFRONT REGENERATION

Cyngor Bwrdeistref Sirol Pen-y-bont ar Ogwr
BRIDGEND County Borough Council

Website

Homes

New homes, which in the Masterplan, would be apartments and maisonettes, although a small number of houses may be added as the scheme is considered by future developers. These could be located in The Crescent.

Leisure Uses

Space for cafes and restaurants, leisure uses, shops, arts, community facilities, and a hotel. These are mainly located in The Harbour, as well as leisure spaces provided along The Promenade block and at The Crescent.

Open Space

The Promenade would provide a dynamic multi-purpose area, with play spaces, and room to accommodate seasonal attractions and events. The space would be approximately 2ha (20,0000 sqm) in size, which is larger than Roald Dahl Plass in Cardiff Bay, and would stretch some 200 metres from north to south. The space would have outstanding views over Sandy Bay and be a key destination for visitors and residents with direct access into and from the Town Centre. The Promenade would be a hard landscape space to provide flexibility for seasonal events, but there would be areas of soft landscape plus the play spaces and a water feature providing further informal play. The two parks would be over 400 sqm and the water feature over 700 sqm.

The Harbour would provide a flexible open space, enclosed by the proposed buildings with future occupiers able to spill out to the space. The space would be visually connected to Porthcawl Harbour and part of it could be used as an additional area for the Harbour providing further interest for visitors. The space would be approximately 0.7ha (7,000 sqm).

Connectivity

The Promenade in Salt Lake would play a key part of the continuous promenade created along the Waterfront, but Salt Lake would also play a key role in connecting the Waterfront to Porthcawl town centre. There would be two important west/east active travel routes through Salt Lake, which would cross The Portway and connect to Dock Street, via a new Hillsboro public space, and James Street. There would be clear visual sight lines between Dock Street and James Street and Salt Lake, and the current striking views of Rhych Tower from Dock Street would be protected.

Parking

Parking in the Salt Lake area would mostly be provided underneath the new buildings. The exception to this is The Crescent, where parking would be surface level, but screened by the existing Aldi car park.



What could be in Coney Beach?

Coney Beach and the Monster Park would be part of the Coney Beach Park and Coney Beach Boardwalk character areas.

Coney Beach Park

Coney Beach Park would be a large green park of approximately 1.78ha (17,800 sqm) stretching from Griffin Park, including the north of the Coney Beach Pleasure Park, the Monster Park, and ending at Sandy Bay Village where it would merge with the Sandy Bay Gardens, which would then merge to the Relic Dunes.

The Coney Beach Park would be a key area for play with a series of play areas that provide over 5,500 sqm of play space. This would include a large adventure park of over 1,000sqm. The play facilities would be integrated into the green landscape offering a combination of natural woodland play and formal play areas. The Park would also be used for health and wellbeing activities and exercise, and the Masterplan includes an outdoor gym.

It is also proposed to provide a wheel park that can include a pump track and skate park that would be a key asset for the Porthcawl community. There are opportunities for commercial attractions to be provided, the Masterplan includes an area for crazy golf, but this use is flexible.

The Park would be a key movement route, with highway access to Sandy Bay Village passing through, and an Active Travel route. It is proposed to close Mackworth Road where it would meet the new Park, with access to the beach, residential properties, and the Hi Tide via the new Sandy Bay Village access.

A small number of new homes in the form of apartments are proposed in the north of the Park along with a public parking area. A flexible area is also included that could be used to provide space for seasonal motorhomes.

Coney Beach Boardwalk

The Coney Beach Boardwalk would be located south of the Park and the Sandy Bay Village access road. The new homes would be apartments and have outstanding views over Sandy Bay. The new homes would be above leisure space that would create active frontages and there are a series of plazas proposed where seasonal events and retail uses could be accommodated. Direct access from the Boardwalk down to Sandy Bay Beach would be possible via the new flood defence works that would be built to deliver the Waterfront Vision. The Boardwalk would be part of the continuous promenade provided, connecting to The Promenade in Salt Lake and the boardwalk in Sandy Bay Gardens.



What could be in Sandy Bay?

Website

Sandy Bay would include two character areas: Sandy Bay Village and Sandy Bay Gardens.

Sandy Bay Village

Sandy Bay Village would provide new homes, a combination of houses and apartments. In the Masterplan the houses are to be located in the centre of the Village with apartments concentrated towards the southern end of the area, fronting Sandy Bay Gardens and the Relic Dunes.

A key feature would be the visual connection to the Relic Dunes, with the proposed illustrative layout providing each property with a visual connection to the Dunes and the Sandy Bay Gardens. Another is that the new Village homes would be delivered in a green setting, with corridors of green space framing future development blocks.

This green space would provide for green and vibrant streets, include sustainable drainage, and offer locally accessible open space with play facilities and the opportunity for resident growing spaces. The green space would also provide significant green boundaries to the Village that would be used to maintain the privacy of adjacent properties and provide opportunities for biodiversity enhancement, climate resilience and sustainable drainage. The Masterplan includes approximately 4.5ha (45,000 sqm) of green open space in the Village.

The Masterplan includes 2.2ha (22,000 sqm) of land for the creation of future education provision, which would provide education capacity for the Masterplan as it is delivered. Part of the eastern green boundary could also be used to provide high quality holiday accommodation.

Sandy Bay Gardens

To the south of the Village is Sandy Bay Gardens, another large outstanding area of public open space is provided that would measure approximately 2ha (20,000 sqm). The Gardens would adjoin the Coney Bay Park to the west and transition to the Relic Dunes to the south, helping to create the extensive natural corridor for the Waterfront Masterplan and also connected by the extension of the boardwalk. Given the proximity to the Relic Dunes the space would have a sandy character, providing a naturalistic transition between the dunes and the neighbourhood. Gardens would be introduced to create focal areas for people to meet and socialise, for play and recreation and to offer shade and shelter.

The Sandy Bay Gardens would replace some of the amenity value provided by the current Sandy Bay Bowl and be a key place for exercise, outdoor health and wellbeing activities like yoga, beach volleyball, community events, and children's play with a second seaside park providing a natural play offer. The play spaces would be approximately 1,000 sqm. Part of the Gardens would be used for sustainable drainage, which takes advantage of the change in landform.

The Gardens would be highly accessible, connected by a boardwalk that would pass through the Gardens and connect Trecco Bay to The Salt Lake Promenade, as well as Sandy Bay Village itself.

45,000 sqm of green space in Sandy Bay Village

22,000 sqm for Newton Primary School

20,000 sqm of green and sandy park

1,000 sqm of play spaces



Where could I take children to play?

Website

The allocation of the site in the Local Development Plan requires 3,000 sqm of play space. The Masterplan will significantly exceed this total.

A summary of notable play spaces in the Masterplan is provided below. A new Multi Use Games Area is also to be provided in Griffin Park.

Salt Lake
The Promenade would have a seaside park with outstanding views over Sandy Bay. The park would provide over 1,100 sqm of space that could be used for play. This would include a seaside park split over two areas that would be over 400 sqm and a water feature of over 700 sqm that would offer flexible and fun informal play opportunities. The park would offer play facilities for different ages and the equipment would be robust to withstand the coastal setting and be reflective of the nearby Harbour setting. When the water feature jets are turned off the water play space could be used as part of The Promenade events space.

Coney Beach Park
The Park would provide the Waterfront with extensive play facilities in a distinctive green and woodland setting. There would be over 5,500 sqm of play space in this area including natural woodland facilities, formal play areas, and also a large adventure park of over 1,000sqm. The Park would also be the location for a wheel park that can include a skate park and pump track. A typical pump track is 1,000 sqm but the area included in the Masterplan is currently over 1,700 sqm. Exercise equipment, woodland play and an outdoor gym are also proposed. There is also an opportunity for paid for facilities, and the Masterplan includes an area for this.

Sandy Bay Village
The public space included in the Village would provide localised play facilities. These would offer a 'play on the way' offer and create facilities for younger children to play close to home. There would be growing spaces for the community to use also.

Sandy Bay Gardens
The Gardens would include a second seaside park providing approximately 1,000 sqm of play space. The park would embrace the natural sandy character of the space and the shelter offered by the Relic Dunes. The park would have a natural character and would be easily accessible from the Wales Coastal Path. The presence and landform of the Dunes adjacent to the Park provide reference for further informal natural play features and exploring. The Dunes would be accessed via timber boardwalks.



What new homes could be available?

Llywodraeth Cymru
Welsh Government

ARDAL ADFYWIO GLANNAU PORTHCAWL REGENERATION

PORTHCAWL WATERFRONT

Cyngor Bwrdeistref Sirol Pen-y-bont ar Ogwr
BRIDGEND County Borough Council

Website

The masterplan can provide up to 1,100 new homes as required by the adopted Bridgend Local Development Plan. The new homes delivered on site would be a combination of houses, apartments and maisonettes.

Up to 50% of the new homes delivered would be affordable with the remainder for private sale. The mix of homes is not yet decided, but would respond to determined local need as the Masterplan is delivered. The affordable homes would include shared ownership to help those looking to purchase a property, older persons accommodation and social rental.

The mix of housing types delivered across the Waterfront would help to create a diverse neighbourhood, where people of different ages and requirements can access a property and live side by side in an outstanding coastal environment. The mix will also ensure that future residents can access different property types as their living requirements change so that they can choose to remain in the Waterfront. A breakdown of where the new houses would be provided is below:

Salt Lake
Homes in these character areas would be apartments and maisonettes, although a small number of houses may be added as the scheme is considered by future developers. These could be located in The Crescent character area. The residential blocks delivered in Salt Lake would be between two and six storeys in height.

Coney Bay Park and Coney Bay
Homes would be provided in the form of apartments, which would be located in the north of the Park enclosing a parking area, and in the south around the Boardwalk. The storey heights in Coney Bay would be up to three storeys in the Park and up to four storeys in the Boardwalk.

Sandy Bay Village
Houses in the Village would be a combination of houses and apartments. There would be a high number of houses, with the Masterplan proposing to locate these in the centre of the site and the apartments in the north and south. Houses would be between two and three storeys in height. The apartment blocks would be between three and six storeys, with six storeys used sparingly and this will be subject to further technical design work. A careful design approach would be followed where storey heights descend towards Sandy Bay Park and the Relic Dunes. The Dunes would screen views of the Village offering interesting glimpses.

The physical appearance of the new homes is not yet decided, and would be subject to input from future development partners. However, design guidance and standards are to be required and set through the Masterplan Design Code that future partners must adhere to. The detailed design of the Masterplan also needs to secure planning permission which would require high quality design. All new homes would need to meet the current sustainability and efficiency standards, helping to reduce carbon emissions and instil climate resilience.

Key design approaches to the architecture of the new homes for each of the character areas are provided on the supporting design sheets.

Sandy Bay Village:
Up to 450 homes

Coney Beach Park and Boardwalk:
Up to 200 homes

Salt Lake:
Up to 450 new homes



How could I get here and where will people park?

Website

Bridgend County Borough Council and the Welsh Government has a policy and statutory requirement to promote Active Travel and enable a modal shift that transitions away from use of private vehicles. However, because the Waterfront is a key visitor destination a sustainable parking solution is required.

To respond to this the Waterfront Masterplan has identified the opportunity to accommodate up to 650 car parking spaces in the Waterfront area for visitors. This includes the following:

- Approximately 400 spaces in Hillsboro car park, which would be configured to a more efficient layout. This would not require a multi-storey.
- Approximately 200 spaces in the north of Coney Beach Park character area.
- Approximately 50 spaces in the Coney Beach Boardwalk character area.

In addition to the above, there is the existing car park offered by the Hi Tide.

To help inform a suitable visitor parking provision for the Masterplan three years of survey data has been collected for the use of Hillsboro North, Hillsboro South, Salt Lake, and Sandy Lane car parks. The survey findings are summarised below and suggest that the parking approach in the Masterplan is proportionate to the typical demand:

- A maximum summertime weekday peak of circa 500 cars parked at any time across the 4 car parks surveyed.
- An average summertime peak (any day) of circa 700 cars parked at any time across the 4 car parks surveyed.
- A maximum peak of circa 1300 cars parked at any one time across the 4 car parks surveyed with this peak arising as a result of both the Porthcawl 10k and Bonfire night peak parking demands.

Based on these findings the number of replacement parking spaces included in the Masterplan can accommodate for all of the average weekday peak identified in the survey, and 90% of the any day peak.

In addition to the public parking provision included in the Masterplan, work is currently underway on preparing a sustainable public parking strategy, and this will identify further opportunities for seasonal overflow parking areas in edge-of-town locations. These areas would provide for the remaining additional parking demands for the average any-day peak and the peaks associated with events and bank holidays.

The gradual modal shift that results in fewer people using private vehicles is also an important consideration, and the delivery of the metro link bus station is expected to help enable this transition for Porthcawl with more people accessing the town via bus.

Public parking solutions for the town are not being looked at in the Waterfront alone and there is a wider parking strategy being prepared to provide for seasonal arrangements and to address peak demand for key events. This would be progressed alongside the delivery of the Waterfront Masterplan and would deliver sustainable and pragmatic solutions to provide visitors with parking during peak times.



What leisure opportunities could there be?

Llywodraeth Cymru
Welsh Government

ARDAL ADFYWIO GLANNAU PORTHCAWL
PORTHCAWL WATERFRONT REGENERATION

Cyngor Bwrdeistref Sirol Pen-y-bont ar Ogwr
BRIDGEND County Borough Council

Website

As Porthcawl is a well known coastal destination, the Waterfront Masterplan would not only deliver new homes, but would include commercial space for new cafes and restaurants, leisure uses, shops, arts, community facilities, and a hotel.

These uses would be delivered over 16,000 sqm of floorspace that would be mainly across the Salt Lake character area and the Coney Beach Boardwalk. 600 sqm of designated community space is also allocated.

There would be a significant concentration of leisure, retail, food and beverage and community space in the Salt Lake Harbour character area, where there is an opportunity to continue the success of the Cosy Corner. This area is also the proposed location for the hotel. The Salt Lake Boardwalk would also have a further leisure offer to take advantage of the outstanding setting provided by Sandy Bay.

In setting aside commercial space it is important to be realistic about what can be delivered and there is importantly a need to maintain flexibility should interest in commercial spaces increase as the Masterplan is delivered. The Masterplan as prepared allows for this.

Alongside this engagement exercise a market testing exercise is also being undertaken to engage with leisure operators and commercial investors to identify the likely demand. The findings of this would shape the amount of commercial space included in the Masterplan.

In addition to the permanent commercial spaces provided there is a significant opportunity to incorporate seasonal events in the large public spaces provided. Such events can be flexible but could include uses like mobile family fun parks, Christmas activities, outdoor cinemas and performances that could attract many visitors into the town. They could also include ‘pop up retailers’. The Salt Lake Promenade and Coney Bay Boardwalk particularly work well to accommodate these uses.

Finally, the Masterplan includes some flexible areas in the Sandy Bay Village where holiday accommodation can be accommodated. This includes an area where mobile holiday homes can park and an area where a small number of high quality holiday lodges can be accommodated.



How could this benefit our local community & environment?

Llywodraeth Cymru
Welsh Government

ARDAL ADFYWIO GLANNAU PORTHCAWL
PORTHCAWL WATERFRONT REGENERATION

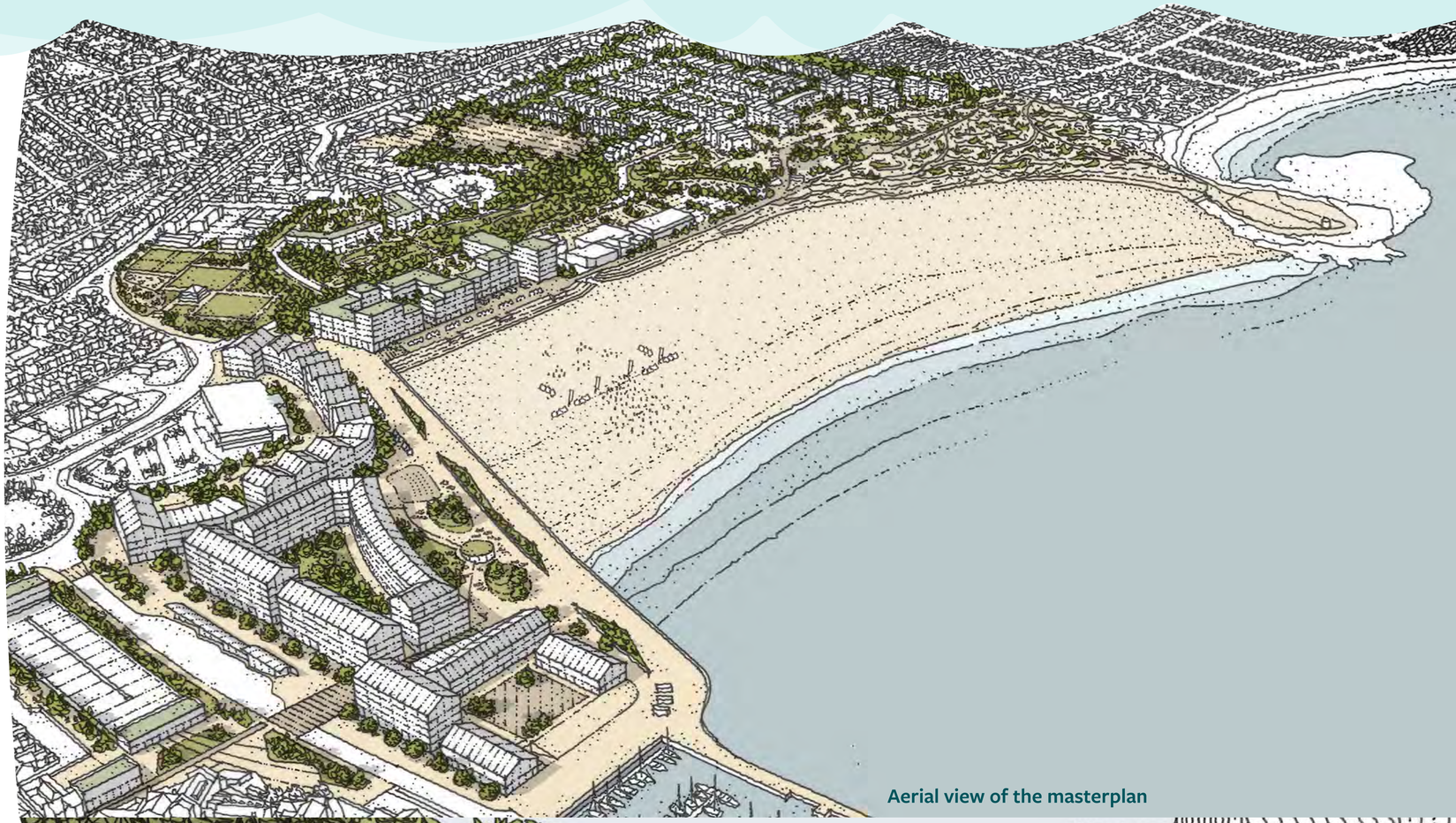
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BRIDGEND County Borough Council

Website

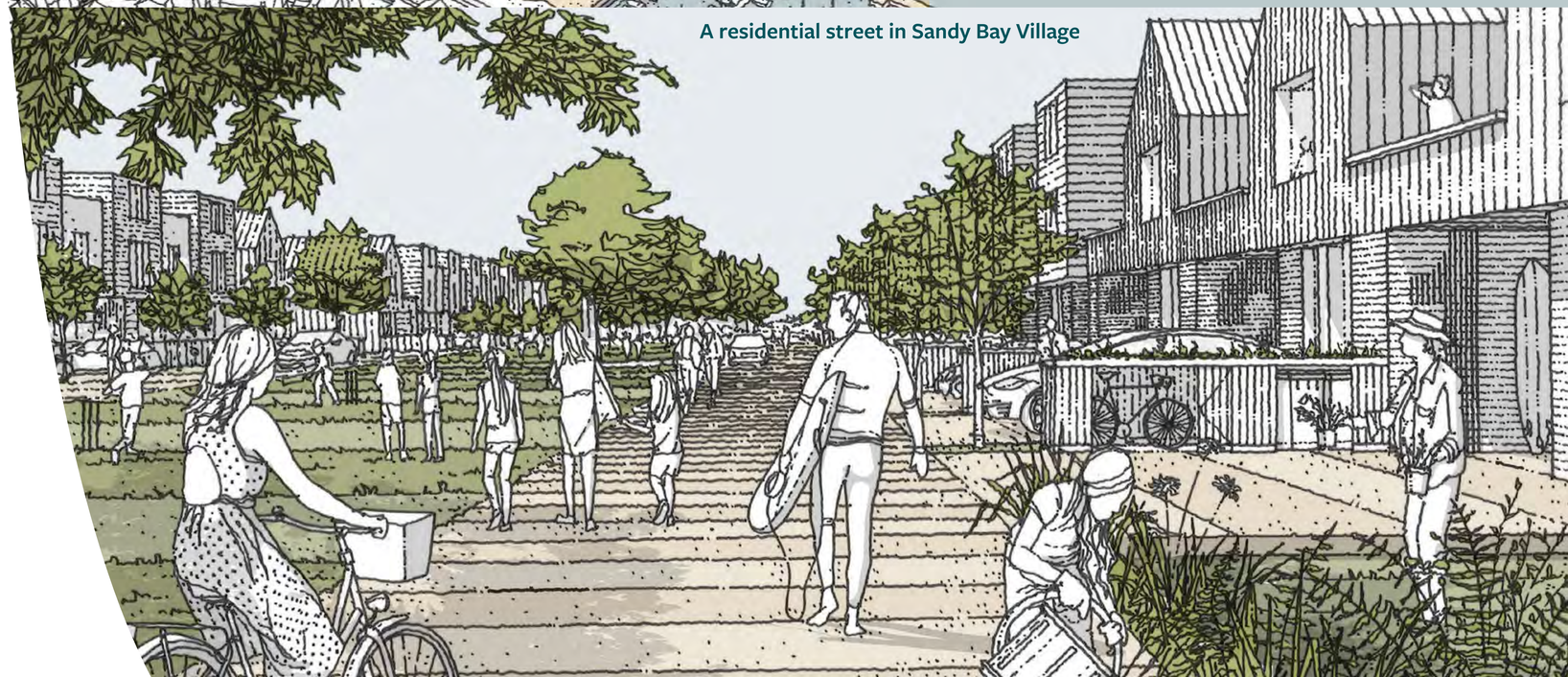
The Waterfront Masterplan presents a transformational regeneration opportunity for Porthcawl that would attract significant investment to the town.

This would have the following benefits for the town and its community:

- Remediate and transform brownfield sites into valuable new uses and public spaces, with new play facilities.
- Create up to 1,100 new homes that would help to meet local need, including providing first time homes, shared ownership and older persons accommodation.
- Create spaces for new community uses and additional leisure offers for existing residents and visitors. There is over 16,000 sqm of non residential use in the Waterfront Masterplan, with over 600 sqm allocated for community space.
- Create significant areas of new green space that can be used for health and wellbeing, exercise and to help contribute to climate resilience and biodiversity enhancement.
- Support existing businesses and future business startups by ensuring a sustainable visitor offer for Porthcawl that is based on its unique seaside landscape and rich character.
- Improve Active Travel routes across the Waterfront and improve the pedestrian connections to the town centre.
- Deliver further flood defences to protect the town.
- Complement Porthcawl town centre's offer and help to ensure the ongoing vitality of the town centre.



Aerial view of the masterplan



A residential street in Sandy Bay Village

Anticipated Timeline

Winter 2021
Porthcawl Placemaking Strategy consultation

Summer 2022
Appropriation of Land at Griffin Park and Sandy Bay consultation

Spring 2023
WG site purchase

Spring 2023
Porthcawl Open Space Concept Design consultation

Winter 2023
Compulsory Purchase Order confirmed

November 2024
Emerging Vision Engagement

February 2025
Masterplan Public Engagement

Summer 2025
Masterplan and Design Code completed

Winter 2025
Planning Application submitted

2026
Anticipated Fun Fair closure

Spring 2026
Marketing / sale of site

Winter 2026
First phase development commencing

Contact

Thank you for taking the time to join us today.
We welcome any further comments and feedback:

Emailing us:
feedback@porthcawlwaterfront.co.uk

Writing to us at:
FREEPOST Grasshopper Consult

Completing our feedback form:
re-url.uk/WP6P

Visit online:
porthcawlwaterfront.co.uk

Website

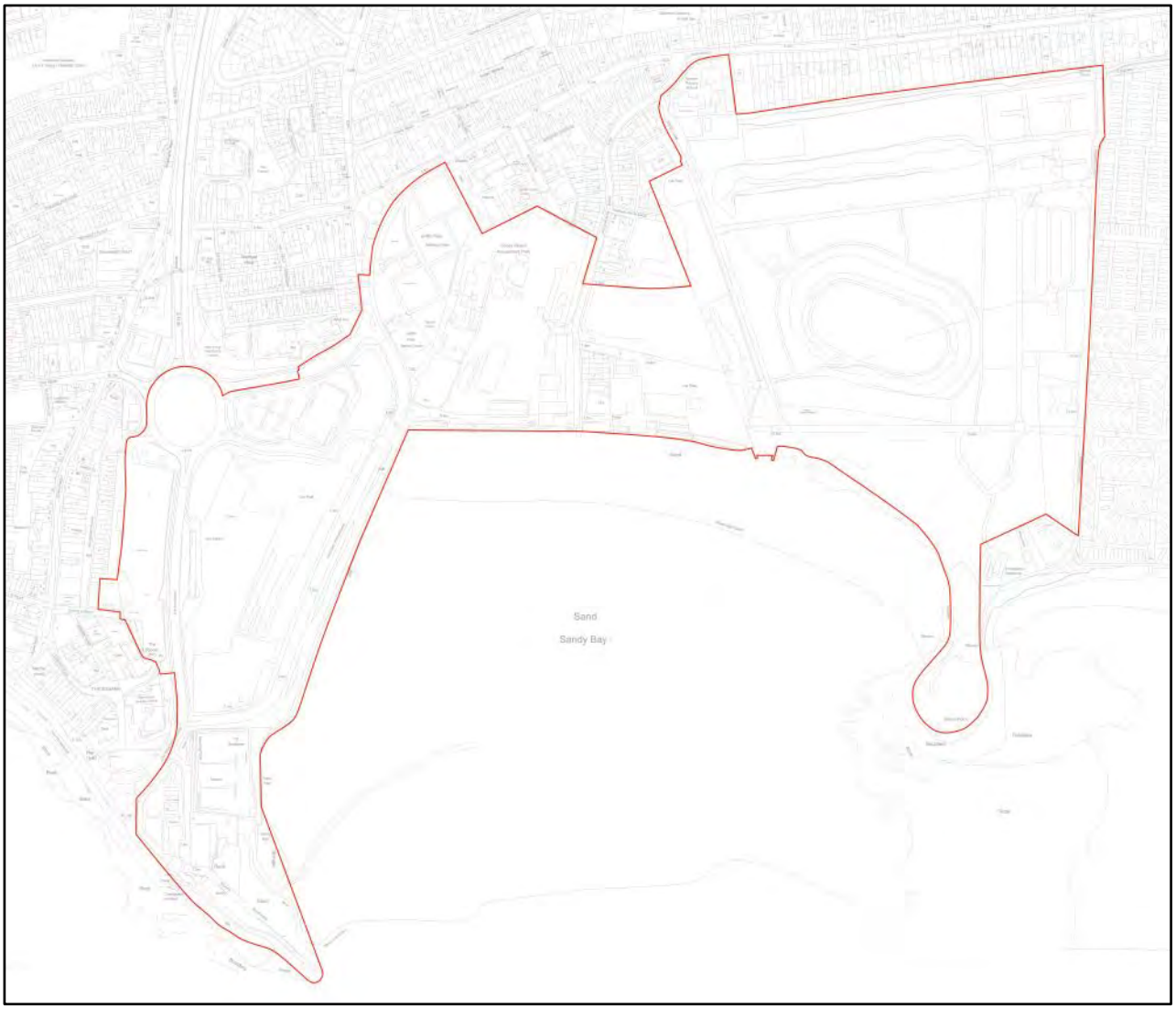
Appendix 6.1 – Transport Assessment


Link
Transport Planning

Digital Viewing:

Disclaimer:

Link Transport Planning Ltd

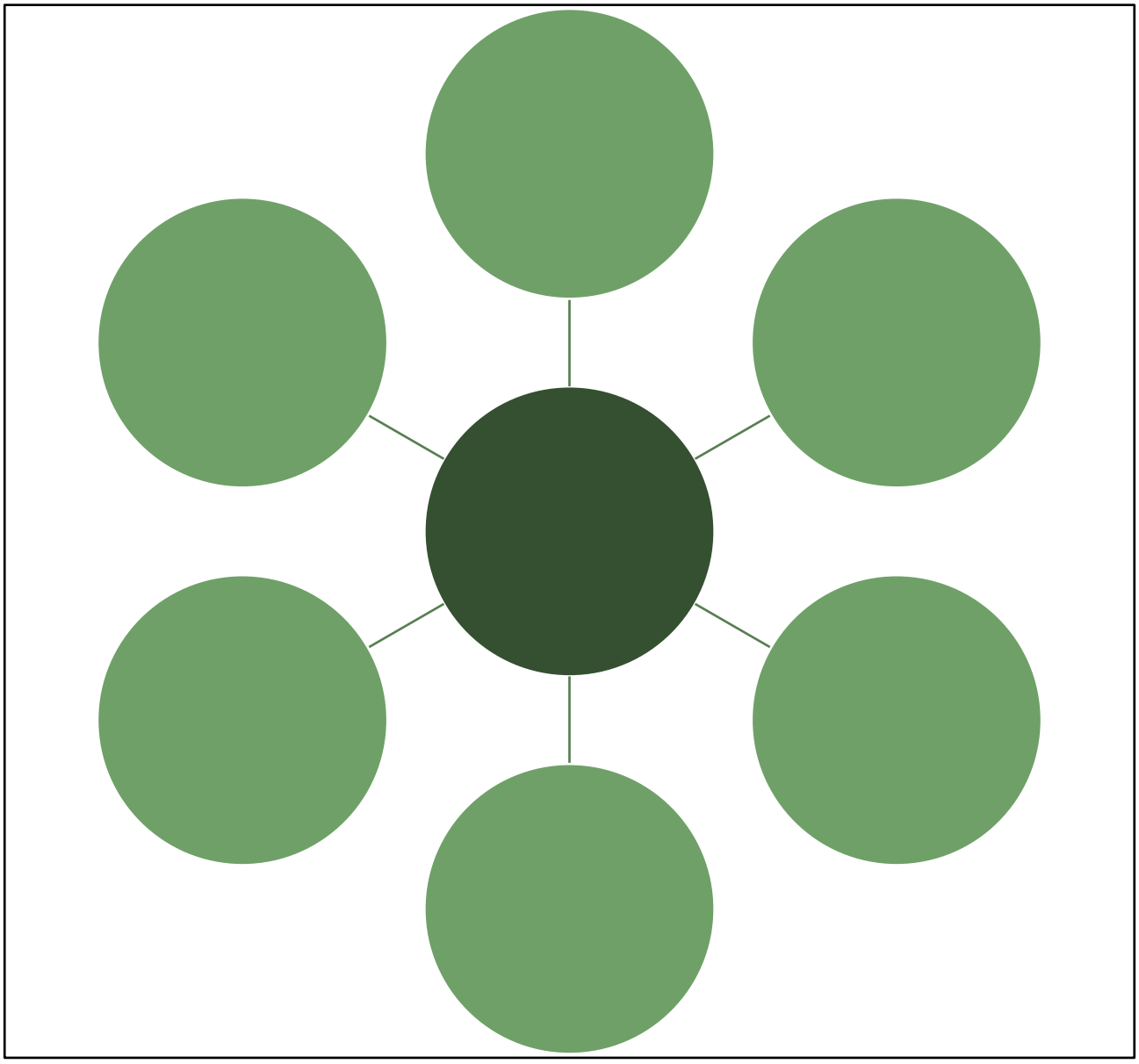

Sand
Sandy Bay

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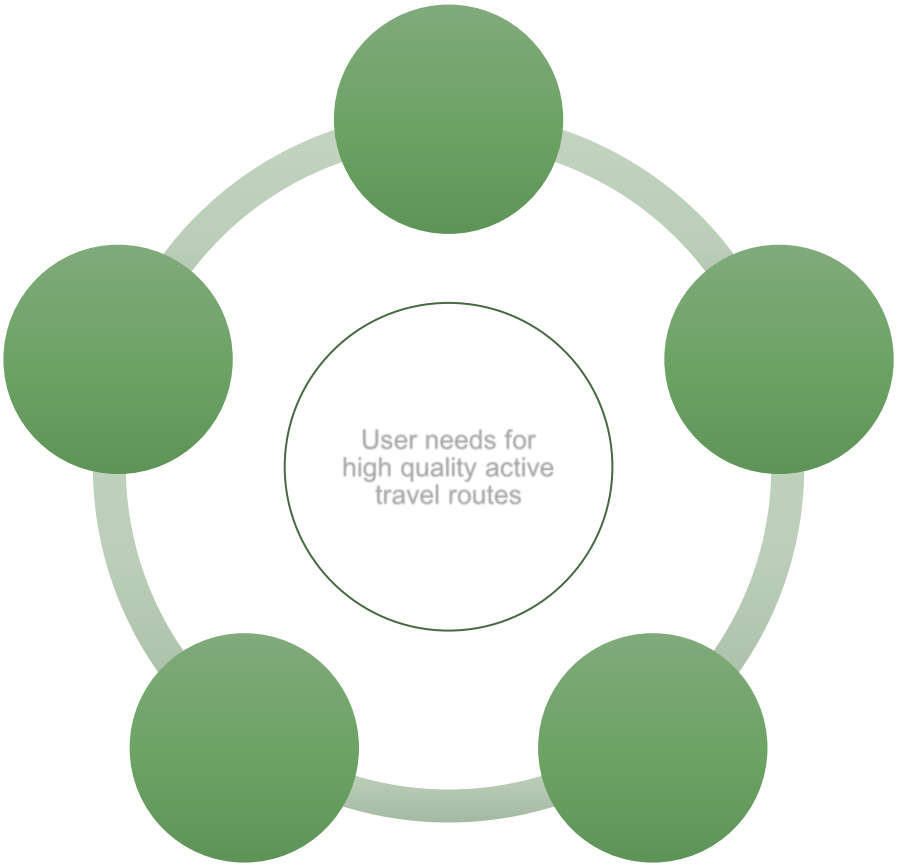
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Five Ways of Working

Seven Well-being Goals



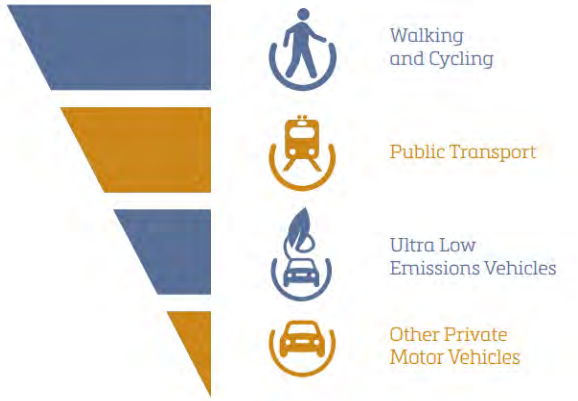
Vision

Priorities

Working from Home

Strategic and Spatial Choices

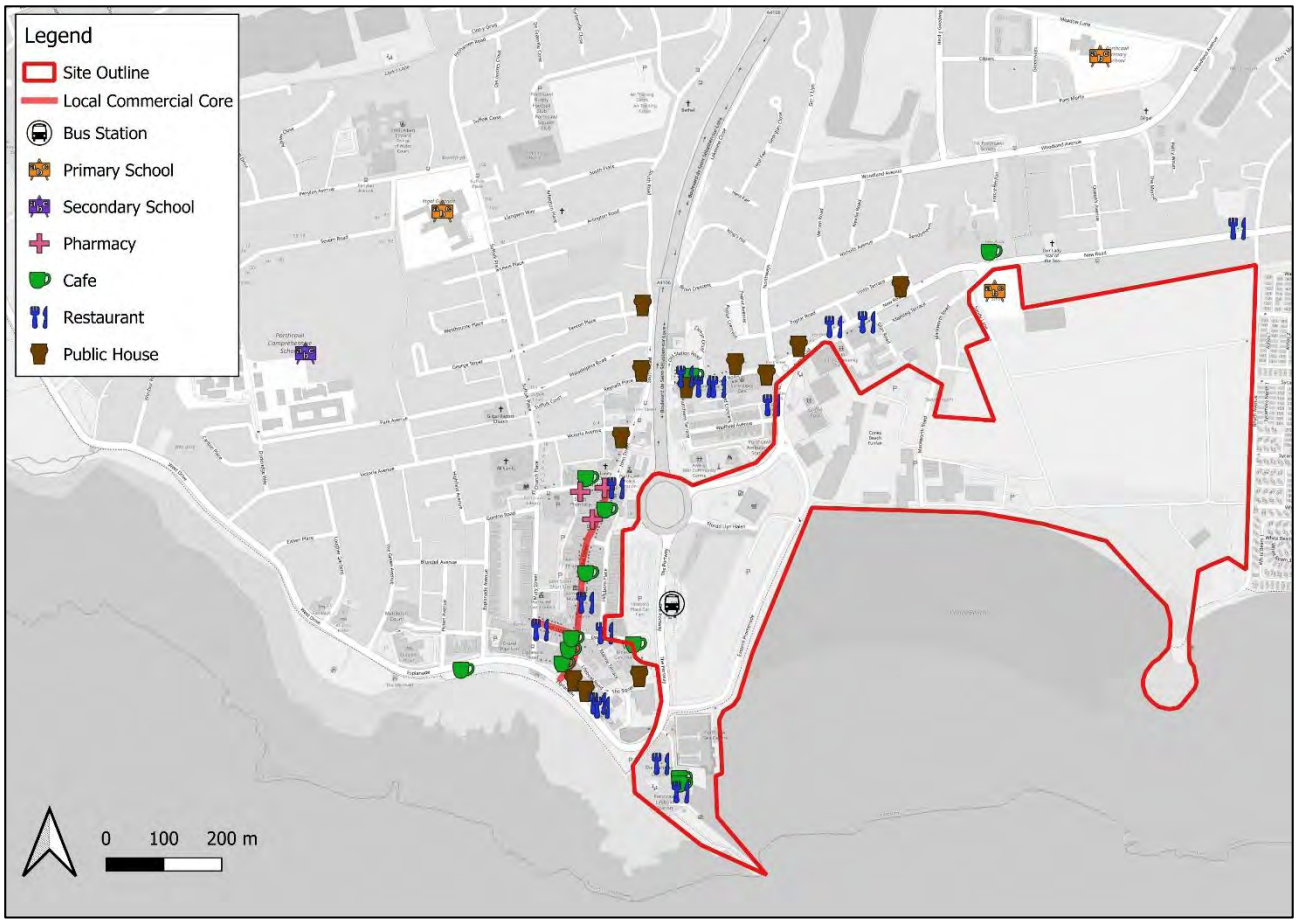
Active and Social Places

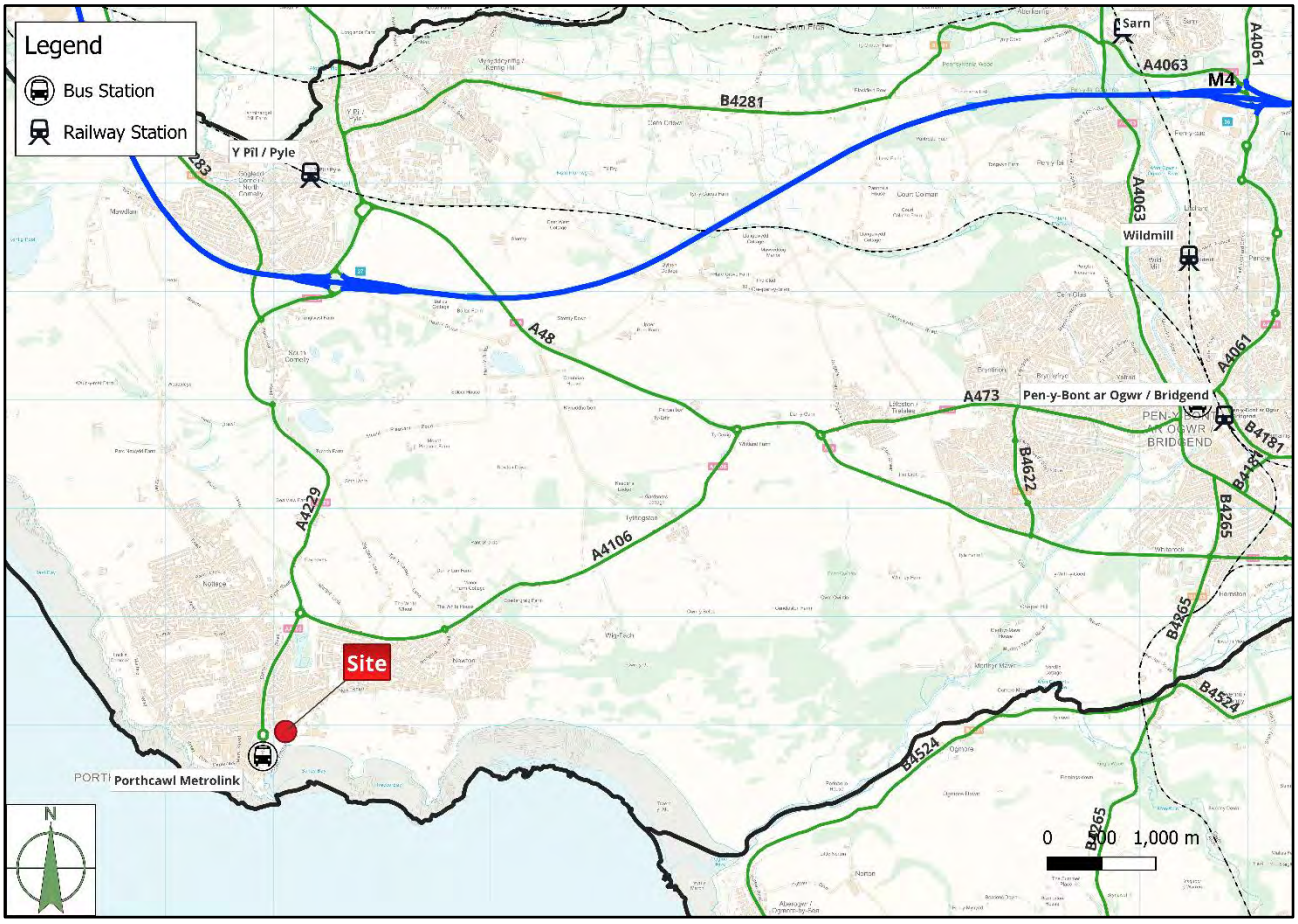


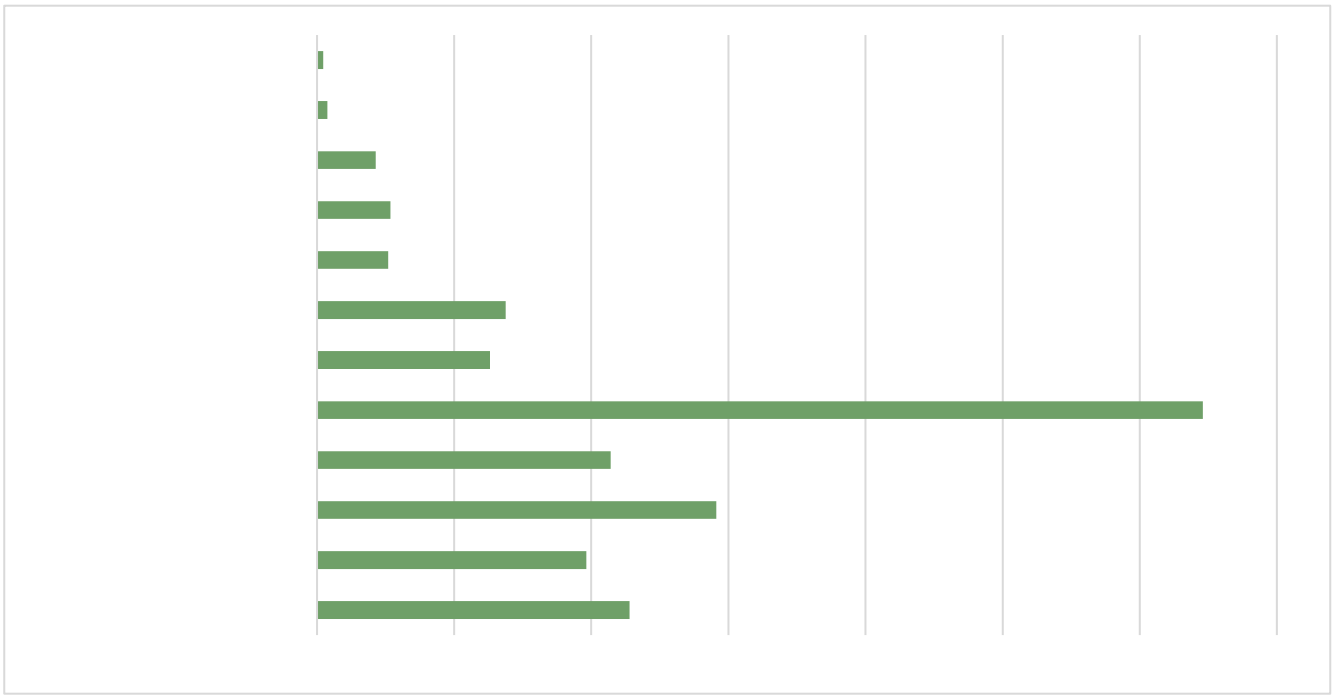
Policy 36 – South East Metro

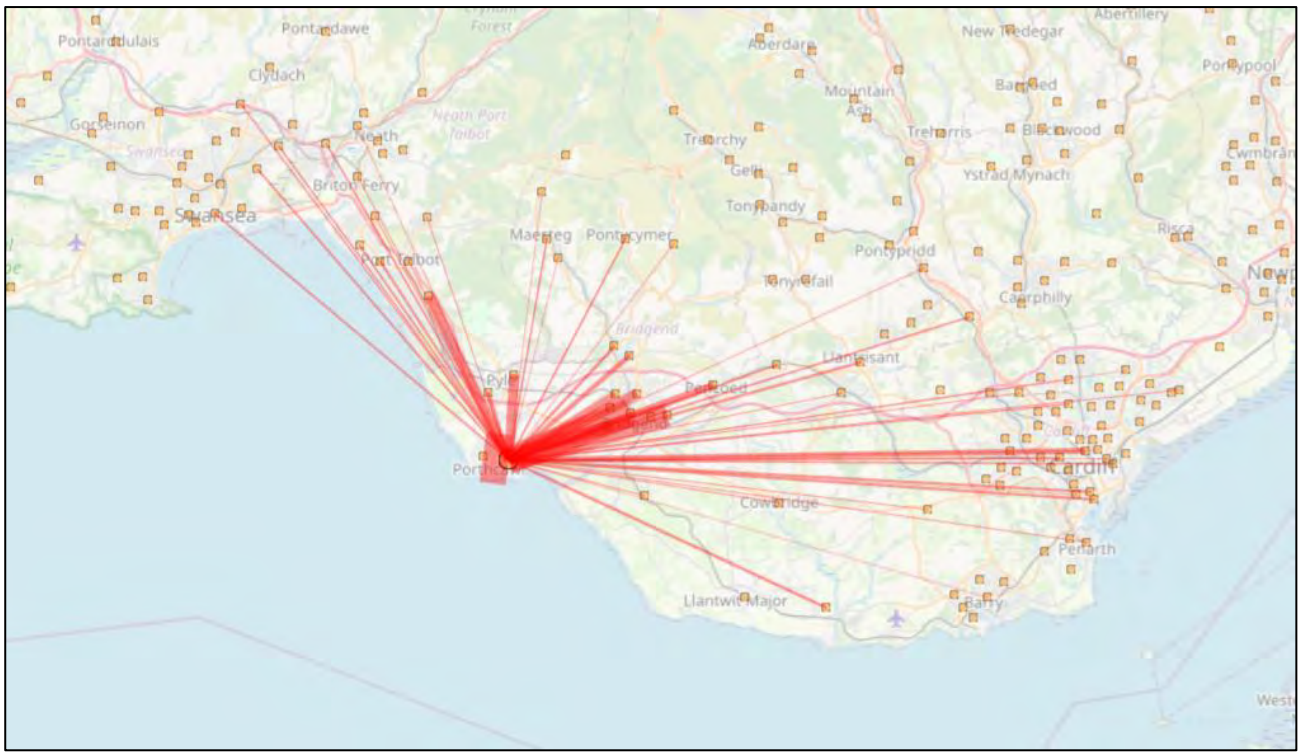

9
10
1
3
2
7
Access stopped off to vehicles
Primary vehicular route
Reduced vehicular access
Indicative secondary road network
Primary active travel route
Pedestrian route
N


10
5
3
Leisure
Metro link
Residential
Commercial / retail
Green infrastructure
Residential areas with mixed uses at ground floor
School
Public realm
Car parking
Future development opportunity
Key community use opportunity


Legend
Site Outline
Local Commercial Core
Bus Station
Primary School
Secondary School
Pharmacy
Cafe
Restaurant
Public House
0
100
200 m


Legend
Bus Station
Railway Station
Sarn
A4063
M4
A4061
B4281
Y Pil / Pyle
A4063
Wildmill
A48
A4061
A473
Pen-y-Bont ar Ogwr / Bridgend
B4622
B4265
A4229
A4106
Site
Porthcawl Metrolink
B4524
N
0
1,000 m




Pontardulais
Pontardawe
Clydach
Gorseinon
Neath
Britton Ferry
Swansea
Port Talbot
Maesteg
Pontycymer
Bridgend
Aberdare
Mountain Ash
Treharris
Tonypandy
Pontypridd
Llantrisant
Caerphilly
New Tredegar
Abertillery
Blackwood
Ystrad Mynach
Risca
Cardiff
Penarth
Barry
Cowbridge
Llantwit Major

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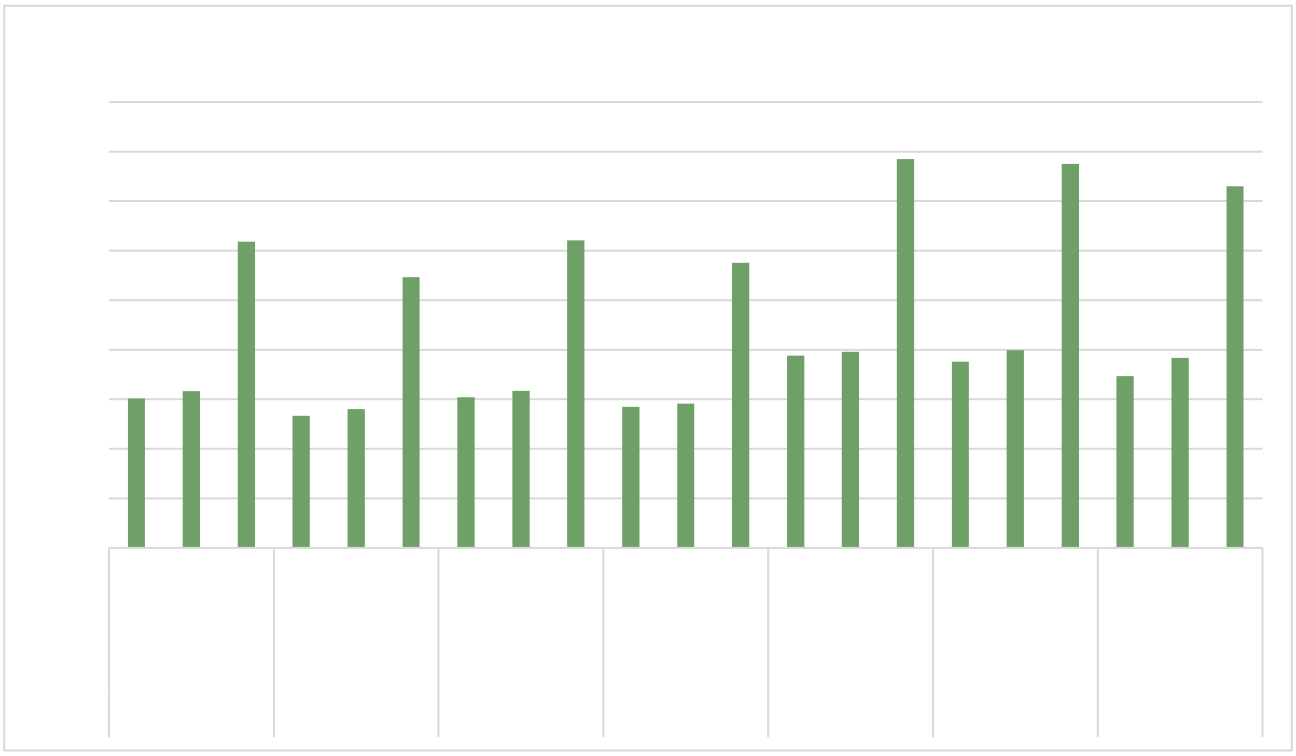
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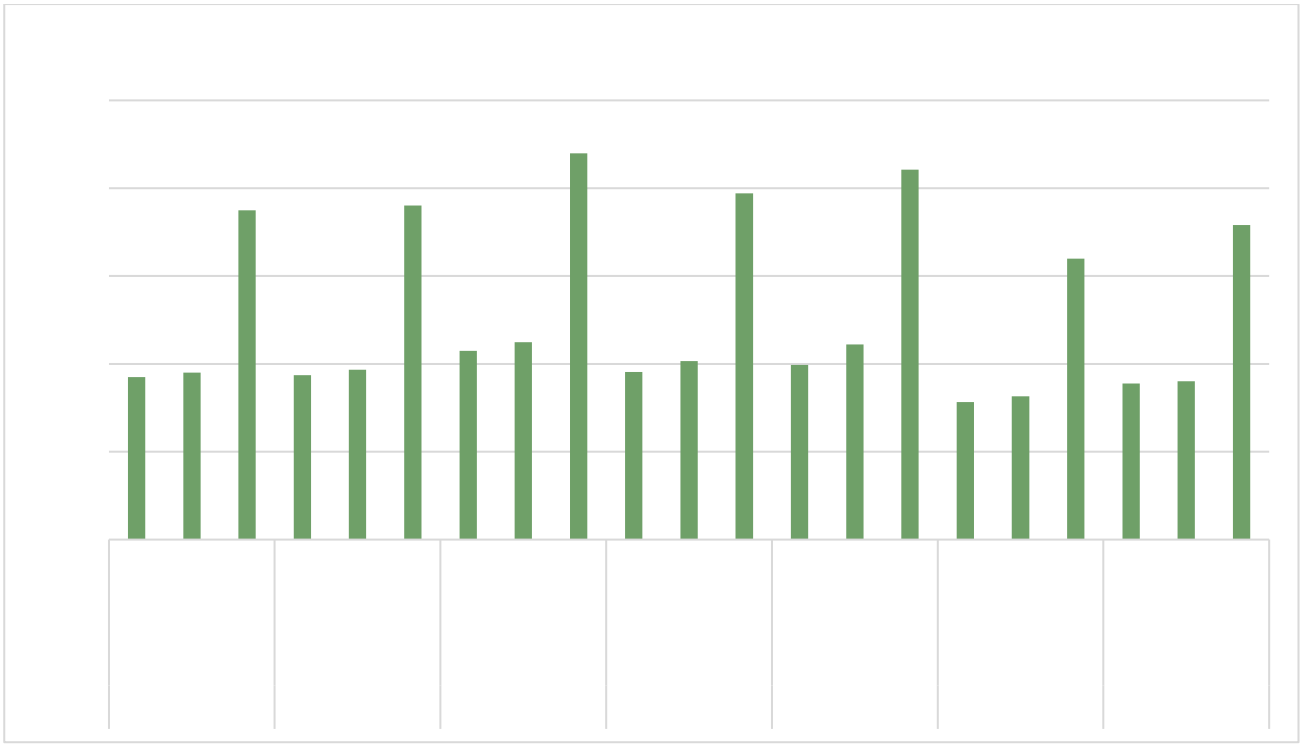
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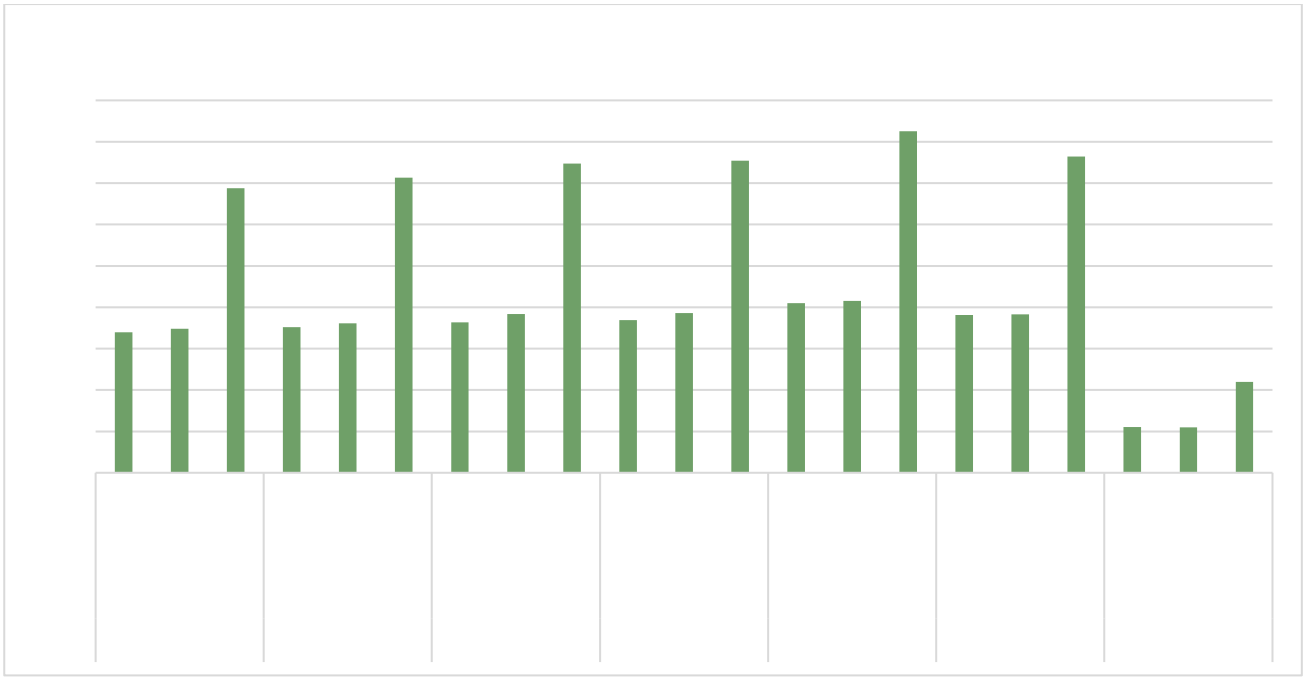
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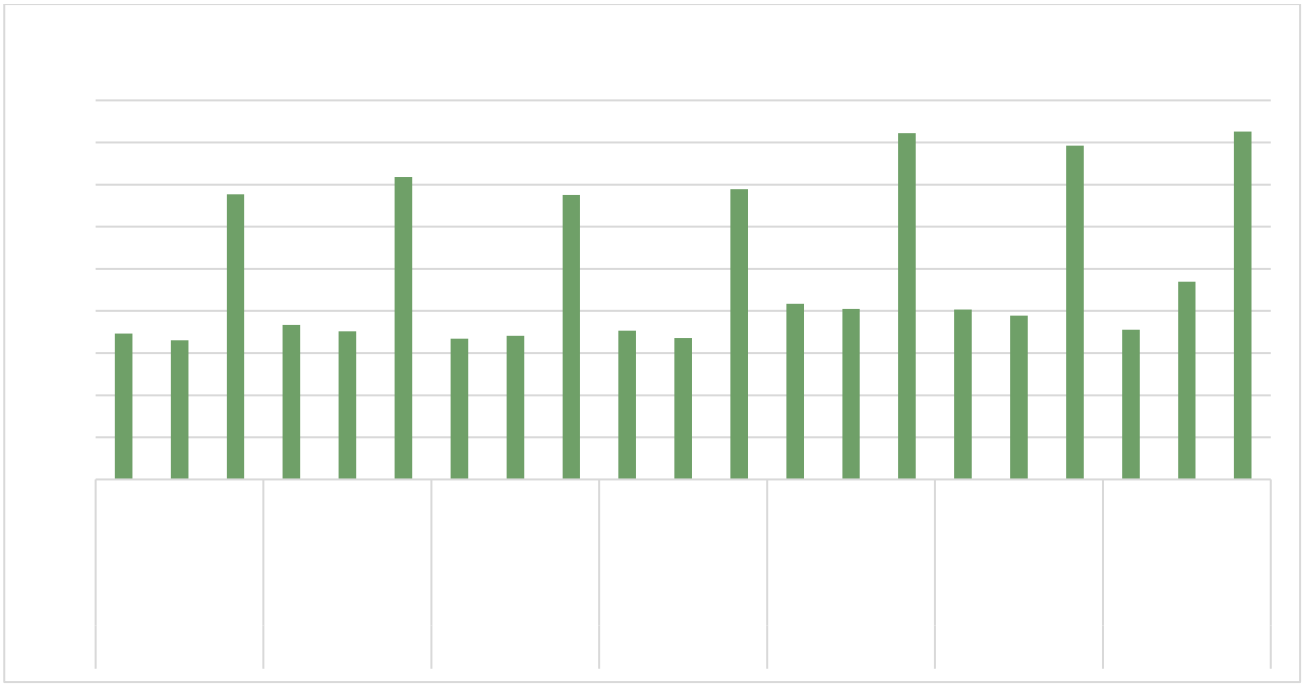

Core Study Area and Survey Points
ATC2
J7
ATC1
J6
J11
J9a
J9b
J10
J5
ATC4
J4
J3
J1
J2
ATC3
J8
J14
J13
J12
J15
J16
ATC2
J7
J6
ATC1
J3
J11
J2
J4
J5
J1
ATC3
J8
Ancillary data points
0
250
500 m

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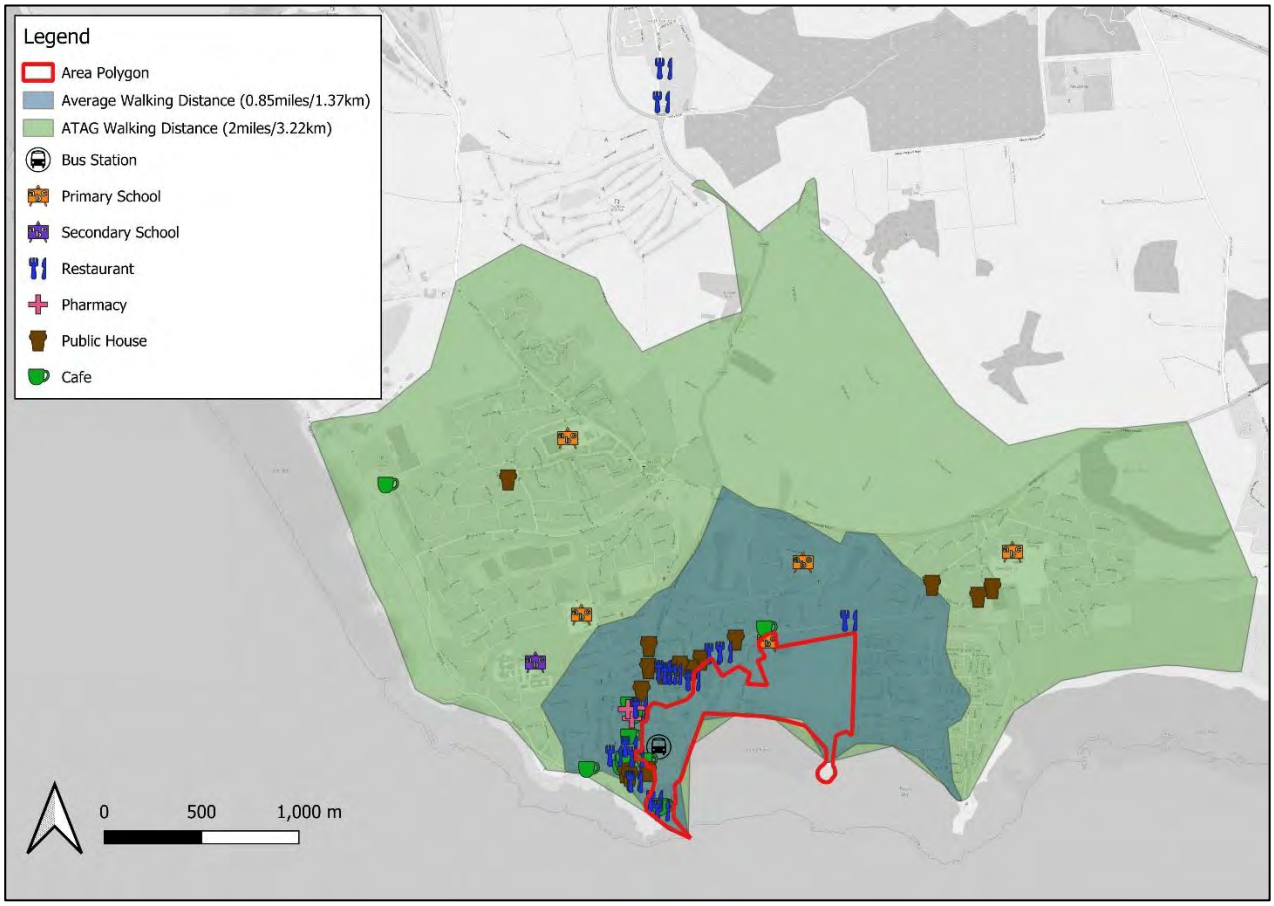


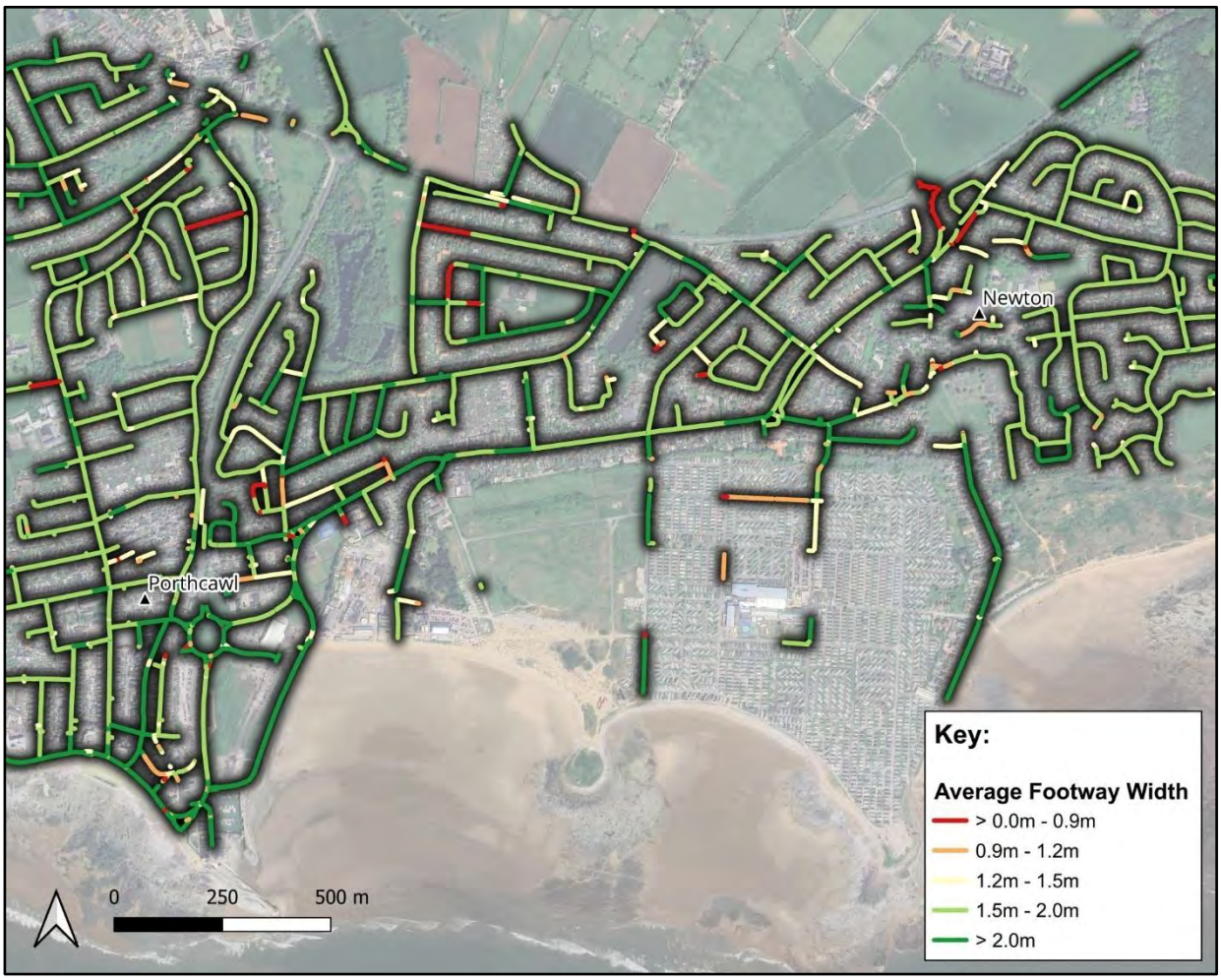


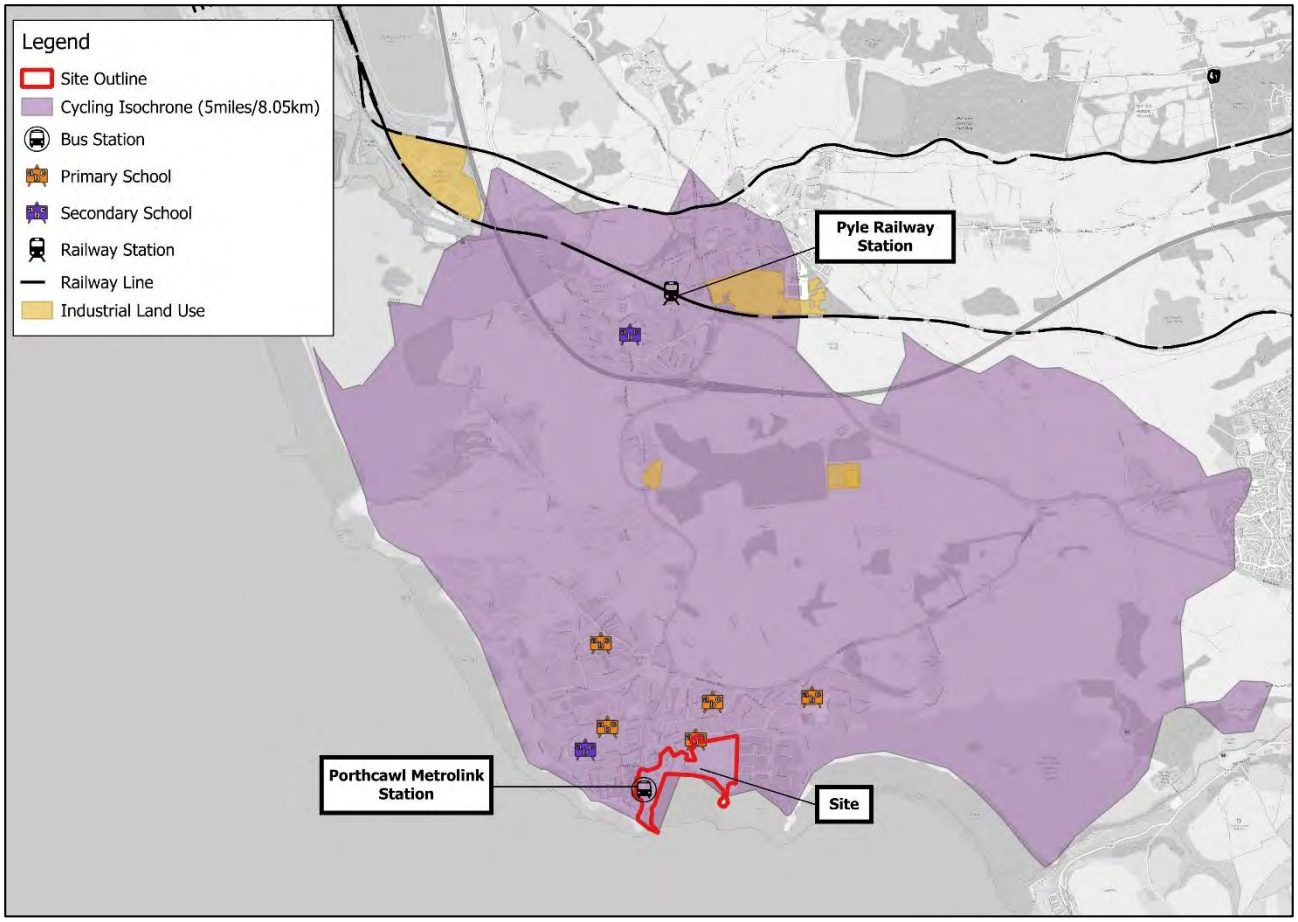


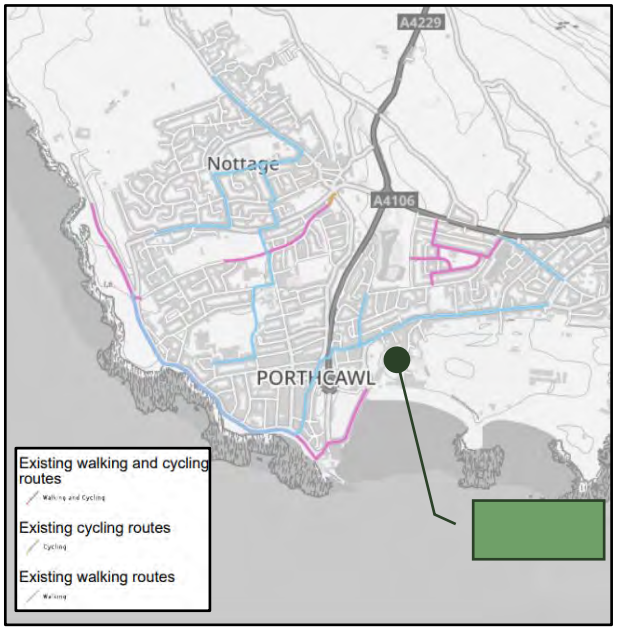
Mode	Less than 1 mile	Up to 2 miles	Up to 3 miles	Up to 4 miles	Up to 5 miles	Up to 7.5 miles	Up to 15 miles
Walk	●	●	●	●	●	●	●
Cycle	●	●	●	●	●	●	●
e-Cycle	●	●	●	●	●	●	●

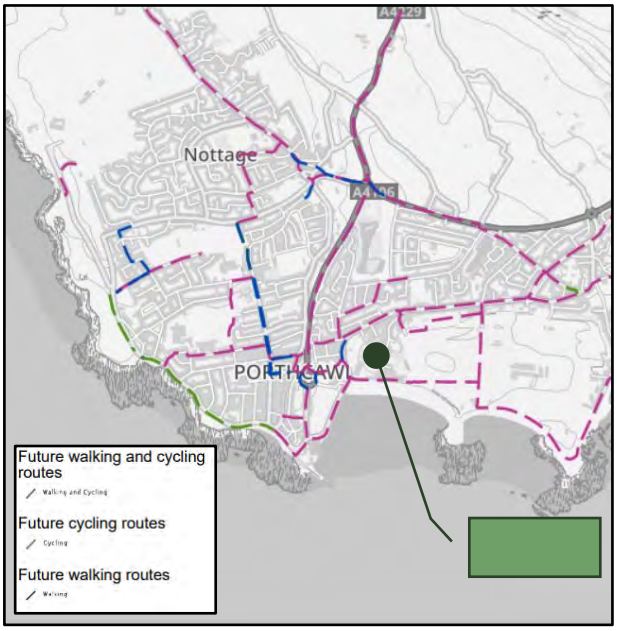
Colour	Average active user likelihood
●	Many users likely to travel this distance for utility journeys
●	Some users likely to travel this distance for utility journeys
●	Few or no users likely to travel this distance for utility journeys

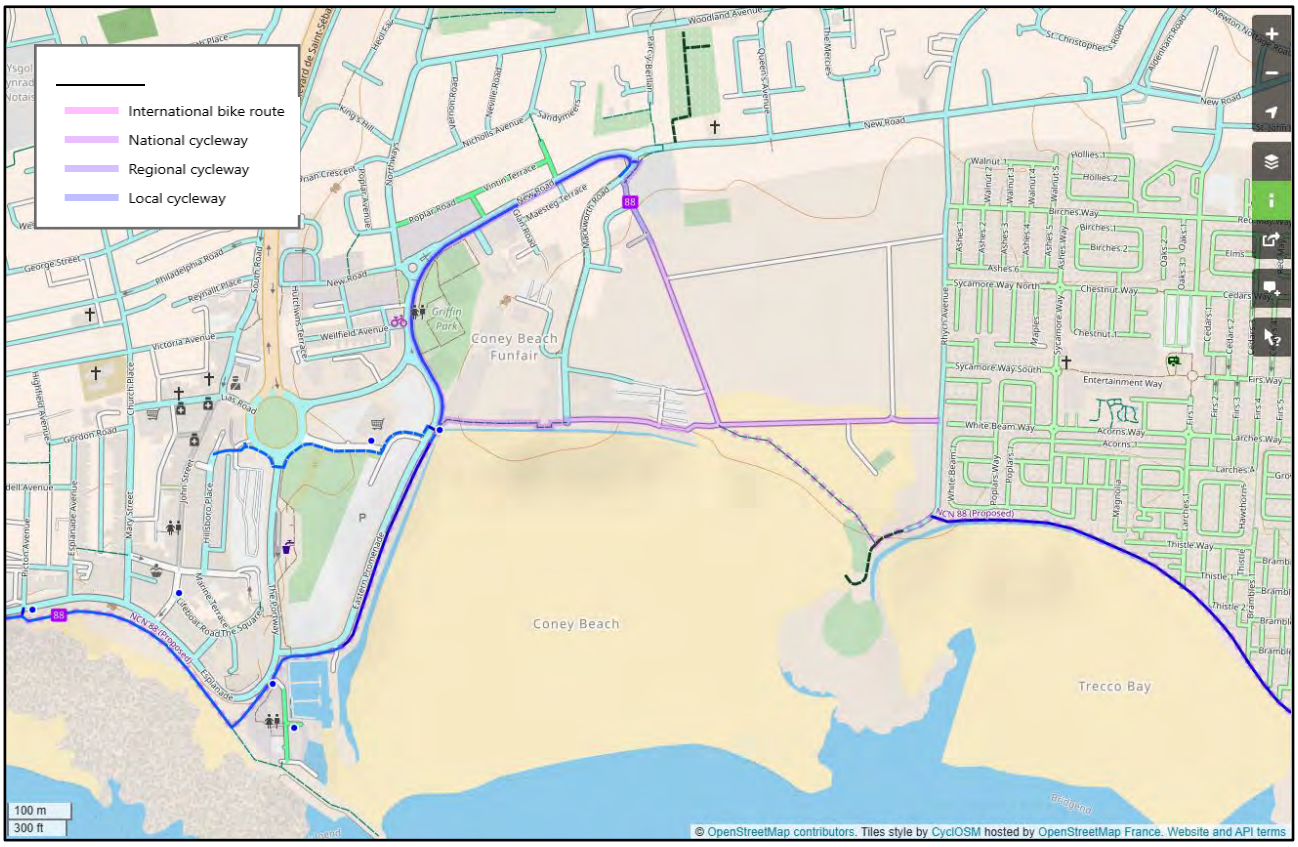



Newton
Porthcawl
0
250
500 m
Key:
Average Footway Width
> 0.0m - 0.9m
0.9m - 1.2m
1.2m - 1.5m
1.5m - 2.0m
> 2.0m

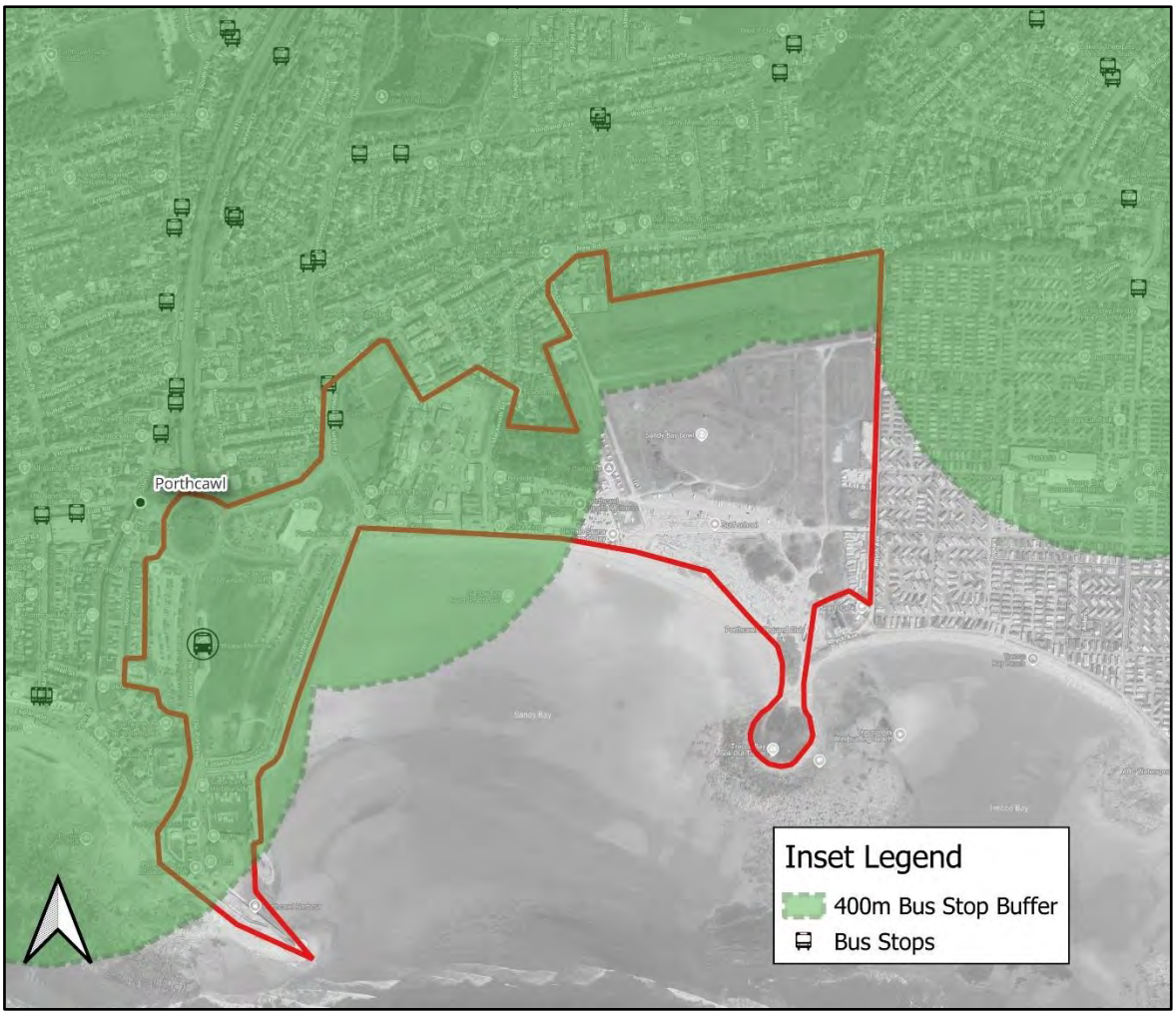

Legend
Site Outline
Cycling Isochrone (5miles/8.05km)
Bus Station
Primary School
Secondary School
Railway Station
Railway Line
Industrial Land Use
Pyle Railway Station
Porthcawl Metrolink Station
Site


A4229
Nottage
A4106
PORTHCAWL
Existing walking and cycling routes
Existing cycling routes
Existing walking routes

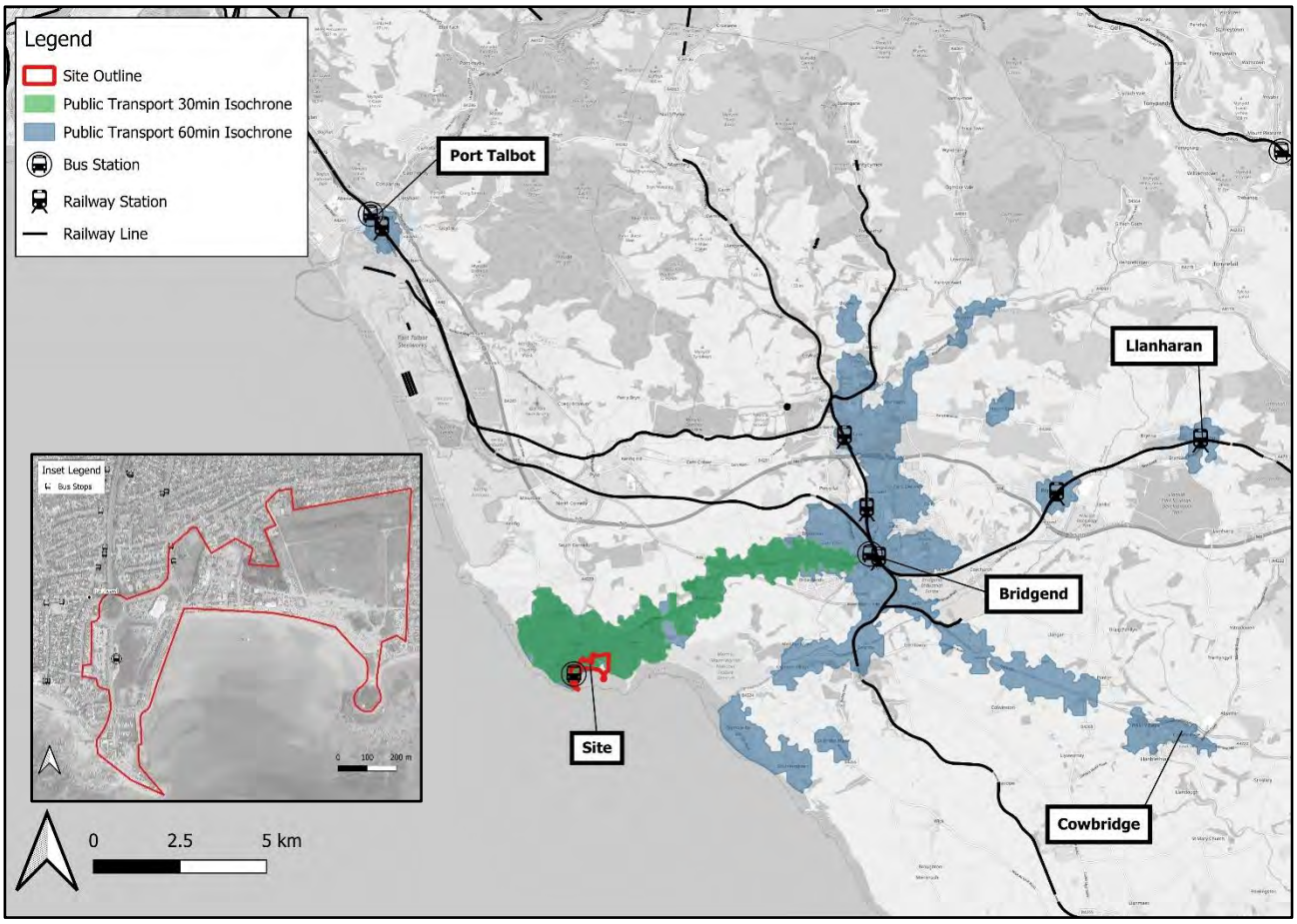

Nottage
PORTHCAWL
Future walking and cycling routes
Future cycling routes
Future walking routes

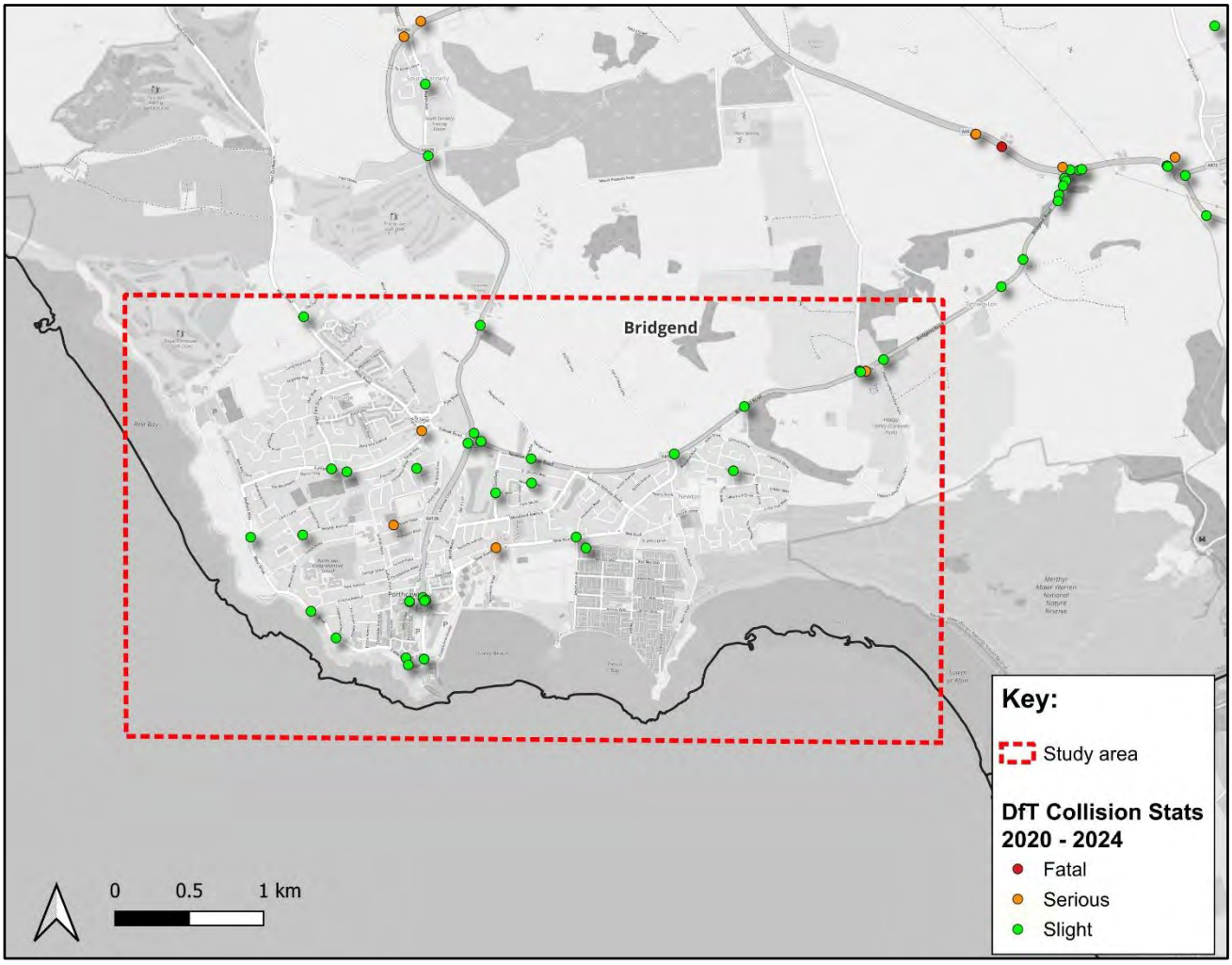

International bike route
National cycleway
Regional cycleway
Local cycleway
Coney Beach Funfair
Coney Beach
Trecco Bay
Griffin Park
New Road
Woodland Avenue
Victoria Avenue
Wellfield Avenue
Gordon Road
Mary Street
Eglwys Nunydd Road
Esplanade
Promenade
Entertainment Way
White Beam Way
Thistle Way
Sycamore Way North
Sycamore Way South
Chestnut Way
Birches Way
Acorns Way
NCN 88 (Proposed)
100 m
300 ft
© OpenStreetMap contributors. Tiles style by CyclOSM hosted by OpenStreetMap France. Website and API terms


Clear Channel
FRESHER
WITH
PINK!
7up


Porthcawl
Sandy Bay
Inset Legend
400m Bus Stop Buffer
Bus Stops


Clear Channel
£24

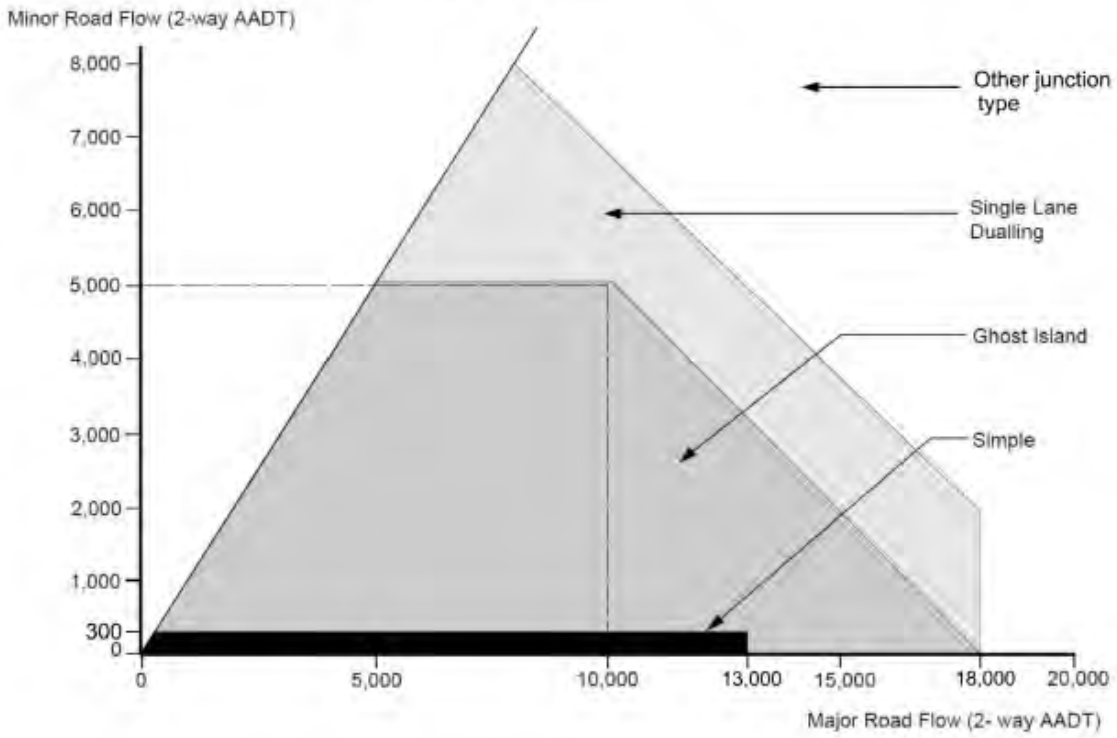

Legend
Site Outline
Public Transport 30min Isochrone
Public Transport 60min Isochrone
Bus Station
Railway Station
Railway Line
Port Talbot
Llanharan
Bridgend
Site
Cowbridge
Inset Legend
Bus Stops
0 100 200 m
0 2.5 5 km

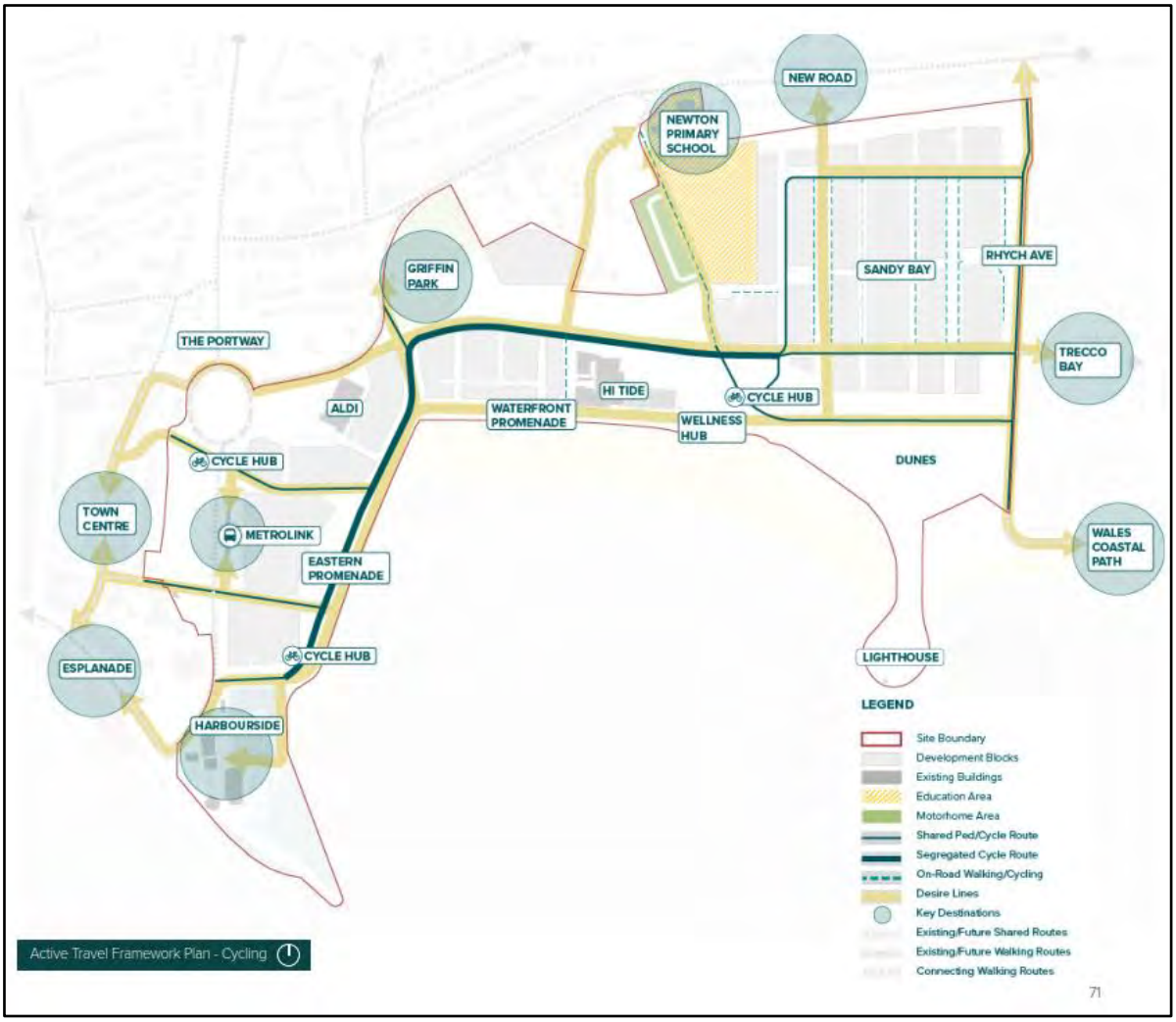

Bridgend
Key:
Study area
DfT Collision Stats 2020 - 2024
Fatal
Serious
Slight
0
0.5
1 km

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Figure 2.3.1 Approximate priority junction provision on single carriageway roads based on flows only



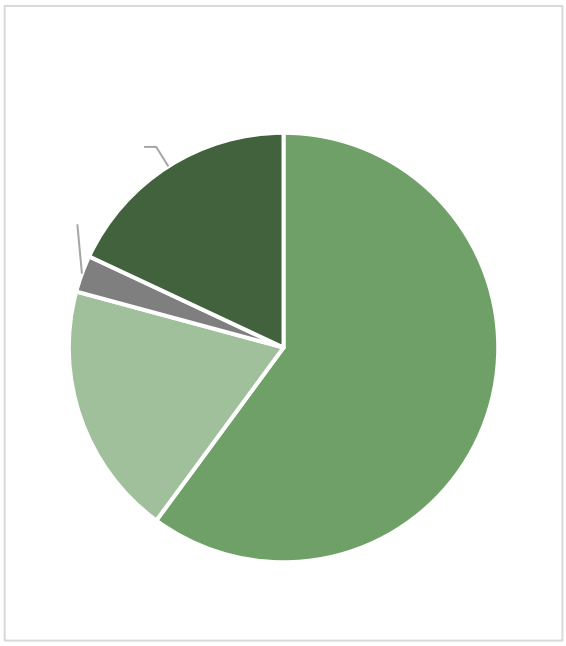

NEW ROAD
NEWTON PRIMARY SCHOOL
GRIFFIN PARK
SANDY BAY
RHYCH AVE
THE PORTWAY
TRECCO BAY
HI TIDE
CYCLE HUB
ALDI
WATERFRONT PROMENADE
WELLNESS HUB
CYCLE HUB
DUNES
TOWN CENTRE
METROLINK
WALES COASTAL PATH
EASTERN PROMENADE
CYCLE HUB
LIGHTHOUSE
ESPLANADE
HARBOURSIDE
LEGEND
Site Boundary
Development Blocks
Existing Buildings
Education Area
Motorhome Area
Shared Ped/Cycle Route
Segregated Cycle Route
On-Road Walking/Cycling
Desire Lines
Key Destinations
Existing/Future Shared Routes
Existing/Future Walking Routes
Connecting Walking Routes
Active Travel Framework Plan - Cycling
71

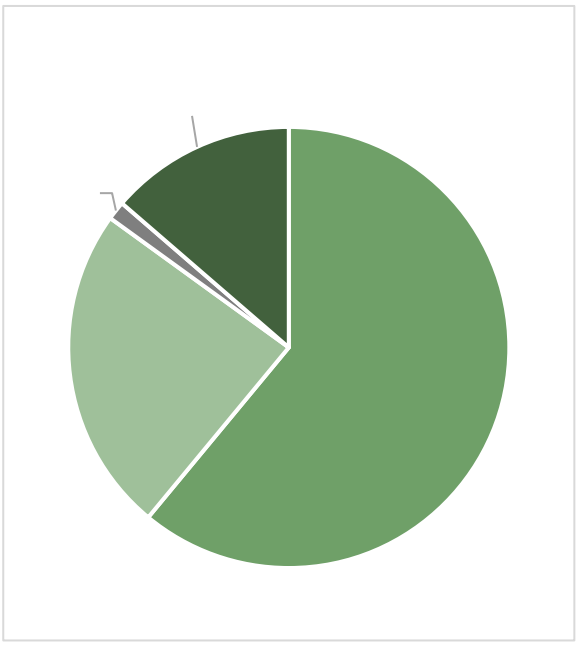
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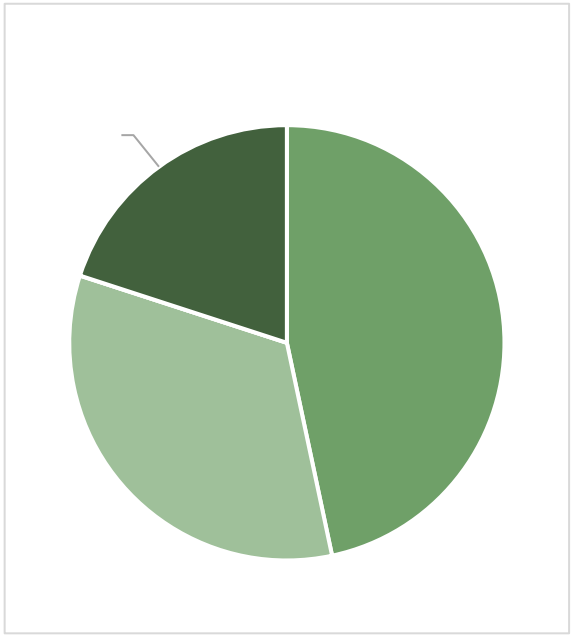
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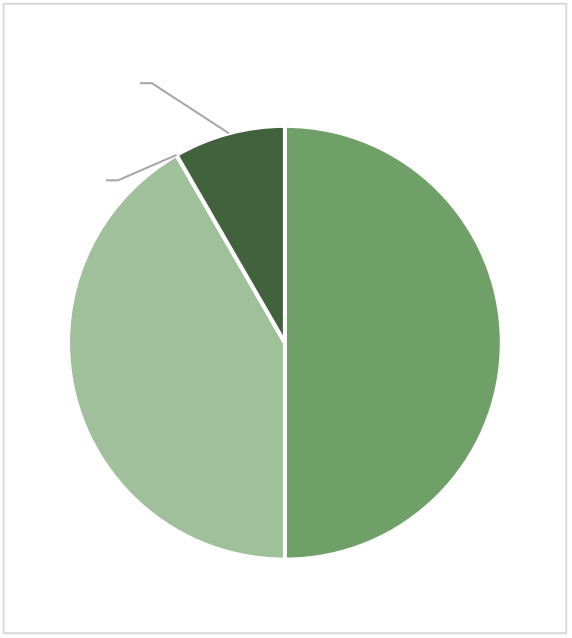




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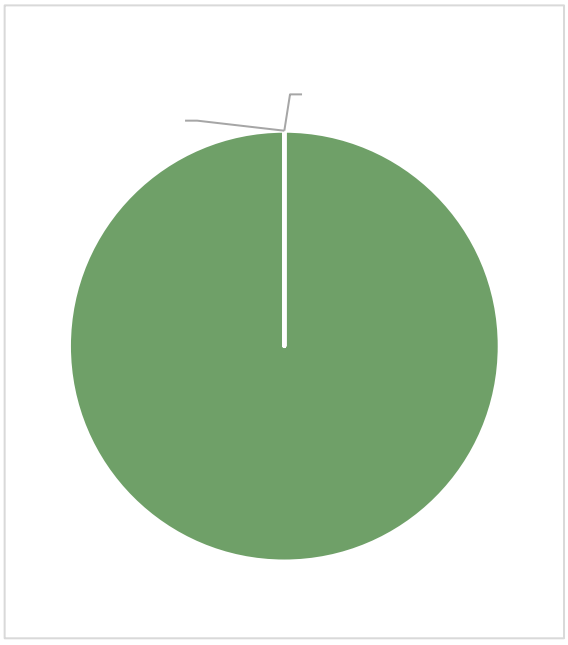


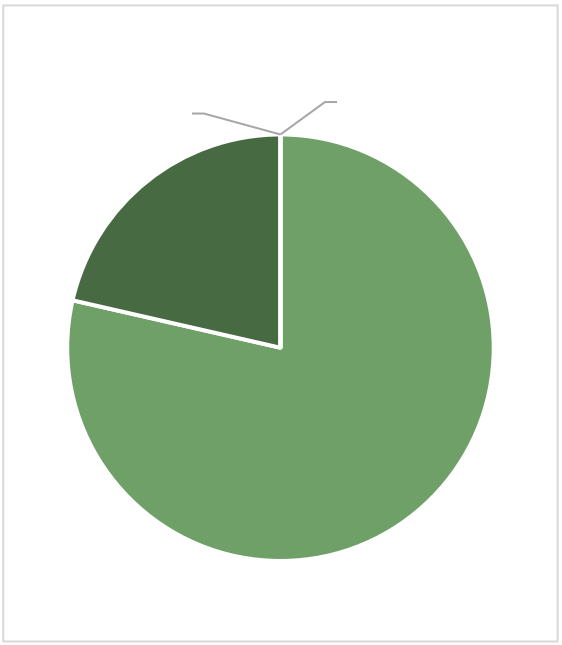
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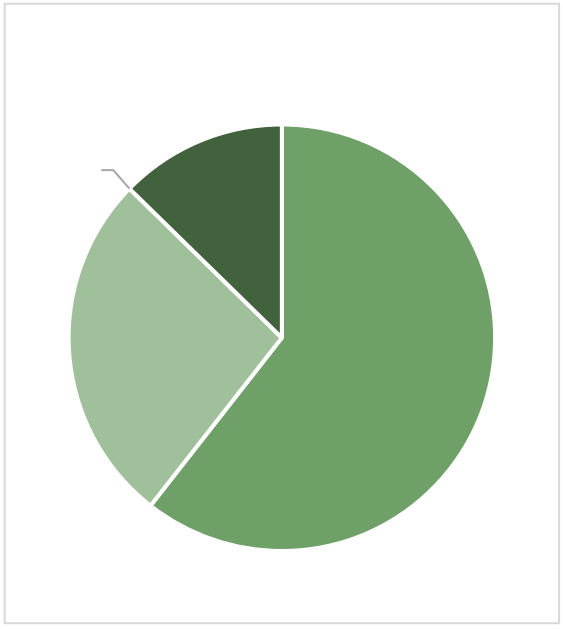


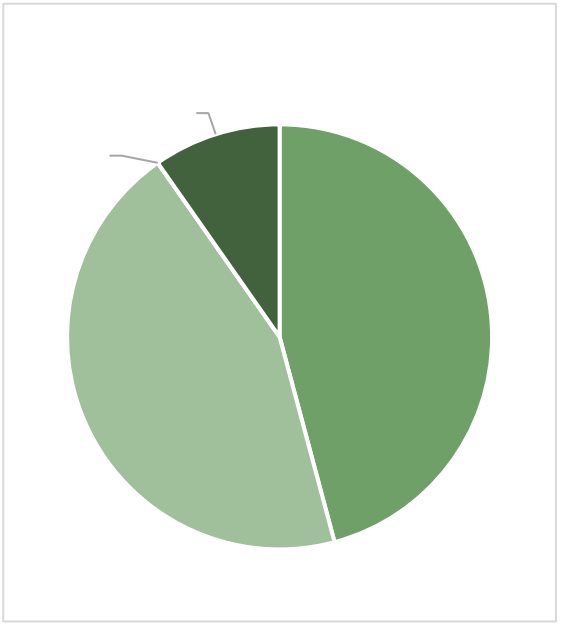


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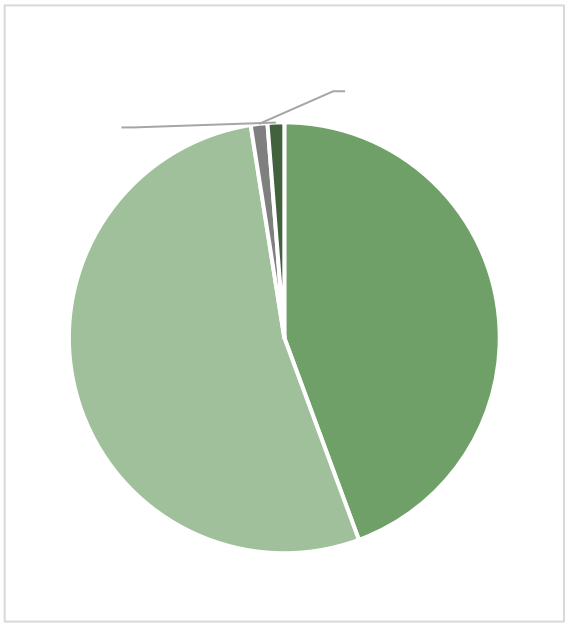


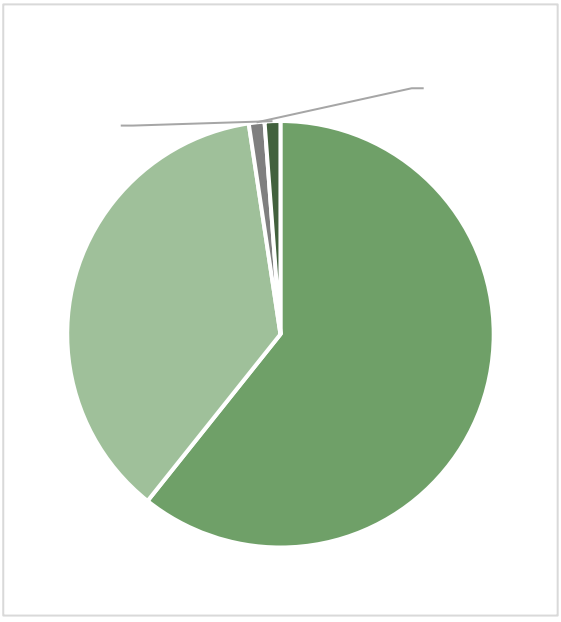
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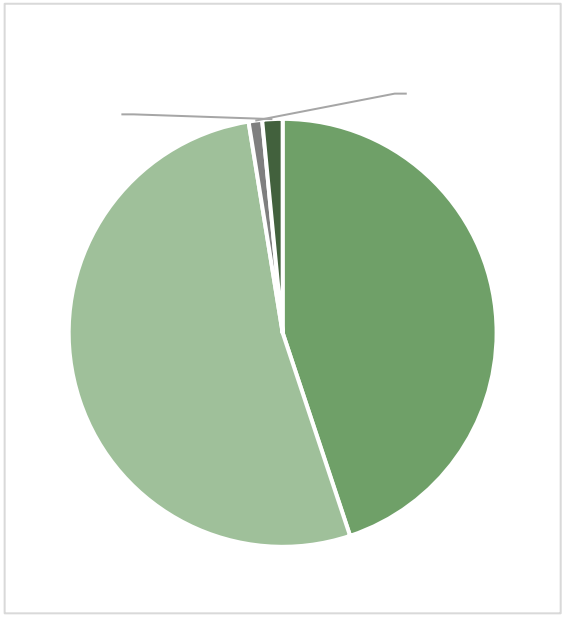


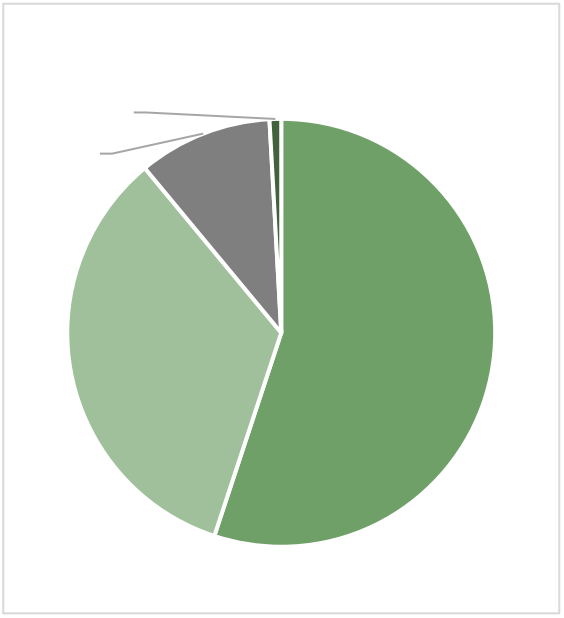


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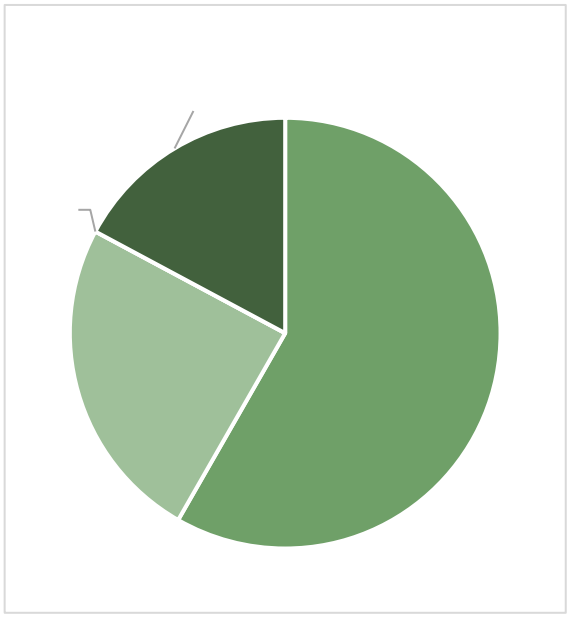
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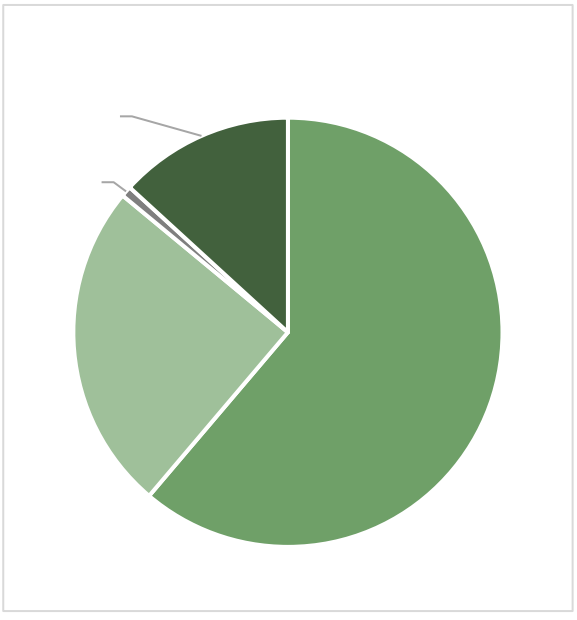




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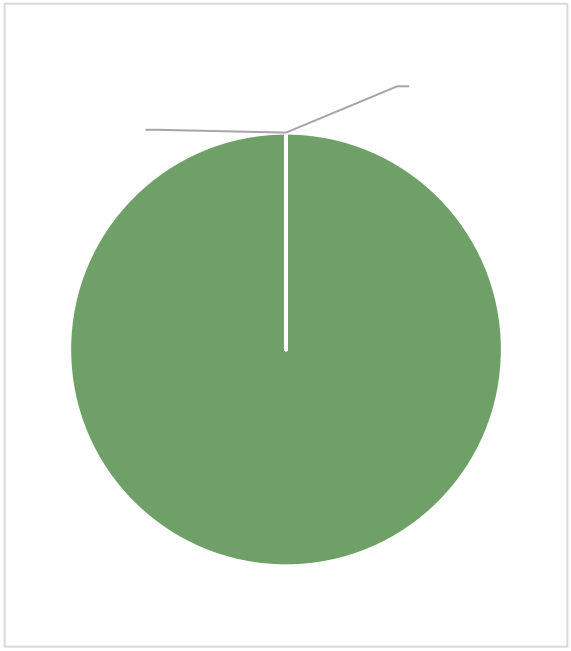
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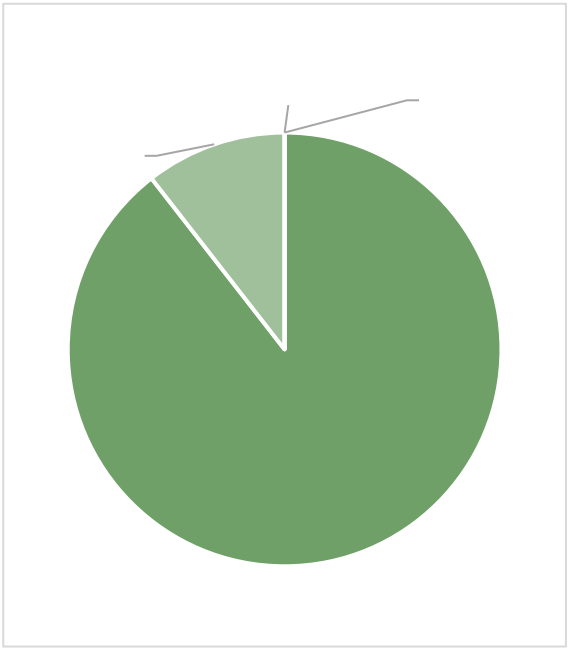




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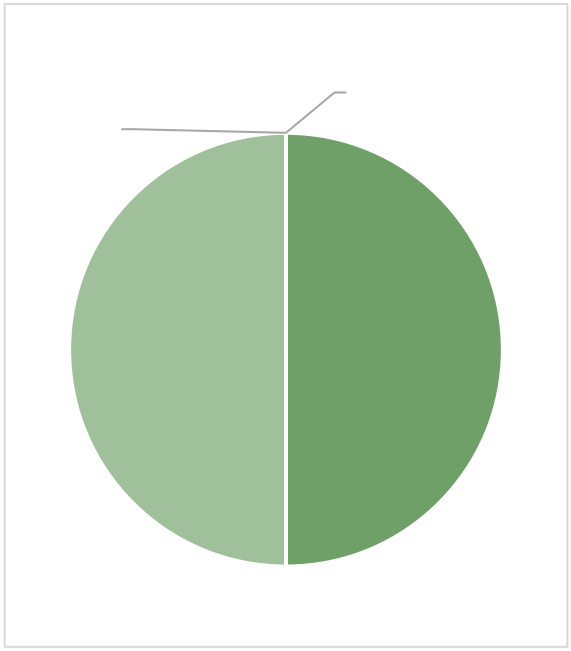


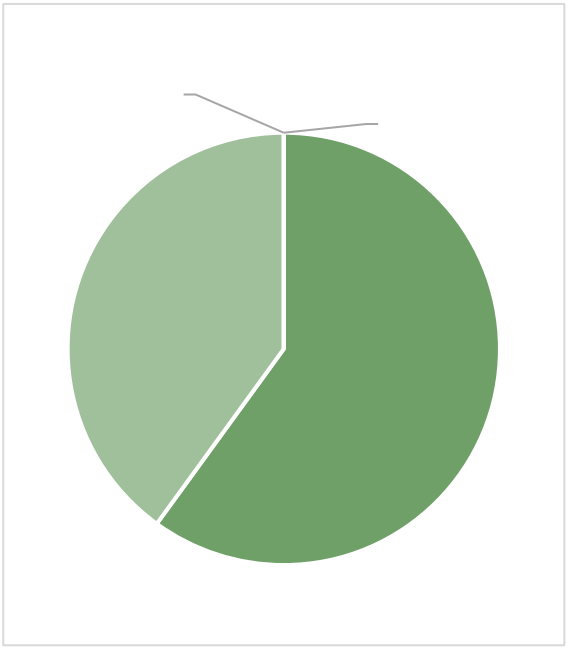
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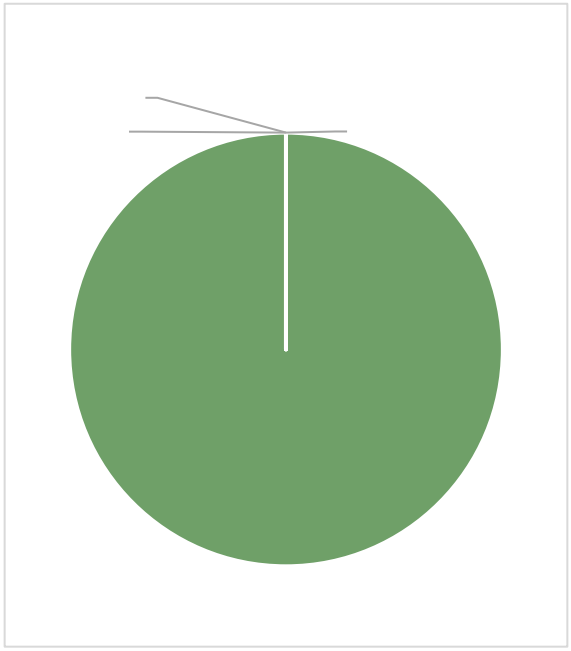
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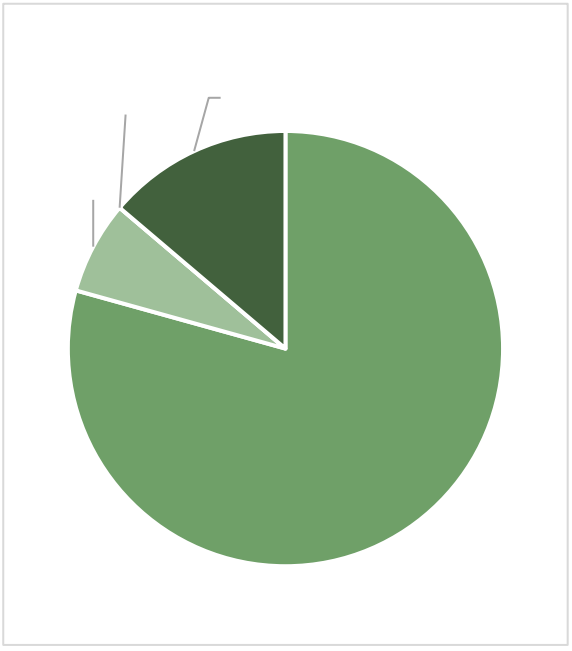




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	8	3		8	24	32	232	233	465
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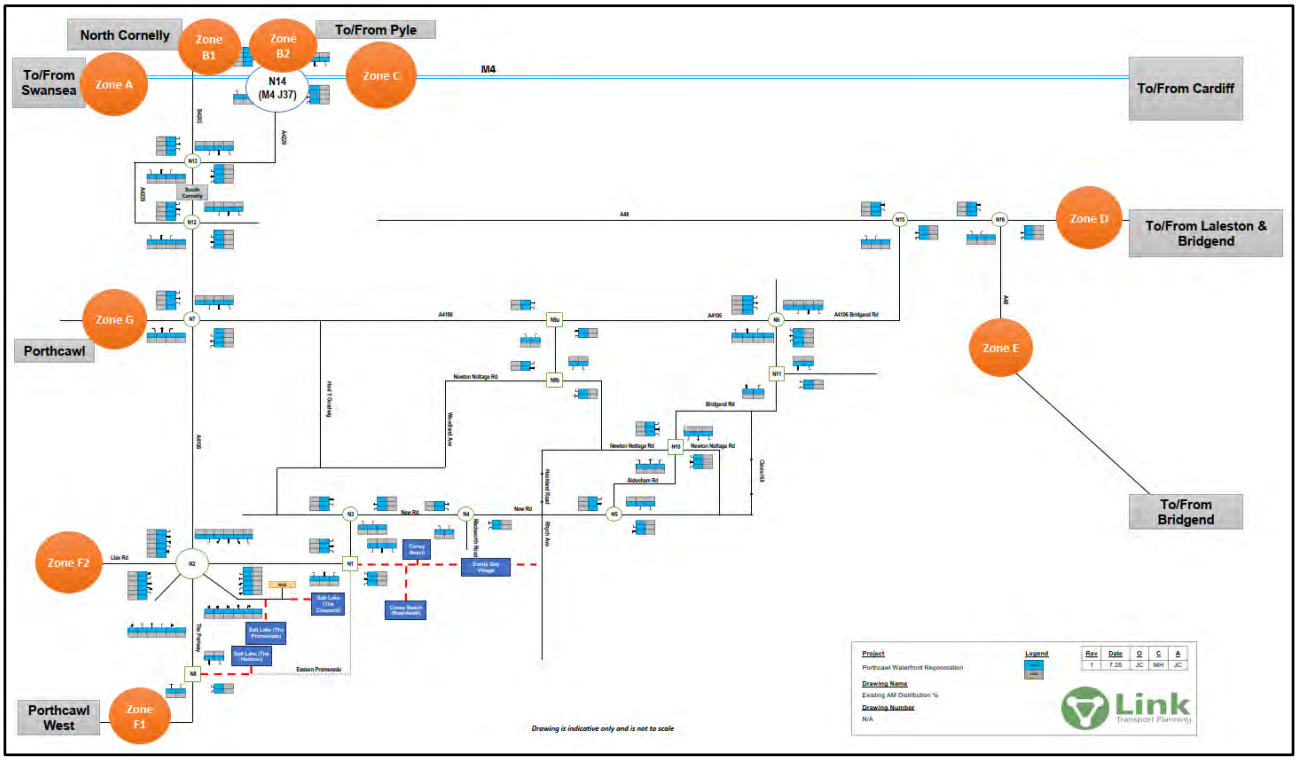
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North Cornelly
Zone B1
Zone B2
To/From Pyle
To/From Swansea
Zone A
N14 (M4 J37)
Zone C
M4
To/From Cardiff
Zone D
To/From Laleston & Bridgend
Zone G
Porthcawl
Zone E
To/From Bridgend
Zone F2
Porthcawl West
Zone F1
Drawing is indicative only and is not to scale
Project
Porthcawl Waterfront Regeneration
Drawing Name
Existing AM Distribution %
Drawing Number
N/A
Legend
Rev
Date
Link
Transport Planning

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KEY

01 8 Lane Outdoor Pool
02 Gym and Studio
03 Flexible Community Space
04 Hotel
05 Outdoor Arena
06 Hillsboro Surface Level Car Park
07 Hillsboro Pocket Park
08 Bus Station
09 Splash Park
10 Funfair
11 MUGA
12 Coney Beach Public Car Park
13 New Linear Park
14 Pump Track
15 Monster Park Treetop Adventure Walk
16 Mini Golf
17 Sandy Bay Park
18 Retained and Enhanced Dunes
19 Land Allocated for Educational Use
20 Community Garden
21 Sea and Beach Facility
22 Community Pavilion

NOTES:

NOT FOR SITE PURPOSES: This drawing is a general arrangement plan only and is not intended for site purposes.

SCALE: Do not scale from this drawing.

SETTING OUT: All setting out, levels, dimensions to be agreed on site. Do not use the information on this drawing without checking all dimensions on site. Any discrepancies between drawings, specifications and site works are to be reported to The Urbanists. Order of construction and setting out is to be agreed on site.

CHECK: This drawing must be the latest revision, read in conjunction with all other drawings, details, specifications and schedules. All dimensions are in millimetres unless otherwise stated. Where and contradiction or uncertainty arises between the drawings and/or the schedule of works, it is the contractor's responsibility to seek verification from The Urbanists before proceeding. No claims will be met by The Urbanists, where the contractor continues work in absence of such confirmation.

No.	Date	By	Revision Notes

PROJECT STATUS:

S3 (SUITABLE FOR REVIEW)

the urbanists

Client: Bridgend County Borough Council & Welsh Government

Project: Porthcawl Waterfront Regeneration

Title: Illustrative Masterplan (with annotations)

Project ID	Organiser	Block	Level	Type	Role	Dwg	Rev.	Status
2316	URB	XX	XX	SK	UD	902		FINAL

Drawn: TS Date: 01/11/2025 Checked: JD Scale: 1:1250

The Urbanists (Cardiff) - The Creative Quarter - 8A Morgan Arcade - CF10 1AF
The Urbanists (Bristol) - Generator Building - Provis Reach - BS1 6BX
T: 029 2023 6133 E: info@theurbanists.net W: www.theurbanists.net
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THE SEVERNSIDE GROUP
Transportation Data Collection
Traffic Management
Inductive Loop Cutting
Fabrication

Head Office: 73 Porth-Y-Castell, Barry, Vale of Glam CF62 6QE
Office: Unit 17, Atlantic Business Park, Hayes Lane, Barry, Vale of Glam CF64 5XU
Severnside Transportation Data Collection is registered Ltd Company
Company Registration Number: 11503589
VAT Number: 306 4112 48

Survey Overview

Job No'/Job Name	SS1938 Porthcawl
Date	Wednesday 09 July 2025
Time	0730-0930 & 1500-1830
Survey Type	Classified JTC Count
Weather Conditions	

Overview Map



Comments

SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 1

Site 1 - Cams 1-1



SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 2

Site 2 - Cams 2-1



SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 2

Site 2 - Cams 2-2



SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 2

Site 2 - Cams 2-3



SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 2

Site 2 - Cams 2-4



SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 2

Site 2 - Cams 2-5



SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 2

Site 2 - Cams 2-6



SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 3

Site 3 - Cams 3-1



SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 4

Site 4 - Cams 4-1



SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 5

Site 5 - Cams 5-1



SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 6

Site 6 - Cams 6-1



SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 7

Site 7 - Cams 7-1



SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 8

Site 8 - Cams 8-1



Severnside
Transportation Data Collection

SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 1

	Arm A - Arm A								Arm A - Arm B								Arm A - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	0	0	0	0	0	0	0	**0**	6	1	1	0	0	0	0	**8**	19	4	2	0	1	0	0	**26**	**34**
0745-0800	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	3	**4**	30	7	0	0	0	0	0	**37**	**41**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**1**	**1**	**0**	**0**	**0**	**3**	**12**	**49**	**11**	**2**	**0**	**1**	**0**	**0**	**63**	**75**
0800-0815	0	0	0	0	0	0	0	**0**	6	3	0	0	0	0	0	**9**	32	6	1	0	3	0	1	**43**	**52**
0815-0830	1	0	0	0	0	0	0	**1**	14	1	0	0	0	0	1	**16**	54	5	0	0	1	0	0	**60**	**77**
0830-0845	0	0	0	0	0	0	0	**0**	11	1	0	0	0	0	0	**12**	67	6	0	0	1	0	1	**75**	**87**
0845-0900	0	0	0	0	0	0	0	**0**	7	0	0	0	0	0	0	**7**	52	2	1	0	0	0	2	**57**	**64**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**38**	**5**	**0**	**0**	**0**	**0**	**1**	**44**	**205**	**19**	**2**	**0**	**5**	**0**	**4**	**235**	**280**
0900-0915	0	0	0	0	0	0	0	**0**	7	3	0	0	0	1	0	**11**	38	8	1	0	0	0	0	**47**	**58**
0915-0930	0	1	0	0	0	0	0	**1**	9	0	0	0	0	0	0	**9**	35	3	0	0	2	0	1	**41**	**51**
Hourly Total	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**16**	**3**	**0**	**0**	**0**	**1**	**0**	**20**	**73**	**11**	**1**	**0**	**2**	**0**	**1**	**88**	**109**
2 Hour Totals (am)	1	1	0	0	0	0	0	**2**	61	9	1	0	0	1	4	**76**	327	41	5	0	8	0	5	**386**	**464**
1500-1515	0	0	0	0	0	0	0	**0**	6	0	0	0	0	0	1	**7**	44	8	0	0	0	0	0	**52**	**59**
1515-1530	0	1	0	0	0	0	0	**1**	10	2	0	0	0	0	0	**12**	57	10	1	0	1	0	0	**69**	**82**
1530-1545	2	0	0	0	0	0	0	**2**	11	2	0	0	0	0	1	**14**	49	2	0	0	1	1	0	**53**	**69**
1545-1600	0	0	0	0	0	0	0	**0**	15	0	0	0	0	1	0	**16**	55	1	1	0	0	0	0	**57**	**73**
Hourly Total	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**42**	**4**	**0**	**0**	**0**	**1**	**2**	**49**	**205**	**21**	**2**	**0**	**2**	**1**	**0**	**231**	**283**
1600-1615	0	0	0	0	0	0	0	**0**	12	3	0	0	0	0	0	**15**	61	2	2	0	0	1	0	**66**	**81**
1615-1630	2	0	0	0	0	0	0	**2**	6	0	0	0	0	0	0	**6**	47	6	0	0	0	0	0	**53**	**61**
1630-1645	0	0	0	0	0	0	0	**0**	12	1	0	0	0	0	1	**14**	43	8	0	0	0	0	0	**51**	**65**
1645-1700	1	0	0	0	0	0	0	**1**	12	1	0	0	0	0	0	**13**	48	5	0	0	1	0	0	**54**	**68**
Hourly Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**42**	**5**	**0**	**0**	**0**	**0**	**1**	**48**	**199**	**21**	**2**	**0**	**1**	**1**	**0**	**224**	**275**
1700-1715	0	0	0	0	0	0	0	**0**	18	0	0	0	0	0	0	**18**	56	7	0	0	1	0	1	**65**	**83**
1715-1730	0	0	0	0	0	0	0	**0**	22	0	1	0	0	1	0	**24**	40	7	0	0	0	0	0	**47**	**71**
1730-1745	2	0	0	0	0	0	0	**2**	10	1	0	0	0	0	1	**12**	48	5	0	0	0	0	0	**53**	**67**
1745-1800	1	0	0	0	0	0	0	**1**	12	1	0	0	0	0	1	**14**	57	1	0	0	1	1	0	**60**	**75**
Hourly Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**62**	**2**	**1**	**0**	**0**	**1**	**2**	**68**	**201**	**20**	**0**	**0**	**2**	**1**	**1**	**225**	**296**
1800-1815	0	0	0	0	0	0	0	**0**	15	0	0	0	0	0	1	**16**	61	6	0	0	0	2	0	**69**	**85**
1815-1830	0	0	0	0	0	0	0	**0**	16	2	0	0	0	1	1	**20**	64	2	0	0	0	0	0	**66**	**86**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**31**	**2**	**0**	**0**	**0**	**1**	**2**	**36**	**125**	**8**	**0**	**0**	**0**	**2**	**0**	**135**	**171**
3.5 Hour Totals (pm)	8	1	0	0	0	0	0	9	177	13	1	0	0	3	7	201	730	70	4	0	5	5	1	815	**1025**
Day Total	9	2	0	0	0	0	0	11	238	22	2	0	0	4	11	277	1057	111	9	0	13	5	6	1201	1489

	Arm B - Arm A								Arm B - Arm B								Arm B - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	2	2	1	0	0	1	0	**6**	0	0	0	0	0	0	0	**0**	6	2	0	0	0	0	0	**8**	**14**
0745-0800	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	2	1	0	0	0	0	0	**3**	**3**
Hourly Total	**2**	**2**	**1**	**0**	**0**	**1**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**3**	**0**	**0**	**0**	**0**	**0**	**11**	**17**

0800-0815	2	1	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	**5**
0815-0830	4	1	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	5	1	0	0	0	0	0	**6**	**11**
0830-0845	11	0	0	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	3	2	0	0	0	0	0	**5**	**16**
0845-0900	5	1	0	0	0	0	1	**7**	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	**10**
Hourly Total	**22**	**3**	**0**	**0**	**0**	**0**	**1**	**26**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**3**	**0**	**0**	**0**	**0**	**0**	**16**	**42**
0900-0915	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	2	1	0	0	0	0	0	**3**	**4**
0915-0930	6	0	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	4	0	0	0	0	0	0	**4**	**10**
Hourly Total	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**7**	**14**
2 Hour Totals (am)	30	6	1	0	0	1	1	**39**	0	0	0	0	0	0	0	**0**	27	7	0	0	0	0	0	**34**	**73**
1500-1515	18	1	0	0	0	1	0	**20**	0	0	0	0	0	0	0	**0**	18	1	0	0	0	0	0	**19**	**39**
1515-1530	11	1	0	0	0	0	0	**12**	2	0	0	0	0	0	0	**2**	20	1	0	0	1	0	0	**22**	**36**
1530-1545	8	0	0	0	0	1	2	**11**	0	0	0	0	0	0	0	**0**	16	0	0	0	0	2	0	**18**	**29**
1545-1600	15	0	0	0	0	0	0	**15**	0	0	0	0	0	0	0	**0**	12	0	0	0	0	0	0	**12**	**27**
Hourly Total	**52**	**2**	**0**	**0**	**0**	**2**	**2**	**58**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**66**	**2**	**0**	**0**	**1**	**2**	**0**	**71**	**131**
1600-1615	16	0	0	0	0	0	2	**18**	0	0	0	0	0	0	0	**0**	15	1	0	0	0	0	0	**16**	**34**
1615-1630	10	1	0	0	0	0	1	**12**	0	0	0	0	0	0	0	**0**	21	2	0	0	0	0	0	**23**	**35**
1630-1645	9	0	0	0	0	0	1	**10**	0	0	0	0	0	0	0	**0**	18	0	0	0	0	0	0	**18**	**28**
1645-1700	14	0	0	0	0	0	0	**14**	0	0	0	0	0	0	0	**0**	11	0	0	0	0	0	0	**11**	**25**
Hourly Total	**49**	**1**	**0**	**0**	**0**	**0**	**4**	**54**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**65**	**3**	**0**	**0**	**0**	**0**	**0**	**68**	**122**
1700-1715	12	1	0	0	0	0	2	**15**	0	0	0	0	0	0	0	**0**	17	0	0	0	0	0	0	**17**	**32**
1715-1730	16	0	0	0	0	1	0	**17**	0	0	0	0	0	0	0	**0**	14	1	0	0	0	1	0	**16**	**33**
1730-1745	21	0	0	0	0	1	0	**22**	0	0	0	0	0	0	0	**0**	13	0	0	0	0	0	0	**13**	**35**
1745-1800	17	2	0	0	0	0	1	**20**	0	0	0	0	0	0	0	**0**	16	0	0	0	0	0	0	**16**	**36**
Hourly Total	**66**	**3**	**0**	**0**	**0**	**2**	**3**	**74**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**60**	**1**	**0**	**0**	**0**	**1**	**0**	**62**	**136**
1800-1815	10	0	0	0	0	2	0	**12**	1	0	0	0	0	0	0	**1**	11	1	0	0	0	0	0	**12**	**25**
1815-1830	16	0	0	0	0	2	0	**18**	0	0	0	0	0	0	0	**0**	10	0	0	0	0	1	0	**11**	**29**
Hourly Total	**26**	**0**	**0**	**0**	**0**	**4**	**0**	**30**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**21**	**1**	**0**	**0**	**0**	**1**	**0**	**23**	**54**
3.5 Hour Totals (pm)	193	6	0	0	0	8	9	216	3	0	0	0	0	0	0	3	212	7	0	0	1	4	0	224	**443**
Day Total	223	12	1	0	0	9	10	255	3	0	0	0	0	0	0	3	239	14	0	0	1	4	0	258	516

	Arm C - Arm A								Arm C - Arm B								Arm C - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	13	2	2	0	0	0	0	**17**	4	0	0	0	0	0	0	**4**	0	0	0	0	0	0	0	**0**	**21**
0745-0800	23	3	1	0	1	0	0	**28**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	**30**
Hourly Total	**36**	**5**	**3**	**0**	**1**	**0**	**0**	**45**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**51**
0800-0815	20	6	0	0	1	0	0	**27**	3	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	**30**
0815-0830	44	7	1	0	1	0	0	**53**	6	1	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	**60**
0830-0845	65	5	0	0	0	0	0	**70**	10	1	0	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	**81**
0845-0900	43	5	0	0	1	0	1	**50**	13	1	0	0	0	0	0	**14**	0	0	0	0	0	0	0	**0**	**64**
Hourly Total	**172**	**23**	**1**	**0**	**3**	**0**	**1**	**200**	**32**	**3**	**0**	**0**	**0**	**0**	**0**	**35**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**235**
0900-0915	53	6	0	0	0	1	1	**61**	10	0	0	0	0	0	0	**10**	0	0	0	0	0	0	0	**0**	**71**
0915-0930	52	6	2	0	1	0	3	**64**	13	1	1	0	0	0	0	**15**	0	0	0	0	0	0	0	**0**	**79**
Hourly Total	**105**	**12**	**2**	**0**	**1**	**1**	**4**	**125**	**23**	**1**	**1**	**0**	**0**	**0**	**0**	**25**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**150**

2 Hour Totals (am)	313	40	6	0	5	1	5	**370**	61	4	1	0	0	0	0	**66**	0	0	0	0	0	0	0	**0**	**436**					
1500-1515	86	5	1	0	1	1	0	**94**	6	1	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	**101**					
1515-1530	51	8	0	0	2	0	1	**62**	8	0	0	0	0	0	0	**8**	0	0	0	0	0	0	0	**0**	**70**					
1530-1545	47	4	0	0	0	0	0	**51**	14	2	0	0	0	0	0	**16**	0	0	0	0	0	0	0	**0**	**67**					
1545-1600	55	6	2	0	0	1	2	**66**	17	0	0	0	0	1	0	**18**	0	0	0	0	0	0	0	**0**	**84**					
Hourly Total	**239**	**23**	**3**	**0**	**3**	**2**	**3**	**273**	**45**	**3**	**0**	**0**	**0**	**1**	**0**	**49**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**322**					
1600-1615	77	4	0	0	0	1	0	**82**	15	0	0	0	0	0	0	**15**	0	0	0	0	0	0	0	**0**	**97**					
1615-1630	62	9	0	0	0	0	0	**71**	17	0	0	0	0	0	0	**17**	1	0	0	0	0	0	0	**1**	**89**					
1630-1645	51	8	1	0	0	0	0	**60**	20	1	0	0	0	3	0	**24**	0	0	0	0	0	0	0	**0**	**84**					
1645-1700	44	3	0	0	0	0	1	**48**	21	0	0	0	0	1	0	**22**	0	0	0	0	0	0	0	**0**	**70**					
Hourly Total	**234**	**24**	**1**	**0**	**0**	**1**	**1**	**261**	**73**	**1**	**0**	**0**	**0**	**4**	**0**	**78**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**340**					
1700-1715	65	1	0	0	0	0	0	**66**	13	0	0	0	0	1	0	**14**	0	0	0	0	0	0	0	**0**	**80**					
1715-1730	68	9	1	0	1	1	0	**80**	25	3	0	0	0	1	0	**29**	0	0	0	0	0	0	0	**0**	**109**					
1730-1745	66	5	0	0	0	1	0	**72**	35	1	0	0	0	1	0	**37**	0	0	0	0	0	0	0	**0**	**109**					
1745-1800	68	2	0	0	1	0	0	**71**	25	1	0	0	0	2	1	**29**	0	0	0	0	0	0	0	**0**	**100**					
Hourly Total	**267**	**17**	**1**	**0**	**2**	**2**	**0**	**289**	**98**	**5**	**0**	**0**	**0**	**5**	**1**	**109**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**398**					
1800-1815	48	3	0	0	0	1	0	**52**	25	1	0	0	0	1	0	**27**	0	0	0	0	0	0	0	**0**	**79**					
1815-1830	54	6	0	0	0	2	2	**64**	25	0	0	0	0	0	0	**25**	0	0	0	0	0	0	0	**0**	**89**					
Hourly Total	**102**	**9**	**0**	**0**	**0**	**3**	**2**	**116**	**50**	**1**	**0**	**0**	**0**	**1**	**0**	**52**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**168**					
3.5 Hour Totals (pm)	842	73	5	0	5	8	6	939	266	10	0	0	0	11	1	288	1	0	0	0	0	0	0	1	**1228**					
Day Total	1155	113	11	0	10	9	11	1309	327	14	1	0	0	11	1	354	1	0	0	0	0	0	0	1	1664					

	Origin - Arm A								Origin - Arm B								Origin - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	25	5	3	0	1	0	0	**34**	8	4	1	0	0	1	0	**14**	17	2	2	0	0	0	0	**21**	**69**
0745-0800	31	7	0	0	0	0	3	**41**	2	1	0	0	0	0	0	**3**	25	3	1	0	1	0	0	**30**	**74**
Hourly Total	**56**	**12**	**3**	**0**	**1**	**0**	**3**	**75**	**10**	**5**	**1**	**0**	**0**	**1**	**0**	**17**	**42**	**5**	**3**	**0**	**1**	**0**	**0**	**51**	**143**
0800-0815	38	9	1	0	3	0	1	**52**	4	1	0	0	0	0	0	**5**	23	6	0	0	1	0	0	**30**	**87**
0815-0830	69	6	0	0	1	0	1	**77**	9	2	0	0	0	0	0	**11**	50	8	1	0	1	0	0	**60**	**148**
0830-0845	78	7	0	0	1	0	1	**87**	14	2	0	0	0	0	0	**16**	75	6	0	0	0	0	0	**81**	**184**
0845-0900	59	2	1	0	0	0	2	**64**	8	1	0	0	0	0	1	**10**	56	6	0	0	1	0	1	**64**	**138**
Hourly Total	**244**	**24**	**2**	**0**	**5**	**0**	**5**	**280**	**35**	**6**	**0**	**0**	**0**	**0**	**1**	**42**	**204**	**26**	**1**	**0**	**3**	**0**	**1**	**235**	**557**
0900-0915	45	11	1	0	0	1	0	**58**	2	2	0	0	0	0	0	**4**	63	6	0	0	0	1	1	**71**	**133**
0915-0930	44	4	0	0	2	0	1	**51**	10	0	0	0	0	0	0	**10**	65	7	3	0	1	0	3	**79**	**140**
Hourly Total	**89**	**15**	**1**	**0**	**2**	**1**	**1**	**109**	**12**	**2**	**0**	**0**	**0**	**0**	**0**	**14**	**128**	**13**	**3**	**0**	**1**	**1**	**4**	**150**	**273**
2 Hour Totals (am)	389	51	6	0	8	1	9	**464**	57	13	1	0	0	1	1	**73**	374	44	7	0	5	1	5	**436**	**973**
1500-1515	50	8	0	0	0	0	1	**59**	36	2	0	0	0	1	0	**39**	92	6	1	0	1	1	0	**101**	**199**
1515-1530	67	13	1	0	1	0	0	**82**	33	2	0	0	1	0	0	**36**	59	8	0	0	2	0	1	**70**	**188**
1530-1545	62	4	0	0	1	1	1	**69**	24	0	0	0	0	3	2	**29**	61	6	0	0	0	0	0	**67**	**165**
1545-1600	70	1	1	0	0	1	0	**73**	27	0	0	0	0	0	0	**27**	72	6	2	0	0	2	2	**84**	**184**
Hourly Total	**249**	**26**	**2**	**0**	**2**	**2**	**2**	**283**	**120**	**4**	**0**	**0**	**1**	**4**	**2**	**131**	**284**	**26**	**3**	**0**	**3**	**3**	**3**	**322**	**736**
1600-1615	73	5	2	0	0	1	0	**81**	31	1	0	0	0	0	2	**34**	92	4	0	0	0	1	0	**97**	**212**

1615-1630	55	6	0	0	0	0	0	**61**	31	3	0	0	0	0	1	**35**	80	9	0	0	0	0	0	**89**	**185**
1630-1645	55	9	0	0	0	0	1	**65**	27	0	0	0	0	0	1	**28**	71	9	1	0	0	3	0	**84**	**177**
1645-1700	61	6	0	0	1	0	0	**68**	25	0	0	0	0	0	0	**25**	65	3	0	0	0	1	1	**70**	**163**
Hourly Total	**244**	**26**	**2**	**0**	**1**	**1**	**1**	**275**	**114**	**4**	**0**	**0**	**0**	**0**	**4**	**122**	**308**	**25**	**1**	**0**	**0**	**5**	**1**	**340**	**737**
1700-1715	74	7	0	0	1	0	1	**83**	29	1	0	0	0	0	2	**32**	78	1	0	0	0	1	0	**80**	**195**
1715-1730	62	7	1	0	0	1	0	**71**	30	1	0	0	0	2	0	**33**	93	12	1	0	1	2	0	**109**	**213**
1730-1745	60	6	0	0	0	0	1	**67**	34	0	0	0	0	1	0	**35**	101	6	0	0	0	2	0	**109**	**211**
1745-1800	70	2	0	0	1	1	1	**75**	33	2	0	0	0	0	1	**36**	93	3	0	0	1	2	1	**100**	**211**
Hourly Total	**266**	**22**	**1**	**0**	**2**	**2**	**3**	**296**	**126**	**4**	**0**	**0**	**0**	**3**	**3**	**136**	**365**	**22**	**1**	**0**	**2**	**7**	**1**	**398**	**830**
1800-1815	76	6	0	0	0	2	1	**85**	22	1	0	0	0	2	0	**25**	73	4	0	0	0	2	0	**79**	**189**
1815-1830	80	4	0	0	0	1	1	**86**	26	0	0	0	0	3	0	**29**	79	6	0	0	0	2	2	**89**	**204**
Hourly Total	**156**	**10**	**0**	**0**	**0**	**3**	**2**	**171**	**48**	**1**	**0**	**0**	**0**	**5**	**0**	**54**	**152**	**10**	**0**	**0**	**0**	**4**	**2**	**168**	**393**
3.5 Hour Totals (pm)	915	84	5	0	5	8	8	1025	408	13	0	0	1	12	9	443	1109	83	5	0	5	19	7	1228	**2696**
Day Total	1304	135	11	0	13	9	17	1489	465	26	1	0	1	13	10	516	1483	127	12	0	10	20	12	1664	3669

	Destination - Arm A								Destination - Arm B								Destination - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	15	4	3	0	0	1	0	**23**	10	1	1	0	0	0	0	**12**	25	6	2	0	1	0	0	**34**	**69**
0745-0800	23	3	1	0	1	0	0	**28**	3	0	0	0	0	0	3	**6**	32	8	0	0	0	0	0	**40**	**74**
Hourly Total	**38**	**7**	**4**	**0**	**1**	**1**	**0**	**51**	**13**	**1**	**1**	**0**	**0**	**0**	**3**	**18**	**57**	**14**	**2**	**0**	**1**	**0**	**0**	**74**	**143**
0800-0815	22	7	0	0	1	0	0	**30**	9	3	0	0	0	0	0	**12**	34	6	1	0	3	0	1	**45**	**87**
0815-0830	49	8	1	0	1	0	0	**59**	20	2	0	0	0	0	1	**23**	59	6	0	0	1	0	0	**66**	**148**
0830-0845	76	5	0	0	0	0	0	**81**	21	2	0	0	0	0	0	**23**	70	8	0	0	1	0	1	**80**	**184**
0845-0900	48	6	0	0	1	0	2	**57**	20	1	0	0	0	0	0	**21**	55	2	1	0	0	0	2	**60**	**138**
Hourly Total	**195**	**26**	**1**	**0**	**3**	**0**	**2**	**227**	**70**	**8**	**0**	**0**	**0**	**0**	**1**	**79**	**218**	**22**	**2**	**0**	**5**	**0**	**4**	**251**	**557**
0900-0915	53	7	0	0	0	1	1	**62**	17	3	0	0	0	1	0	**21**	40	9	1	0	0	0	0	**50**	**133**
0915-0930	58	7	2	0	1	0	3	**71**	22	1	1	0	0	0	0	**24**	39	3	0	0	2	0	1	**45**	**140**
Hourly Total	**111**	**14**	**2**	**0**	**1**	**1**	**4**	**133**	**39**	**4**	**1**	**0**	**0**	**1**	**0**	**45**	**79**	**12**	**1**	**0**	**2**	**0**	**1**	**95**	**273**
2 Hour Totals (am)	344	47	7	0	5	2	6	**411**	122	13	2	0	0	1	4	**142**	354	48	5	0	8	0	5	**420**	**973**
1500-1515	104	6	1	0	1	2	0	**114**	12	1	0	0	0	0	1	**14**	62	9	0	0	0	0	0	**71**	**199**
1515-1530	62	10	0	0	2	0	1	**75**	20	2	0	0	0	0	0	**22**	77	11	1	0	2	0	0	**91**	**188**
1530-1545	57	4	0	0	0	1	2	**64**	25	4	0	0	0	0	1	**30**	65	2	0	0	1	3	0	**71**	**165**
1545-1600	70	6	2	0	0	1	2	**81**	32	0	0	0	0	2	0	**34**	67	1	1	0	0	0	0	**69**	**184**
Hourly Total	**293**	**26**	**3**	**0**	**3**	**4**	**5**	**334**	**89**	**7**	**0**	**0**	**0**	**2**	**2**	**100**	**271**	**23**	**2**	**0**	**3**	**3**	**0**	**302**	**736**
1600-1615	93	4	0	0	0	1	2	**100**	27	3	0	0	0	0	0	**30**	76	3	2	0	0	1	0	**82**	**212**
1615-1630	74	10	0	0	0	0	1	**85**	23	0	0	0	0	0	0	**23**	69	8	0	0	0	0	0	**77**	**185**
1630-1645	60	8	1	0	0	0	1	**70**	32	2	0	0	0	3	1	**38**	61	8	0	0	0	0	0	**69**	**177**
1645-1700	59	3	0	0	0	0	1	**63**	33	1	0	0	0	1	0	**35**	59	5	0	0	1	0	0	**65**	**163**
Hourly Total	**286**	**25**	**1**	**0**	**0**	**1**	**5**	**318**	**115**	**6**	**0**	**0**	**0**	**4**	**1**	**126**	**265**	**24**	**2**	**0**	**1**	**1**	**0**	**293**	**737**
1700-1715	77	2	0	0	0	0	2	**81**	31	0	0	0	0	1	0	**32**	73	7	0	0	1	0	1	**82**	**195**
1715-1730	84	9	1	0	1	2	0	**97**	47	3	1	0	0	2	0	**53**	54	8	0	0	0	1	0	**63**	**213**
1730-1745	89	5	0	0	0	2	0	**96**	45	2	0	0	0	1	1	**49**	61	5	0	0	0	0	0	**66**	**211**
1745-1800	86	4	0	0	1	0	1	**92**	37	2	0	0	0	2	2	**43**	73	1	0	0	1	1	0	**76**	**211**
Hourly Total	**336**	**20**	**1**	**0**	**2**	**4**	**3**	**366**	**160**	**7**	**1**	**0**	**0**	**6**	**3**	**177**	**261**	**21**	**0**	**0**	**2**	**2**	**1**	**287**	**830**

1800-1815	58	3	0	0	0	3	0	**64**	41	1	0	0	0	1	1	**44**	72	7	0	0	0	2	0	**81**	**189**
1815-1830	70	6	0	0	0	4	2	**82**	41	2	0	0	0	1	1	**45**	74	2	0	0	0	1	0	**77**	**204**
Hourly Total	**128**	**9**	**0**	**0**	**0**	**7**	**2**	**146**	**82**	**3**	**0**	**0**	**0**	**2**	**2**	**89**	**146**	**9**	**0**	**0**	**0**	**3**	**0**	**158**	**393**
3.5 Hour Totals (pm)	1043	80	5	0	5	16	15	1164	446	23	1	0	0	14	8	492	943	77	4	0	6	9	1	1040	**2696**
Day Total	1387	127	12	0	10	18	21	1575	568	36	3	0	0	15	12	634	1297	125	9	0	14	9	6	1460	3669

Severnside
Transportation Data Collection

Summary	
Project	Porthcawl
Project Code	SS1938
Site name	Site 01
Legs and Movements	All Processed Legs & Movements
Bin Size	15.0
Start Time	07:30
End Time	18:15
Location	Site 01
Latitude and Longitude	51.47968423573928, -3.69909412105056

	Start	End
Am Peak	2025-07-09 08:15:00	2025-07-09 09:15:00
Pm Peak	2025-07-09 17:00:00	2025-07-09 18:00:00



Turning Movement Data Plot

Class	Right	Thru	U-turn
Car	1057	238	9
LGV	111	22	2
OGV1	9	2	0
OGV2	0	0	0
PSV	13	0	0
MC	5	4	0
PC	6	11	0
Total	1201	277	11

	U-turn	Left	Thru
Car	3	239	223
LGV	0	14	12
OGV1	0	0	1
OGV2	0	0	0
PSV	0	1	0
MC	0	4	9
PC	0	0	10
Total	3	258	255

	U-turn	Left	Right
Car	1	1155	307
LGV	0	113	14
OGV1	0	11	1
OGV2	0	0	0
PSV	0	10	0
MC	0	9	11
PC	0	11	1
Total	1	1309	354

North

AM Peak Turning Movement Data Summary

Class	Right	Thru	U-turn
Car	211	39	1
LGV	21	5	0
OGV1	2	0	0
OGV2	0	0	0
PSV	2	0	0
MC	0	1	0
PC	3	1	0
Total	239	46	1

	U-turn	Left	Thru
Car	0	13	20
LGV	0	4	3
OGV1	0	0	0
OGV2	0	0	0
PSV	0	0	0
MC	0	0	0
PC	0	0	1
Total	0	17	24

	U-turn	Left	Right
Car	0	205	30
LGV	0	23	3
OGV1	0	1	0
OGV2	0	0	0
PSV	0	2	0
MC	0	1	0
PC	0	2	0
Total	0	234	42

North

PM Peak Turning Movemet Data Summary

Class	Right	Thru	U-turn
Car	201	62	3
LGV	20	2	0
OGV1	0	1	0
OGV2	0	0	0
PSV	2	0	0
MC	1	1	0
PC	1	2	0
Total	225	68	3

	U-turn	Left	Thru
Car	0	60	66
LGV	0	1	3
OGV1	0	0	0
OGV2	0	0	0
PSV	0	0	0
MC	0	0	0
PC	0	1	2
Total	0	62	74

	U-turn	Left	Right
Car	0	257	36
LGV	0	17	5
OGV1	0	1	0
OGV2	0	0	0
PSV	0	2	0
MC	0	2	0
PC	0	0	1
Total	0	289	109

North

Severnside
Transportation Data Collection

SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 2

	Arm A - Arm A								Arm A - Arm B								Arm A - Arm C								Arm A - Arm D								Arm A - Arm E								Arm A - Arm F								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	0	0	0	0	0	0	0	**0**	9	0	0	0	0	0	0	**9**	2	0	0	1	0	0	0	**3**	22	3	0	0	0	0	0	**25**	3	2	0	0	0	0	0	**5**	8	6	0	0	0	0	0	**14**	**42**
0745-0800	0	0	0	0	0	0	0	**0**	18	1	1	0	0	0	0	**20**	2	1	0	0	0	0	0	**3**	29	3	0	0	1	0	0	**33**	6	2	0	0	0	0	0	**8**	21	3	0	0	0	0	0	**24**	**64**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**1**	**1**	**0**	**0**	**0**	**0**	**29**	**4**	**1**	**0**	**1**	**0**	**0**	**0**	**6**	**51**	**6**	**0**	**0**	**1**	**0**	**0**	**58**	**9**	**4**	**0**	**0**	**0**	**0**	**0**	**13**	**29**	**9**	**0**	**0**	**0**	**0**	**0**	**38**	**106**
0800-0815	0	1	0	0	0	0	0	**1**	13	4	0	0	0	0	0	**17**	7	0	0	0	0	0	0	**7**	39	5	1	0	0	1	0	**46**	4	0	0	0	0	0	0	**4**	22	6	1	0	1	0	0	**30**	**75**
0815-0830	0	0	0	0	0	0	0	**0**	18	4	0	0	0	0	0	**22**	10	0	0	0	0	0	0	**10**	47	5	1	2	1	0	0	**56**	8	0	0	0	0	0	0	**8**	60	3	2	0	1	0	0	**66**	**96**
0830-0845	0	0	0	0	0	0	0	**0**	30	3	0	0	0	0	0	**33**	7	2	0	0	0	0	0	**9**	62	3	1	1	0	0	0	**67**	10	1	0	0	0	0	0	**11**	50	1	2	0	0	1	0	**54**	**120**
0845-0900	0	0	0	0	0	0	0	**0**	28	2	0	0	0	0	0	**30**	5	1	0	0	0	0	0	**6**	36	4	0	1	0	0	0	**41**	19	1	0	0	0	0	0	**20**	46	4	1	0	0	0	0	**51**	**97**
Hourly Total	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**89**	**13**	**0**	**0**	**0**	**0**	**0**	**102**	**29**	**3**	**0**	**0**	**0**	**0**	**0**	**32**	**184**	**17**	**3**	**4**	**1**	**1**	**0**	**210**	**41**	**2**	**0**	**0**	**0**	**0**	**0**	**43**	**178**	**14**	**6**	**0**	**2**	**1**	**0**	**201**	**388**
0900-0915	0	0	0	0	0	0	0	**0**	34	3	0	0	0	0	0	**37**	10	0	1	0	0	0	0	**11**	31	4	1	0	0	0	0	**36**	16	0	0	0	0	0	0	**16**	26	4	1	0	0	0	0	**31**	**100**
0915-0930	0	0	0	0	0	0	0	**0**	45	4	2	0	0	0	0	**51**	12	2	0	0	0	0	0	**14**	47	2	0	0	0	0	0	**49**	25	0	0	0	0	0	0	**25**	31	5	2	0	0	0	0	**38**	**139**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**79**	**7**	**2**	**0**	**0**	**0**	**0**	**88**	**22**	**2**	**1**	**0**	**0**	**0**	**0**	**25**	**78**	**6**	**1**	**0**	**0**	**0**	**0**	**85**	**41**	**0**	**0**	**0**	**0**	**0**	**0**	**41**	**57**	**9**	**3**	**0**	**0**	**0**	**0**	**69**	**239**
2 Hour Totals (am)	0	1	0	0	0	0	0	**1**	195	21	3	0	0	0	0	**219**	55	6	1	1	0	0	0	**63**	313	29	4	4	2	1	0	**353**	91	6	0	0	0	0	0	**97**	264	32	9	0	2	1	0	**308**	**733**
1500-1515	1	0	0	0	0	0	0	**1**	24	1	1	0	0	0	0	**26**	14	4	0	0	0	0	0	**18**	46	2	0	0	1	1	0	**50**	8	1	0	0	0	0	0	**9**	27	6	0	0	0	0	0	**33**	**104**
1515-1530	0	0	0	0	0	0	0	**0**	16	2	0	0	0	0	0	**18**	18	4	0	0	0	0	0	**22**	31	0	0	0	0	0	0	**31**	7	0	0	0	0	0	0	**7**	42	5	0	0	0	0	0	**47**	**78**
1530-1545	0	0	0	0	0	0	0	**0**	28	3	0	0	0	0	0	**31**	25	1	0	0	0	0	0	**26**	34	3	1	0	0	0	0	**38**	6	0	0	0	0	0	0	**6**	30	3	0	0	0	0	0	**33**	**101**
1545-1600	0	0	0	0	0	0	0	**0**	35	4	1	0	0	1	0	**41**	28	0	0	0	0	0	0	**28**	51	0	0	0	0	0	0	**51**	10	0	0	0	0	0	0	**10**	21	4	0	0	0	1	0	**26**	**130**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**103**	**10**	**2**	**0**	**0**	**1**	**0**	**116**	**85**	**9**	**0**	**0**	**0**	**0**	**0**	**94**	**162**	**5**	**1**	**0**	**1**	**1**	**0**	**170**	**31**	**1**	**0**	**0**	**0**	**0**	**0**	**32**	**120**	**18**	**0**	**0**	**0**	**1**	**0**	**139**	**413**
1600-1615	0	0	0	0	0	0	0	**0**	43	1	0	0	0	0	0	**44**	20	2	0	0	0	0	0	**22**	46	3	0	1	0	2	0	**52**	6	0	0	0	0	0	0	**6**	15	0	0	0	0	0	0	**15**	**124**
1615-1630	0	0	0	0	0	0	0	**0**	38	5	0	0	0	0	0	**43**	21	3	0	0	0	0	0	**24**	36	4	0	0	1	2	0	**43**	3	1	0	0	0	0	0	**4**	21	0	0	0	0	0	0	**21**	**114**
1630-1645	0	0	0	0	0	0	0	**0**	42	4	0	0	0	2	0	**48**	19	1	0	0	0	0	0	**20**	29	6	0	0	0	3	0	**38**	10	0	0	0	0	0	0	**10**	37	2	0	0	0	0	0	**39**	**116**
1645-1700	0	0	0	0	0	0	0	**0**	32	0	0	0	0	1	0	**33**	15	2	0	0	0	0	0	**17**	39	2	0	0	0	3	0	**44**	4	0	0	0	0	0	0	**4**	31	2	0	0	0	1	0	**34**	**98**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**155**	**10**	**0**	**0**	**0**	**3**	**0**	**168**	**75**	**8**	**0**	**0**	**0**	**0**	**0**	**83**	**150**	**15**	**0**	**1**	**1**	**10**	**0**	**177**	**23**	**1**	**0**	**0**	**0**	**0**	**0**	**24**	**104**	**4**	**0**	**0**	**0**	**1**	**0**	**109**	**452**
1700-1715	0	0	0	0	0	0	0	**0**	35	1	0	0	0	2	0	**38**	27	2	0	0	0	0	0	**29**	50	2	0	0	0	3	0	**55**	10	1	0	0	0	0	0	**11**	36	0	0	0	0	0	0	**36**	**133**
1715-1730	0	0	0	0	0	0	0	**0**	53	6	0	0	0	1	0	**60**	25	1	0	0	0	0	0	**26**	37	3	0	0	0	2	2	**44**	7	1	0	0	0	0	0	**8**	21	0	0	0	0	0	0	**21**	**138**
1730-1745	0	0	0	0	0	0	0	**0**	56	3	0	0	0	1	0	**60**	21	2	0	0	0	0	0	**23**	34	4	0	0	0	2	0	**40**	4	0	0	0	0	0	0	**4**	29	0	0	0	0	0	0	**29**	**127**
1745-1800	0	0	0	0	0	0	0	**0**	49	1	0	0	0	2	0	**52**	14	2	0	0	0	0	0	**16**	38	4	0	0	0	3	0	**45**	7	0	0	0	0	0	0	**7**	26	0	0	0	0	0	0	**26**	**120**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**193**	**11**	**0**	**0**	**0**	**6**	**0**	**210**	**87**	**7**	**0**	**0**	**0**	**0**	**0**	**94**	**159**	**13**	**0**	**0**	**0**	**10**	**2**	**184**	**28**	**2**	**0**	**0**	**0**	**0**	**0**	**30**	**112**	**0**	**0**	**0**	**0**	**0**	**0**	**112**	**518**
1800-1815	0	0	0	0	0	0	0	**0**	41	2	0	0	0	1	0	**44**	16	2	0	0	0	0	0	**18**	42	2	0	0	0	3	1	**48**	11	0	0	0	0	0	0	**11**	31	0	0	0	0	0	0	**31**	**121**
1815-1830	1	0	0	0	0	0	0	**1**	35	2	0	0	0	1	0	**38**	15	1	0	0	0	0	0	**16**	38	2	0	0	0	2	1	**43**	8	1	0	0	0	0	0	**9**	20	4	0	0	0	0	0	**24**	**107**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**76**	**4**	**0**	**0**	**0**	**2**	**0**	**82**	**31**	**3**	**0**	**0**	**0**	**0**	**0**	**34**	**80**	**4**	**0**	**0**	**0**	**5**	**2**	**91**	**19**	**1**	**0**	**0**	**0**	**0**	**0**	**20**	**51**	**4**	**0**	**0**	**0**	**0**	**0**	**55**	**228**
3.5 Hour Totals (pm)	2	0	0	0	0	0	0	2	527	35	2	0	0	12	0	576	278	27	0	0	0	0	0	305	551	37	1	1	2	26	4	622	101	5	0	0	0	0	0	106	387	26	0	0	0	2	0	415	**1611**
Day Total	2	1	0	0	0	0	0	3	722	56	5	0	0	12	0	795	333	33	1	1	0	0	0	368	864	66	5	5	4	27	4	975	192	11	0	0	0	0	0	203	651	58	9	0	2	3	0	723	**2344**

	Arm B - Arm A								Arm B - Arm B								Arm B - Arm C								Arm B - Arm D								Arm B - Arm E								Arm B - Arm F								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	9	1	1	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	4	0	0	0	1	0	0	**5**	0	0	0	0	0	0	0	**0**	7	4	1	0	0	0	0	**12**	**16**
0745-0800	17	1	0	0	0	0	0	**18**	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	6	0	0	0	0	0	0	**6**	1	0	0	0	0	0	0	**1**	3	4	0	0	0	0	0	**7**	**28**
Hourly Total	**26**	**2**	**1**	**0**	**0**	**0**	**0**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**10**	**0**	**0**	**0**	**1**	**0**	**0**	**11**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**10**	**8**	**1**	**0**	**0**	**0**	**0**	**19**	**44**
0800-0815	20	1	1	0	1	0	0	**23**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	6	3	0	0	2	0	0	**11**	0	0	0	0	0	0	0	**0**	7	2	0	0	0	0	0	**9**	**36**
0815-0830	17	3	0	0	0	0	0	**20**	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	16	1	0	0	0	0	0	**17**	1	0	0	0	0	0	0	**1**	15	2	0	0	1	0	0	**18**	**41**
0830-0845	16	2	0	0	0	0	0	**18**	0	0	0	0	0	0	0	**0**	4	0	0	0	0	0	0	**4**	24	2	0	0	1	0	0	**27**	0	0	0	0	0	0	0	**0**	18	2	0	0	0	0	0	**20**	**49**
0845-0900	22	2	0	0	0	0	0	**24**	0	0	0	0	0	0	0	**0**	7	0	0	0	0	0	0	**7**	12	0	0	0	0	0	0	**12**	0	0	0	0	0	0	0	**0**	13	2	1	0	0	0	1	**17**	**43**
Hourly Total	**75**	**8**	**1**	**0**	**1**	**0**	**0**	**85**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**58**	**6**	**0**	**0**	**3**	**0**	**0**	**67**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**53**	**8**	**1**	**0**	**1**	**0**	**1**	**64**	**169**
0900-0915	12	3	0	0	0	0	0	**15**	0	0	0	0	0	0	0	**0**	7	0	0	0	0	0	0	**7**	11	2	1	0	0	0	0	**14**	1	0	0	0	0	0	0	**1**	9	1	0	0	0	0	0	**10**	**37**
0915-0930	16	0	0	0	0	0	0	**16**	0	0	0	0	0	0	0	**0**	5	0	0	0	0	0	1	**6**	7	1	0	0	1	0	0	**9**	0	0	0	0	0	0	0	**0**	8	4	0	0	1	0	0	**13**	**31**
Hourly Total	**28**	**3**	**0**	**0**	**0**	**0**	**0**	**31**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**1**	**13**	**18**	**3**	**1**	**0**	**1**	**0**	**0**	**23**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**17**	**5**	**0**	**0**	**1**	**0**	**0**	**23**	**68**
2 Hour Totals (am)	129	13	2	0	1	0	0	**145**	0	0	0	0	0	0	0	**0**	31	0	0	0	0	0	1	**32**	86	9	1	0	5	0	0	**101**	3	0	0	0	0	0	0	**3**	80	21	2	0	2	0	1	**106**	**281**
1500-1515	24	1	0	0	0	0	0	**25**	0	0	0	0	0	0	0	**0**	4	1	0	0	0	0	0	**5**	16	3	0	0	0	0	0	**19**	3	0	0	0	0	0	0	**3**	15	2	0	0	0	0	0	**17**	**52**
1515-1530	38	2	0	0	1	0	0	**41**	0	0	0	0	0	0	0	**0**	9	1	0	0	0	0	0	**10**	14	2	0	0	1	0	0	**17**	0	0	0	0	0	0	0	**0**	16	5	1	0	0	0	0	**22**	**68**
1530-1545	31	2	0	0	1	3	0	**37**	0	0	0	0	0	0	0	**0**	15	0	0	0	0	0	0	**15**	13	0	0	0	0	0	0	**13**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	**65**
1545-1600	30	0	1	0	0	0	0	**31**	0	0	0	0	0	0	0	**0**	8	1	0	0	0	0	0	**9**	6	0	0	0	0	0	0	**6**	2	0	0	0	0	0	0	**2**	21	0	0	0	0	0	0	**21**	**48**
Hourly Total	**123**	**5**	**1**	**0**	**2**	**3**	**0**	**134**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**36**	**3**	**0**	**0**	**0**	**0**	**0**	**39**	**49**	**5**	**0**	**0**	**1**	**0**	**0**	**55**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**54**	**7**	**1**	**0**	**0**	**0**	**0**	**62**	**233**
1600-1615	32	0	1	0	0	1	0	**34**	0	0	0	0	0	0	0	**0**	13	0	0	0	0	0	0	**13**	7	0	1	0	0	0	0	**8**	0	0	0	0	0	0	0	**0**	27	2	0	0	0	0	0	**29**	**55**
1615-1630	33	4	0	0	0	0	0	**37**	0	0	0	0	0	0	0	**0**	7	0	0	0	0	0	0	**7**	4	0	0	0	0	0	0	**4**	1	0	0	0	0	0	0	**1**	17	4	0	0	0	0	0	**21**	**49**
1630-1645	27	3	0	0	0	0	0	**30**	0	0	0	0	0	0	0	**0**	7	1	0	0	0	0	0	**8**	13	0	0	0	0	0	0	**13**	0	0	0	0	0	0	0	**0**	8	3	0	0	0	0	0	**11**	**51**
1645-1700	25	0	0	0	1	0	0	**26**	0	0	0	0	0	0	0	**0**	7	2	0	0	0	0	0	**9**	7	0	0	0	0	0	0	**7**	2	0	0	0	0	0	0	**2**	16	4	0	0	0	0	0	**20**	**44**
Hourly Total	**117**	**7**	**1**	**0**	**1**	**1**	**0**	**127**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**34**	**3**	**0**	**0**	**0**	**0**	**0**	**37**	**31**	**0**	**1**	**0**	**0**	**0**	**0**	**32**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**68**	**13**	**0**	**0**	**0**	**0**	**0**	**81**	**199**
1700-1715	31	2	0	0	0	0	0	**33**	0	0	0	0	0	0	0	**0**	12	0	0	0	0	0	0	**12**	14	1	0	0	1	0	1	**17**	1	0	0	0	0	0	0	**1**	13	4	0	0	0	0	0	**17**	**63**
1715-1730	11	3	0	0	1	0	0	**15**	0	0	0	0	0	0	0	**0**	12	1	0	0	0	0	0	**13**	8	0	0	0	0	0	0	**8**	0	0	0	0	0	0	0	**0**	19	2	0	0	0	0	0	**21**	**36**
1730-1745	15	1	0	0	0	0	0	**16**	0	0	0	0	0	0	0	**0**	11	0	0	0	0	0	0	**11**	18	0	0	0	0	0	0	**18**	0	0	0	0	0	0	0	**0**	16	2	0	0	0	0	0	**18**	**45**
1745-1800	30	0	0	0	1	0	0	**31**	0	0	0	0	0	0	0	**0**	8	1	0	0	0	0	0	**9**	17	0	0	0	1	0	0	**18**	1	0	0	0	0	0	0	**1**	15	1	0	0	0	0	0	**16**	**59**
Hourly Total	**87**	**6**	**0**	**0**	**0**	**2**	**0**	**95**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**43**	**2**	**0**	**0**	**0**	**0**	**0**	**45**	**57**	**1**	**0**	**0**	**2**	**0**	**1**	**61**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**63**	**9**	**0**	**0**	**0**	**0**	**0**	**72**	**203**
1800-1815	23	3	0	0	0	0	0	**26**	0	0	0	0	0	0	0	**0**	12	0	0	0	0	1	0	**13**	11	0	0	0	0	1	0	**12**	1	0	0	0	0	0	0	**1**	11	2	0	0	0	0	0	**13**	**52**
1815-1830	27	2	0	0	0	1	0	**30**	0	0	0	0	0	0	0	**0**	7	0	0	0	0	0	0	**7**	15	0	0	0	0	0	0	**15**	0	0	0	0	0	0	0	**0**	14	1	0	0	0	0	0	**15**	**52**
Hourly Total	**50**	**5**	**0**	**0**	**0**	**1**	**0**	**56**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**0**	**0**	**0**	**0**	**1**	**0**	**20**	**26**	**0**	**0**	**0**	**0**	**1**	**0**	**27**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**25**	**3**	**0**	**0**	**0**	**0**	**0**	**28**	**104**
3.5 Hour Totals (pm)	377	23	2	0	3	7	0	412	0	0	0	0	0	0	0	0	132	8	0	0	0	1	0	141	163	6	1	0	3	1	1	175	11	0	0	0	0	0	0	11	210	32	1	0	0	0	0	243	**739**
Day Total	506	36	4	0	4	7	0	557	0	0	0	0	0	0	0	0	163	8	0	0	0	1	1	173	249	15	2	0	8	1	1	276	14	0	0	0	0	0	0	14	290	53	3	0	2	0	1	349	**1020**

	Arm C - Arm A								Arm C - Arm B								Arm C - Arm C								Arm C - Arm D								Arm C - Arm E								Arm C - Arm F								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**0**
0745-0800	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**1**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
0800-0815	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**2**
0815-0830	9	0	0	0	0	0	0	**9**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**14**
0830-0845	7	1	0	0	0	0	0	**8**	7	0	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	4	0	0	0	0	0	0	**4**	**17**
0845-0900	14	2	0	1	0	0	0	**17**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	**1**	**19**
Hourly Total	**30**	**3**	**0**	**1**	**0**

	Arm D - Arm A								Arm D - Arm B								Arm D - Arm C								Arm D - Arm D								Arm D - Arm E								Arm D - Arm F								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	16	5	1	0	0	0	0	**22**	1	0	2	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	**25**
0745-0800	19	4	1	1	0	0	1	**26**	2	1	0	0	0	0	0	**3**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	**1**	**30**
Hourly Total	**35**	**9**	**2**	**1**	**0**	**0**	**1**	**48**	**3**	**1**	**2**	**0**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**55**
0800-0815	21	4	1	0	1	0	0	**27**	6	2	0	0	0	0	0	**8**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**37**
0815-0830	31	5	1	0	0	1	0	**38**	12	3	1	0	0	0	0	**16**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	1	0	**1**	**56**
0830-0845	64	5	0	0	0	0	0	**69**	17	1	0	0	0	0	0	**18**	8	0	0	0	0	0	0	**8**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**95**
0845-0900	46	4	0	0	0	0	0	**50**	5	3	0	0	0	0	0	**8**	4	0	0	0	0	0	0	**4**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	**63**
Hourly Total	**162**	**18**	**2**	**0**	**1**	**1**	**0**	**184**	**40**	**9**	**1**	**0**	**0**	**0**	**0**	**50**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**251**
0900-0915	31	4	1	1	0	0	0	**37**	12	3	0	0	0	1	0	**16**	3	0	0	0	0	0	0	**3**	1	0	0	0	0	0	0	**1**	2	0	0	0	0	0	0	**2**	7	2	0	0	0	0	0	**9**	**59**
0915-0930	28	6	0	0	0	0	0	**34**	9	3	0	0	0	0	0	**12**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	1	2	0	0	0	0	0	**3**	**51**
Hourly Total	**59**	**10**	**1**	**1**	**0**	**0**	**0**	**71**	**21**	**6**	**0**	**0**	**0**	**1**	**0**	**28**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**8**	**4**	**0**	**0**	**0**	**0**	**0**	**12**	**110**
2 Hour Totals (am)	**256**	**37**	**5**	**2**	**1**	**1**	**1**	**303**	**64**	**16**	**3**	**0**	**0**	**1**	**0**	**84**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**12**	**5**	**0**	**0**	**0**	**0**	**1**	**18**	**416**
1500-1515	64	6	0	0	1	0	0	**71**	32	3	0	0	1	0	0	**36**	10	0	0	0	0	0	0	**10**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	2	0	0	0	0	0	0	**2**	**118**
1515-1530	61	5	2	0	0	0	0	**68**	13	1	0	0	0	0	0	**14**	6	0	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	1	0	0	0	0	0	0	**1**	**91**
1530-1545	40	5	0	0	0	1	0	**46**	11	0	0	0	0	0	0	**11**	8	0	0	0	0	0	0	**8**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	1	**3**	**65**
1545-1600	53	5	0	0	0	0	0	**58**	12	1	1	0	0	1	0	**15**	5	1	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	1	1	0	0	0	0	0	**2**	**81**
Hourly Total	**218**	**21**	**2**	**0**	**1**	**1**	**0**	**243**	**68**	**5**	**1**	**0**	**1**	**1**	**0**	**76**	**29**	**1**	**0**	**0**	**0**	**0**	**0**	**30**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**6**	**1**	**0**	**0**	**0**	**0**	**1**	**8**	**355**
1600-1615	41	2	1	0	0	2	0	**46**	14	2	0	0	0	0	0	**16**	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	3	0	0	0	0	0	0	**3**	**70**
1615-1630	25	2	0	0	0	3	0	**30**	14	0	0	0	0	0	0	**14**	3	1	0	0	0	0	0	**4**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**48**
1630-1645	42	3	2	1	1	1	0	**50**	11	2	1	0	0	0	0	**14**	9	0	0	0	0	0	0	**9**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**73**
1645-1700	45	1	0	0	1	0	0	**47**	11	0	0	0	0	0	0	**11**	3	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**62**
Hourly Total	**153**	**8**	**3**	**1**	**2**	**6**	**0**	**173**	**50**	**4**	**1**	**0**	**0**	**0**	**0**	**55**	**20**	**1**	**0**	**0**	**0**	**0**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**253**
1700-1715	50	3	1	0	0	2	0	**56**	9	1	0	0	0	0	0	**10**	4	0	0	0	0	0	0	**4**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	1	1	0	0	0	0	0	**2**	**72**
1715-1730	37	2	0	0	0	4	0	**43**	11	3	1	0	0	0	0	**15**	6	0	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	**65**
1730-1745	42	1	1	0	0	1	0	**45**	12	0	0	0	0	1	0	**13**	7	0	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	**66**
1745-1800	34	2	0	0	0	0	0	**36**	16	2	0	0	0	0	0	**18**	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**59**
Hourly Total	**163**	**8**	**2**	**0**	**0**	**7**	**0**	**180**	**48**	**6**	**1**	**0**	**0**	**1**	**0**	**56**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**5**	**262**
1800-1815	27	0	0	0	1	0	0	**28**	10	2	0	0	0	0	0	**12**	4	1	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	2	1	0	0	0	0	0	**3**	**45**
1815-1830	36	2	0	0	0	1	0	**39**	18	0	0	0	0	0	2	**20**	3	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	**1**	1	2	0	0	0	0	2	**5**	**63**
Hourly Total	**63**	**2**	**0**	**0**	**0**	**2**	**0**	**67**	**28**	**2**	**0**	**0**	**0**	**0**	**2**	**32**	**7**	**1**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**3**	**0**	**0**	**0**	**0**	**2**	**8**	**108**
3.5 Hour Totals (pm)	**597**	**39**	**7**	**1**	**3**	**16**	**0**	**663**	**194**	**17**	**3**	**0**	**1**	**2**	**2**	**219**	**78**	**3**	**0**	**0**	**0**	**0**	**0**	**81**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**1**	**0**	**0**	**0**	**0**	**0**	**15**	**18**	**5**	**0**	**0**	**0**	**0**	**3**	**26**	**978**
Day Total	**853**	**76**	**12**	**3**	**4**	**17**	**1**	**966**	**258**	**33**	**6**	**0**	**1**	**3**	**2**	**303**	**100**	**3**	**0**	**0**	**0**	**0**	**0**	**103**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**20**	**1**	**0**	**0**	**0**	**0**	**0**	**21**	**30**	**10**	**0**	**0**	**0**	**0**	**4**	**44**	**1394**

	Arm E - Arm A								Arm E - Arm B								Arm E - Arm C								Arm E - Arm D								Arm E - Arm E								Arm E - Arm F								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	3	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	**1**	**3**
0745-0800	4	0	0	0	0	0	0	**4**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	**1**	**4**
Hourly Total	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**7**
0800-0815	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**3**
0815-0830	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**2**
0830-0845	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**4**
0845-0900	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	1	1	0	0	0	0	0	**2**	**2**
Hourly Total	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**11**
0900-0915	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	3	1	0	0	0	0	0	**4**	**5**
0915-0930	6	0	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	**1**	**8**
Hourly Total	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**2**	**0**	**0**	**0**	**0**	**0**	**5**	**13**
2 Hour Totals (am)	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**5**	**0**	**0**	**0**	**0**	**0**	**9**	**31**
1500-1515	15	0	0	0	0	0	0	**15**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**20**
1515-1530	21	1	0	0	0	0	0	**22**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	1	1	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**26**
1530-1545	13	0	0	0	0	0	0	**13**	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**16**
1545-1600	9	1	0	0	0	0	0	**10**	1	0	0	0	0	0	1	**2**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**13**
Hourly Total	**58**	**2**	**0**	**0**	**0**	**0**	**0**	**60**	**5**	**1**	**0**	**0**	**0**	**0**	**1**	**7**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**75**
1600-1615	17	0	0	0	0	0	0	**17**	3	0	0	0	0	1	0	**4**	2	0	0	0	0	0	0	**2**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**25**
1615-1630	13	0	0	0	0	0	0	**13**	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	**16**
1630-1645	7	1	0	0	0	0	0	**8**	1	1	0	0	0	0	0	**2**	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	**12**

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| | | |

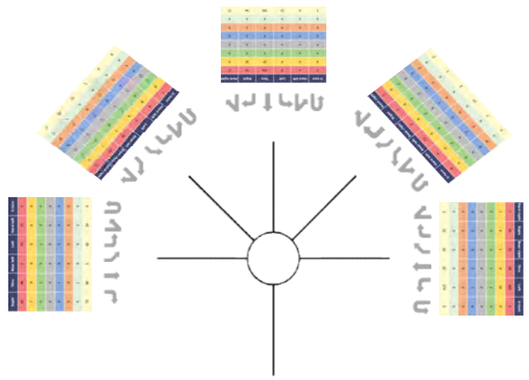
Seventside
Transportation Data Collection

Summary	
Project	Northlevel
Site name	Site 03
Movement Code	S1:S1:S1
Lanes and Movements	All Motorised Lanes & Movements
Site Size	15.0
Start Time	07:30
End Time	19:15
Interval	Site 03
Latitude and Longitude	51.478/.5546705456 -3.7016246979331O1

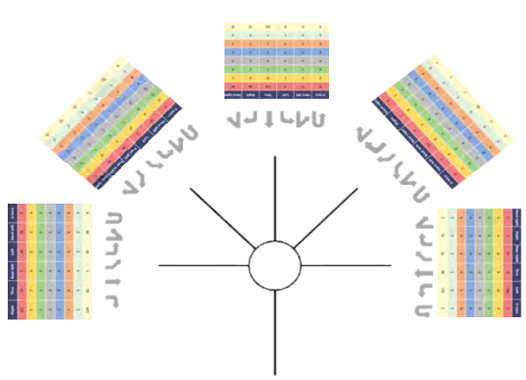
Data Peak	Start	End
AM Peak	2025-07-09 08:30:00	2025-07-09 08:30:00
PM Peak	2025-07-09 15:00:00	2025-07-09 16:00:00

Turning Movement Data Plot

AM Peak Turning Movement Data Summary



PM Peak Turning Movement Data Summary



Severnside
Transportation Data Collection

SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 3

	Arm A - Arm A								Arm A - Arm B								Arm A - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	0	0	0	0	0	0	0	**0**	12	2	2	0	0	0	0	**16**	3	0	0	0	0	0	1	**4**	**20**
0745-0800	0	0	0	0	0	0	0	**0**	15	3	0	0	0	0	0	**18**	3	1	0	0	0	0	0	**4**	**22**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**5**	**2**	**0**	**0**	**0**	**0**	**34**	**6**	**1**	**0**	**0**	**0**	**0**	**1**	**8**	**42**
0800-0815	0	0	0	0	0	0	0	**0**	21	3	1	0	0	0	1	**26**	2	0	0	0	0	0	0	**2**	**28**
0815-0830	0	0	0	0	0	0	0	**0**	33	2	0	0	0	0	1	**36**	5	1	2	0	0	0	0	**8**	**44**
0830-0845	0	0	0	0	0	0	0	**0**	40	3	0	0	0	0	0	**43**	3	0	0	0	0	0	2	**5**	**48**
0845-0900	1	0	0	0	0	0	0	**1**	39	1	0	0	0	0	0	**40**	9	0	0	0	0	0	0	**9**	**50**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**133**	**9**	**1**	**0**	**0**	**0**	**2**	**145**	**19**	**1**	**2**	**0**	**0**	**0**	**2**	**24**	**170**
0900-0915	1	0	0	0	0	0	0	**1**	25	3	1	0	0	0	0	**29**	7	0	0	0	0	0	0	**7**	**37**
0915-0930	0	0	0	0	0	0	0	**0**	28	2	0	0	0	0	1	**31**	4	0	0	0	0	0	1	**5**	**36**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**53**	**5**	**1**	**0**	**0**	**0**	**1**	**60**	**11**	**0**	**0**	**0**	**0**	**0**	**1**	**12**	**73**
2 Hour Totals (am)	2	0	0	0	0	0	0	**2**	213	19	4	0	0	0	3	**239**	36	2	2	0	0	0	4	**44**	**285**
1500-1515	0	0	0	0	0	0	0	**0**	31	4	0	0	0	0	1	**36**	5	0	0	0	0	0	1	**6**	**42**
1515-1530	2	0	0	0	0	0	0	**2**	42	7	0	0	0	0	0	**49**	13	2	0	0	0	0	0	**15**	**66**
1530-1545	1	0	0	0	0	0	0	**1**	34	1	0	0	0	1	1	**37**	2	1	0	0	0	0	0	**3**	**41**
1545-1600	0	0	0	0	0	0	0	**0**	38	1	0	0	0	0	0	**39**	8	0	0	0	0	0	0	**8**	**47**
Hourly Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**145**	**13**	**0**	**0**	**0**	**1**	**2**	**161**	**28**	**3**	**0**	**0**	**0**	**0**	**1**	**32**	**196**
1600-1615	1	0	0	0	0	0	0	**1**	43	4	1	0	0	1	0	**49**	8	0	0	0	0	0	0	**8**	**58**
1615-1630	0	0	0	0	0	0	0	**0**	29	5	0	0	0	0	0	**34**	8	3	0	0	0	0	0	**11**	**45**
1630-1645	0	0	0	0	0	0	0	**0**	27	5	0	0	0	0	0	**32**	3	1	0	0	0	0	0	**4**	**36**
1645-1700	1	0	0	0	0	0	0	**1**	25	1	0	0	0	0	0	**26**	6	0	0	0	0	0	0	**6**	**33**
Hourly Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**124**	**15**	**1**	**0**	**0**	**1**	**0**	**141**	**25**	**4**	**0**	**0**	**0**	**0**	**0**	**29**	**172**
1700-1715	1	0	0	0	0	0	0	**1**	34	2	0	0	0	0	1	**37**	4	1	1	0	0	0	0	**6**	**44**
1715-1730	0	0	0	0	0	0	0	**0**	34	3	0	0	0	1	0	**38**	7	4	0	0	0	0	0	**11**	**49**
1730-1745	2	1	0	0	0	0	0	**3**	28	1	0	0	0	0	1	**30**	7	0	0	0	0	0	0	**7**	**40**
1745-1800	0	0	0	0	0	0	0	**0**	46	0	0	0	0	1	0	**47**	11	2	0	0	0	0	0	**13**	**60**
Hourly Total	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	**142**	**6**	**0**	**0**	**0**	**2**	**2**	**152**	**29**	**7**	**1**	**0**	**0**	**0**	**0**	**37**	**193**
1800-1815	2	0	0	0	0	0	0	**2**	37	3	0	0	0	2	0	**42**	5	0	0	0	0	0	0	**5**	**49**
1815-1830	2	0	0	0	0	0	0	**2**	44	4	0	0	0	0	0	**48**	8	1	0	0	0	0	0	**9**	**59**
Hourly Total	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**81**	**7**	**0**	**0**	**0**	**2**	**0**	**90**	**13**	**1**	**0**	**0**	**0**	**0**	**0**	**14**	**108**
3.5 Hour Totals (pm)	12	1	0	0	0	0	0	13	492	41	1	0	0	6	4	544	95	15	1	0	0	0	1	112	**669**
Day Total	14	1	0	0	0	0	0	15	705	60	5	0	0	6	7	783	131	17	3	0	0	0	5	156	954

	Arm B - Arm A								Arm B - Arm B								Arm B - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	7	2	2	0	0	1	0	**12**	0	0	0	0	0	0	0	**0**	9	3	1	0	0	0	0	**13**	**25**
0745-0800	13	3	0	0	0	0	0	**16**	0	0	0	0	0	0	0	**0**	8	0	1	0	1	0	0	**10**	**26**
Hourly Total	**20**	**5**	**2**	**0**	**0**	**1**	**0**	**28**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**3**	**2**	**0**	**1**	**0**	**0**	**23**	**51**

0800-0815	17	6	0	0	0	0	0	**23**	2	0	0	0	0	0	0	**2**	6	1	0	0	1	0	0	**8**	**33**
0815-0830	29	5	1	0	0	0	0	**35**	1	1	0	0	0	0	0	**2**	18	3	0	0	1	0	0	**22**	**59**
0830-0845	34	2	0	0	0	0	0	**36**	0	0	0	0	0	0	0	**0**	39	4	0	0	0	0	0	**43**	**79**
0845-0900	25	1	0	0	0	0	0	**26**	1	0	0	0	0	0	1	**2**	23	5	0	0	1	0	1	**30**	**58**
Hourly Total	**105**	**14**	**1**	**0**	**0**	**0**	**0**	**120**	**4**	**1**	**0**	**0**	**0**	**0**	**1**	**6**	**86**	**13**	**0**	**0**	**3**	**0**	**1**	**103**	**229**
0900-0915	21	3	0	0	0	1	0	**25**	2	0	0	0	0	0	0	**2**	30	2	0	0	0	0	1	**33**	**60**
0915-0930	30	4	1	0	0	0	1	**36**	1	0	0	0	0	0	2	**3**	25	2	1	0	1	0	0	**29**	**68**
Hourly Total	**51**	**7**	**1**	**0**	**0**	**1**	**1**	**61**	**3**	**0**	**0**	**0**	**0**	**0**	**2**	**5**	**55**	**4**	**1**	**0**	**1**	**0**	**1**	**62**	**128**
2 Hour Totals (am)	176	26	4	0	0	2	1	**209**	7	1	0	0	0	0	3	**11**	158	20	3	0	5	0	2	**188**	**408**
1500-1515	55	4	1	0	0	0	0	**60**	5	0	0	0	0	0	0	**5**	43	2	0	0	1	2	0	**48**	**113**
1515-1530	34	2	0	0	0	0	0	**36**	2	0	0	0	0	0	0	**2**	26	8	0	0	2	0	0	**36**	**74**
1530-1545	26	2	0	0	0	0	0	**28**	1	0	0	0	0	0	0	**1**	28	2	0	0	0	1	3	**34**	**63**
1545-1600	33	2	0	0	0	1	1	**37**	6	0	0	0	0	0	0	**6**	29	4	2	0	0	0	1	**36**	**79**
Hourly Total	**148**	**10**	**1**	**0**	**0**	**1**	**1**	**161**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**126**	**16**	**2**	**0**	**3**	**3**	**4**	**154**	**329**
1600-1615	59	3	0	0	0	1	1	**64**	5	0	0	0	0	0	0	**5**	28	2	0	0	0	0	0	**30**	**99**
1615-1630	45	4	0	0	0	0	0	**49**	2	0	0	0	0	0	0	**2**	27	5	0	0	0	0	1	**33**	**84**
1630-1645	32	4	1	0	0	0	1	**38**	3	0	0	0	0	0	0	**3**	23	3	0	0	0	0	0	**26**	**67**
1645-1700	29	0	0	0	0	0	1	**30**	4	0	0	0	0	0	0	**4**	25	3	0	0	0	0	0	**28**	**62**
Hourly Total	**165**	**11**	**1**	**0**	**0**	**1**	**3**	**181**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**103**	**13**	**0**	**0**	**0**	**0**	**1**	**117**	**312**
1700-1715	39	2	0	0	0	0	0	**41**	9	1	0	0	0	0	0	**10**	32	1	0	0	0	0	2	**35**	**86**
1715-1730	38	4	1	0	0	1	0	**44**	4	0	0	0	0	0	0	**4**	36	3	0	0	1	1	0	**41**	**89**
1730-1745	46	3	0	0	0	1	0	**50**	5	0	0	0	0	0	0	**5**	35	2	0	0	0	1	0	**38**	**93**
1745-1800	52	2	0	0	0	0	1	**55**	4	0	0	0	0	0	0	**4**	32	1	0	0	1	0	1	**35**	**94**
Hourly Total	**175**	**11**	**1**	**0**	**0**	**2**	**1**	**190**	**22**	**1**	**0**	**0**	**0**	**0**	**0**	**23**	**135**	**7**	**0**	**0**	**2**	**2**	**3**	**149**	**362**
1800-1815	27	1	0	0	0	2	0	**30**	1	0	0	0	0	0	0	**1**	26	3	0	0	0	1	0	**30**	**61**
1815-1830	32	5	0	0	0	2	2	**41**	8	0	0	0	0	0	0	**8**	29	1	0	0	0	2	0	**32**	**81**
Hourly Total	**59**	**6**	**0**	**0**	**0**	**4**	**2**	**71**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**55**	**4**	**0**	**0**	**0**	**3**	**0**	**62**	**142**
3.5 Hour Totals (pm)	547	38	3	0	0	8	7	603	59	1	0	0	0	0	0	60	419	40	2	0	5	8	8	482	**1145**
Day Total	723	64	7	0	0	10	8	812	66	2	0	0	0	0	3	71	577	60	5	0	10	8	10	670	1553

	Arm C - Arm A								Arm C - Arm B								Arm C - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	1	0	0	0	0	0	0	**1**	11	6	1	0	0	0	0	**18**	0	0	0	0	0	0	0	**0**	**19**
0745-0800	3	1	0	0	0	0	0	**4**	16	2	0	0	0	0	2	**20**	0	0	0	0	0	0	0	**0**	**24**
Hourly Total	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**5**	**27**	**8**	**1**	**0**	**0**	**0**	**2**	**38**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**43**
0800-0815	7	0	0	0	0	0	0	**7**	15	5	0	0	3	0	0	**23**	0	0	0	0	0	0	0	**0**	**30**
0815-0830	3	3	0	0	0	0	0	**6**	33	3	0	0	1	0	0	**37**	0	0	0	0	0	0	0	**0**	**43**
0830-0845	8	0	0	0	0	0	0	**8**	38	4	0	0	1	0	2	**45**	0	0	0	0	0	0	0	**0**	**53**
0845-0900	8	2	0	0	0	0	0	**10**	19	1	1	0	0	0	1	**22**	0	0	0	0	0	0	0	**0**	**32**
Hourly Total	**26**	**5**	**0**	**0**	**0**	**0**	**0**	**31**	**105**	**13**	**1**	**0**	**5**	**0**	**3**	**127**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**158**
0900-0915	3	0	0	0	0	0	0	**3**	21	7	0	0	0	1	0	**29**	1	0	0	0	0	0	0	**1**	**33**
0915-0930	9	0	1	0	0	0	0	**10**	15	2	0	0	2	0	0	**19**	0	0	0	0	0	0	0	**0**	**29**
Hourly Total	**12**	**0**	**1**	**0**	**0**	**0**	**0**	**13**	**36**	**9**	**0**	**0**	**2**	**1**	**0**	**48**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**62**

2 Hour Totals (am)	42	6	1	0	0	0	0	**49**	168	30	2	0	7	1	5	**213**	1	0	0	0	0	0	0	**1**	**263**					
1500-1515	9	0	0	0	0	0	4	**13**	15	4	0	0	0	0	0	**19**	0	1	0	0	0	0	0	**1**	**33**					
1515-1530	5	1	0	0	0	0	4	**10**	26	6	1	0	1	0	0	**34**	0	0	0	0	0	0	0	**0**	**44**					
1530-1545	6	2	0	0	0	0	1	**9**	28	3	0	0	1	0	0	**32**	0	0	0	0	0	0	0	**0**	**41**					
1545-1600	4	1	0	0	0	0	1	**6**	25	0	1	0	0	1	0	**27**	1	0	0	0	0	0	0	**1**	**34**					
Hourly Total	**24**	**4**	**0**	**0**	**0**	**0**	**10**	**38**	**94**	**13**	**2**	**0**	**2**	**1**	**0**	**112**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**152**					
1600-1615	19	0	0	0	0	0	2	**21**	27	1	1	0	0	0	1	**30**	1	0	0	0	0	0	0	**1**	**52**					
1615-1630	9	0	0	0	0	0	0	**9**	29	3	0	0	0	0	0	**32**	0	0	0	0	0	0	0	**0**	**41**					
1630-1645	6	1	0	0	0	0	0	**7**	23	3	0	0	0	0	0	**26**	0	0	0	0	0	0	0	**0**	**33**					
1645-1700	6	3	0	0	0	0	1	**10**	29	5	0	0	1	0	0	**35**	1	0	0	0	0	0	0	**1**	**46**					
Hourly Total	**40**	**4**	**0**	**0**	**0**	**0**	**3**	**47**	**108**	**12**	**1**	**0**	**1**	**0**	**1**	**123**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**172**					
1700-1715	4	1	0	0	0	0	0	**5**	31	4	0	0	1	0	0	**36**	0	0	0	0	0	0	0	**0**	**41**					
1715-1730	13	1	0	0	0	0	1	**15**	21	4	1	0	0	0	0	**26**	1	0	0	0	0	0	0	**1**	**42**					
1730-1745	6	2	0	0	0	0	1	**9**	28	6	0	0	0	0	0	**34**	0	0	0	0	0	0	0	**0**	**43**					
1745-1800	16	0	0	0	0	1	0	**17**	26	1	0	0	1	0	0	**28**	0	0	0	0	0	0	0	**0**	**45**					
Hourly Total	**39**	**4**	**0**	**0**	**0**	**1**	**2**	**46**	**106**	**15**	**1**	**0**	**2**	**0**	**0**	**124**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**171**					
1800-1815	5	1	0	0	0	0	0	**6**	31	3	0	0	0	0	0	**34**	0	0	0	0	0	0	0	**0**	**40**					
1815-1830	5	0	0	0	0	0	0	**5**	31	0	0	0	0	1	1	**33**	1	0	0	0	0	0	0	**1**	**39**					
Hourly Total	**10**	**1**	**0**	**0**	**0**	**0**	**0**	**11**	**62**	**3**	**0**	**0**	**0**	**1**	**1**	**67**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**79**					
3.5 Hour Totals (pm)	113	13	0	0	0	1	15	142	370	43	4	0	5	2	2	426	5	1	0	0	0	0	0	6	**574**					
Day Total	155	19	1	0	0	1	15	191	538	73	6	0	12	3	7	639	6	1	0	0	0	0	0	7	837					

	Origin - Arm A								Origin - Arm B								Origin - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	15	2	2	0	0	0	1	**20**	16	5	3	0	0	1	0	**25**	12	6	1	0	0	0	0	**19**	**64**
0745-0800	18	4	0	0	0	0	0	**22**	21	3	1	0	1	0	0	**26**	19	3	0	0	0	0	2	**24**	**72**
Hourly Total	**33**	**6**	**2**	**0**	**0**	**0**	**1**	**42**	**37**	**8**	**4**	**0**	**1**	**1**	**0**	**51**	**31**	**9**	**1**	**0**	**0**	**0**	**2**	**43**	**136**
0800-0815	23	3	1	0	0	0	1	**28**	25	7	0	0	1	0	0	**33**	22	5	0	0	3	0	0	**30**	**91**
0815-0830	38	3	2	0	0	0	1	**44**	48	9	1	0	1	0	0	**59**	36	6	0	0	1	0	0	**43**	**146**
0830-0845	43	3	0	0	0	0	2	**48**	73	6	0	0	0	0	0	**79**	46	4	0	0	1	0	2	**53**	**180**
0845-0900	49	1	0	0	0	0	0	**50**	49	6	0	0	1	0	2	**58**	27	3	1	0	0	0	1	**32**	**140**
Hourly Total	**153**	**10**	**3**	**0**	**0**	**0**	**4**	**170**	**195**	**28**	**1**	**0**	**3**	**0**	**2**	**229**	**131**	**18**	**1**	**0**	**5**	**0**	**3**	**158**	**557**
0900-0915	33	3	1	0	0	0	0	**37**	53	5	0	0	0	1	1	**60**	25	7	0	0	0	1	0	**33**	**130**
0915-0930	32	2	0	0	0	0	2	**36**	56	6	2	0	1	0	3	**68**	24	2	1	0	2	0	0	**29**	**133**
Hourly Total	**65**	**5**	**1**	**0**	**0**	**0**	**2**	**73**	**109**	**11**	**2**	**0**	**1**	**1**	**4**	**128**	**49**	**9**	**1**	**0**	**2**	**1**	**0**	**62**	**263**
2 Hour Totals (am)	251	21	6	0	0	0	7	**285**	341	47	7	0	5	2	6	**408**	211	36	3	0	7	1	5	**263**	**956**
1500-1515	36	4	0	0	0	0	2	**42**	103	6	1	0	1	2	0	**113**	24	5	0	0	0	0	4	**33**	**188**
1515-1530	57	9	0	0	0	0	0	**66**	62	10	0	0	2	0	0	**74**	31	7	1	0	1	0	4	**44**	**184**
1530-1545	37	2	0	0	0	1	1	**41**	55	4	0	0	0	1	3	**63**	34	5	0	0	1	0	1	**41**	**145**
1545-1600	46	1	0	0	0	0	0	**47**	68	6	2	0	0	1	2	**79**	30	1	1	0	0	1	1	**34**	**160**
Hourly Total	**176**	**16**	**0**	**0**	**0**	**1**	**3**	**196**	**288**	**26**	**3**	**0**	**3**	**4**	**5**	**329**	**119**	**18**	**2**	**0**	**2**	**1**	**10**	**152**	**677**
1600-1615	52	4	1	0	0	1	0	**58**	92	5	0	0	0	1	1	**99**	47	1	1	0	0	0	3	**52**	**209**

1615-1630	37	8	0	0	0	0	0	**45**	74	9	0	0	0	0	1	**84**	38	3	0	0	0	0	0	**41**	**170**
1630-1645	30	6	0	0	0	0	0	**36**	58	7	1	0	0	0	1	**67**	29	4	0	0	0	0	0	**33**	**136**
1645-1700	32	1	0	0	0	0	0	**33**	58	3	0	0	0	0	1	**62**	36	8	0	0	1	0	1	**46**	**141**
Hourly Total	**151**	**19**	**1**	**0**	**0**	**1**	**0**	**172**	**282**	**24**	**1**	**0**	**0**	**1**	**4**	**312**	**150**	**16**	**1**	**0**	**1**	**0**	**4**	**172**	**656**
1700-1715	39	3	1	0	0	0	1	**44**	80	4	0	0	0	0	2	**86**	35	5	0	0	1	0	0	**41**	**171**
1715-1730	41	7	0	0	0	1	0	**49**	78	7	1	0	1	2	0	**89**	35	5	1	0	0	0	1	**42**	**180**
1730-1745	37	2	0	0	0	0	1	**40**	86	5	0	0	0	2	0	**93**	34	8	0	0	0	0	1	**43**	**176**
1745-1800	57	2	0	0	0	1	0	**60**	88	3	0	0	1	0	2	**94**	42	1	0	0	1	1	0	**45**	**199**
Hourly Total	**174**	**14**	**1**	**0**	**0**	**2**	**2**	**193**	**332**	**19**	**1**	**0**	**2**	**4**	**4**	**362**	**146**	**19**	**1**	**0**	**2**	**1**	**2**	**171**	**726**
1800-1815	44	3	0	0	0	2	0	**49**	54	4	0	0	0	3	0	**61**	36	4	0	0	0	0	0	**40**	**150**
1815-1830	54	5	0	0	0	0	0	**59**	69	6	0	0	0	4	2	**81**	37	0	0	0	0	1	1	**39**	**179**
Hourly Total	**98**	**8**	**0**	**0**	**0**	**2**	**0**	**108**	**123**	**10**	**0**	**0**	**0**	**7**	**2**	**142**	**73**	**4**	**0**	**0**	**0**	**1**	**1**	**79**	**329**
3.5 Hour Totals (pm)	599	57	2	0	0	6	5	669	1025	79	5	0	5	16	15	1145	488	57	4	0	5	3	17	574	**2388**
Day Total	850	78	8	0	0	6	12	954	1366	126	12	0	10	18	21	1553	699	93	7	0	12	4	22	837	3344

	Destination - Arm A								Destination - Arm B								Destination - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	8	2	2	0	0	1	0	**13**	23	8	3	0	0	0	0	**34**	12	3	1	0	0	0	1	**17**	**64**
0745-0800	16	4	0	0	0	0	0	**20**	31	5	0	0	0	0	2	**38**	11	1	1	0	1	0	0	**14**	**72**
Hourly Total	**24**	**6**	**2**	**0**	**0**	**1**	**0**	**33**	**54**	**13**	**3**	**0**	**0**	**0**	**2**	**72**	**23**	**4**	**2**	**0**	**1**	**0**	**1**	**31**	**136**
0800-0815	24	6	0	0	0	0	0	**30**	38	8	1	0	3	0	1	**51**	8	1	0	0	1	0	0	**10**	**91**
0815-0830	32	8	1	0	0	0	0	**41**	67	6	0	0	1	0	1	**75**	23	4	2	0	1	0	0	**30**	**146**
0830-0845	42	2	0	0	0	0	0	**44**	78	7	0	0	1	0	2	**88**	42	4	0	0	0	0	2	**48**	**180**
0845-0900	34	3	0	0	0	0	0	**37**	59	2	1	0	0	0	2	**64**	32	5	0	0	1	0	1	**39**	**140**
Hourly Total	**132**	**19**	**1**	**0**	**0**	**0**	**0**	**152**	**242**	**23**	**2**	**0**	**5**	**0**	**6**	**278**	**105**	**14**	**2**	**0**	**3**	**0**	**3**	**127**	**557**
0900-0915	25	3	0	0	0	1	0	**29**	48	10	1	0	0	1	0	**60**	38	2	0	0	0	0	1	**41**	**130**
0915-0930	39	4	2	0	0	0	1	**46**	44	4	0	0	2	0	3	**53**	29	2	1	0	1	0	1	**34**	**133**
Hourly Total	**64**	**7**	**2**	**0**	**0**	**1**	**1**	**75**	**92**	**14**	**1**	**0**	**2**	**1**	**3**	**113**	**67**	**4**	**1**	**0**	**1**	**0**	**2**	**75**	**263**
2 Hour Totals (am)	220	32	5	0	0	2	1	**260**	388	50	6	0	7	1	11	**463**	195	22	5	0	5	0	6	**233**	**956**
1500-1515	64	4	1	0	0	0	4	**73**	51	8	0	0	0	0	1	**60**	48	3	0	0	1	2	1	**55**	**188**
1515-1530	41	3	0	0	0	0	4	**48**	70	13	1	0	1	0	0	**85**	39	10	0	0	2	0	0	**51**	**184**
1530-1545	33	4	0	0	0	0	1	**38**	63	4	0	0	1	1	1	**70**	30	3	0	0	0	1	3	**37**	**145**
1545-1600	37	3	0	0	0	1	2	**43**	69	1	1	0	0	1	0	**72**	38	4	2	0	0	0	1	**45**	**160**
Hourly Total	**175**	**14**	**1**	**0**	**0**	**1**	**11**	**202**	**253**	**26**	**2**	**0**	**2**	**2**	**2**	**287**	**155**	**20**	**2**	**0**	**3**	**3**	**5**	**188**	**677**
1600-1615	79	3	0	0	0	1	3	**86**	75	5	2	0	0	1	1	**84**	37	2	0	0	0	0	0	**39**	**209**
1615-1630	54	4	0	0	0	0	0	**58**	60	8	0	0	0	0	0	**68**	35	8	0	0	0	0	1	**44**	**170**
1630-1645	38	5	1	0	0	0	1	**45**	53	8	0	0	0	0	0	**61**	26	4	0	0	0	0	0	**30**	**136**
1645-1700	36	3	0	0	0	0	2	**41**	58	6	0	0	1	0	0	**65**	32	3	0	0	0	0	0	**35**	**141**
Hourly Total	**207**	**15**	**1**	**0**	**0**	**1**	**6**	**230**	**246**	**27**	**2**	**0**	**1**	**1**	**1**	**278**	**130**	**17**	**0**	**0**	**0**	**0**	**1**	**148**	**656**
1700-1715	44	3	0	0	0	0	0	**47**	74	7	0	0	1	0	1	**83**	36	2	1	0	0	0	2	**41**	**171**
1715-1730	51	5	1	0	0	1	1	**59**	59	7	1	0	0	1	0	**68**	44	7	0	0	1	1	0	**53**	**180**
1730-1745	54	6	0	0	0	1	1	**62**	61	7	0	0	0	0	1	**69**	42	2	0	0	0	1	0	**45**	**176**
1745-1800	68	2	0	0	0	1	1	**72**	76	1	0	0	1	1	0	**79**	43	3	0	0	1	0	1	**48**	**199**
Hourly Total	**217**	**16**	**1**	**0**	**0**	**3**	**3**	**240**	**270**	**22**	**1**	**0**	**2**	**2**	**2**	**299**	**165**	**14**	**1**	**0**	**2**	**2**	**3**	**187**	**726**

1800-1815	34	2	0	0	0	2	0	**38**	69	6	0	0	0	2	0	**77**	31	3	0	0	0	1	0	**35**	**150**
1815-1830	39	5	0	0	0	2	2	**48**	83	4	0	0	0	1	1	**89**	38	2	0	0	0	2	0	**42**	**179**
Hourly Total	**73**	**7**	**0**	**0**	**0**	**4**	**2**	**86**	**152**	**10**	**0**	**0**	**0**	**3**	**1**	**166**	**69**	**5**	**0**	**0**	**0**	**3**	**0**	**77**	**329**
3.5 Hour Totals (pm)	672	52	3	0	0	9	22	758	921	85	5	0	5	8	6	1030	519	56	3	0	5	8	9	600	**2388**
Day Total	892	84	8	0	0	11	23	1018	1309	135	11	0	12	9	17	1493	714	78	8	0	10	8	15	833	3344

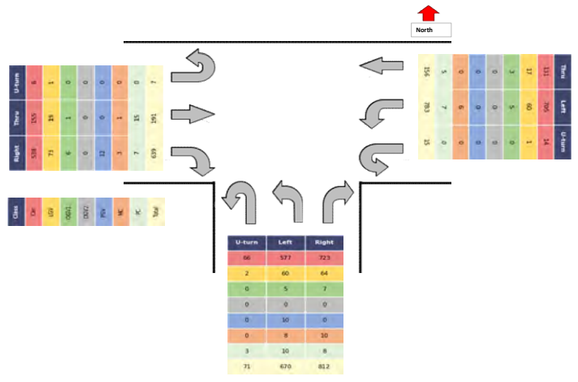
Severnside
Tranportation Data Collection

	Summary
Project	Porthcawl
Project Code	SS1938
Site name	Site 01
Lees and Movements	All Processed Lees & Movements
Bin Size	15.0
Start Time	07:30
End Time	18:15
Location	Site 01
Latitude and Longitude	51.482875889679 83, -3.699072224903

	Start	End
Am Peak	2025-07-09 08:15:00	2025-07-09 09:15:00
Pm Peak	2025-07-09 17:00:00	2025-07-09 18:00:00



Turning Movement Data Plot

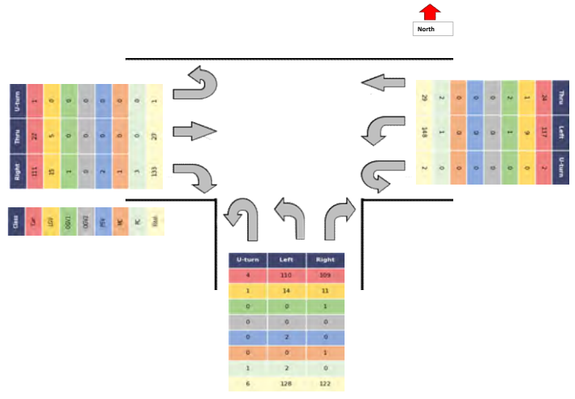


Class	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total
U-turn	6	1	0	0	0	0	0	7
Thru	525	35	1	0	0	1	15	591
Right	538	73	9	0	12	3	7	639

Class	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total
U-turn	5	0	0	0	0	0	0	5
Thru	703	43	8	0	0	2	27	783
Left	705	60	5	0	0	2	27	799
U-turn	34	5	0	0	0	0	1	40

U-turn	Left	Right
66	577	723
2	60	64
0	5	7
0	0	0
0	10	0
0	8	10
3	10	8
71	670	812

AM Peak Turning Movement Data Summary

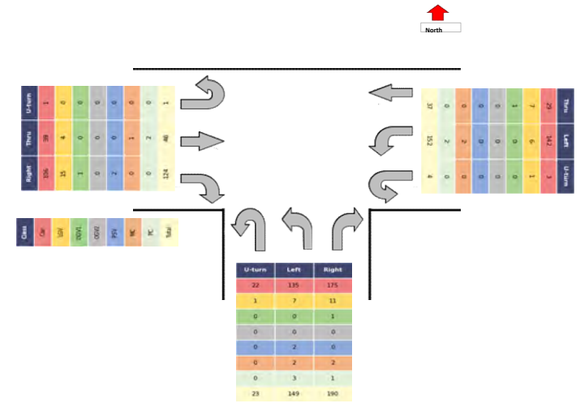


Class	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total
U-turn	1	0	0	0	0	0	0	1
Thru	282	5	0	0	0	0	0	287
Right	111	15	1	0	2	1	3	133

Class	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total
U-turn	0	0	0	0	0	0	0	0
Thru	329	19	0	0	0	2	1	351
Left	217	27	0	0	0	2	1	247
U-turn	2	2	0	0	0	0	0	4

U-turn	Left	Right
4	110	109
1	14	11
0	0	1
0	0	0
0	2	0
0	0	1
1	2	0
6	128	122

PM Peak Turning Movemet Data Summary



Class	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total
U-turn	1	0	0	0	0	0	0	1
Thru	28	4	0	0	0	1	2	40
Right	106	15	1	0	0	0	0	124

Class	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total
U-turn	0	0	0	0	0	0	0	0
Thru	297	17	0	0	0	6	7	327
Left	342	11	0	0	0	6	7	366
U-turn	4	2	0	0	0	0	1	7

U-turn	Left	Right
22	135	175
1	7	11
0	0	1
0	0	0
0	2	0
0	2	2
0	3	1
23	149	190

Severnside
Transportation Data Collection

SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 4

	Arm A - Arm A								Arm A - Arm B								Arm A - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	0	0	0	0	0	0	0	**0**	2	1	0	0	0	0	0	**3**	8	0	0	0	0	0	1	**9**	**12**
0745-0800	0	0	0	0	0	0	0	**0**	5	0	0	0	0	0	0	**5**	6	2	0	0	0	0	0	**8**	**13**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**1**	**0**	**0**	**0**	**0**	**0**	**8**	**14**	**2**	**0**	**0**	**0**	**0**	**1**	**17**	**25**
0800-0815	0	0	0	0	0	0	0	**0**	5	0	0	0	0	0	0	**5**	12	2	1	0	0	0	0	**15**	**20**
0815-0830	0	0	0	0	0	0	0	**0**	8	0	0	0	0	0	0	**8**	14	2	1	0	0	0	1	**18**	**26**
0830-0845	0	0	0	0	0	0	0	**0**	8	0	0	0	0	0	0	**8**	23	3	0	0	0	0	3	**29**	**37**
0845-0900	1	0	0	0	0	0	0	**1**	8	1	0	0	0	0	0	**9**	12	2	0	0	0	0	0	**14**	**24**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**29**	**1**	**0**	**0**	**0**	**0**	**0**	**30**	**61**	**9**	**2**	**0**	**0**	**0**	**4**	**76**	**107**
0900-0915	0	0	0	0	0	0	0	**0**	7	2	0	0	0	0	0	**9**	24	3	0	0	0	0	0	**27**	**36**
0915-0930	1	0	0	0	0	0	0	**1**	8	0	0	0	0	0	0	**8**	14	1	0	0	0	0	2	**17**	**26**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**15**	**2**	**0**	**0**	**0**	**0**	**0**	**17**	**38**	**4**	**0**	**0**	**0**	**0**	**2**	**44**	**62**
2 Hour Totals (am)	2	0	0	0	0	0	0	**2**	51	4	0	0	0	0	0	**55**	113	15	2	0	0	0	7	**137**	**194**
1500-1515	0	0	0	0	0	0	0	**0**	8	1	0	0	0	0	0	**9**	17	5	0	0	0	0	2	**24**	**33**
1515-1530	3	0	0	0	0	0	0	**3**	7	1	0	0	0	0	0	**8**	15	4	0	0	0	0	0	**19**	**30**
1530-1545	1	0	0	0	0	0	0	**1**	7	2	0	0	0	0	0	**9**	25	0	1	0	0	0	0	**26**	**36**
1545-1600	0	1	0	0	0	0	0	**1**	6	1	0	0	0	0	0	**7**	28	2	0	0	0	0	0	**30**	**38**
Hourly Total	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**5**	**28**	**5**	**0**	**0**	**0**	**0**	**0**	**33**	**85**	**11**	**1**	**0**	**0**	**0**	**2**	**99**	**137**
1600-1615	0	0	0	0	0	0	0	**0**	6	1	0	0	0	0	0	**7**	24	3	0	0	0	1	0	**28**	**35**
1615-1630	0	0	0	0	0	0	0	**0**	6	0	0	0	0	0	0	**6**	22	6	0	0	0	0	0	**28**	**34**
1630-1645	0	0	0	0	0	0	0	**0**	6	0	0	0	0	0	0	**6**	11	4	0	0	0	0	1	**16**	**22**
1645-1700	2	0	0	0	0	0	0	**2**	9	0	0	0	0	0	0	**9**	18	2	0	0	0	0	0	**20**	**31**
Hourly Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**27**	**1**	**0**	**0**	**0**	**0**	**0**	**28**	**75**	**15**	**0**	**0**	**0**	**1**	**1**	**92**	**122**
1700-1715	1	0	0	0	0	0	0	**1**	13	1	0	0	0	0	1	**15**	26	1	1	0	0	0	1	**29**	**45**
1715-1730	0	0	0	0	0	0	0	**0**	7	0	1	0	0	0	0	**8**	18	1	0	0	0	1	0	**20**	**28**
1730-1745	0	0	0	0	0	0	0	**0**	11	0	0	0	0	0	0	**11**	23	0	0	0	0	0	1	**24**	**35**
1745-1800	0	1	0	0	0	0	0	**1**	15	0	0	0	0	1	0	**16**	21	2	0	0	0	1	1	**25**	**42**
Hourly Total	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**46**	**1**	**1**	**0**	**0**	**1**	**1**	**50**	**88**	**4**	**1**	**0**	**0**	**2**	**3**	**98**	**150**
1800-1815	2	0	0	0	0	0	0	**2**	12	1	0	0	0	0	0	**13**	27	2	0	0	0	1	0	**30**	**45**
1815-1830	0	0	0	0	0	0	0	**0**	12	2	0	0	0	0	0	**14**	25	2	0	0	0	0	0	**27**	**41**
Hourly Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**24**	**3**	**0**	**0**	**0**	**0**	**0**	**27**	**52**	**4**	**0**	**0**	**0**	**1**	**0**	**57**	**86**
3.5 Hour Totals (pm)	9	2	0	0	0	0	0	11	125	10	1	0	0	1	1	138	300	34	2	0	0	4	6	346	**495**
Day Total	11	2	0	0	0	0	0	13	176	14	1	0	0	1	1	193	413	49	4	0	0	4	13	483	689

	Arm B - Arm A								Arm B - Arm B								Arm B - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	6	0	2	0	0	0	0	**8**	**9**
0745-0800	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	3	1	0	0	0	0	0	**4**	**6**
Hourly Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**1**	**2**	**0**	**0**	**0**	**0**	**12**	**15**

0800-0815	1	2	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	7	1	0	0	0	0	0	**8**	**11**
0815-0830	4	0	0	0	0	0	0	**4**	0	0	0	0	0	0	0	**0**	14	0	0	0	0	0	0	**14**	**18**
0830-0845	4	2	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	12	0	0	0	0	0	0	**12**	**18**
0845-0900	7	0	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	26	0	0	0	0	0	1	**27**	**34**
Hourly Total	**16**	**4**	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**59**	**1**	**0**	**0**	**0**	**0**	**1**	**61**	**81**
0900-0915	2	0	0	0	0	0	1	**3**	0	0	0	0	0	0	0	**0**	6	0	1	0	0	0	0	**7**	**10**
0915-0930	7	0	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	12	2	0	0	0	0	1	**15**	**22**
Hourly Total	**9**	**0**	**0**	**0**	**0**	**0**	**1**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**2**	**1**	**0**	**0**	**0**	**1**	**22**	**32**
2 Hour Totals (am)	28	4	0	0	0	0	1	**33**	0	0	0	0	0	0	0	**0**	86	4	3	0	0	0	2	**95**	**128**
1500-1515	8	0	0	0	0	0	0	**8**	0	0	0	0	0	0	0	**0**	13	2	0	0	0	0	0	**15**	**23**
1515-1530	22	0	1	0	0	0	0	**23**	0	0	0	0	0	0	0	**0**	38	3	0	0	0	0	0	**41**	**64**
1530-1545	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	7	1	0	0	0	1	1	**10**	**15**
1545-1600	7	0	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	12	0	0	0	0	0	1	**13**	**20**
Hourly Total	**42**	**0**	**1**	**0**	**0**	**0**	**0**	**43**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**70**	**6**	**0**	**0**	**0**	**1**	**2**	**79**	**122**
1600-1615	10	0	0	0	0	0	1	**11**	0	0	0	0	0	0	0	**0**	17	1	0	0	0	0	0	**18**	**29**
1615-1630	7	1	0	0	0	0	0	**8**	0	0	0	0	0	0	0	**0**	13	1	0	0	0	0	0	**14**	**22**
1630-1645	1	1	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	11	0	0	0	0	0	0	**11**	**13**
1645-1700	9	0	0	0	0	0	0	**9**	0	0	0	0	0	0	0	**0**	10	0	0	0	0	0	0	**10**	**19**
Hourly Total	**27**	**2**	**0**	**0**	**0**	**0**	**1**	**30**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**51**	**2**	**0**	**0**	**0**	**0**	**0**	**53**	**83**
1700-1715	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	11	2	0	0	0	0	0	**13**	**18**
1715-1730	5	1	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	14	2	0	0	0	0	0	**16**	**22**
1730-1745	6	0	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	13	2	0	0	0	0	0	**15**	**21**
1745-1800	10	2	0	0	0	0	0	**12**	0	0	0	0	0	0	0	**0**	31	1	0	0	0	0	0	**32**	**44**
Hourly Total	**26**	**3**	**0**	**0**	**0**	**0**	**0**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**69**	**7**	**0**	**0**	**0**	**0**	**0**	**76**	**105**
1800-1815	7	1	0	0	0	1	0	**9**	0	0	0	0	0	0	0	**0**	14	2	0	0	0	1	0	**17**	**26**
1815-1830	10	0	0	0	0	0	0	**10**	0	0	0	0	0	0	0	**0**	19	1	0	0	0	0	0	**20**	**30**
Hourly Total	**17**	**1**	**0**	**0**	**0**	**1**	**0**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**33**	**3**	**0**	**0**	**0**	**1**	**0**	**37**	**56**
3.5 Hour Totals (pm)	112	6	1	0	0	1	1	121	0	0	0	0	0	0	0	0	223	18	0	0	0	2	2	245	**366**
Day Total	140	10	1	0	0	1	2	154	0	0	0	0	0	0	0	0	309	22	3	0	0	2	4	340	494

	Arm C - Arm A								Arm C - Arm B								Arm C - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	3	1	1	0	0	1	0	**6**	3	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	**9**
0745-0800	4	2	0	0	0	0	0	**6**	5	3	0	0	0	0	0	**8**	1	1	0	0	0	0	0	**2**	**16**
Hourly Total	**7**	**3**	**1**	**0**	**0**	**1**	**0**	**12**	**8**	**3**	**0**	**0**	**0**	**0**	**0**	**11**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**25**
0800-0815	10	4	0	0	0	0	0	**14**	10	3	0	0	0	0	0	**13**	0	1	0	0	0	0	0	**1**	**28**
0815-0830	12	1	0	0	0	0	0	**13**	13	3	1	0	0	0	0	**17**	1	0	1	0	0	0	0	**2**	**32**
0830-0845	15	1	0	0	0	0	0	**16**	21	0	0	0	0	0	0	**21**	0	0	0	0	0	0	0	**0**	**37**
0845-0900	13	2	0	0	0	0	0	**15**	18	0	0	0	0	0	0	**18**	3	0	0	0	0	0	0	**3**	**36**
Hourly Total	**50**	**8**	**0**	**0**	**0**	**0**	**0**	**58**	**62**	**6**	**1**	**0**	**0**	**0**	**0**	**69**	**4**	**1**	**1**	**0**	**0**	**0**	**0**	**6**	**133**
0900-0915	10	1	0	0	0	0	1	**12**	12	2	0	0	0	1	0	**15**	0	0	0	0	0	0	0	**0**	**27**
0915-0930	15	2	1	0	0	0	0	**18**	15	0	0	0	0	0	1	**16**	1	0	0	0	0	0	0	**1**	**35**
Hourly Total	**25**	**3**	**1**	**0**	**0**	**0**	**1**	**30**	**27**	**2**	**0**	**0**	**0**	**1**	**1**	**31**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**62**

2 Hour Totals (am)	82	14	2	0	0	1	1	**100**	97	11	1	0	0	1	1	**111**	6	2	1	0	0	0	0	**9**	**220**
1500-1515	32	3	0	0	0	0	1	**36**	26	2	0	0	0	0	0	**28**	4	0	0	0	0	0	0	**4**	**68**
1515-1530	25	2	0	0	0	0	3	**30**	14	2	0	0	0	0	0	**16**	0	0	0	0	0	0	0	**0**	**46**
1530-1545	21	1	1	0	0	0	0	**23**	5	1	0	0	0	0	0	**6**	1	0	0	0	0	0	0	**1**	**30**
1545-1600	17	2	0	0	0	2	1	**22**	14	1	0	0	0	0	0	**15**	2	0	0	0	0	0	0	**2**	**39**
Hourly Total	**95**	**8**	**1**	**0**	**0**	**2**	**5**	**111**	**59**	**6**	**0**	**0**	**0**	**0**	**0**	**65**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**183**
1600-1615	31	3	0	0	0	1	3	**38**	36	0	0	0	0	0	0	**36**	1	0	0	0	0	0	0	**1**	**75**
1615-1630	22	1	0	0	0	0	1	**24**	26	1	0	0	0	0	0	**27**	0	0	0	0	0	0	0	**0**	**51**
1630-1645	19	3	1	0	0	0	0	**23**	13	2	0	0	0	0	0	**15**	2	2	0	0	0	0	0	**4**	**42**
1645-1700	29	0	0	0	0	0	0	**29**	5	2	0	0	0	0	0	**7**	3	0	0	0	0	0	0	**3**	**39**
Hourly Total	**101**	**7**	**1**	**0**	**0**	**1**	**4**	**114**	**80**	**5**	**0**	**0**	**0**	**0**	**0**	**85**	**6**	**2**	**0**	**0**	**0**	**0**	**0**	**8**	**207**
1700-1715	21	2	0	0	0	0	0	**23**	19	0	0	0	0	0	0	**19**	1	1	0	0	0	0	0	**2**	**44**
1715-1730	19	2	1	0	0	1	0	**23**	25	2	0	0	0	0	0	**27**	5	2	0	0	0	0	0	**7**	**57**
1730-1745	26	2	0	0	0	1	0	**29**	23	2	0	0	0	0	0	**25**	1	0	0	0	0	0	0	**1**	**55**
1745-1800	20	1	0	0	0	1	2	**24**	26	1	0	0	0	0	0	**27**	4	0	0	0	0	0	0	**4**	**55**
Hourly Total	**86**	**7**	**1**	**0**	**0**	**3**	**2**	**99**	**93**	**5**	**0**	**0**	**0**	**0**	**0**	**98**	**11**	**3**	**0**	**0**	**0**	**0**	**0**	**14**	**211**
1800-1815	22	2	0	0	0	0	0	**24**	11	1	0	0	0	2	0	**14**	2	0	0	0	0	0	0	**2**	**40**
1815-1830	23	3	0	0	0	2	2	**30**	17	2	0	0	0	0	0	**19**	3	1	0	0	0	0	0	**4**	**53**
Hourly Total	**45**	**5**	**0**	**0**	**0**	**2**	**2**	**54**	**28**	**3**	**0**	**0**	**0**	**2**	**0**	**33**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**6**	**93**
3.5 Hour Totals (pm)	327	27	3	0	0	8	13	378	260	19	0	0	0	2	0	281	29	6	0	0	0	0	0	35	**694**
Day Total	409	41	5	0	0	9	14	478	357	30	1	0	0	3	1	392	35	8	1	0	0	0	0	44	914

	Origin - Arm A								Origin - Arm B								Origin - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	10	1	0	0	0	0	1	**12**	7	0	2	0	0	0	0	**9**	6	1	1	0	0	1	0	**9**	**30**
0745-0800	11	2	0	0	0	0	0	**13**	5	1	0	0	0	0	0	**6**	10	6	0	0	0	0	0	**16**	**35**
Hourly Total	**21**	**3**	**0**	**0**	**0**	**0**	**1**	**25**	**12**	**1**	**2**	**0**	**0**	**0**	**0**	**15**	**16**	**7**	**1**	**0**	**0**	**1**	**0**	**25**	**65**
0800-0815	17	2	1	0	0	0	0	**20**	8	3	0	0	0	0	0	**11**	20	8	0	0	0	0	0	**28**	**59**
0815-0830	22	2	1	0	0	0	1	**26**	18	0	0	0	0	0	0	**18**	26	4	2	0	0	0	0	**32**	**76**
0830-0845	31	3	0	0	0	0	3	**37**	16	2	0	0	0	0	0	**18**	36	1	0	0	0	0	0	**37**	**92**
0845-0900	21	3	0	0	0	0	0	**24**	33	0	0	0	0	0	1	**34**	34	2	0	0	0	0	0	**36**	**94**
Hourly Total	**91**	**10**	**2**	**0**	**0**	**0**	**4**	**107**	**75**	**5**	**0**	**0**	**0**	**0**	**1**	**81**	**116**	**15**	**2**	**0**	**0**	**0**	**0**	**133**	**321**
0900-0915	31	5	0	0	0	0	0	**36**	8	0	1	0	0	0	1	**10**	22	3	0	0	0	1	1	**27**	**73**
0915-0930	23	1	0	0	0	0	2	**26**	19	2	0	0	0	0	1	**22**	31	2	1	0	0	0	1	**35**	**83**
Hourly Total	**54**	**6**	**0**	**0**	**0**	**0**	**2**	**62**	**27**	**2**	**1**	**0**	**0**	**0**	**2**	**32**	**53**	**5**	**1**	**0**	**0**	**1**	**2**	**62**	**156**
2 Hour Totals (am)	166	19	2	0	0	0	7	**194**	114	8	3	0	0	0	3	**128**	185	27	4	0	0	2	2	**220**	**542**
1500-1515	25	6	0	0	0	0	2	**33**	21	2	0	0	0	0	0	**23**	62	5	0	0	0	0	1	**68**	**124**
1515-1530	25	5	0	0	0	0	0	**30**	60	3	1	0	0	0	0	**64**	39	4	0	0	0	0	3	**46**	**140**
1530-1545	33	2	1	0	0	0	0	**36**	12	1	0	0	0	1	1	**15**	27	2	1	0	0	0	0	**30**	**81**
1545-1600	34	4	0	0	0	0	0	**38**	19	0	0	0	0	0	1	**20**	33	3	0	0	0	2	1	**39**	**97**
Hourly Total	**117**	**17**	**1**	**0**	**0**	**0**	**2**	**137**	**112**	**6**	**1**	**0**	**0**	**1**	**2**	**122**	**161**	**14**	**1**	**0**	**0**	**2**	**5**	**183**	**442**
1600-1615	30	4	0	0	0	1	0	**35**	27	1	0	0	0	0	1	**29**	68	3	0	0	0	1	3	**75**	**139**

1615-1630	28	6	0	0	0	0	0	**34**	20	2	0	0	0	0	0	**22**	48	2	0	0	0	0	1	**51**	**107**
1630-1645	17	4	0	0	0	0	1	**22**	12	1	0	0	0	0	0	**13**	34	7	1	0	0	0	0	**42**	**77**
1645-1700	29	2	0	0	0	0	0	**31**	19	0	0	0	0	0	0	**19**	37	2	0	0	0	0	0	**39**	**89**
Hourly Total	**104**	**16**	**0**	**0**	**0**	**1**	**1**	**122**	**78**	**4**	**0**	**0**	**0**	**0**	**1**	**83**	**187**	**14**	**1**	**0**	**0**	**1**	**4**	**207**	**412**
1700-1715	40	2	1	0	0	0	2	**45**	16	2	0	0	0	0	0	**18**	41	3	0	0	0	0	0	**44**	**107**
1715-1730	25	1	1	0	0	1	0	**28**	19	3	0	0	0	0	0	**22**	49	6	1	0	0	1	0	**57**	**107**
1730-1745	34	0	0	0	0	0	1	**35**	19	2	0	0	0	0	0	**21**	50	4	0	0	0	1	0	**55**	**111**
1745-1800	36	3	0	0	0	2	1	**42**	41	3	0	0	0	0	0	**44**	50	2	0	0	0	1	2	**55**	**141**
Hourly Total	**135**	**6**	**2**	**0**	**0**	**3**	**4**	**150**	**95**	**10**	**0**	**0**	**0**	**0**	**0**	**105**	**190**	**15**	**1**	**0**	**0**	**3**	**2**	**211**	**466**
1800-1815	41	3	0	0	0	1	0	**45**	21	3	0	0	0	2	0	**26**	35	3	0	0	0	2	0	**40**	**111**
1815-1830	37	4	0	0	0	0	0	**41**	29	1	0	0	0	0	0	**30**	43	6	0	0	0	2	2	**53**	**124**
Hourly Total	**78**	**7**	**0**	**0**	**0**	**1**	**0**	**86**	**50**	**4**	**0**	**0**	**0**	**2**	**0**	**56**	**78**	**9**	**0**	**0**	**0**	**4**	**2**	**93**	**235**
3.5 Hour Totals (pm)	434	46	3	0	0	5	7	495	335	24	1	0	0	3	3	366	616	52	3	0	0	10	13	694	**1555**
Day Total	600	65	5	0	0	5	14	689	449	32	4	0	0	3	6	494	801	79	7	0	0	12	15	914	2097

	Destination - Arm A								Destination - Arm B								Destination - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	4	1	1	0	0	1	0	**7**	5	1	0	0	0	0	0	**6**	14	0	2	0	0	0	1	**17**	**30**
0745-0800	6	2	0	0	0	0	0	**8**	10	3	0	0	0	0	0	**13**	10	4	0	0	0	0	0	**14**	**35**
Hourly Total	**10**	**3**	**1**	**0**	**0**	**1**	**0**	**15**	**15**	**4**	**0**	**0**	**0**	**0**	**0**	**19**	**24**	**4**	**2**	**0**	**0**	**0**	**1**	**31**	**65**
0800-0815	11	6	0	0	0	0	0	**17**	15	3	0	0	0	0	0	**18**	19	4	1	0	0	0	0	**24**	**59**
0815-0830	16	1	0	0	0	0	0	**17**	21	3	1	0	0	0	0	**25**	29	2	2	0	0	0	1	**34**	**76**
0830-0845	19	3	0	0	0	0	0	**22**	29	0	0	0	0	0	0	**29**	35	3	0	0	0	0	3	**41**	**92**
0845-0900	21	2	0	0	0	0	0	**23**	26	1	0	0	0	0	0	**27**	41	2	0	0	0	0	1	**44**	**94**
Hourly Total	**67**	**12**	**0**	**0**	**0**	**0**	**0**	**79**	**91**	**7**	**1**	**0**	**0**	**0**	**0**	**99**	**124**	**11**	**3**	**0**	**0**	**0**	**5**	**143**	**321**
0900-0915	12	1	0	0	0	0	2	**15**	19	4	0	0	0	1	0	**24**	30	3	1	0	0	0	0	**34**	**73**
0915-0930	23	2	1	0	0	0	0	**26**	23	0	0	0	0	0	1	**24**	27	3	0	0	0	0	3	**33**	**83**
Hourly Total	**35**	**3**	**1**	**0**	**0**	**0**	**2**	**41**	**42**	**4**	**0**	**0**	**0**	**1**	**1**	**48**	**57**	**6**	**1**	**0**	**0**	**0**	**3**	**67**	**156**
2 Hour Totals (am)	112	18	2	0	0	1	2	**135**	148	15	1	0	0	1	1	**166**	205	21	6	0	0	0	9	**241**	**542**
1500-1515	40	3	0	0	0	0	1	**44**	34	3	0	0	0	0	0	**37**	34	7	0	0	0	0	2	**43**	**124**
1515-1530	50	2	1	0	0	0	3	**56**	21	3	0	0	0	0	0	**24**	53	7	0	0	0	0	0	**60**	**140**
1530-1545	27	1	1	0	0	0	0	**29**	12	3	0	0	0	0	0	**15**	33	1	1	0	0	1	1	**37**	**81**
1545-1600	24	3	0	0	0	2	1	**30**	20	2	0	0	0	0	0	**22**	42	2	0	0	0	0	1	**45**	**97**
Hourly Total	**141**	**9**	**2**	**0**	**0**	**2**	**5**	**159**	**87**	**11**	**0**	**0**	**0**	**0**	**0**	**98**	**162**	**17**	**1**	**0**	**0**	**1**	**4**	**185**	**442**
1600-1615	41	3	0	0	0	1	4	**49**	42	1	0	0	0	0	0	**43**	42	4	0	0	0	1	0	**47**	**139**
1615-1630	29	2	0	0	0	0	1	**32**	32	1	0	0	0	0	0	**33**	35	7	0	0	0	0	0	**42**	**107**
1630-1645	20	4	1	0	0	0	0	**25**	19	2	0	0	0	0	0	**21**	24	6	0	0	0	0	1	**31**	**77**
1645-1700	40	0	0	0	0	0	0	**40**	14	2	0	0	0	0	0	**16**	31	2	0	0	0	0	0	**33**	**89**
Hourly Total	**130**	**9**	**1**	**0**	**0**	**1**	**5**	**146**	**107**	**6**	**0**	**0**	**0**	**0**	**0**	**113**	**132**	**19**	**0**	**0**	**0**	**1**	**1**	**153**	**412**
1700-1715	27	2	0	0	0	0	0	**29**	32	1	0	0	0	0	1	**34**	38	4	1	0	0	0	1	**44**	**107**
1715-1730	24	3	1	0	0	1	0	**29**	32	2	1	0	0	0	0	**35**	37	5	0	0	0	1	0	**43**	**107**
1730-1745	32	2	0	0	0	1	0	**35**	34	2	0	0	0	0	0	**36**	37	2	0	0	0	0	1	**40**	**111**
1745-1800	30	4	0	0	0	1	2	**37**	41	1	0	0	0	1	0	**43**	56	3	0	0	0	1	1	**61**	**141**
Hourly Total	**113**	**11**	**1**	**0**	**0**	**3**	**2**	**130**	**139**	**6**	**1**	**0**	**0**	**1**	**1**	**148**	**168**	**14**	**1**	**0**	**0**	**2**	**3**	**188**	**466**

1800-1815	31	3	0	0	0	1	0	**35**	23	2	0	0	0	2	0	**27**	43	4	0	0	0	2	0	**49**	**111**
1815-1830	33	3	0	0	0	2	2	**40**	29	4	0	0	0	0	0	**33**	47	4	0	0	0	0	0	**51**	**124**
Hourly Total	**64**	**6**	**0**	**0**	**0**	**3**	**2**	**75**	**52**	**6**	**0**	**0**	**0**	**2**	**0**	**60**	**90**	**8**	**0**	**0**	**0**	**2**	**0**	**100**	**235**
3.5 Hour Totals (pm)	448	35	4	0	0	9	14	510	385	29	1	0	0	3	1	419	552	58	2	0	0	6	8	626	**1555**
Day Total	560	53	6	0	0	10	16	645	533	44	2	0	0	4	2	585	757	79	8	0	0	6	17	867	2097

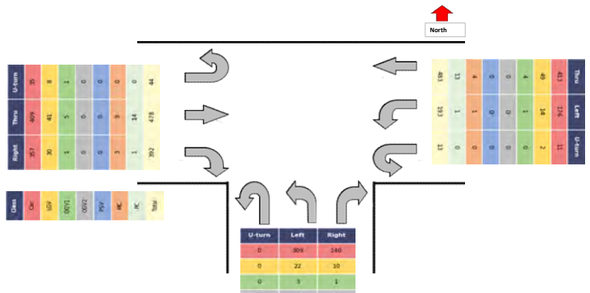
Severnside
Tranportation Data Collection

Summary	
Project	Porthcawl
Project Code	05193B
Site name	Site 04
Lees and Movements	All Processed Lees & Movements
Bin Size	15.0
Start Time	07:30
End Time	18:15
Location	Site 04
Latitude and Longitude	51.482430946812 8, -3.69419004265793

	Start	End
Am Peak	2025-07-09 08:30:00	2025-07-09 09:30:00
Pm Peak	2025-07-09 17:30:00	2025-07-09 18:30:00

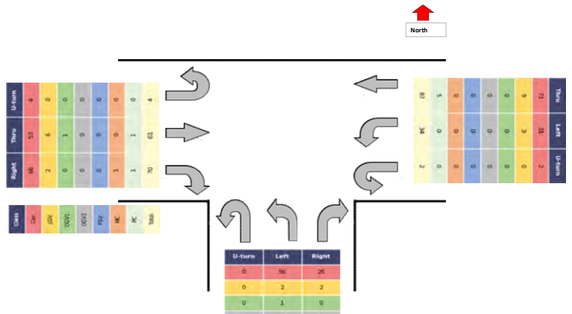


Turning Movement Data Plot



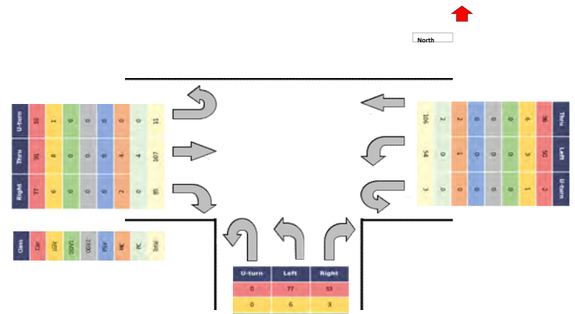
U-turn	Left	Right
0	309	140
0	22	10
0	3	1
0	0	0
0	0	0
0	2	1
0	4	2
0	340	154

AM Peak Turning Movement Data Summary



U-turn	Left	Right
0	56	26
0	2	2
0	1	0
0	0	0
0	0	0
0	0	0
0	2	1
0	61	29

PM Peak Turning Movemet Data Summary



U-turn	Left	Right
0	77	33
0	6	3
0	0	0
0	0	0
0	0	0
0	1	1
0	0	0
0	84	37

Severnside
Transportation Data Collection

SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 5

	Arm A - Arm A								Arm A - Arm B								Arm A - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	0	0	0	0	0	0	0	**0**	7	4	1	0	0	0	0	**12**	2	4	0	0	0	0	0	**6**	**18**
0745-0800	0	0	0	0	0	0	0	**0**	7	1	1	0	0	0	0	**9**	15	4	0	0	0	1	0	**20**	**29**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**5**	**2**	**0**	**0**	**0**	**0**	**21**	**17**	**8**	**0**	**0**	**0**	**1**	**0**	**26**	**47**
0800-0815	0	0	0	0	0	0	0	**0**	10	1	0	0	0	0	0	**11**	16	3	0	0	0	0	0	**19**	**30**
0815-0830	0	0	0	0	0	0	0	**0**	10	3	1	0	0	0	0	**14**	14	4	0	0	0	0	0	**18**	**32**
0830-0845	0	0	0	0	0	0	0	**0**	12	0	0	0	0	0	0	**12**	20	1	0	0	0	0	0	**21**	**33**
0845-0900	0	0	0	0	0	0	0	**0**	14	3	1	0	0	0	0	**18**	18	5	0	0	0	0	0	**23**	**41**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**46**	**7**	**2**	**0**	**0**	**0**	**0**	**55**	**68**	**13**	**0**	**0**	**0**	**0**	**0**	**81**	**136**
0900-0915	1	0	0	0	0	0	0	**1**	14	4	1	0	0	1	0	**20**	17	3	0	0	0	0	0	**20**	**41**
0915-0930	0	0	0	0	0	0	0	**0**	16	2	1	0	0	0	0	**19**	21	5	1	0	0	1	0	**28**	**47**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**30**	**6**	**2**	**0**	**0**	**1**	**0**	**39**	**38**	**8**	**1**	**0**	**0**	**1**	**0**	**48**	**88**
2 Hour Totals (am)	1	0	0	0	0	0	0	**1**	90	18	6	0	0	1	0	**115**	123	29	1	0	0	2	0	**155**	**271**
1500-1515	0	0	0	0	0	0	0	**0**	15	2	0	0	0	0	0	**17**	20	3	0	0	0	0	0	**23**	**40**
1515-1530	1	0	0	0	0	0	0	**1**	20	5	0	0	0	0	1	**26**	22	5	0	0	0	0	0	**27**	**54**
1530-1545	0	0	0	0	0	0	0	**0**	37	2	0	0	0	0	0	**39**	18	3	1	0	0	0	0	**22**	**61**
1545-1600	0	0	0	0	0	0	0	**0**	25	4	1	0	1	0	0	**31**	23	5	0	0	0	1	0	**29**	**60**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**97**	**13**	**1**	**0**	**1**	**0**	**1**	**113**	**83**	**16**	**1**	**0**	**0**	**1**	**0**	**101**	**215**
1600-1615	0	0	0	0	0	0	0	**0**	26	1	0	0	0	0	0	**27**	23	3	0	0	0	0	0	**26**	**53**
1615-1630	0	0	0	0	0	0	0	**0**	21	3	0	0	0	0	0	**24**	21	1	0	0	0	0	0	**22**	**46**
1630-1645	0	0	0	0	0	0	0	**0**	30	1	0	0	0	0	0	**31**	25	3	0	0	0	0	0	**28**	**59**
1645-1700	0	0	0	0	0	0	0	**0**	39	4	1	0	0	0	0	**44**	25	1	0	0	0	0	0	**26**	**70**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**116**	**9**	**1**	**0**	**0**	**0**	**0**	**126**	**94**	**8**	**0**	**0**	**0**	**0**	**0**	**102**	**228**
1700-1715	0	0	0	0	0	0	0	**0**	29	0	0	0	0	0	0	**29**	37	1	1	0	0	0	0	**39**	**68**
1715-1730	0	0	0	0	0	0	0	**0**	33	0	0	0	0	0	0	**33**	24	2	1	0	0	1	0	**28**	**61**
1730-1745	0	0	0	0	0	0	0	**0**	32	5	0	0	0	0	0	**37**	37	3	0	0	0	0	0	**40**	**77**
1745-1800	0	0	0	0	0	0	0	**0**	32	0	0	0	0	0	0	**32**	30	1	0	0	0	1	0	**32**	**64**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**126**	**5**	**0**	**0**	**0**	**0**	**0**	**131**	**128**	**7**	**2**	**0**	**0**	**2**	**0**	**139**	**270**
1800-1815	1	0	0	0	0	0	0	**1**	23	1	0	0	0	0	0	**24**	28	0	0	0	0	0	0	**28**	**53**
1815-1830	0	0	0	0	0	0	0	**0**	23	2	0	0	0	2	0	**27**	28	3	0	0	0	0	0	**31**	**58**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**46**	**3**	**0**	**0**	**0**	**2**	**0**	**51**	**56**	**3**	**0**	**0**	**0**	**0**	**0**	**59**	**111**
3.5 Hour Totals (pm)	2	0	0	0	0	0	0	2	385	30	2	0	1	2	1	421	361	34	3	0	0	3	0	401	**824**
Day Total	3	0	0	0	0	0	0	3	475	48	8	0	1	3	1	536	484	63	4	0	0	5	0	556	1095

	Arm B - Arm A								Arm B - Arm B								Arm B - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	17	2	1	0	0	0	0	**20**	0	0	0	0	0	0	0	**0**	3	1	1	0	0	0	0	**5**	**25**
0745-0800	20	7	1	0	1	1	0	**30**	0	0	0	0	0	0	0	**0**	4	1	0	0	0	0	0	**5**	**35**
Hourly Total	**37**	**9**	**2**	**0**	**1**	**1**	**0**	**50**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**2**	**1**	**0**	**0**	**0**	**0**	**10**	**60**

0800-0815	21	6	0	0	0	1	1	**29**	0	0	0	0	0	0	0	**0**	3	3	1	0	0	0	0	**7**	**36**
0815-0830	34	5	0	0	0	0	0	**39**	0	0	0	0	0	0	0	**0**	14	0	2	0	0	0	0	**16**	**55**
0830-0845	46	3	0	0	0	0	0	**49**	0	0	0	0	0	0	0	**0**	10	3	0	0	0	0	0	**13**	**62**
0845-0900	24	6	1	0	0	0	0	**31**	0	0	0	0	0	0	0	**0**	9	2	0	0	0	0	0	**11**	**42**
Hourly Total	**125**	**20**	**1**	**0**	**0**	**1**	**1**	**148**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**36**	**8**	**3**	**0**	**0**	**0**	**0**	**47**	**195**
0900-0915	25	0	3	0	0	0	0	**28**	0	0	0	0	0	0	0	**0**	14	4	0	0	0	0	0	**18**	**46**
0915-0930	31	2	2	0	1	0	0	**36**	0	1	0	0	0	0	0	**1**	14	0	0	0	0	1	0	**15**	**52**
Hourly Total	**56**	**2**	**5**	**0**	**1**	**0**	**0**	**64**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**28**	**4**	**0**	**0**	**0**	**1**	**0**	**33**	**98**
2 Hour Totals (am)	218	31	8	0	2	2	1	**262**	0	1	0	0	0	0	0	**1**	71	14	4	0	0	1	0	**90**	**353**
1500-1515	38	3	0	0	0	0	0	**41**	1	0	0	0	0	0	0	**1**	16	3	0	0	0	0	0	**19**	**61**
1515-1530	40	4	0	0	0	0	0	**44**	0	0	0	0	0	0	0	**0**	13	2	1	0	0	0	0	**16**	**60**
1530-1545	39	5	1	1	0	2	0	**48**	0	0	0	0	0	0	0	**0**	18	3	0	0	0	0	1	**22**	**70**
1545-1600	30	5	1	0	1	0	0	**37**	0	0	0	0	0	0	0	**0**	15	2	0	0	0	0	0	**17**	**54**
Hourly Total	**147**	**17**	**2**	**1**	**1**	**2**	**0**	**170**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**62**	**10**	**1**	**0**	**0**	**0**	**1**	**74**	**245**
1600-1615	35	3	1	0	0	0	0	**39**	1	0	0	0	0	0	0	**1**	20	0	0	0	0	0	0	**20**	**60**
1615-1630	38	4	1	0	0	0	1	**44**	1	0	0	0	0	0	0	**1**	12	1	0	0	0	0	0	**13**	**58**
1630-1645	37	3	1	0	0	0	0	**41**	0	0	0	0	0	0	0	**0**	11	2	0	0	0	0	0	**13**	**54**
1645-1700	29	2	1	0	0	0	0	**32**	0	0	0	0	0	0	0	**0**	13	3	0	0	0	0	0	**16**	**48**
Hourly Total	**139**	**12**	**4**	**0**	**0**	**0**	**1**	**156**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**56**	**6**	**0**	**0**	**0**	**0**	**0**	**62**	**220**
1700-1715	39	4	0	0	0	0	0	**43**	0	0	0	0	0	0	0	**0**	26	1	0	0	0	0	0	**27**	**70**
1715-1730	37	3	0	0	0	0	0	**40**	0	0	0	0	0	0	0	**0**	11	0	0	0	0	0	1	**12**	**52**
1730-1745	35	2	0	0	0	0	0	**37**	0	0	0	0	0	0	0	**0**	12	1	0	0	0	1	0	**14**	**51**
1745-1800	30	3	0	0	0	0	0	**33**	0	0	0	0	0	0	0	**0**	26	0	0	0	0	1	0	**27**	**60**
Hourly Total	**141**	**12**	**0**	**0**	**0**	**0**	**0**	**153**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**75**	**2**	**0**	**0**	**0**	**2**	**1**	**80**	**233**
1800-1815	39	3	0	0	0	0	0	**42**	1	0	0	0	0	0	0	**1**	24	2	0	0	0	1	0	**27**	**70**
1815-1830	38	0	0	0	0	0	0	**38**	1	0	0	0	0	0	0	**1**	13	2	0	0	0	0	0	**15**	**54**
Hourly Total	**77**	**3**	**0**	**0**	**0**	**0**	**0**	**80**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**37**	**4**	**0**	**0**	**0**	**1**	**0**	**42**	**124**
3.5 Hour Totals (pm)	504	44	6	1	1	2	1	559	5	0	0	0	0	0	0	5	230	22	1	0	0	3	2	258	**822**
Day Total	722	75	14	1	3	4	2	821	5	1	0	0	0	0	0	6	301	36	5	0	0	4	2	348	1175

	Arm C - Arm A								Arm C - Arm B								Arm C - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	6	3	1	0	0	1	0	**11**	6	1	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	**18**
0745-0800	11	6	0	0	0	1	1	**19**	3	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	**22**
Hourly Total	**17**	**9**	**1**	**0**	**0**	**2**	**1**	**30**	**9**	**1**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**40**
0800-0815	15	4	0	0	0	0	0	**19**	1	1	0	0	0	0	0	**2**	1	0	0	0	0	0	0	**1**	**22**
0815-0830	13	3	0	0	0	0	1	**17**	5	2	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	**24**
0830-0845	22	2	0	0	0	0	0	**24**	6	1	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	**31**
0845-0900	23	0	0	0	0	0	0	**23**	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	**28**
Hourly Total	**73**	**9**	**0**	**0**	**0**	**0**	**1**	**83**	**17**	**4**	**0**	**0**	**0**	**0**	**0**	**21**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**105**
0900-0915	10	1	1	0	0	0	1	**13**	4	2	0	0	0	0	1	**7**	0	0	0	0	0	0	0	**0**	**20**
0915-0930	23	1	1	0	0	0	0	**25**	3	1	0	0	0	1	0	**5**	0	0	0	0	0	0	0	**0**	**30**
Hourly Total	**33**	**2**	**2**	**0**	**0**	**0**	**1**	**38**	**7**	**3**	**0**	**0**	**0**	**1**	**1**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**50**

2 Hour Totals (am)	123	20	3	0	0	2	3	**151**	33	8	0	0	0	1	1	**43**	1	0	0	0	0	0	0	**1**	**195**
1500-1515	23	2	0	0	0	0	0	**25**	10	1	0	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	**36**
1515-1530	44	1	0	0	0	0	0	**45**	19	1	1	0	0	0	0	**21**	0	0	0	0	0	0	0	**0**	**66**
1530-1545	16	2	1	0	0	0	0	**19**	9	0	0	0	0	0	0	**9**	0	0	0	0	0	0	0	**0**	**28**
1545-1600	22	8	0	0	0	0	0	**30**	18	1	0	0	0	0	0	**19**	0	0	0	0	0	0	0	**0**	**49**
Hourly Total	**105**	**13**	**1**	**0**	**0**	**0**	**0**	**119**	**56**	**3**	**1**	**0**	**0**	**0**	**0**	**60**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**179**
1600-1615	20	1	0	0	0	2	1	**24**	15	0	0	0	0	0	2	**17**	1	0	0	0	0	0	0	**1**	**42**
1615-1630	27	5	0	0	0	0	1	**33**	12	1	0	0	0	0	0	**13**	1	0	0	0	0	0	0	**1**	**47**
1630-1645	17	4	0	0	0	0	0	**21**	9	2	0	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	**32**
1645-1700	29	0	0	0	0	0	1	**30**	21	0	0	0	0	0	0	**21**	2	0	0	0	0	0	0	**2**	**53**
Hourly Total	**93**	**10**	**0**	**0**	**0**	**2**	**3**	**108**	**57**	**3**	**0**	**0**	**0**	**0**	**2**	**62**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**174**
1700-1715	22	1	0	0	0	0	0	**23**	11	1	0	0	0	0	0	**12**	0	0	0	0	0	0	0	**0**	**35**
1715-1730	29	4	1	0	0	1	0	**35**	9	1	0	0	0	0	0	**10**	0	0	0	0	0	0	0	**0**	**45**
1730-1745	31	2	0	0	0	0	0	**33**	15	0	0	0	0	1	1	**17**	0	0	0	0	0	0	0	**0**	**50**
1745-1800	24	4	0	0	0	0	1	**29**	12	1	0	0	0	0	0	**13**	0	0	0	0	0	0	0	**0**	**42**
Hourly Total	**106**	**11**	**1**	**0**	**0**	**1**	**1**	**120**	**47**	**3**	**0**	**0**	**0**	**1**	**1**	**52**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**172**
1800-1815	29	2	0	0	0	1	0	**32**	16	0	0	0	0	0	0	**16**	0	0	0	0	0	0	0	**0**	**48**
1815-1830	23	1	0	0	0	0	1	**25**	12	1	0	0	0	2	1	**16**	0	0	0	0	0	0	0	**0**	**41**
Hourly Total	**52**	**3**	**0**	**0**	**0**	**1**	**1**	**57**	**28**	**1**	**0**	**0**	**0**	**2**	**1**	**32**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**89**
3.5 Hour Totals (pm)	356	37	2	0	0	4	5	404	188	10	1	0	0	3	4	206	4	0	0	0	0	0	0	4	**614**
Day Total	479	57	5	0	0	6	8	555	221	18	1	0	0	4	5	249	5	0	0	0	0	0	0	5	809

	Origin - Arm A								Origin - Arm B								Origin - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	9	8	1	0	0	0	0	**18**	20	3	2	0	0	0	0	**25**	12	4	1	0	0	1	0	**18**	**61**
0745-0800	22	5	1	0	0	1	0	**29**	24	8	1	0	1	1	0	**35**	14	6	0	0	0	1	1	**22**	**86**
Hourly Total	**31**	**13**	**2**	**0**	**0**	**1**	**0**	**47**	**44**	**11**	**3**	**0**	**1**	**1**	**0**	**60**	**26**	**10**	**1**	**0**	**0**	**2**	**1**	**40**	**147**
0800-0815	26	4	0	0	0	0	0	**30**	24	9	1	0	0	1	1	**36**	17	5	0	0	0	0	0	**22**	**88**
0815-0830	24	7	1	0	0	0	0	**32**	48	5	2	0	0	0	0	**55**	18	5	0	0	0	0	1	**24**	**111**
0830-0845	32	1	0	0	0	0	0	**33**	56	6	0	0	0	0	0	**62**	28	3	0	0	0	0	0	**31**	**126**
0845-0900	32	8	1	0	0	0	0	**41**	33	8	1	0	0	0	0	**42**	28	0	0	0	0	0	0	**28**	**111**
Hourly Total	**114**	**20**	**2**	**0**	**0**	**0**	**0**	**136**	**161**	**28**	**4**	**0**	**0**	**1**	**1**	**195**	**91**	**13**	**0**	**0**	**0**	**0**	**1**	**105**	**436**
0900-0915	32	7	1	0	0	1	0	**41**	39	4	3	0	0	0	0	**46**	14	3	1	0	0	0	2	**20**	**107**
0915-0930	37	7	2	0	0	1	0	**47**	45	3	2	0	1	1	0	**52**	26	2	1	0	0	1	0	**30**	**129**
Hourly Total	**69**	**14**	**3**	**0**	**0**	**2**	**0**	**88**	**84**	**7**	**5**	**0**	**1**	**1**	**0**	**98**	**40**	**5**	**2**	**0**	**0**	**1**	**2**	**50**	**236**
2 Hour Totals (am)	214	47	7	0	0	3	0	**271**	289	46	12	0	2	3	1	**353**	157	28	3	0	0	3	4	**195**	**819**
1500-1515	35	5	0	0	0	0	0	**40**	55	6	0	0	0	0	0	**61**	33	3	0	0	0	0	0	**36**	**137**
1515-1530	43	10	0	0	0	0	1	**54**	53	6	1	0	0	0	0	**60**	63	2	1	0	0	0	0	**66**	**180**
1530-1545	55	5	1	0	0	0	0	**61**	57	8	1	1	0	2	1	**70**	25	2	1	0	0	0	0	**28**	**159**
1545-1600	48	9	1	0	1	1	0	**60**	45	7	1	0	1	0	0	**54**	40	9	0	0	0	0	0	**49**	**163**
Hourly Total	**181**	**29**	**2**	**0**	**1**	**1**	**1**	**215**	**210**	**27**	**3**	**1**	**1**	**2**	**1**	**245**	**161**	**16**	**2**	**0**	**0**	**0**	**0**	**179**	**639**
1600-1615	49	4	0	0	0	0	0	**53**	56	3	1	0	0	0	0	**60**	36	1	0	0	0	2	3	**42**	**155**

1615-1630	42	4	0	0	0	0	0	**46**	51	5	1	0	0	0	1	**58**	40	6	0	0	0	0	1	**47**	**151**
1630-1645	55	4	0	0	0	0	0	**59**	48	5	1	0	0	0	0	**54**	26	6	0	0	0	0	0	**32**	**145**
1645-1700	64	5	1	0	0	0	0	**70**	42	5	1	0	0	0	0	**48**	52	0	0	0	0	0	1	**53**	**171**
Hourly Total	**210**	**17**	**1**	**0**	**0**	**0**	**0**	**228**	**197**	**18**	**4**	**0**	**0**	**0**	**1**	**220**	**154**	**13**	**0**	**0**	**0**	**2**	**5**	**174**	**622**
1700-1715	66	1	1	0	0	0	0	**68**	65	5	0	0	0	0	0	**70**	33	2	0	0	0	0	0	**35**	**173**
1715-1730	57	2	1	0	0	1	0	**61**	48	3	0	0	0	0	1	**52**	38	5	1	0	0	1	0	**45**	**158**
1730-1745	69	8	0	0	0	0	0	**77**	47	3	0	0	0	1	0	**51**	46	2	0	0	0	1	1	**50**	**178**
1745-1800	62	1	0	0	0	1	0	**64**	56	3	0	0	0	1	0	**60**	36	5	0	0	0	0	1	**42**	**166**
Hourly Total	**254**	**12**	**2**	**0**	**0**	**2**	**0**	**270**	**216**	**14**	**0**	**0**	**0**	**2**	**1**	**233**	**153**	**14**	**1**	**0**	**0**	**2**	**2**	**172**	**675**
1800-1815	52	1	0	0	0	0	0	**53**	64	5	0	0	0	1	0	**70**	45	2	0	0	0	1	0	**48**	**171**
1815-1830	51	5	0	0	0	2	0	**58**	52	2	0	0	0	0	0	**54**	35	2	0	0	0	2	2	**41**	**153**
Hourly Total	**103**	**6**	**0**	**0**	**0**	**2**	**0**	**111**	**116**	**7**	**0**	**0**	**0**	**1**	**0**	**124**	**80**	**4**	**0**	**0**	**0**	**3**	**2**	**89**	**324**
3.5 Hour Totals (pm)	748	64	5	0	1	5	1	824	739	66	7	1	1	5	3	822	548	47	3	0	0	7	9	614	**2260**
Day Total	962	111	12	0	1	8	1	1095	1028	112	19	1	3	8	4	1175	705	75	6	0	0	10	13	809	3079

	Destination - Arm A								Destination - Arm B								Destination - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	23	5	2	0	0	1	0	**31**	13	5	1	0	0	0	0	**19**	5	5	1	0	0	0	0	**11**	**61**
0745-0800	31	13	1	0	1	2	1	**49**	10	1	1	0	0	0	0	**12**	19	5	0	0	0	1	0	**25**	**86**
Hourly Total	**54**	**18**	**3**	**0**	**1**	**3**	**1**	**80**	**23**	**6**	**2**	**0**	**0**	**0**	**0**	**31**	**24**	**10**	**1**	**0**	**0**	**1**	**0**	**36**	**147**
0800-0815	36	10	0	0	0	1	1	**48**	11	2	0	0	0	0	0	**13**	20	6	1	0	0	0	0	**27**	**88**
0815-0830	47	8	0	0	0	0	1	**56**	15	5	1	0	0	0	0	**21**	28	4	2	0	0	0	0	**34**	**111**
0830-0845	68	5	0	0	0	0	0	**73**	18	1	0	0	0	0	0	**19**	30	4	0	0	0	0	0	**34**	**126**
0845-0900	47	6	1	0	0	0	0	**54**	19	3	1	0	0	0	0	**23**	27	7	0	0	0	0	0	**34**	**111**
Hourly Total	**198**	**29**	**1**	**0**	**0**	**1**	**2**	**231**	**63**	**11**	**2**	**0**	**0**	**0**	**0**	**76**	**105**	**21**	**3**	**0**	**0**	**0**	**0**	**129**	**436**
0900-0915	36	1	4	0	0	0	1	**42**	18	6	1	0	0	1	1	**27**	31	7	0	0	0	0	0	**38**	**107**
0915-0930	54	3	3	0	1	0	0	**61**	19	4	1	0	0	1	0	**25**	35	5	1	0	0	2	0	**43**	**129**
Hourly Total	**90**	**4**	**7**	**0**	**1**	**0**	**1**	**103**	**37**	**10**	**2**	**0**	**0**	**2**	**1**	**52**	**66**	**12**	**1**	**0**	**0**	**2**	**0**	**81**	**236**
2 Hour Totals (am)	342	51	11	0	2	4	4	**414**	123	27	6	0	0	2	1	**159**	195	43	5	0	0	3	0	**246**	**819**
1500-1515	61	5	0	0	0	0	0	**66**	26	3	0	0	0	0	0	**29**	36	6	0	0	0	0	0	**42**	**137**
1515-1530	85	5	0	0	0	0	0	**90**	39	6	1	0	0	0	1	**47**	35	7	1	0	0	0	0	**43**	**180**
1530-1545	55	7	2	1	0	2	0	**67**	46	2	0	0	0	0	0	**48**	36	6	1	0	0	0	1	**44**	**159**
1545-1600	52	13	1	0	1	0	0	**67**	43	5	1	0	1	0	0	**50**	38	7	0	0	0	1	0	**46**	**163**
Hourly Total	**253**	**30**	**3**	**1**	**1**	**2**	**0**	**290**	**154**	**16**	**2**	**0**	**1**	**0**	**1**	**174**	**145**	**26**	**2**	**0**	**0**	**1**	**1**	**175**	**639**
1600-1615	55	4	1	0	0	2	1	**63**	42	1	0	0	0	0	2	**45**	44	3	0	0	0	0	0	**47**	**155**
1615-1630	65	9	1	0	0	0	2	**77**	34	4	0	0	0	0	0	**38**	34	2	0	0	0	0	0	**36**	**151**
1630-1645	54	7	1	0	0	0	0	**62**	39	3	0	0	0	0	0	**42**	36	5	0	0	0	0	0	**41**	**145**
1645-1700	58	2	1	0	0	0	1	**62**	60	4	1	0	0	0	0	**65**	40	4	0	0	0	0	0	**44**	**171**
Hourly Total	**232**	**22**	**4**	**0**	**0**	**2**	**4**	**264**	**175**	**12**	**1**	**0**	**0**	**0**	**2**	**190**	**154**	**14**	**0**	**0**	**0**	**0**	**0**	**168**	**622**
1700-1715	61	5	0	0	0	0	0	**66**	40	1	0	0	0	0	0	**41**	63	2	1	0	0	0	0	**66**	**173**
1715-1730	66	7	1	0	0	1	0	**75**	42	1	0	0	0	0	0	**43**	35	2	1	0	0	1	1	**40**	**158**
1730-1745	66	4	0	0	0	0	0	**70**	47	5	0	0	0	1	1	**54**	49	4	0	0	0	1	0	**54**	**178**
1745-1800	54	7	0	0	0	0	1	**62**	44	1	0	0	0	0	0	**45**	56	1	0	0	0	2	0	**59**	**166**
Hourly Total	**247**	**23**	**1**	**0**	**0**	**1**	**1**	**273**	**173**	**8**	**0**	**0**	**0**	**1**	**1**	**183**	**203**	**9**	**2**	**0**	**0**	**4**	**1**	**219**	**675**

1800-1815	69	5	0	0	0	1	0	**75**	40	1	0	0	0	0	0	**41**	52	2	0	0	0	1	0	**55**	**171**
1815-1830	61	1	0	0	0	0	1	**63**	36	3	0	0	0	4	1	**44**	41	5	0	0	0	0	0	**46**	**153**
Hourly Total	**130**	**6**	**0**	**0**	**0**	**1**	**1**	**138**	**76**	**4**	**0**	**0**	**0**	**4**	**1**	**85**	**93**	**7**	**0**	**0**	**0**	**1**	**0**	**101**	**324**
3.5 Hour Totals (pm)	862	81	8	1	1	6	6	965	578	40	3	0	1	5	5	632	595	56	4	0	0	6	2	663	**2260**
Day Total	1204	132	19	1	3	10	10	1379	701	67	9	0	1	7	6	791	790	99	9	0	0	9	2	909	3079

Severnside
Tranportation Data Collection

	Summary
Project	Porthcawl
Project Code	SS19/38
Site name	Site 05
Lees and Movements	All Processed Lees & Movements
Bin Size	15.0
Start Time	07:30
End Time	18:15
Location	Site 05
Latitude and Longitude	51.48336920083974, -3.68322550109874 1

	Start	End
Am Peak	2025-07-09 08:30:00	2025-07-09 09:30:00
Pm Peak	2025-07-09 16:45:00	2025-07-09 17:45:00



Turning Movement Data Plot

Class	Right	Left	U-turn
Car	484	475	3
LGV	63	48	0
OGV1	4	8	0
OGV2	0	0	0
PSV	0	1	0
MC	5	3	0
PC	0	1	0
Total	556	536	3



AM Peak Turning Movement Data Summary

Class	Right	Left	U-turn
Car	76	56	1
LGV	14	9	0
OGV1	1	3	0
OGV2	0	0	0
PSV	0	0	0
MC	1	1	0
PC	0	0	0
Total	92	69	1



PM Peak Turning Movemet Data Summary

Class	Right	Left	U-turn
Car	123	133	0
LGV	7	9	0
OGV1	2	1	0
OGV2	0	0	0
PSV	0	0	0
MC	1	0	0
PC	0	0	0
Total	133	143	0



Severnside
Transportation Data Collection

SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 6

	Arm A - Arm A								Arm A - Arm B								Arm A - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	0	0	0	0	0	0	0	**0**	3	1	0	0	0	0	0	**4**	21	3	0	0	1	0	0	**25**	**29**
0745-0800	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	36	3	0	0	2	0	0	**41**	**43**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**6**	**57**	**6**	**0**	**0**	**3**	**0**	**0**	**66**	**72**
0800-0815	0	0	0	0	0	0	0	**0**	6	0	0	0	0	0	0	**6**	42	9	1	0	2	0	0	**54**	**60**
0815-0830	0	0	0	0	0	0	0	**0**	5	0	0	0	0	0	0	**5**	62	7	0	2	1	1	0	**73**	**78**
0830-0845	0	0	0	0	0	0	0	**0**	2	1	0	0	0	0	0	**3**	96	5	1	1	2	0	0	**105**	**108**
0845-0900	0	0	0	0	0	0	0	**0**	9	1	0	0	0	0	0	**10**	43	3	1	1	2	0	0	**50**	**60**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**2**	**0**	**0**	**0**	**0**	**0**	**24**	**243**	**24**	**3**	**4**	**7**	**1**	**0**	**282**	**306**
0900-0915	0	0	0	0	0	0	0	**0**	4	1	0	0	0	0	0	**5**	44	6	2	0	1	0	0	**53**	**58**
0915-0930	0	0	0	0	0	0	0	**0**	13	0	0	0	0	0	0	**13**	47	3	0	0	1	0	0	**51**	**64**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**1**	**0**	**0**	**0**	**0**	**0**	**18**	**91**	**9**	**2**	**0**	**2**	**0**	**0**	**104**	**122**
2 Hour Totals (am)	0	0	0	0	0	0	0	**0**	44	4	0	0	0	0	0	**48**	391	39	5	4	12	1	0	**452**	**500**
1500-1515	0	0	0	0	0	0	0	**0**	2	1	0	0	0	0	0	**3**	69	4	0	0	1	1	0	**75**	**78**
1515-1530	0	0	0	0	0	0	0	**0**	6	0	0	0	0	0	0	**6**	48	5	0	0	2	0	0	**55**	**61**
1530-1545	0	0	0	0	0	0	0	**0**	5	0	0	0	0	0	0	**5**	58	4	1	0	1	0	0	**64**	**69**
1545-1600	0	0	0	0	0	0	0	**0**	5	0	0	0	0	0	0	**5**	61	1	0	0	1	0	0	**63**	**68**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**1**	**0**	**0**	**0**	**0**	**0**	**19**	**236**	**14**	**1**	**0**	**5**	**1**	**0**	**257**	**276**
1600-1615	0	0	0	0	0	0	0	**0**	4	0	0	0	0	0	0	**4**	66	2	1	1	0	3	0	**73**	**77**
1615-1630	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	58	4	0	0	0	2	0	**64**	**66**
1630-1645	0	0	0	0	0	0	0	**0**	8	0	0	0	0	0	0	**8**	53	5	0	0	2	4	0	**64**	**72**
1645-1700	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	50	2	0	0	0	3	0	**55**	**58**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**227**	**13**	**1**	**1**	**2**	**12**	**0**	**256**	**273**
1700-1715	0	0	0	0	0	0	0	**0**	4	0	0	0	0	0	0	**4**	71	3	0	0	2	0	1	**77**	**81**
1715-1730	0	0	0	0	0	0	0	**0**	4	0	0	0	0	0	0	**4**	51	4	0	0	1	3	3	**62**	**66**
1730-1745	0	0	0	0	0	0	0	**0**	12	0	0	0	0	0	0	**12**	66	4	0	0	1	1	0	**72**	**84**
1745-1800	0	0	0	0	0	0	0	**0**	5	0	0	0	0	0	0	**5**	62	6	0	0	1	4	0	**73**	**78**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**250**	**17**	**0**	**0**	**5**	**8**	**4**	**284**	**309**
1800-1815	0	0	0	0	0	0	0	**0**	6	1	0	0	0	0	0	**7**	63	1	0	0	1	4	1	**70**	**77**
1815-1830	0	0	0	0	0	0	0	**0**	6	0	0	0	0	0	0	**6**	63	3	0	0	1	1	1	**69**	**75**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**1**	**0**	**0**	**0**	**0**	**0**	**13**	**126**	**4**	**0**	**0**	**2**	**5**	**2**	**139**	**152**
3.5 Hour Totals (pm)	0	0	0	0	0	0	0	0	72	2	0	0	0	0	0	74	839	48	2	1	14	26	6	936	**1010**
Day Total	0	0	0	0	0	0	0	0	116	6	0	0	0	0	0	122	1230	87	7	5	26	27	6	1388	1510

	Arm B - Arm A								Arm B - Arm B								Arm B - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	6	0	1	0	0	0	0	**7**	**7**
0745-0800	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	2	0	0	0	0	2	**4**	**5**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**2**	**1**	**0**	**0**	**0**	**2**	**11**	**12**

0800-0815	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	6	3	0	0	0	0	1	**10**	**11**
0815-0830	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	14	2	0	0	0	0	0	**16**	**17**
0830-0845	1	1	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	13	0	0	0	0	0	0	**13**	**15**
0845-0900	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	6	1	0	0	0	0	0	**7**	**8**
Hourly Total	**3**	**2**	**0**	**0**	**0**	**0**	**0**	5	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**39**	**6**	**0**	**0**	**0**	**0**	**1**	**46**	**51**
0900-0915	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	7	2	0	0	0	0	0	**9**	**9**
0915-0930	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	10	2	0	0	0	1	0	**13**	**13**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**4**	**0**	**0**	**0**	**1**	**0**	**22**	**22**
2 Hour Totals (am)	4	2	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	62	12	1	0	0	1	3	**79**	**85**
1500-1515	2	1	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	9	0	0	0	0	0	0	**9**	**12**
1515-1530	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	22	2	0	0	0	0	0	**24**	**25**
1530-1545	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	20	2	0	0	0	0	1	**23**	**25**
1545-1600	3	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	21	0	0	0	0	2	0	**23**	**26**
Hourly Total	**7**	**1**	**0**	**0**	**0**	**0**	**0**	8	**1**	**0**	**0**	**0**	**0**	**0**	**0**	1	**72**	**4**	**0**	**0**	**0**	**2**	**1**	79	**88**
1600-1615	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	17	1	0	0	0	0	0	**18**	**20**
1615-1630	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	11	0	0	0	0	0	0	**11**	**12**
1630-1645	3	0	0	0	0	0	0	**3**	1	0	0	0	0	0	0	**1**	13	1	0	0	0	1	1	**16**	**20**
1645-1700	5	0	0	0	0	0	0	**5**	1	0	0	0	0	0	0	**1**	17	1	0	0	0	1	0	**19**	**25**
Hourly Total	**10**	**0**	**0**	**0**	**0**	**0**	**0**	10	**3**	**0**	**0**	**0**	**0**	**0**	**0**	3	**58**	**3**	**0**	**0**	**0**	**2**	**1**	64	**77**
1700-1715	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	20	0	0	0	0	1	0	**21**	**26**
1715-1730	3	0	0	0	0	1	0	**4**	0	0	0	0	0	0	0	**0**	20	2	0	0	0	1	1	**24**	**28**
1730-1745	3	0	1	0	0	0	0	**4**	2	0	0	0	0	0	0	**2**	36	2	0	0	0	0	0	**38**	**44**
1745-1800	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	23	0	0	0	0	0	0	**23**	**28**
Hourly Total	**16**	**0**	**1**	**0**	**0**	**1**	**0**	18	**2**	**0**	**0**	**0**	**0**	**0**	**0**	2	**99**	**4**	**0**	**0**	**0**	**2**	**1**	106	**126**
1800-1815	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	25	2	0	0	0	1	0	**28**	**28**
1815-1830	6	0	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	29	2	0	0	0	3	1	**35**	**41**
Hourly Total	**6**	**0**	**0**	**0**	**0**	**0**	**0**	6	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	**54**	**4**	**0**	**0**	**0**	**4**	**1**	63	**69**
3.5 Hour Totals (pm)	39	1	1	0	0	1	0	42	6	0	0	0	0	0	0	6	283	15	0	0	0	10	4	312	**360**
Day Total	43	3	1	0	0	1	0	48	6	0	0	0	0	0	0	6	345	27	1	0	0	11	7	391	445

	Arm C - Arm A								Arm C - Arm B								Arm C - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	19	5	3	0	0	0	1	**28**	1	5	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	**34**
0745-0800	23	7	1	1	0	0	0	**32**	0	1	0	0	0	0	1	**2**	0	0	0	0	0	0	0	**0**	**34**
Hourly Total	**42**	**12**	**4**	**1**	**0**	**0**	**1**	60	**1**	**6**	**0**	**0**	**0**	**0**	**1**	8	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	**68**
0800-0815	26	7	1	0	1	0	0	**35**	2	2	0	0	0	0	0	**4**	0	0	0	0	0	0	0	**0**	**39**
0815-0830	48	6	2	0	0	1	1	**58**	6	1	0	0	0	0	1	**8**	0	0	0	0	0	0	0	**0**	**66**
0830-0845	90	7	0	0	0	0	0	**97**	11	1	0	0	0	0	0	**12**	0	0	0	0	0	0	0	**0**	**109**
0845-0900	53	5	0	0	0	0	0	**58**	6	1	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	**65**
Hourly Total	**217**	**25**	**3**	**0**	**1**	**1**	**1**	248	**25**	**5**	**0**	**0**	**0**	**0**	**1**	31	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	**279**
0900-0915	56	11	1	1	0	1	0	**70**	7	1	0	0	0	0	1	**9**	0	0	1	0	0	0	0	**1**	**80**
0915-0930	42	9	0	0	0	0	0	**51**	9	0	0	0	0	0	0	**9**	0	0	0	0	0	0	0	**0**	**60**
Hourly Total	**98**	**20**	**1**	**1**	**0**	**1**	**0**	121	**16**	**1**	**0**	**0**	**0**	**0**	**1**	18	**0**	**0**	**1**	**0**	**0**	**0**	**0**	1	**140**

2 Hour Totals (am)	357	57	8	2	1	2	2	**429**	42	12	0	0	0	0	3	**57**	0	0	1	0	0	0	0	**1**	**487**
1500-1515	109	7	0	0	1	0	0	**117**	14	1	0	0	0	0	0	**15**	0	0	0	0	0	0	0	**0**	**132**
1515-1530	81	7	2	0	0	0	0	**90**	13	1	0	0	1	0	0	**15**	0	0	0	0	0	0	0	**0**	**105**
1530-1545	62	5	0	0	0	1	1	**69**	6	0	0	0	0	3	2	**11**	0	0	0	0	0	0	0	**0**	**80**
1545-1600	74	8	1	0	0	1	0	**84**	17	0	0	0	0	0	0	**17**	0	0	0	0	0	0	0	**0**	**101**
Hourly Total	**326**	**27**	**3**	**0**	**1**	**2**	**1**	**360**	**50**	**2**	**0**	**0**	**1**	**3**	**2**	**58**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**418**
1600-1615	66	3	1	0	0	2	0	**72**	13	0	0	0	0	0	2	**15**	0	0	0	0	0	0	0	**0**	**87**
1615-1630	36	4	2	0	0	3	0	**45**	12	1	0	0	0	0	0	**13**	0	0	0	0	0	0	0	**0**	**58**
1630-1645	60	5	1	1	1	1	0	**69**	9	0	0	0	0	0	1	**10**	0	0	0	0	0	0	0	**0**	**79**
1645-1700	61	1	0	0	1	0	0	**63**	15	0	0	0	0	0	0	**15**	0	0	0	0	0	0	0	**0**	**78**
Hourly Total	**223**	**13**	**4**	**1**	**2**	**6**	**0**	**249**	**49**	**1**	**0**	**0**	**0**	**0**	**3**	**53**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**302**
1700-1715	55	6	2	0	0	2	0	**65**	15	1	0	0	0	0	2	**18**	1	0	0	0	0	0	0	**1**	**84**
1715-1730	55	4	0	0	0	4	0	**63**	16	0	0	0	0	2	0	**18**	0	0	0	0	0	0	0	**0**	**81**
1730-1745	60	1	0	0	0	1	0	**62**	21	0	0	0	0	3	0	**24**	0	0	0	0	0	0	0	**0**	**86**
1745-1800	50	4	0	0	0	0	0	**54**	12	2	0	0	0	0	1	**15**	0	0	0	0	0	0	0	**0**	**69**
Hourly Total	**220**	**15**	**2**	**0**	**0**	**7**	**0**	**244**	**64**	**3**	**0**	**0**	**0**	**5**	**3**	**75**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**320**
1800-1815	47	4	0	0	0	1	0	**52**	19	1	0	0	0	2	0	**22**	1	0	0	0	0	0	0	**1**	**75**
1815-1830	49	6	0	0	0	1	4	**60**	12	1	0	0	0	4	0	**17**	0	0	0	0	0	0	0	**0**	**77**
Hourly Total	**96**	**10**	**0**	**0**	**0**	**2**	**4**	**112**	**31**	**2**	**0**	**0**	**0**	**6**	**0**	**39**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**152**
3.5 Hour Totals (pm)	865	65	9	1	3	17	5	965	194	8	0	0	1	14	8	225	2	0	0	0	0	0	0	2	**1192**
Day Total	1222	122	17	3	4	19	7	1394	236	20	0	0	1	14	11	282	2	0	1	0	0	0	0	3	1679

	Origin - Arm A								Origin - Arm B								Origin - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	24	4	0	0	1	0	0	**29**	6	0	1	0	0	0	0	**7**	20	10	3	0	0	0	1	**34**	**70**
0745-0800	38	3	0	0	2	0	0	**43**	1	2	0	0	0	0	2	**5**	23	8	1	1	0	0	1	**34**	**82**
Hourly Total	**62**	**7**	**0**	**0**	**3**	**0**	**0**	**72**	**7**	**2**	**1**	**0**	**0**	**0**	**2**	**12**	**43**	**18**	**4**	**1**	**0**	**0**	**2**	**68**	**152**
0800-0815	48	9	1	0	2	0	0	**60**	7	3	0	0	0	0	1	**11**	28	9	1	0	1	0	0	**39**	**110**
0815-0830	67	7	0	2	1	1	0	**78**	15	2	0	0	0	0	0	**17**	54	7	2	0	0	1	2	**66**	**161**
0830-0845	98	6	1	1	2	0	0	**108**	14	1	0	0	0	0	0	**15**	101	8	0	0	0	0	0	**109**	**232**
0845-0900	52	4	1	1	2	0	0	**60**	6	2	0	0	0	0	0	**8**	59	6	0	0	0	0	0	**65**	**133**
Hourly Total	**265**	**26**	**3**	**4**	**7**	**1**	**0**	**306**	**42**	**8**	**0**	**0**	**0**	**0**	**1**	**51**	**242**	**30**	**3**	**0**	**1**	**1**	**2**	**279**	**636**
0900-0915	48	7	2	0	1	0	0	**58**	7	2	0	0	0	0	0	**9**	63	12	2	1	0	1	1	**80**	**147**
0915-0930	60	3	0	0	1	0	0	**64**	10	2	0	0	0	1	0	**13**	51	9	0	0	0	0	0	**60**	**137**
Hourly Total	**108**	**10**	**2**	**0**	**2**	**0**	**0**	**122**	**17**	**4**	**0**	**0**	**0**	**1**	**0**	**22**	**114**	**21**	**2**	**1**	**0**	**1**	**1**	**140**	**284**
2 Hour Totals (am)	435	43	5	4	12	1	0	**500**	66	14	1	0	0	1	3	**85**	399	69	9	2	1	2	5	**487**	**1072**
1500-1515	71	5	0	0	1	1	0	**78**	11	1	0	0	0	0	0	**12**	123	8	0	0	1	0	0	**132**	**222**
1515-1530	54	5	0	0	2	0	0	**61**	23	2	0	0	0	0	0	**25**	94	8	2	0	1	0	0	**105**	**191**
1530-1545	63	4	1	0	1	0	0	**69**	22	2	0	0	0	0	1	**25**	68	5	0	0	0	4	3	**80**	**174**
1545-1600	66	1	0	0	1	0	0	**68**	24	0	0	0	0	2	0	**26**	91	8	1	0	0	1	0	**101**	**195**
Hourly Total	**254**	**15**	**1**	**0**	**5**	**1**	**0**	**276**	**80**	**5**	**0**	**0**	**0**	**2**	**1**	**88**	**376**	**29**	**3**	**0**	**2**	**5**	**3**	**418**	**782**
1600-1615	70	2	1	1	0	3	0	**77**	19	1	0	0	0	0	0	**20**	79	3	1	0	0	2	2	**87**	**184**

1615-1630	60	4	0	0	0	2	0	**66**	12	0	0	0	0	0	0	**12**	48	5	2	0	0	3	0	**58**	**136**
1630-1645	61	5	0	0	2	4	0	**72**	17	1	0	0	0	1	1	**20**	69	5	1	1	1	1	1	**79**	**171**
1645-1700	53	2	0	0	0	3	0	**58**	23	1	0	0	0	1	0	**25**	76	1	0	0	1	0	0	**78**	**161**
Hourly Total	**244**	**13**	**1**	**1**	**2**	**12**	**0**	**273**	**71**	**3**	**0**	**0**	**0**	**2**	**1**	**77**	**272**	**14**	**4**	**1**	**2**	**6**	**3**	**302**	**652**
1700-1715	75	3	0	0	2	0	1	**81**	25	0	0	0	0	1	0	**26**	71	7	2	0	0	2	2	**84**	**191**
1715-1730	55	4	0	0	1	3	3	**66**	23	2	0	0	0	2	1	**28**	71	4	0	0	0	6	0	**81**	**175**
1730-1745	78	4	0	0	1	1	0	**84**	41	2	1	0	0	0	0	**44**	81	1	0	0	0	4	0	**86**	**214**
1745-1800	67	6	0	0	1	4	0	**78**	28	0	0	0	0	0	0	**28**	62	6	0	0	0	0	1	**69**	**175**
Hourly Total	**275**	**17**	**0**	**0**	**5**	**8**	**4**	**309**	**117**	**4**	**1**	**0**	**0**	**3**	**1**	**126**	**285**	**18**	**2**	**0**	**0**	**12**	**3**	**320**	**755**
1800-1815	69	2	0	0	1	4	1	**77**	25	2	0	0	0	1	0	**28**	67	5	0	0	0	3	0	**75**	**180**
1815-1830	69	3	0	0	1	1	1	**75**	35	2	0	0	0	3	1	**41**	61	7	0	0	0	5	4	**77**	**193**
Hourly Total	**138**	**5**	**0**	**0**	**2**	**5**	**2**	**152**	**60**	**4**	**0**	**0**	**0**	**4**	**1**	**69**	**128**	**12**	**0**	**0**	**0**	**8**	**4**	**152**	**373**
3.5 Hour Totals (pm)	911	50	2	1	14	26	6	1010	328	16	1	0	0	11	4	360	1061	73	9	1	4	31	13	1192	**2562**
Day Total	1346	93	7	5	26	27	6	1510	394	30	2	0	0	12	7	445	1460	142	18	3	5	33	18	1679	3634

	Destination - Arm A								Destination - Arm B								Destination - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	19	5	3	0	0	0	1	**28**	4	6	0	0	0	0	0	**10**	27	3	1	0	1	0	0	**32**	**70**
0745-0800	24	7	1	1	0	0	0	**33**	2	1	0	0	0	0	1	**4**	36	5	0	0	2	0	2	**45**	**82**
Hourly Total	**43**	**12**	**4**	**1**	**0**	**0**	**1**	**61**	**6**	**7**	**0**	**0**	**0**	**0**	**1**	**14**	**63**	**8**	**1**	**0**	**3**	**0**	**2**	**77**	**152**
0800-0815	27	7	1	0	1	0	0	**36**	8	2	0	0	0	0	0	**10**	48	12	1	0	2	0	1	**64**	**110**
0815-0830	49	6	2	0	0	1	1	**59**	11	1	0	0	0	0	1	**13**	76	9	0	2	1	1	0	**89**	**161**
0830-0845	91	8	0	0	0	0	0	**99**	13	2	0	0	0	0	0	**15**	109	5	1	1	2	0	0	**118**	**232**
0845-0900	53	6	0	0	0	0	0	**59**	15	2	0	0	0	0	0	**17**	49	4	1	1	2	0	0	**57**	**133**
Hourly Total	**220**	**27**	**3**	**0**	**1**	**1**	**1**	**253**	**47**	**7**	**0**	**0**	**0**	**0**	**1**	**55**	**282**	**30**	**3**	**4**	**7**	**1**	**1**	**328**	**636**
0900-0915	56	11	1	1	0	1	0	**70**	11	2	0	0	0	0	1	**14**	51	8	3	0	1	0	0	**63**	**147**
0915-0930	42	9	0	0	0	0	0	**51**	22	0	0	0	0	0	0	**22**	57	5	0	0	1	1	0	**64**	**137**
Hourly Total	**98**	**20**	**1**	**1**	**0**	**1**	**0**	**121**	**33**	**2**	**0**	**0**	**0**	**0**	**1**	**36**	**108**	**13**	**3**	**0**	**2**	**1**	**0**	**127**	**284**
2 Hour Totals (am)	361	59	8	2	1	2	2	**435**	86	16	0	0	0	0	3	**105**	453	51	7	4	12	2	3	**532**	**1072**
1500-1515	111	8	0	0	1	0	0	**120**	16	2	0	0	0	0	0	**18**	78	4	0	0	1	1	0	**84**	**222**
1515-1530	82	7	2	0	0	0	0	**91**	19	1	0	0	1	0	0	**21**	70	7	0	0	2	0	0	**79**	**191**
1530-1545	63	5	0	0	0	1	1	**70**	12	0	0	0	0	3	2	**17**	78	6	1	0	1	0	1	**87**	**174**
1545-1600	77	8	1	0	0	1	0	**87**	22	0	0	0	0	0	0	**22**	82	1	0	0	1	2	0	**86**	**195**
Hourly Total	**333**	**28**	**3**	**0**	**1**	**2**	**1**	**368**	**69**	**3**	**0**	**0**	**1**	**3**	**2**	**78**	**308**	**18**	**1**	**0**	**5**	**3**	**1**	**336**	**782**
1600-1615	67	3	1	0	0	2	0	**73**	18	0	0	0	0	0	2	**20**	83	3	1	1	0	3	0	**91**	**184**
1615-1630	37	4	2	0	0	3	0	**46**	14	1	0	0	0	0	0	**15**	69	4	0	0	0	2	0	**75**	**136**
1630-1645	63	5	1	1	1	1	0	**72**	18	0	0	0	0	0	1	**19**	66	6	0	0	2	5	1	**80**	**171**
1645-1700	66	1	0	0	1	0	0	**68**	19	0	0	0	0	0	0	**19**	67	3	0	0	0	4	0	**74**	**161**
Hourly Total	**233**	**13**	**4**	**1**	**2**	**6**	**0**	**259**	**69**	**1**	**0**	**0**	**0**	**0**	**3**	**73**	**285**	**16**	**1**	**1**	**2**	**14**	**1**	**320**	**652**
1700-1715	60	6	2	0	0	2	0	**70**	19	1	0	0	0	0	2	**22**	92	3	0	0	2	1	1	**99**	**191**
1715-1730	58	4	0	0	0	5	0	**67**	20	0	0	0	0	2	0	**22**	71	6	0	0	1	4	4	**86**	**175**
1730-1745	63	1	1	0	0	1	0	**66**	35	0	0	0	0	3	0	**38**	102	6	0	0	1	1	0	**110**	**214**
1745-1800	55	4	0	0	0	0	0	**59**	17	2	0	0	0	0	1	**20**	85	6	0	0	1	4	0	**96**	**175**
Hourly Total	**236**	**15**	**3**	**0**	**0**	**8**	**0**	**262**	**91**	**3**	**0**	**0**	**0**	**5**	**3**	**102**	**350**	**21**	**0**	**0**	**5**	**10**	**5**	**391**	**755**

1800-1815	47	4	0	0	0	1	0	**52**	25	2	0	0	0	2	0	**29**	89	3	0	0	1	5	1	**99**	**180**
1815-1830	55	6	0	0	0	1	4	**66**	18	1	0	0	0	4	0	**23**	92	5	0	0	1	4	2	**104**	**193**
Hourly Total	**102**	**10**	**0**	**0**	**0**	**2**	**4**	**118**	**43**	**3**	**0**	**0**	**0**	**6**	**0**	**52**	**181**	**8**	**0**	**0**	**2**	**9**	**3**	**203**	**373**
3.5 Hour Totals (pm)	904	66	10	1	3	18	5	1007	272	10	0	0	1	14	8	305	1124	63	2	1	14	36	10	1250	**2562**
Day Total	1265	125	18	3	4	20	7	1442	358	26	0	0	1	14	11	410	1577	114	9	5	26	38	13	1782	3634

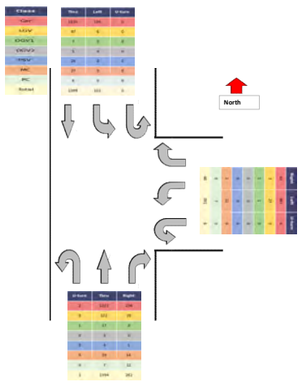
Severnside
Tramportation Data Collection

Summary	
Project	Porthcawl
Project Code	05193B
Site name	Site 06
Lees and Movements	All Processed Lees & Movements
Bin Size	15.0
Start Time	07:30
End Time	18:15
Location	Site 06
Latitude and Longitude	51.475637721823 44, -3.702012401118774

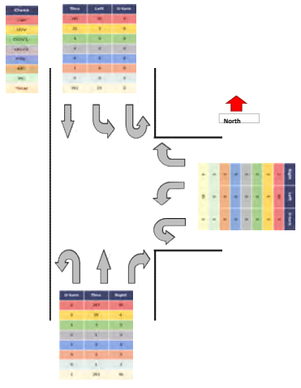
	Start	End
Am Peak	2025-07-09 08:15:00	2025-07-09 09:15:00
Pm Peak	2025-07-09 15:00:00	2025-07-09 16:00:00



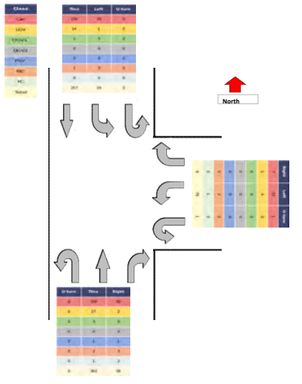
Turning Movement Data Plot



AM Peak Turning Movement Data Summary



PM Peak Turning Movemet Data Summary



Severnside
Transportation Data Collection

SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 7

	Arm A - Arm A								Arm A - Arm B								Arm A - Arm C								Arm A - Arm D								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	0	0	0	0	0	0	0	**0**	5	0	0	0	0	0	0	**5**	2	0	0	0	0	0	0	**2**	6	7	0	0	0	0	0	**13**	**20**
0745-0800	0	0	0	0	0	0	0	**0**	3	1	0	0	0	0	0	**4**	2	0	0	0	0	0	1	**3**	12	3	0	0	0	0	0	**15**	**22**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**1**	**0**	**0**	**0**	**0**	**0**	**9**	**4**	**0**	**0**	**0**	**0**	**0**	**1**	**5**	**18**	**10**	**0**	**0**	**0**	**0**	**0**	**28**	**42**
0800-0815	0	0	0	0	0	0	0	**0**	9	0	0	0	1	0	0	**10**	2	0	0	0	0	0	0	**2**	9	3	0	0	0	0	0	**12**	**24**
0815-0830	0	0	0	0	0	0	0	**0**	5	0	0	0	0	0	0	**5**	3	1	0	0	0	0	0	**4**	9	2	0	0	0	0	0	**11**	**20**
0830-0845	0	0	0	0	0	0	0	**0**	13	1	0	0	1	0	0	**15**	3	1	0	0	0	0	0	**4**	11	1	0	0	0	0	0	**12**	**31**
0845-0900	0	0	0	0	0	0	0	**0**	10	0	0	0	0	0	0	**10**	2	2	0	0	0	0	0	**4**	20	1	1	0	0	0	0	**22**	**36**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**37**	**1**	**0**	**0**	**2**	**0**	**0**	**40**	**10**	**4**	**0**	**0**	**0**	**0**	**0**	**14**	**49**	**7**	**1**	**0**	**0**	**0**	**0**	**57**	**111**
0900-0915	0	0	0	0	0	0	0	**0**	9	0	0	0	1	0	0	**10**	4	1	0	0	0	0	0	**5**	14	3	1	0	0	1	0	**19**	**34**
0915-0930	0	0	0	0	0	0	0	**0**	7	0	1	1	0	0	0	**9**	2	0	0	0	0	0	0	**2**	16	5	1	0	0	0	0	**22**	**33**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**1**	**1**	**1**	**0**	**0**	**19**	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**7**	**30**	**8**	**3**	**0**	**0**	**1**	**0**	**41**	**67**
2 Hour Totals (am)	0	0	0	0	0	0	0	**0**	61	2	1	1	3	0	0	**68**	20	5	0	0	0	0	1	**26**	97	25	4	0	0	1	0	**126**	**220**
1500-1515	0	0	0	0	0	0	0	**0**	15	0	0	0	2	0	0	**17**	2	1	0	0	0	0	0	**3**	16	2	0	0	0	0	0	**18**	**38**
1515-1530	0	0	0	0	0	0	0	**0**	8	0	1	0	2	0	0	**11**	7	3	1	0	0	0	0	**11**	22	6	0	0	0	0	0	**28**	**50**
1530-1545	0	0	0	0	0	0	0	**0**	14	0	0	0	0	0	0	**14**	5	2	0	0	0	0	0	**7**	32	1	0	0	0	0	0	**33**	**54**
1545-1600	0	0	0	0	0	0	0	**0**	4	1	0	0	0	0	1	**6**	5	0	0	0	0	0	1	**6**	24	4	0	0	1	1	0	**30**	**42**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**41**	**1**	**1**	**0**	**4**	**0**	**1**	**48**	**19**	**6**	**1**	**0**	**0**	**0**	**1**	**27**	**94**	**13**	**0**	**0**	**1**	**1**	**0**	**109**	**184**
1600-1615	0	0	0	0	0	0	0	**0**	12	1	0	0	0	0	0	**13**	4	1	0	0	1	0	1	**7**	26	1	0	0	0	0	0	**27**	**47**
1615-1630	0	0	0	0	0	0	0	**0**	14	2	0	0	0	0	0	**16**	4	0	0	0	0	0	0	**4**	20	3	0	0	0	0	0	**23**	**43**
1630-1645	0	0	0	0	0	0	0	**0**	4	3	0	0	0	0	0	**7**	6	0	0	0	0	0	1	**7**	21	2	0	0	0	0	0	**23**	**37**
1645-1700	0	0	0	0	0	0	0	**0**	12	2	0	0	0	0	0	**14**	6	0	0	0	0	0	0	**6**	37	2	0	0	0	0	0	**39**	**59**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**42**	**8**	**0**	**0**	**0**	**0**	**0**	**50**	**20**	**1**	**0**	**0**	**1**	**0**	**2**	**24**	**104**	**8**	**0**	**0**	**0**	**0**	**0**	**112**	**186**
1700-1715	0	0	0	0	0	0	0	**0**	9	1	0	0	0	0	0	**10**	8	0	0	0	0	0	1	**9**	34	0	0	0	0	0	0	**34**	**53**
1715-1730	0	0	0	0	0	0	0	**0**	8	0	0	0	0	0	0	**8**	7	0	0	0	0	0	0	**7**	28	0	0	0	0	0	0	**28**	**43**
1730-1745	0	0	0	0	0	0	0	**0**	15	0	0	0	1	0	0	**16**	8	2	0	0	0	0	0	**10**	27	4	0	0	0	0	0	**31**	**57**
1745-1800	0	0	0	0	0	0	0	**0**	4	0	0	0	1	0	0	**5**	5	0	0	0	0	0	0	**5**	28	0	0	0	0	1	0	**29**	**39**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**36**	**1**	**0**	**0**	**2**	**0**	**0**	**39**	**28**	**2**	**0**	**0**	**0**	**0**	**1**	**31**	**117**	**4**	**0**	**0**	**0**	**1**	**0**	**122**	**192**
1800-1815	0	0	0	0	0	0	0	**0**	8	0	0	0	0	0	0	**8**	5	1	0	0	0	0	0	**6**	22	1	0	0	0	0	0	**23**	**37**
1815-1830	0	0	0	0	0	0	0	**0**	7	0	0	0	0	0	0	**7**	5	0	0	0	0	0	0	**5**	19	2	0	0	0	1	0	**22**	**34**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**10**	**1**	**0**	**0**	**0**	**0**	**0**	**11**	**41**	**3**	**0**	**0**	**0**	**1**	**0**	**45**	**71**
3.5 Hour Totals (pm)	0	0	0	0	0	0	0	0	134	10	1	0	6	0	1	152	77	10	1	0	1	0	4	93	356	28	0	0	1	3	0	388	**633**
Day Total	0	0	0	0	0	0	0	0	195	12	2	1	9	0	1	220	97	15	1	0	1	0	5	119	453	53	4	0	1	4	0	514	**853**

	Arm B - Arm A								Arm B - Arm B								Arm B - Arm C								Arm B - Arm D								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	1	1	0	0	0	0	0	**2**	4	1	1	0	0	1	0	**7**	**10**
0745-0800	6	1	1	1	2	0	0	**11**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	10	2	1	0	0	0	0	**13**	**24**
Hourly Total	**7**	**1**	**1**	**1**	**2**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**14**	**3**	**2**	**0**	**0**	**1**	**0**	**20**	**34**
0800-0815	3	2	1	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	16	3	0	0	0	0	0	**19**	**25**
0815-0830	2	1	1	0	2	0	0	**6**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	15	3	1	0	0	0	0	**19**	**25**
0830-0845	11	0	0	0	1	0	0	**12**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	22	1	1	0	0	0	0	**24**	**38**
0845-0900	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	1	**1**	11	7	0	0	0	0	0	**18**	**24**
Hourly Total	**21**	**3**	**2**	**0**	**3**	**0**	**0**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**64**	**14**	**2**	**0**	**0**	**0**	**0**	**80**	**112**
0900-0915	9	0	0	0	1	0	0	**10**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	21	3	0	0	0	0	0	**24**	**34**
0915-0930	4	1	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	1	1	0	0	0	0	0	**2**	17	2	0	0	0	1	0	**20**	**27**
Hourly Total	**13**	**1**	**0**	**0**	**1**	**0**	**0**	**15**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**38**	**5**	**3**	**0**	**0**	**1**	**0**	**44**	**61**
2 Hour Totals (am)	41	5	3	1	6	0	0	**56**	0	0	0	0	0	0	0	**0**	4	2	0	0	0	0	1	**7**	116	22	7	0	0	2	0	**144**	**207**
1500-1515	11	0	0	0	1	0	0	**12**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	19	3	0	0	0	0	0	**22**	**35**
1515-1530	6	0	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	23	4	0	0	0	0	1	**28**	**35**
1530-1545	10	2	0	0	0	0	0	**12**	0	0	0	0	0	0	0	**0**	1	1	0	0	0	0	0	**2**	24	3	1	0	0	0	0	**28**	**42**
1545-1600	9	1	0	0	0	0	0	**10**	0	0	0	0	0	0	0	**0**	3	1	0	0	0	0	0	**4**	26	4	1	0	0	0	0	**31**	**45**

Hourly Total	**36**	**3**	**0**	**0**	**1**	**0**	**0**	**40**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**2**	**0**	**0**	**0**	**0**	**0**	**8**	**92**	**14**	**2**	**0**	**0**	**0**	**1**	**109**	**157**
1600-1615	4	3	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	0	2	0	0	0	0	0	**2**	23	3	0	0	0	0	0	**26**	**35**
1615-1630	8	2	0	0	0	0	0	**10**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	22	1	0	0	0	0	0	**23**	**35**
1630-1645	4	0	0	0	1	0	0	**5**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	35	2	0	0	0	0	0	**37**	**44**
1645-1700	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	26	3	1	0	0	0	0	**30**	**35**
Hourly Total	**21**	**5**	**0**	**0**	**1**	**0**	**0**	**27**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**2**	**0**	**0**	**0**	**0**	**0**	**6**	**106**	**9**	**1**	**0**	**0**	**0**	**0**	**116**	**149**
1700-1715	13	1	0	0	1	0	0	**15**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	35	1	1	0	0	0	0	**37**	**54**
1715-1730	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	30	2	1	0	0	1	0	**34**	**42**
1730-1745	2	0	0	0	1	0	0	**3**	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	39	4	0	0	0	0	0	**43**	**49**
1745-1800	6	0	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	32	1	0	0	0	0	0	**33**	**41**
Hourly Total	**26**	**1**	**0**	**0**	**2**	**0**	**0**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**136**	**8**	**2**	**0**	**0**	**1**	**0**	**147**	**186**
1800-1815	11	0	0	0	0	0	0	11	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	30	0	0	0	0	0	0	**30**	**44**
1815-1830	11	0	0	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	4	0	0	0	0	0	0	**4**	31	3	0	0	0	1	0	**35**	**50**
Hourly Total	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**61**	**3**	**0**	**0**	**0**	**1**	**0**	**65**	**94**
3.5 Hour Totals (pm)	105	9	0	0	4	0	0	118	0	0	0	0	0	0	0	0	27	4	0	0	0	0	0	31	395	34	5	0	0	2	1	437	**586**
Day Total	146	14	3	1	10	0	0	174	0	0	0	0	0	0	0	0	31	6	0	0	0	0	1	38	511	56	12	0	0	4	1	581	**793**

	Arm C - Arm A								Arm C - Arm B								Arm C - Arm C								Arm C - Arm D								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**1**
0745-0800	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**1**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
0800-0815	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**1**
0815-0830	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**1**
0830-0845	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**1**
0845-0900	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**1**
Hourly Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
0900-0915	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	1	**1**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**1**
0915-0930	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**0**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**
2 Hour Totals (am)	3	0	0	0	0	0	0	**3**	2	1	0	0	0	0	1	**4**	0	0	0	0	0	0	0	**0**	0	0	3	0	0	0	0	**0**	**7**
1500-1515	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**0**
1515-1530	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	**1**	**1**
1530-1545	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**1**
1545-1600	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**0**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**2**
1600-1615	0	0	0	0	0	0	2	**2**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**3**
1615-1630	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**0**
1630-1645	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**1**
1645-1700	0	0	0	0	0	0	1	**1**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**1**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**
1700-1715	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**0**
1715-1730	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**0**
1730-1745	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**0**
1745-1800	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**1**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
1800-1815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**0**
1815-1830	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**1**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
3.5 Hour Totals (pm)	0	0	0	0	0	0	3	3	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	5	**9**
Day Total	3	0	0	0	0	0	3	6	3	1	0	0	0	0	1	5	0	0	0	0	0	0	0	0	4	1	3	0	0	0	0	5	16

	Arm D - Arm A								Arm D - Arm B								Arm D - Arm C								Arm D - Arm D								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	17	3	1	0	0	0	0	**21**	6	1	1	0	0	1	0	**9**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**30**
0745-0800	17	9	0	0	1	0	1	**28**	15	4	1	0	0	2	0	**22**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**50**

Hourly Total	**34**	**12**	**1**	**0**	**1**	**0**	**1**	**49**	**21**	**5**	**2**	**0**	**0**	**3**	**0**	**31**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**80**
0800-0815	13	3	0	0	0	1	1	**18**	22	6	0	0	0	0	0	**28**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**46**
0815-0830	22	2	0	0	0	0	0	**24**	28	5	0	0	0	0	1	**34**	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**59**
0830-0845	37	2	0	0	0	0	0	**39**	30	5	0	0	0	0	0	**35**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**74**
0845-0900	15	4	0	0	0	0	0	**19**	29	2	1	0	0	0	0	**32**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**51**
Hourly Total	**87**	**11**	**0**	**0**	**0**	**1**	**1**	**100**	**109**	**18**	**1**	**0**	**0**	**0**	**1**	**129**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**230**
0900-0915	19	0	2	0	0	0	1	**22**	18	2	2	0	0	0	0	**22**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**44**
0915-0930	26	0	2	0	1	0	0	**29**	25	3	1	0	0	0	0	**29**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**59**
Hourly Total	**45**	**0**	**4**	**0**	**1**	**0**	**1**	**51**	**43**	**5**	**3**	**0**	**0**	**0**	**0**	**51**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**103**
2 Hour Totals (am)	166	23	5	0	2	1	3	**200**	173	28	6	0	0	3	1	**211**	1	1	0	0	0	0	0	**2**	0	0	3	0	0	0	0	**0**	**413**
1500-1515	28	2	0	0	0	0	0	**30**	33	3	0	0	0	0	0	**36**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**66**
1515-1530	39	2	0	0	0	0	0	**41**	46	2	0	0	0	0	0	**48**	1	1	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	**91**
1530-1545	20	1	1	1	0	1	0	**24**	34	5	1	0	0	1	0	**41**	1	1	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	**67**
1545-1600	28	12	1	0	0	0	0	**41**	24	1	0	0	1	0	0	**26**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**68**
Hourly Total	**115**	**17**	**2**	**1**	**0**	**1**	**0**	**136**	**137**	**11**	**1**	**0**	**1**	**1**	**0**	**151**	**3**	**2**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**292**
1600-1615	31	2	1	0	0	1	0	**35**	22	2	0	0	0	1	1	**26**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**62**
1615-1630	40	5	0	0	0	0	2	**47**	21	4	1	0	0	0	0	**26**	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	**78**
1630-1645	28	4	0	0	0	0	0	**32**	24	2	1	0	0	0	0	**27**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**60**
1645-1700	22	2	0	0	0	0	0	**24**	32	1	1	0	0	0	1	**35**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**60**
Hourly Total	**121**	**13**	**1**	**0**	**0**	**1**	**2**	**138**	**99**	**9**	**3**	**0**	**0**	**1**	**2**	**114**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**260**
1700-1715	31	3	0	0	0	0	0	**34**	28	2	0	0	0	0	0	**30**	3	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	**67**
1715-1730	36	2	0	0	0	0	0	**38**	29	4	1	0	0	1	0	**35**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**73**
1730-1745	34	2	0	0	0	0	0	**36**	32	3	0	0	0	0	0	**35**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**72**
1745-1800	26	4	0	0	0	0	0	**30**	27	2	0	0	0	0	1	**30**	0	1	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**61**
Hourly Total	**127**	**11**	**0**	**0**	**0**	**0**	**0**	**138**	**116**	**11**	**1**	**0**	**0**	**1**	**1**	**130**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**273**
1800-1815	29	3	0	0	0	1	0	**33**	38	3	0	0	0	0	0	**41**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	**76**
1815-1830	29	1	0	0	0	0	0	**30**	33	0	0	0	0	0	1	**34**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**65**
Hourly Total	**58**	**4**	**0**	**0**	**0**	**1**	**0**	**63**	**71**	**3**	**0**	**0**	**0**	**0**	**1**	**75**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**141**
3.5 Hour Totals (pm)	421	45	3	1	0	3	2	475	423	34	5	0	1	3	4	470	18	3	0	0	0	0	0	21	0	0	0	0	0	0	0	0	**966**
Day Total	587	68	8	1	2	4	5	675	596	62	11	0	1	6	5	681	19	4	0	0	0	0	0	23	0	0	3	0	0	0	0	0	**1379**

	Origin - Arm A								Origin - Arm B								Origin - Arm C								Origin - Arm D								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	13	7	0	0	0	0	0	**20**	6	2	1	0	0	1	0	**10**	0	1	0	0	0	0	0	**1**	23	4	2	0	0	1	0	**30**	**61**
0745-0800	17	4	0	0	0	0	1	**22**	16	3	2	1	2	0	0	**24**	1	0	0	0	0	0	0	**1**	32	13	1	0	1	2	1	**50**	**97**
Hourly Total	**30**	**11**	**0**	**0**	**0**	**0**	**1**	**42**	**22**	**5**	**3**	**1**	**2**	**1**	**0**	**34**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**55**	**17**	**3**	**0**	**1**	**3**	**1**	**80**	**158**
0800-0815	20	3	0	0	1	0	0	**24**	19	5	1	0	0	0	0	**25**	1	0	0	0	0	0	0	**1**	35	9	0	0	0	1	1	**46**	**96**
0815-0830	17	3	0	0	0	0	0	**20**	17	4	2	0	2	0	0	**25**	1	0	0	0	0	0	0	**1**	50	8	0	0	0	0	1	**59**	**105**
0830-0845	27	3	0	0	1	0	0	**31**	35	1	1	0	1	0	0	**38**	1	0	0	0	0	0	0	**1**	67	7	0	0	0	0	0	**74**	**144**
0845-0900	32	3	1	0	0	0	0	**36**	16	7	0	0	0	0	1	**24**	1	0	0	0	0	0	0	**1**	44	6	1	0	0	0	0	**51**	**112**
Hourly Total	**96**	**12**	**1**	**0**	**2**	**0**	**0**	**111**	**87**	**17**	**4**	**0**	**3**	**0**	**1**	**112**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**196**	**30**	**1**	**0**	**0**	**1**	**2**	**230**	**457**
0900-0915	27	4	1	0	1	1	0	**34**	30	3	0	0	1	0	0	**34**	0	0	0	0	0	0	1	**1**	37	2	4	0	0	0	1	**44**	**113**
0915-0930	25	5	2	1	0	0	0	**33**	22	4	0	0	0	1	0	**27**	0	0	0	0	0	0	0	**0**	52	3	3	0	1	0	0	**59**	**119**
Hourly Total	**52**	**9**	**3**	**1**	**1**	**1**	**0**	**67**	**52**	**7**	**0**	**0**	**1**	**1**	**0**	**61**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**89**	**5**	**7**	**0**	**1**	**0**	**1**	**103**	**232**
2 Hour Totals (am)	178	32	4	1	3	1	1	**220**	161	29	7	1	6	2	1	**207**	5	1	0	0	0	0	1	**7**	340	52	11	0	2	4	4	**413**	**847**
1500-1515	33	3	0	0	2	0	0	**38**	31	3	0	0	1	0	0	**35**	0	0	0	0	0	0	0	**0**	61	5	0	0	0	0	0	**66**	**139**
1515-1530	37	9	2	0	2	0	0	**50**	30	4	0	0	0	0	1	**35**	0	1	0	0	0	0	0	**1**	86	5	0	0	0	0	0	**91**	**177**
1530-1545	51	3	0	0	0	0	0	**54**	35	6	1	0	0	0	0	**42**	1	0	0	0	0	0	0	**1**	55	7	2	1	0	2	0	**67**	**164**
1545-1600	33	5	0	0	1	1	2	**42**	38	6	1	0	0	0	0	**45**	0	0	0	0	0	0	0	**0**	53	13	1	0	1	0	0	**68**	**155**
Hourly Total	**154**	**20**	**2**	**0**	**5**	**1**	**2**	**184**	**134**	**19**	**2**	**0**	**1**	**0**	**1**	**157**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**255**	**30**	**3**	**1**	**1**	**2**	**0**	**292**	**635**
1600-1615	42	3	0	0	1	0	1	**47**	27	8	0	0	0	0	0	**35**	1	0	0	0	0	0	2	**3**	54	4	1	0	0	2	1	**62**	**147**
1615-1630	38	5	0	0	0	0	0	**43**	32	3	0	0	0	0	0	**35**	0	0	0	0	0	0	0	**0**	66	9	1	0	0	0	2	**78**	**156**
1630-1645	31	5	0	0	0	0	1	**37**	41	2	0	0	1	0	0	**44**	1	0	0	0	0	0	0	**1**	53	6	1	0	0	0	0	**60**	**142**
1645-1700	55	4	0	0	0	0	0	**59**	31	3	1	0	0	0	0	**35**	0	0	0	0	0	0	1	**1**	55	3	1	0	0	0	1	**60**	**155**
Hourly Total	**166**	**17**	**0**	**0**	**1**	**0**	**2**	**186**	**131**	**16**	**1**	**0**	**1**	**0**	**0**	**149**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	**5**	**228**	**22**	**4**	**0**	**0**	**2**	**4**	**260**	**600**
1700-1715	51	1	0	0	0	0	1	**53**	50	2	1	0	1	0	0	**54**	0	0	0	0	0	0	0	**0**	62	5	0	0	0	0	0	**67**	**174**
1715-1730	43	0	0	0	0	0	0	**43**	38	2	1	0	0	1	0	**42**	0	0	0	0	0	0	0	**0**	65	6	1	0	0	1	0	**73**	**158**

1730-1745	50	6	0	0	1	0	0	**57**	44	4	0	0	1	0	0	**49**	0	0	0	0	0	0	0	**0**	67	5	0	0	0	0	0	**72**	**178**
1745-1800	37	0	0	0	1	1	0	**39**	40	1	0	0	0	0	0	**41**	1	0	0	0	0	0	0	**1**	53	7	0	0	0	0	1	**61**	**142**
Hourly Total	**181**	**7**	**0**	**0**	**2**	**1**	**1**	**192**	**172**	**9**	**2**	**0**	**2**	**1**	**0**	**186**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**247**	**23**	**1**	**0**	**0**	**1**	**1**	**273**	**652**
1800-1815	35	2	0	0	0	0	0	**37**	44	0	0	0	0	0	0	**44**	0	0	0	0	0	0	0	**0**	69	6	0	0	0	1	0	**76**	**157**
1815-1830	31	2	0	0	0	1	0	**34**	46	3	0	0	0	1	0	**50**	1	0	0	0	0	0	0	**1**	63	1	0	0	0	0	1	**65**	**150**
Hourly Total	**66**	**4**	**0**	**0**	**0**	**1**	**0**	**71**	**90**	**3**	**0**	**0**	**0**	**1**	**0**	**94**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**132**	**7**	**0**	**0**	**0**	**1**	**1**	**141**	**307**
3.5 Hour Totals (pm)	567	48	2	0	8	3	5	633	527	47	5	0	4	2	1	586	5	1	0	0	0	0	3	9	862	82	8	1	1	6	6	966	**2194**
Day Total	745	80	6	1	11	4	6	853	688	76	12	1	10	4	2	793	10	2	0	0	0	0	4	16	1202	134	19	1	3	10	10	1379	3041

	Destination - Arm A								Destination - Arm B								Destination - Arm C								Destination - Arm D								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	18	3	1	0	0	0	0	**22**	11	2	1	0	0	1	0	**15**	3	1	0	0	0	0	0	**4**	10	8	1	0	0	1	0	**20**	**61**
0745-0800	24	10	1	1	3	0	1	**40**	18	5	1	0	0	2	0	**26**	2	0	0	0	0	0	1	**3**	22	5	1	0	0	0	0	**28**	**97**
Hourly Total	**42**	**13**	**2**	**1**	**3**	**0**	**1**	**62**	**29**	**7**	**2**	**0**	**0**	**3**	**0**	**41**	**5**	**1**	**0**	**0**	**0**	**0**	**1**	**7**	**32**	**13**	**2**	**0**	**0**	**1**	**0**	**48**	**158**
0800-0815	16	5	1	0	0	1	1	**24**	32	6	0	0	1	0	0	**39**	2	0	0	0	0	0	0	**2**	25	6	0	0	0	0	0	**31**	**96**
0815-0830	25	3	1	0	2	0	0	**31**	33	5	0	0	0	0	1	**39**	3	2	0	0	0	0	0	**5**	24	5	1	0	0	0	0	**30**	**105**
0830-0845	49	2	0	0	1	0	0	**52**	43	6	0	0	1	0	0	**50**	5	1	0	0	0	0	0	**6**	33	2	1	0	0	0	0	**36**	**144**
0845-0900	20	4	0	0	0	0	0	**24**	40	2	1	0	0	0	0	**43**	2	2	0	0	0	0	1	**5**	31	8	1	0	0	0	0	**40**	**112**
Hourly Total	**110**	**14**	**2**	**0**	**3**	**1**	**1**	**131**	**148**	**19**	**1**	**0**	**2**	**0**	**1**	**171**	**12**	**5**	**0**	**0**	**0**	**0**	**1**	**18**	**113**	**21**	**3**	**0**	**0**	**0**	**0**	**137**	**457**
0900-0915	28	0	2	0	1	0	1	**32**	27	2	2	0	1	0	1	**33**	4	1	0	0	0	0	0	**5**	35	6	1	0	0	1	0	**43**	**113**
0915-0930	30	1	2	0	1	0	0	**34**	32	3	2	1	0	0	0	**38**	4	1	0	0	0	0	0	**5**	33	7	1	0	0	1	0	**42**	**119**
Hourly Total	**58**	**1**	**4**	**0**	**2**	**0**	**1**	**66**	**59**	**5**	**4**	**1**	**1**	**0**	**1**	**71**	**8**	**2**	**0**	**0**	**0**	**0**	**0**	**10**	**68**	**13**	**2**	**0**	**0**	**2**	**0**	**85**	**232**
2 Hour Totals (am)	210	28	8	1	8	1	3	**259**	236	31	7	1	3	3	2	**283**	25	8	0	0	0	0	2	**35**	213	47	7	0	0	3	0	**270**	**847**
1500-1515	39	2	0	0	1	0	0	**42**	48	3	0	0	2	0	0	**53**	3	1	0	0	0	0	0	**4**	35	5	0	0	0	0	0	**40**	**139**
1515-1530	45	2	0	0	0	0	0	**47**	54	2	1	0	2	0	0	**59**	9	4	1	0	0	0	0	**14**	45	11	0	0	0	0	1	**57**	**177**
1530-1545	30	3	1	1	0	1	0	**36**	48	5	1	0	0	1	0	**55**	7	4	0	0	0	0	0	**11**	57	4	1	0	0	0	0	**62**	**164**
1545-1600	37	13	1	0	0	0	0	**51**	28	2	0	0	1	0	1	**32**	9	1	0	0	0	0	1	**11**	50	8	1	0	1	1	0	**61**	**155**
Hourly Total	**151**	**20**	**2**	**1**	**1**	**1**	**0**	**176**	**178**	**12**	**2**	**0**	**5**	**1**	**1**	**199**	**28**	**10**	**1**	**0**	**0**	**0**	**1**	**40**	**187**	**28**	**2**	**0**	**1**	**1**	**1**	**220**	**635**
1600-1615	35	5	1	0	0	1	2	**44**	34	3	0	0	0	1	1	**39**	5	3	0	0	1	0	1	**10**	50	4	0	0	0	0	0	**54**	**147**
1615-1630	48	7	0	0	0	0	2	**57**	35	6	1	0	0	0	0	**42**	11	0	0	0	0	0	0	**11**	42	4	0	0	0	0	0	**46**	**156**
1630-1645	32	4	0	0	1	0	0	**37**	29	5	1	0	0	0	0	**35**	9	0	0	0	0	0	1	**10**	56	4	0	0	0	0	0	**60**	**142**
1645-1700	27	2	0	0	0	0	1	**30**	44	3	1	0	0	0	1	**49**	7	0	0	0	0	0	0	**7**	63	5	1	0	0	0	0	**69**	**155**
Hourly Total	**142**	**18**	**1**	**0**	**1**	**1**	**5**	**168**	**142**	**17**	**3**	**0**	**0**	**1**	**2**	**165**	**32**	**3**	**0**	**0**	**1**	**0**	**2**	**38**	**211**	**17**	**1**	**0**	**0**	**0**	**0**	**229**	**600**
1700-1715	44	4	0	0	1	0	0	**49**	37	3	0	0	0	0	0	**40**	13	0	0	0	0	0	1	**14**	69	1	1	0	0	0	0	**71**	**174**
1715-1730	41	2	0	0	0	0	0	**43**	37	4	1	0	0	1	0	**43**	10	0	0	0	0	0	0	**10**	58	2	1	0	0	1	0	**62**	**158**
1730-1745	36	2	0	0	1	0	0	**39**	47	3	0	0	1	0	0	**51**	12	2	0	0	0	0	0	**14**	66	8	0	0	0	0	0	**74**	**178**
1745-1800	32	4	0	0	0	0	0	**36**	31	2	0	0	1	0	1	**35**	7	1	0	0	0	0	0	**8**	61	1	0	0	0	1	0	**63**	**142**
Hourly Total	**153**	**12**	**0**	**0**	**2**	**0**	**0**	**167**	**152**	**12**	**1**	**0**	**2**	**1**	**1**	**169**	**42**	**3**	**0**	**0**	**0**	**0**	**1**	**46**	**254**	**12**	**2**	**0**	**0**	**2**	**0**	**270**	**652**
1800-1815	40	3	0	0	0	1	0	**44**	46	3	0	0	0	0	0	**49**	10	1	0	0	0	0	0	**11**	52	1	0	0	0	0	0	**53**	**157**
1815-1830	40	1	0	0	0	0	0	**41**	40	0	0	0	0	0	1	**41**	10	0	0	0	0	0	0	**10**	51	5	0	0	0	2	0	**58**	**150**
Hourly Total	**80**	**4**	**0**	**0**	**0**	**1**	**0**	**85**	**86**	**3**	**0**	**0**	**0**	**0**	**1**	**90**	**20**	**1**	**0**	**0**	**0**	**0**	**0**	**21**	**103**	**6**	**0**	**0**	**0**	**2**	**0**	**111**	**307**
3.5 Hour Totals (pm)	526	54	3	1	4	3	5	596	558	44	6	0	7	3	5	623	122	17	1	0	1	0	4	145	755	63	5	0	1	5	1	830	**2194**
Day Total	736	82	11	2	12	4	8	855	794	75	13	1	10	6	7	906	147	25	1	0	1	0	6	180	968	110	12	0	1	8	1	1100	3041

Severnside
Tranportation Data Collection

Summary	
Project	Porthcawl
Project Code	0519.38
Site name	Site 07
Lees and Movements	All Processed Lees & Movements
Bin Size	15.0
Start Time	07:30
End Time	18:15
Location	Site 07
Latitude and Longitude	51.486676708761 92, -3.682027304160803

	Start	End
Am Peak	2025-07-09 08:30:00	2025-07-09 09:30:00
Pm Peak	2025-07-09 16:45:00	2025-07-09 17:45:00


Site 7
Eastern Bay
Porthcawl Marina
Sandy Bay
Slip Way
Slip Way
Slip Way

Severnside
Transportation Data Collection

SS1938 Porthcawl
Wednesday 09 July 2025
0730-0930 & 1500-1830
Site 8

	Arm A - Arm A								Arm A - Arm B								Arm A - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	0	0	0	0	0	0	0	**0**	13	1	1	0	1	0	0	**16**	13	5	1	0	0	2	0	**21**	**37**
0745-0800	0	0	0	0	0	0	0	**0**	17	1	0	0	0	0	0	**18**	16	4	1	1	2	1	0	**25**	**43**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**30**	**2**	**1**	**0**	**1**	**0**	**0**	**34**	**29**	**9**	**2**	**1**	**2**	**3**	**0**	**46**	**80**
0800-0815	0	0	0	0	0	0	0	**0**	22	3	1	0	1	0	0	**27**	18	7	1	0	0	0	0	**26**	**53**
0815-0830	0	0	0	0	0	0	0	**0**	34	1	0	0	2	0	1	**38**	21	7	1	0	3	0	0	**32**	**70**
0830-0845	0	0	0	0	0	0	0	**0**	44	4	0	0	1	0	0	**49**	50	5	0	0	0	0	0	**55**	**104**
0845-0900	0	0	0	0	0	0	0	**0**	31	3	0	0	0	0	0	**34**	43	7	1	0	0	0	0	**51**	**85**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**131**	**11**	**1**	**0**	**4**	**0**	**1**	**148**	**132**	**26**	**3**	**0**	**3**	**0**	**0**	**164**	**312**
0900-0915	0	0	0	0	0	0	0	**0**	25	2	1	0	0	0	1	**29**	42	4	0	0	1	1	0	**48**	**77**
0915-0930	0	0	0	0	0	0	0	**0**	22	2	0	0	0	0	0	**24**	30	11	0	0	0	0	0	**41**	**65**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**47**	**4**	**1**	**0**	**0**	**0**	**1**	**53**	**72**	**15**	**0**	**0**	**1**	**1**	**0**	**89**	**142**
2 Hour Totals (am)	0	0	0	0	0	0	0	**0**	208	17	3	0	5	0	2	**235**	233	50	5	1	6	4	0	**299**	**534**
1500-1515	0	0	0	0	0	0	0	**0**	36	3	1	0	0	0	0	**40**	53	5	0	0	1	0	0	**59**	**99**
1515-1530	0	0	0	0	0	0	0	**0**	33	3	0	0	2	0	0	**38**	45	6	0	1	0	0	0	**52**	**90**
1530-1545	0	0	0	0	0	0	0	**0**	44	7	0	0	1	0	0	**52**	42	3	0	0	0	0	0	**45**	**97**
1545-1600	0	0	0	0	0	0	0	**0**	46	4	0	0	0	0	0	**50**	54	5	0	0	0	0	0	**59**	**109**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**159**	**17**	**1**	**0**	**3**	**0**	**0**	**180**	**194**	**19**	**0**	**1**	**1**	**0**	**0**	**215**	**395**
1600-1615	0	0	0	0	0	0	0	**0**	35	3	1	0	0	0	0	**39**	49	8	1	0	0	0	0	**58**	**97**
1615-1630	0	0	0	0	0	0	0	**0**	58	2	0	0	0	0	0	**60**	45	9	0	0	0	0	0	**54**	**114**
1630-1645	0	0	0	0	0	0	0	**0**	42	5	0	0	0	0	0	**47**	60	3	0	0	1	0	0	**64**	**111**
1645-1700	0	0	0	0	0	0	0	**0**	47	3	1	0	0	0	0	**51**	42	2	2	0	0	0	0	**46**	**97**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**182**	**13**	**2**	**0**	**0**	**0**	**0**	**197**	**196**	**22**	**3**	**0**	**1**	**0**	**0**	**222**	**419**
1700-1715	0	0	0	0	0	0	0	**0**	41	2	0	0	0	0	0	**43**	79	8	0	0	1	0	0	**88**	**131**
1715-1730	0	0	0	0	0	0	0	**0**	32	0	0	0	0	0	0	**32**	58	3	0	0	0	1	0	**62**	**94**
1730-1745	0	0	0	0	0	0	0	**0**	50	2	0	0	0	0	0	**52**	63	3	0	0	1	0	0	**67**	**119**
1745-1800	0	0	0	0	0	0	0	**0**	38	2	0	0	0	0	0	**40**	72	2	0	0	0	0	0	**74**	**114**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**161**	**6**	**0**	**0**	**0**	**0**	**0**	**167**	**272**	**16**	**0**	**0**	**2**	**1**	**0**	**291**	**458**
1800-1815	0	0	0	0	0	0	0	**0**	27	6	0	0	0	0	0	**33**	52	3	0	0	0	0	0	**55**	**88**
1815-1830	0	0	0	0	0	0	0	**0**	21	0	0	0	0	0	0	**21**	50	3	0	0	0	1	0	**54**	**75**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**48**	**6**	**0**	**0**	**0**	**0**	**0**	**54**	**102**	**6**	**0**	**0**	**0**	**1**	**0**	**109**	**163**
3.5 Hour Totals (pm)	0	0	0	0	0	0	0	0	550	42	3	0	3	0	0	598	764	63	3	1	4	2	0	837	**1435**
Day Total	0	0	0	0	0	0	0	0	758	59	6	0	8	0	2	833	997	113	8	2	10	6	0	1136	1969

	Arm B - Arm A								Arm B - Arm B								Arm B - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0730-0745	42	5	0	0	0	0	0	**47**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	**49**
0745-0800	31	2	1	0	0	0	0	**34**	0	0	0	0	0	0	0	**0**	6	0	0	0	1	0	1	**8**	**42**
Hourly Total	**73**	**7**	**1**	**0**	**0**	**0**	**0**	**81**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**1**	**0**	**1**	**10**	**91**

0800-0815	54	2	1	0	1	1	0	**59**	0	0	0	0	0	0	0	**0**	11	0	0	0	0	0	0	**11**	**70**
0815-0830	41	3	0	0	0	0	0	**44**	0	0	0	0	0	0	0	**0**	15	1	1	0	0	0	0	**17**	**61**
0830-0845	59	0	0	0	2	0	0	**61**	0	0	0	0	0	0	0	**0**	19	1	0	0	0	0	1	**21**	**82**
0845-0900	40	3	1	0	0	0	0	**44**	0	0	0	0	0	0	0	**0**	6	1	0	0	0	0	1	**8**	**52**
Hourly Total	**194**	**8**	**2**	**0**	**3**	**1**	**0**	**208**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**51**	**3**	**1**	**0**	**0**	**0**	**2**	**57**	**265**
0900-0915	37	2	1	0	0	0	0	**40**	0	0	0	0	0	0	0	**0**	10	1	0	0	1	0	0	**12**	**52**
0915-0930	34	3	1	0	0	0	0	**38**	0	0	0	0	0	0	0	**0**	6	0	0	0	0	0	0	**6**	**44**
Hourly Total	**71**	**5**	**2**	**0**	**0**	**0**	**0**	**78**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**1**	**0**	**0**	**1**	**0**	**0**	**18**	**96**
2 Hour Totals (am)	338	20	5	0	3	1	0	**367**	0	0	0	0	0	0	0	**0**	75	4	1	0	2	0	3	**85**	**452**
1500-1515	25	2	2	0	0	0	0	**29**	0	0	0	0	0	0	0	**0**	11	0	0	0	0	0	0	**11**	**40**
1515-1530	20	5	0	0	0	0	0	**25**	0	0	0	0	0	0	0	**0**	6	0	0	0	0	0	0	**6**	**31**
1530-1545	27	5	0	0	0	0	0	**32**	0	0	0	0	0	0	0	**0**	5	3	1	0	0	0	0	**9**	**41**
1545-1600	43	2	0	0	3	0	1	**49**	0	0	0	0	0	0	0	**0**	12	1	0	0	0	0	0	**13**	**62**
Hourly Total	**115**	**14**	**2**	**0**	**3**	**0**	**1**	**135**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**34**	**4**	**1**	**0**	**0**	**0**	**0**	**39**	**174**
1600-1615	33	2	0	0	1	0	0	**36**	0	0	0	0	0	0	0	**0**	5	1	0	0	0	0	0	**6**	**42**
1615-1630	30	2	1	0	0	0	0	**33**	0	0	0	0	0	0	0	**0**	7	0	0	0	0	0	0	**7**	**40**
1630-1645	42	5	0	0	0	0	0	**47**	0	0	0	0	0	0	0	**0**	8	1	0	0	0	0	0	**9**	**56**
1645-1700	27	4	0	0	0	0	0	**31**	0	0	0	0	0	0	0	**0**	7	0	0	0	0	0	0	**7**	**38**
Hourly Total	**132**	**13**	**1**	**0**	**1**	**0**	**0**	**147**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**2**	**0**	**0**	**0**	**0**	**0**	**29**	**176**
1700-1715	41	3	0	0	0	0	0	**44**	0	0	0	0	0	0	0	**0**	11	0	0	0	0	0	0	**11**	**55**
1715-1730	29	2	0	0	0	0	0	**31**	0	0	0	0	0	0	0	**0**	7	2	0	0	0	0	0	**9**	**40**
1730-1745	22	1	0	0	0	0	0	**23**	0	0	0	0	0	0	0	**0**	11	1	0	0	0	0	0	**12**	**35**
1745-1800	30	0	0	0	0	0	0	**30**	0	0	0	0	0	0	0	**0**	6	0	0	0	0	0	0	**6**	**36**
Hourly Total	**122**	**6**	**0**	**0**	**0**	**0**	**0**	**128**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**35**	**3**	**0**	**0**	**0**	**0**	**0**	**38**	**166**
1800-1815	36	2	0	0	0	0	0	**38**	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	**13**	**51**
1815-1830	26	5	0	0	0	1	0	**32**	0	0	0	0	0	0	0	**0**	10	0	0	0	0	0	0	**10**	**42**
Hourly Total	**62**	**7**	**0**	**0**	**0**	**1**	**0**	**70**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	**93**
3.5 Hour Totals (pm)	431	40	3	0	4	1	1	480	0	0	0	0	0	0	0	0	119	9	1	0	0	0	0	129	**609**
Day Total	769	60	8	0	7	2	1	847	0	0	0	0	0	0	0	0	194	13	2	0	2	0	3	214	1061

	Arm C - Arm A								Arm C - Arm B								Arm C - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	22	4	1	0	0	1	0	**28**	8	0	0	0	0	0	0	**8**	0	0	0	0	0	0	0	**0**	**36**
0745-0800	42	7	1	0	0	2	0	**52**	6	0	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	**58**
Hourly Total	**64**	**11**	**2**	**0**	**0**	**3**	**0**	**80**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**94**
0800-0815	47	4	0	0	1	0	0	**52**	7	0	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	**59**
0815-0830	54	4	0	0	0	0	0	**58**	7	1	0	0	0	0	0	**8**	0	0	0	0	0	0	0	**0**	**66**
0830-0845	76	4	0	0	1	0	0	**81**	10	3	0	0	0	0	0	**13**	0	0	0	0	0	0	0	**0**	**94**
0845-0900	46	3	1	0	0	0	0	**50**	15	0	0	0	0	0	0	**15**	0	0	0	0	0	0	0	**0**	**65**
Hourly Total	**223**	**15**	**1**	**0**	**2**	**0**	**0**	**241**	**39**	**4**	**0**	**0**	**0**	**0**	**0**	**43**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**284**
0900-0915	33	0	2	0	1	0	0	**36**	13	0	0	0	0	0	1	**14**	0	0	0	0	0	0	0	**0**	**50**
0915-0930	37	6	2	1	0	0	2	**48**	10	1	0	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	**59**
Hourly Total	**70**	**6**	**4**	**1**	**1**	**0**	**2**	**84**	**23**	**1**	**0**	**0**	**0**	**0**	**1**	**25**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**109**

2 Hour Totals (am)	357	32	7	1	3	3	2	**405**	76	5	0	0	0	0	1	**82**	0	0	0	0	0	0	0	**0**	**487**
1500-1515	49	4	0	0	2	0	0	**55**	9	0	0	0	0	0	1	**10**	0	0	0	0	0	0	0	**0**	**65**
1515-1530	51	4	1	0	1	0	0	**57**	17	4	0	0	0	0	0	**21**	0	0	0	0	0	0	0	**0**	**78**
1530-1545	55	4	1	0	1	1	0	**62**	15	1	0	0	0	0	0	**16**	0	0	0	0	0	0	0	**0**	**78**
1545-1600	40	2	0	0	0	0	0	**42**	9	1	0	0	1	0	0	**11**	0	0	0	0	0	0	0	**0**	**53**
Hourly Total	**195**	**14**	**2**	**0**	**4**	**1**	**0**	**216**	**50**	**6**	**0**	**0**	**1**	**0**	**1**	**58**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**274**
1600-1615	34	2	0	0	1	1	1	**39**	10	0	0	0	0	0	0	**10**	0	0	0	0	0	0	0	**0**	**49**
1615-1630	29	12	1	0	0	0	0	**42**	15	0	1	0	0	0	0	**16**	0	0	0	0	0	0	0	**0**	**58**
1630-1645	35	1	1	0	0	0	0	**37**	8	2	0	0	0	0	0	**10**	0	0	0	0	0	0	0	**0**	**47**
1645-1700	39	3	1	0	0	1	1	**45**	12	2	0	0	0	0	0	**14**	0	0	0	0	0	0	0	**0**	**59**
Hourly Total	**137**	**18**	**3**	**0**	**1**	**2**	**2**	**163**	**45**	**4**	**1**	**0**	**0**	**0**	**0**	**50**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**213**
1700-1715	46	5	0	0	0	1	0	**52**	12	3	0	0	0	0	0	**15**	0	0	0	0	0	0	0	**0**	**67**
1715-1730	36	3	0	0	0	1	0	**40**	12	1	0	0	0	0	0	**13**	0	0	0	0	0	0	0	**0**	**53**
1730-1745	47	3	0	0	1	0	0	**51**	10	2	0	0	0	0	0	**12**	0	0	0	0	0	0	0	**0**	**63**
1745-1800	29	4	0	0	0	0	0	**33**	10	0	0	0	0	0	0	**10**	0	0	0	0	0	0	0	**0**	**43**
Hourly Total	**158**	**15**	**0**	**0**	**1**	**2**	**0**	**176**	**44**	**6**	**0**	**0**	**0**	**0**	**0**	**50**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**226**
1800-1815	44	4	0	0	1	0	1	**50**	14	0	0	0	0	0	0	**14**	0	0	0	0	0	0	0	**0**	**64**
1815-1830	33	2	0	0	0	0	0	**35**	7	2	0	0	0	0	0	**9**	0	0	0	0	0	0	0	**0**	**44**
Hourly Total	**77**	**6**	**0**	**0**	**1**	**0**	**1**	**85**	**21**	**2**	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**108**
3.5 Hour Totals (pm)	567	53	5	0	7	5	3	640	160	18	1	0	1	0	1	181	0	0	0	0	0	0	0	0	**821**
Day Total	924	85	12	1	10	8	5	1045	236	23	1	0	1	0	2	263	0	0	0	0	0	0	0	0	1308

	Origin - Arm A								Origin - Arm B								Origin - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	26	6	2	0	1	2	0	**37**	44	5	0	0	0	0	0	**49**	30	4	1	0	0	1	0	**36**	**122**
0745-0800	33	5	1	1	2	1	0	**43**	37	2	1	0	1	0	1	**42**	48	7	1	0	0	2	0	**58**	**143**
Hourly Total	**59**	**11**	**3**	**1**	**3**	**3**	**0**	**80**	**81**	**7**	**1**	**0**	**1**	**0**	**1**	**91**	**78**	**11**	**2**	**0**	**0**	**3**	**0**	**94**	**265**
0800-0815	40	10	2	0	1	0	0	**53**	65	2	1	0	1	1	0	**70**	54	4	0	0	1	0	0	**59**	**182**
0815-0830	55	8	1	0	5	0	1	**70**	56	4	1	0	0	0	0	**61**	61	5	0	0	0	0	0	**66**	**197**
0830-0845	94	9	0	0	1	0	0	**104**	78	1	0	0	2	0	1	**82**	86	7	0	0	1	0	0	**94**	**280**
0845-0900	74	10	1	0	0	0	0	**85**	46	4	1	0	0	0	1	**52**	61	3	1	0	0	0	0	**65**	**202**
Hourly Total	**263**	**37**	**4**	**0**	**7**	**0**	**1**	**312**	**245**	**11**	**3**	**0**	**3**	**1**	**2**	**265**	**262**	**19**	**1**	**0**	**2**	**0**	**0**	**284**	**861**
0900-0915	67	6	1	0	1	1	1	**77**	47	3	1	0	1	0	0	**52**	46	0	2	0	1	0	1	**50**	**179**
0915-0930	52	13	0	0	0	0	0	**65**	40	3	1	0	0	0	0	**44**	47	7	2	1	0	0	2	**59**	**168**
Hourly Total	**119**	**19**	**1**	**0**	**1**	**1**	**1**	**142**	**87**	**6**	**2**	**0**	**1**	**0**	**0**	**96**	**93**	**7**	**4**	**1**	**1**	**0**	**3**	**109**	**347**
2 Hour Totals (am)	441	67	8	1	11	4	2	**534**	413	24	6	0	5	1	3	**452**	433	37	7	1	3	3	3	**487**	**1473**
1500-1515	89	8	1	0	1	0	0	**99**	36	2	2	0	0	0	0	**40**	58	4	0	0	2	0	1	**65**	**204**
1515-1530	78	9	0	1	2	0	0	**90**	26	5	0	0	0	0	0	**31**	68	8	1	0	1	0	0	**78**	**199**
1530-1545	86	10	0	0	1	0	0	**97**	32	8	1	0	0	0	0	**41**	70	5	1	0	1	1	0	**78**	**216**
1545-1600	100	9	0	0	0	0	0	**109**	55	3	0	0	3	0	1	**62**	49	3	0	0	1	0	0	**53**	**224**
Hourly Total	**353**	**36**	**1**	**1**	**4**	**0**	**0**	**395**	**149**	**18**	**3**	**0**	**3**	**0**	**1**	**174**	**245**	**20**	**2**	**0**	**5**	**1**	**1**	**274**	**843**
1600-1615	84	11	2	0	0	0	0	**97**	38	3	0	0	1	0	0	**42**	44	2	0	0	1	1	1	**49**	**188**

1615-1630	103	11	0	0	0	0	0	**114**	37	2	1	0	0	0	0	**40**	44	12	2	0	0	0	0	**58**	**212**
1630-1645	102	8	0	0	1	0	0	**111**	50	6	0	0	0	0	0	**56**	43	3	1	0	0	0	0	**47**	**214**
1645-1700	89	5	3	0	0	0	0	**97**	34	4	0	0	0	0	0	**38**	51	5	1	0	0	1	1	**59**	**194**
Hourly Total	**378**	**35**	**5**	**0**	**1**	**0**	**0**	**419**	**159**	**15**	**1**	**0**	**1**	**0**	**0**	**176**	**182**	**22**	**4**	**0**	**1**	**2**	**2**	**213**	**808**
1700-1715	120	10	0	0	1	0	0	**131**	52	3	0	0	0	0	0	**55**	58	8	0	0	0	1	0	**67**	**253**
1715-1730	90	3	0	0	0	1	0	**94**	36	4	0	0	0	0	0	**40**	48	4	0	0	0	1	0	**53**	**187**
1730-1745	113	5	0	0	1	0	0	**119**	33	2	0	0	0	0	0	**35**	57	5	0	0	1	0	0	**63**	**217**
1745-1800	110	4	0	0	0	0	0	**114**	36	0	0	0	0	0	0	**36**	39	4	0	0	0	0	0	**43**	**193**
Hourly Total	**433**	**22**	**0**	**0**	**2**	**1**	**0**	**458**	**157**	**9**	**0**	**0**	**0**	**0**	**0**	**166**	**202**	**21**	**0**	**0**	**1**	**2**	**0**	**226**	**850**
1800-1815	79	9	0	0	0	0	0	**88**	49	2	0	0	0	0	0	**51**	58	4	0	0	1	0	1	**64**	**203**
1815-1830	71	3	0	0	0	1	0	**75**	36	5	0	0	0	1	0	**42**	40	4	0	0	0	0	0	**44**	**161**
Hourly Total	**150**	**12**	**0**	**0**	**0**	**1**	**0**	**163**	**85**	**7**	**0**	**0**	**0**	**1**	**0**	**93**	**98**	**8**	**0**	**0**	**1**	**0**	**1**	**108**	**364**
3.5 Hour Totals (pm)	1314	105	6	1	7	2	0	1435	550	49	4	0	4	1	1	609	727	71	6	0	8	5	4	821	**2865**
Day Total	1755	172	14	2	18	6	2	1969	963	73	10	0	9	2	4	1061	1160	108	13	1	11	8	7	1308	4338

	Destination - Arm A								Destination - Arm B								Destination - Arm C								
	Car	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Car**	**LGV**	**OGV1**	**OGV2**	**PSV**	**MC**	**PC**	**Total**	**Arm Total**
0730-0745	64	9	1	0	0	1	0	**75**	21	1	1	0	1	0	0	**24**	15	5	1	0	0	2	0	**23**	**122**
0745-0800	73	9	2	0	0	2	0	**86**	23	1	0	0	0	0	0	**24**	22	4	1	1	3	1	1	**33**	**143**
Hourly Total	**137**	**18**	**3**	**0**	**0**	**3**	**0**	**161**	**44**	**2**	**1**	**0**	**1**	**0**	**0**	**48**	**37**	**9**	**2**	**1**	**3**	**3**	**1**	**56**	**265**
0800-0815	101	6	1	0	2	1	0	**111**	29	3	1	0	1	0	0	**34**	29	7	1	0	0	0	0	**37**	**182**
0815-0830	95	7	0	0	0	0	0	**102**	41	2	0	0	2	0	1	**46**	36	8	2	0	3	0	0	**49**	**197**
0830-0845	135	4	0	0	3	0	0	**142**	54	7	0	0	1	0	0	**62**	69	6	0	0	0	0	1	**76**	**280**
0845-0900	86	6	2	0	0	0	0	**94**	46	3	0	0	0	0	0	**49**	49	8	1	0	0	0	1	**59**	**202**
Hourly Total	**417**	**23**	**3**	**0**	**5**	**1**	**0**	**449**	**170**	**15**	**1**	**0**	**4**	**0**	**1**	**191**	**183**	**29**	**4**	**0**	**3**	**0**	**2**	**221**	**861**
0900-0915	70	2	3	0	1	0	0	**76**	38	2	1	0	0	0	2	**43**	52	5	0	0	2	1	0	**60**	**179**
0915-0930	71	9	3	1	0	0	2	**86**	32	3	0	0	0	0	0	**35**	36	11	0	0	0	0	0	**47**	**168**
Hourly Total	**141**	**11**	**6**	**1**	**1**	**0**	**2**	**162**	**70**	**5**	**1**	**0**	**0**	**0**	**2**	**78**	**88**	**16**	**0**	**0**	**2**	**1**	**0**	**107**	**347**
2 Hour Totals (am)	695	52	12	1	6	4	2	**772**	284	22	3	0	5	0	3	**317**	308	54	6	1	8	4	3	**384**	**1473**
1500-1515	74	6	2	0	2	0	0	**84**	45	3	1	0	0	0	1	**50**	64	5	0	0	1	0	0	**70**	**204**
1515-1530	71	9	1	0	1	0	0	**82**	50	7	0	0	2	0	0	**59**	51	6	0	1	0	0	0	**58**	**199**
1530-1545	82	9	1	0	1	1	0	**94**	59	8	0	0	1	0	0	**68**	47	6	1	0	0	0	0	**54**	**216**
1545-1600	83	4	0	0	3	0	1	**91**	55	5	0	0	1	0	0	**61**	66	6	0	0	0	0	0	**72**	**224**
Hourly Total	**310**	**28**	**4**	**0**	**7**	**1**	**1**	**351**	**209**	**23**	**1**	**0**	**4**	**0**	**1**	**238**	**228**	**23**	**1**	**1**	**1**	**0**	**0**	**254**	**843**
1600-1615	67	4	0	0	2	1	1	**75**	45	3	1	0	0	0	0	**49**	54	9	1	0	0	0	0	**64**	**188**
1615-1630	59	14	2	0	0	0	0	**75**	73	2	1	0	0	0	0	**76**	52	9	0	0	0	0	0	**61**	**212**
1630-1645	77	6	1	0	0	0	0	**84**	50	7	0	0	0	0	0	**57**	68	4	0	0	1	0	0	**73**	**214**
1645-1700	66	7	1	0	0	1	1	**76**	59	5	1	0	0	0	0	**65**	49	2	2	0	0	0	0	**53**	**194**
Hourly Total	**269**	**31**	**4**	**0**	**2**	**2**	**2**	**310**	**227**	**17**	**3**	**0**	**0**	**0**	**0**	**247**	**223**	**24**	**3**	**0**	**1**	**0**	**0**	**251**	**808**
1700-1715	87	8	0	0	0	1	0	**96**	53	5	0	0	0	0	0	**58**	90	8	0	0	1	0	0	**99**	**253**
1715-1730	65	5	0	0	0	1	0	**71**	44	1	0	0	0	0	0	**45**	65	5	0	0	0	1	0	**71**	**187**
1730-1745	69	4	0	0	1	0	0	**74**	60	4	0	0	0	0	0	**64**	74	4	0	0	1	0	0	**79**	**217**
1745-1800	59	4	0	0	0	0	0	**63**	48	2	0	0	0	0	0	**50**	78	2	0	0	0	0	0	**80**	**193**
Hourly Total	**280**	**21**	**0**	**0**	**1**	**2**	**0**	**304**	**205**	**12**	**0**	**0**	**0**	**0**	**0**	**217**	**307**	**19**	**0**	**0**	**2**	**1**	**0**	**329**	**850**

1800-1815	80	6	0	0	1	0	1	**88**	41	6	0	0	0	0	0	**47**	65	3	0	0	0	0	0	**68**	**203**
1815-1830	59	7	0	0	0	1	0	**67**	28	2	0	0	0	0	0	**30**	60	3	0	0	0	1	0	**64**	**161**
Hourly Total	**139**	**13**	**0**	**0**	**1**	**1**	**1**	**155**	**69**	**8**	**0**	**0**	**0**	**0**	**0**	**77**	**125**	**6**	**0**	**0**	**0**	**1**	**0**	**132**	**364**
3.5 Hour Totals (pm)	998	93	8	0	11	6	4	1120	710	60	4	0	4	0	1	779	883	72	4	1	4	2	0	966	**2865**
Day Total	1693	145	20	1	17	10	6	1892	994	82	7	0	9	0	4	1096	1191	126	10	2	12	6	3	1350	4338

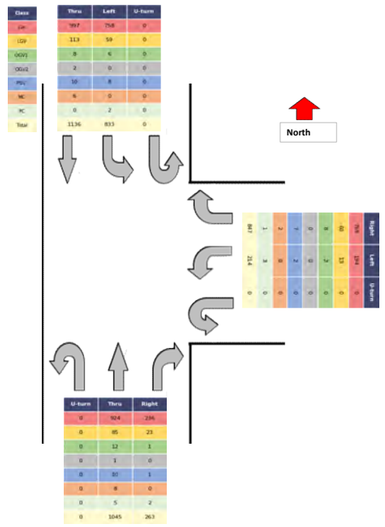
Severnside
Transportation Data Collection

Summary	
Project	Porthcawl
Project Code	SS1938
Site name	Site 08
Legs and Movements	All Processed Legs & Movements
Bin Size	15.0
Start Time	07:30
End Time	18:15
Location	Site 08
Latitude and Longitude	51.48720044401959, -3.67766092263376

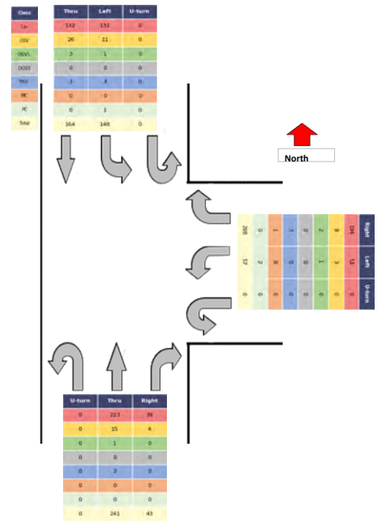
	Start	End
Am Peak	2025-07-09 08:00:00	2025-07-09 09:00:00
Pm Peak	2025-07-09 16:15:00	2025-07-09 17:15:00



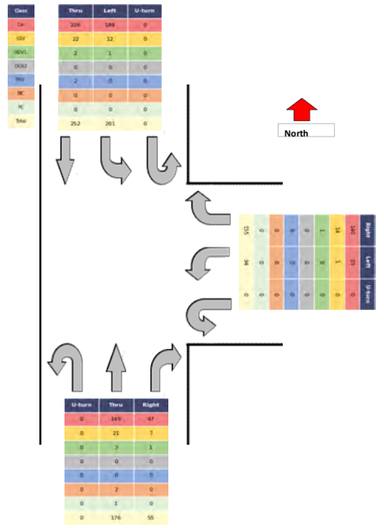
Turning Movement Data Plot



AM Peak Turning Movement Data Summary



PM Peak Turning Movemet Data Summary



Severnside
Transportation Data Collection
www.severnsidetdc.co.uk
Severnside
Traffic Management

Time	Mon			Tue			Wed			Thu		
	14-Jul			15-Jul			16-Jul			17-Jul		
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	22	24	46	27	21	48	20	27	47	30	28	58
01:00	13	16	29	5	9	14	11	16	27	7	9	16
02:00	5	8	13	7	7	14	6	7	13	7	5	12
03:00	9	11	20	8	7	15	7	7	14	7	3	10
04:00	7	12	19	6	13	19	8	16	24	4	12	16
05:00	22	52	74	25	52	77	24	71	95	18	56	74
06:00	54	127	181	48	129	177	55	140	195	56	122	178
07:00	195	353	548	164	337	501	166	350	516	147	315	462
08:00	380	430	810	322	465	787	333	528	861	318	434	752
09:00	389	467	856	326	372	698	394	362	756	325	388	713
10:00	407	476	883	333	390	723	419	403	822	335	371	706
11:00	462	494	956	334	432	766	443	417	860	351	364	715
12:00	448	466	914	391	399	790	447	476	923	380	402	782
13:00	419	450	869	372	424	796	442	490	932	444	430	874
14:00	441	433	874	400	372	772	447	433	880	419	402	821
15:00	486	529	1015	429	410	839	477	494	971	459	455	914
16:00	518	444	962	533	374	907	553	449	1002	523	429	952
17:00	535	405	940	476	404	880	546	433	979	504	401	905
18:00	409	360	769	369	295	664	433	377	810	429	349	778
19:00	317	261	578	253	224	477	338	268	606	345	274	619
20:00	217	237	454	203	189	392	227	266	493	240	230	470
21:00	133	150	283	159	152	311	145	154	299	183	174	357
22:00	91	87	178	100	89	189	96	101	197	102	113	215
23:00	55	39	94	41	36	77	42	51	93	65	51	116
07-19	5089	5307	10396	4449	4674	9123	5100	5212	10312	4634	4740	9374
06-22	5810	6082	11892	5112	5368	10480	5865	6040	11905	5458	5540	10998
06-00	5956	6208	12164	5253	5493	10746	6003	6192	12195	5625	5704	11329
00-00	6034	6331	12365	5331	5602	10933	6079	6336	12415	5698	5817	11515

SS1938 Porthcawl
01 - A4106 Bridgend Road
11/07/2025

Total Volume														
Fri			Sat			Sun			5 Day Avg			7 Day Avg		
11-Jul			12-Jul			13-Jul								
NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
36	38	74	85	91	176	74	93	167	27	28	55	42	46	88
23	22	45	34	42	76	33	38	71	12	14	26	18	22	40
8	8	16	17	21	38	19	22	41	7	7	14	10	11	21
11	6	17	13	12	25	18	24	42	8	7	15	10	10	20
7	14	21	15	11	26	11	15	26	6	13	19	8	13	21
32	59	91	27	34	61	19	24	43	24	58	82	24	50	74
86	141	227	72	73	145	62	48	110	60	132	192	62	111	173
216	338	554	204	155	359	180	105	285	178	339	517	182	279	461
420	531	951	433	288	721	268	168	436	355	478	833	353	406	759
442	480	922	455	405	860	470	358	828	375	414	789	400	405	805
468	504	972	576	554	1130	564	465	1029	392	429	821	443	452	895
525	446	971	605	520	1125	608	472	1080	423	431	854	475	449	924
523	476	999	667	500	1167	702	517	1219	438	444	882	508	462	970
497	496	993	619	482	1101	668	546	1214	435	458	893	494	474	968
501	519	1020	654	597	1251	583	556	1139	442	432	874	492	473	965
664	533	1197	541	511	1052	547	598	1145	503	484	987	515	504	1019
713	502	1215	467	585	1052	509	609	1118	568	440	1008	545	485	1030
718	526	1244	451	621	1072	396	646	1042	556	434	990	518	491	1009
570	437	1007	467	605	1072	391	747	1138	442	364	806	438	453	891
472	432	904	354	471	825	295	595	890	345	292	637	339	361	700
341	470	811	274	446	720	212	451	663	246	278	524	245	327	572
229	503	732	214	461	675	149	292	441	170	227	397	173	269	442
148	271	419	155	327	482	87	193	280	107	132	239	111	169	280
118	170	288	119	168	287	69	85	154	64	69	133	73	86	159
6257	5788	12045	6139	5823	11962	5886	5787	11673	5106	5144	10250	5365	5333	10698
7385	7334	14719	7053	7274	14327	6604	7173	13777	5926	6073	11999	6184	6402	12586
7651	7775	15426	7327	7769	15096	6760	7451	14211	6098	6274	12372	6368	6656	13024
7768	7922	15690	7518	7980	15498	6934	7667	14601	6182	6402	12584	6480	6808	13288

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1938 Porthcawl
02 - A4229 Pyle Road
03/07/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	07-Jul			08-Jul			09-Jul			03-Jul			04-Jul			05-Jul			06-Jul								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	44	36	80	26	26	52	27	22	49	45	71	116	37	40	77	112	83	195	71	69	140	36	39	75	52	50	102
01:00	17	17	34	19	22	41	16	21	37	17	18	35	16	17	33	43	41	84	46	44	90	17	19	36	25	26	51
02:00	10	9	19	11	6	17	9	9	18	19	18	37	5	3	8	33	18	51	33	35	68	11	9	20	17	14	31
03:00	15	9	24	7	10	17	7	10	17	9	12	21	11	10	21	14	13	27	20	9	29	10	10	20	12	10	22
04:00	22	18	40	25	16	41	23	12	35	20	18	38	23	22	45	18	21	39	16	25	41	23	17	40	21	19	40
05:00	127	54	181	132	48	180	126	48	174	114	51	165	124	51	175	60	37	97	25	34	59	125	50	175	101	46	147
06:00	293	105	398	304	105	409	284	121	405	253	122	375	233	112	345	85	73	158	72	90	162	273	113	386	218	104	322
07:00	585	267	852	573	287	860	560	322	882	522	321	843	494	302	796	193	145	338	114	283	397	547	300	847	434	275	709
08:00	734	707	1441	770	703	1473	746	731	1477	771	730	1501	679	683	1362	277	372	649	210	1112	1322	740	711	1451	598	720	1318
09:00	660	545	1205	527	595	1122	603	594	1197	603	618	1221	648	600	1248	463	426	889	302	969	1271	608	590	1198	544	621	1165
10:00	579	567	1146	539	592	1131	672	731	1403	539	640	1179	644	692	1336	565	536	1101	338	498	836	595	644	1239	554	608	1162
11:00	576	662	1238	540	640	1180	877	1083	1960	592	692	1284	635	745	1380	558	659	1217	894	615	1509	644	764	1408	667	728	1395
12:00	611	687	1298	598	673	1271	844	1078	1922	578	701	1279	683	828	1511	556	754	1310	875	628	1503	663	793	1456	678	764	1442
13:00	635	685	1320	576	702	1278	1003	1003	2006	648	688	1336	675	807	1482	582	728	1310	881	752	1633	707	777	1484	714	766	1480
14:00	640	780	1420	690	724	1414	766	858	1624	623	713	1336	703	814	1517	574	763	1337	988	758	1746	684	778	1462	712	773	1485
15:00	725	774	1499	734	696	1430	808	790	1598	751	734	1485	800	909	1709	617	634	1251	842	669	1511	764	781	1545	754	744	1498
16:00	639	838	1477	690	861	1551	693	819	1512	656	906	1562	603	1019	1622	638	635	1273	823	605	1428	656	889	1545	677	812	1489
17:00	618	882	1500	601	909	1510	619	905	1524	647	886	1533	552	1030	1582	630	499	1129	688	515	1203	607	922	1529	622	804	1426
18:00	509	688	1197	573	815	1388	569	763	1332	563	815	1378	540	820	1360	481	554	1035	583	416	999	551	780	1331	545	696	1241
19:00	435	447	882	520	510	1030	492	509	1001	519	555	1074	523	601	1124	389	395	784	422	341	763	498	524	1022	471	480	951
20:00	336	343	679	395	325	720	414	332	746	427	395	822	456	396	852	287	254	541	270	224	494	406	358	764	369	324	693
21:00	253	205	458	309	218	527	313	222	535	359	245	604	442	285	727	271	194	465	183	158	341	335	235	570	304	218	522
22:00	123	113	236	153	114	267	204	153	357	180	129	309	282	181	463	219	158	377	124	106	230	188	138	326	184	136	320
23:00	59	62	121	50	65	115	76	105	181	90	81	171	141	132	273	165	160	325	57	63	120	83	89	172	91	95	186
07-19	7511	8082	15593	7411	8197	15608	8760	9677	18437	7493	8444	15937	7656	9249	16905	6134	6705	12839	7538	7820	15358	7766	8730	16496	7500	8311	15811
06-22	8828	9182	18010	8939	9355	18294	10263	10861	21124	9051	9761	18812	9310	10643	19953	7166	7621	14787	8485	8633	17118	9278	9960	19238	8863	9437	18300
06-00	9010	9357	18367	9142	9534	18676	10543	11119	21662	9321	9971	19292	9733	10956	20689	7550	7939	15489	8666	8802	17468	9550	10187	19737	9138	9668	18806
00-00	9245	9500	18745	9362	9662	19024	10751	11241	21992	9545	10159	19704	9949	11099	21048	7830	8152	15982	8877	9018	17895	9770	10332	20102	9366	9833	19199

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1938 Porthcawl
03 - The Portway
03/07/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	07-Jul			08-Jul			09-Jul			03-Jul			04-Jul			05-Jul			06-Jul								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	11	9	20	9	6	15	7	8	15	5	10	15	22	11	33	36	19	55	16	19	35	11	9	20	15	12	27
01:00	10	10	20	6	3	9	6	2	8	10	6	16	5	3	8	8	17	25	19	14	33	7	5	12	9	8	17
02:00	3	2	5	3	1	4	2	2	4	3	6	9	3	0	3	10	4	14	9	7	16	3	2	5	5	3	8
03:00	2	0	2	3	1	4	1	1	2	6	2	8	3	2	5	1	0	1	6	2	8	3	1	4	3	1	4
04:00	2	1	3	4	3	7	3	2	5	8	3	11	11	7	18	4	1	5	7	7	14	6	3	9	6	3	9
05:00	17	13	30	17	14	31	20	18	38	16	3	19	16	12	28	10	6	16	3	10	13	17	12	29	14	11	25
06:00	40	31	71	42	26	68	50	19	69	42	22	64	42	28	70	18	18	36	1	15	16	43	25	68	34	23	57
07:00	99	66	165	99	80	179	92	92	184	95	88	183	91	85	176	41	61	102	12	22	34	95	82	177	76	71	147
08:00	232	263	495	245	266	511	252	304	556	237	263	500	249	271	520	139	214	353	4	8	12	243	273	516	194	227	421
09:00	212	183	395	170	215	385	219	256	475	218	252	470	219	219	438	243	177	420	8	4	12	208	225	433	184	187	371
10:00	195	224	419	204	237	441	223	271	494	199	274	473	235	302	537	280	247	527	12	14	26	211	262	473	193	224	417
11:00	208	270	478	188	303	491	216	297	513	219	298	517	281	335	616	245	272	517	6	7	13	222	301	523	195	255	450
12:00	257	288	545	227	267	494	230	290	520	259	302	561	300	328	628	293	307	600	3	6	9	255	295	550	224	255	479
13:00	252	270	522	223	264	487	221	253	474	266	290	556	301	301	602	283	295	578	8	3	11	253	276	529	222	239	461
14:00	258	312	570	261	294	555	270	268	538	265	257	522	274	324	598	332	371	703	22	7	29	266	291	557	240	262	502
15:00	346	282	628	361	264	625	354	279	633	331	278	609	397	265	662	324	323	647	18	9	27	358	274	632	304	243	547
16:00	286	241	527	298	308	606	271	268	539	273	289	562	271	304	575	325	333	658	195	184	379	280	282	562	274	275	549
17:00	264	282	546	320	272	592	267	297	564	279	298	577	296	373	669	302	279	581	208	206	414	285	304	589	277	287	564
18:00	197	218	415	259	299	558	226	292	518	259	356	615	261	317	578	259	303	562	183	202	385	240	296	536	235	284	519
19:00	154	198	352	216	187	403	219	231	450	226	214	440	232	262	494	202	223	425	151	144	295	209	218	427	200	208	408
20:00	164	163	327	180	160	340	218	187	405	183	162	345	188	158	346	134	141	275	92	97	189	187	166	353	166	153	319
21:00	115	97	212	115	86	201	132	109	241	180	105	285	223	142	365	154	96	250	68	59	127	153	108	261	141	99	240
22:00	48	37	85	43	40	83	108	55	163	78	57	135	125	61	186	107	59	166	35	32	67	80	50	130	78	49	127
23:00	25	19	44	24	17	41	29	33	62	29	23	52	56	41	97	62	64	126	19	16	35	33	27	60	35	30	65
07-19	2806	2899	5705	2855	3069	5924	2841	3167	6008	2900	3245	6145	3175	3424	6599	3066	3182	6248	679	672	1351	2915	3161	6076	2617	2808	5425
06-22	3279	3388	6667	3408	3528	6936	3460	3713	7173	3531	3748	7279	3860	4014	7874	3574	3660	7234	991	987	1978	3508	3678	7186	3158	3291	6449
06-00	3352	3444	6796	3475	3585	7060	3597	3801	7398	3638	3828	7466	4041	4116	8157	3743	3783	7526	1045	1035	2080	3621	3755	7376	3270	3370	6640
00-00	3397	3479	6876	3517	3613	7130	3636	3834	7470	3686	3858	7544	4101	4151	8252	3812	3830	7642	1105	1094	2199	3667	3787	7454	3322	3408	6730

Severnside Transportation Data Collection
Severnside Traffic Management

SS1938 Porthcawl
04 - New Road
03/07/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	07-Jul			08-Jul			09-Jul			03-Jul			04-Jul			05-Jul			06-Jul								
	EB	WB	Both	EB	WB	Both	EB	WB	Both	EB	WB	Both	EB	WB	Both	EB	WB	Both	EB	WB	Both	EB	WB	Both	EB	WB	Both
00:00	7	3	10	6	6	12	6	2	8	7	7	14	4	6	10	18	30	48	25	26	51	6	5	11	10	11	21
01:00	2	2	4	2	3	5	1	3	4	2	1	3	3	2	5	6	7	13	14	10	24	2	2	4	4	4	8
02:00	0	0	0	0	0	0	0	1	1	1	2	3	0	1	1	3	3	6	1	6	7	0	1	1	1	2	3
03:00	0	0	0	1	0	1	0	1	1	0	2	2	1	0	1	0	1	1	2	4	6	0	1	1	1	1	2
04:00	0	1	1	1	1	2	0	0	0	2	2	4	1	2	3	0	2	2	4	0	4	1	1	2	1	1	2
05:00	9	4	13	17	3	20	14	4	18	10	1	11	16	0	16	3	2	5	1	2	3	13	2	15	10	2	12
06:00	15	10	25	20	18	38	21	20	41	12	13	25	30	24	54	15	6	21	27	8	35	20	17	37	20	14	34
07:00	47	27	74	28	24	52	29	28	57	32	29	61	32	46	78	26	13	39	32	15	47	34	31	65	32	26	58
08:00	92	52	144	141	80	221	103	70	173	104	76	180	126	70	196	57	33	90	124	44	168	113	70	183	107	61	168
09:00	104	91	195	109	97	206	114	80	194	109	79	188	121	89	210	93	69	162	127	60	187	111	87	198	111	81	192
10:00	124	96	220	119	95	214	119	105	224	112	86	198	106	86	192	154	127	281	85	159	244	116	94	210	117	108	225
11:00	125	80	205	147	129	276	115	92	207	133	93	226	135	115	250	157	129	286	138	253	391	131	102	233	136	127	263
12:00	142	110	252	147	109	256	119	101	220	146	112	258	162	123	285	199	143	342	154	421	575	143	111	254	153	160	313
13:00	122	115	237	122	126	248	103	138	241	138	122	260	130	132	262	164	161	325	146	232	378	123	127	250	132	147	279
14:00	132	136	268	121	139	260	131	132	263	118	142	260	127	144	271	200	171	371	180	217	397	126	139	265	144	154	298
15:00	156	174	330	135	174	309	129	159	288	98	104	202	153	190	343	154	187	341	149	169	318	134	160	294	139	165	304
16:00	140	149	289	146	135	281	122	137	259	140	126	266	171	164	335	190	169	359	120	166	286	144	142	286	147	149	296
17:00	153	145	298	151	141	292	146	120	266	137	131	268	202	160	362	158	181	339	131	164	295	158	139	297	154	149	303
18:00	127	129	256	143	147	290	135	136	271	165	159	324	190	161	351	129	155	284	121	127	248	152	146	298	144	145	289
19:00	90	122	212	116	130	246	112	151	263	101	127	228	142	146	288	91	107	198	92	85	177	112	135	247	106	124	230
20:00	67	89	156	65	93	158	60	109	169	100	122	222	94	146	240	69	79	148	43	85	128	77	112	189	71	103	174
21:00	44	67	111	54	72	126	60	72	132	57	84	141	73	135	208	52	67	119	26	46	72	58	86	144	52	78	130
22:00	23	41	64	30	26	56	25	36	61	29	41	70	38	47	85	47	47	94	26	33	59	29	38	67	31	39	70
23:00	11	9	20	12	10	22	7	8	15	14	18	32	29	34	63	32	56	88	11	17	28	15	16	31	17	22	39
07-19	1464	1304	2768	1509	1396	2905	1365	1298	2663	1432	1259	2691	1655	1480	3135	1681	1538	3219	1507	2027	3534	1485	1347	2832	1516	1472	2988
06-22	1680	1592	3272	1764	1709	3473	1618	1650	3268	1702	1605	3307	1994	1931	3925	1908	1797	3705	1695	2251	3946	1752	1697	3449	1766	1791	3557
06-00	1714	1642	3356	1806	1745	3551	1650	1694	3344	1745	1664	3409	2061	2012	4073	1987	1900	3887	1732	2301	4033	1795	1751	3546	1814	1851	3665
00-00	1732	1652	3384	1833	1758	3591	1671	1705	3376	1767	1679	3446	2086	2023	4109	2017	1945	3962	1779	2349	4128	1818	1763	3581	1841	1873	3714

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
01 - A4106 Bridgend Road
22/07/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	28-Jul			22-Jul			23-Jul			24-Jul			25-Jul			26-Jul			27-Jul								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	26	18	44	19	14	33	35	26	61	28	29	57	36	32	68	45	29	74	50	57	107	29	24	53	34	29	63
01:00	13	17	30	11	12	23	15	15	30	10	16	26	20	13	33	24	29	53	30	30	60	14	15	29	18	19	37
02:00	10	7	17	9	8	17	8	6	14	5	3	8	14	3	17	22	10	32	20	22	42	9	5	14	13	8	21
03:00	8	13	21	6	8	14	4	4	8	6	6	12	10	11	21	7	12	19	19	17	36	7	8	15	9	10	19
04:00	14	17	31	10	4	14	8	7	15	21	13	34	14	9	23	7	14	21	9	7	16	13	10	23	12	10	22
05:00	59	35	94	60	23	83	57	32	89	47	23	70	46	32	78	25	14	39	20	23	43	54	29	83	45	26	71
06:00	122	69	191	123	50	173	139	50	189	120	60	180	111	85	196	49	42	91	23	55	78	123	63	186	98	59	157
07:00	298	175	473	294	194	488	289	183	472	303	198	501	267	175	442	121	177	298	85	147	232	290	185	475	237	178	415
08:00	364	294	658	390	271	661	387	299	686	439	304	743	368	336	704	223	356	579	161	182	343	390	301	691	333	292	625
09:00	414	355	769	352	303	655	355	331	686	382	384	766	429	406	835	375	354	729	272	285	557	386	356	742	368	345	713
10:00	460	392	852	379	391	770	380	411	791	419	439	858	473	481	954	497	412	909	412	427	839	422	423	845	431	422	853
11:00	442	481	923	385	431	816	401	448	849	446	524	970	469	559	1028	440	474	914	507	496	1003	429	489	918	441	488	929
12:00	495	484	979	449	406	855	450	430	880	458	537	995	486	634	1120	455	571	1026	517	554	1071	468	498	966	473	517	990
13:00	531	528	1059	472	422	894	455	437	892	532	533	1065	527	585	1112	488	594	1082	523	545	1068	503	501	1004	504	521	1025
14:00	508	507	1015	453	486	939	462	459	921	488	506	994	551	542	1093	479	616	1095	520	498	1018	492	500	992	494	516	1010
15:00	481	501	982	483	443	926	479	507	986	551	503	1054	581	611	1192	505	525	1030	472	491	963	515	513	1028	507	512	1019
16:00	491	535	1026	460	582	1042	515	552	1067	568	568	1136	600	680	1280	533	479	1012	585	382	967	527	583	1110	536	540	1076
17:00	474	534	1008	406	568	974	459	575	1034	530	562	1092	555	622	1177	522	462	984	408	290	698	485	572	1057	479	516	995
18:00	393	463	856	355	450	805	362	437	799	413	409	822	460	563	1023	521	320	841	265	249	514	397	464	861	396	413	809
19:00	327	317	644	299	472	771	345	287	632	337	322	659	431	375	806	301	280	581	237	192	429	348	355	703	325	321	646
20:00	290	233	523	241	359	600	252	196	448	305	248	553	361	235	596	292	166	458	231	170	401	290	254	544	282	230	512
21:00	180	140	320	396	208	604	197	146	343	182	163	345	345	165	510	285	148	433	186	128	314	260	164	424	253	157	410
22:00	104	77	181	418	102	520	101	77	178	113	113	226	155	140	295	161	131	292	107	80	187	178	102	280	166	103	269
23:00	36	42	78	52	71	123	47	32	79	59	52	111	83	74	157	81	67	148	58	58	116	55	54	109	59	57	116
07-19	5351	5249	10600	4878	4947	9825	4994	5069	10063	5529	5467	10996	5766	6194	11960	5159	5340	10499	4727	4546	9273	5304	5385	10689	5201	5259	10460
06-22	6270	6008	12278	5937	6036	11973	5927	5748	11675	6473	6260	12733	7014	7054	14068	6086	5976	12062	5404	5091	10495	6324	6221	12545	6159	6025	12184
06-00	6410	6127	12537	6407	6209	12616	6075	5857	11932	6645	6425	13070	7252	7268	14520	6328	6174	12502	5569	5229	10798	6558	6377	12935	6384	6184	12568
00-00	6540	6234	12774	6522	6278	12800	6202	5947	12149	6762	6515	13277	7392	7368	14760	6458	6282	12740	5717	5385	11102	6684	6468	13152	6513	6287	12800

Severnside
Transportation Data Collection
Severnside
Traffic Monitoring

SS1961 Porthcawl
01 - A4106 Bridgend Road
29/07/2025

Time	Total Volume																													
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	04-Aug			29-Jul			30-Jul			31-Jul			01-Aug			02-Aug			03-Aug											
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	36	35	71	22	18	40	30	22	52	37	41	78	39	32	71	63	71	134	67	59	126	33	30	63	42	40	82			
01:00	23	14	37	16	11	27	18	16	34	16	16	32	24	11	35	43	27	70	44	36	80	19	14	33	26	19	45			
02:00	7	5	12	5	8	13	4	8	12	5	9	14	12	11	23	21	15	36	31	29	60	7	8	15	12	12	24			
03:00	7	8	15	8	7	15	8	4	12	10	4	14	7	14	21	10	12	22	19	13	32	8	7	15	10	9	19			
04:00	10	5	15	12	18	30	8	20	28	13	22	35	13	12	25	12	15	27	15	16	31	11	15	26	12	15	27			
05:00	32	15	47	62	33	95	35	39	74	20	4	24	40	54	94	20	26	46	13	17	30	38	29	67	32	27	59			
06:00	104	32	136	136	72	208	128	77	205	68	7	75	123	101	224	45	64	109	31	56	87	112	58	170	91	58	149			
07:00	246	122	368	270	171	441	274	185	459	202	37	239	223	200	423	118	184	302	49	132	181	243	143	386	197	147	344			
08:00	367	229	596	387	317	704	383	326	709	382	308	690	353	357	710	204	399	603	106	172	278	374	307	681	312	301	613			
09:00	409	321	730	396	351	747	423	431	854	374	451	825	422	491	913	356	430	786	232	279	511	405	409	814	373	393	766			
10:00	431	297	728	121	124	245	415	485	900	392	473	865	615	653	1268	465	545	1010	367	377	744	395	406	801	401	422	823			
11:00	398	350	748	0	0	0	442	532	974	413	474	887	526	723	1249	438	537	975	422	455	877	356	412	768	377	436	813			
12:00	407	419	826	0	0	0	489	536	1025	471	500	971	499	574	1073	446	601	1047	432	476	908	373	406	779	392	444	836			
13:00	413	396	809	0	0	0	539	527	1066	450	469	919	497	535	1032	458	543	1001	433	498	931	380	385	765	399	424	823			
14:00	353	418	771	0	0	0	520	482	1002	518	475	993	516	605	1121	516	565	1081	395	490	885	381	396	777	403	434	837			
15:00	364	503	867	433	442	875	610	556	1166	478	460	938	520	542	1062	504	565	1069	417	497	914	481	501	982	475	509	984			
16:00	398	495	893	516	483	999	606	519	1125	530	510	1040	648	617	1265	572	538	1110	442	475	917	559	525	1064	590	520	1040			
17:00	402	525	927	459	616	1075	530	636	1166	498	610	1108	577	663	1240	555	437	992	446	335	781	493	610	1103	495	546	1041			
18:00	372	439	811	372	542	914	450	526	976	428	442	870	530	517	1047	561	368	929	432	319	751	430	493	923	449	450	899			
19:00	291	325	616	335	562	897	429	352	781	396	362	758	432	386	818	536	341	877	456	254	710	377	397	774	411	369	780			
20:00	198	250	448	289	549	838	371	241	612	351	276	627	417	318	735	347	221	568	261	167	428	325	327	652	319	289	608			
21:00	180	151	331	219	269	488	226	170	396	292	190	482	377	196	573	251	174	425	205	129	334	259	195	454	250	183	433			
22:00	99	73	172	996	165	1161	133	104	237	160	105	265	191	137	328	164	110	274	116	80	196	316	117	433	266	111	377			
23:00	48	48	96	161	61	222	67	51	118	71	69	140	113	97	210	70	83	153	55	38	93	92	65	157	84	64	148			
07-19	4560	4514	9074	2954	3046	6000	5681	5721	11402	5136	5209	10345	5922	6477	12399	5193	5712	10905	4173	4505	8678	4851	4993	9844	4803	5026	9829			
06-22	5333	5272	10605	3933	4498	8431	6835	6561	13396	6243	6044	12287	7271	7478	14749	6372	6512	12884	5126	5111	10237	5923	5971	11894	5873	5925	11798			
06-00	5480	5393	10873	5090	4724	9814	7035	6716	13751	6474	6218	12692	7575	7712	15287	6606	6705	13311	5297	5229	10526	6331	6153	12484	6222	6100	12322			
00-00	5595	5475	11070	5215	4819	10034	7138	6825	13963	6575	6314	12889	7710	7846	15556	6775	6871	13646	5486	5399	10885	6447	6256	12703	6356	6221	12577			

Severnside Transportation Data Collection
Severnside Traffic Management

SS1961 Porthcawl
01 - A4106 Bridgend Road
05/08/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	11-Aug			05-Aug			06-Aug			07-Aug			08-Aug			09-Aug			10-Aug								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	32	21	53	32	29	61	31	22	53	27	22	49	20	20	40	46	44	90	57	47	104	28	23	51	35	29	64
01:00	16	15	31	7	11	18	7	6	13	7	9	16	14	15	29	37	30	67	36	34	70	10	11	21	18	17	35
02:00	7	4	11	5	5	10	3	2	5	7	6	13	10	6	16	24	20	44	16	27	43	6	5	11	10	10	20
03:00	8	10	18	9	6	15	9	7	16	10	7	17	5	9	14	11	12	23	25	23	48	8	8	16	11	11	22
04:00	10	10	20	10	12	22	14	9	23	18	6	24	9	4	13	12	8	20	11	13	24	12	8	20	12	9	21
05:00	59	20	79	61	18	79	52	28	80	34	18	52	44	27	71	29	14	43	14	31	45	50	22	72	42	22	64
06:00	134	76	210	135	55	190	130	66	196	131	47	178	108	58	166	66	50	116	56	86	142	128	60	188	109	63	172
07:00	291	168	459	314	183	497	317	164	481	316	164	480	287	179	466	128	142	270	77	166	243	305	172	477	247	167	414
08:00	410	309	719	384	296	680	394	304	698	351	267	618	402	302	704	213	386	599	335	226	561	388	296	684	356	299	655
09:00	421	400	821	405	326	731	386	373	759	410	311	721	429	354	783	378	335	713	291	523	814	410	353	763	389	375	764
10:00	481	510	991	375	426	801	392	477	869	455	391	846	467	461	928	464	466	930	434	516	950	434	453	887	438	464	902
11:00	455	553	1008	389	494	883	404	477	881	463	453	916	448	500	948	496	597	1093	513	616	1129	432	495	927	453	527	980
12:00	455	526	981	429	494	923	506	550	1056	435	436	871	468	562	1030	499	650	1149	586	735	1321	459	514	973	483	565	1048
13:00	523	510	1033	514	468	982	540	514	1054	543	480	943	489	555	1044	542	688	1230	593	669	1262	506	505	1011	523	555	1078
14:00	516	501	1017	493	506	999	551	489	1040	441	451	892	506	594	1100	514	639	1153	567	634	1201	501	508	1009	513	545	1058
15:00	575	496	1071	501	526	1027	608	522	1130	453	445	898	518	617	1135	649	547	1196	630	562	1192	531	521	1052	562	531	1093
16:00	573	504	1077	501	550	1051	503	641	1144	411	523	934	568	662	1230	689	494	1183	716	478	1194	511	576	1087	566	550	1116
17:00	520	545	1065	479	596	1075	502	539	1041	399	534	933	555	638	1193	638	445	1083	725	356	1081	491	570	1061	545	522	1067
18:00	339	383	722	408	648	1056	377	439	816	343	373	716	487	482	969	536	391	927	603	350	953	391	465	856	442	438	880
19:00	245	284	529	358	649	1007	293	293	586	284	283	567	455	368	823	385	310	695	430	307	737	327	375	702	350	356	706
20:00	228	209	437	302	665	967	270	207	477	218	189	407	512	275	787	334	191	525	354	195	549	306	309	615	317	276	593
21:00	144	132	276	370	307	677	258	139	397	142	164	306	316	177	493	237	133	370	229	126	355	246	184	430	242	168	410
22:00	88	75	163	1172	118	1290	106	97	203	81	105	186	175	113	288	142	112	254	134	77	211	324	102	426	271	100	371
23:00	45	51	96	168	52	220	49	45	94	48	43	91	87	50	137	87	94	181	55	58	113	79	48	127	77	56	133
07-19	5559	5405	10964	5192	5513	10705	5480	5489	10969	4940	4828	9768	5624	5906	11530	5746	5780	11526	6070	5831	11901	5359	5428	10787	5516	5536	11052
06-22	6310	6106	12416	6357	7189	13546	6431	6194	12625	5715	5511	11226	7015	6784	13799	6768	6464	13232	7139	6545	13684	6366	6357	12723	6534	6399	12933
06-00	6443	6232	12675	7697	7359	15056	6586	6336	12922	5844	5659	11503	7277	6947	14224	6997	6670	13667	7328	6680	14008	6769	6507	13276	6882	6555	13437
00-00	6575	6312	12887	7821	7440	15261	6702	6410	13112	5947	5727	11674	7379	7028	14407	7156	6798	13954	7487	6855	14342	6885	6583	13468	7010	6653	13663

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
01 - A4106 Bridgend Road
12/08/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	18-Aug			12-Aug			13-Aug			14-Aug			15-Aug			16-Aug			17-Aug								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	26	17	43	35	21	56	54	29	83	41	22	63	33	28	61	57	52	109	62	51	113	38	23	61	44	31	75
01:00	19	10	29	7	7	14	18	14	32	15	19	34	21	11	32	25	22	47	45	27	72	16	12	28	21	16	37
02:00	8	4	12	6	8	14	9	4	13	10	9	19	8	7	15	19	15	34	21	17	38	8	6	14	12	9	21
03:00	2	10	12	6	9	15	4	7	11	10	17	27	8	11	19	17	13	30	11	11	22	6	11	17	8	11	19
04:00	10	6	16	12	8	20	12	7	19	14	9	23	15	10	25	20	16	36	14	14	28	13	8	21	14	10	24
05:00	63	21	84	52	32	84	57	22	79	57	20	77	46	31	77	25	29	54	15	14	29	55	25	80	45	24	69
06:00	137	47	184	144	59	203	132	57	189	141	74	215	130	65	195	72	47	119	46	47	93	137	60	197	115	57	172
07:00	282	166	448	334	189	523	332	191	523	289	192	481	267	178	445	149	175	324	79	122	201	301	183	484	247	173	420
08:00	358	279	637	399	310	709	395	311	706	391	296	687	341	311	652	226	404	630	148	231	379	377	301	678	323	306	629
09:00	428	332	760	380	436	816	341	327	668	396	318	714	444	399	843	379	385	764	304	389	693	398	362	760	382	369	751
10:00	463	395	858	379	574	953	442	390	832	394	376	770	439	501	940	486	533	1019	431	638	1069	423	447	870	433	487	920
11:00	451	436	887	449	599	1048	439	456	895	446	394	840	502	573	1075	540	631	1171	478	593	1071	457	492	949	472	526	998
12:00	464	516	980	462	577	1039	437	509	946	447	454	901	490	566	1056	547	599	1146	566	591	1157	460	524	984	488	545	1033
13:00	416	481	897	527	569	1096	443	450	893	445	452	897	496	541	1037	474	620	1094	564	593	1157	465	499	964	481	529	1010
14:00	482	505	987	551	592	1143	427	463	890	435	475	910	520	561	1081	525	626	1151	536	608	1144	483	519	1002	497	547	1044
15:00	499	474	973	612	596	1208	471	498	969	446	504	950	574	617	1191	571	541	1112	509	578	1087	520	538	1058	526	544	1070
16:00	452	558	1010	623	629	1252	487	545	1032	489	530	1019	555	611	1166	568	457	1025	606	486	1092	521	575	1096	540	545	1085
17:00	412	509	921	589	787	1376	512	569	1081	425	552	977	533	613	1146	559	416	975	525	363	888	494	606	1100	508	544	1052
18:00	358	349	707	495	816	1311	420	448	868	394	431	825	432	517	949	563	404	967	501	323	824	420	512	932	452	470	922
19:00	230	284	514	508	885	1393	357	334	691	295	286	581	404	423	827	472	341	813	419	318	737	359	442	801	384	410	794
20:00	232	201	433	507	761	1268	285	229	514	273	234	507	397	249	646	367	222	589	350	207	557	339	335	674	344	300	644
21:00	101	98	199	623	350	973	218	170	388	154	138	292	347	155	502	286	161	447	264	119	383	289	182	471	285	170	455
22:00	0	0	0	1093	125	1218	119	91	210	93	115	208	190	107	297	164	95	259	112	72	184	299	88	387	253	86	339
23:00	0	0	0	559	61	620	48	44	92	56	67	123	92	75	167	82	75	157	49	52	101	151	49	200	127	53	180
07-19	5065	5000	10065	5800	6674	12474	5146	5157	10303	4997	4974	9971	5593	5988	11581	5587	5791	11378	5247	5515	10762	5320	5559	10879	5348	5586	10934
06-22	5765	5630	11395	7582	8729	16311	6138	5947	12085	5860	5706	11566	6871	6880	13751	6784	6562	13346	6326	6206	12532	6443	6578	13021	6475	6523	12998
06-00	5765	5630	11395	9234	8915	18149	6305	6082	12387	6009	5888	11897	7153	7062	14215	7030	6732	13762	6487	6330	12817	6893	6715	13608	6855	6663	13518
00-00	5893	5698	11591	9352	9000	18352	6459	6165	12624	6156	5984	12140	7284	7160	14444	7193	6879	14072	6655	6464	13119	7029	6801	13830	6999	6764	13763

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
01 - A4106 Bridgend Road
19/08/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	25-Aug			19-Aug			20-Aug			21-Aug			22-Aug			23-Aug			24-Aug								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	45	46	91	0	0	0	39	29	68	31	28	59	22	27	49	52	41	93	67	68	135	27	26	53	37	34	71
01:00	30	29	59	0	0	0	24	15	39	11	15	26	11	8	19	33	22	55	61	40	101	15	13	28	24	18	42
02:00	17	18	35	0	0	0	10	3	13	6	6	12	4	9	13	19	14	33	28	22	50	7	7	14	12	10	22
03:00	12	18	30	0	0	0	6	4	10	6	9	15	7	10	17	15	12	27	14	18	32	6	8	14	9	10	19
04:00	14	21	35	0	0	0	12	8	20	10	11	21	5	9	14	11	13	24	13	13	26	8	10	18	9	11	20
05:00	14	14	28	0	0	0	35	15	50	36	33	69	32	26	58	21	16	37	14	15	29	23	18	41	22	17	39
06:00	35	36	71	0	0	0	111	44	155	108	44	152	104	70	174	56	36	92	25	35	60	72	39	111	63	38	101
07:00	87	106	193	0	0	0	267	143	410	262	140	402	247	123	370	112	143	255	58	104	162	173	102	275	148	108	256
08:00	173	221	394	0	0	0	353	270	623	371	280	651	336	273	609	209	322	531	136	182	318	247	209	456	225	221	446
09:00	309	346	655	0	0	0	394	319	713	406	350	756	459	362	821	367	323	690	277	278	555	314	275	589	316	283	599
10:00	452	545	997	5	3	8	404	393	797	400	406	806	497	453	950	477	394	871	402	417	819	352	360	712	377	373	750
11:00	520	715	1235	328	396	724	397	440	837	426	476	902	474	541	1015	461	477	938	462	523	985	429	514	943	438	510	948
12:00	551	915	1466	490	449	939	467	482	949	430	507	937	454	592	1046	448	555	1003	507	544	1051	478	589	1067	478	578	1056
13:00	549	670	1219	470	474	944	468	425	893	457	472	929	541	559	1100	447	616	1063	522	598	1120	497	520	1017	493	545	1038
14:00	564	786	1350	440	512	952	470	489	959	506	475	981	504	587	1091	469	532	1001	465	552	1017	497	570	1067	488	562	1050
15:00	632	617	1249	507	522	1029	443	486	929	495	527	1022	518	557	1075	491	553	1044	512	507	1019	519	542	1061	514	538	1052
16:00	767	528	1295	509	496	1005	502	540	1042	523	499	1022	592	614	1206	500	480	980	535	470	1005	579	535	1114	561	518	1079
17:00	782	410	1192	463	577	1040	434	530	964	484	573	1057	499	611	1110	496	441	937	489	380	869	532	540	1072	521	503	1024
18:00	603	370	973	374	602	976	334	460	794	419	512	931	444	496	940	463	388	851	437	340	777	435	488	923	439	453	892
19:00	550	312	862	304	634	938	323	297	620	348	355	703	375	392	767	366	325	691	407	317	724	380	398	778	382	376	758
20:00	416	184	600	246	600	846	235	210	445	342	228	570	346	254	600	352	243	595	355	180	535	317	295	612	327	271	598
21:00	290	141	431	474	270	744	178	143	321	225	178	403	287	194	481	329	184	513	228	128	356	291	185	476	287	177	464
22:00	119	101	220	981	131	1112	93	84	177	118	114	232	171	127	298	213	136	349	113	102	215	296	111	407	258	114	372
23:00	56	44	100	119	48	167	63	50	113	68	76	144	92	97	189	137	85	222	92	63	155	80	63	143	90	66	156
07-19	5989	6229	12218	3586	4031	7617	4933	4977	9910	5179	5217	10396	5565	5768	11333	4940	5224	10164	4802	4895	9697	5050	5244	10294	4999	5192	10191
06-22	7280	6902	14182	4610	5535	10145	5780	5671	11451	6202	6022	12224	6677	6678	13355	6043	6012	12055	5817	5555	11372	6110	6162	12272	6058	6054	12112
06-00	7455	7047	14502	5710	5714	11424	5936	5805	11741	6388	6212	12600	6940	6902	13842	6393	6233	12626	6022	5720	11742	6486	6336	12822	6406	6233	12639
00-00	7587	7193	14780	5710	5714	11424	6062	5879	11941	6488	6314	12802	7021	6991	14012	6544	6351	12895	6219	5896	12115	6574	6418	12992	6519	6334	12853

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
01 - A4106 Bridgend Road
26/08/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	01-Sep			26-Aug			27-Aug			28-Aug			29-Aug			30-Aug			31-Aug								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	0	0	0	32	25	57	27	22	49	26	28	54	10	8	18	46	47	93	0	0	0	19	17	36	20	19	39
01:00	0	0	0	19	11	30	12	9	21	14	9	23	13	11	24	26	13	39	0	0	0	12	8	20	12	8	20
02:00	0	0	0	9	8	17	6	4	10	6	3	9	4	2	6	21	21	42	0	0	0	5	3	8	7	5	12
03:00	0	0	0	7	4	11	7	6	13	9	12	21	6	13	19	8	11	19	0	0	0	6	7	13	5	7	12
04:00	0	0	0	11	8	19	10	5	15	15	3	18	9	7	16	9	10	19	0	0	0	9	5	14	8	5	13
05:00	0	0	0	37	28	65	57	17	74	46	14	60	41	13	54	30	15	45	0	0	0	36	14	50	30	12	42
06:00	0	0	0	104	55	159	127	53	180	125	52	177	118	52	170	47	43	90	0	0	0	95	42	137	74	36	110
07:00	2	0	2	258	128	386	281	156	437	276	149	425	243	165	408	116	144	260	0	0	0	212	120	332	168	106	274
08:00	8	6	14	373	246	619	393	265	658	379	267	646	389	265	654	195	384	579	0	0	0	308	210	518	248	205	453
09:00	7	6	13	393	307	700	389	290	679	352	315	667	433	374	807	342	345	687	65	2	67	315	258	573	283	234	517
10:00	8	6	14	441	396	837	375	343	718	390	376	766	440	426	866	465	423	888	298	35	333	331	309	640	345	286	631
11:00	10	6	16	430	466	896	395	380	775	463	397	860	494	480	974	544	443	987	348	39	387	358	346	704	383	316	699
12:00	18	7	25	441	470	911	418	433	851	471	387	858	478	524	1002	622	482	1104	500	449	949	365	364	729	421	393	814
13:00	18	12	30	512	484	996	468	412	880	451	451	902	515	506	1021	534	458	992	463	487	950	393	373	766	423	401	824
14:00	11	6	17	460	524	984	410	524	934	397	281	678	462	558	1020	20	15	35	299	203	502	348	379	727	294	302	596
15:00	32	16	48	460	493	953	405	491	896	480	451	931	526	605	1131	8	6	14	206	17	223	381	411	792	302	297	599
16:00	15	3	18	484	571	1055	470	542	1012	404	506	910	492	524	1016	9	6	15	4	0	4	373	429	802	268	307	575
17:00	12	3	15	427	615	1042	411	535	946	397	535	932	427	602	1029	1	0	1	8	6	14	335	458	793	240	328	568
18:00	14	0	14	373	686	1059	350	418	768	303	374	677	390	405	795	0	0	0	1	0	1	286	377	663	204	269	473
19:00	14	1	15	293	851	1144	303	280	583	234	294	528	293	327	620	0	0	0	0	0	0	227	351	578	162	250	412
20:00	10	0	10	250	802	1052	276	206	482	205	190	395	238	234	472	0	0	0	1	0	1	196	286	482	140	205	345
21:00	15	1	16	691	258	949	132	144	276	142	174	316	207	173	380	1	0	1	1	1	2	237	150	387	170	107	277
22:00	2	0	2	1032	111	1143	113	102	215	66	90	156	130	133	263	0	0	0	0	0	0	269	87	356	192	62	254
23:00	0	0	0	437	57	494	49	42	91	50	43	93	100	53	153	0	0	0	0	0	0	127	39	166	91	28	119
07-19	155	71	226	5052	5386	10438	4765	4789	9554	4763	4489	9252	5289	5434	10723	2856	2706	5562	2192	1238	3430	4005	4034	8039	3582	3445	7027
06-22	194	73	267	6390	7352	13742	5603	5472	11075	5469	5199	10668	6145	6220	12365	2904	2749	5653	2194	1239	3433	4760	4863	9623	4128	4043	8171
06-00	196	73	269	7859	7520	15379	5765	5616	11381	5585	5332	10917	6375	6406	12781	2904	2749	5653	2194	1239	3433	5156	4989	10145	4411	4134	8545
00-00	196	73	269	7974	7604	15578	5884	5679	11563	5701	5401	11102	6458	6460	12918	3044	2866	5910	2194	1239	3433	5243	5043	10286	4493	4189	8682

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
01 - A4106 Bridgend Road
02/09/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	08-Sep			02-Sep			03-Sep			04-Sep			05-Sep			06-Sep			07-Sep								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	0	0	0	0	0	0	15	6	21	1	0	1	3	0	3	4	0	4	6	0	6	4	1	5	4	1	5
01:00	0	0	0	0	0	0	7	0	7	0	0	0	1	0	1	2	0	2	5	0	5	2	0	2	2	0	2
02:00	0	0	0	0	0	0	4	0	4	0	0	0	3	1	4	2	0	2	2	0	2	1	0	1	2	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	2	0	0	0	0	0	0	0	0	0
04:00	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1	1	0	1	1	0	1	0	0	0	1	0	1
05:00	0	0	0	2	0	2	2	0	2	0	0	0	12	0	12	2	0	2	1	0	1	3	0	3	3	0	3
06:00	2	1	3	6	0	6	1	0	1	0	0	0	21	2	23	7	1	8	5	0	5	6	1	7	6	1	7
07:00	8	6	14	14	0	14	3	0	3	10	6	16	66	5	71	21	2	23	10	0	10	20	3	23	19	3	22
08:00	15	12	27	43	6	49	2	0	2	10	6	16	130	3	133	50	4	54	29	1	30	40	5	45	40	5	45
09:00	16	12	28	57	3	60	10	0	10	10	6	16	109	9	118	87	3	90	45	1	46	40	6	46	48	5	53
10:00	14	9	23	214	14	228	113	6	119	2	1	3	134	11	145	121	9	130	85	4	89	95	8	103	98	8	106
11:00	35	3	38	262	33	295	165	13	178	92	11	103	188	11	199	134	11	145	101	10	111	148	14	162	140	13	153
12:00	49	8	57	233	35	268	139	28	167	237	10	247	125	16	141	73	7	80	146	10	156	157	19	176	143	16	159
13:00	31	2	33	350	65	415	114	13	127	64	7	71	95	11	106	77	11	88	160	13	173	131	20	151	127	17	144
14:00	30	3	33	326	33	359	38	16	54	41	5	46	100	10	110	85	13	98	141	7	148	107	13	120	109	12	121
15:00	27	2	29	310	34	344	7	6	13	68	5	73	74	4	78	78	13	91	94	6	100	97	10	107	94	10	104
16:00	30	8	38	284	30	314	2	0	2	66	6	72	77	7	84	102	3	105	83	7	90	92	10	102	92	9	101
17:00	24	4	28	289	56	345	1	0	1	35	3	38	93	7	100	72	2	74	69	5	74	88	14	102	83	11	94
18:00	33	3	36	278	85	363	0	0	0	45	6	51	74	7	81	48	0	48	58	4	62	86	20	106	77	15	92
19:00	38	1	39	277	88	365	9	6	15	52	1	53	70	4	74	29	1	30	52	0	52	89	20	109	75	14	89
20:00	26	1	27	204	50	254	0	0	0	58	2	60	81	3	84	49	1	50	62	2	64	74	11	85	69	8	77
21:00	11	0	11	141	20	161	0	0	0	30	1	31	43	3	46	33	0	33	13	2	15	45	5	50	39	4	43
22:00	1	0	1	56	8	64	0	0	0	14	1	15	26	0	26	23	1	24	6	0	6	19	2	21	18	1	19
23:00	1	0	1	28	7	35	0	0	0	5	0	5	18	0	18	8	0	8	0	0	0	10	1	11	9	1	10
07-19	312	72	384	2660	394	3054	594	82	676	680	72	752	1265	101	1366	948	78	1026	1021	68	1089	1102	144	1246	1069	124	1193
06-22	389	75	464	3288	552	3840	604	88	692	820	76	896	1480	113	1593	1066	81	1147	1153	72	1225	1316	181	1497	1257	151	1408
06-00	391	75	466	3372	567	3939	604	88	692	839	77	916	1524	113	1637	1097	82	1179	1159	72	1231	1346	184	1530	1284	153	1437
00-00	391	75	466	3375	567	3942	632	94	726	840	77	917	1545	114	1659	1110	82	1192	1174	72	1246	1357	185	1542	1295	154	1449

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
01 - A4106 Bridgend Road
09/09/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	15-Sep			09-Sep			10-Sep			11-Sep			12-Sep			13-Sep			14-Sep								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	0	0	0	1	0	1	19	17	36	13	15	28	7	16	23	42	29	71	51	57	108	8	10	18	19	19	38
01:00	0	0	0	2	0	2	8	13	21	10	5	15	10	13	23	18	16	34	38	30	68	6	6	12	12	11	23
02:00	0	0	0	0	0	0	7	2	9	2	2	4	5	4	9	15	8	23	18	15	33	3	2	5	7	4	11
03:00	0	0	0	0	0	0	6	1	7	7	5	12	9	4	13	3	7	10	10	9	19	4	2	6	5	4	9
04:00	0	0	0	2	0	2	12	12	24	18	4	22	13	11	24	7	8	15	14	10	24	9	5	14	9	6	15
05:00	0	0	0	3	0	3	60	24	84	53	32	85	36	23	59	17	15	32	15	17	32	30	16	46	26	16	42
06:00	0	0	0	8	1	9	118	46	164	124	56	180	119	59	178	49	36	85	48	39	87	74	32	106	67	34	101
07:00	0	0	0	25	3	28	342	165	507	331	170	501	325	181	506	124	104	228	62	89	151	205	104	309	173	102	275
08:00	0	0	0	230	128	358	486	346	832	460	343	803	513	371	884	256	324	580	157	154	311	338	238	576	300	238	538
09:00	2	1	3	359	339	698	337	299	636	392	363	755	493	397	890	380	271	651	260	220	480	317	280	597	318	270	588
10:00	0	0	0	372	361	733	349	272	621	378	322	700	544	381	925	436	422	858	394	297	691	329	267	596	353	294	647
11:00	0	0	0	429	351	780	355	334	689	376	346	722	458	412	870	503	415	918	482	366	848	324	289	613	372	318	690
12:00	0	0	0	450	430	880	361	334	695	399	385	784	479	471	950	498	461	959	457	394	851	338	324	662	378	354	732
13:00	29	33	62	425	369	794	379	392	771	333	367	700	425	420	845	510	526	1036	404	376	780	318	316	634	358	355	713
14:00	15	14	29	428	400	828	379	380	759	345	441	786	392	470	862	469	448	917	357	355	712	312	341	653	341	358	699
15:00	6	4	10	460	500	960	428	405	833	459	443	902	472	474	946	454	488	942	242	94	336	365	365	730	360	344	704
16:00	6	7	13	383	507	890	390	535	925	415	529	944	413	584	997	430	458	888	200	25	225	321	432	753	320	378	698
17:00	0	0	0	345	472	817	367	487	854	386	533	919	386	514	900	426	367	793	16	5	21	297	401	698	275	340	615
18:00	0	0	0	275	379	654	263	377	640	320	375	695	351	413	764	292	282	574	0	0	0	242	309	551	214	261	475
19:00	0	0	0	200	254	454	223	263	486	233	267	500	257	287	544	240	243	483	0	0	0	183	214	397	165	188	353
20:00	0	0	0	133	152	285	200	176	376	192	175	367	195	192	387	185	139	324	0	0	0	144	139	283	129	119	248
21:00	0	0	0	130	121	251	120	145	265	102	155	257	163	145	308	112	123	235	0	0	0	103	113	216	90	98	188
22:00	0	0	0	58	61	119	69	69	138	72	76	148	110	104	214	98	86	184	0	0	0	62	62	124	58	57	115
23:00	0	0	0	34	43	77	27	29	56	27	29	56	72	70	142	81	63	144	0	0	0	32	34	66	34	33	67
07-19	58	59	117	4181	4239	8420	4436	4326	8762	4594	4617	9211	5251	5088	10339	4778	4566	9344	3031	2375	5406	3704	3666	7370	3761	3610	7371
06-22	58	59	117	4652	4767	9419	5097	4956	10053	5245	5270	10515	5985	5771	11756	5364	5107	10471	3079	2414	5493	4207	4165	8372	4211	4049	8260
06-00	58	59	117	4744	4871	9615	5193	5054	10247	5344	5375	10719	6167	5945	12112	5543	5256	10799	3079	2414	5493	4301	4261	8562	4304	4139	8443
00-00	58	59	117	4752	4871	9623	5305	5123	10428	5447	5438	10885	6247	6016	12263	5645	5339	10984	3225	2552	5777	4362	4301	8663	4383	4200	8583

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
02 - A4229 Pyle Road
22/07/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	28-Jul			22-Jul			23-Jul			24-Jul			25-Jul			26-Jul			27-Jul								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	28	34	62	19	25	44	38	35	73	37	28	65	55	37	92	86	52	138	82	61	143	35	32	67	49	39	88
01:00	20	17	37	22	13	35	18	13	31	15	16	31	22	24	46	38	39	77	51	44	95	19	17	36	27	24	51
02:00	13	7	20	12	11	23	10	12	22	7	14	21	13	11	24	18	17	35	29	27	56	11	11	22	15	14	29
03:00	15	5	20	8	11	19	8	11	19	6	7	13	14	6	20	21	13	34	20	16	36	10	8	18	13	10	23
04:00	36	31	67	26	16	42	19	14	33	28	20	48	24	19	43	21	23	44	18	16	34	27	20	47	25	20	45
05:00	132	51	183	118	29	147	116	52	168	115	50	165	114	49	163	43	36	79	39	33	72	119	46	165	97	43	140
06:00	252	125	377	292	104	396	278	132	410	277	104	381	266	130	396	94	93	187	63	74	137	273	119	392	217	109	326
07:00	502	298	800	503	278	781	537	279	816	555	308	863	447	343	790	199	220	419	110	189	299	509	301	810	408	274	682
08:00	551	505	1056	632	451	1083	579	501	1080	598	509	1107	612	537	1149	334	535	869	212	315	527	594	501	1095	503	479	982
09:00	625	617	1242	489	536	1025	539	539	1078	491	618	1109	616	676	1292	549	619	1168	392	424	816	552	597	1149	529	576	1105
10:00	653	672	1325	528	638	1166	557	612	1169	573	732	1305	765	840	1605	606	872	1478	588	639	1227	615	699	1314	610	715	1325
11:00	677	788	1465	538	698	1236	549	699	1248	578	840	1418	626	996	1622	590	847	1437	619	868	1487	594	804	1398	597	819	1416
12:00	661	863	1524	585	609	1194	635	711	1346	584	770	1354	692	944	1636	595	845	1440	653	849	1502	631	779	1410	629	799	1428
13:00	667	806	1473	625	640	1265	614	709	1323	657	749	1406	730	919	1649	682	906	1588	756	836	1592	659	765	1424	676	795	1471
14:00	689	829	1518	621	641	1262	647	709	1356	664	685	1349	843	945	1788	672	976	1648	792	720	1512	693	762	1455	704	786	1490
15:00	720	742	1462	653	702	1355	692	711	1403	782	745	1527	813	966	1779	836	836	1672	715	633	1348	732	773	1505	744	762	1506
16:00	768	810	1578	649	755	1404	738	779	1517	830	827	1657	848	1025	1873	798	734	1532	891	628	1519	767	839	1606	789	794	1583
17:00	703	814	1517	631	817	1448	665	948	1613	755	848	1603	832	1028	1860	838	656	1494	623	475	1098	717	891	1608	721	798	1519
18:00	589	694	1283	489	799	1288	551	712	1263	595	708	1303	774	896	1670	693	603	1296	493	471	964	600	762	1362	598	698	1296
19:00	491	505	996	374	661	1035	458	453	911	505	450	955	646	577	1223	584	484	1068	371	337	708	495	529	1024	490	495	985
20:00	410	352	762	336	603	939	379	344	723	364	337	701	558	348	906	480	317	797	336	227	563	409	397	806	409	361	770
21:00	277	208	485	529	285	814	314	208	522	295	224	519	510	205	715	399	208	607	265	158	423	385	226	611	370	214	584
22:00	156	127	283	615	157	772	150	147	297	186	143	329	246	147	393	231	162	393	155	113	268	271	144	415	248	142	390
23:00	60	57	117	98	64	162	67	72	139	76	60	136	114	106	220	129	95	224	86	65	151	83	72	155	90	74	164
07-19	7805	8438	16243	6943	7564	14507	7303	7909	15212	7662	8339	16001	8598	10115	18713	7392	8649	16041	6844	7047	13891	7662	8473	16135	7507	8294	15801
06-22	9235	9628	18863	8474	9217	17691	8732	9046	17778	9103	9454	18557	10578	11375	21953	8949	9751	18700	7879	7843	15722	9224	9744	18968	8993	9473	18466
06-00	9451	9812	19263	9187	9438	18625	8949	9265	18214	9365	9657	19022	10938	11628	22566	9309	10008	19317	8120	8021	16141	9578	9960	19538	9331	9690	19021
00-00	9695	9957	19652	9392	9543	18935	9158	9402	18560	9573	9792	19365	11180	11774	22954	9536	10188	19724	8359	8218	16577	9800	10094	19894	9556	9839	19395

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
02 - A4229 Pyle Road
29/07/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	04-Aug			29-Jul			30-Jul			31-Jul			01-Aug			02-Aug			03-Aug								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	39	32	71	26	22	48	38	36	74	46	44	90	48	48	96	88	79	167	93	98	191	39	36	75	54	51	105
01:00	20	18	38	18	17	35	26	28	54	15	18	33	21	24	45	45	45	90	49	30	79	20	21	41	28	26	54
02:00	11	7	18	5	6	11	13	9	22	13	13	26	19	14	33	21	13	34	26	24	50	12	10	22	15	12	27
03:00	18	4	22	12	9	21	9	4	13	12	17	29	6	2	8	11	17	28	23	14	37	11	7	18	13	10	23
04:00	22	13	35	24	29	53	21	35	56	20	40	60	24	43	67	16	21	37	17	26	43	22	32	54	21	30	51
05:00	96	22	118	120	45	165	92	62	154	110	98	208	85	91	176	48	43	91	27	27	54	101	64	165	83	55	138
06:00	225	76	301	263	141	404	232	164	396	204	211	415	212	230	442	95	117	212	62	82	144	227	164	391	185	146	331
07:00	464	198	662	501	311	812	479	332	811	432	429	861	404	493	897	189	273	462	123	228	351	456	353	809	370	323	693
08:00	563	410	973	601	601	1202	595	666	1261	588	711	1299	529	801	1330	301	699	1000	157	447	604	575	638	1213	476	619	1095
09:00	568	537	1105	519	594	1113	586	830	1416	502	826	1328	579	657	1236	456	867	1323	341	623	964	551	689	1240	507	705	1212
10:00	658	485	1143	578	572	1150	570	851	1421	577	806	1383	621	603	1224	660	961	1621	510	757	1267	601	663	1264	596	719	1315
11:00	620	560	1180	583	667	1250	606	937	1543	558	852	1410	587	829	1416	597	958	1555	621	850	1471	591	769	1360	596	808	1404
12:00	583	596	1179	599	666	1265	648	903	1551	620	845	1465	655	858	1513	592	1006	1598	637	863	1500	621	774	1395	619	820	1439
13:00	582	624	1206	588	709	1297	668	867	1535	618	706	1324	738	886	1624	639	903	1542	583	838	1421	639	758	1397	631	790	1421
14:00	599	606	1205	612	662	1274	771	732	1503	714	653	1367	733	847	1580	733	923	1656	591	723	1314	686	700	1386	679	735	1414
15:00	538	694	1232	520	563	1083	843	828	1671	722	707	1429	799	862	1661	782	868	1650	666	698	1364	684	731	1415	696	746	1442
16:00	524	797	1321	707	721	1428	867	838	1705	772	778	1550	818	950	1768	982	747	1729	728	670	1398	738	817	1555	771	786	1557
17:00	581	833	1414	685	919	1604	850	942	1792	740	883	1623	788	1012	1800	940	676	1616	732	584	1316	729	918	1647	759	836	1595
18:00	497	687	1184	588	1000	1588	709	946	1655	682	829	1511	770	895	1665	936	633	1569	776	490	1266	649	871	1520	708	783	1491
19:00	420	492	912	447	921	1368	661	618	1279	697	554	1251	746	666	1412	911	501	1412	899	397	1296	594	650	1244	683	593	1276
20:00	356	302	658	413	817	1230	576	354	930	528	439	967	682	433	1115	681	404	1085	567	299	866	511	469	980	543	435	978
21:00	265	220	485	269	439	708	415	196	611	410	274	684	658	280	938	476	254	730	312	200	512	403	282	685	401	266	667
22:00	147	120	267	1250	189	1439	238	134	372	227	155	382	303	179	482	272	159	431	195	115	310	433	155	588	376	150	526
23:00	76	70	146	193	94	287	98	79	177	114	100	214	145	128	273	169	120	289	86	61	147	125	94	219	126	93	219
07-19	6777	7027	13804	7081	7985	15066	8192	9672	17864	7525	9025	16550	8021	9693	17714	7807	9514	17321	6465	7771	14236	7519	8680	16199	7410	8670	16080
06-22	8043	8117	16160	8473	10303	18776	10076	11004	21080	9364	10503	19867	10319	11302	21621	9970	10790	20760	8305	8749	17054	9255	10246	19501	9221	10110	19331
06-00	8266	8307	16573	9916	10586	20502	10412	11217	21629	9705	10758	20463	10767	11609	22376	10411	11069	21480	8586	8925	17511	9813	10495	20308	9723	10353	20076
00-00	8472	8403	16875	10121	10714	20835	10611	11391	22002	9921	10988	20909	10970	11831	22801	10640	11287	21927	8821	9144	17965	10019	10665	20684	9937	10537	20474

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
02 - A4229 Pyle Road
05/08/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	11-Aug			05-Aug			06-Aug			07-Aug			08-Aug			09-Aug			10-Aug								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	38	25	63	43	35	78	39	27	66	38	43	81	26	24	50	64	53	117	87	55	142	37	31	68	48	37	85
01:00	24	23	47	20	18	38	18	16	34	26	13	39	32	22	54	46	36	82	50	42	92	24	18	42	31	24	55
02:00	13	7	20	13	11	24	14	9	23	11	13	24	16	18	34	19	22	41	35	27	62	13	12	25	17	15	32
03:00	19	12	31	7	4	11	9	6	15	5	5	10	10	7	17	13	13	26	24	18	42	10	7	17	12	9	21
04:00	32	15	47	20	18	38	27	24	51	31	16	47	29	23	52	19	14	33	17	24	41	28	19	47	25	19	44
05:00	127	50	177	128	40	168	111	48	159	95	31	126	97	47	144	40	34	74	43	116	159	112	43	155	92	52	144
06:00	289	109	398	269	96	365	279	130	409	261	100	361	242	122	364	111	96	207	68	211	279	268	111	379	217	123	340
07:00	532	274	806	486	262	748	519	289	808	501	264	765	454	305	759	179	235	414	150	218	368	498	279	777	403	264	667
08:00	630	489	1119	604	505	1109	593	509	1102	581	450	1031	528	472	1000	320	561	881	371	514	885	587	485	1072	518	500	1018
09:00	618	649	1267	509	525	1034	543	582	1125	544	486	1030	656	609	1265	563	509	1072	380	613	993	574	570	1144	545	568	1113
10:00	657	843	1500	563	613	1176	564	733	1297	582	535	1117	695	712	1407	655	795	1450	634	966	1600	612	687	1299	621	742	1363
11:00	656	932	1588	604	774	1378	584	877	1461	581	656	1237	696	912	1608	631	970	1601	761	1084	1845	624	830	1454	645	886	1531
12:00	660	907	1567	597	758	1355	587	847	1434	562	653	1215	647	894	1541	629	1060	1689	749	1049	1798	611	812	1423	633	881	1514
13:00	651	912	1563	585	773	1358	611	795	1406	587	653	1240	721	877	1598	705	1055	1760	752	1072	1824	631	802	1433	659	877	1536
14:00	810	812	1622	709	714	1423	795	730	1525	667	625	1292	758	949	1707	717	971	1688	818	1005	1823	748	766	1514	753	829	1582
15:00	863	817	1680	759	739	1498	858	740	1598	662	684	1346	799	971	1770	887	885	1772	1046	790	1836	788	790	1578	839	804	1643
16:00	863	781	1644	786	888	1674	784	842	1626	568	763	1331	743	1014	1757	1030	791	1821	1158	730	1888	749	858	1607	847	830	1677
17:00	882	752	1634	682	988	1670	700	958	1658	567	820	1387	677	1055	1732	922	726	1648	1114	619	1733	702	915	1617	792	845	1637
18:00	500	623	1123	523	1023	1546	616	679	1295	494	672	1166	550	849	1399	848	586	1434	951	566	1517	537	769	1306	640	714	1354
19:00	387	445	832	416	1120	1536	496	466	962	420	420	840	210	505	715	584	436	1020	751	439	1190	386	591	977	466	547	1013
20:00	326	248	574	373	1028	1401	427	285	712	321	349	670	233	379	612	480	330	810	567	283	850	336	458	794	390	415	805
21:00	266	198	464	566	383	949	359	243	602	252	231	483	608	229	837	358	214	572	412	183	595	410	257	667	403	240	643
22:00	134	106	240	1208	173	1381	178	132	310	160	128	288	235	153	388	224	164	388	194	119	313	383	138	521	333	139	472
23:00	89	64	153	241	66	307	73	51	124	77	60	137	131	105	236	161	117	278	94	57	151	122	69	191	124	74	198
07-19	8322	8791	17113	7407	8562	15969	7754	8581	16335	6896	7261	14157	7924	9619	17543	8086	9144	17230	8884	9226	18110	7661	8563	16224	7896	8741	16637
06-22	9590	9791	19381	9031	11189	20220	9315	9705	19020	8150	8361	16511	9217	10854	20071	9619	10220	19839	10682	10342	21024	9061	9980	19041	9372	10066	19438
06-00	9813	9961	19774	10480	11428	21908	9566	9888	19454	8387	8549	16936	9583	11112	20695	10004	10501	20505	10970	10518	21488	9566	10188	19754	9829	10280	20109
00-00	10066	10093	20159	10711	11554	22265	9784	10018	19802	8593	8670	17263	9793	11253	21046	10205	10673	20878	11226	10800	22026	9789	10318	20107	10054	10437	20491

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
02 - A4229 Pyle Road
12/08/2025

Time	Total Volume																					5 Day Avg			7 Day Avg		
	Mon			Tue			Wed			Thu			Fri			Sat			Sun								
	18-Aug			12-Aug			13-Aug			14-Aug			15-Aug			16-Aug			17-Aug								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	0	0	0	32	26	58	59	33	92	37	35	72	46	37	83	0	0	0	0	0	0	35	26	61	25	19	44
01:00	0	0	0	18	10	28	33	30	63	27	17	44	28	28	56	0	0	0	0	0	0	21	17	38	15	12	27
02:00	0	0	0	5	9	14	15	9	24	14	11	25	12	18	30	0	0	0	0	0	0	9	9	18	7	7	14
03:00	0	0	0	20	4	24	9	7	16	11	11	22	18	14	32	0	0	0	0	0	0	12	7	19	8	5	13
04:00	0	0	0	31	17	48	27	19	46	28	10	38	32	21	53	0	0	0	0	0	0	24	13	37	17	10	27
05:00	0	0	0	125	38	163	105	48	153	115	39	154	103	61	164	0	0	0	0	0	0	90	37	127	64	27	91
06:00	123	69	192	290	117	407	282	108	390	250	115	365	268	132	400	0	0	0	0	0	0	243	108	351	173	77	250
07:00	496	252	748	529	296	825	541	302	843	494	282	776	445	287	732	0	0	0	0	0	0	501	284	785	358	203	561
08:00	593	479	1072	596	518	1114	619	475	1094	627	520	1147	307	249	556	0	0	0	0	0	0	548	448	996	392	320	712
09:00	627	612	1239	473	665	1138	588	608	1196	562	549	1111	3	7	10	0	0	0	0	0	0	451	488	939	322	349	671
10:00	729	646	1375	588	940	1528	606	725	1331	653	630	1283	0	3	3	0	0	0	0	1	1	515	589	1104	368	421	789
11:00	618	757	1375	513	1079	1592	639	795	1434	615	668	1283	22	34	56	0	0	0	0	0	0	481	667	1148	344	476	820
12:00	601	777	1378	563	1028	1591	630	838	1468	643	720	1363	22	31	53	0	0	0	0	0	0	492	679	1171	351	485	836
13:00	685	764	1449	652	984	1636	658	725	1383	578	655	1233	0	0	0	0	0	0	0	0	0	515	626	1141	368	447	815
14:00	713	697	1410	780	862	1642	688	807	1495	593	709	1302	0	0	0	0	0	0	0	0	0	555	615	1170	396	439	835
15:00	778	736	1514	926	880	1806	794	885	1679	651	648	1299	0	0	0	0	0	0	0	0	0	630	630	1260	450	450	900
16:00	614	823	1437	981	981	1962	790	922	1712	642	766	1408	0	0	0	0	0	0	0	0	0	605	698	1303	432	499	931
17:00	611	789	1400	830	1115	1945	714	974	1688	657	860	1517	0	0	0	0	0	0	0	0	0	562	748	1310	402	534	936
18:00	547	610	1157	750	1143	1893	691	757	1448	580	711	1291	0	0	0	0	0	0	0	0	0	514	644	1158	367	460	827
19:00	418	421	839	679	1051	1730	616	518	1134	433	489	922	0	0	0	0	0	0	0	0	0	429	496	925	307	354	661
20:00	338	303	641	715	1007	1722	466	345	811	436	342	778	0	0	0	0	0	0	0	0	0	391	399	790	279	285	564
21:00	234	211	445	888	454	1342	302	243	545	296	231	527	0	0	0	0	0	0	0	0	0	344	228	572	246	163	409
22:00	137	119	256	995	197	1192	179	144	323	182	119	301	0	0	0	0	0	0	0	0	0	299	116	415	213	83	296
23:00	67	52	119	560	78	638	98	61	159	79	70	149	0	0	0	0	0	0	0	0	0	161	52	213	115	37	152
07-19	7612	7942	15554	8181	10491	18672	7958	8813	16771	7295	7718	15013	799	611	1410	0	0	0	0	1	1	6369	7115	13484	4549	5082	9631
06-22	8725	8946	17671	10753	13120	23873	9624	10027	19651	8710	8895	17605	1067	743	1810	0	0	0	0	1	1	7776	8346	16122	5554	5962	11516
06-00	8929	9117	18046	12308	13395	25703	9901	10232	20133	8971	9084	18055	1067	743	1810	0	0	0	0	1	1	8235	8514	16749	5882	6082	11964
00-00	8929	9117	18046	12539	13499	26038	10149	10378	20527	9203	9207	18410	1306	922	2228	0	0	0	0	1	1	8425	8625	17050	6018	6161	12179

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
02 - A4229 Pyle Road
19/08/2025

Time	Total Volume																									
	Mon 25-Aug			Tue 19-Aug			Wed 20-Aug			Thu 21-Aug			Fri 22-Aug			Sat 23-Aug			Sun 24-Aug			5 Day Avg			7 Day Avg		
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	0	0	0	28	32	60	49	31	80	0	0	0	0	0	0	0	0	0	0	0	0	15	13	28	11	9	20
01:00	0	0	0	11	19	30	17	25	42	0	0	0	0	0	0	0	0	0	0	0	0	6	9	15	4	6	10
02:00	0	0	0	19	7	26	5	8	13	0	0	0	0	0	0	0	0	0	0	0	0	5	3	8	3	2	5
03:00	0	0	0	7	3	10	10	8	18	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5	2	2	4
04:00	0	0	0	26	13	39	21	14	35	0	0	0	0	0	0	0	0	0	0	0	0	9	5	14	7	4	11
05:00	0	0	0	102	39	141	97	29	126	0	0	0	0	0	0	0	0	0	0	0	0	40	14	54	28	10	38
06:00	0	0	0	266	94	360	228	94	322	0	0	0	0	0	0	0	0	0	0	0	0	99	38	137	71	27	98
07:00	0	0	0	490	254	744	476	260	736	0	0	0	0	0	0	0	0	0	0	0	0	193	103	296	138	73	211
08:00	0	0	0	570	478	1048	598	440	1038	0	0	0	0	0	0	0	0	0	0	0	0	234	184	418	167	131	298
09:00	0	0	0	551	570	1121	458	459	917	0	0	0	0	0	0	0	0	0	0	0	0	202	206	408	144	147	291
10:00	0	0	0	486	540	1026	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97	108	205	69	77	146
11:00	0	0	0	479	653	1132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	131	227	68	93	161
12:00	0	0	0	608	708	1316	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	122	142	264	87	101	188
13:00	0	0	0	637	715	1352	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127	143	270	91	102	193
14:00	0	0	0	612	704	1316	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	122	141	263	87	101	188
15:00	0	0	0	672	702	1374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	134	140	274	96	100	196
16:00	0	0	0	701	850	1551	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	140	170	310	100	121	221
17:00	0	0	0	645	981	1626	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	129	196	325	92	140	232
18:00	0	0	0	490	1009	1499	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	202	300	70	144	214
19:00	0	0	0	445	999	1444	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	200	289	64	143	207
20:00	0	0	0	343	956	1299	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	191	260	49	137	186
21:00	0	0	0	662	448	1110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	132	90	222	95	64	159
22:00	0	0	0	1127	203	1330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	225	41	266	161	29	190
23:00	0	0	0	169	72	241	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	14	48	24	10	34
07-19	0	0	0	6941	8164	15105	1532	1159	2691	0	0	0	0	0	0	0	0	0	0	0	0	1695	1865	3560	1210	1332	2542
06-22	0	0	0	8657	10661	19318	1760	1253	3013	0	0	0	0	0	0	0	0	0	0	0	0	2083	2383	4466	1488	1702	3190
06-00	0	0	0	9953	10936	20889	1760	1253	3013	0	0	0	0	0	0	0	0	0	0	0	0	2343	2438	4781	1673	1741	3414
00-00	0	0	0	10146	11049	21195	1959	1368	3327	0	0	0	0	0	0	0	0	0	0	0	0	2421	2483	4904	1729	1774	3503

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
02 - A4229 Pyle Road
26/08/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	01-Sep			26-Aug			27-Aug			28-Aug			29-Aug			30-Aug			31-Aug								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	15	27	42	0	0	0	52	32	84	32	29	61	39	34	73	68	56	124	70	65	135	28	24	52	39	35	74
01:00	9	15	24	0	0	0	17	12	29	25	22	47	16	19	35	49	42	91	51	41	92	13	14	27	24	22	46
02:00	2	5	7	0	0	0	15	5	20	6	12	18	10	12	22	31	19	50	26	19	45	7	7	14	13	10	23
03:00	8	7	15	0	0	0	7	10	17	8	19	27	15	10	25	8	13	21	15	14	29	8	9	17	9	10	19
04:00	14	16	30	0	0	0	23	13	36	27	13	40	27	16	43	15	18	33	13	13	26	18	12	30	17	13	30
05:00	84	42	126	0	0	0	109	37	146	102	24	126	94	40	134	46	24	70	43	25	68	78	29	107	68	27	95
06:00	302	98	400	0	0	0	244	127	371	258	106	364	211	101	312	86	92	178	66	81	147	203	86	289	167	86	253
07:00	588	296	884	0	0	0	504	255	759	497	281	778	443	303	746	175	203	378	126	132	258	406	227	633	333	210	543
08:00	617	469	1086	1	0	1	588	428	1016	565	489	1054	604	477	1081	356	582	938	200	256	456	475	373	848	419	386	805
09:00	567	488	1055	475	440	915	551	509	1060	558	511	1069	619	615	1234	578	505	1083	401	406	807	554	513	1067	536	496	1032
10:00	614	469	1083	604	578	1182	581	505	1086	607	567	1174	793	689	1482	674	603	1277	572	599	1171	640	562	1202	635	573	1208
11:00	577	502	1079	624	674	1298	598	629	1227	605	562	1167	692	723	1415	739	689	1428	671	640	1311	619	618	1237	644	631	1275
12:00	505	579	1084	580	676	1256	559	654	1213	596	650	1246	700	794	1494	762	741	1503	683	722	1405	588	671	1259	626	688	1314
13:00	549	586	1135	629	695	1324	647	611	1258	569	592	1161	679	708	1387	669	692	1361	676	691	1367	615	638	1253	631	654	1285
14:00	545	585	1130	615	684	1299	549	680	1229	547	574	1121	704	760	1464	608	597	1205	746	695	1441	592	657	1249	616	654	1270
15:00	561	674	1235	682	724	1406	665	722	1387	531	703	1234	707	845	1552	476	553	1029	717	636	1353	629	734	1363	620	694	1314
16:00	595	732	1327	690	908	1598	641	801	1442	542	742	1284	617	891	1508	500	556	1056	576	566	1142	617	815	1432	594	742	1336
17:00	499	609	1108	603	1047	1650	615	875	1490	578	752	1330	609	858	1467	539	485	1024	555	455	1010	581	828	1409	571	726	1297
18:00	390	699	1089	523	1138	1661	505	719	1224	444	633	1077	577	746	1323	402	425	827	456	377	833	488	787	1275	471	677	1148
19:00	309	321	630	366	1159	1525	460	497	957	366	420	786	461	498	959	320	380	700	344	323	667	392	579	971	375	514	889
20:00	267	294	561	329	1134	1463	431	328	759	305	300	605	439	358	797	288	252	540	256	251	507	354	483	837	331	417	748
21:00	159	162	321	773	358	1131	238	174	412	222	207	429	363	238	601	205	186	391	132	136	268	351	228	579	299	209	508
22:00	87	96	183	845	182	1027	147	127	274	137	111	248	197	152	349	163	129	292	57	86	143	283	134	417	233	126	359
23:00	47	58	105	388	76	464	73	50	123	76	45	121	123	108	231	105	101	206	28	45	73	141	67	208	120	69	189
07-19	6607	6688	13295	6026	7564	13590	7003	7388	14391	6639	7056	13695	7744	8409	16153	6478	6631	13109	6379	6175	12554	6804	7421	14225	6697	7130	13827
06-22	7644	7563	15207	7494	10215	17709	8376	8514	16890	7790	8089	15879	9218	9604	18822	7377	7541	14918	7177	6966	14143	8104	8797	16901	7868	8356	16224
06-00	7778	7717	15495	8727	10473	19200	8596	8691	17287	8003	8245	16248	9538	9864	19402	7645	7771	15416	7262	7097	14359	8528	8998	17526	8221	8551	16772
00-00	7910	7829	15739	8727	10473	19200	8819	8800	17619	8203	8364	16567	9739	9995	19734	7862	7943	15805	7480	7274	14754	8680	9092	17772	8391	8668	17059

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
02 - A4229 Pyle Road
02/09/2025

Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	08-Sep			02-Sep			03-Sep			04-Sep			05-Sep			06-Sep			07-Sep								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	22	28	50	22	24	46	35	31	66	23	28	51	29	32	61	53	43	96	72	71	143	26	29	55	37	37	74
01:00	11	20	31	12	12	24	13	14	27	10	15	25	20	24	44	30	29	59	36	45	81	13	17	30	19	23	42
02:00	10	7	17	9	3	12	9	10	19	10	13	23	11	8	19	34	30	64	31	20	51	10	8	18	16	13	29
03:00	13	2	15	10	10	20	6	0	6	9	6	15	10	8	18	18	16	34	16	15	31	10	5	15	12	8	20
04:00	26	14	40	26	13	39	16	14	30	19	12	31	17	12	29	20	16	36	12	11	23	21	13	34	19	13	32
05:00	121	46	167	93	34	127	100	41	141	100	31	131	107	48	155	41	23	64	22	18	40	104	40	144	83	34	117
06:00	278	89	367	264	107	371	258	97	355	219	95	314	226	123	349	95	76	171	66	68	134	249	102	351	201	94	295
07:00	578	291	869	608	318	926	574	297	871	562	286	848	543	291	834	194	185	379	118	126	244	573	297	870	454	256	710
08:00	755	679	1434	590	514	1104	717	662	1379	772	643	1415	742	698	1440	335	494	829	228	235	463	715	639	1354	591	561	1152
09:00	625	558	1183	501	484	985	636	532	1168	556	553	1109	611	631	1242	500	486	986	400	362	762	586	552	1138	547	515	1062
10:00	566	513	1079	513	520	1033	503	505	1008	541	475	1016	663	637	1300	620	689	1309	553	460	1013	557	530	1087	566	543	1109
11:00	574	574	1148	553	529	1082	562	506	1068	542	518	1060	651	723	1374	634	833	1467	592	531	1123	576	570	1146	587	602	1189
12:00	550	618	1168	467	517	984	532	531	1063	531	545	1076	622	782	1404	695	993	1688	628	626	1254	540	599	1139	575	659	1234
13:00	578	592	1170	539	555	1094	543	521	1064	505	601	1106	664	747	1411	692	945	1637	616	625	1241	566	603	1169	591	655	1246
14:00	586	687	1273	572	598	1170	550	640	1190	532	634	1166	680	798	1478	738	841	1579	613	591	1204	584	671	1255	610	684	1294
15:00	724	716	1440	618	651	1269	646	659	1305	675	679	1354	744	815	1559	704	736	1440	529	609	1138	681	704	1385	663	695	1358
16:00	518	657	1175	570	705	1275	589	732	1321	599	786	1385	671	982	1653	846	724	1570	510	530	1040	589	772	1361	615	731	1346
17:00	360	190	550	536	830	1366	532	760	1292	552	829	1381	617	869	1486	842	899	1741	482	462	944	519	696	1215	560	691	1251
18:00	462	419	881	474	632	1106	431	574	1005	466	634	1100	551	762	1313	666	888	1554	455	417	872	477	604	1081	501	618	1119
19:00	376	357	733	418	402	820	341	393	734	425	414	839	439	474	913	521	597	1118	375	387	762	400	408	808	414	432	846
20:00	240	264	504	302	305	607	259	280	539	329	315	644	430	381	811	404	427	831	311	228	539	312	309	621	325	314	639
21:00	159	177	336	216	175	391	190	179	369	223	234	457	281	201	482	293	302	595	182	111	293	214	193	407	221	197	418
22:00	103	100	203	100	111	211	100	113	213	120	125	245	166	135	301	181	167	348	127	92	219	118	117	235	128	120	248
23:00	42	56	98	45	57	102	56	63	119	51	55	106	96	95	191	125	106	231	48	43	91	58	65	123	66	68	134
07-19	6876	6494	13370	6541	6853	13394	6815	6919	13734	6833	7183	14016	7759	8735	16494	7466	8713	16179	5724	5574	11298	6965	7237	14202	6859	7210	14069
06-22	7929	7381	15310	7741	7842	15583	7863	7868	15731	8029	8241	16270	9135	9914	19049	8779	10115	18894	6658	6368	13026	8139	8249	16388	8019	8247	16266
06-00	8074	7537	15611	7886	8010	15896	8019	8044	16063	8200	8421	16621	9397	10144	19541	9085	10388	19473	6833	6503	13336	8315	8431	16746	8213	8435	16648
00-00	8277	7654	15931	8058	8106	16164	8198	8154	16352	8371	8526	16897	9591	10276	19867	9281	10545	19826	7022	6683	13705	8499	8543	17042	8400	8563	16963

Severnside
Transportation Data Collection
Severnside
Traffic Management

SS1961 Porthcawl
02 - A4229 Pyle Road
09/09/2025

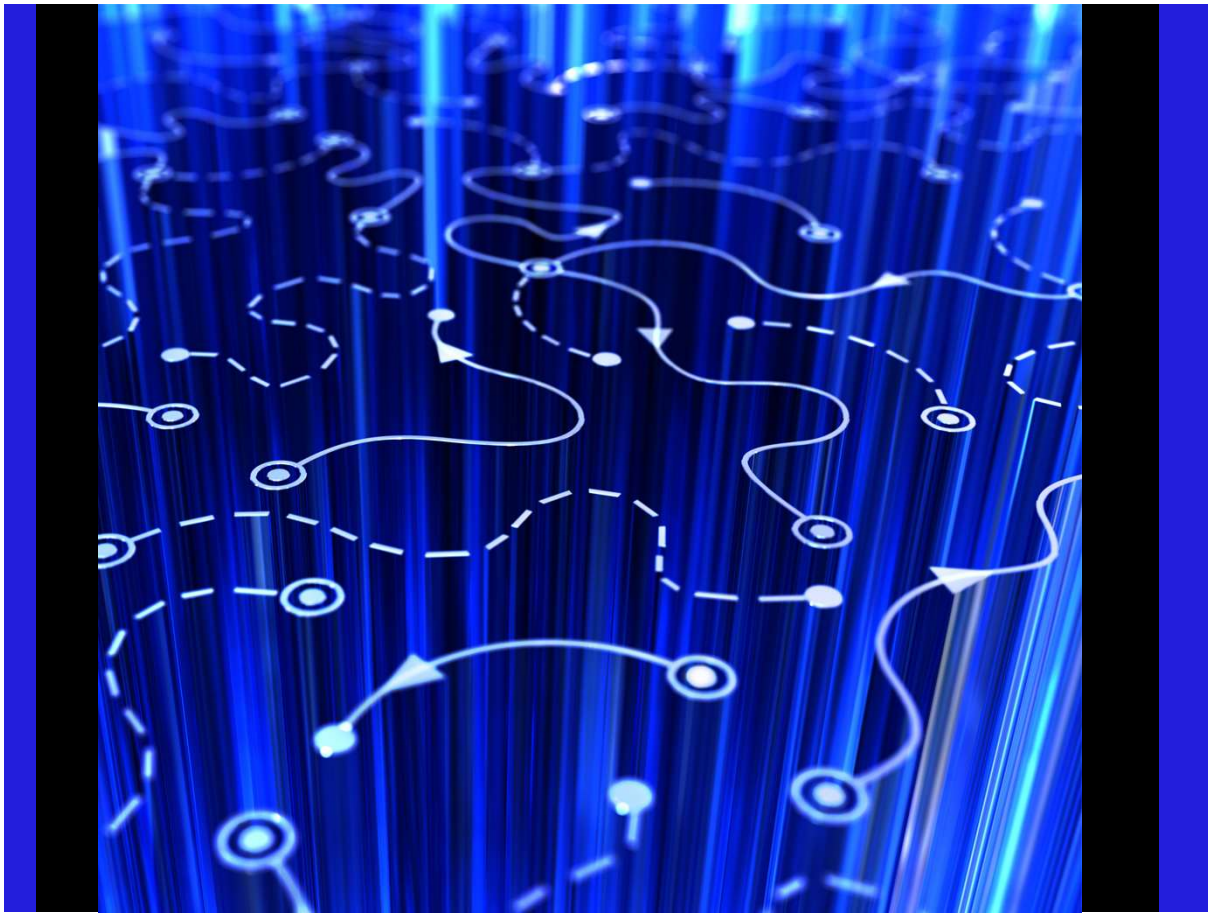
Time	Total Volume																										
	Mon			Tue			Wed			Thu			Fri			Sat			Sun			5 Day Avg			7 Day Avg		
	15-Sep			09-Sep			10-Sep			11-Sep			12-Sep			13-Sep			14-Sep								
	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both	NB	SB	Both
00:00	26	21	47	32	28	60	23	28	51	23	26	49	29	21	50	56	47	103	61	59	120	27	25	52	36	33	69
01:00	11	14	25	18	19	37	11	13	24	15	18	33	16	19	35	19	25	44	29	49	78	14	17	31	17	22	39
02:00	12	9	21	6	7	13	13	10	23	10	4	14	5	13	18	19	16	35	45	31	76	9	9	18	16	13	29
03:00	11	3	14	9	6	15	11	2	13	12	6	18	13	3	16	26	11	37	13	9	22	11	4	15	14	6	20
04:00	23	13	36	19	12	31	25	15	40	28	19	47	17	15	32	19	23	42	15	12	27	22	15	37	21	16	37
05:00	111	36	147	102	36	138	103	45	148	104	32	136	100	53	153	58	30	88	31	21	52	104	40	144	87	36	123
06:00	261	98	359	280	98	378	268	100	368	263	99	362	240	113	353	94	74	168	67	62	129	262	102	364	210	92	302
07:00	580	293	873	571	311	882	567	302	869	598	302	900	544	308	852	177	189	366	130	145	275	572	303	875	452	264	716
08:00	745	689	1434	787	666	1453	776	652	1428	792	687	1479	652	648	1300	326	466	792	212	259	471	750	668	1418	613	581	1194
09:00	609	500	1109	524	547	1071	519	490	1009	536	530	1066	552	531	1083	499	446	945	388	347	735	548	520	1068	518	484	1002
10:00	567	474	1041	507	535	1042	532	413	945	477	465	942	560	524	1084	622	592	1214	548	487	1035	529	482	1011	545	499	1044
11:00	501	474	975	511	506	1017	529	492	1021	542	435	977	552	555	1107	647	663	1310	611	530	1141	527	492	1019	556	522	1078
12:00	435	521	956	568	570	1138	496	526	1022	546	543	1089	582	669	1251	645	647	1292	661	616	1277	525	566	1091	562	585	1147
13:00	395	432	827	519	513	1032	505	533	1038	509	561	1070	557	628	1185	683	761	1444	567	584	1151	497	533	1030	534	573	1107
14:00	346	538	884	520	628	1148	501	638	1139	553	676	1229	591	754	1345	591	692	1283	549	553	1102	502	647	1149	522	640	1162
15:00	396	537	933	688	627	1315	633	591	1224	700	634	1334	748	777	1525	587	591	1178	527	501	1028	633	633	1266	611	608	1219
16:00	353	489	842	571	694	1265	501	703	1204	547	749	1296	550	845	1395	597	612	1209	438	437	875	504	696	1200	508	647	1155
17:00	309	664	973	548	737	1285	517	711	1228	503	800	1303	572	866	1438	592	605	1197	388	364	752	490	756	1246	490	678	1168
18:00	299	402	701	412	611	1023	393	553	946	428	560	988	463	647	1110	459	504	963	341	307	648	399	555	954	399	512	911
19:00	278	303	581	292	350	642	328	373	701	376	420	796	389	490	879	332	369	701	276	261	537	333	387	720	324	367	691
20:00	187	232	419	250	248	498	261	287	548	285	265	550	279	299	578	288	255	543	205	196	401	252	266	518	251	255	506
21:00	126	137	263	176	182	358	173	169	342	189	201	390	269	212	481	221	178	399	134	111	245	187	180	367	184	170	354
22:00	78	80	158	85	85	170	96	110	206	113	91	204	156	139	295	146	151	297	88	66	154	106	101	207	109	103	212
23:00	30	30	60	39	48	87	60	73	133	53	56	109	106	92	198	108	82	190	37	44	81	58	60	118	62	61	123
07-19	5535	6013	11548	6726	6945	13671	6469	6604	13073	6731	6942	13673	6923	7752	14675	6425	6768	13193	5360	5130	10490	6477	6851	13328	6310	6593	12903
06-22	6387	6783	13170	7724	7823	15547	7499	7533	15032	7844	7927	15771	8100	8866	16966	7360	7644	15004	6042	5760	11802	7511	7786	15297	7279	7477	14756
06-00	6495	6893	13388	7848	7956	15804	7655	7716	15371	8010	8074	16084	8362	9097	17459	7614	7877	15491	6167	5870	12037	7674	7947	15621	7450	7640	15090
00-00	6689	6989	13678	8034	8064	16098	7841	7829	15670	8202	8179	16381	8542	9221	17763	7811	8029	15840	6361	6051	12412	7862	8056	15918	7640	7766	15406

Porthcawl Parking Strategy: Parking Data Analysis 2023 Update

Version: 1

Bridgend County Borough Council

Porthcawl Parking Strategy Update
9 January 2024



Porthcawl Parking Strategy:
Parking Data Analysis 2023 Update

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Executive Summary

This report evaluates survey data obtained in the summer and autumn of 2023 to examine the use of parking on the Porthcawl Waterfront. This has been done for two reasons, first to introduce data on the usage of the Aldi Porthcawl car park, which opened in July 2023, and second, to confirm the accuracy of car park usage data collected in 2021, which may have been affected by the COVID pandemic. The 2021 results were presented in the Porthcawl Parking Strategy report issued on 16 November 2021.

Aldi Car Park

The new Aldi store and its associated car park are situated directly north of Salt Lake car park, to the east of Porthcawl town centre. The store officially opened on Thursday 13 July 2023, and the car park includes a total of a 114 parking bays. The car park is free to use, and it is understood that customers can park at the facility for up to 90 minutes.

Entry and exit traffic movements were surveyed at the Aldi car park in both the summer and the autumn of 2023. The data was collected in two separate periods to remove any potential bias in customer numbers that may have occurred in the weeks immediately following the opening of the store. These surveys found that:

- In general, the Aldi car park is well-used, with the car park estimated to have reached capacity or come close to capacity on several days.
- The Aldi car park is used most on Saturdays and Sundays. Weekday use was much higher on weekdays during the summer rather than the autumn. This is likely due to visitors during the summer holiday period, but trips to Aldi may also have decreased slightly in the months following its opening.
- Weekday use is highest in the late afternoon and the early evening. Saturday use is highest in the early afternoon. Use on Sunday is relatively high throughout the Aldi's opening hours, but peaks in the afternoon.

Waterfront Car Parks

The previous analysis of waterfront car parks, which was undertaken in 2021, found that in the period surveyed Saturdays were typically the busiest day for these car parks. It was estimated that parking accumulation across the four car parks peaked at an average of 705 vehicles at 15:00 on Saturday afternoons. The busiest day in the period studied, however, was Sunday 29 August 2021, on the August Bank Holiday weekend, when 1,042 vehicles were estimated to be parked across the four car parks at 15:00.

The average parking accumulation for weekdays, Saturdays and Sundays across the waterfront car parks in 2023 is shown in Figure A. This shows that average parking accumulation across the four car parks was highest on Sundays, with an average peak of 530 vehicles. The average parking accumulation on Saturdays and weekdays shows a peak of 329 and 327 vehicles, respectively. These average peaks are all lower than what was observed in 2021 (483 on weekdays, 705 on Saturdays, and 548 on Sundays), though only marginally so in the case of Sundays.

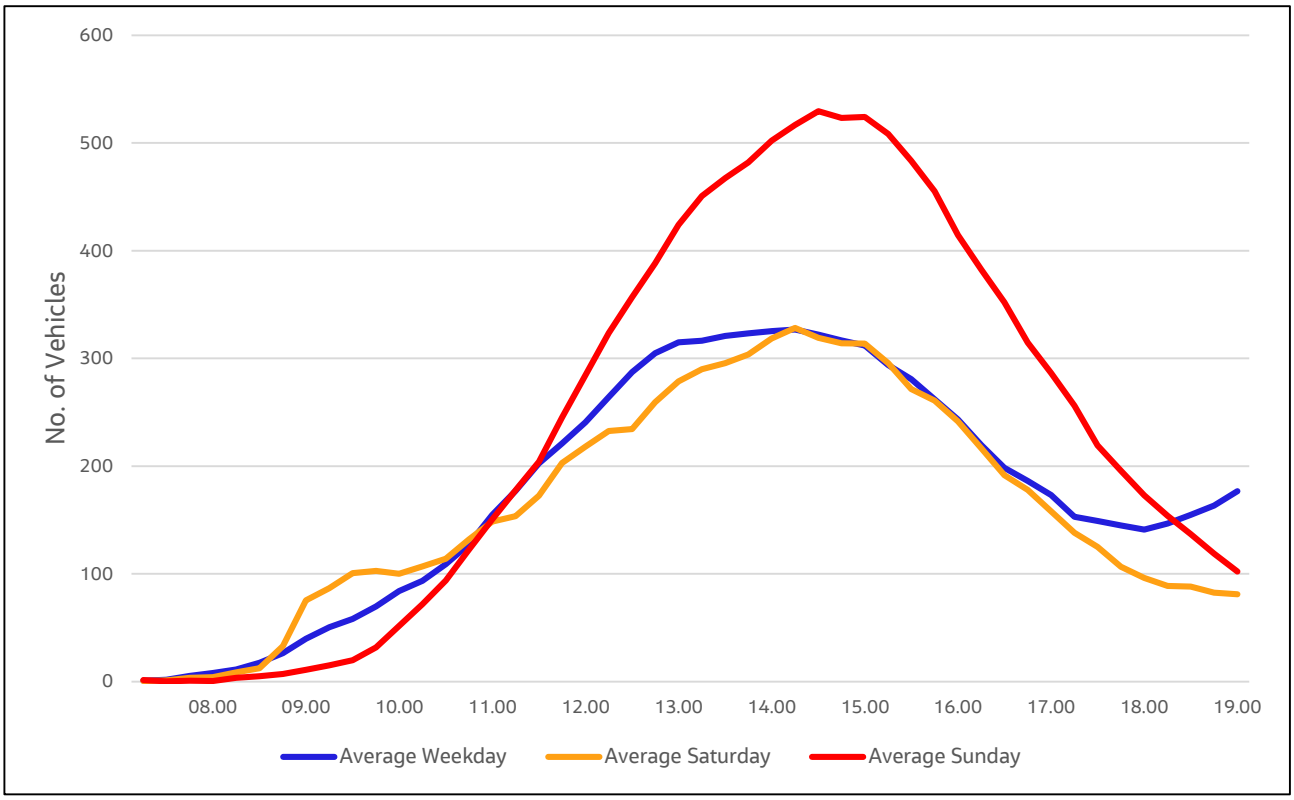


Figure A: Total Average Parking Accumulation along Porthcawl Waterfront

These averages may have been influenced by lower accumulation over the bank holiday weekend in 2023 compared to 2021. Overall, the number of vehicles parking over the bank holiday weekend was lower for the Friday, Saturday and Sunday relative. Only the bank holiday Monday itself had a higher number of vehicles parking. It is possible that the numbers in 2021 may have been influenced by the COVID response, with many restrictions being lifted in the early summer. However, the weather over the bank holiday weekend may have also influenced use of this car park. In 2021, temperatures were warm, with highs in the low- to mid-twenties and moderate sunshine on all four days. In 2023, the bank holiday weekend was cooler, with highs in the mid- to high teens, less sun, and some scattered showers. Hence, the year-to-year variation is not considered to be enough to suggest demand for car parking in Porthcawl has reduced.

The maximum accumulation for weekdays, Saturdays and Sundays across the waterfront car parks in 2023 is shown in Figure B. The peak parking accumulation across the four waterfront car parks in 2023 was on the bank holiday Monday, when a maximum of 952 vehicles are considered to have been parked. This is roughly 10% lower the peak observed in the 2021 surveys, which occurred on the Sunday prior to the bank holiday.

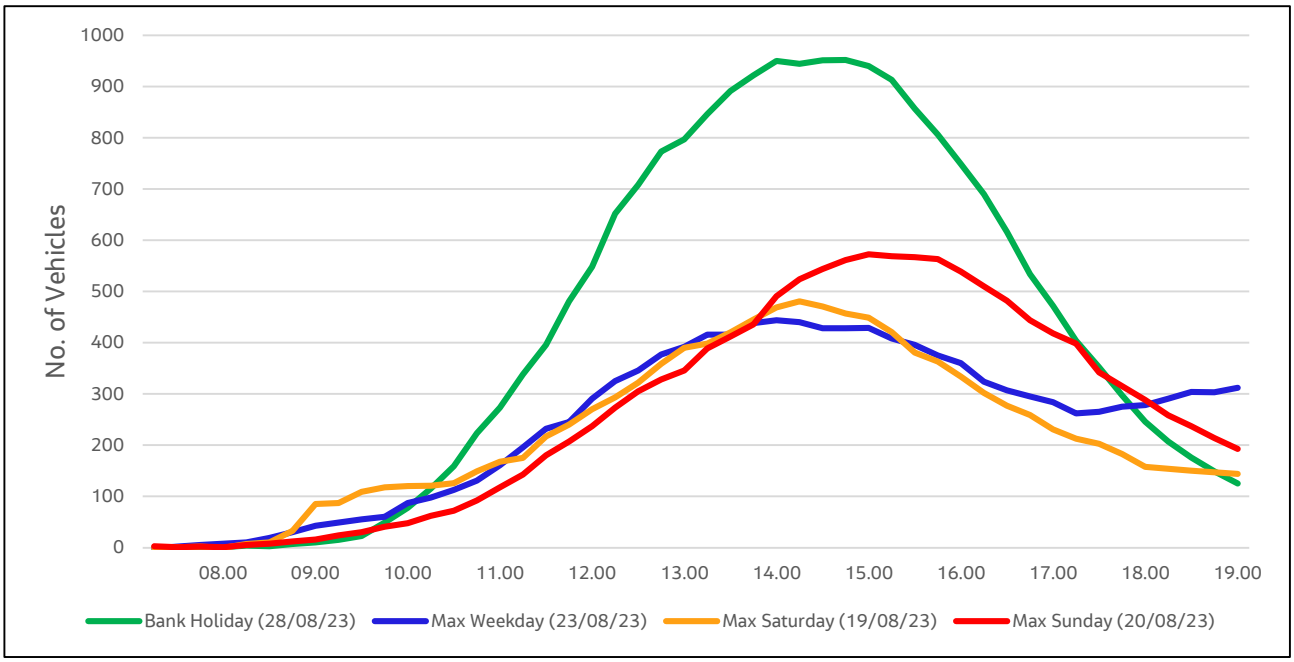


Figure B: Total Maximum Parking Accumulation along Porthcawl Waterfront

Aside from the bank holiday Monday when more vehicles were observed parking in the waterfront car parks in 2023 compared to 2021, the maximum parking accumulation peaks observed on a weekday, Saturday and Sunday in the 2023 surveys are below what was observed in 2021. The peak accumulation on a weekday was 444 vehicles in 2023 compared with 575 in 2021. The peak accumulation on a Saturday was 481 vehicles (compared with 791 in 2021) and on a Sunday was 573 vehicles (compared with 1042 in 2021). It should be noted that the 2021 surveys covered a longer period, giving more opportunity for them to capture fine days that are likely to bring out more visitors.

In addition, the profile of entries and exits observed at each of the four car parks in 2023 is generally comparable to those observed in 2021, although on average less entries and exits were observed. There is also a trend of entries peaking later and exits peaking earlier, which could indicate shorter stay durations. This is supported by length of stay data obtained by ANPR for the bank holiday weekend.

The length of stay data supports previous findings that use of Hillsboro Place (North) and Hillsboro Place (South) is primarily orientated towards shorter stays, while Salt Lake is used for more longer stays. However, no car park appears to show exclusively short-stay or long-stay behaviour; all three car parks are being used for a mix of stay durations.

The survey results suggest there was some change in the use of the Waterfront car parks in 2023 relative to 2021. However, the following caveats must be noted:

- Incomplete data collected by ANPR may skew the length of stay results for the Saturday and Sunday of the 2023 bank holiday weekend.
- Parking at a seaside town such as Porthcawl is likely to be susceptible to variations in weather. It is noted that August 2023 was characterised by mixed and unsettled weather, with wet and windy weather at times due to major storms. August 2021, on the other hand, was both drier and duller than a typical August. In particular, the August Bank Holiday weekend in 2021 was warmer and drier than in 2023.

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1. Introduction

1.1 Purpose of Report

This report evaluates survey data obtained in the summer and autumn of 2023 to examine the use of parking on the Porthcawl Waterfront. This has been done for two reasons, first to introduce data on the usage of the Aldi Porthcawl car park, which opened in July 2023, and second, to confirm the accuracy of car park usage data collected in 2021, which may have been affected by the COVID pandemic. The 2021 results were presented in the 'Porthcawl Parking Strategy: Parking Data Analysis' report issued on 16 November 2021.

1.2 Background

The 'Porthcawl Parking Strategy: Parking Data Analysis' report provided an analysis of how the four major car parks which serve the Porthcawl Waterfront are used during the month of August, which is taken as the peak period of sustained visitor activity in the town. The need for this report was established in the previous 'Porthcawl Development Review' (2020), which analysed the impact of the Porthcawl Waterfront Regeneration Area (PWRA) on the local transport infrastructure.

The four car parks considered in the 2021 report are:

- Hillsboro Place (North) Car Park;
- Hillsboro Place (South) Car Park;
- Salt Lake Car Park; and,
- Sandy Bay Car Park.

The 2021 analysis found that in the period surveyed (10 August 2021 – 6 September 2021), Saturdays were typically the busiest day for these car parks. It was estimated that parking accumulation across the four car parks peaked at an average of 705 vehicles at 15.00 on Saturday afternoon. The busiest day in the period studied, however, was Sunday 29 August 2021, on the August Bank Holiday weekend, when 1042 vehicles were estimated to be parked across the four car parks at 15.00.

1.3 Report Structure

The structure of the report is set out as follows:

- Section 1: Introduction;
- Section 2: Data Collection;
- Section 3: Aldi Car Park;
- Section 4: 2023 Waterfront Survey Results; and,
- Section 5: Conclusion

Appendices, found at the end of the report, provide the 2023 raw survey data.

2. Data Collection

A range of data was collected at the entrances to the following five sites:

- Site 1: Hillsboro Place (North) Car Park;
- Site 2: Hillsboro Place (South) Car Park;
- Site 3: Salt Lake Car Park;
- Site 4: Sandy Bay Car Park; and,
- Site 5: Aldi Car Park.

The location of these car parks is shown in Figure 2.1



Figure 2.1: Location of Car Parks Surveyed in 2023

2.1 Entry and Exit Car Park Surveys

Entry and exit car park surveys were conducted using cameras over different periods of time for Sites 1 to 4 and Site 5. For Sites 1 to 4, entry and exit surveys took place on the following days:

- Saturday 5 August and Sunday 6 August 2023;
- Saturday 12 August and Sunday 13 August 2023; and,
- Friday 18 August to Tuesday 29 August 2023, inclusive.

Entry and exit data for Site 5 was collected over a longer period, and in both the summer and autumn. Dates when data was collected for Site 5 in the summer include:

- Mondays 31 July to Sunday 6 August 2023, inclusive;
- Saturday 12 August and Sunday 13 August 2023; and
- Friday 18 August to Tuesday 29 August 2023, inclusive.

Dates when data was collected for Site 5 in the autumn include:

- Friday 6 October to Thursday 12 October 2023.

The entry and exit car park surveys were conducted over a 12-hour period each day between 07.00 and 19.00. A full breakdown of the surveyed entry and exit movement is provided within **Appendix A**.

2.2 Automatic Number Plate Recognition (ANPR) Surveys

The ANPR surveys were conducted for Sites 1 to 3 only; data was collected over the Bank Holiday Weekend, from Friday 25 August to Monday 28 August 2023 at the entry points of the Hillsboro Place (North), Hillsboro Place (South) and Salt Lake car parks (locations displayed in Figure 2.1) between 07.00 and 19.00. The ANPR cameras use optical character recognition technology to read vehicle registration plates as the vehicles enter and exit the car parks, allowing us to gather an understanding of the typical length of stay of parked vehicles. A full breakdown of the ANPR survey data is provided within **Appendix B**.

3. Aldi Car Park

3.1 Introduction

The new Aldi and its associated car park are situated directly north of Salt Lake Car Park, to the east of Porthcawl town centre. It can be accessed by vehicles via the A4106 / Eastern Promenade / The Portway / Lias Road roundabout. The store officially opened on Thursday 13 July 2023, and is open from 08.00 to 22.00 from Monday to Saturday (including bank holidays), and from 10.00 to 16.00 on Sunday. The car park includes a total of a 114 parking bays, of which there are 4 electric vehicle charging points, 5 disabled parking bays, 7 parent and child parking bays, and a covered cycle parking area. The car park is free to use, and it is understood that customers can park at the facility for up to 90 minutes.

Figure 3.1 illustrates a layout plan of the store and its associated car park, whilst Figure 3.2 provides an image of the finished Aldi storefront.

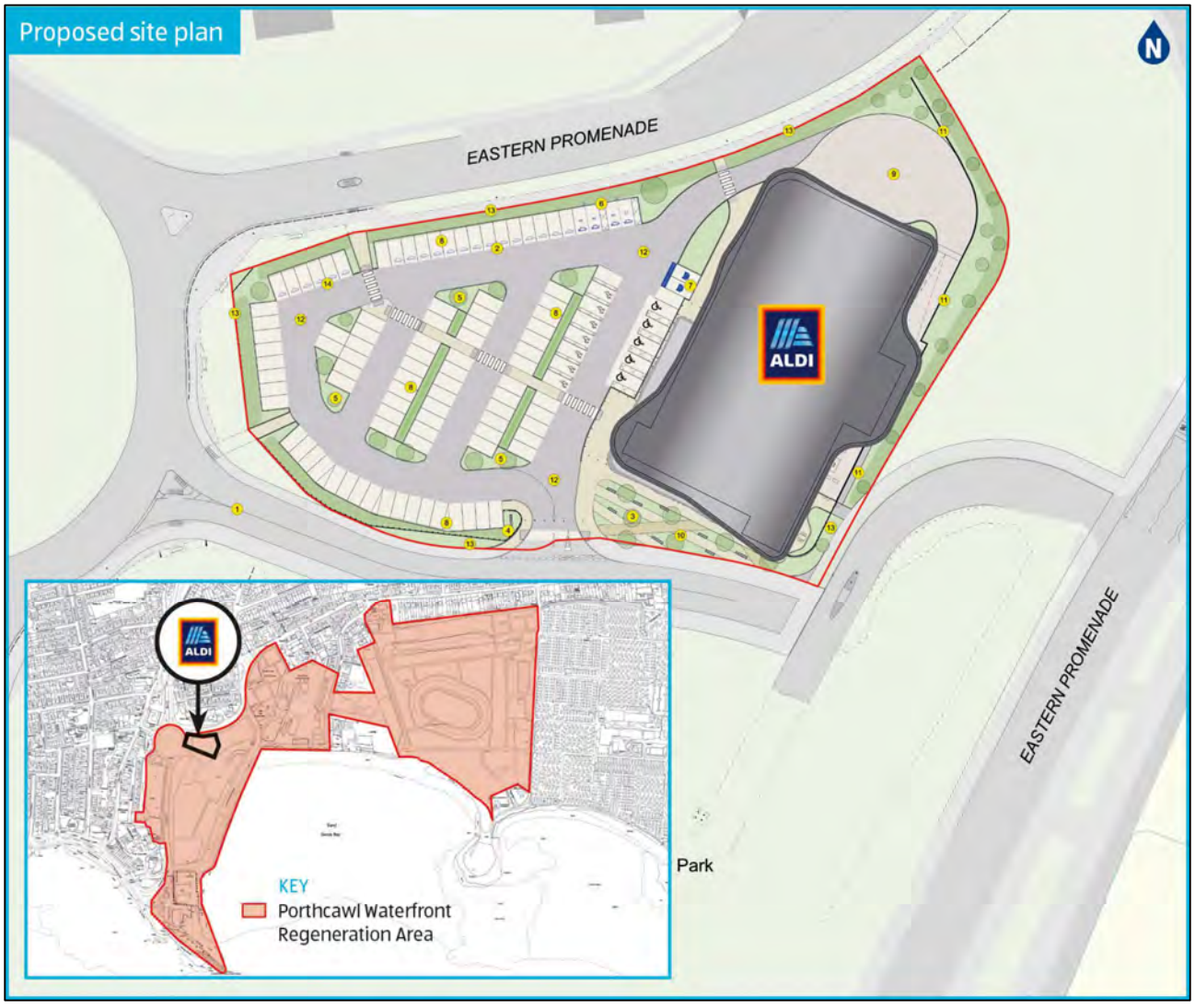


Figure 3.1: Layout Plan of Aldi Porthcawl (Source: Aldi)



Figure 3.2: Aldi Porthcawl Storefront (Source: Wales Online)

3.2 Data Analysis

3.2.1 Entry and Exit Traffic Movements

Entry and exit traffic movements were surveyed at the Aldi car park in both the summer and the autumn. The data was collected in two separate periods to remove any potential bias in customer numbers that may have occurred in the weeks immediately following the opening of the store.

3.2.1.1 Summer Survey Period

Figure 3.3 and Figure 3.4 illustrate the entry and exit traffic movements respectively, throughout the week between the hours of 07.00 and 19.00 during the summer survey period. The highest average day entry and exit movements across an average week both occur on Monday with 1,676 vehicles and 1,625 vehicles entering and exiting the car park respectively. Likewise, the highest maximum entry and exit movement during the summer survey period also occur on a Monday, with 1,753 vehicles and 1,699 vehicles entering and exiting the car park respectively.

The lowest average day entry and exit movements across an average week both occur on Sunday with 1,119 vehicles and 1,121 vehicles entering and exiting the car park respectively. Likewise, the lowest maximum entry and exit movement during the summer survey period also occurred on a Sunday, with 1,217 vehicles and 1,222 vehicles entering and exiting the car park respectively. The low number of entry and exit movements on Sunday are most likely down to the reduced opening hours of the store (10.00 – 16.00).

Throughout the week, entry and exit movements can be seen peaking on Monday and Friday in particular, perhaps reflecting shopping habits as customers tend to buy groceries for the week and the weekend. It is

noticeable that apart from Sunday, entry and exit movements are typically lower in mid-week, especially on Wednesday and Thursday.

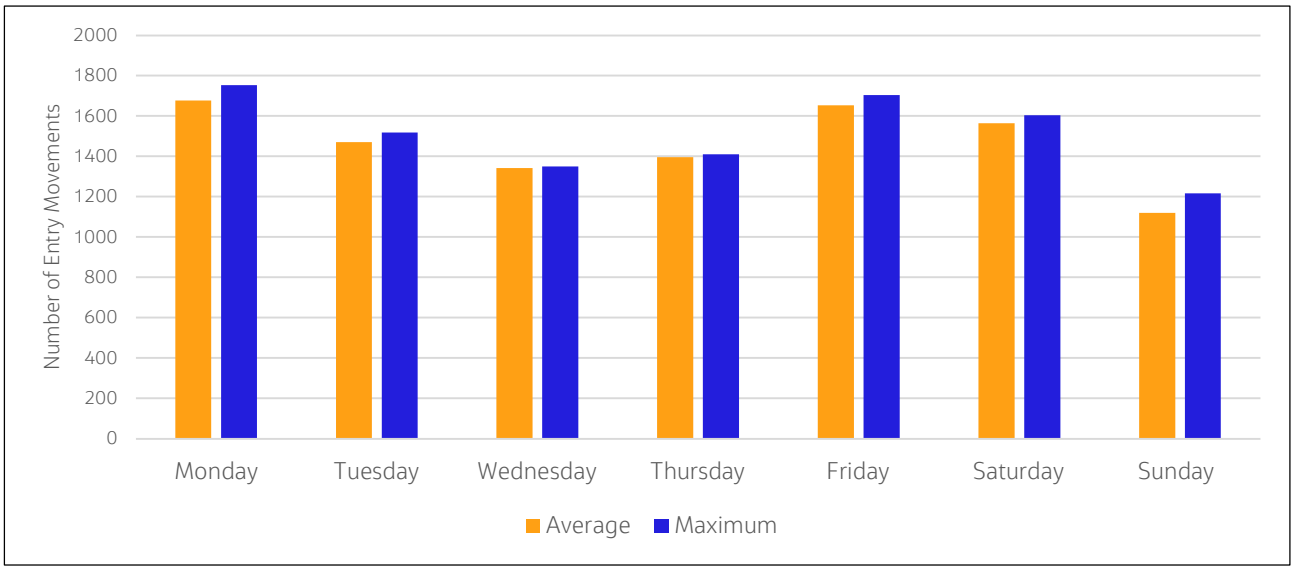


Figure 3.3: Entry Vehicular Movements throughout the week at the Aldi Car Park (Summer Survey 2023)

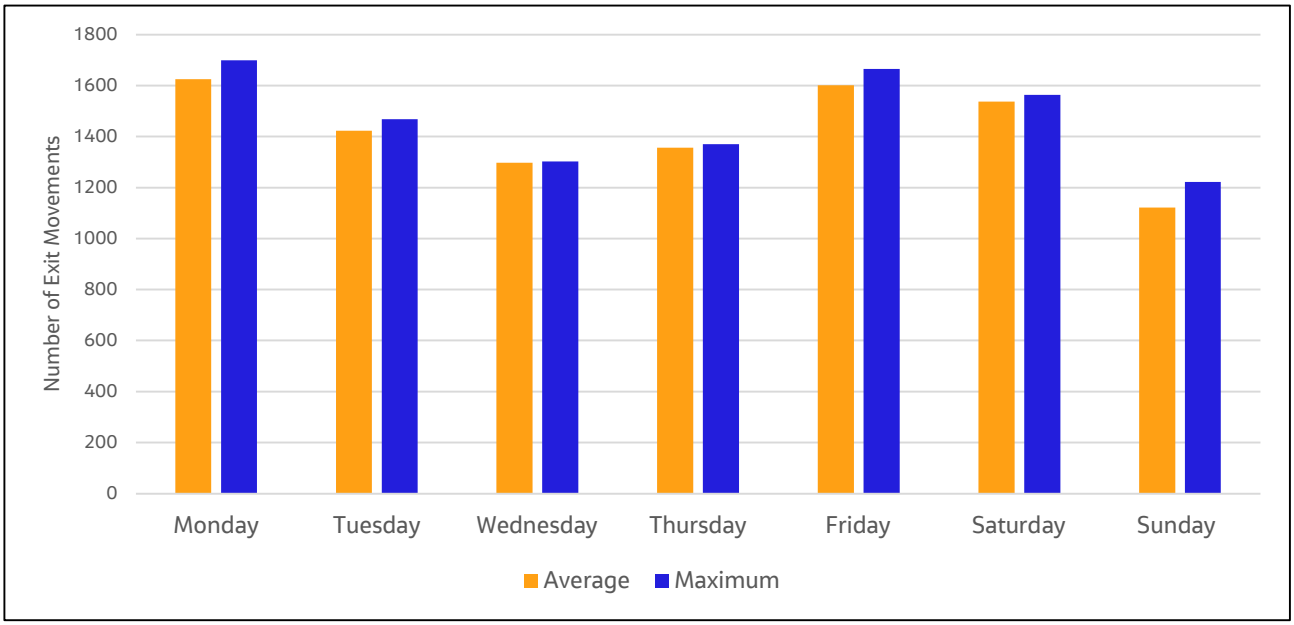


Figure 3.4: Exit Vehicular Movements throughout the week at the Aldi Car Park (Summer Survey 2023)

Figure 3.5, Figure 3.6 and Figure 3.7 illustrate the entry and exit traffic movements for each surveyed hour for an average weekday, average Saturday, and average Sunday respectively (during the summer survey period). Figure 3.5 demonstrates that on an average weekday, the number of vehicles entering the car park peaks between 16.00 and 17.00 when an average of 168 vehicles enter, and that the number of vehicles exiting the car park peaks between 17.00 and 18.00 when an average 176 vehicles exit. Generally, on an average weekday, entry movements remain relatively high between late morning and late afternoon, whereas exit movements remain relatively high between mid-afternoon and the early evening. The entry and exit traffic movements throughout an average weekday reflect the regular turnover of a car park being used by customers for short periods throughout the day.

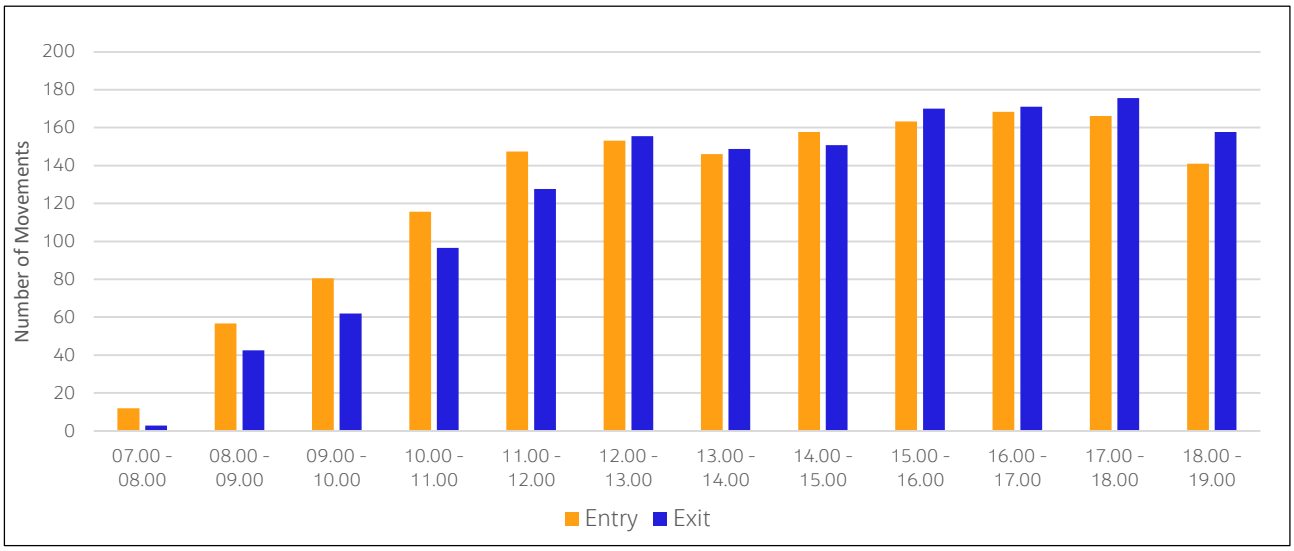


Figure 3.5: Average Weekday Vehicular Movements at the Aldi Car Park (Summer Survey 2023)

Figure 3.6 demonstrates that on an average Saturday, the number of vehicles entering and exiting the car park both peak between 14.00 and 15.00, when an average of 181 vehicles and 177 vehicles enter and exit the car park, respectively. Generally, on an average Saturday, entry movements tend to remain relatively high between late morning and late afternoon, whereas exit movement tend to remain relatively high between early afternoon and late afternoon. Entry and exit movements during the morning hours tend to be a bit higher than those recorded on an average weekday, whilst unlike an average weekday, exit movements see a more significant decrease between late afternoon and early evening.

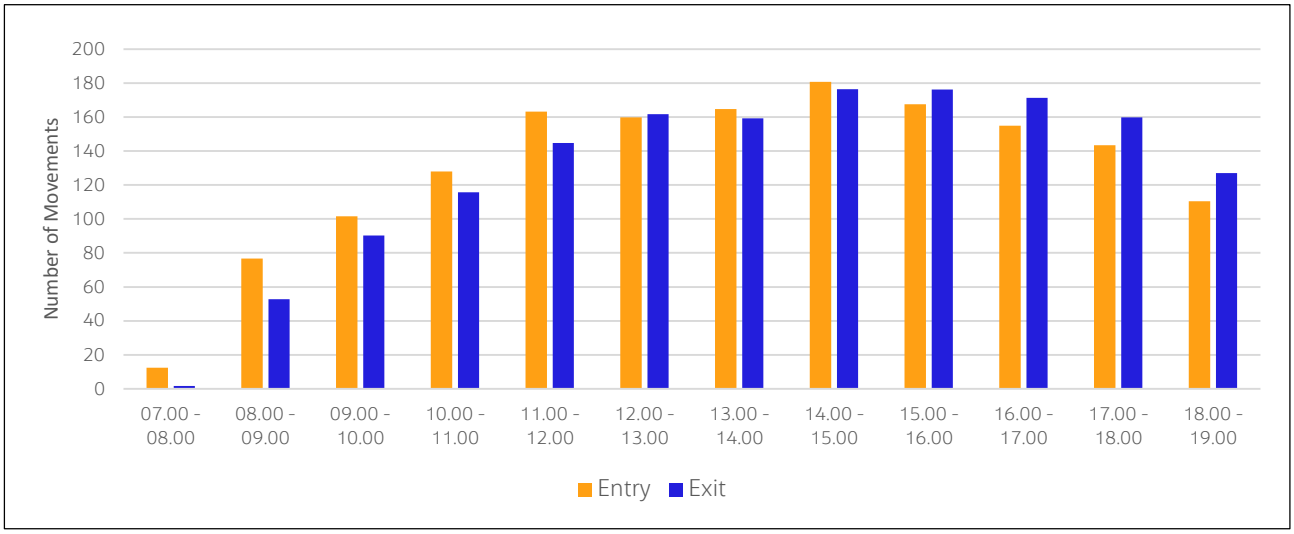


Figure 3.6: Average Saturday Vehicular Movements at the Aldi Car Park (Summer Survey 2023)

Figure 3.7 demonstrates that on an average Sunday, the number of vehicles entering the car park peaks between 14.00 and 15.00 when an average of 191 vehicles enter the car park. The number of vehicles exiting the car park peaks at 219 vehicles between 15.00 and 16.00, reflecting the closing time of the store, which is at 16.00 on Sunday. As the store is open for a shorter time on Sundays, the number of entries and exits are consistently high during these hours.

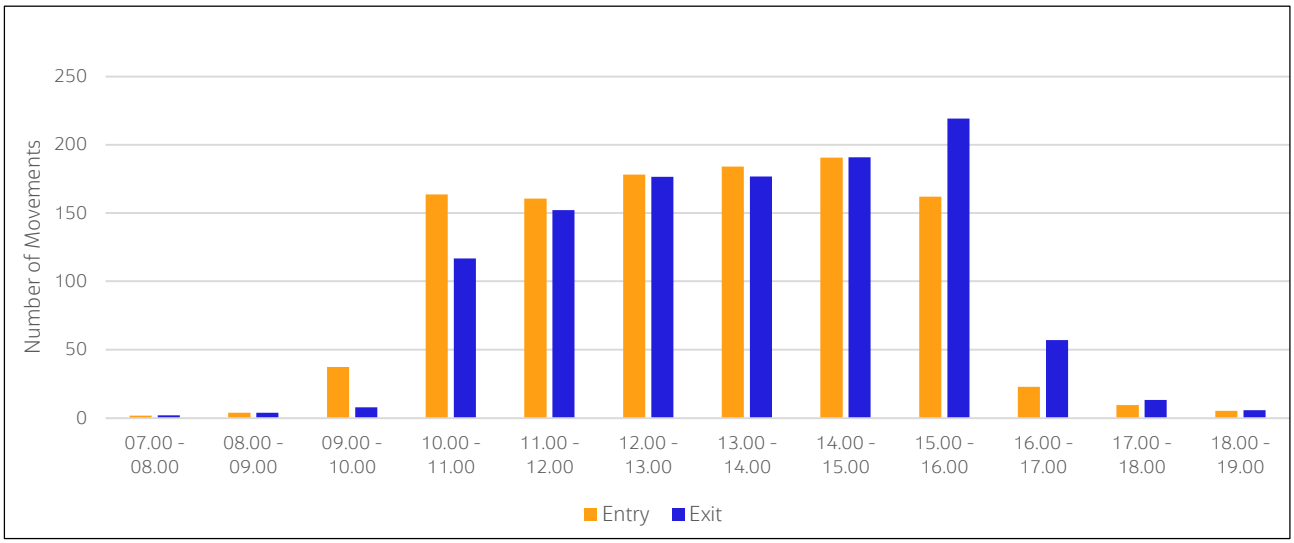


Figure 3.7: Average Sunday Vehicular Movements at the Aldi Car Park (Summer Survey 2023)

3.2.1.2 Autumn Survey Period

Table 3.1 compares the entry and exit traffic movements between 07.00 and 19.00 for an average weekday and the maximum weekday, between the summer and autumn survey periods. The entry and exit traffic movements during the autumn period are well below the summer values, featuring 384 less movements than for an average weekday and 608 less movements for the maximum weekday during the survey period.

Table 3.1: Traffic Movements Comparison between Summer and Autumn Survey Periods (Weekday)

Survey Period	Average Weekday Traffic Movements			Max Weekday Traffic Movements			
	Entry	Exit	Total	Entry	Exit	Total	Date
Summer	1,507	1,461	2,968	1,753	1,699	3,452	31/07/23
Autumn	1.310	1,274	2,584	1,440	1,404	2,844	06/10/23
Difference	-197	-187	-384	-313	-295	-608	-

As only one Saturday and one Sunday were surveyed in the autumn, it is difficult to know whether these are representative of autumn usage patterns. Nevertheless, these have been compared in Table 3.2 and Table 3.3. The entries and exits on the Saturday were slightly below the average and maximum Saturday observed in the summer period. Meanwhile, the entries and exits on the Sunday were above the average observed in the summer period and comparable to the maximum Sunday in August.

Table 3.2: Traffic Movements Comparison between Summer and Autumn Survey Periods (Saturday)

Survey Period	Average Weekday Traffic Movements			Max Weekday Traffic Movements			
	Entry	Exit	Total	Entry	Exit	Total	Date
Summer	1,564	1,537	3,101	1,603	1,563	3,166	19/08/23
Autumn	1,502	1,466	2,968	1,502	1,466	2,968	07/10/23
Difference	-62	-71	-133	-101	-97	-198	-

Table 3.3: Traffic Movements Comparison between Summer and Autumn Survey Periods (Sunday)

Survey Period	Average Weekday Traffic Movements			Max Weekday Traffic Movements			
	Entry	Exit	Total	Entry	Exit	Total	Date
Summer	1,119	1,121	2,240	1,217	1,222	2,439	13/08/23

Survey Period	Average Weekday Traffic Movements			Max Weekday Traffic Movements			
	Entry	Exit	Total	Entry	Exit	Total	Date
Autumn	1,211	1,217	2,428	1,211	1,217	2,428	08/10/23
Difference	+92	+96	+188	-6	-5	-11	-

While some of the difference in entry and exit traffic movements could be due an initial surge in patronage to the Aldi which followed it's opening, it is likely that some of the difference is also due to the summer survey data being recorded during the summer school holiday period.

Figure 3.8 illustrates the average weekday entry and exit traffic movements for each surveyed hour during the autumn survey period. On an average weekday during the autumn survey period, the number of vehicles entering and exiting the car park both peak between 17.00 and 18.00, with 151 vehicles and 158 vehicles entering and exiting the car park respectively. The peak entry movements during this autumn survey period occurs an hour later compared to the data collected across the summer survey period. However overall, the average weekday traffic movements during both the summer and autumn survey periods follow a similar pattern throughout the day, indicating there is no significant seasonal variation as to the time-of-day Aldi customers attend and use the car park.

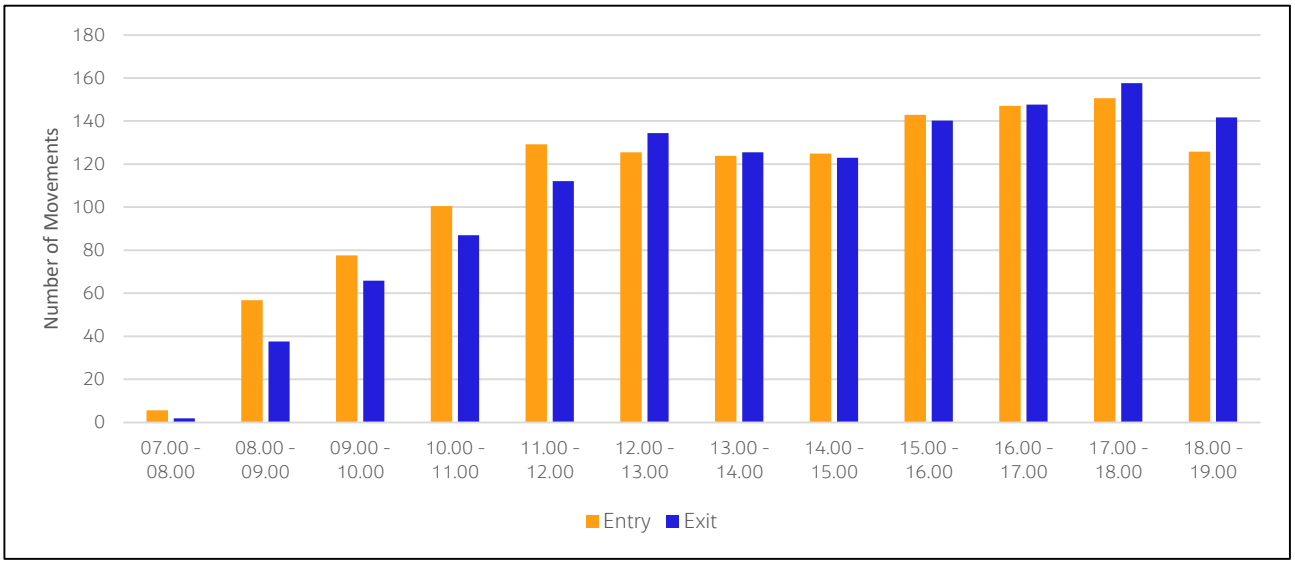


Figure 3.8: Average Weekday Vehicular Movements at the Aldi Car Park (Autumn Survey 2023)

3.2.2 Parking Accumulation

3.2.2.1 Summer Survey Period

The estimated parking accumulation numbers throughout the day at Aldi car park has been calculated by presuming there are no parked vehicles within the car park before 07.00 and taking into consideration the number of vehicles entering and exiting the car park. The Aldi car park has a capacity of 114 parking bays.

Table 3.4 displays the estimated average maximum and maximum number of parked vehicles within the car park for each day of the week during the surveyed hours of 07.00 to 19.00. The highest average maximum number of parked vehicles (114 vehicles) and the maximum number of parked vehicles (118 vehicles) both occur on a Monday. There are noticeably high parking numbers on Friday and Sunday as well. Due to the methodology used to estimate parking accumulation, by calculating from entry and exit movements, the estimated maximum parked vehicles on Monday 31 July 2023 (118 parked vehicles) and Sunday 13 August 2023 (117 parked vehicles) reached numbers beyond the capacity of the car park. In reality, the number of parked vehicles is not likely to have gone above its capacity of 114, and it is assumed that the high number of

entry and exit movements would have resulted in some motorists entering and soon leaving the car park when unable to find a space.

Table 3.4: Parking Accumulation at the Aldi Car Park (Summer Survey Period)

Day	Capacity	Average Maximum Parked Vehicles		Maximum Parked Vehicles		
		No.	Usage %	No.	Usage %	Date
Monday	114	114	100.0%	118	103.5%	31/07/2023
Tuesday	114	93	81.3%	97	85.1%	01/08/2023
Wednesday	114	86	75.0%	96	84.2%	02/08/2023
Thursday	114	78	68.4%	78	68.4%	24/08/2023
Friday	114	109	95.9%	112	98.2%	04/08/2023
Saturday	114	99	87.1%	104	91.2%	05/08/2023
Sunday	114	110	96.7%	117	102.6%	13/08/2023

The lowest average maximum and maximum number of parked vehicles both occur on a Thursday. Parking peaks are also relatively low on Tuesday and Wednesday as well.

Figure 3.9 illustrates the parking accumulation at Aldi car park between 07.00 and 19.00 on an average weekday, average Saturday and average Sunday during the summer survey period.

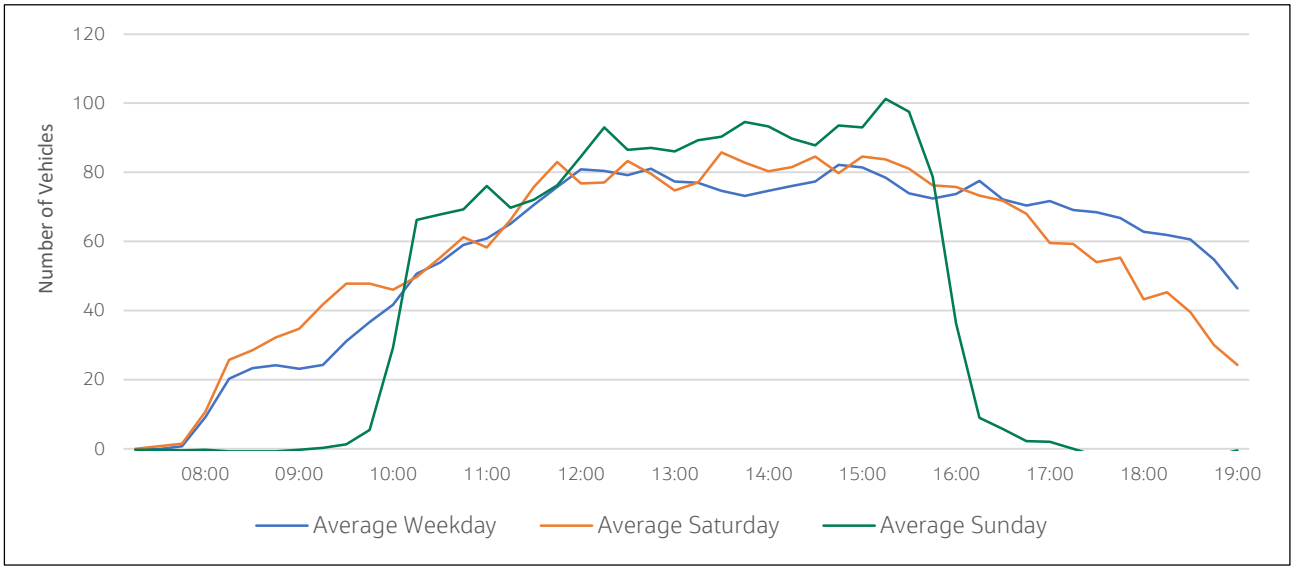


Figure 3.9: Average Parking Accumulation at the Aldi Car Park (Summer Survey Period)

The highest average parking accumulation occurs on a Sunday, with the average parking accumulation peaking at 101 vehicles between 15.00 and 15.15, approximately and hour before the closing time of the store. Parking accumulation for an average Saturday, peaks between 13.15 and 13.30 with 86 parked vehicles, and the parking accumulation for an average weekday, peaks between 14.40 and 14.45 with 82 parked vehicles.

The profiles for the average weekday and average Saturday are relatively similar, with the peak parking accumulation across both days occurring around 11.30 to 15.30. The distribution for the average Sunday is different, with the line graph mirroring the store's reduced opening hours (on Sunday). There is a rise and fall in the number of parked vehicles on an average Sunday immediately after 10.00 (when the store opens) and after 16.00 (when the store closes), respectively.

Figure 3.10 illustrates the parking accumulation at Aldi car park between 07.00 and 19.00 on the busiest weekday, busiest Saturday and busiest Sunday during the summer survey period. The highest maximum parking accumulation occurs on Monday 31 July, when a maximum number of 118 vehicles were estimated to be parked within the Aldi car park between 16.00 and 16.45. In terms of weekdays, this is closely followed by

Friday 4 August, when 112 vehicles were estimated to be parked within the car park between 15.45 and 16.00. During the week, the number of vehicles using the car park peak at either end of the week (on Monday and Friday) and drop in the middle of the week (Tuesday, Wednesday and Thursday).

The highest maximum parking accumulation for a Saturday was logged on 5 August, when 104 vehicles were estimated to be parked within the car park at two separate periods of 11.30 to 11.45 and 13.15 to 13.30. The highest maximum parking accumulation for a Sunday took place on 13 August, when 117 vehicles were estimated to be parked within the car park between 15.15 and 15.30. Again, the profiles for weekdays and Saturdays follow a similar distribution, whereas the profile for Sundays mirrors the opening hours of the store.

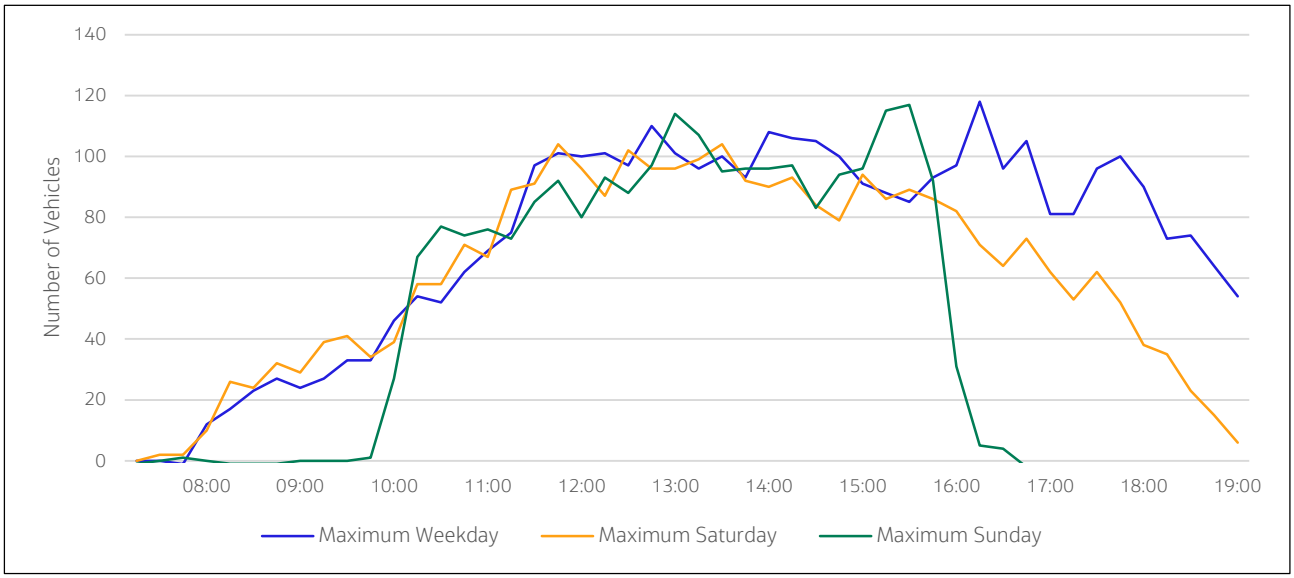


Figure 3.10: Maximum Parking Accumulation at the Aldi Car Park (Summer Survey Period)

3.2.2.2 Autumn Survey Period

Table 3.5 displays the maximum estimated number of parked vehicles at Aldi car park during each day of the autumn survey period. Parking accumulation reached an estimated maximum of 109 vehicles on Sunday, approximately 95.6% of the car park's capacity. However, the daily maximum parking accumulation is lowest on Wednesday with 70 parked vehicles, approximately 61.4% of the car park's capacity. The maximum parking accumulation numbers throughout the autumn survey period are significantly less than those recorded during the summer survey period. This may be because the summer survey period was undertaken during the summer school holidays. Although the maximum number of parked vehicles are significantly lower during the autumn survey period, the distribution throughout the week is relatively similar with parked numbers highest on Monday, Friday and during the weekend.

Table 3.5: Parking Accumulation at the Aldi Car Park (Autumn Survey Period)

Day	Capacity	Maximum Parked Vehicles	Usage %
Monday	114	81	71.1%
Tuesday	114	72	63.2%
Wednesday	114	70	61.4%
Thursday	114	74	64.9%
Friday	114	78	68.4%
Saturday	114	85	74.6%
Sunday	114	109	95.6%

Figure 3.11 illustrates the parking accumulation numbers between 07.00 and 19.00 for an average weekday and the maximum weekday during the autumn survey period in October 2023. The maximum parking

accumulation weekday occurred on Monday when the number of parked vehicles is estimated to peak at 81 vehicles between 14.45 and 15.00. The parking accumulation for an average weekday across the autumn survey period is expected to peak at 67 vehicles between 12.00 and 12.15.

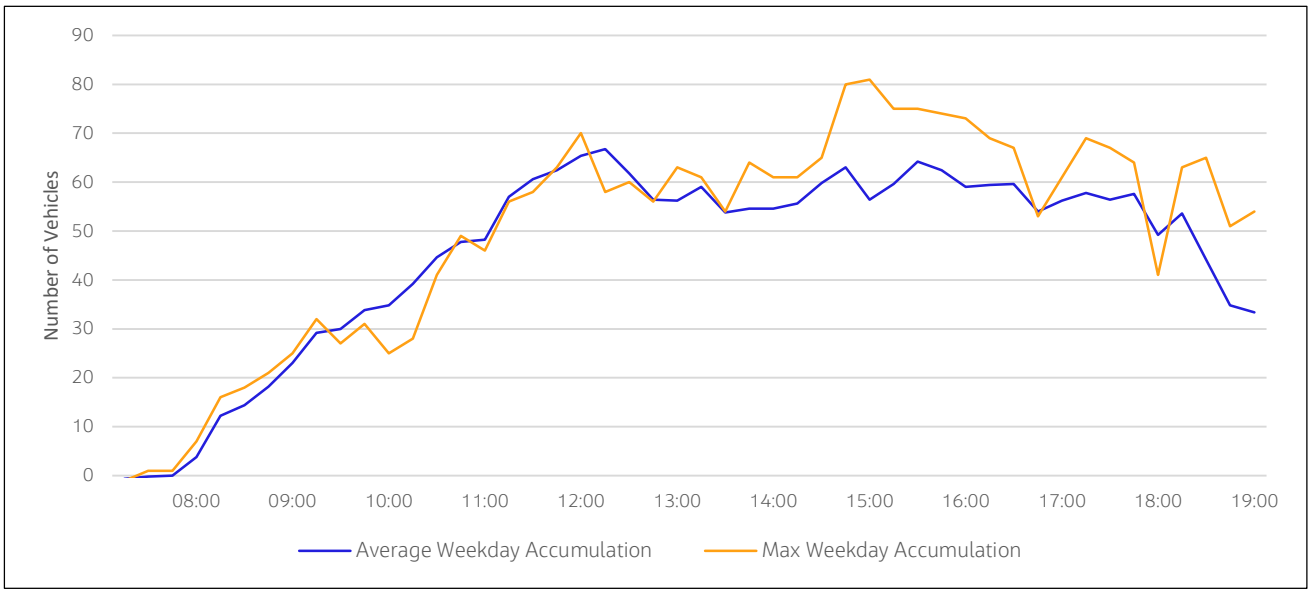


Figure 3.11: Weekday Parking Accumulation at Aldi Car Park (Autumn Survey Period)

3.2.3 Summary

The following key features have been observed by analysing the data gathered from the entry and exit surveys at Aldi car park undertaken during the summer survey (July and August 2023) and autumn survey periods (October 2023):

- During the summer survey period, the store was at its busiest on Mondays, Fridays, Saturdays and Sundays, with significant entry and exit vehicular movements and / or high parking accumulation numbers occurring on these days. In contrast, entry and exit vehicular movements and parking accumulation numbers tended to be much lower during the mid-week days. Its thought that this may reflect typical shopping habits, as customers may buy groceries for the week or for the weekend. A similar weekly distribution was discovered during the autumn survey period;
- Entry and exit vehicular movements and parking accumulation were significantly lower on weekdays during the autumn survey period in comparison to the summer survey period. Visits to the store may have been higher during the summer survey period due to summer school holidays;
- During both survey periods, the entry and exit vehicular movements on an average weekday peak in the late afternoon and early evening, between 16.00 and 18.00. During the summer survey period, the entry and exit vehicular movements on an average Saturday peak between 14.00 and 15.00, whilst on an average Sunday the entry vehicular movements peak between 14.00 and 15.00, and the exit vehicular movements peak between 15.00 and 16.00;
- In the summer survey period, the Aldi car park was estimated to have reached capacity on three occasions: Monday 31 July, Sunday 13 August and Monday 21 August. Furthermore, it is estimated that the car park reached a parking accumulation of 113 vehicles, just short of capacity, on both Sunday 6 August and Sunday 20 August, whilst a parking accumulation of 110 vehicles, approaching capacity, was estimated to have been reached on the bank holiday Monday 28 August; and,
- In comparison, its estimated that the highest parking accumulation reached during the autumn survey periods was 109 vehicles on Sunday 8 August.

4. 2023 Waterfront Survey Results

This section summarises the use of the four waterfront public car parks (Hillsboro Place North, Hillsboro Place South, Salt Lake, and Sandy Bay) over the surveyed period. To understand how the car parks are used, three metrics have been analysed:

- Entry and exit movements;
- Parking accumulation; and,
- Length of stay.

The results from 2023 are briefly compared with the data collected in 2021.

4.1 Hillsboro Place (North) Car Park

Hillsboro Place (North) car park is located on the eastern edge of the town centre and has a capacity of approximately 250 vehicles. It is accessed on its northern edge from the A4106 / The Portway roundabout. At the time of the surveys, parking was charged at £1 for up to an hour, £1.50 for one to three hours, and £3 for more than three hours.

4.1.1 Entry and Exit Traffic Movements

Surveys captured counts of entry and exit traffic movements at Hillsboro Place (North) car park between 07.00 and 19.00 on 5 and 6 August, 12 and 13 August, and between 18 and 29 August 2023.

Figure 4.1 shows the profile of entries and exits on the average weekday. Entry movements rise rapidly in the morning, peak at 105 entries between 11.00 and 12.00, then fall throughout the afternoon with a slight increase between 18.00 and 19.00 just prior to the end of the survey. In general, vehicular entries remain relatively steady from 15.00 onwards with a moderate number of entries every hour. Exit movements remain relatively low until the late morning, after which exit movements remain high and largely steady between 12.00 and 18.00, when an average of more than 80 vehicles exit the car park in each hour. The peak exit movements of 88 vehicles occurs between 15.00 and 16.00.

Figure 4.2 shows the profile of entries and exits on the average Saturday. There is an early spike in entry movements between 8.00 and 9.00. The next hour has fewer entries, but they then rise again and remain high between 10.00 and 15.00, with a peak of 107 entries occurring between 12.00 and 13.00. Entries are then low after 15.00, though similar to weekdays there is a slight increase in the last hour before the end of the survey. Exit movements also have an early rapid increase, going from 6 vehicular exits between 08.00 and 09.00, to 36 vehicular exits between 09.00 and 10.00. Exit movements then continue to increase and a peak of 96 vehicular exits is reached between 13.00 and 14.00.

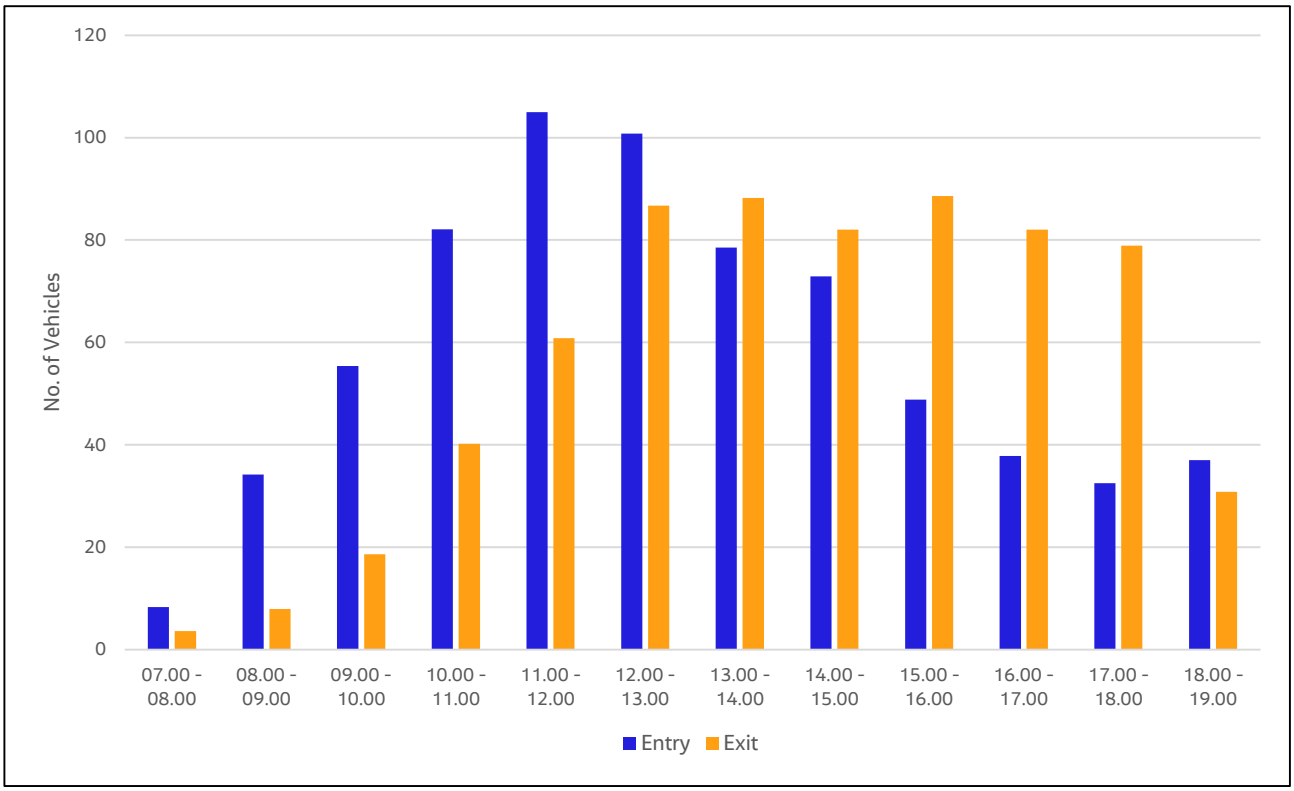


Figure 4.1 Average Weekday Entry and Exit Movements at Hillsboro Place (North) Car Park

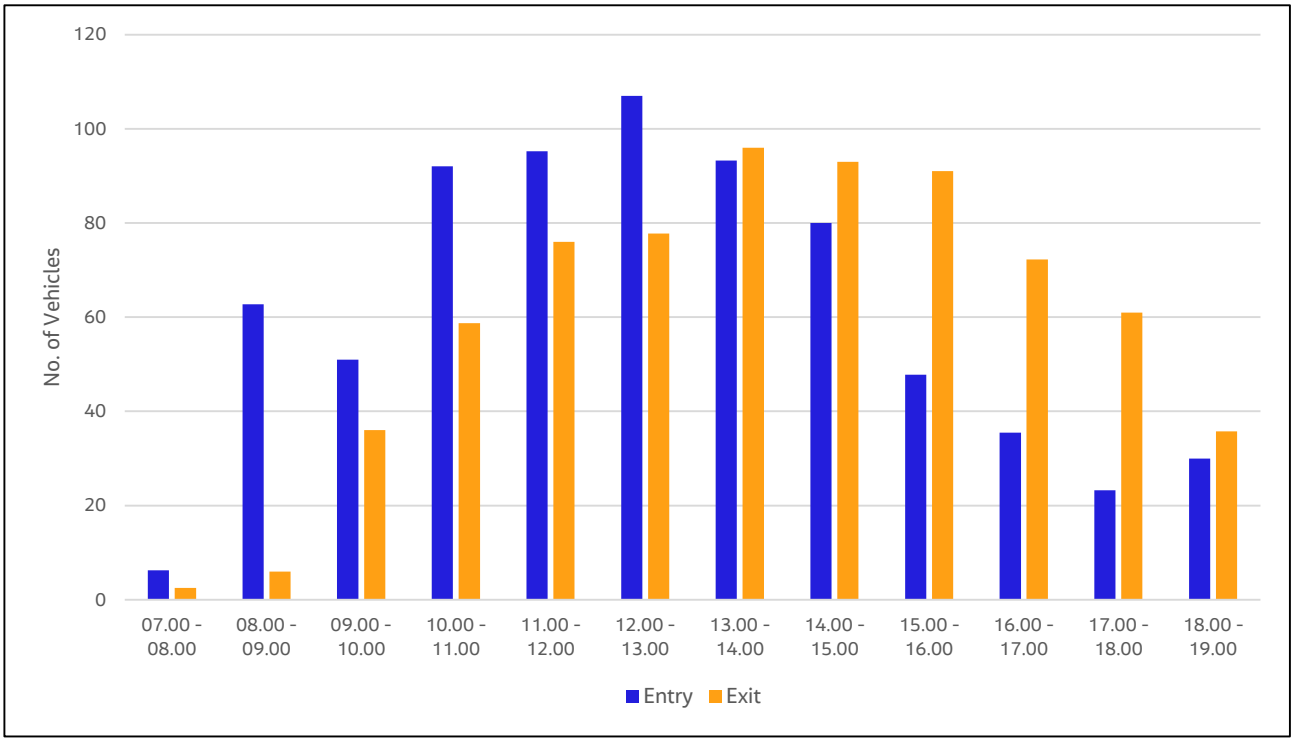


Figure 4.2 Average Saturday Entry and Exit Movements at Hillsboro Place (North) Car

Figure 4.3 shows the profile of entries and exits on the average Sunday. Both entry and exit movements have a straightforward rising and then falling profile, with the exits lagging the entries by approximately three hours. Entry movements peak at 112 entries between 12.00 and 13.00, whilst exit movements peak at 100 exits between 15.00 and 16.00.

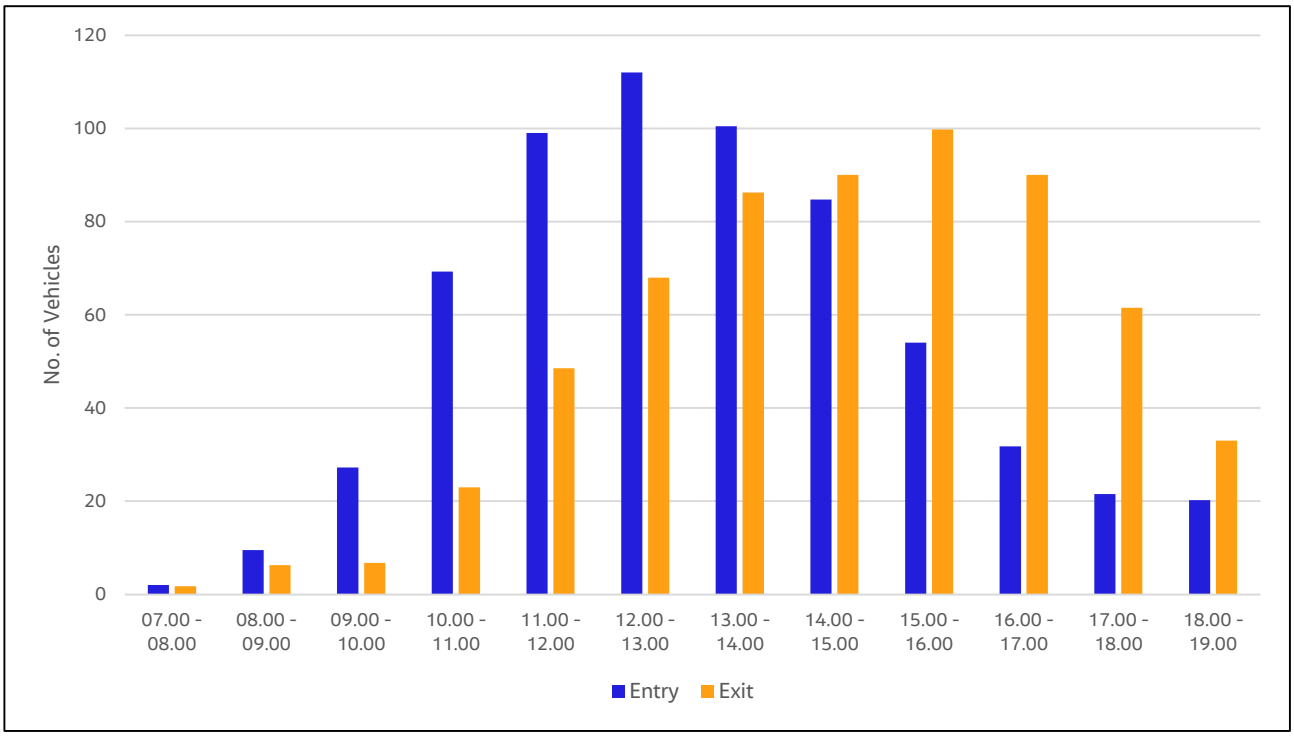


Figure 4.3 Average Sunday Entry and Exit Movements at Hillsboro Place (North) Car Park

4.1.2 Parking Accumulation

Parking accumulation at Hillsboro Place (North) car park has been calculated from the entry and exit data. The estimated number of parked vehicles at any time has been calculated by assuming there are no parked vehicles within the car park before 07.00.

The average maximum and maximum number of parked vehicles for weekdays, Saturdays, and Sundays are shown in Table 4.1. The bank holiday Monday has been excluded from the weekday calculation and is provided separately. Table 4.1 shows that on average the car park was busiest on Sundays. However, the average usage on weekdays, Saturdays, and Sundays is not substantially different from each other.

Table 4.1: Parking Accumulation at Hillsboro Place (North) Car Park

Day	Capacity	Average Max Parked Vehicles		Maximum Parked Vehicles		
		Count	Usage (%)	Count	Usage (%)	Date
Weekday	250	170	68.0 %	220	88.0 %	24/08/23
Saturday	250	160	64.0 %	224	89.6 %	19/08/23
Sunday	250	182	72.8 %	227	90.8 %	06/08/23
Bank Holiday	250	n/a	n/a	278	111.2 %	28/08/23

The car park is presumed to have reached full capacity on the bank holiday Monday (28 August 2023), when it is estimated at one point there was 278 vehicles in the car park, 28 more than the car park's capacity. While it is possible that some of these vehicles were parked at this time, it is likely that this high figure captures circulating vehicles that had entered the car park but were unable to find a space.

The profile of parking accumulation between 07.00 and 19.00 over the course of an average weekday, Saturday and Sunday is shown in Figure 4.4. Figure 4.4 shows that the average weekday and Saturday have similar parking accumulation profiles and peak at similar times (in the 12.30-12.45 and 13.00-13.15 periods, respectively). On the average weekday and Saturday, the use of the car park begins to pick up around 8.00. Unlike the average weekday, the average Saturday parking accumulation profile shows a rapid increase just

before 9.00, that may align with any early Saturday morning events such as the local parkrun or farmer's market. Compared to the rest of the week, the parking accumulation on the average Sunday peaks much later in the afternoon between 14.15 and 14.30. The car park also begins filling up later in the day, as there are few vehicles recorded prior to 9.00. On all days there is a rapid decrease in the number of vehicles in the car park in the afternoon. The profile flattens out after 18.00 with only a small number of cars remaining after this time.

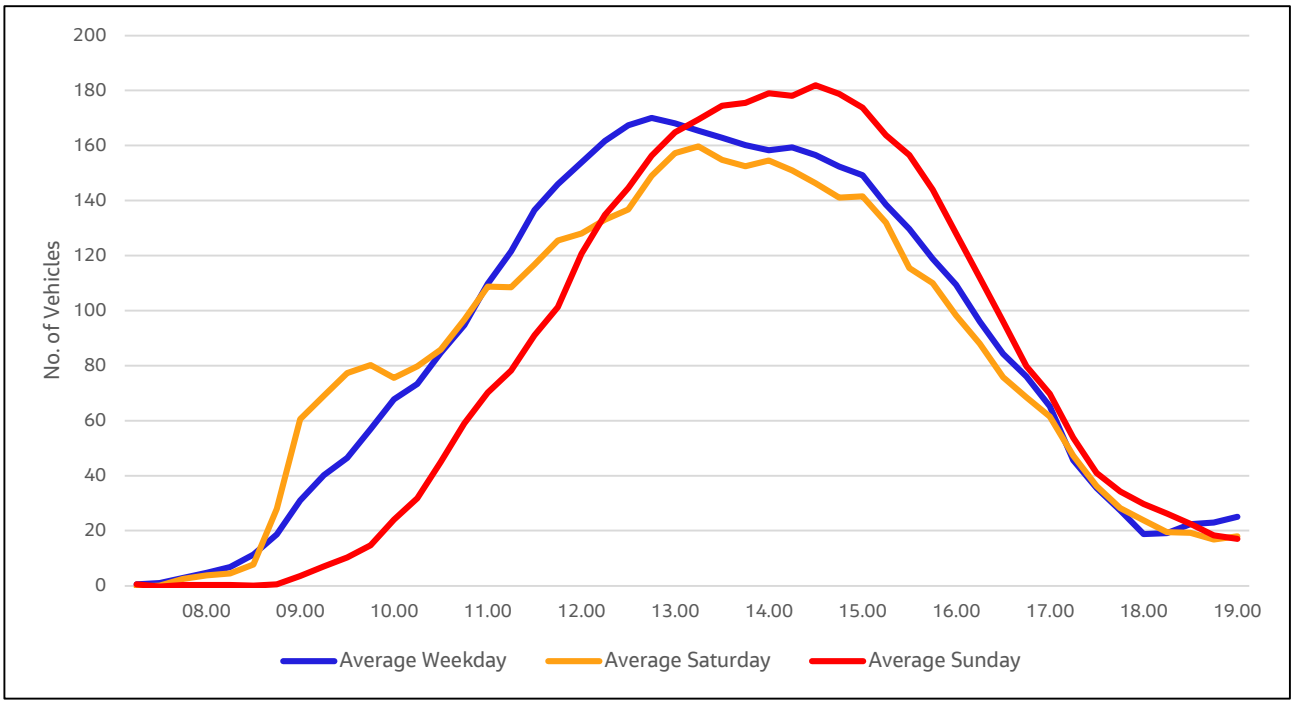


Figure 4.4: Average Parking Accumulation at Hillsboro Place (North) Car Park

Profiles for the maximum parking accumulation are shown in Figure 4.5. During the bank holiday Monday (the busiest surveyed day), the parking accumulation is estimated to have peaked at 278 vehicles between 13.30 and 13.45, however in reality this figure is likely to have captured circulating vehicles that had entered the car park but were unable to find a space. Figure 4.5 displays that the parking accumulation was at or over capacity (250 vehicles) between 12.30 and 15.00. The peak parking accumulation on the maximum weekday (excluding bank holiday), Saturday and Sunday were reached in-between 12.30 and 12.45 (220 vehicles), 13.30 and 13.45 (224 vehicles), and 13.00 and 13.15 (227 vehicles) respectively. The car park capacity of 250 vehicles was not reached on the maximum weekday (excluding the bank holiday), Saturday or Sunday.

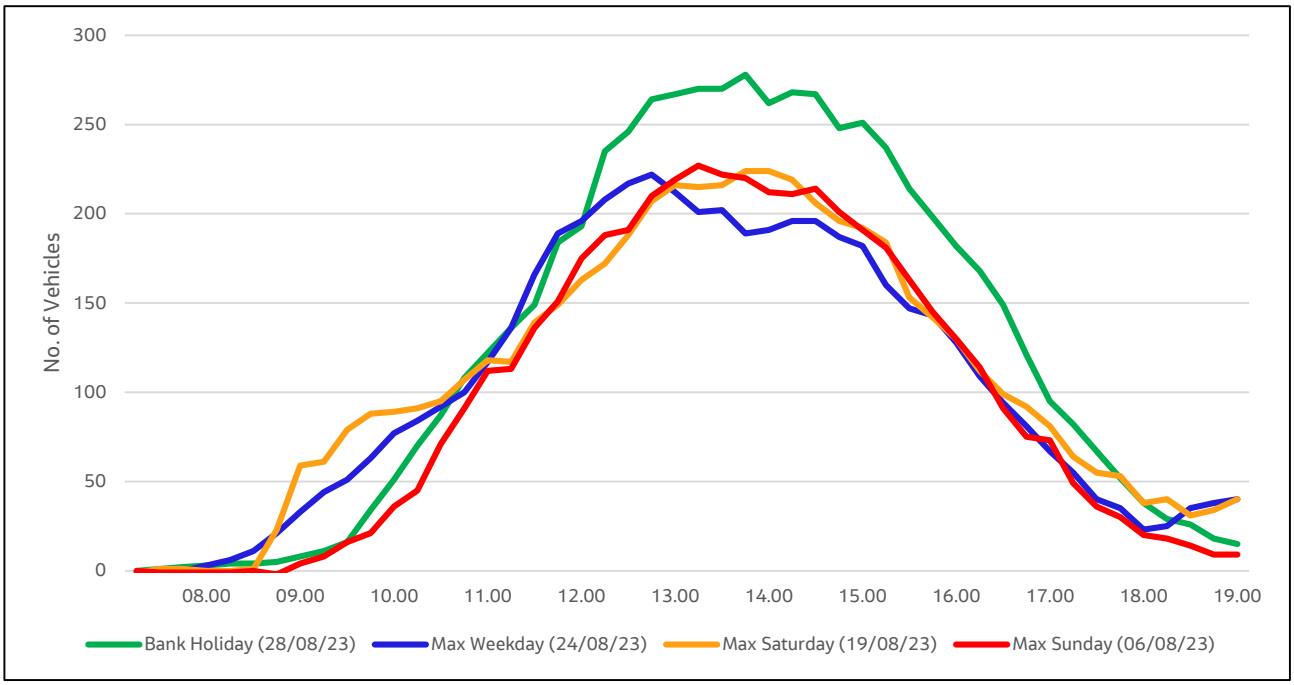


Figure 4.5: Maximum Parking Accumulation at Hillsboro Place (North) Car Park

4.1.3 Length of Stay

The length of stay data originates from the ANPR survey records. Data was recorded over the August Bank Holiday weekend (Friday 25 August 2023 – Monday 28 August 2023). As ANPR technology can fail to capture a number plate from time to time, the number of entries and exits recorded by ANPR was verified manually. This verification indicated that the number of entries is within 10-15% and the number of exits is within 3-5% of the actual number. Hence, a length of stay analysis based on ANPR data should be reasonably robust at this site. Note that as lengths of stays cannot be calculated for entries prior to 07.00 and exits after 19.00, these records have been excluded from the analysis.

Figure 4.6 summarises the length of stay at Hilsboro Place (North) car park during each of the four surveyed days. The most common length of stay on all surveyed days was under 30 minutes, however short stays under this category (less than 30 mins) may include dropping off and picking up of passengers or circulating the car park without parking. The second most common length of stay was between one and two hours. Most vehicles stayed for three hours or less. There are, however, a small number of vehicles that were observed staying for three hours or more, including some that stayed in excess of six hours. The bank holiday Monday saw a lower proportion of vehicles staying between 30 minutes and an hour and a greater proportion of vehicles staying between four and five hours in comparison to the other surveyed days. Friday, the only working weekday to be surveyed for length of stay, had a greater proportion of vehicles staying in excess of six hours in comparison to the other surveyed days.

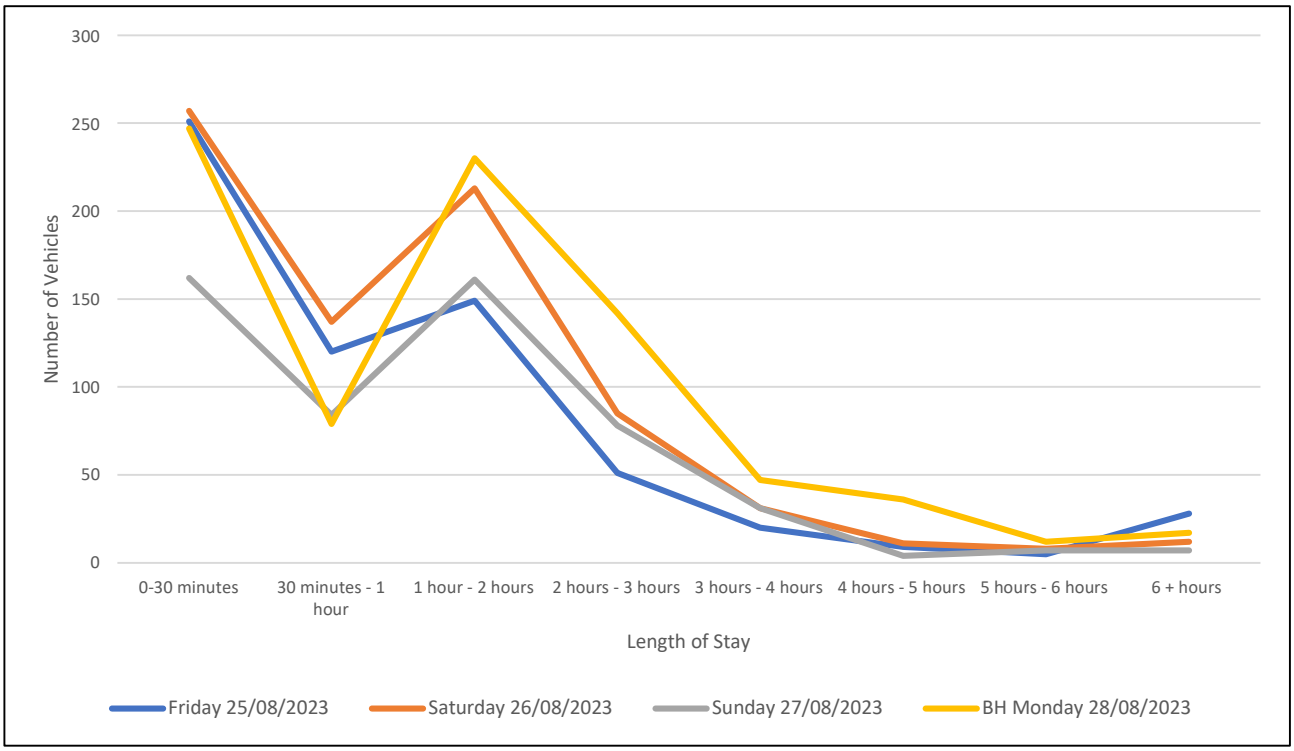


Figure 4.6: Length of Stay of Vehicles for Peak Day at Hillsboro Place (North)

Table 4.2 shows the minimum, average, and maximum length of stay for all four surveyed days at Hillsboro Place (North) car park. The longest and shortest average length of stay were on the bank holiday Monday and Saturday respectively.

Table 4.2: Length of Stay at Hillsboro Place (North) Car Park

Length of Stay	Friday 25/08/23	Saturday 26/08/23	Sunday 27/08/23	Monday 28/08/23
Minimum Stay	0:00:17	0:00:11	0:00:19	0:00:15
Average Stay	1:19:08	1:15:42	1:21:01	1:35:01
Maximum Stay	9:50:26	9:29:40	8:21:57	8:23:33

4.1.4 Comparison with 2021

The 2023 survey data for Hillsboro Place (North) car park demonstrates the following features compared to the data collected in 2021:

- The profiles of entry and exit movements remain largely similar for the average weekday, Saturday and Sunday when comparing the 2021 and 2023 data. Weekday exits stay high later into the afternoon/evening in 2023. There is also more of a noticeable spike in entries on Saturday mornings in 2023.
- The average maximum and maximum parking accumulation is lower on all days in 2023 than observed in 2021, with the exception of the 2023 bank holiday Monday, which is higher.
- Sundays saw the highest accumulation on average (182 vehicles), as opposed to Saturdays in 2021 (216 vehicles).
- The average length of stay was shorter on all days in 2023 than their equivalent days in 2021:
  - 1h19m on the Friday compared to 1h37m in 2021.
  - 1h15m on the Saturday compared to 1h51m in 2021.

- 1h21m on the Sunday compared to 1h57m in 2021.
- 1h35m on the bank holiday Monday compared to 1h42m in 2021.

4.2 Hillsboro Place (South) Car Park

Hillsboro Place (South) car park is located on the eastern edge of the town centre and has a capacity of approximately 77 vehicles. It is accessed on the town centre side from Dock Street, which is reached from John Street. At the time of the surveys, parking was charged at £1 for up to an hour, £1.50 for one to three hours, and £3 for more than three hours.

4.2.1 Entry and Exit Traffic Movements

Surveys captured counts of entry and exit traffic movements at Hillsboro Place (South) car park between 07.00 and 19.00 on 5 and 6 August, 12 and 13 August, and between 18 and 29 August 2023.

Figure 4.7 shows the profile of entries and exits on the average weekday. Entry movements rise throughout the morning and peak at 43 entries between 12.00 and 13.00. They then fall but remain steady from 15.00 onwards with a moderate number of entries every hour. Exit movements increase more slowly and reach their peak at 34 exits between 14.00 and 15.00.

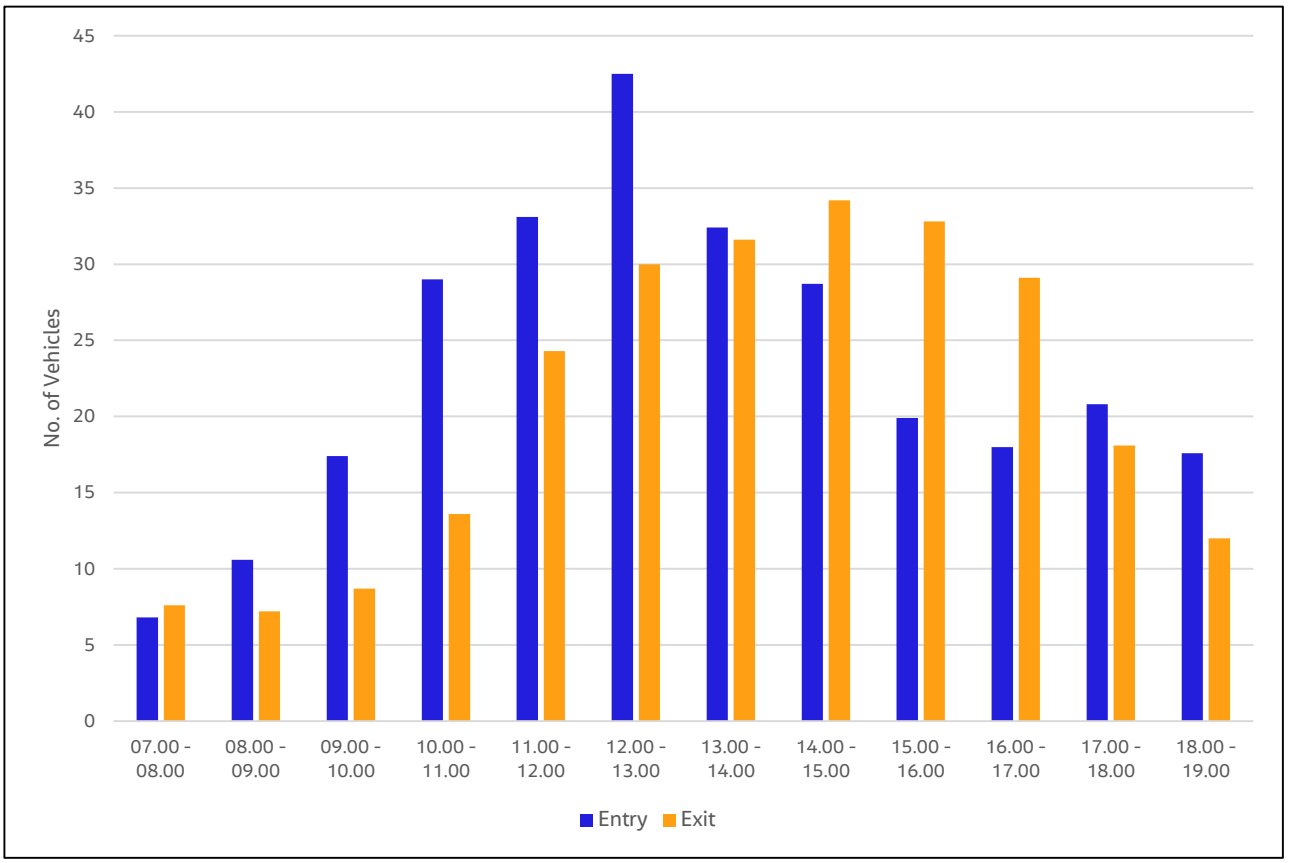


Figure 4.7 Average Weekday Entry and Exit Movements at Hillsboro Place (South) Car Park

Figure 4.8 shows the profile of entries and exits on the average Saturday. Entry movements are relatively high from 8.00 onwards, rising throughout the morning and early afternoon to peak at 36 entries between 13.00 and 14.00. Entries then drop off rapidly until15.00 though after which it stabilises with a moderate number of entries every hour. Exit movements increase more slowly and reach their peak at 38 exits between 14.00 and 15.00.

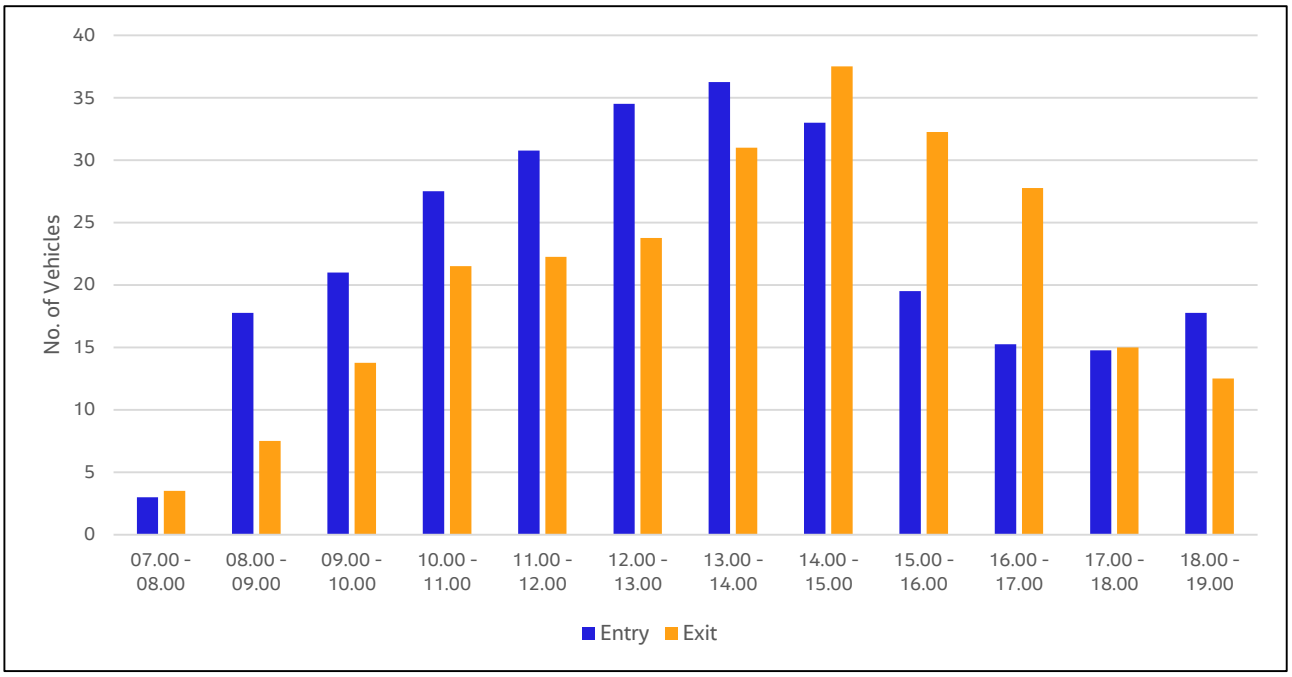


Figure 4.8 Average Saturday Entry and Exit Movements at Hillsboro Place (South) Car Park

Figure 4.9 shows the profile of entries and exits on the average Sunday. Entry movements are relatively high from 10.00 onwards – roughly two hours later than on the average weekday or Saturday. Entries rise throughout the morning and early afternoon to peak at 40 entries between 13.00 and 14.00. Entries then drop off steadily over the remainder of the survey period. Exit movements increase more slowly and reach their peak at 39 exits between 15.00 and 16.00.

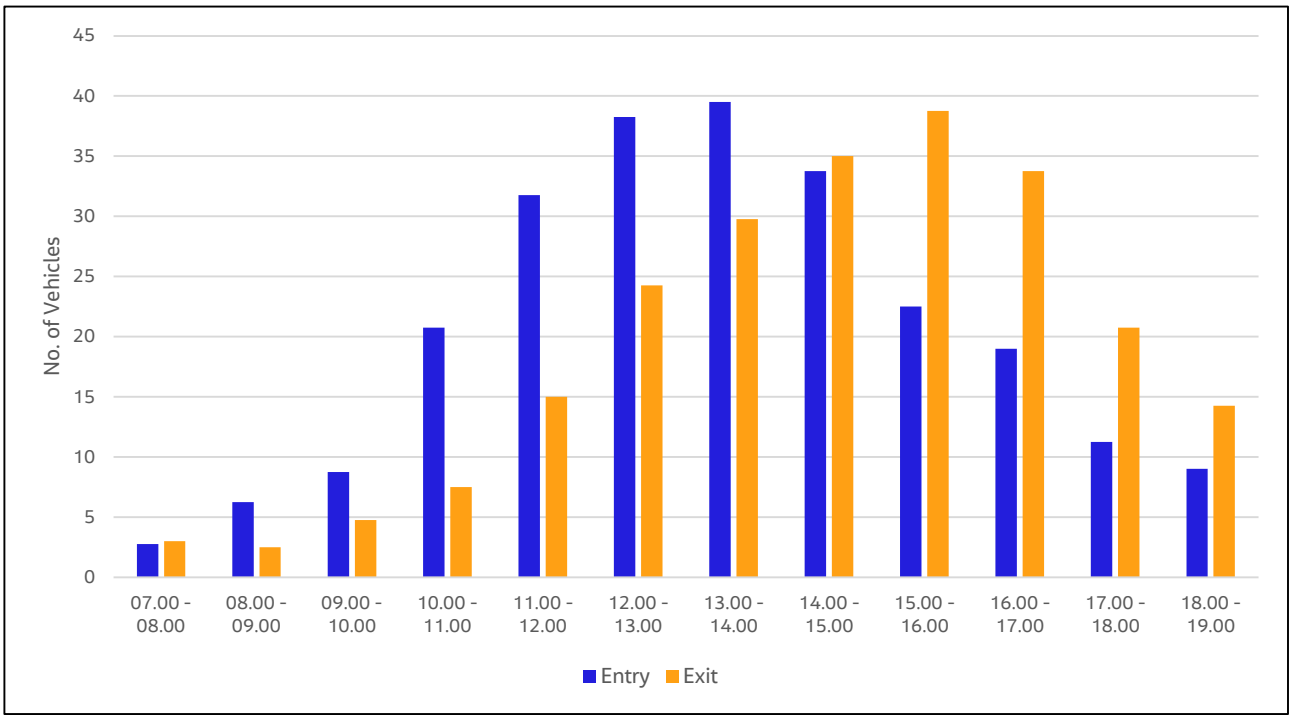


Figure 4.9 Average Sunday Entry and Exit Movements at Hillsboro Place (South) Car Park

4.2.2 Parking Accumulation

Parking accumulation at Hillsboro Place (South) car park has been calculated from the entry and exit data. The estimated number of parked vehicles at any time has been calculated by assuming there are no parked vehicles within the car park before 07.00.

The average maximum and maximum number of parked vehicles for weekdays, Saturdays, and Sundays are shown in Table 4.3. The bank holiday Monday has been excluded from the weekday calculation and is provided separately. Table 4.3 shows that on average the car park was busiest on Sundays.

Table 4.3: Parking Accumulation at Hillsboro Place (South) Car Park

Day	Capacity	Average Max Parked Vehicles		Maximum Parked Vehicles		
		Count	Usage (%)	Count	Usage (%)	Date
Weekday	77	49	63.6 %	61	79.2 %	22/08/23
Saturday	77	48	62.3 %	59	76.6 %	19/08/23
Sunday	77	64	83.1 %	80	103.9 %	20/08/23
Bank Holiday	77	n/a	n/a	83	107.8 %	28/08/23

The car park is presumed to have reached full capacity on Sunday 20 August 2023 and the bank holiday Monday (28 August 2023), when it is estimated there were at one point 80 and 83 vehicles in the car park respectively, slightly more than the assumed capacity (77 vehicles). While it is possible that some of these vehicles were parked at this time, the figure may have captured circulating vehicles that had entered the car park but were unable to find a space.

The profile of parking accumulation between 07.00 and 19.00 over the course of an average weekday, Saturday and Sunday is shown in Figure 4.10. Like the Hillsboro Place (North) car park, the Hillsboro Place (South) parking accumulation profiles for the average weekday and Saturday are similar. The average weekday and Saturday parking accumulation peak at similar times, 13.45-14.00 and 13.30-13.45 respectively. The average Saturday parking accumulation profile shows a slight increase in parking numbers just before 09.00, whilst both the average weekday and Saturday profiles display parking gradually increasing after 17.00 until the end of the survey at 19.00. This indicates that the Hillsboro Place (South) car park may include a second parking peak during the evening hours of weekdays and Saturday, when the car park is most likely used for leisure parking purposes.

The parking accumulation profile for an average Sunday, starts by following a similar profile to the average weekday during the morning. However, unlike weekdays and Saturdays, the number of parked vehicles on an average Sunday continue to rise well into the mid-afternoon, peaking at 64 vehicles between 14.00 and 14.30. The number of parked vehicles gradually reduces throughout the afternoon post peak period, and unlike on weekdays or Saturdays does not display any signs of a second peak during the evening hours.

Profiles for the maximum parking accumulation are shown in Figure 4.11. On the bank holiday Monday (28 August 2023), the parking accumulation is estimated to have peaked at 83 vehicles between 13.30 and 13.45, whilst on Sunday 20 August 2023 the parking accumulation is estimated to have peaked at 80 vehicles between 14.30 and 14.45. Despite these figures being above the car park capacity of 77 vehicles, it is likely that these figures have captured circulating vehicles that had entered the car park but were unable to find a space. The peak parking accumulation on the maximum weekday (excluding bank holiday) and Saturday were reached between 13.15 and 13.45 (61 vehicles), and 13.00 and 13.30 (59 vehicles) respectively.

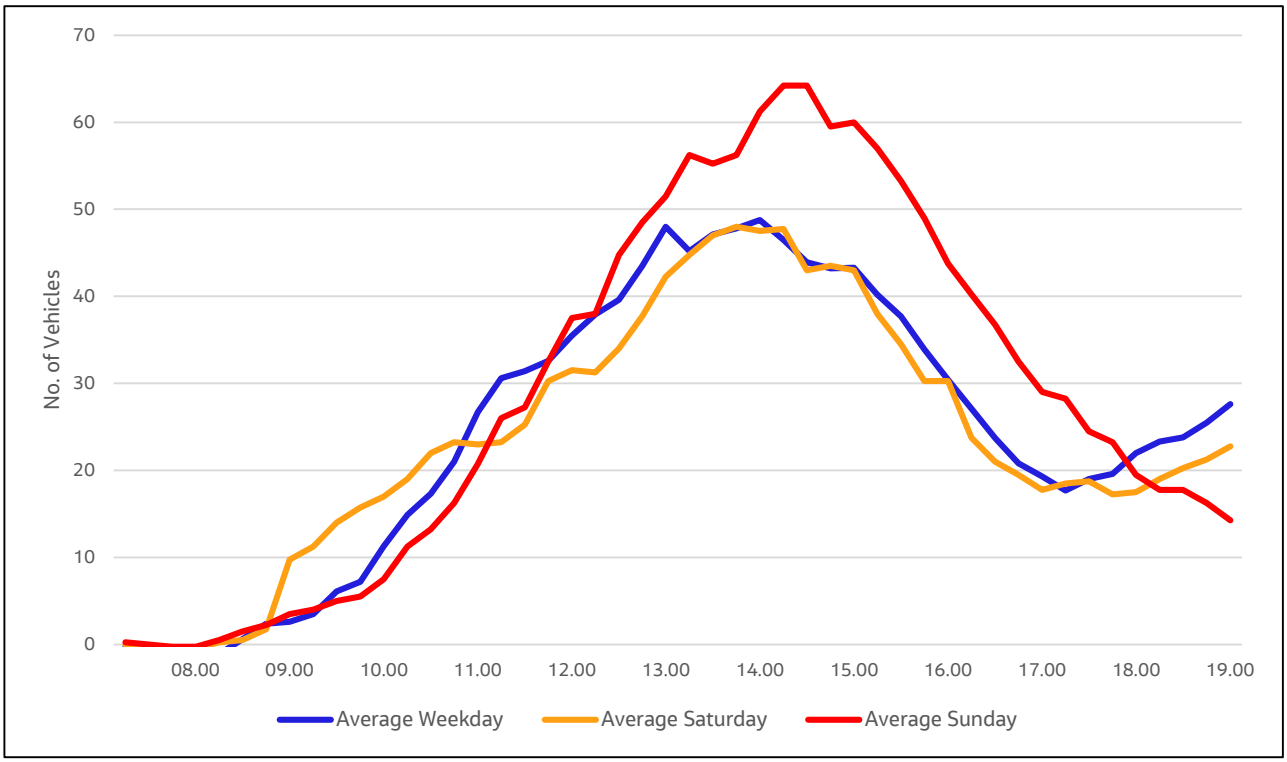


Figure 4.10: Average Parking Accumulation at Hillsboro Place (South) Car Park

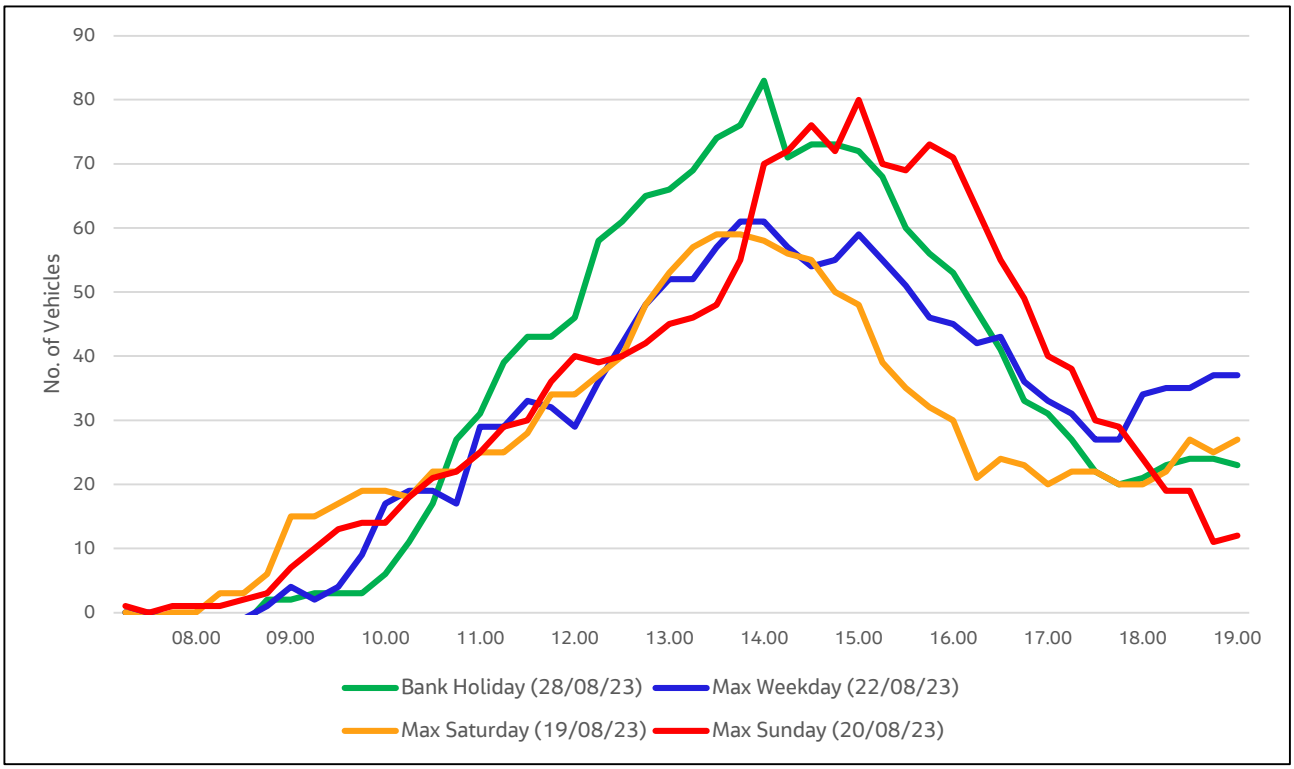


Figure 4.11: Maximum Parking Accumulation at Hillsboro Place (South) Car Park

4.2.3 Length of Stay

The length of stay data originates from the ANPR survey records. Data was recorded over the August Bank Holiday weekend (Friday 25 August 2023 – Monday 28 August 2023). As ANPR technology can fail to capture a number plate from time to time, the number of entries and exits recorded by ANPR was verified manually. The verification indicated that the number of entries is within 2% but the number of exits is only within 27%,

indicating that a large proportion of exits were not captured by the ANPR cameras. While it is likely that the analysis is still representative, the potential for error must be acknowledged. Note that as lengths of stays cannot be calculated for entries prior to 07.00 and exits after 19.00, these records have been excluded from the analysis.

Figure 4.12 summarises the length of stay at Hillsboro Place (South) car park during each of the four surveyed days. The most common length of stay on the Friday and Saturday was under 30 minutes, although these stays may have included vehicles dropping off and picking up of passengers or circulating the car park without parking. The second most common length of stay on the Friday and Saturday and the most common length of stay on the Sunday and Monday was between one and two hours. Most vehicles stayed for three hours or less on all days. There are, however, a small number of vehicles that were observed staying for three hours or more, including some that stayed in excess of six hours. Friday, the only working weekday to be surveyed for length of stay, had a greater proportion of vehicles staying in excess of six hours in comparison to the other surveyed days.

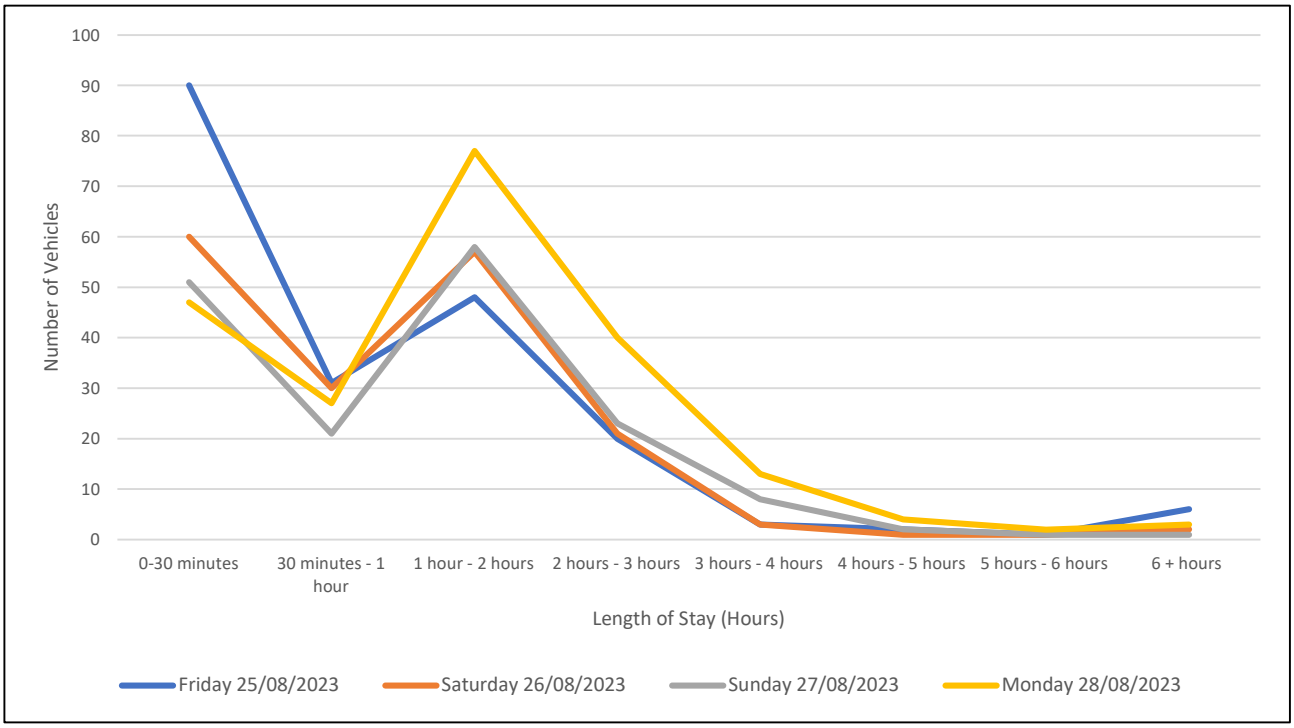


Figure 4.12: Length of Stay of Vehicles for Peak Day at Hillsboro Place (South)

Table 4.4 shows the minimum, average, and maximum length of stay for all four surveyed days at Hillsboro Place (South) car park. The longest and shortest average length of stay was on the bank holiday Monday and Friday respectively. On all days the average stay was shorter than at Hillsboro Place (North) car park.

Table 4.4: Length of Stay at Hillsboro Place (South) Car Park

Length of Stay	Friday 25/08/23	Saturday 26/08/23	Sunday 27/08/23	Monday 28/08/23
Minimum Stay	0:00:19	0:00:14	0:00:31	0:00:14
Average Stay	1:06:33	1:10:16	1:18:07	1:32:35
Maximum Stay	10:11:53	9:19:26	8:05:55	8:27:58

4.2.4 Comparison with 2021

The 2023 survey data for Hillsboro Place (South) car park demonstrates the following features compared to the data collected in 2021:

- The profiles of entries and exits are largely similar for the average weekday and Sunday when comparing the 2021 and 2023 data. However, the profile for the average Saturday differs between the 2021 and 2023 data. In 2021, entry movements were significantly higher during the early morning hours, and remained constantly high from 08.00 to 16.00, unlike in 2023 where the entry movements displayed more of a rise and fall profile (Figure 4.8). The average Saturday exit movements also tended to display constantly high figures across the day in 2021, rather than the rise and fall profile shown in 2023.
- The average maximum and maximum parking accumulation is similar for weekdays when comparing the 2021 and 2023 data. However, the 2021 and 2023 data provide contrasting parking numbers with regards to Saturdays and Sundays, with the 2021 data estimating that Saturdays would include higher parking accumulation, whilst the 2023 data estimated that Sundays would include higher parking accumulation. Parking accumulation number detailed below:
  - Maximum parking accumulation for average Saturday: 63 vehicles (2021) and 48 vehicles (2023)
  - Maximum parking accumulation for busiest Saturday: 68 vehicles (2021) and 59 vehicles (2023)
  - Maximum parking accumulation for average Sunday: 52 vehicles (2021) and 64 vehicles (2023)
  - Maximum parking accumulation for busiest Sunday: 58 vehicles (2021) and 80 vehicles (2023)
- Hillsboro Place (South) car park reached its full capacity on Sunday 20 August 2023 and the bank holiday Monday (28 August 2023). In 2021 no days were found to have reached full capacity.
- The average length of stay was generally comparable for the Friday, Saturday and Sunday on the bank holiday weekend in 2023 compared to their equivalent days in 2021. However, the average length of stay was much longer on the bank holiday Monday in 2023 than in 2021 (1h32m and 0h58m, respectively).

4.3 Salt Lake Car Park

Salt Lake car park is located directly on the waterfront overlooking Sandy Bay. It is accessed on its eastern edge from Eastern Promenade. At the time of the surveys, parking was charged at £2 for one to two hours and £5 for all day, with charges only applying between 8.00 and 21.00.

Per the 2021 Porthcawl Parking Strategy Parking Analysis report, Salt Lake car park had a capacity of approximately 1200 vehicles under standard utilisation, while more than 1500 vehicles could have fit on the site if spaces were to be marked out. With the construction of the Aldi, it is estimated that the Salt Lake site has been reduced to approximately 70% of its former size. It is therefore assumed that the capacity under standard utilisation is now approximately 840 vehicles, and that more than 1,050 vehicles could fit on the site if spaces were marked out.

4.3.1 Entry and Exit Traffic Movements

Surveys captured counts of entry and exit traffic movements at Salt Lake car park between 07.00 and 19.00 on 5 and 6 August, 12 and 13 August, and between 18 and 29 August 2023.

Figure 4.13 shows the profile of entries and exits on the average weekday. There are two distinct high periods for the entries. The first high period lasts between 11.00 and 14.00, with the peak of 66 vehicles entering the car park occurring between 12.00 and 13.00. The second high period occurs from 17.00 until the end of the survey at 19.00. This suggests two different groups of users on weekdays: daytime visitors and after-work visitors. On the other hand, exits rise throughout the day and are highest between 15.00 and 18.00. These represent the daytime visitor group, as the after-work visitors will tend to exit after the surveys finished. There is a lag of several hours between the entries and exits for the daytime visitors, suggesting they tend to stay for several hours.

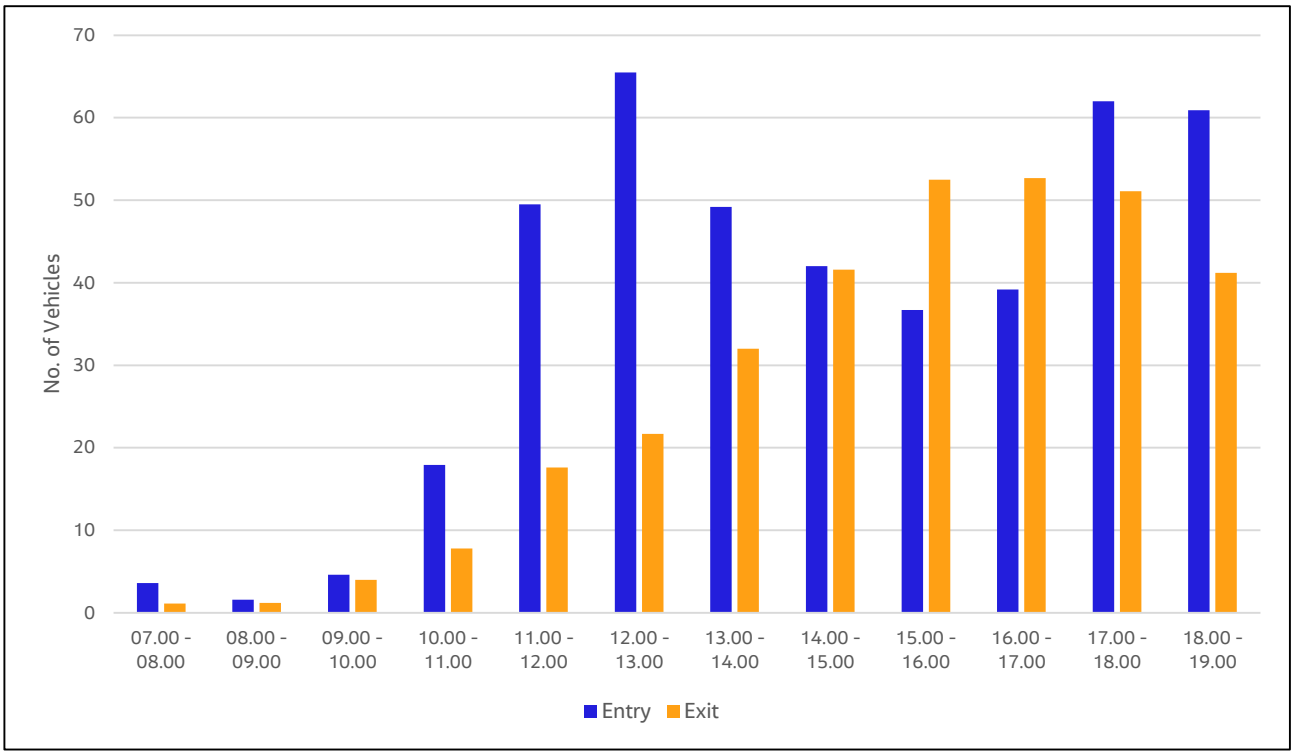


Figure 4.13 Average Weekday Entry and Exit Movements at Salt Lake Car Park

Figure 4.14 shows the profile of entries and exits on the average Saturday. Entries are highest between 11.00 and 15.00, with a peak of 66 vehicles entering between 13.00 and 14.00. Relatively few vehicles enter before 11.00, while entries are steady and moderate throughout the afternoon and early evening. Exits are highest between 14.00 and 18.00. There are few exits until midday, at which point there are many exits in the 12.00-13.00 hour before falling slightly in the following hour. This suggests that lunchtime is a common time for morning visitors to leave.

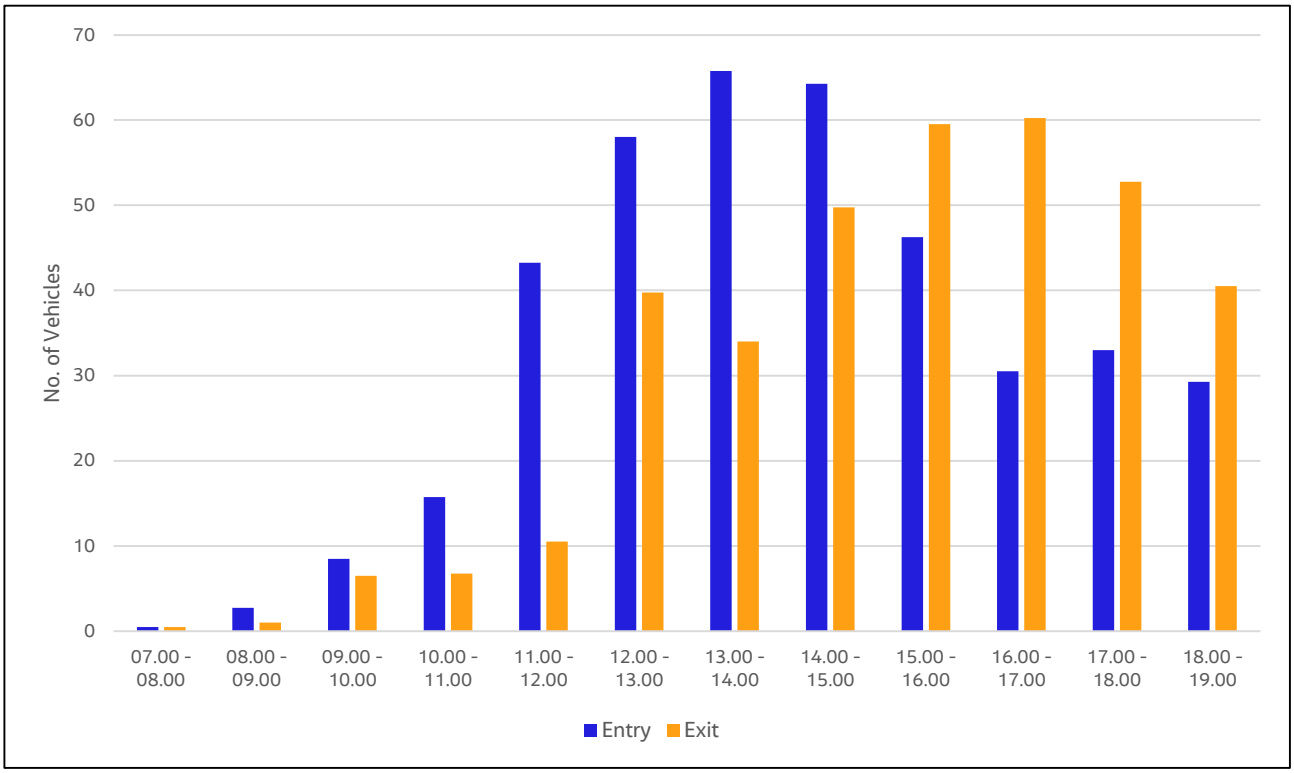


Figure 4.14 Average Saturday Entry and Exit Movements at Salt Lake Car Park

Figure 4.15 shows the profile of entries and exits on the average Sunday. Entries are highest between 11.00 and 14.00, with a peak of 125 vehicles entering between 12.00 and 13.00. Exits rise throughout the day until the 15.00-16.00 hour, when 116 vehicles exit.

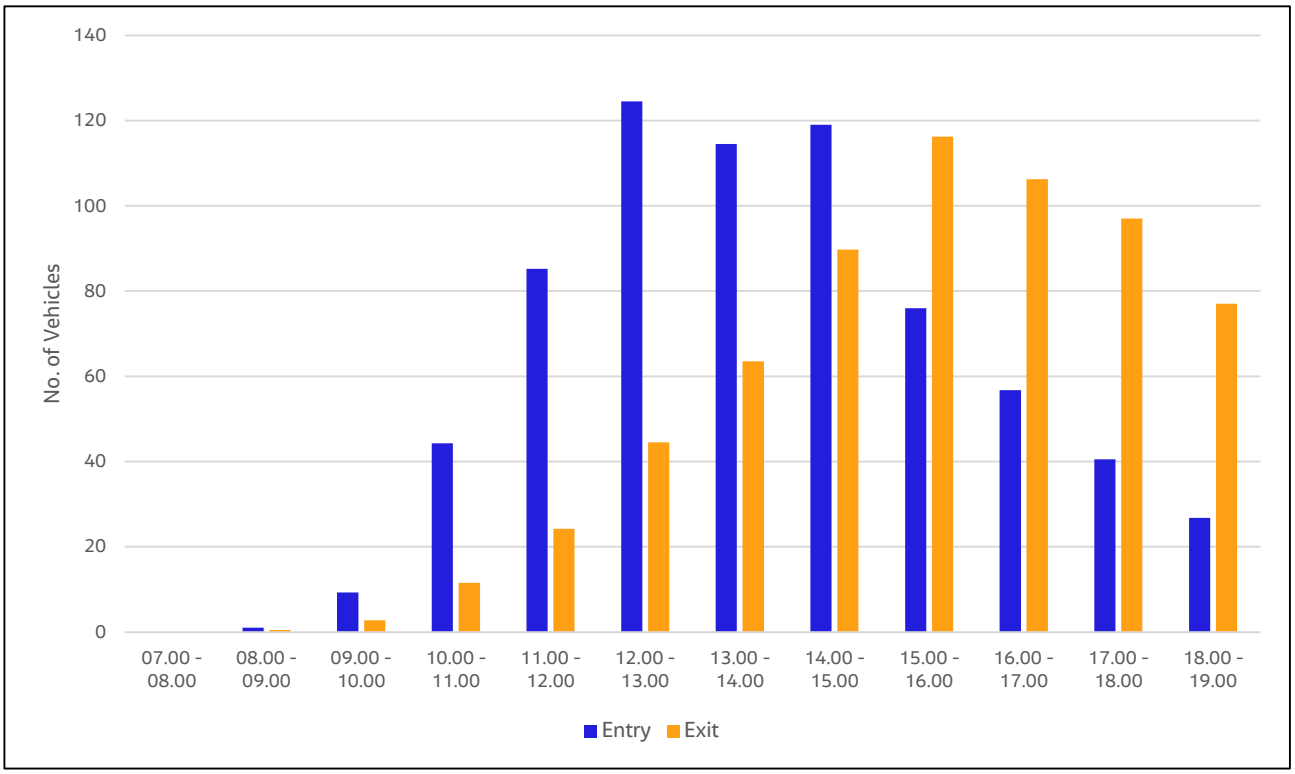


Figure 4.15 Average Sunday Entry and Exit Movements at Salt Lake Car Park

4.3.2 Parking Accumulation

Parking accumulation at Salt Lake car park has been calculated from the entry and exit data. The estimated number of parked vehicles at any time has been calculated by assuming there are no parked vehicles within the car park before 07.00.

The average maximum and maximum parked vehicles for weekdays, Saturdays, and Sundays are shown in Table 4.5. The bank holiday Monday has been excluded from the weekday calculation and is provided separately. Table 4.5 shows that on average the car park was busiest on Sundays.

Table 4.5: Parking Accumulation at Salt Lake Car Park

Day	Capacity	Average Max Parked Vehicles		Maximum Parked Vehicles		
		Count	Usage (%)	Count	Usage (%)	Date
Weekday	840	110	13.1 %	230	27.4 %	23/08/23
Saturday	840	110	13.1 %	183	21.8 %	19/08/23
Sunday	840	261	31.1 %	287	34.2 %	20/08/23
Bank Holiday	840	n/a	n/a	600	71.4 %	28/08/23

Due to the nature and the size of the Salt Lake car park, the car park did not come close to filling its total capacity on any day during the surveyed period. The busiest day was the bank holiday Monday (28 August 2023), when a peak of 600 vehicles was present, more than double the parking numbers of any other surveyed day.

The profile of parking accumulation between 07.00 and 19.00 over the course of an average weekday, Saturday and Sunday is shown in Figure 4.16. The parking accumulation for the average weekday, Saturday and Sunday all peak during the mid-afternoon, however, display very different profiles to each other throughout the rest of the day.

On the average weekday, parking numbers remain relatively low until late morning, only reaching more than a handful of cars after 10:30. The initial average weekday peak occurs between 14.15 and 14.30 when 110 vehicles are estimated to be parked within the car park. However, a secondary peak occurs in the evening as parking numbers reach 108 vehicles in the last fifteen minutes prior to the end of the survey (18.45-19.00). The average weekday parking accumulation profile suggests that the evening parking numbers may continue to climb and peak later in the evening after 19.00. The afternoon and evening peaks suggest a change in use from daytime visitors to people visiting the waterfront after work on weekdays.

The average Saturday follows a similar profile to the average weekday, except the average Saturday does not include a secondary parking accumulation peak in the surveyed evening hours. The parking accumulation on an average Saturday peaks at 110 vehicles between 14.30 and 15.00. There is a slight decrease in usage after 12.15, following by a rapid increase in use from 13.30 to 14.30. This could suggest a lunchtime changeover period as morning visitors leave shortly before afternoon visitors arrive.

Parking on an average Sunday was observed to be significantly busier than other days. The number of parked vehicles increases rapidly from 10.00, peaking at 261 vehicles between 14.45 and 15.00, before decreasing at a constant rate until the end of the survey period at 19.00.

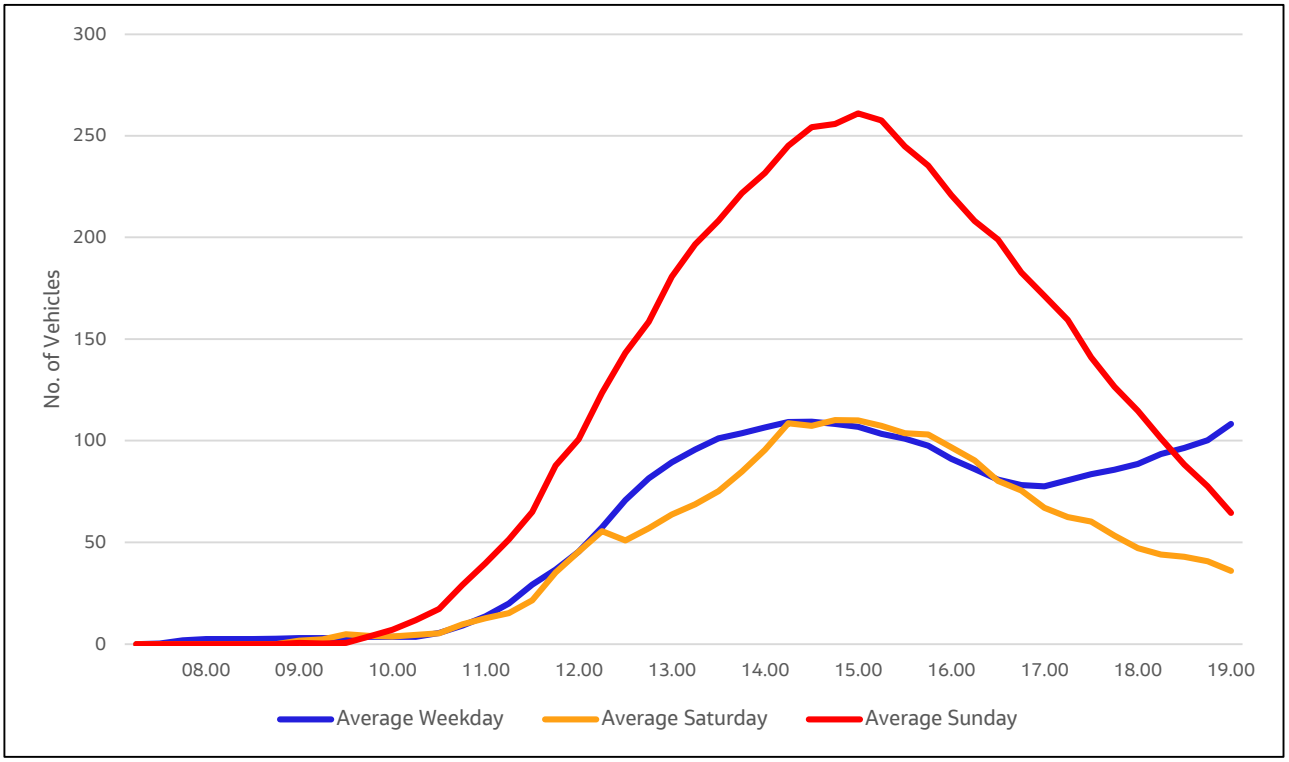


Figure 4.16: Average Parking Accumulation at Salt Lake Car Park

Profiles for the maximum parking accumulation are shown in Figure 4.17. This shows that on the busiest surveyed day, the bank holiday Monday, parking peaked at 600 vehicles between 14.30 and 14.45. The parking peaked at the same time on the busiest Saturday (183 vehicles), whilst on the busiest Sunday parking peaked between 15.15 and 15.30 at 287 vehicles. The profile for the parking accumulation on a maximum weekday (23 August 2023) differs from the others, when parking reached 170 vehicles between 14.45 and 15.00, before dipping slightly and rising again after 17.00, until reaching its peak of 230 parked vehicles during the 18.15-18.30 and 18.45-19.00 time periods.

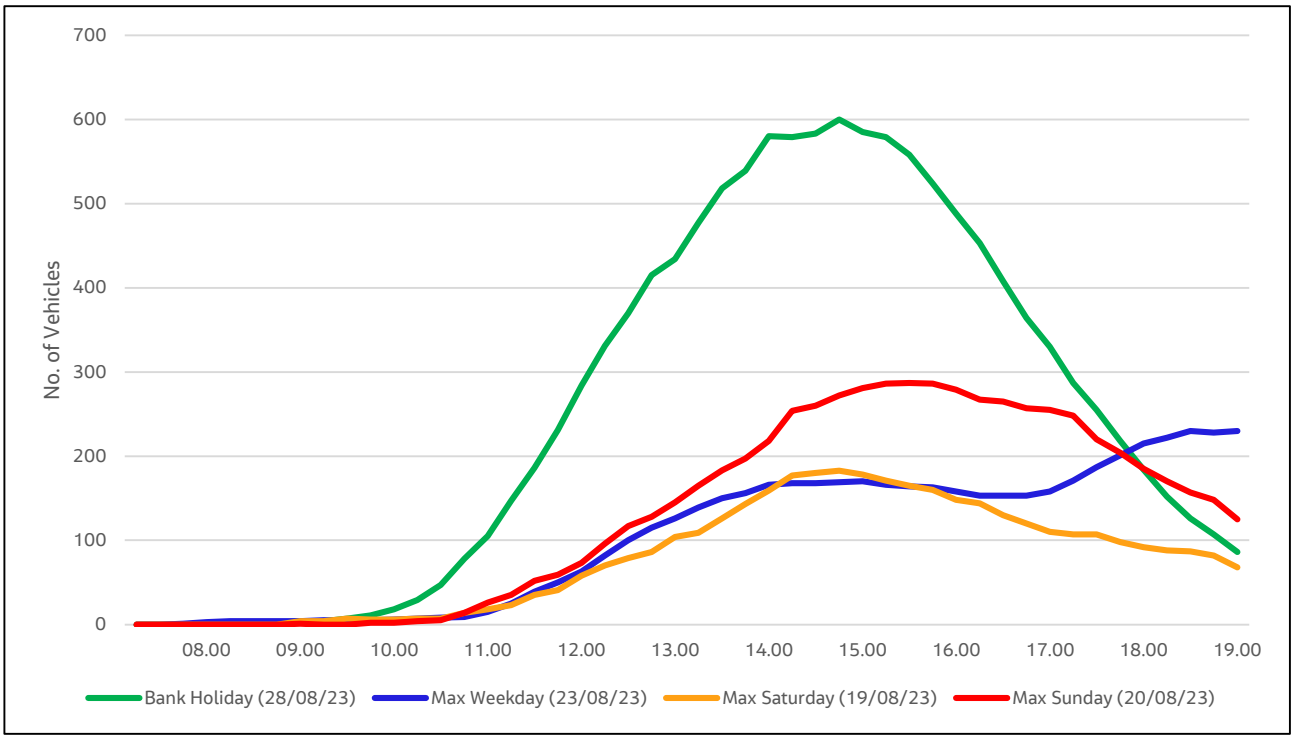


Figure 4.17: Maximum Parking Accumulation at Salt Lake Car Park

4.3.3 Length of Stay

The length of stay data originates from the ANPR survey records. Data was recorded over the August Bank Holiday weekend (Friday 25 August 2023 – Monday 28 August 2023). As ANPR technology can fail to capture a number plate from time to time, the number of entries and exits recorded by ANPR was verified manually. This verification indicated that the records for the Friday and the Monday are reasonably accurate, however the Saturday and Sunday entry numbers are off by 29% and 42% respectively, indicating that the ANPR data for these days is incomplete and may skew the results. Furthermore, as lengths of stays cannot be calculated for entries prior to 07:00 and exits after 19:00, these records have been excluded from the analysis. In the case of Friday 25 August 2023, 75% more entries were recorded than exits, highlighting that many vehicles remained parked within the car park after 19.00.

Figure 4.18 summarises the length of stay at Salt Lake car park during each of the four surveyed days. All days include a large number of vehicles staying under 30 minutes or between one and two hours. Unlike the Friday, Saturday and Sunday, the bank holiday Monday displays a very different profile, with a significant number of vehicles staying for longer periods. The lack of vehicles staying for longer periods on the Friday, Saturday and Sunday could be a result of the deficiencies in the data.

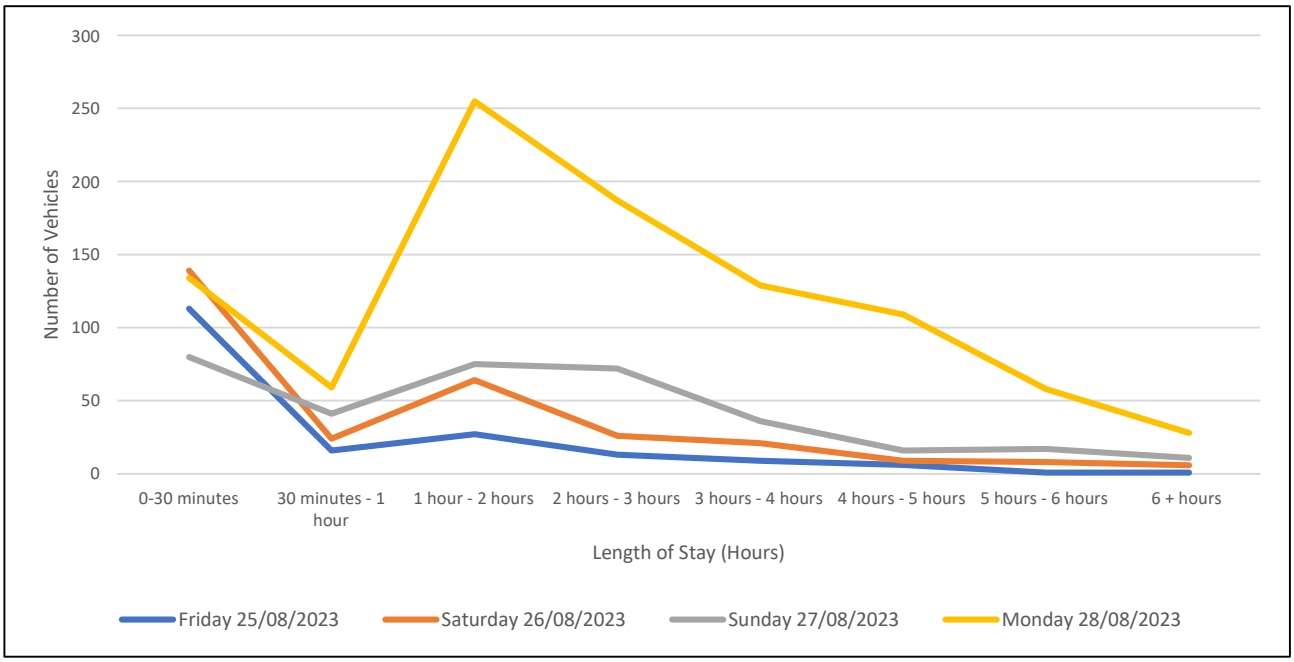


Figure 4.18: Length of Stay of Vehicles for Peak Day at Salt Lake

Table 4.6 shows the minimum, average, and maximum length of stay for all four surveyed days at Salt Lake car park. The longest average length of stay was on the bank holiday Monday, which is by far the longest average observed on any of the days at any of the three car parks surveyed by ANPR.

Table 4.6: Length of Stay at Salt Lake Car Park

Length of Stay	Friday 25/08/23	Saturday 26/08/23	Sunday 27/08/23	Monday 28/08/23
Minimum Stay	0:00:02	0:00:10	0:00:03	0:00:00
Average Stay	0:49:58	1:17:09	1:58:58	2:26:25
Maximum Stay	6:02:04	7:36:00	8:01:44	9:36:46

4.3.4 Comparison with 2021

The 2023 survey data for Salt Lake car park demonstrates the following features compared to the data collected in 2021:

- The profiles of entries and exits for the average weekday show significantly lower peaks in 2023 (66 entry movements and 53 exit movements) than in 2021 (103 entry movements and 86 exit movements). In 2023, the midday (66 vehicles) and early evening (62 vehicles) entry movement peaks are similar in value, whereas in 2021 the midday entry movement peak (103 vehicles) was approximately twice as high as the early evening peak (55 vehicles).
- The profile of entries and exits for the average Saturday shows that the peak number of entries occurred at the same time in 2021 and 2023 (13.00-14.00). The peak number of exits, however, occurred an hour earlier (16.00-17.00 in 2023 compared to 17.00-18.00 in 2021). This suggests a reduced length of stay on the average Saturday relative to 2021.
- The profile of entries and exits for the average Sunday shows that the peak number of entries occurred at the same time in 2021 and 2023 (13.00-14.00). The peak number of exits, however, occurred an hour earlier (15.00-16.00 in 2023 compared to 16.00-17.00 in 2021). This suggests a reduced length of stay on the average Sunday relative to 2021.

- The average maximum parking accumulation for an average weekday, Saturday and Sunday was 256, 420 and 295 vehicles respectively in 2021, and 110, 110 and 261 vehicles respectively in 2023. In general, the average maximum parking accumulation figures were substantially higher in 2021.
- The maximum parking accumulation during the Bank Holiday Monday and the busiest weekday, Saturday and Sunday was 586, 519, 462, 746 vehicles respectively in 2021, and 600, 230, 183 and 287 vehicles respectively in 2023. In general, the maximum parking accumulation figures on the busiest days were substantially higher in 2021.
- Peak parking accumulation was reached on the bank holiday Monday (600 vehicles) in 2023, whereas in 2021 it was on Sunday the 29 August 2021 during the Bank Holiday Weekend (746 vehicles).
- The average length of stay on the bank holiday Monday was comparable to the figure observed in 2021 (2:26 compared to 2:35). However, the average lengths of stay on the Friday, Saturday and Sunday (0:50, 1:17, and 1:59) were well below their 2021 equivalents (2:39, 2:44 and 3:01, respectively). However, it should be noted that those figures may not be accurate due to the number of entries and exits that were not recorded by the ANPR on those days.

4.4 Sandy Bay Car Park

Sandy Bay car park is located on the eastern edge of the town centre and has a capacity of approximately 42 vehicles. It is accessed on its eastern edge from Sandy Lane, which is reached from New Road via Mackworth Road. There is no charge for use of the car park, and it is not advertised as a parking location on the Bridgend County Borough Council website.

No ANPR data was collected at this car park as part of the 2023 surveys, so length of stay is not considered here.

4.4.1 Entry and Exit Traffic Movements

Surveys captured counts of entry and exit traffic movements at Sandy Bay car park between 07.00 and 19.00 on 5 and 6 August, 12 and 13 August, and between the 18 and 29 August 2023.

Figure 4.19 shows the profile of entries and exits on the average weekday. Entries generally rise throughout the day, peaking at 14 entries in the last hour (18.00 to 19.00) of the survey period. Exits also generally rise throughout the day but peak between 16.00 and 17.00 hour with 12 exits. Despite these general trends, there is considerable variation in the number of movements from hour to hour, suggesting use of Sandy Bay car park is relatively inconsistent when compared with the other car parks.

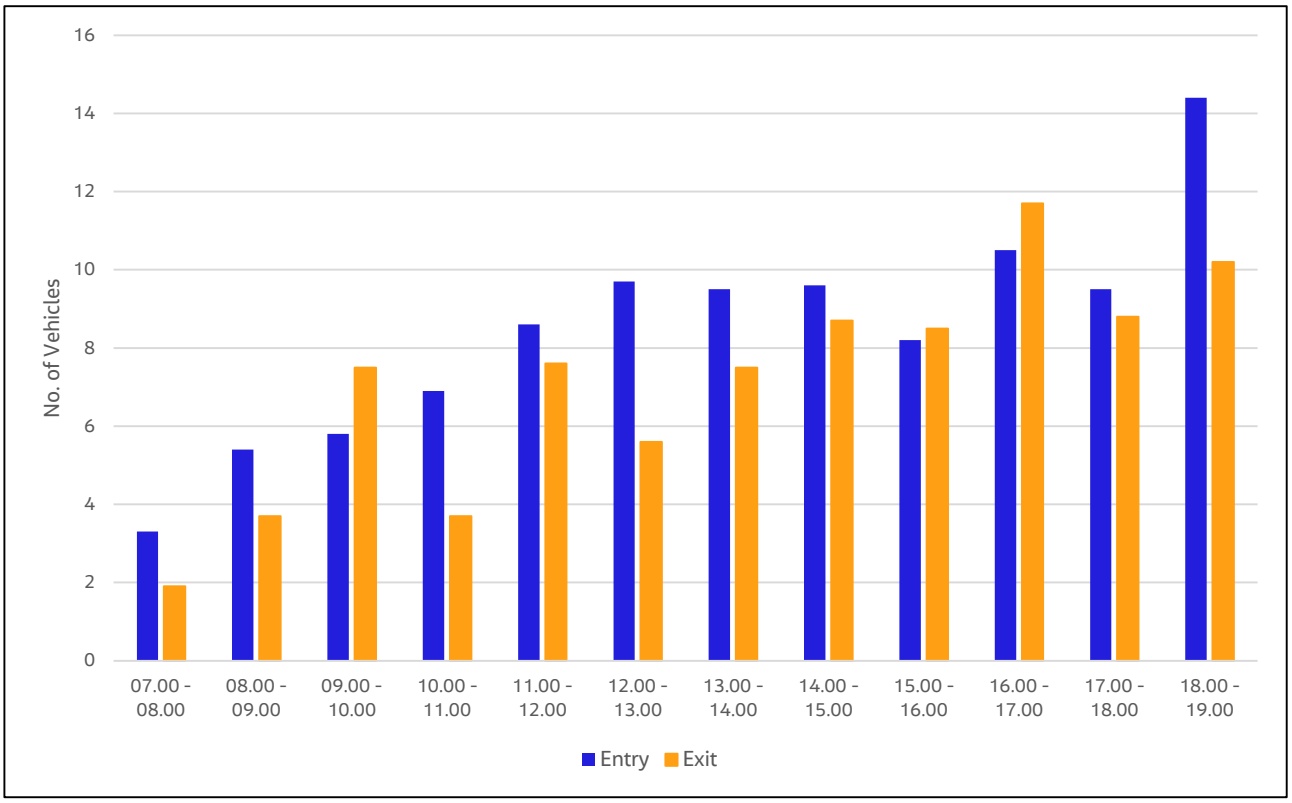


Figure 4.19 Average Weekday Entry and Exit Movements at Sandy Bay Car Park

Figure 4.20 shows the profile of entries and exits on the average Saturday. Entry movements increase throughout the morning and peak at 20 entries between 13.00 and 14.00, before decreasing throughout the afternoon. Exit movements similarly rise to a peak of 17 exits between 14.00 and 15.00 and then decrease thereafter. Entries are highest between 11.00 and 15.00 and exits are highest between 12.00 and 17.00. This lag suggests that many vehicles are likely parking for an hour or two on average.

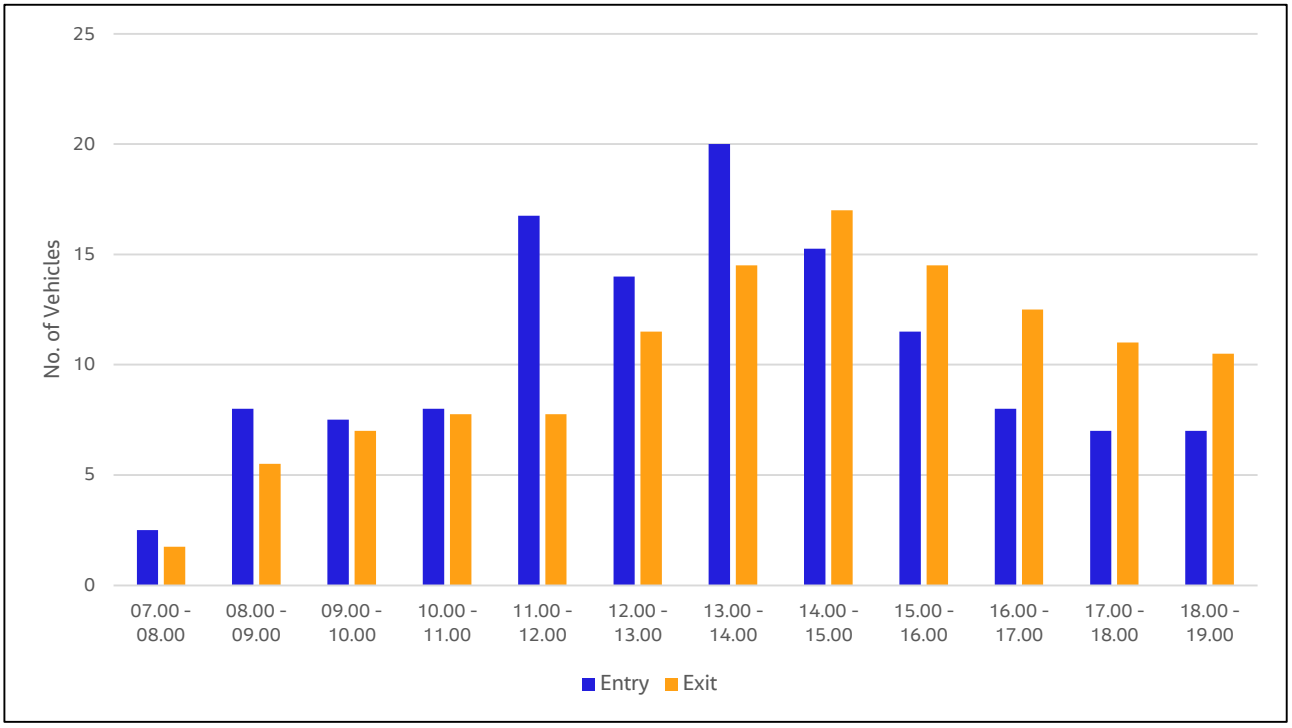


Figure 4.20 Average Saturday Entry and Exit Movements at Sandy Bay Car Park

Figure 4.21 shows the profile of entries and exits on the average Sunday. Both entries and exits peak between 12.00 and 13.00, with 26 entries and 24 exits. However, in terms of extended peaks, entries are highest between 9.00 and 15.00 while exits are highest between 12.00 and 17.00.

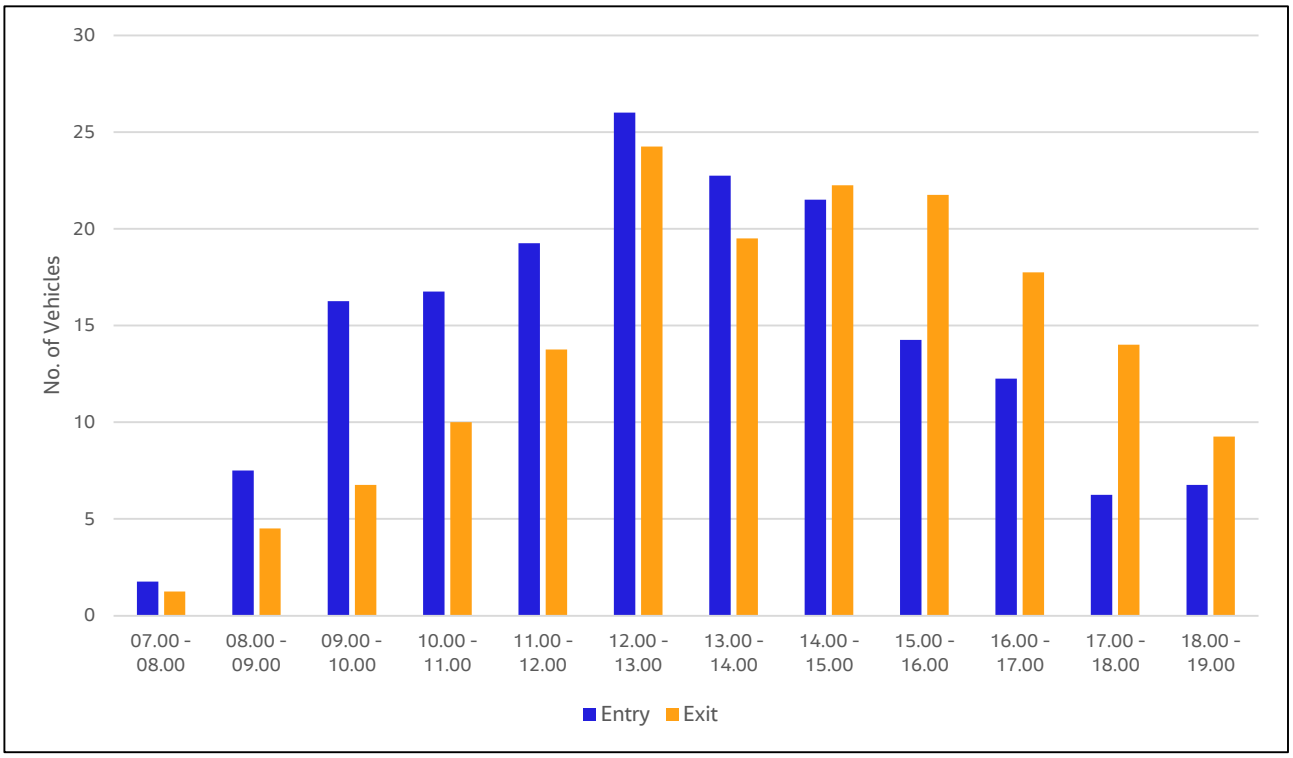


Figure 4.21 Average Sunday Entry and Exit Movements at Sandy Bay Car Park

4.4.2 Parking Accumulation

Parking accumulation at Sandy Bay car park has been calculated from the entry and exit data. The estimated number of parked vehicles at any time has been calculated by assuming there are no parked vehicles within the car park before 07.00.

The average maximum and maximum parked vehicles for weekdays, Saturdays, and Sundays are shown in Table 4.7. The bank holiday Monday has been excluded from the weekday calculation and is provided separately. Table 4.7 shows that on average the car park was busiest on Sundays but did not come close to its full capacity on any day.

Table 4.7: Parking Accumulation at Sandy Bay Car Park

Day	Capacity	Average Max Parked Vehicles		Maximum Parked Vehicles		
		Count	Usage (%)	Count	Usage (%)	Date
Weekday	45	16	35.6 %	31	68.9 %	23/08/23
Saturday	45	23	51.1 %	34	51.1 %	19/08/23
Sunday	45	30	66.7 %	39	86.6 %	20/08/23
Bank Holiday	45	n/a	n/a	32	71.1 %	28/08/23

The profile of parking accumulation between 07.00 and 19.00 over the course of an average weekday, Saturday and Sunday is shown in Figure 4.22. Figure 4.22 shows that on an average weekday, the use of the car park remains relatively low (between 07.00 and 19.00), however gradually rises throughout the day and is recorded as peaking during the last surveyed period between 18.45 and 19.00. The nature of the average weekday parking accumulation profile suggests that the car park may in fact peak during the non-surveyed evening

hours, when locals may be attending community evening events at the adjacent church or taking advantage of the free parking to access the local beach and surrounding leisure facilities.

Parking accumulation on an average Saturday, remains relatively low until 11.00, after which it rises and peaks at 23 vehicles in between 14.15 and 14.30. The parking then gradually drops off at a steady rate with only a handful of cars remaining in the car park by the end of the survey.

The parking accumulation on an average Sunday shows a similar profile to an average Saturday, except that usages spikes earlier in the morning at around 10.00, likely reflecting use by those attending services in the adjacent place of worship, and that the parking peaks at a higher value of 30 vehicles (recorded between 13.45 and 14.15, and 14.45 and 15.15).

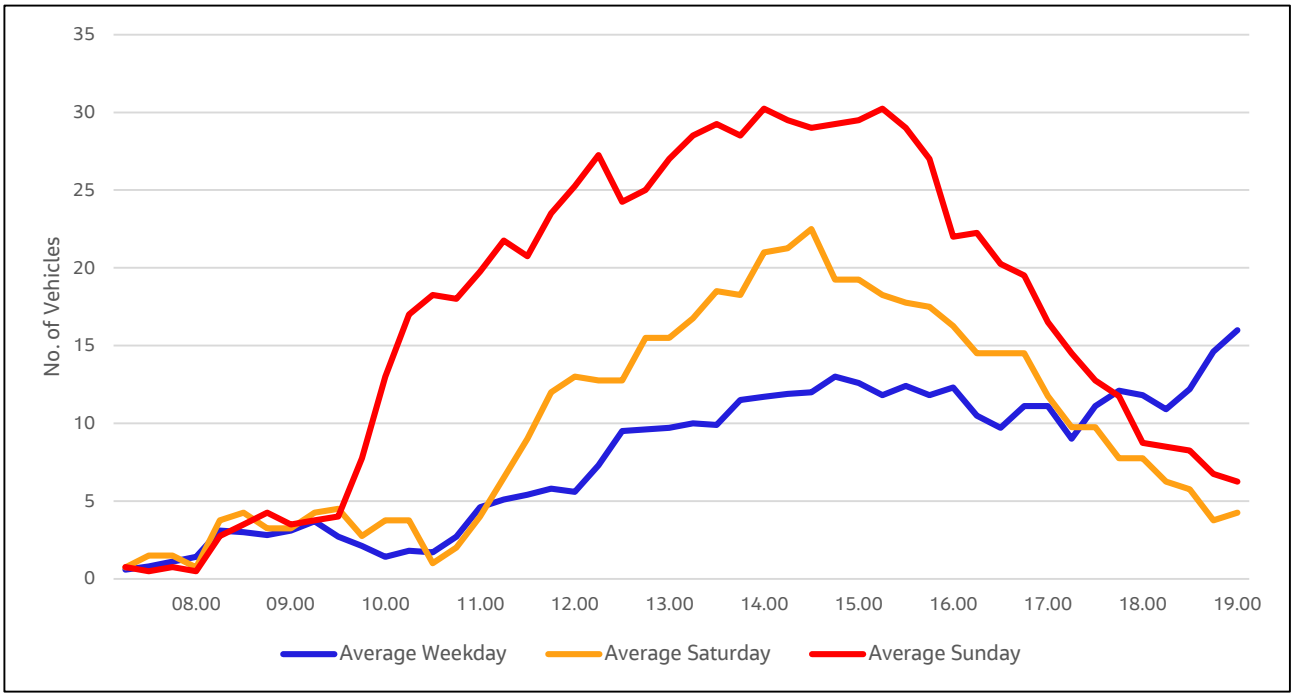


Figure 4.22: Average Parking Accumulation at Sandy Bay Car Park

Profiles for the maximum parking accumulation are shown in Figure 4.23. The bank holiday Monday and the maximum Saturday and Sunday show similar profiles, with an extended busy period between 12.00 and 15.00, and can be seen peaking between 14.45 to 15.00, 14.15 to 14.30, and 12.45 to 13.00, respectively. The maximum weekday sees usage increase slowly throughout the day, with the peak only being reached in the final period of the survey (18.45-19.00) following a rapid increase.

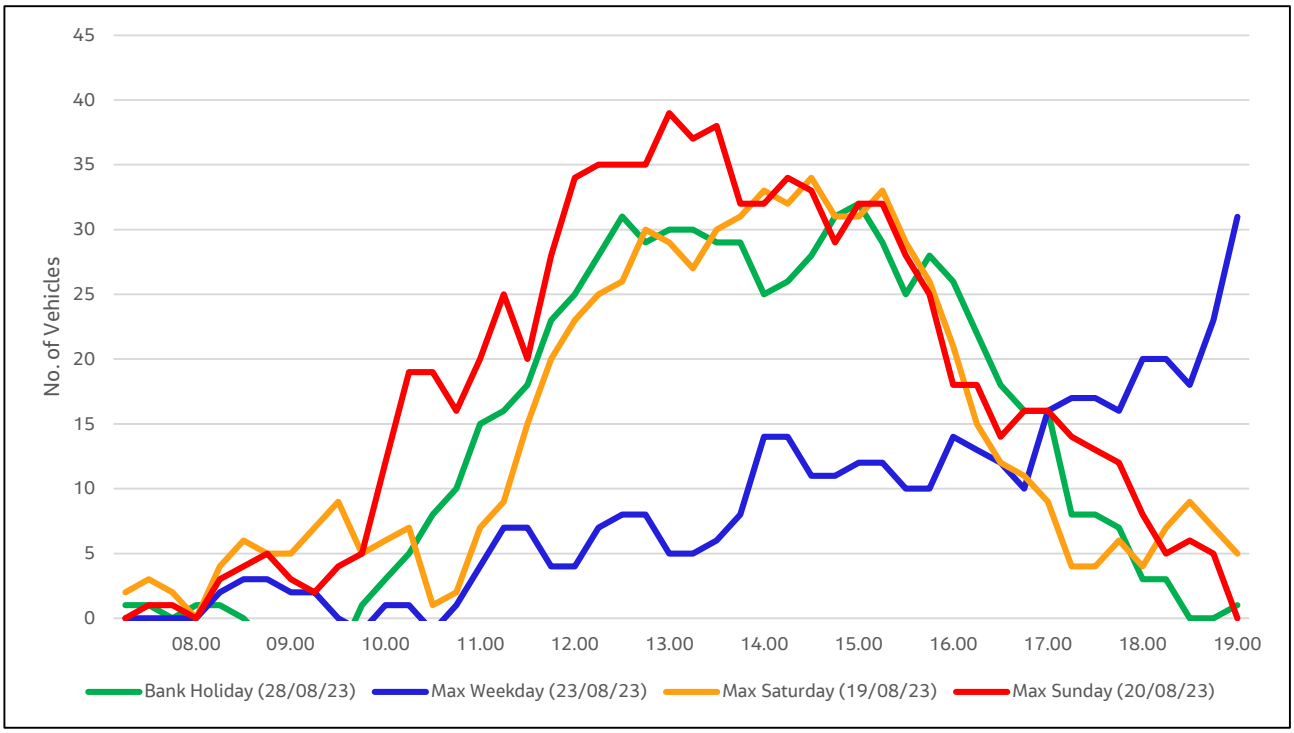


Figure 4.23: Maximum Parking Accumulation at Sandy Bay Car Park

4.4.3 Comparison with 2021

The 2023 survey data for Sandy Bay car park demonstrates the following features compared to the data collected in 2021:

- The profiles of entry and exit movements for the average weekday remains largely similar when comparing the 2021 and 2023 data. However, the profiles of entry and exit movements for both the average Saturday and Sunday show that the peak number of entries and exits occurred approximately one to two hours later in the day during the 2021 surveys in comparison to the 2023 surveys.
- The average maximum and maximum parking accumulation on weekdays, Saturdays and Sundays are lower than that was observed in 2021.
- During the 2023 surveys, the peak parking accumulation occurred on Sunday the 20 August 2023 with 39 parked vehicles, whilst during the 2021 surveys occurred on Tuesday the 31 August 2021 with 44 parked vehicles.

4.5 Overall Porthcawl Waterfront Parking

To understand the overall parking situation in the Porthcawl Waterfront area during the surveyed periods, the combined use of the car parks has been considered. The following analysis considers the peak combined usage of Hillsboro Place (North), Hillsboro Place (South), Salt Lake and Sandy Bay car parks. The use of the Aldi car park has not been considered in this analysis as it is anticipated that it is used nearly exclusively by supermarket patrons and is time limited to 90 minutes.

4.5.1 Parking Accumulation

Parking accumulation along the waterfront has been calculated from entry and exit data. The estimated number of parked vehicles at any time has been calculated by assuming there are no parked vehicles within the car park before 07.00.

Figure 4.24 shows the total average parking accumulation across all four waterfront car parks on an average weekday, Saturday and Sunday during the summer 2023 surveys. The average Sunday was observed to have a

much higher parking accumulation than the average weekday or Saturday. On the average Sunday, parking accumulation peaks at 530 vehicles between 14.15 and 14.30. The profile for the average Sunday is characterised by a rapid increase in parked vehicles in the late morning and into the early afternoon, followed by a rapid decrease in the number of parked vehicles in the late afternoon into the early evening.

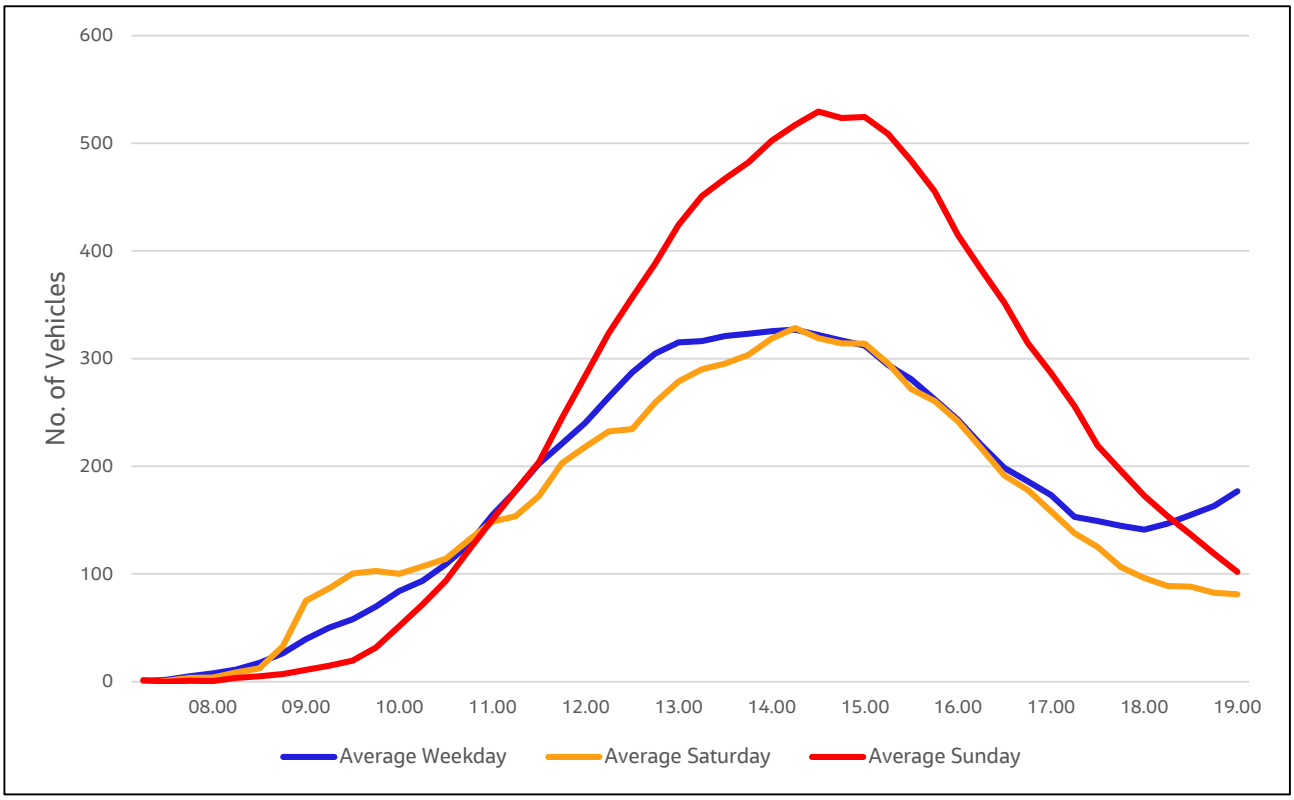


Figure 4.24: Total Average Parking Accumulation along Porthcawl Waterfront

The average weekday and Saturday show similar profiles. Both peak between 14.00 and 14.15, with the average weekday reaching 327 vehicles while the average Saturday peaks at 329 vehicles. Both rise in the morning earlier than the average Sunday, with the Saturday in particular showing a rapid increase in the lead-up to 9.00. The average weekday shows a noticeable secondary peak occurring just prior to the end of the survey period (177 vehicles between 18.45 and 19.00), unlike the average Saturday where vehicles number start to level out in the early evening.

Figure 4.25 shows the parking accumulation across all four waterfront car parks during the bank holiday Monday, and the combined busiest weekday, Saturday and Sunday. The highest peak was observed on the bank holiday Monday between 14.30 and 14.45 when 952 vehicles are estimated to be parked across all four waterfront car parks. The second highest peak was observed on Sunday the 20th August 2023 when 573 vehicles were estimated to be parked between 14.45 and 15.00. The maximum Saturday parking accumulation (481 vehicles in the 14.00-14.15 period) and maximum weekday parking accumulation (444 vehicles in the 13.45-14.00 time period) were at comparable levels to each other.

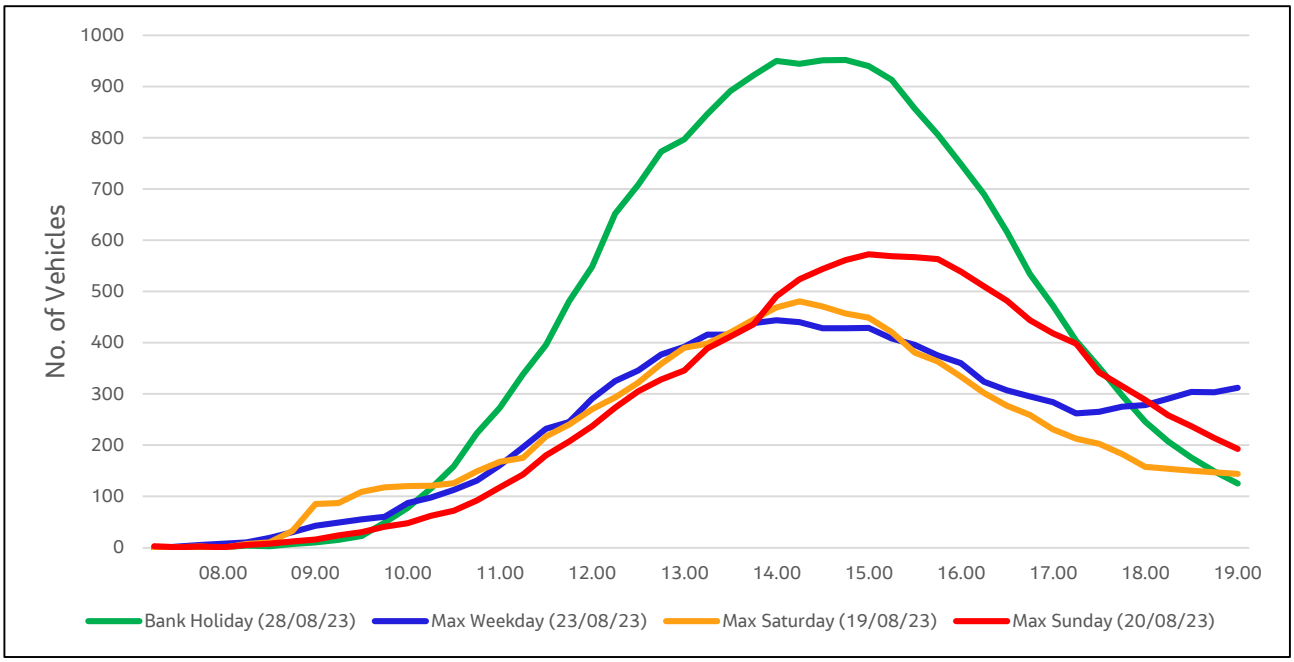


Figure 4.25: Total Maximum Parking Accumulation along Porthcawl Waterfront

4.5.2 Comparison with 2021

The 2023 survey data for the four waterfront car parks demonstrates the following features compared to the data collected in 2021:

- The maximum parking accumulation estimated during the 2023 surveys was 952 vehicles on the bank holiday Monday between 14.30 and 14.45. This is lower than the maximum of 1,042 vehicles that was estimated during the 2021 surveys on Sunday the 29 August 2021 during the bank holiday weekend. However, it is higher than the bank holiday Monday in 2021 when a maximum of 855 vehicles was estimated.
- The maximum parking accumulation peaks observed on a weekday (non-bank holiday), Saturday and Sunday (444, 481, and 573 vehicles, respectively) in the 2023 surveys are below what was observed in 2021 (575, 791, and 1042 vehicles, respectively).
- The average maximum parking accumulation peak for Sundays are similar between the 2023 and 2021 surveys, with a peak of 530 vehicles in 2023, compared to 548 vehicles in 2021. However, the average maximum parking accumulation peaks for average weekdays and Saturdays are vastly different, with 2023 data peaks much lower than the 2021 data peaks. The average Saturday parking accumulation peaks at 329 vehicles in 2023 in contrast to 705 vehicles in 2021, whilst the average weekday parking accumulation peaks at 327 vehicles in 2023 in contrast to 483 vehicles in 2021.

5. Conclusion

The 2023 Porthcawl car park survey data has been analysed to examine the usage of the new Aldi Porthcawl car park and to confirm the accuracy of car park data collected in 2021. The following conclusions were gathered:

Aldi Car Park

- In general, the Aldi car park is well-used, with the car park estimated to have reached capacity or come close to capacity on several days.
- The Aldi car park is used most on Saturdays and Sundays. Weekday use was much higher on weekdays during the summer rather than the autumn. This is likely due to visitors during the summer holiday period, but trips to Aldi may also have decreased slightly in the months following its opening.
- Weekday use is highest in the late afternoon and the early evening. Saturday use is highest in the early afternoon. Use on Sunday is relatively high throughout the Aldi's opening hours, but peaks in the afternoon.

Waterfront Car Parks:

- The peak parking accumulation across the four waterfront car parks in 2023 occurred on the bank holiday Monday, when a maximum of 952 vehicles are considered to have been parked between 14.30 and 14.45. This is roughly 10% lower than the peak that was estimated in the 2021 surveys on Sunday the 29 August 2021 (August Bank Holiday weekend 2021).
- The average maximum parking accumulation across the four waterfront car parks on average weekdays and Saturdays was substantially lower during the 2023 surveys in comparison to the 2021 surveys, although the average maximum parking accumulation on Sundays were relatively similar.
- During the August Bank Holiday Weekend, the total parking accumulation across the four waterfront car parks was higher in 2021 on the Saturday and Sunday, however on the Bank Holiday Monday, the total parking accumulation was higher in 2023 when 952 vehicles were estimated to be parked in comparison to the 855 vehicles estimated to be parked in 2021.
- The entry and exit profiles at each of the four surveyed car parks display relatively similar profiles to those produced from the 2021 data. However, on average less entry and exit movements were observed during the 2023 data, whilst there is some indication that entries tended to be later and exits tended to be earlier, which could indicate shorter stay durations. This is supported by the length of stay data for the bank holiday weekend.
- Use of Hillsboro Place (North) and Hillsboro Place (South) car parks are primarily orientated towards shorter stays, while Salt Lake car parks is used for more longer stays. However, no car park appears to show exclusively short-stay or long-stay behaviour; all three car parks are being used for a mix of stay durations.

The survey results suggest there was some change in the use of the Waterfront car parks in 2023 relative to 2021. However, the following caveats must be noted:

- Incomplete data collected by ANPR may skew the length of stay results for the Saturday and Sunday of the 2023 bank holiday weekend.
- Parking at a seaside town such as Porthcawl is likely to be susceptible to variations in weather. It is noted that August 2023 was characterised by mixed and unsettled weather, with wet and windy weather at times due to major storms. August 2021, on the other hand, was both drier and duller than a typical August. In particular, the August Bank Holiday weekend in 2021 was warmer and drier than in 2023.

Appendix A. Entry and Exit Survey Data

Appendix B. ANPR Survey Data

Link
Transport Planning

Cyngor Bwrdeistref Sirol
Pen-y-bont ar Ogwr
BRIDGEND
County Borough Council

Digital Viewing Recommended

Disclaimer

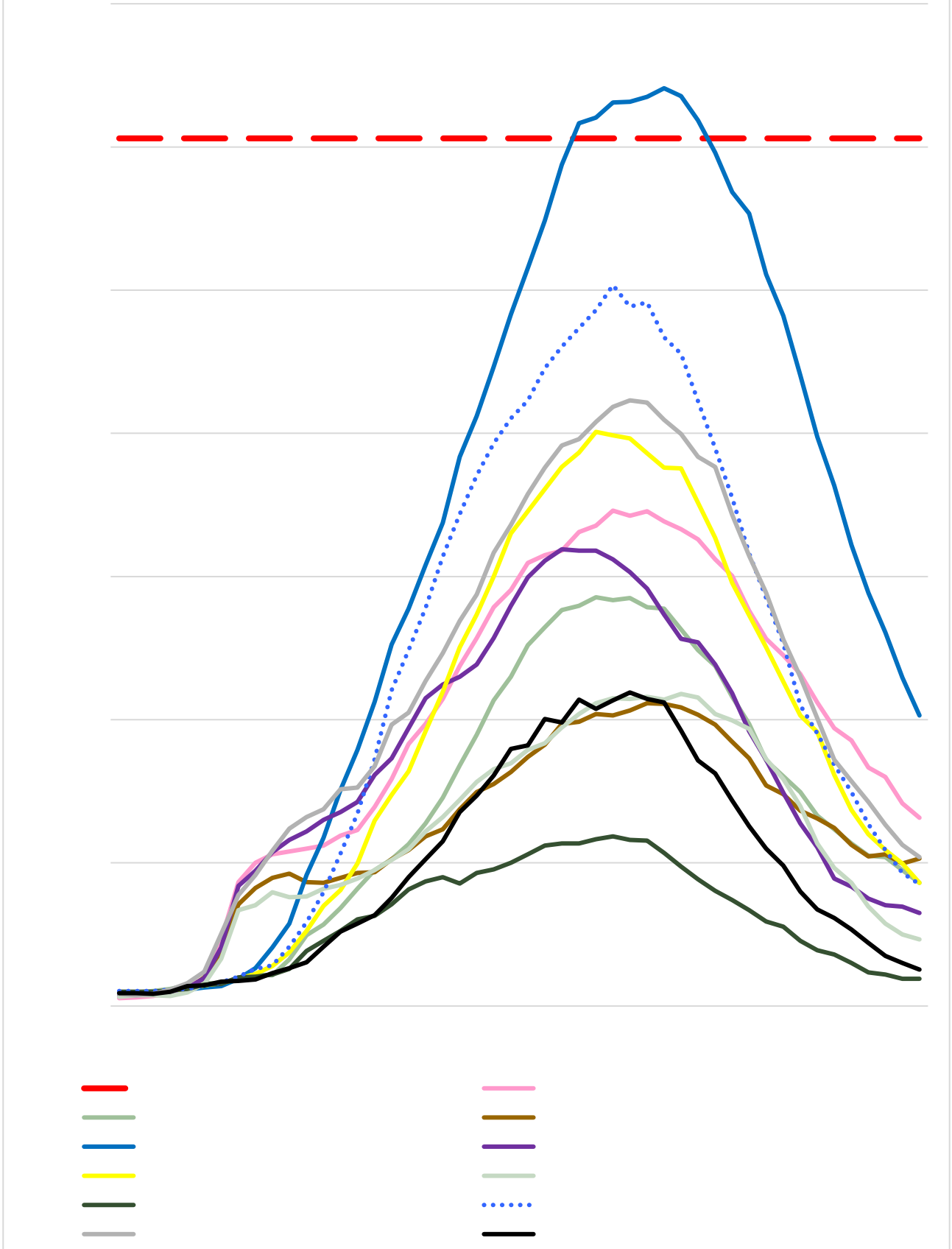
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Porthcawl Parking Surveys 2024
Scope of Count Locations
Pyle Road (A4229)
Nottage
Bridgend Road (A4106)
DANYGRAIG
A4106
Portmar Rd
A4106
A4106
New Rd
NEWTON
Porthcawl Comp. Sch. (Event Parking)
New Rd
Sandy Bay
Sandy Bowl (Event Parking)
Porthcawl
Hillsboro Place (North)
Hillsboro Place (South)
Salt Lake
Esplanade
Google Earth
Image © 2024 Airbus
N
700 m

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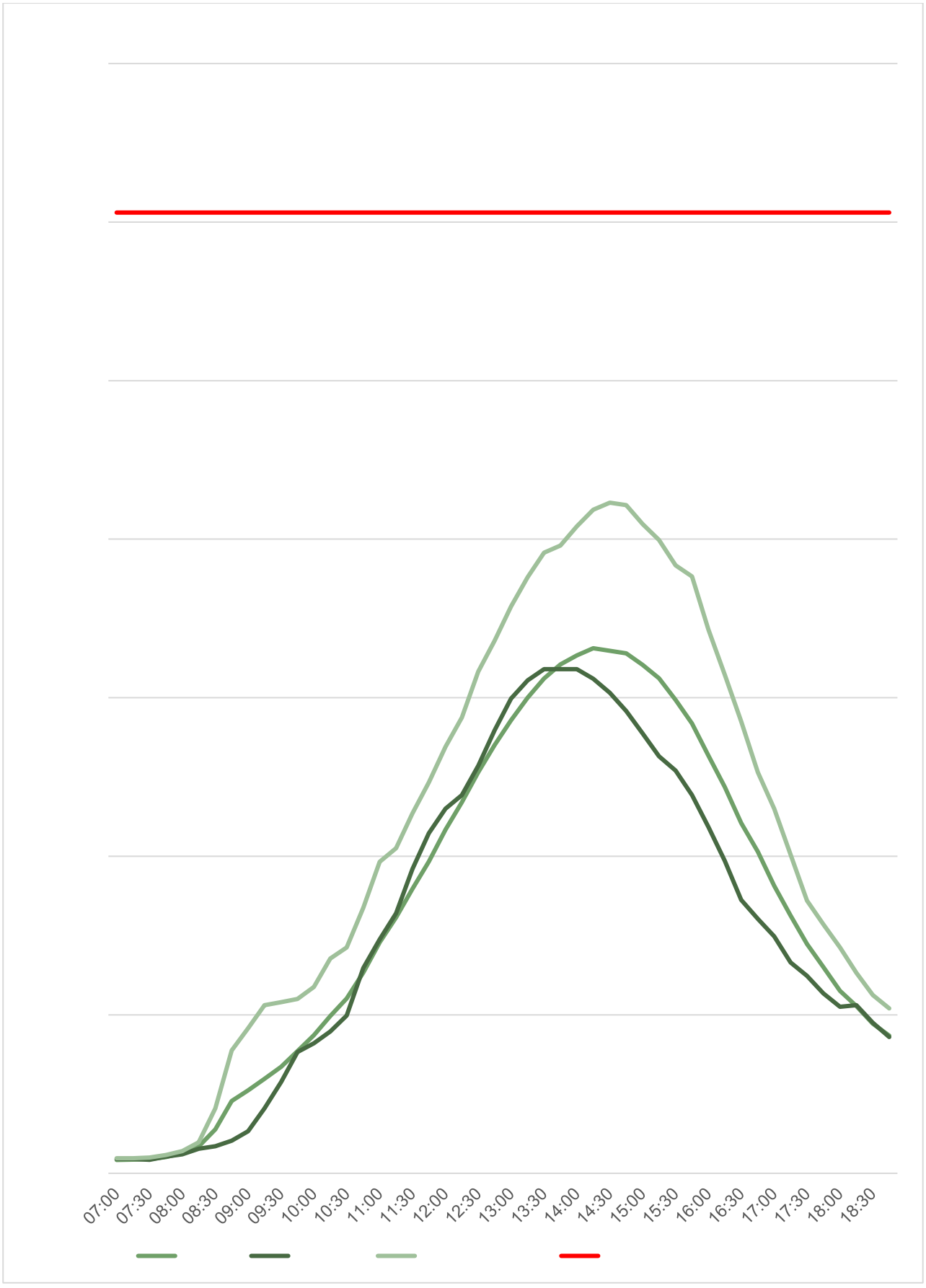
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Porthcawl 6-week Summer 2024 Council Car Park Survey Results Summary



Threshold Analysis

Further Metrics

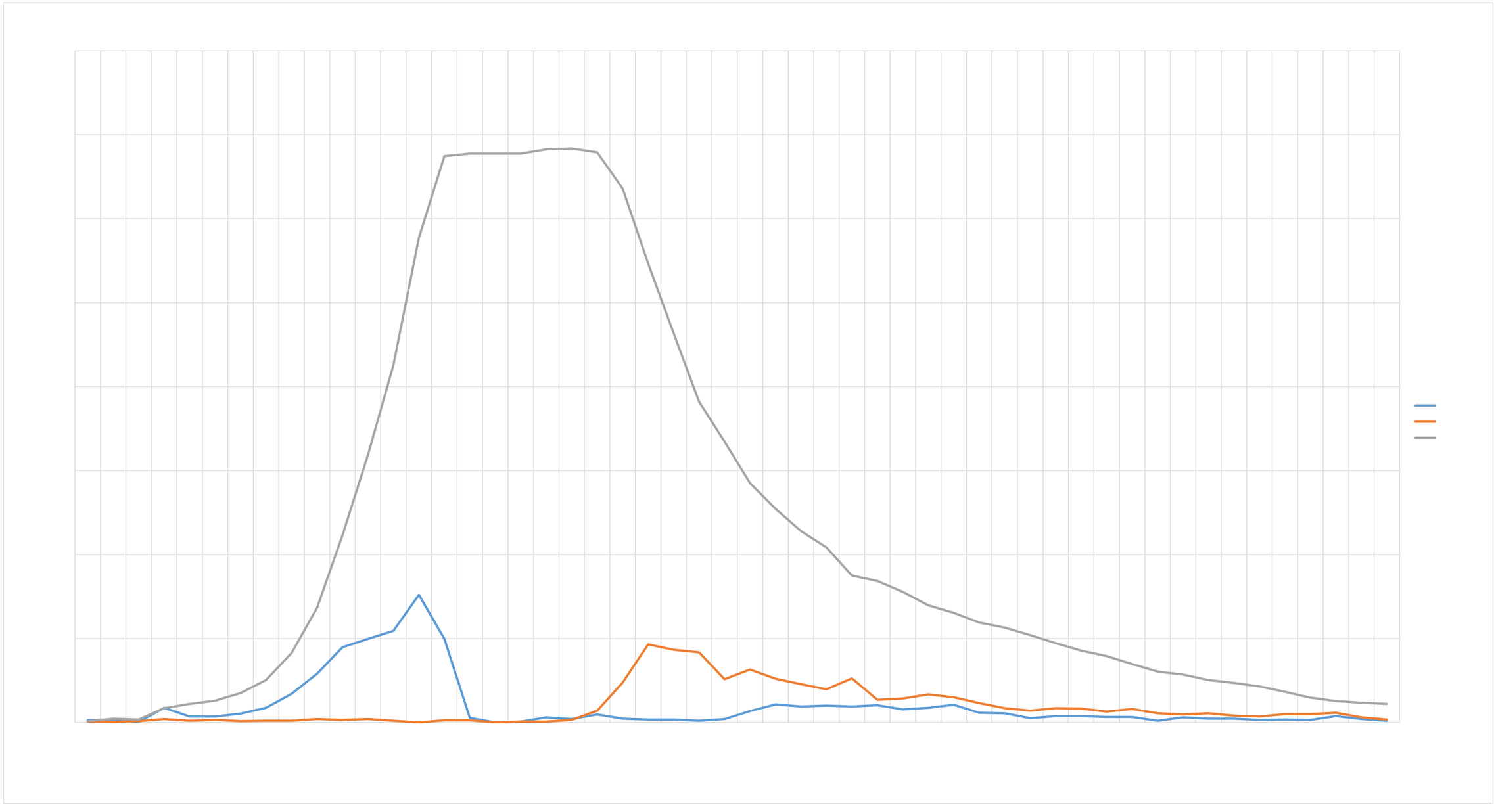

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11:30
12:00
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18:30

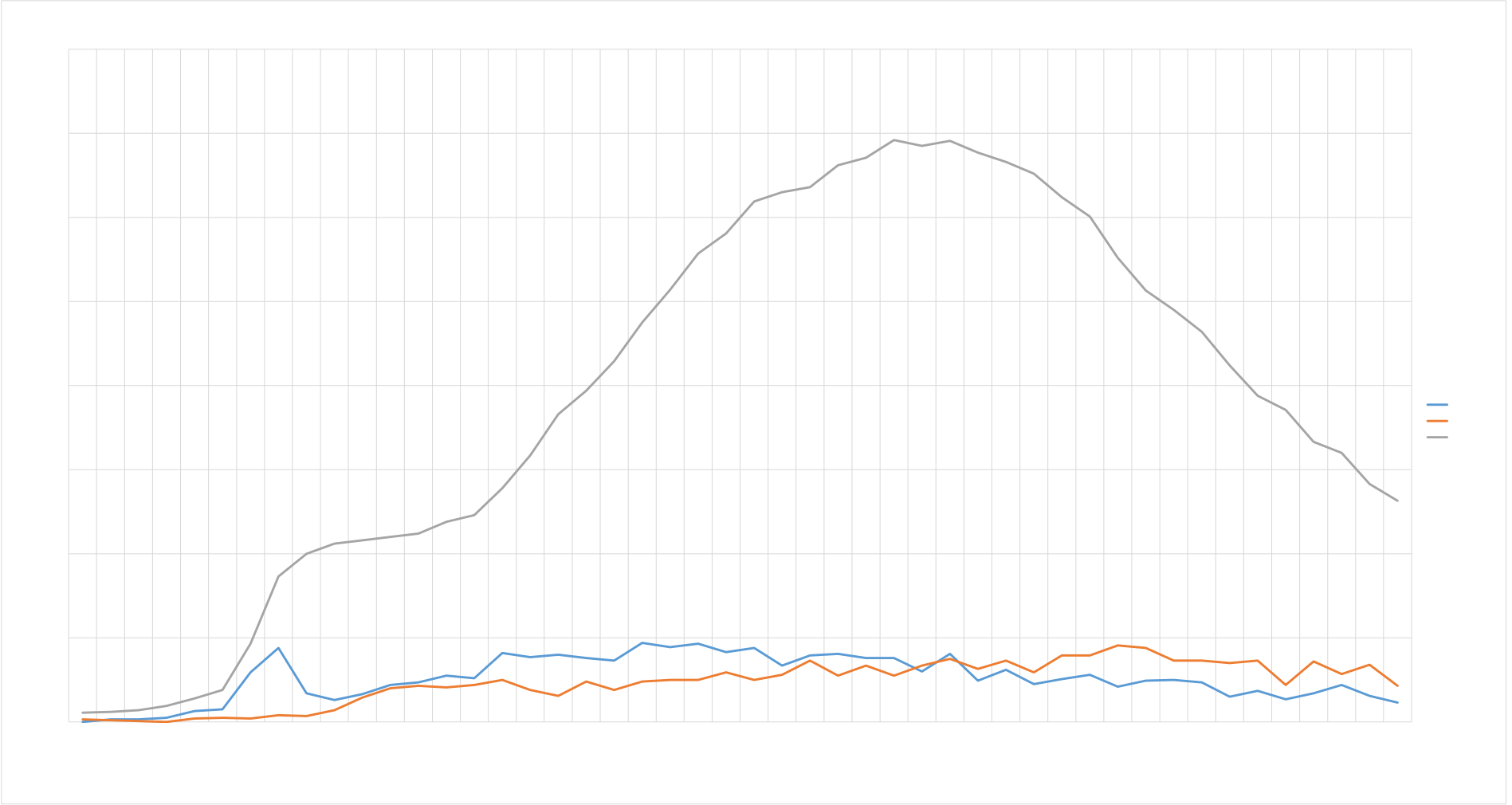
Comparison with Previous Surveys

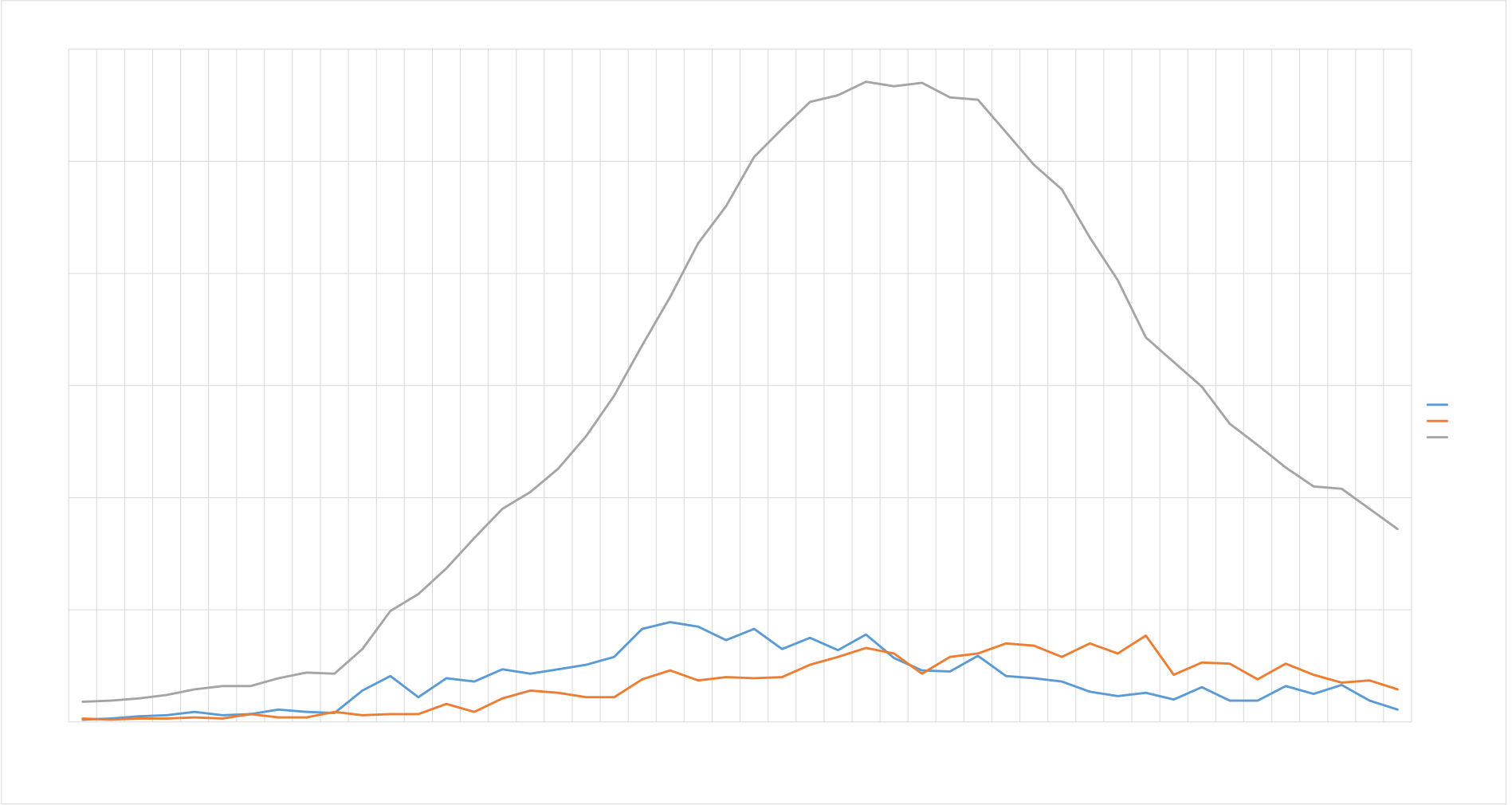
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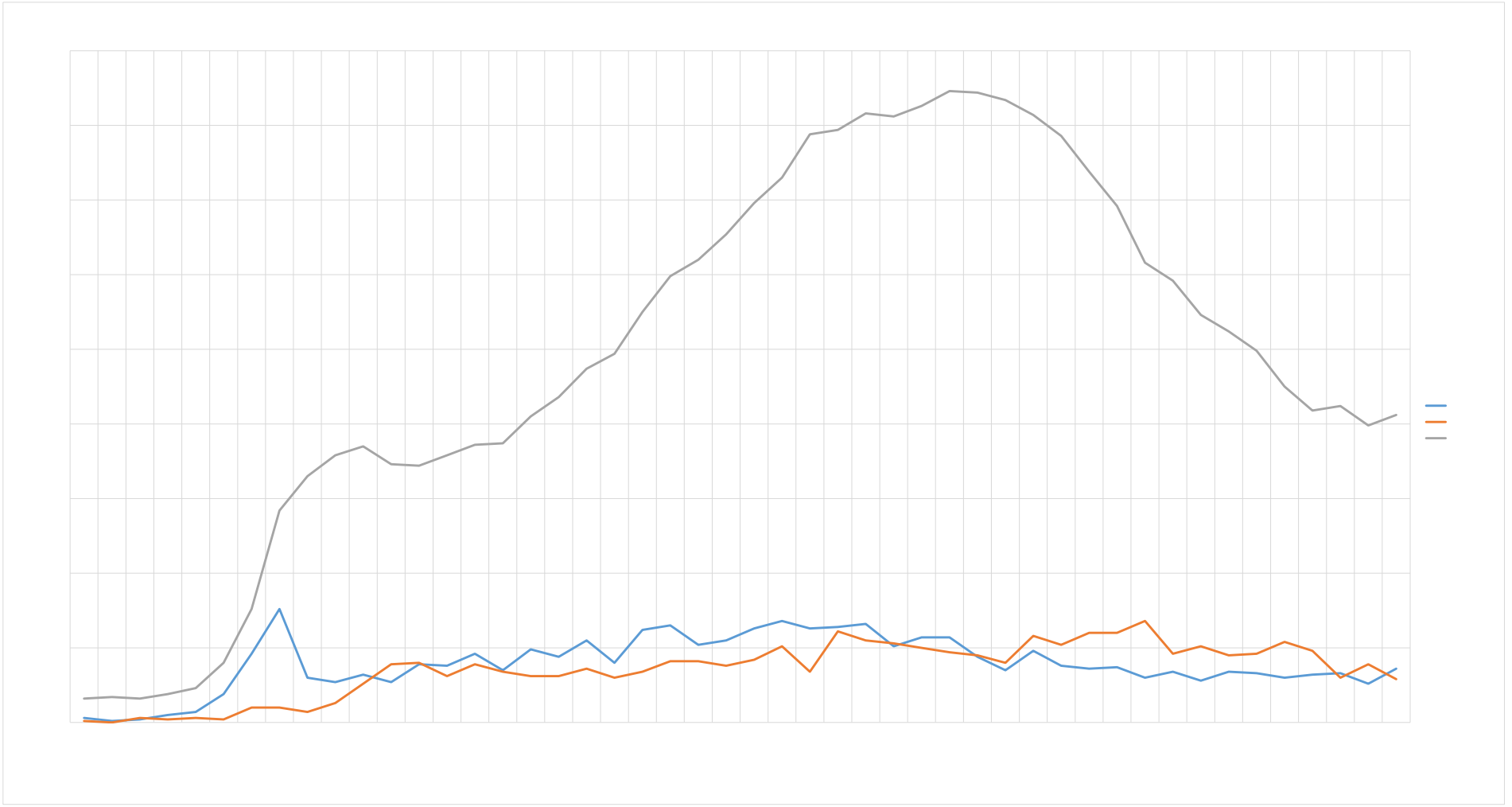
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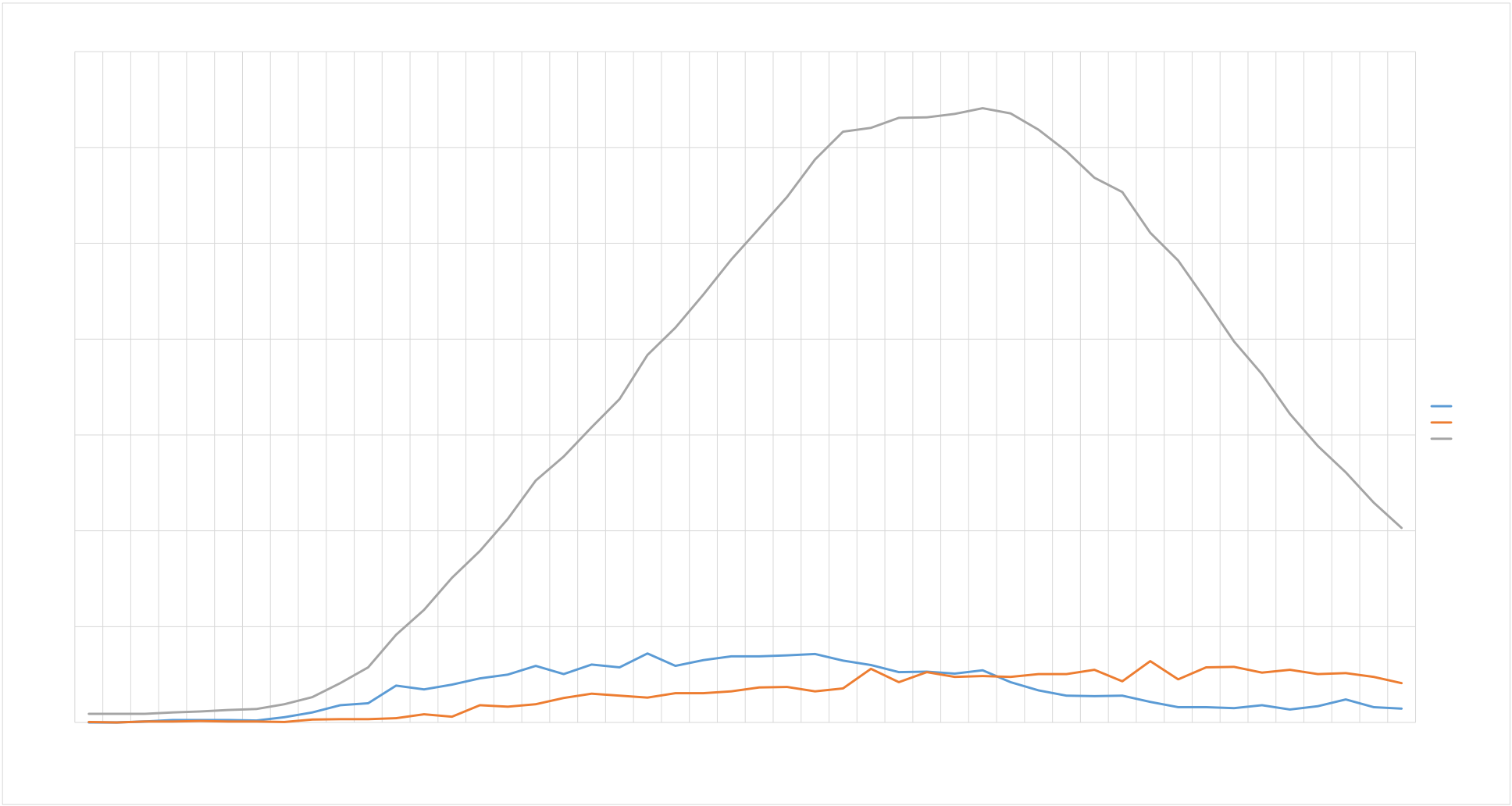
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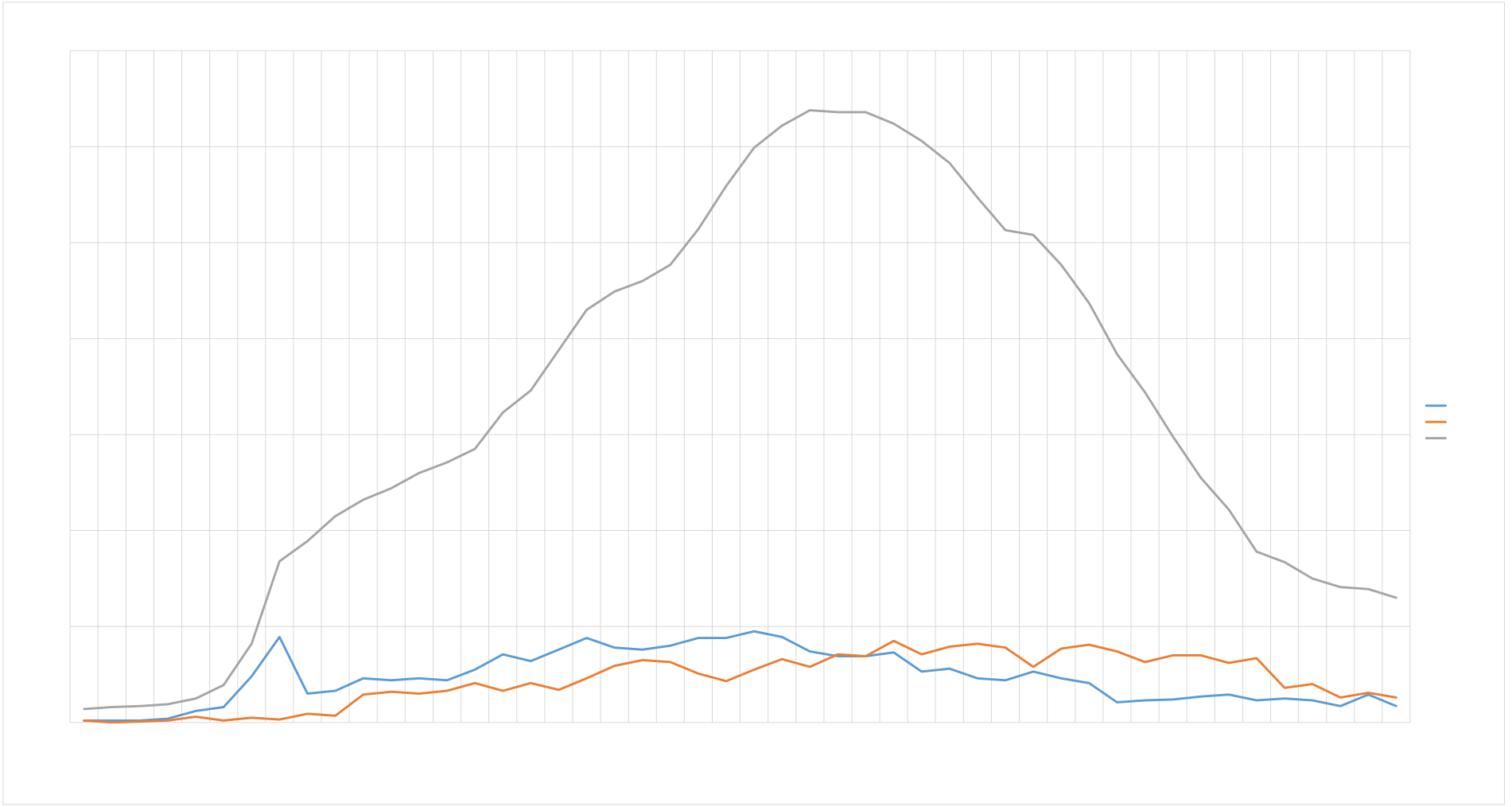


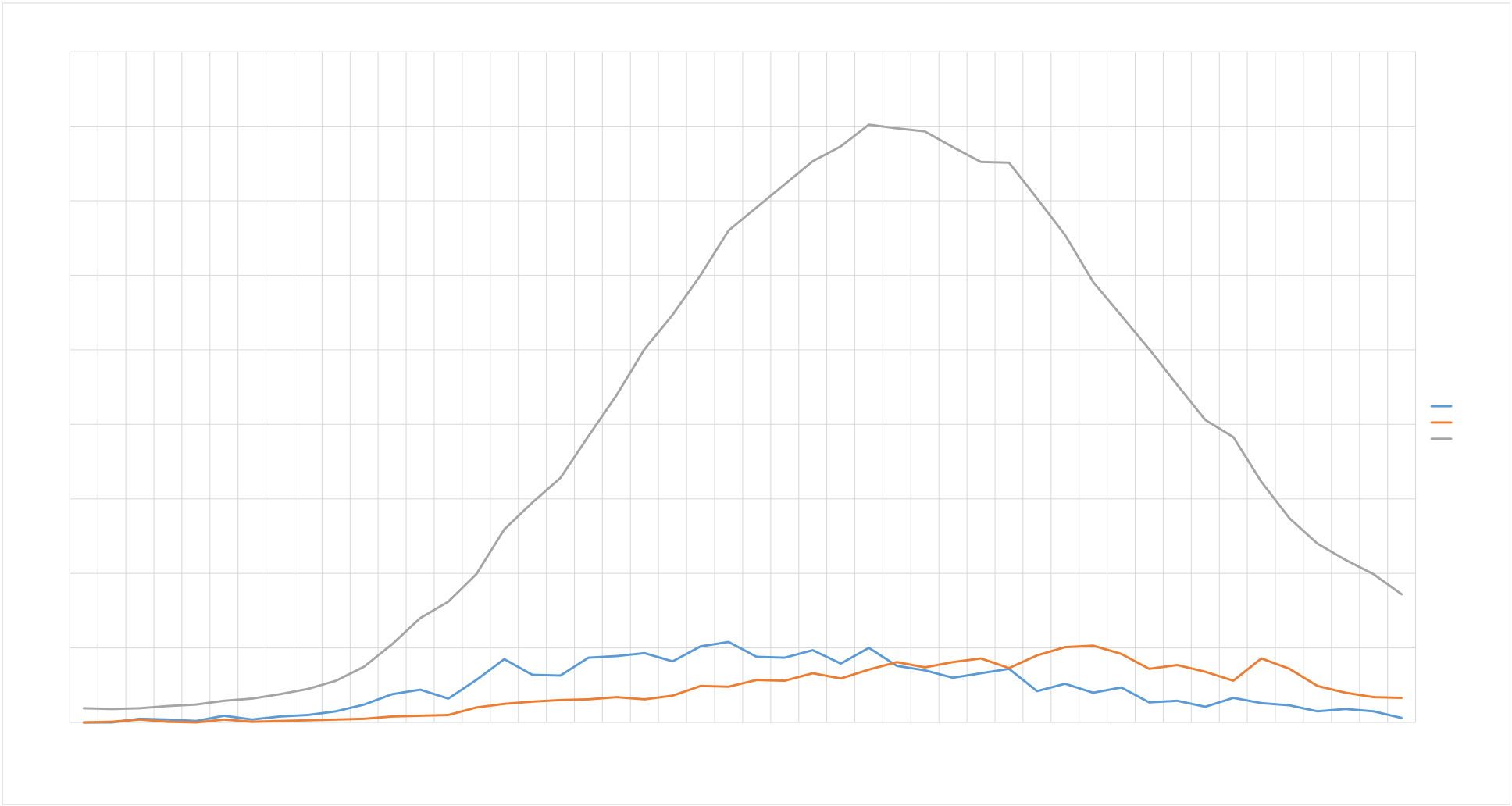


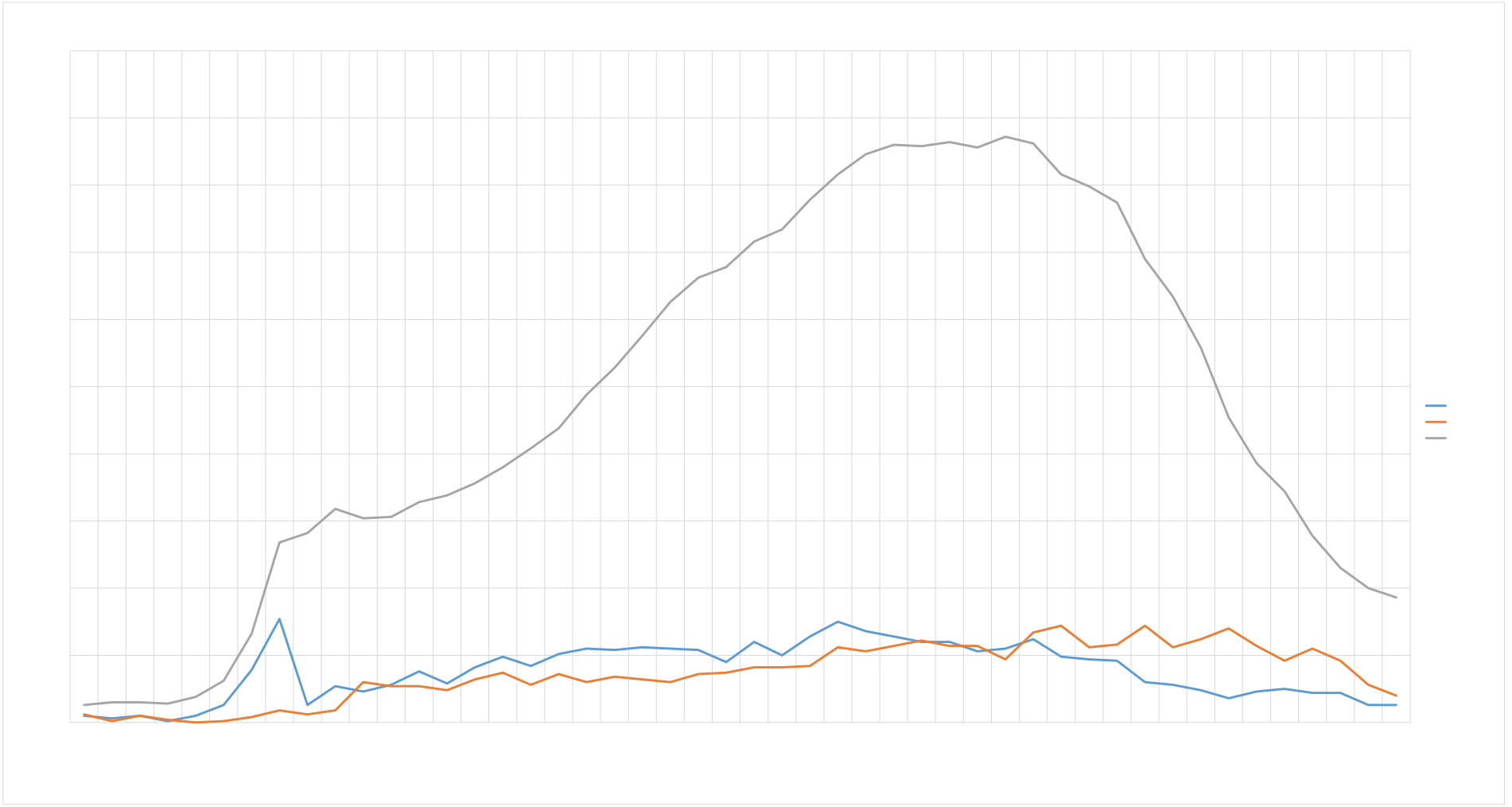


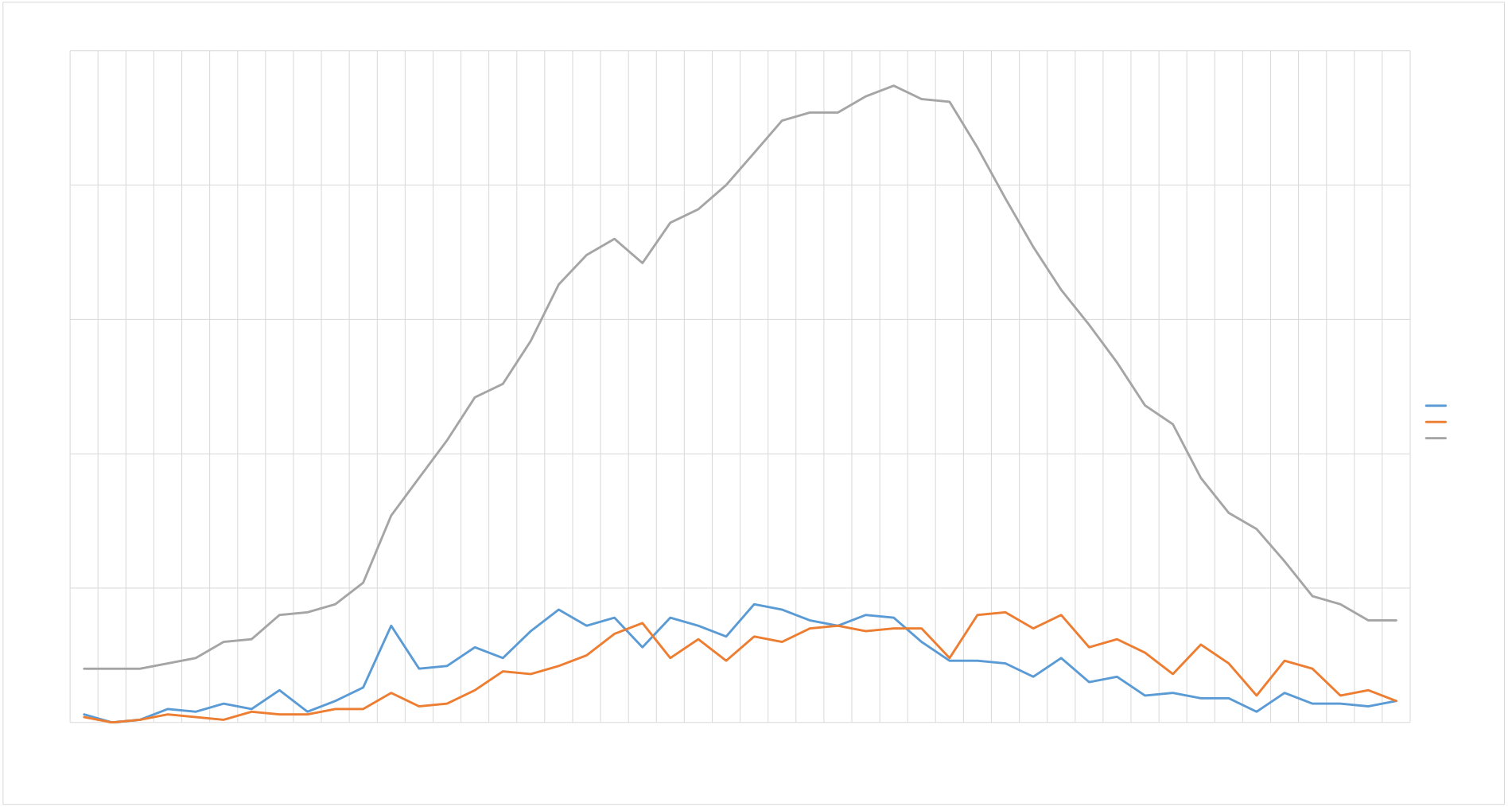


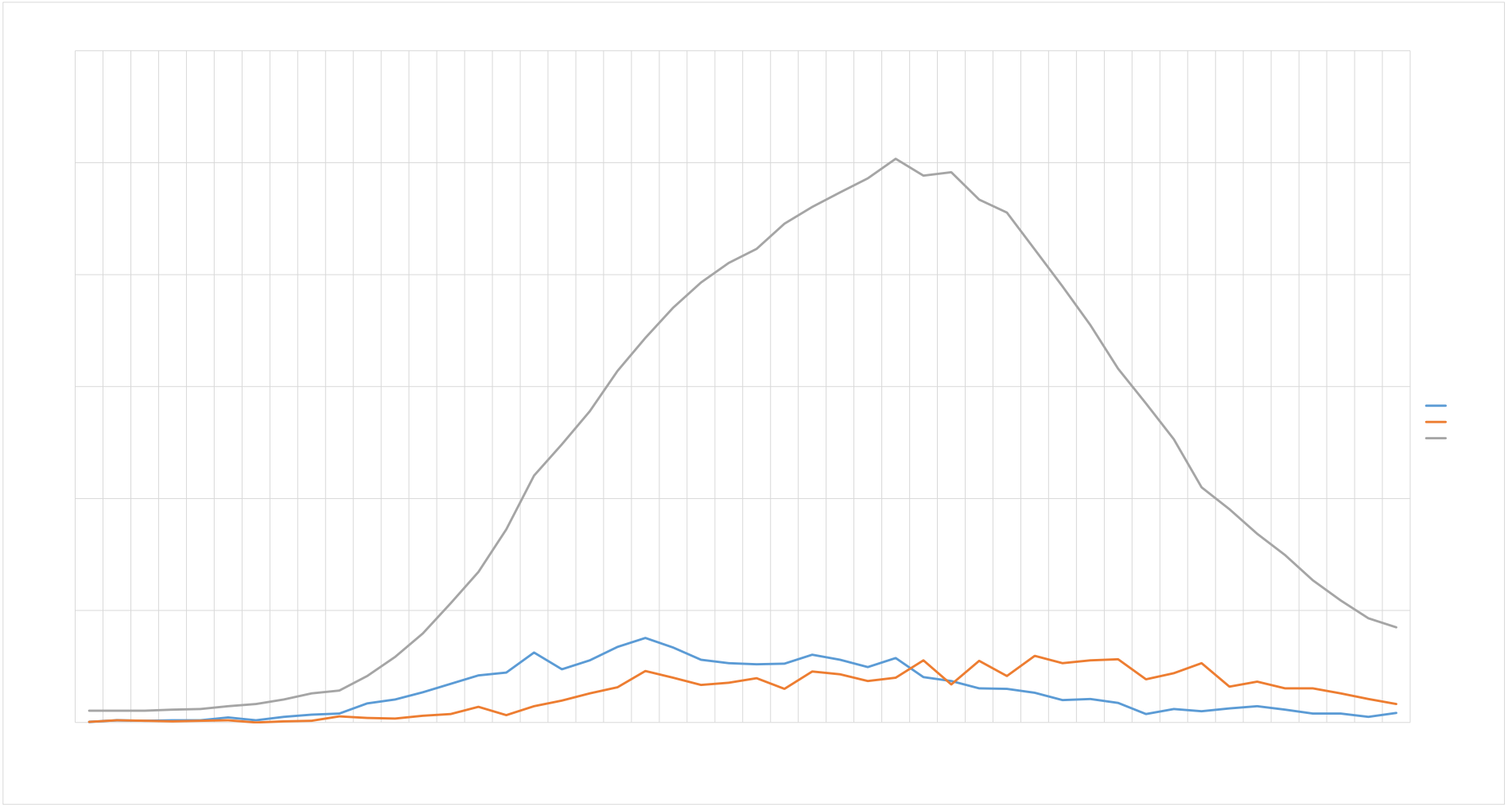


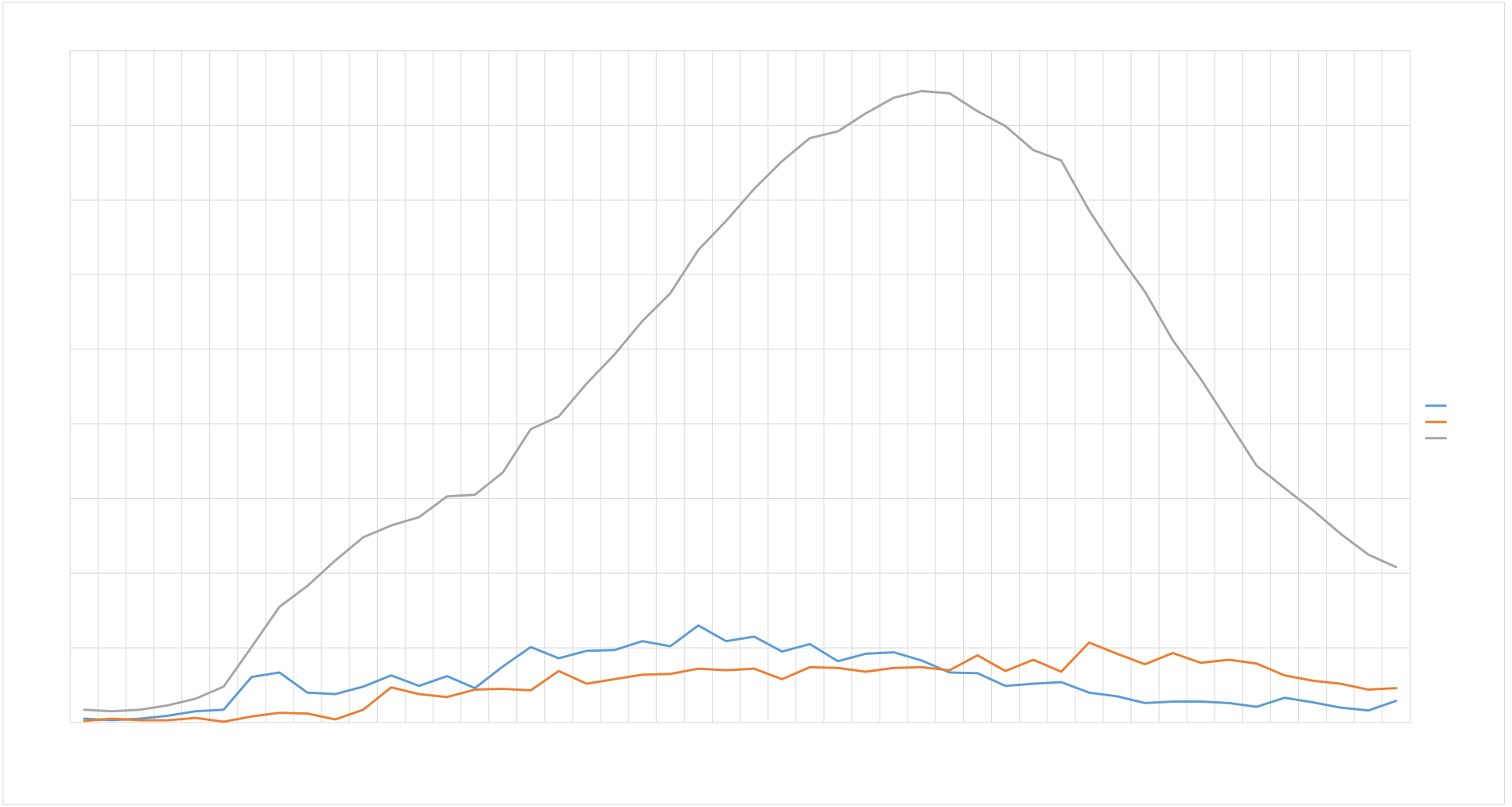


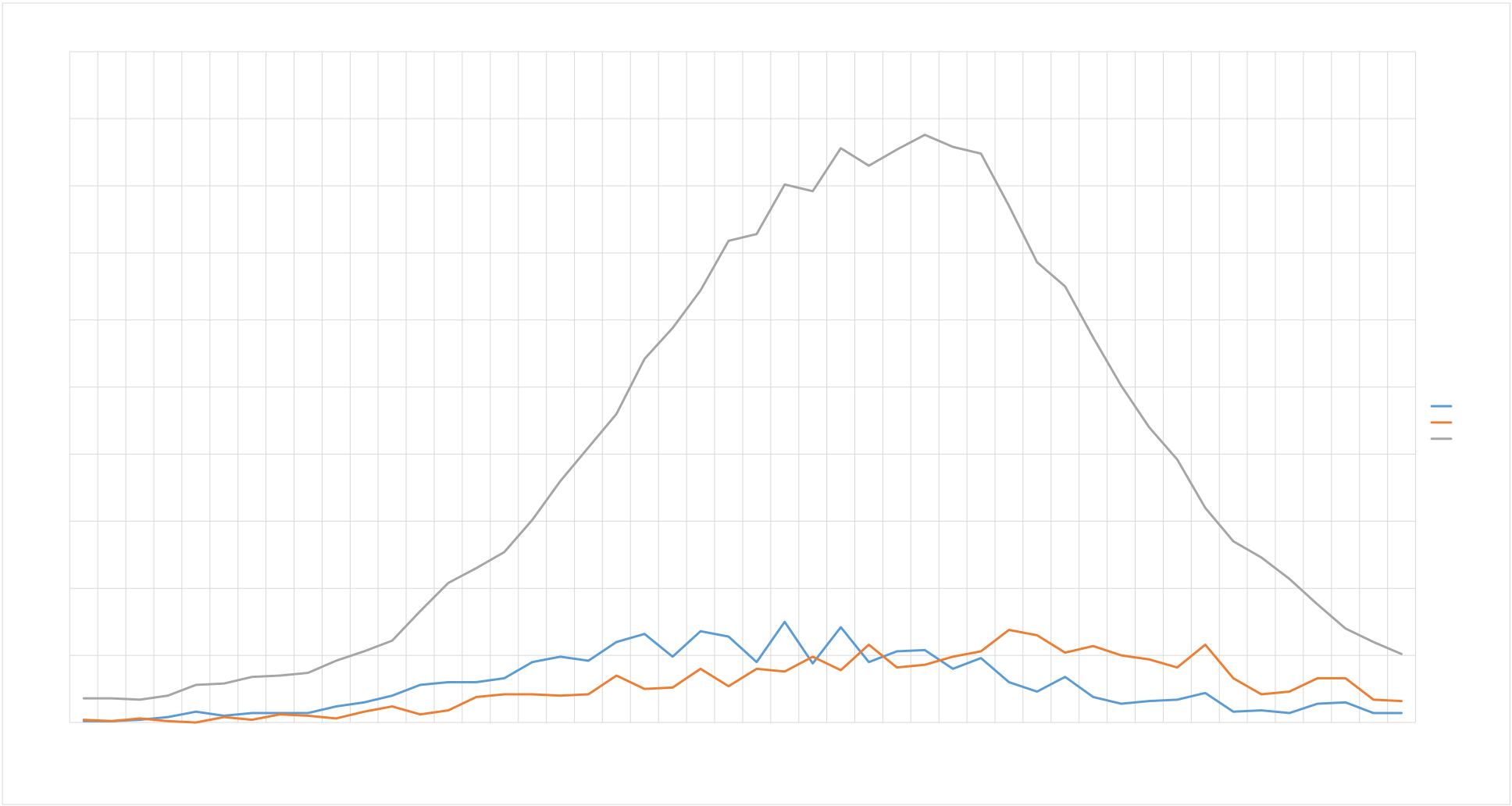


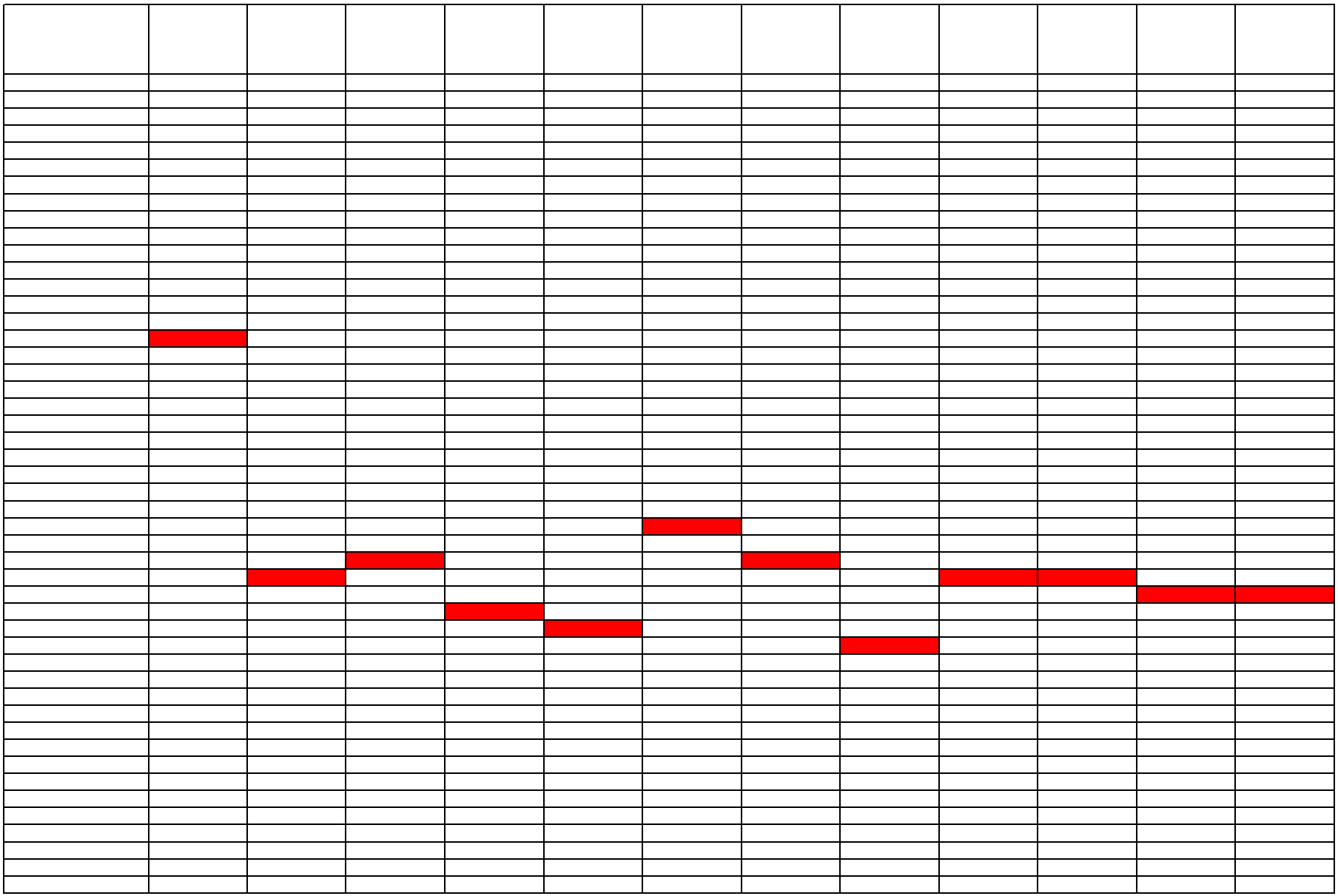


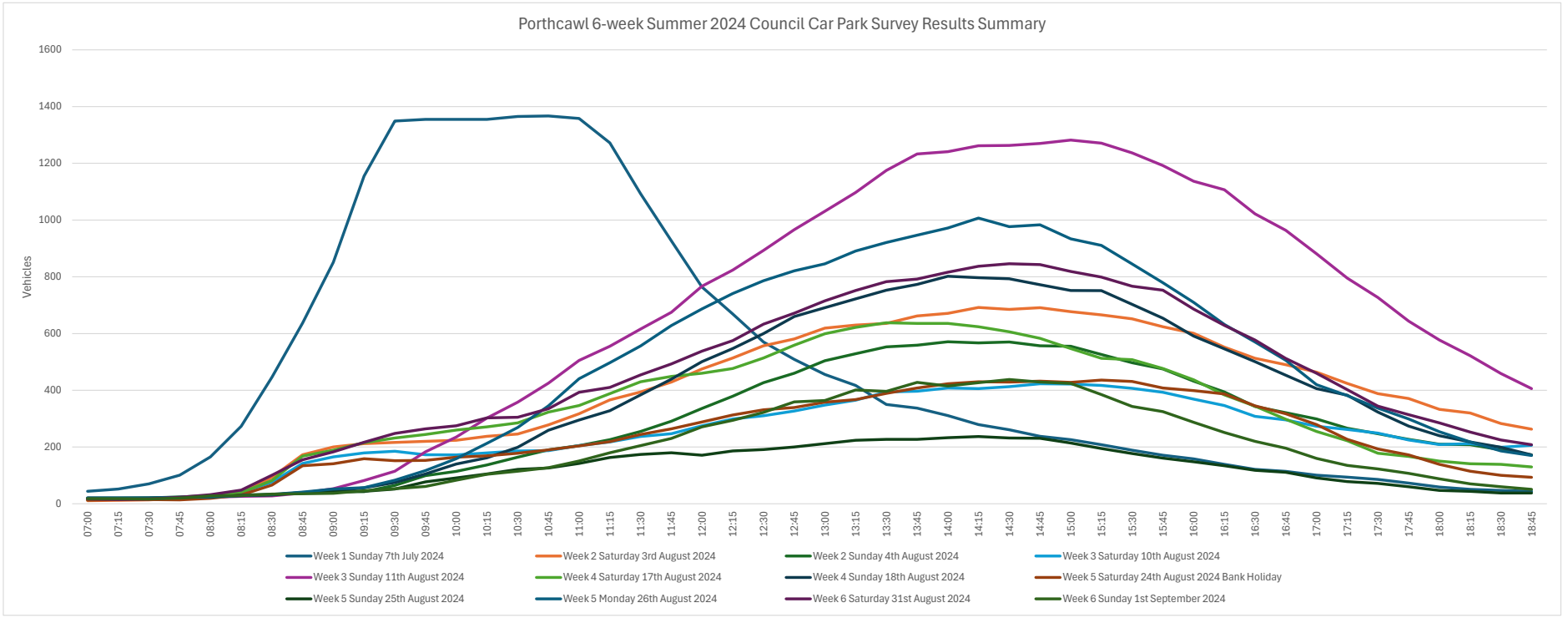


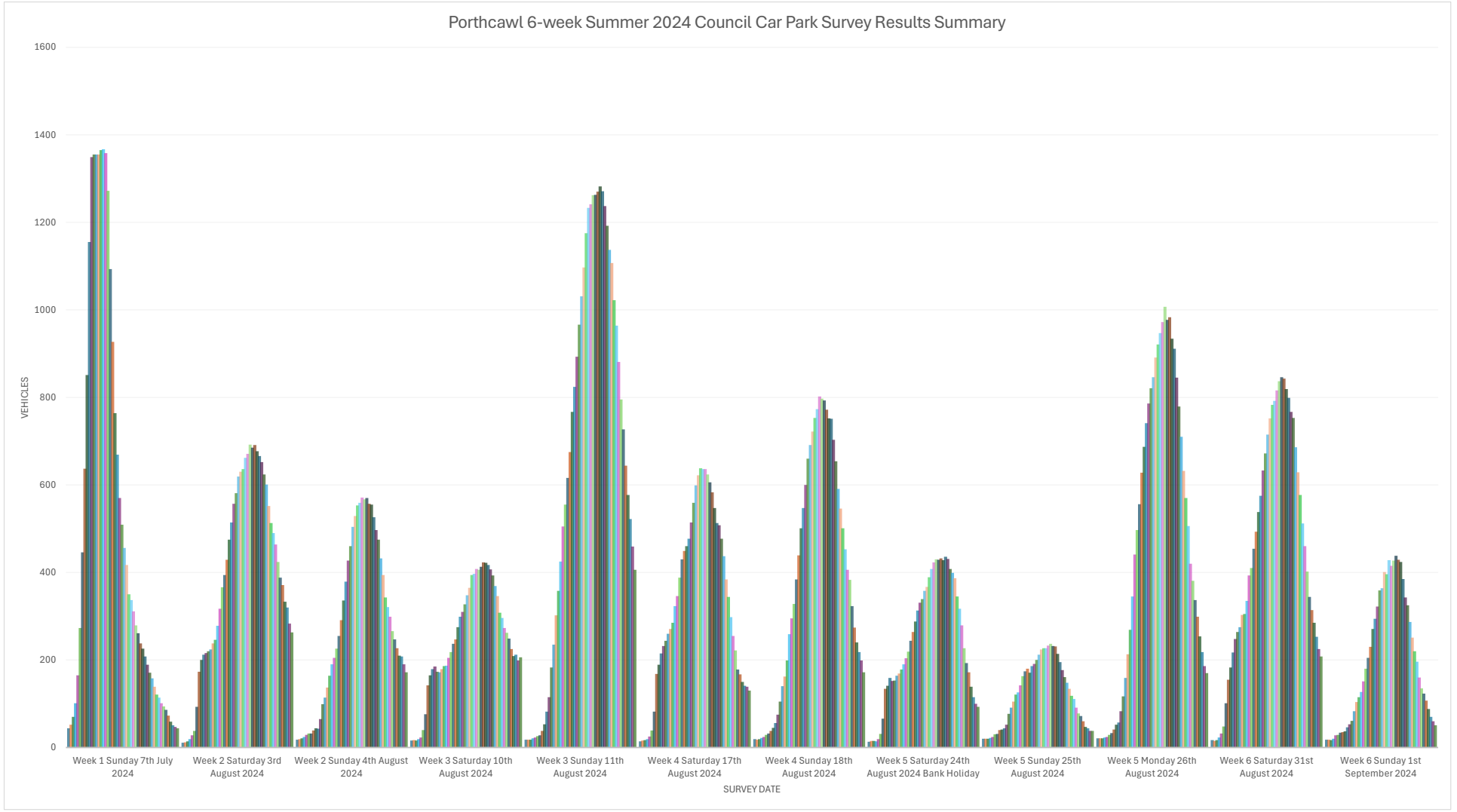


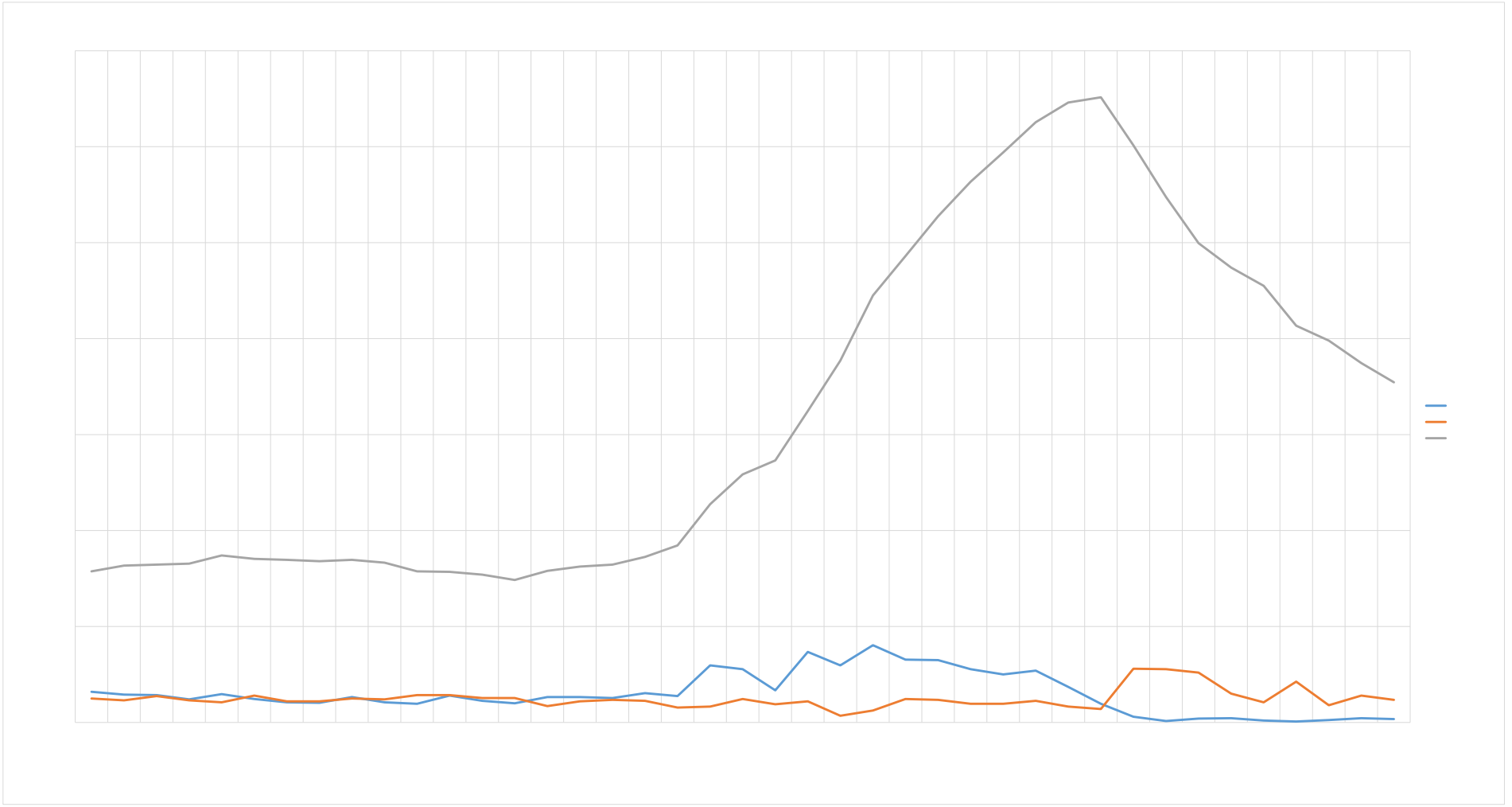


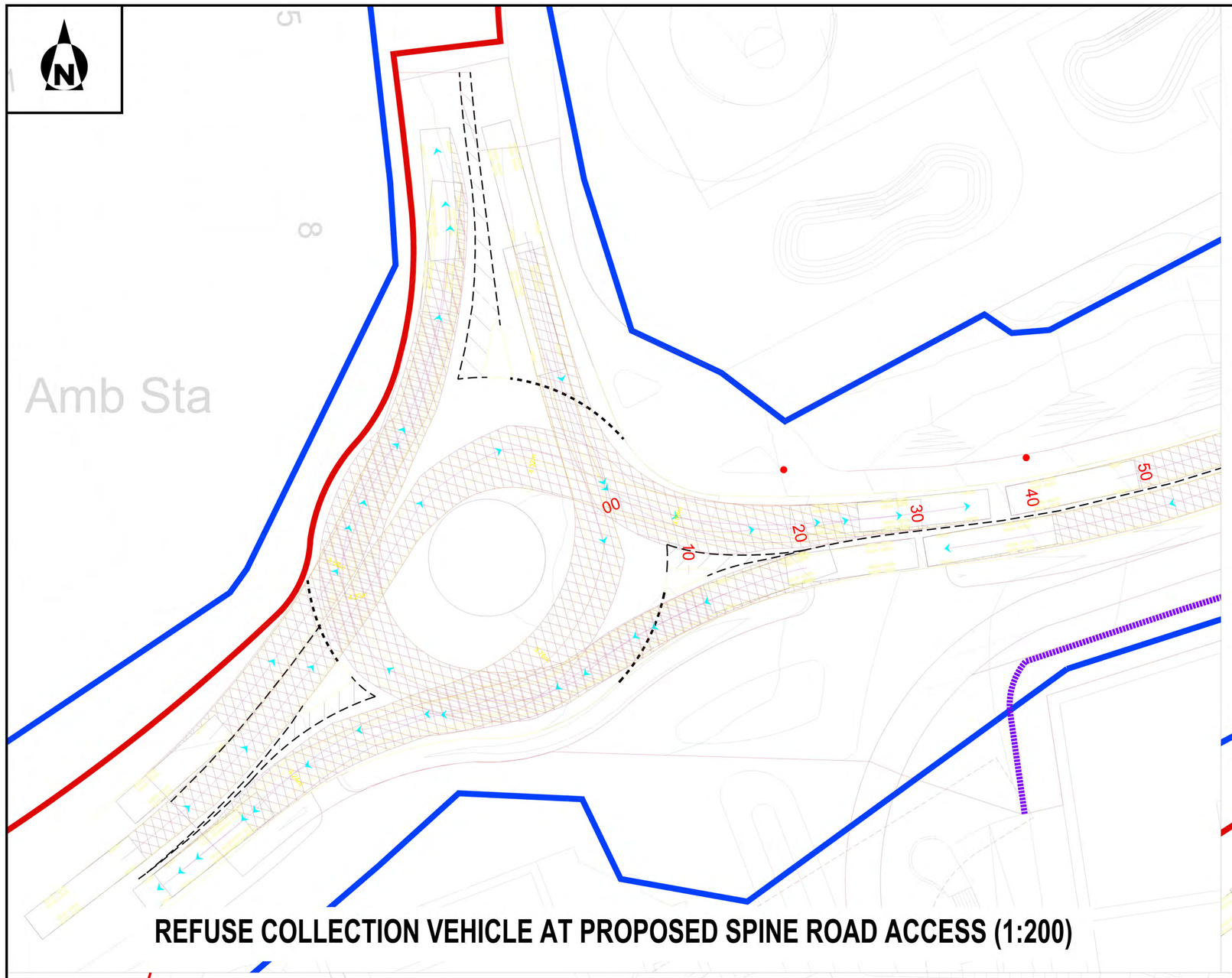




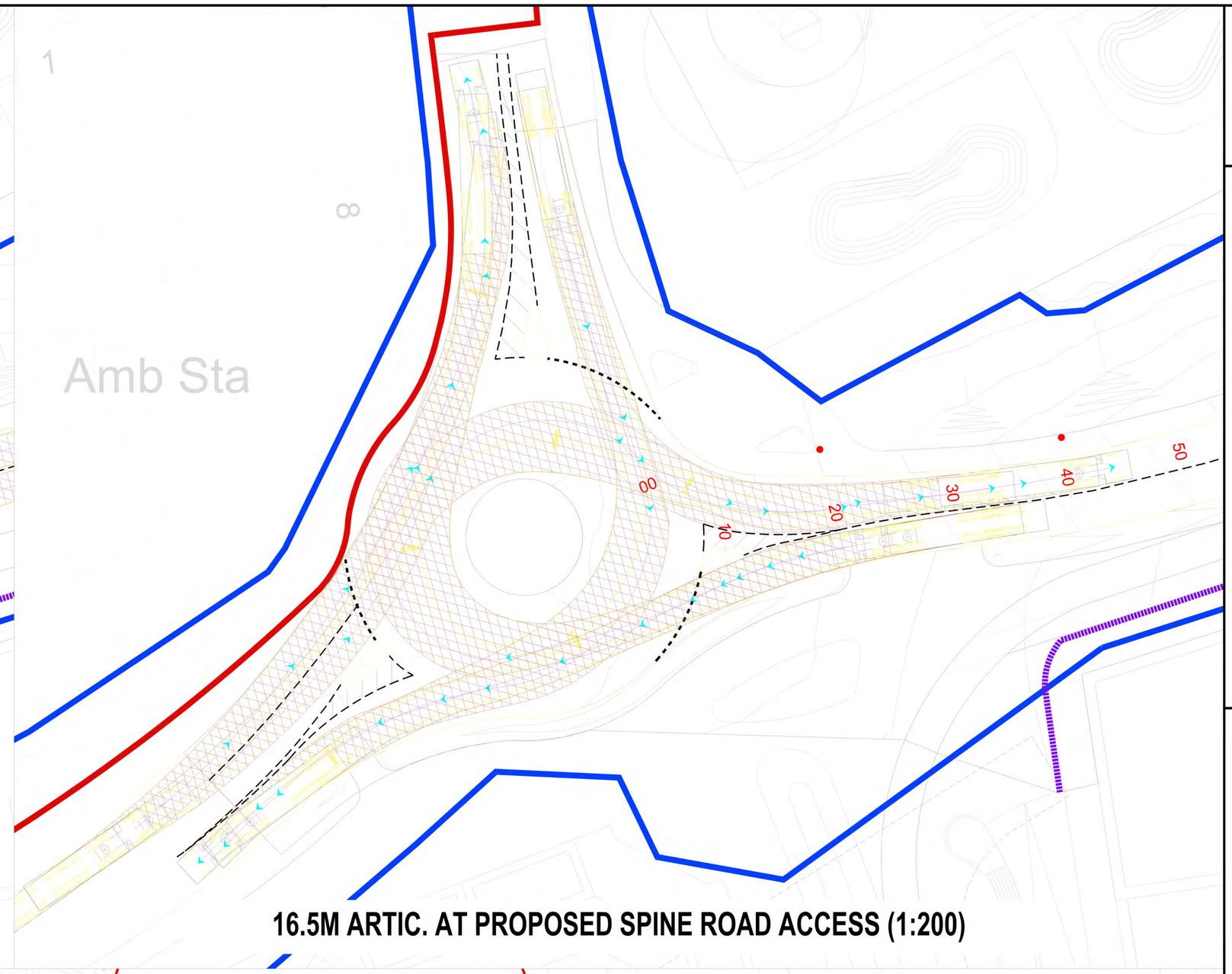

Porthcawl 6-week Summer 2024 Council Car Park Survey Results Summary
Vehicles
1600
1400
1200
1000
800
600
400
200
0
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07:15
07:30
07:45
08:00
08:15
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18:30
18:45
Week 1 Sunday 7th July 2024
Week 2 Saturday 3rd August 2024
Week 2 Sunday 4th August 2024
Week 3 Saturday 10th August 2024
Week 3 Sunday 11th August 2024
Week 4 Saturday 17th August 2024
Week 4 Sunday 18th August 2024
Week 5 Saturday 24th August 2024 Bank Holiday
Week 5 Sunday 25th August 2024
Week 5 Monday 26th August 2024
Week 6 Saturday 31st August 2024
Week 6 Sunday 1st September 2024


Porthcawl 6-week Summer 2024 Council Car Park Survey Results Summary
1600
1400
1200
1000
800
600
400
200
0
VEHICLES
Week 1 Sunday 7th July 2024
Week 2 Saturday 3rd August 2024
Week 2 Sunday 4th August 2024
Week 3 Saturday 10th August 2024
Week 3 Sunday 11th August 2024
Week 4 Saturday 17th August 2024
Week 4 Sunday 18th August 2024
Week 5 Saturday 24th August 2024 Bank Holiday
Week 5 Sunday 25th August 2024
Week 5 Monday 26th August 2024
Week 6 Saturday 31st August 2024
Week 6 Sunday 1st September 2024
SURVEY DATE

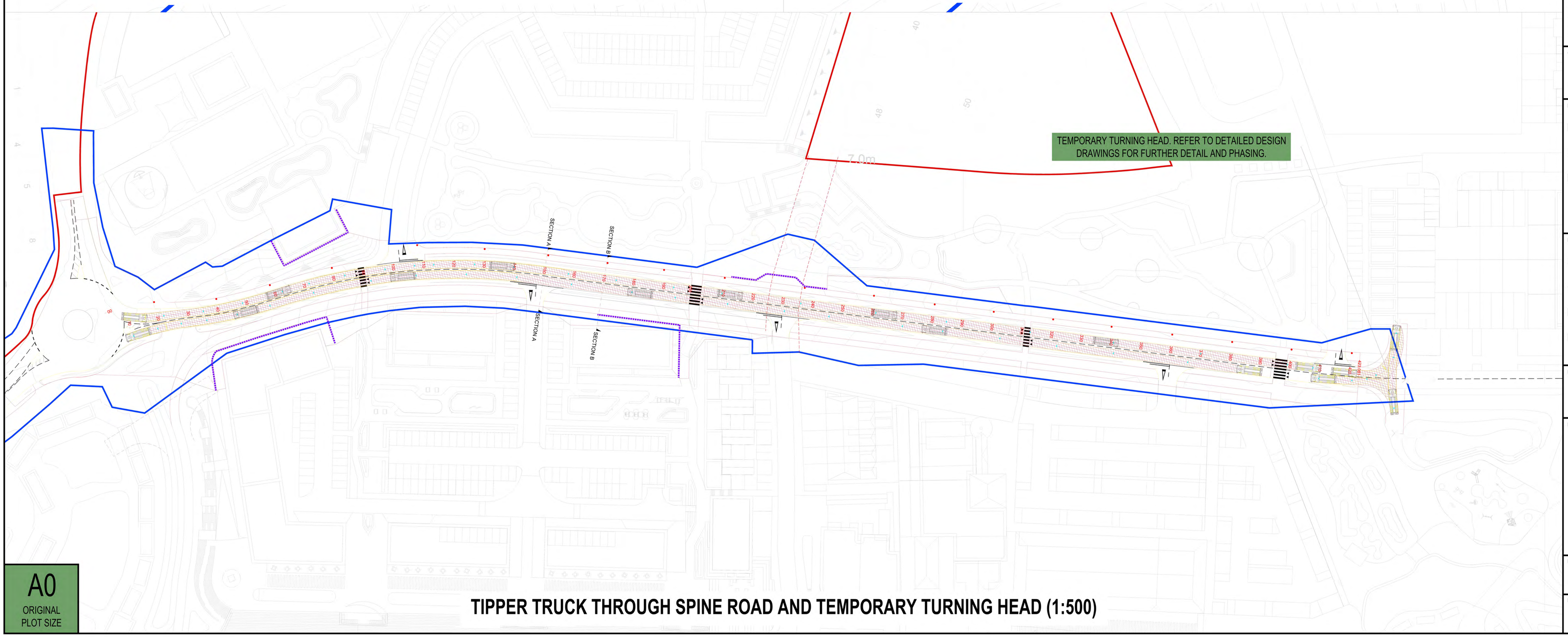




REFUSE COLLECTION VEHICLE AT PROPOSED SPINE ROAD ACCESS (1:200)



16.5M ARTIC. AT PROPOSED SPINE ROAD ACCESS (1:200)

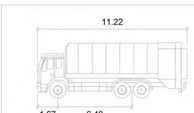


TIPPER TRUCK THROUGH SPINE ROAD AND TEMPORARY TURNING HEAD (1:500)

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ORIGINAL
PLOT SIZE

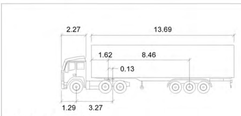
Link Transport Planning

LEGEND



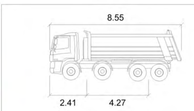
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	meters
Width	: 2.53
Track	: 2.53
Lock to Lock Time	: 4.0
Steering Angle	: 37.5



BOX VAN 6AXLE

	meters		
Tractor Width	: 2.55	Lock to Lock Time	: 6.0
Trailer Width	: 2.55	Steering Angle	: 25.5
Tractor Track	: 2.55	Articulating Angle	: 70.0
Trailer Track	: 2.55		



DAF FAD CF85 Tipper

meters

Width	: 2.55
Track	: 2.55
Lock to Lock Time	: 6.0
Steering Angle	: 35.5

NOTES

1. ACCESS JUNCTION DESIGNED BY OTHERS AND SUBJECT TO DETAILED DESIGN AND ROAD SAFETY AUDIT PROCESSES

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This drawing is based on [Company] drawing reference | drawing number and version|

CLIENT

BCBC

PROJECT NAME

PORTHCAWL

WATERFRONT

REGENERATION

DRAWING NAME

SWEPT PATH ANALYSIS

OF

PROPOSED SPINE ROAD

PHASE 1

DRAWING STATUS

INFORMATION

REVISION LOG

DATE	DRAWN	CHECKED	APPROVED
11.25	JC	JC	JC

PROJECT NO.	DWG REF	REVISION	SCALE
2541	SP01	-	AS SHOWN

Link Transport Planning Tondu Enterprise Centre Bridgend Licence No: 118301

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
Category : O - LEISURE PARK
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02 SOUTH EAST
HF HERTFORDSHIRE 1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
Actual Range: 22331 to 22331 (units: sqm)
Range Selected by User: 6543 to 30000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 04/11/23

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:
Saturday 1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:
Manual count 1 days
Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:
Town Centre 1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:
No Sub Category 1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:
Servicing vehicles Included X days - Selected
Servicing vehicles Excluded 1 days - Selected

Secondary Filtering selection:

Use Class:
n/a 1 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included
Population within 1 mile:
20,001 to 25,000 1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Secondary Filtering selection (Cont.):

Population within 5 miles:
125,001 to 250,000 1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:
0.6 to 1.0 1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:
No 1 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:
No PTAL Present 1 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 HF-07-O-02 LEISURE PARK HERTFORDSHIRE
KINGS WAY
STEVENAGE

Town Centre
No Sub Category
Total Gross floor area: 22331 sqm
Survey date: SATURDAY *04/11/23* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.93

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.197	1	22331	0.094	1	22331	0.291
07:00 - 08:00	1	22331	0.582	1	22331	0.349	1	22331	0.931
08:00 - 09:00	1	22331	1.137	1	22331	0.869	1	22331	2.006
09:00 - 10:00	1	22331	1.308	1	22331	0.905	1	22331	2.213
10:00 - 11:00	1	22331	2.006	1	22331	1.482	1	22331	3.488
11:00 - 12:00	1	22331	2.118	1	22331	1.603	1	22331	3.721
12:00 - 13:00	1	22331	1.926	1	22331	1.572	1	22331	3.498
13:00 - 14:00	1	22331	1.903	1	22331	2.235	1	22331	4.138
14:00 - 15:00	1	22331	1.746	1	22331	2.149	1	22331	3.895
15:00 - 16:00	1	22331	1.733	1	22331	1.863	1	22331	3.596
16:00 - 17:00	1	22331	1.630	1	22331	1.823	1	22331	3.453
17:00 - 18:00	1	22331	1.863	1	22331	1.796	1	22331	3.659
18:00 - 19:00	1	22331	1.814	1	22331	1.867	1	22331	3.681
19:00 - 20:00	1	22331	1.151	1	22331	1.572	1	22331	2.723
20:00 - 21:00	1	22331	0.931	1	22331	1.308	1	22331	2.239
21:00 - 22:00	1	22331	0.681	1	22331	1.003	1	22331	1.684
22:00 - 23:00	1	22331	0.596	1	22331	0.699	1	22331	1.295
23:00 - 24:00	1	22331	0.242	1	22331	0.372	1	22331	0.614
Total Rates:			23.564			23.561			47.125

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	22331 - 22331 (units: sqm)
Survey date date range:	01/01/00 - 04/11/23
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	1
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL TAXIS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
07:00 - 08:00	1	22331	0.018	1	22331	0.018	1	22331	0.036
08:00 - 09:00	1	22331	0.022	1	22331	0.018	1	22331	0.040
09:00 - 10:00	1	22331	0.031	1	22331	0.031	1	22331	0.062
10:00 - 11:00	1	22331	0.045	1	22331	0.045	1	22331	0.090
11:00 - 12:00	1	22331	0.027	1	22331	0.031	1	22331	0.058
12:00 - 13:00	1	22331	0.045	1	22331	0.045	1	22331	0.090
13:00 - 14:00	1	22331	0.036	1	22331	0.036	1	22331	0.072
14:00 - 15:00	1	22331	0.036	1	22331	0.036	1	22331	0.072
15:00 - 16:00	1	22331	0.022	1	22331	0.022	1	22331	0.044
16:00 - 17:00	1	22331	0.027	1	22331	0.027	1	22331	0.054
17:00 - 18:00	1	22331	0.018	1	22331	0.018	1	22331	0.036
18:00 - 19:00	1	22331	0.013	1	22331	0.013	1	22331	0.026
19:00 - 20:00	1	22331	0.009	1	22331	0.009	1	22331	0.018
20:00 - 21:00	1	22331	0.013	1	22331	0.013	1	22331	0.026
21:00 - 22:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
22:00 - 23:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
23:00 - 24:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
Total Rates:			0.362			0.362			0.724

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
07:00 - 08:00	1	22331	0.009	1	22331	0.000	1	22331	0.009
08:00 - 09:00	1	22331	0.004	1	22331	0.009	1	22331	0.013
09:00 - 10:00	1	22331	0.000	1	22331	0.004	1	22331	0.004
10:00 - 11:00	1	22331	0.004	1	22331	0.000	1	22331	0.004
11:00 - 12:00	1	22331	0.000	1	22331	0.004	1	22331	0.004
12:00 - 13:00	1	22331	0.004	1	22331	0.004	1	22331	0.008
13:00 - 14:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
14:00 - 15:00	1	22331	0.004	1	22331	0.000	1	22331	0.004
15:00 - 16:00	1	22331	0.000	1	22331	0.004	1	22331	0.004
16:00 - 17:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
17:00 - 18:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
18:00 - 19:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
19:00 - 20:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
20:00 - 21:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
21:00 - 22:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
22:00 - 23:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
23:00 - 24:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
Total Rates:			0.025			0.025			0.050

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
07:00 - 08:00	1	22331	0.004	1	22331	0.004	1	22331	0.008
08:00 - 09:00	1	22331	0.018	1	22331	0.013	1	22331	0.031
09:00 - 10:00	1	22331	0.045	1	22331	0.040	1	22331	0.085
10:00 - 11:00	1	22331	0.054	1	22331	0.045	1	22331	0.099
11:00 - 12:00	1	22331	0.054	1	22331	0.018	1	22331	0.072
12:00 - 13:00	1	22331	0.072	1	22331	0.072	1	22331	0.144
13:00 - 14:00	1	22331	0.112	1	22331	0.090	1	22331	0.202
14:00 - 15:00	1	22331	0.085	1	22331	0.107	1	22331	0.192
15:00 - 16:00	1	22331	0.103	1	22331	0.076	1	22331	0.179
16:00 - 17:00	1	22331	0.099	1	22331	0.094	1	22331	0.193
17:00 - 18:00	1	22331	0.072	1	22331	0.081	1	22331	0.153
18:00 - 19:00	1	22331	0.054	1	22331	0.063	1	22331	0.117
19:00 - 20:00	1	22331	0.036	1	22331	0.054	1	22331	0.090
20:00 - 21:00	1	22331	0.027	1	22331	0.031	1	22331	0.058
21:00 - 22:00	1	22331	0.013	1	22331	0.022	1	22331	0.035
22:00 - 23:00	1	22331	0.009	1	22331	0.009	1	22331	0.018
23:00 - 24:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
Total Rates:			0.857			0.819			1.676

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.255	1	22331	0.116	1	22331	0.371
07:00 - 08:00	1	22331	0.837	1	22331	0.466	1	22331	1.303
08:00 - 09:00	1	22331	1.679	1	22331	1.290	1	22331	2.969
09:00 - 10:00	1	22331	1.948	1	22331	1.281	1	22331	3.229
10:00 - 11:00	1	22331	3.018	1	22331	2.176	1	22331	5.194
11:00 - 12:00	1	22331	3.363	1	22331	2.315	1	22331	5.678
12:00 - 13:00	1	22331	2.924	1	22331	2.387	1	22331	5.311
13:00 - 14:00	1	22331	2.991	1	22331	3.336	1	22331	6.327
14:00 - 15:00	1	22331	2.754	1	22331	3.291	1	22331	6.045
15:00 - 16:00	1	22331	2.767	1	22331	2.879	1	22331	5.646
16:00 - 17:00	1	22331	2.566	1	22331	2.808	1	22331	5.374
17:00 - 18:00	1	22331	2.960	1	22331	2.799	1	22331	5.759
18:00 - 19:00	1	22331	2.906	1	22331	2.964	1	22331	5.870
19:00 - 20:00	1	22331	1.697	1	22331	2.557	1	22331	4.254
20:00 - 21:00	1	22331	1.424	1	22331	2.060	1	22331	3.484
21:00 - 22:00	1	22331	1.070	1	22331	1.608	1	22331	2.678
22:00 - 23:00	1	22331	0.905	1	22331	1.057	1	22331	1.962
23:00 - 24:00	1	22331	0.367	1	22331	0.591	1	22331	0.958
Total Rates:			36.431			35.981			72.412

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.022	1	22331	0.022	1	22331	0.044
07:00 - 08:00	1	22331	0.036	1	22331	0.040	1	22331	0.076
08:00 - 09:00	1	22331	0.031	1	22331	0.031	1	22331	0.062
09:00 - 10:00	1	22331	0.103	1	22331	0.081	1	22331	0.184
10:00 - 11:00	1	22331	0.099	1	22331	0.103	1	22331	0.202
11:00 - 12:00	1	22331	0.085	1	22331	0.103	1	22331	0.188
12:00 - 13:00	1	22331	0.170	1	22331	0.121	1	22331	0.291
13:00 - 14:00	1	22331	0.354	1	22331	0.296	1	22331	0.650
14:00 - 15:00	1	22331	0.372	1	22331	0.399	1	22331	0.771
15:00 - 16:00	1	22331	0.296	1	22331	0.318	1	22331	0.614
16:00 - 17:00	1	22331	0.273	1	22331	0.246	1	22331	0.519
17:00 - 18:00	1	22331	0.246	1	22331	0.228	1	22331	0.474
18:00 - 19:00	1	22331	0.202	1	22331	0.197	1	22331	0.399
19:00 - 20:00	1	22331	0.125	1	22331	0.116	1	22331	0.241
20:00 - 21:00	1	22331	0.112	1	22331	0.107	1	22331	0.219
21:00 - 22:00	1	22331	0.085	1	22331	0.072	1	22331	0.157
22:00 - 23:00	1	22331	0.045	1	22331	0.054	1	22331	0.099
23:00 - 24:00	1	22331	0.018	1	22331	0.031	1	22331	0.049
Total Rates:			2.674			2.565			5.239

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.022	1	22331	0.013	1	22331	0.035
07:00 - 08:00	1	22331	0.049	1	22331	0.031	1	22331	0.080
08:00 - 09:00	1	22331	0.022	1	22331	0.027	1	22331	0.049
09:00 - 10:00	1	22331	0.081	1	22331	0.067	1	22331	0.148
10:00 - 11:00	1	22331	0.081	1	22331	0.076	1	22331	0.157
11:00 - 12:00	1	22331	0.067	1	22331	0.072	1	22331	0.139
12:00 - 13:00	1	22331	0.121	1	22331	0.121	1	22331	0.242
13:00 - 14:00	1	22331	0.287	1	22331	0.260	1	22331	0.547
14:00 - 15:00	1	22331	0.278	1	22331	0.322	1	22331	0.600
15:00 - 16:00	1	22331	0.260	1	22331	0.269	1	22331	0.529
16:00 - 17:00	1	22331	0.206	1	22331	0.242	1	22331	0.448
17:00 - 18:00	1	22331	0.202	1	22331	0.197	1	22331	0.399
18:00 - 19:00	1	22331	0.184	1	22331	0.197	1	22331	0.381
19:00 - 20:00	1	22331	0.143	1	22331	0.184	1	22331	0.327
20:00 - 21:00	1	22331	0.085	1	22331	0.099	1	22331	0.184
21:00 - 22:00	1	22331	0.058	1	22331	0.054	1	22331	0.112
22:00 - 23:00	1	22331	0.040	1	22331	0.031	1	22331	0.071
23:00 - 24:00	1	22331	0.027	1	22331	0.022	1	22331	0.049
Total Rates:			2.213			2.284			4.497

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL TOTAL RAIL PASSENGERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.022	1	22331	0.018	1	22331	0.040
07:00 - 08:00	1	22331	0.058	1	22331	0.049	1	22331	0.107
08:00 - 09:00	1	22331	0.049	1	22331	0.040	1	22331	0.089
09:00 - 10:00	1	22331	0.112	1	22331	0.116	1	22331	0.228
10:00 - 11:00	1	22331	0.130	1	22331	0.099	1	22331	0.229
11:00 - 12:00	1	22331	0.143	1	22331	0.125	1	22331	0.268
12:00 - 13:00	1	22331	0.251	1	22331	0.143	1	22331	0.394
13:00 - 14:00	1	22331	0.452	1	22331	0.313	1	22331	0.765
14:00 - 15:00	1	22331	0.479	1	22331	0.461	1	22331	0.940
15:00 - 16:00	1	22331	0.354	1	22331	0.376	1	22331	0.730
16:00 - 17:00	1	22331	0.309	1	22331	0.390	1	22331	0.699
17:00 - 18:00	1	22331	0.318	1	22331	0.358	1	22331	0.676
18:00 - 19:00	1	22331	0.264	1	22331	0.300	1	22331	0.564
19:00 - 20:00	1	22331	0.193	1	22331	0.255	1	22331	0.448
20:00 - 21:00	1	22331	0.179	1	22331	0.193	1	22331	0.372
21:00 - 22:00	1	22331	0.125	1	22331	0.152	1	22331	0.277
22:00 - 23:00	1	22331	0.085	1	22331	0.112	1	22331	0.197
23:00 - 24:00	1	22331	0.027	1	22331	0.045	1	22331	0.072
Total Rates:			3.550			3.545			7.095

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.045	1	22331	0.031	1	22331	0.076
07:00 - 08:00	1	22331	0.107	1	22331	0.081	1	22331	0.188
08:00 - 09:00	1	22331	0.072	1	22331	0.067	1	22331	0.139
09:00 - 10:00	1	22331	0.193	1	22331	0.184	1	22331	0.377
10:00 - 11:00	1	22331	0.210	1	22331	0.175	1	22331	0.385
11:00 - 12:00	1	22331	0.210	1	22331	0.197	1	22331	0.407
12:00 - 13:00	1	22331	0.372	1	22331	0.264	1	22331	0.636
13:00 - 14:00	1	22331	0.739	1	22331	0.573	1	22331	1.312
14:00 - 15:00	1	22331	0.757	1	22331	0.784	1	22331	1.541
15:00 - 16:00	1	22331	0.613	1	22331	0.645	1	22331	1.258
16:00 - 17:00	1	22331	0.515	1	22331	0.631	1	22331	1.146
17:00 - 18:00	1	22331	0.519	1	22331	0.555	1	22331	1.074
18:00 - 19:00	1	22331	0.448	1	22331	0.497	1	22331	0.945
19:00 - 20:00	1	22331	0.336	1	22331	0.439	1	22331	0.775
20:00 - 21:00	1	22331	0.264	1	22331	0.291	1	22331	0.555
21:00 - 22:00	1	22331	0.184	1	22331	0.206	1	22331	0.390
22:00 - 23:00	1	22331	0.125	1	22331	0.143	1	22331	0.268
23:00 - 24:00	1	22331	0.054	1	22331	0.067	1	22331	0.121
Total Rates:			5.763			5.830			11.593

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.93

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.322	1	22331	0.170	1	22331	0.492
07:00 - 08:00	1	22331	0.985	1	22331	0.591	1	22331	1.576
08:00 - 09:00	1	22331	1.800	1	22331	1.402	1	22331	3.202
09:00 - 10:00	1	22331	2.288	1	22331	1.585	1	22331	3.873
10:00 - 11:00	1	22331	3.381	1	22331	2.499	1	22331	5.880
11:00 - 12:00	1	22331	3.712	1	22331	2.633	1	22331	6.345
12:00 - 13:00	1	22331	3.538	1	22331	2.844	1	22331	6.382
13:00 - 14:00	1	22331	4.196	1	22331	4.294	1	22331	8.490
14:00 - 15:00	1	22331	3.968	1	22331	4.581	1	22331	8.549
15:00 - 16:00	1	22331	3.779	1	22331	3.918	1	22331	7.697
16:00 - 17:00	1	22331	3.453	1	22331	3.779	1	22331	7.232
17:00 - 18:00	1	22331	3.797	1	22331	3.663	1	22331	7.460
18:00 - 19:00	1	22331	3.609	1	22331	3.721	1	22331	7.330
19:00 - 20:00	1	22331	2.194	1	22331	3.166	1	22331	5.360
20:00 - 21:00	1	22331	1.827	1	22331	2.490	1	22331	4.317
21:00 - 22:00	1	22331	1.352	1	22331	1.908	1	22331	3.260
22:00 - 23:00	1	22331	1.084	1	22331	1.263	1	22331	2.347
23:00 - 24:00	1	22331	0.439	1	22331	0.690	1	22331	1.129
Total Rates:			45.724			45.197			90.921

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL CARS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.197	1	22331	0.094	1	22331	0.291
07:00 - 08:00	1	22331	0.511	1	22331	0.309	1	22331	0.820
08:00 - 09:00	1	22331	1.066	1	22331	0.788	1	22331	1.854
09:00 - 10:00	1	22331	1.223	1	22331	0.824	1	22331	2.047
10:00 - 11:00	1	22331	1.912	1	22331	1.384	1	22331	3.296
11:00 - 12:00	1	22331	2.024	1	22331	1.505	1	22331	3.529
12:00 - 13:00	1	22331	1.840	1	22331	1.482	1	22331	3.322
13:00 - 14:00	1	22331	1.827	1	22331	2.158	1	22331	3.985
14:00 - 15:00	1	22331	1.666	1	22331	2.064	1	22331	3.730
15:00 - 16:00	1	22331	1.666	1	22331	1.800	1	22331	3.466
16:00 - 17:00	1	22331	1.590	1	22331	1.769	1	22331	3.359
17:00 - 18:00	1	22331	1.805	1	22331	1.751	1	22331	3.556
18:00 - 19:00	1	22331	1.778	1	22331	1.832	1	22331	3.610
19:00 - 20:00	1	22331	1.128	1	22331	1.540	1	22331	2.668
20:00 - 21:00	1	22331	0.918	1	22331	1.285	1	22331	2.203
21:00 - 22:00	1	22331	0.676	1	22331	0.999	1	22331	1.675
22:00 - 23:00	1	22331	0.587	1	22331	0.690	1	22331	1.277
23:00 - 24:00	1	22331	0.242	1	22331	0.372	1	22331	0.614
Total Rates:			22.656			22.646			45.302

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL LGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
07:00 - 08:00	1	22331	0.031	1	22331	0.022	1	22331	0.053
08:00 - 09:00	1	22331	0.040	1	22331	0.040	1	22331	0.080
09:00 - 10:00	1	22331	0.049	1	22331	0.045	1	22331	0.094
10:00 - 11:00	1	22331	0.040	1	22331	0.045	1	22331	0.085
11:00 - 12:00	1	22331	0.063	1	22331	0.054	1	22331	0.117
12:00 - 13:00	1	22331	0.036	1	22331	0.040	1	22331	0.076
13:00 - 14:00	1	22331	0.040	1	22331	0.040	1	22331	0.080
14:00 - 15:00	1	22331	0.040	1	22331	0.045	1	22331	0.085
15:00 - 16:00	1	22331	0.040	1	22331	0.036	1	22331	0.076
16:00 - 17:00	1	22331	0.013	1	22331	0.022	1	22331	0.035
17:00 - 18:00	1	22331	0.031	1	22331	0.027	1	22331	0.058
18:00 - 19:00	1	22331	0.018	1	22331	0.018	1	22331	0.036
19:00 - 20:00	1	22331	0.013	1	22331	0.018	1	22331	0.031
20:00 - 21:00	1	22331	0.000	1	22331	0.009	1	22331	0.009
21:00 - 22:00	1	22331	0.004	1	22331	0.004	1	22331	0.008
22:00 - 23:00	1	22331	0.009	1	22331	0.009	1	22331	0.018
23:00 - 24:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
Total Rates:			0.467			0.474			0.941

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL MOTOR CYCLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
07:00 - 08:00	1	22331	0.013	1	22331	0.000	1	22331	0.013
08:00 - 09:00	1	22331	0.004	1	22331	0.013	1	22331	0.017
09:00 - 10:00	1	22331	0.004	1	22331	0.000	1	22331	0.004
10:00 - 11:00	1	22331	0.004	1	22331	0.009	1	22331	0.013
11:00 - 12:00	1	22331	0.004	1	22331	0.009	1	22331	0.013
12:00 - 13:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
13:00 - 14:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
14:00 - 15:00	1	22331	0.000	1	22331	0.004	1	22331	0.004
15:00 - 16:00	1	22331	0.004	1	22331	0.000	1	22331	0.004
16:00 - 17:00	1	22331	0.000	1	22331	0.004	1	22331	0.004
17:00 - 18:00	1	22331	0.009	1	22331	0.000	1	22331	0.009
18:00 - 19:00	1	22331	0.004	1	22331	0.004	1	22331	0.008
19:00 - 20:00	1	22331	0.000	1	22331	0.004	1	22331	0.004
20:00 - 21:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
21:00 - 22:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
22:00 - 23:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
23:00 - 24:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
Total Rates:			0.046			0.047			0.093

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/O - LEISURE PARK
MULTI-MODAL Scooters
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
07:00 - 08:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
08:00 - 09:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
09:00 - 10:00	1	22331	0.013	1	22331	0.004	1	22331	0.017
10:00 - 11:00	1	22331	0.018	1	22331	0.013	1	22331	0.031
11:00 - 12:00	1	22331	0.022	1	22331	0.009	1	22331	0.031
12:00 - 13:00	1	22331	0.031	1	22331	0.031	1	22331	0.062
13:00 - 14:00	1	22331	0.054	1	22331	0.013	1	22331	0.067
14:00 - 15:00	1	22331	0.049	1	22331	0.045	1	22331	0.094
15:00 - 16:00	1	22331	0.040	1	22331	0.027	1	22331	0.067
16:00 - 17:00	1	22331	0.027	1	22331	0.022	1	22331	0.049
17:00 - 18:00	1	22331	0.022	1	22331	0.036	1	22331	0.058
18:00 - 19:00	1	22331	0.009	1	22331	0.031	1	22331	0.040
19:00 - 20:00	1	22331	0.009	1	22331	0.022	1	22331	0.031
20:00 - 21:00	1	22331	0.009	1	22331	0.027	1	22331	0.036
21:00 - 22:00	1	22331	0.004	1	22331	0.022	1	22331	0.026
22:00 - 23:00	1	22331	0.000	1	22331	0.004	1	22331	0.004
23:00 - 24:00	1	22331	0.000	1	22331	0.000	1	22331	0.000
Total Rates:			0.307			0.306			0.613

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use: 07 - LEISURE

Category: U - PLAY CENTRE

Selected Vehicle Type: Total Vehicles

Selected regions and areas:

01	**GREATER LONDON**		
	BE	BEXLEY	1 day
03	**SOUTH WEST**		
	PL	PLYMOUTH	1 day

This section displays the number of survey days per TRICS® sub-region in the selected set.

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Primary Filtering Selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	GFA
Actual Range:	925 to 1500 (units:sqm)
Range Selected by User:	925 to 1500 (units:sqm)
Parking Spaces Range:	50 - 117

Public Transport Provision:

Selection by:	All Surveys Included
Date Range:	01/01/02 to 28/06/24

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Thursday	1 days
Tuesday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	2
Direction ATC Count	0

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines

Selected Locations:

Neighbourhood Centre (PPS6 Local Centre)	1 days
Suburban Area (PPS6 Out of Centre)	1 days

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	1 days
No Sub Category	1 days

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicle Counts:

Servicing vehicles Excluded	2 days

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Secondary Filtering Selection:

Use Class:

E(d)	2 surveys

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

924 - 1000

Population within 1 mile:

25,001 to 50,000	2 surveys

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

250,001 to 500,000	1 surveys
500,001 or More	1 surveys

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 surveys
1.1 to 1.5	1 surveys

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

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Petrol filling station:

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

No	2 surveys

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	2 surveys

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

COVID-19 Restrictions:

No

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1	**BE-07-U-01**	**PLAY CENTRE**	**BEXLEY**

COPERS COPE ROAD
NEW BECKENHAM
Suburban Area (PPS6 Out of Centre)
No Sub Category
Site area: 0.5 hect
Survey date: Thursday 26/10/2006 Survey Type: Manual

2	**PL-07-U-01**	**PLAY CENTRE**	**PLYMOUTH**

TAMERTON FOLIOT ROAD
PLYMOUTH
CROWNHILL
Neighbourhood Centre (PPS6 Local Centre)
Industrial Zone
Site area: 0.25 hect
Survey date: Tuesday 27/10/2009 Survey Type: Manual

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

Total Vehicles

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.603**	**0.258**	**0.861**
09:00-10:00	**2**	**1330**	**2.217**	**0.188**	**2.405**
10:00-11:00	**2**	**1330**	**2.743**	**0.676**	**3.419**
11:00-12:00	**2**	**1330**	**1.841**	**0.676**	**2.517**
12:00-13:00	**2**	**1330**	**1.954**	**2.706**	**4.660**
13:00-14:00	**2**	**1330**	**3.157**	**2.668**	**5.825**
14:00-15:00	**2**	**1330**	**2.706**	**2.330**	**5.036**
15:00-16:00	**2**	**1330**	**1.353**	**2.518**	**3.871**
16:00-17:00	**2**	**1330**	**0.714**	**2.743**	**3.457**
17:00-18:00	**2**	**1330**	**0.601**	**1.879**	**2.480**
18:00-19:00	**2**	**1330**	**0.301**	**1.578**	**1.879**
19:00-20:00	**2**	**1330**	**0.038**	**0.150**	**0.188**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**18.228**	**18.370**	**36.598**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	26/10/2006 - 27/10/2009
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

Total People

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**1.206**	**0.172**	**1.378**
09:00-10:00	**2**	**1330**	**7.478**	**0.188**	**7.666**
10:00-11:00	**2**	**1330**	**8.944**	**1.917**	**10.861**
11:00-12:00	**2**	**1330**	**6.464**	**2.255**	**8.719**
12:00-13:00	**2**	**1330**	**8.192**	**9.696**	**17.888**
13:00-14:00	**2**	**1330**	**11.236**	**8.380**	**19.616**
14:00-15:00	**2**	**1330**	**9.282**	**7.704**	**16.986**
15:00-16:00	**2**	**1330**	**4.510**	**8.944**	**13.454**
16:00-17:00	**2**	**1330**	**2.668**	**10.297**	**12.965**
17:00-18:00	**2**	**1330**	**1.278**	**6.351**	**7.629**
18:00-19:00	**2**	**1330**	**0.188**	**5.336**	**5.524**
19:00-20:00	**2**	**1330**	**0.000**	**0.338**	**0.338**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**61.446**	**61.578**	**123.024**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	26/10/2006 - 27/10/2009
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

Cyclists

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.000**	**0.000**	**0.000**
09:00-10:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
10:00-11:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
11:00-12:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
12:00-13:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
13:00-14:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
14:00-15:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
15:00-16:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
16:00-17:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
17:00-18:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
18:00-19:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
19:00-20:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.000**	**0.000**	**0.000**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	N/A - N/A
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

PSVs

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.000**	**0.000**	**0.000**
09:00-10:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
10:00-11:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
11:00-12:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
12:00-13:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
13:00-14:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
14:00-15:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
15:00-16:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
16:00-17:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
17:00-18:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
18:00-19:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
19:00-20:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.000**	**0.000**	**0.000**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	N/A - N/A
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

OGVs

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.000**	**0.000**	**0.000**
09:00-10:00	**2**	**1330**	**0.038**	**0.038**	**0.076**
10:00-11:00	**2**	**1330**	**0.038**	**0.038**	**0.076**
11:00-12:00	**2**	**1330**	**0.038**	**0.038**	**0.076**
12:00-13:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
13:00-14:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
14:00-15:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
15:00-16:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
16:00-17:00	**2**	**1330**	**0.038**	**0.038**	**0.076**
17:00-18:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
18:00-19:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
19:00-20:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.152**	**0.152**	**0.304**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	26/10/2006 - 26/10/2006
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

Taxis

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.000**	**0.000**	**0.000**
09:00-10:00	**2**	**1330**	**0.038**	**0.038**	**0.076**
10:00-11:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
11:00-12:00	**2**	**1330**	**0.038**	**0.038**	**0.076**
12:00-13:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
13:00-14:00	**2**	**1330**	**0.038**	**0.038**	**0.076**
14:00-15:00	**2**	**1330**	**0.038**	**0.038**	**0.076**
15:00-16:00	**2**	**1330**	**0.038**	**0.038**	**0.076**
16:00-17:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
17:00-18:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
18:00-19:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
19:00-20:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.190**	**0.190**	**0.380**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	26/10/2006 - 27/10/2009
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

Cars

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.000**	**0.000**	**0.000**
09:00-10:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
10:00-11:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
11:00-12:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
12:00-13:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
13:00-14:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
14:00-15:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
15:00-16:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
16:00-17:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
17:00-18:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
18:00-19:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
19:00-20:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.000**	**0.000**	**0.000**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	N/A - N/A
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

LGVs

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.000**	**0.000**	**0.000**
09:00-10:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
10:00-11:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
11:00-12:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
12:00-13:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
13:00-14:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
14:00-15:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
15:00-16:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
16:00-17:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
17:00-18:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
18:00-19:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
19:00-20:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.000**	**0.000**	**0.000**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	N/A - N/A
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

Motorcycles

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.000**	**0.000**	**0.000**
09:00-10:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
10:00-11:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
11:00-12:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
12:00-13:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
13:00-14:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
14:00-15:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
15:00-16:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
16:00-17:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
17:00-18:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
18:00-19:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
19:00-20:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.000**	**0.000**	**0.000**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	N/A - N/A
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

Vehicle Occupants

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.861**	**0.172**	**1.033**
09:00-10:00	**2**	**1330**	**7.103**	**0.150**	**7.253**
10:00-11:00	**2**	**1330**	**8.643**	**1.766**	**10.409**
11:00-12:00	**2**	**1330**	**6.013**	**1.992**	**8.005**
12:00-13:00	**2**	**1330**	**6.614**	**9.132**	**15.746**
13:00-14:00	**2**	**1330**	**9.808**	**8.005**	**17.813**
14:00-15:00	**2**	**1330**	**8.906**	**6.426**	**15.332**
15:00-16:00	**2**	**1330**	**4.247**	**7.478**	**11.725**
16:00-17:00	**2**	**1330**	**1.879**	**9.207**	**11.086**
17:00-18:00	**2**	**1330**	**1.278**	**6.013**	**7.291**
18:00-19:00	**2**	**1330**	**0.188**	**4.923**	**5.111**
19:00-20:00	**2**	**1330**	**0.000**	**0.263**	**0.263**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**55.540**	**55.527**	**111.067**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	26/10/2006 - 27/10/2009
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

Pedestrians

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.000**	**0.000**	**0.000**
09:00-10:00	**2**	**1330**	**0.225**	**0.038**	**0.263**
10:00-11:00	**2**	**1330**	**0.301**	**0.150**	**0.451**
11:00-12:00	**2**	**1330**	**0.451**	**0.150**	**0.601**
12:00-13:00	**2**	**1330**	**1.353**	**0.564**	**1.917**
13:00-14:00	**2**	**1330**	**1.390**	**0.338**	**1.728**
14:00-15:00	**2**	**1330**	**0.376**	**0.827**	**1.203**
15:00-16:00	**2**	**1330**	**0.113**	**1.353**	**1.466**
16:00-17:00	**2**	**1330**	**0.413**	**0.676**	**1.089**
17:00-18:00	**2**	**1330**	**0.000**	**0.188**	**0.188**
18:00-19:00	**2**	**1330**	**0.000**	**0.301**	**0.301**
19:00-20:00	**2**	**1330**	**0.000**	**0.075**	**0.075**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**4.622**	**4.660**	**9.282**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	26/10/2006 - 27/10/2009
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

Public Transport Users

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.345**	**0.000**	**0.345**
09:00-10:00	**2**	**1330**	**0.150**	**0.000**	**0.150**
10:00-11:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
11:00-12:00	**2**	**1330**	**0.000**	**0.113**	**0.113**
12:00-13:00	**2**	**1330**	**0.225**	**0.000**	**0.225**
13:00-14:00	**2**	**1330**	**0.038**	**0.038**	**0.076**
14:00-15:00	**2**	**1330**	**0.000**	**0.451**	**0.451**
15:00-16:00	**2**	**1330**	**0.150**	**0.113**	**0.263**
16:00-17:00	**2**	**1330**	**0.376**	**0.413**	**0.789**
17:00-18:00	**2**	**1330**	**0.000**	**0.150**	**0.150**
18:00-19:00	**2**	**1330**	**0.000**	**0.113**	**0.113**
19:00-20:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**1.284**	**1.391**	**2.675**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	26/10/2006 - 27/10/2009
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

Bus/Tram Passengers

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.086**	**0.000**	**0.086**
09:00-10:00	**2**	**1330**	**0.113**	**0.000**	**0.113**
10:00-11:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
11:00-12:00	**2**	**1330**	**0.000**	**0.113**	**0.113**
12:00-13:00	**2**	**1330**	**0.225**	**0.000**	**0.225**
13:00-14:00	**2**	**1330**	**0.038**	**0.038**	**0.076**
14:00-15:00	**2**	**1330**	**0.000**	**0.451**	**0.451**
15:00-16:00	**2**	**1330**	**0.150**	**0.075**	**0.225**
16:00-17:00	**2**	**1330**	**0.376**	**0.413**	**0.789**
17:00-18:00	**2**	**1330**	**0.000**	**0.150**	**0.150**
18:00-19:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
19:00-20:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.988**	**1.240**	**2.228**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	26/10/2006 - 27/10/2009
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

Coach Passengers

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.000**	**0.000**	**0.000**
09:00-10:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
10:00-11:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
11:00-12:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
12:00-13:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
13:00-14:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
14:00-15:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
15:00-16:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
16:00-17:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
17:00-18:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
18:00-19:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
19:00-20:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.000**	**0.000**	**0.000**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	N/A - N/A
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE for Land Use 07 - LEISURE/U - PLAY CENTRE

Total Rail Passengers

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00					
07:00-08:00					
08:00-09:00	**1**	**1161**	**0.258**	**0.000**	**0.258**
09:00-10:00	**2**	**1330**	**0.038**	**0.000**	**0.038**
10:00-11:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
11:00-12:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
12:00-13:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
13:00-14:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
14:00-15:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
15:00-16:00	**2**	**1330**	**0.000**	**0.038**	**0.038**
16:00-17:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
17:00-18:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
18:00-19:00	**2**	**1330**	**0.000**	**0.113**	**0.113**
19:00-20:00	**2**	**1330**	**0.000**	**0.000**	**0.000**
20:00-21:00					
21:00-22:00					
22:00-23:00					
23:00-00:00					
Total Rates:			**0.296**	**0.151**	**0.447**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter Summary:

Trip rate parameter range selected:	925 - 1500 (units: sqm)
Survey date date range:	26/10/2006 - 26/10/2006
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : B - RESTAURANTS
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

03	SOUTH WEST		
	BC	BOURNEMOUTH CHRISTCHURCH & POOLE	1 days
	DC	DORSET	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS		
	DY	DERBY	2 days
	LN	LINCOLNSHIRE	1 days
	LR	LEICESTER	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	2 days
	WM	WEST MIDLANDS	2 days
08	NORTH WEST		
	EC	CHESHIRE EAST	1 days
	GM	GREATER MANCHESTER	1 days
	MS	MERSEYSIDE	1 days
09	NORTH		
	CU	CUMBERLAND	1 days
	DH	DURHAM	1 days
10	WALES		
	CF	CARDIFF	1 days
11	SCOTLAND		
	FA	FALKIRK	1 days
	GC	GLASGOW CITY	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	Gross floor area
Actual Range:	110 to 2400 (units: sqm)
Range Selected by User:	110 to 2400 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/05 to 23/06/23

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	2 days
Wednesday	1 days
Thursday	4 days
Friday	7 days
Saturday	4 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	19 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Town Centre	12
Edge of Town Centre	7

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Commercial Zone	1
Development Zone	5
Retail Zone	1
Built-Up Zone	5
High Street	5
No Sub Category	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	7 days - Selected
Servicing vehicles Excluded	12 days - Selected

Secondary Filtering selection:

Use Class:

E(b)	19 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
10,001 to 15,000	2 days
15,001 to 20,000	2 days
20,001 to 25,000	6 days
25,001 to 50,000	8 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	1 days
75,001 to 100,000	5 days
100,001 to 125,000	1 days
125,001 to 250,000	4 days
250,001 to 500,000	4 days
500,001 or More	4 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.5 or Less	2 days
0.6 to 1.0	11 days
1.1 to 1.5	6 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	19 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	19 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 BC-06-B-01 PIZZA EXPRESS BOURNEMOUTH CHRISTCHURCH & POOLE
HIGH STREET
POOLE

Town Centre
No Sub Category
Total Gross floor area: 178 sqm
Survey date: FRIDAY *18/07/08* *Survey Type: MANUAL*

2 CA-06-B-02 WILDWOOD CAMBRIDGESHIRE
BRIDGE STREET
CAMBRIDGE

Town Centre
High Street
Total Gross floor area: 370 sqm
Survey date: FRIDAY *23/06/23* *Survey Type: MANUAL*

3 CF-06-B-01 LA TASCA CARDIFF
CAROLINE STREET
CARDIFF

Town Centre
Retail Zone
Total Gross floor area: 650 sqm
Survey date: FRIDAY *12/10/07* *Survey Type: MANUAL*

4 CU-06-B-01 ITALIAN RESTAURANT CUMBERLAND
MARKET STREET
CARLISLE

Town Centre
Built-Up Zone
Total Gross floor area: 150 sqm
Survey date: SATURDAY *25/06/16* *Survey Type: MANUAL*

5 DC-06-B-02 PREZZO DORSET
HIGH WEST STREET
DORCHESTER

Town Centre
High Street
Total Gross floor area: 525 sqm
Survey date: FRIDAY *16/09/16* *Survey Type: MANUAL*

6 DH-06-B-01 CHIQUITO DURHAM
FREEMANS PLACE
DURHAM
MILLENIUM PLACE
Edge of Town Centre
Development Zone
Total Gross floor area: 500 sqm
Survey date: THURSDAY *04/12/08* *Survey Type: MANUAL*

7 DY-06-B-01 LITTLE FRANKIES DERBY
CORN MARKET
DERBY

Town Centre
Built-Up Zone
Total Gross floor area: 425 sqm
Survey date: SATURDAY *20/06/09* *Survey Type: MANUAL*

8 DY-06-B-04 FRENCH RESTAURANT DERBY
FRIAR GATE
DERBY

Town Centre
High Street
Total Gross floor area: 180 sqm
Survey date: WEDNESDAY *25/09/19* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

9 EC-06-B-02 PIZZA EXPRESS CHESHIRE EAST
MARKET PLACE
MACCLESFIELD

Town Centre
Built-Up Zone
Total Gross floor area: 321 sqm
Survey date: SATURDAY 11/11/17 Survey Type: MANUAL

10 FA-06-B-01 FRANKIE & BENNYS FALKIRK
STIRLING ROAD
FALKIRK

Edge of Town Centre
No Sub Category
Total Gross floor area: 425 sqm
Survey date: FRIDAY 27/04/07 Survey Type: MANUAL

11 GC-06-B-03 INDIAN RESTAURANT GLASGOW CITY
ALBION STREET
GLASGOW
MERCHANT CITY
Town Centre
Development Zone
Total Gross floor area: 2400 sqm
Survey date: THURSDAY 26/06/08 Survey Type: MANUAL

12 GM-06-B-03 PIZZA HUT GREATER MANCHESTER
WELLINGTON ROAD STH.
STOCKPORT

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 900 sqm
Survey date: MONDAY 23/11/09 Survey Type: MANUAL

13 LN-06-B-01 PREZZO LINCOLNSHIRE
BRAYFORD WHARF NORTH
LINCOLN
BRAYFORD WHARF
Edge of Town Centre
Development Zone
Total Gross floor area: 1136 sqm
Survey date: TUESDAY 10/10/17 Survey Type: MANUAL

14 LR-06-B-01 THAI RESTAURANT LEICESTER
BRAUNSTONE GATE
LEICESTER

Edge of Town Centre
Commercial Zone
Total Gross floor area: 450 sqm
Survey date: SATURDAY 19/05/07 Survey Type: MANUAL

15 MS-06-B-01 INDIAN RESTAURANT MERSEYSIDE
GOWER STREET
LIVERPOOL
ALBERT DOCK
Edge of Town Centre
Development Zone
Total Gross floor area: 600 sqm
Survey date: FRIDAY 22/06/07 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

16 SH-06-B-01 THE BEEFY BOYS SHROPSHIRE
HIGH STREET
SHREWSBURY

Town Centre
High Street
Total Gross floor area: 110 sqm
Survey date: THURSDAY *15/06/23* *Survey Type: MANUAL*

17 SH-06-B-02 ASK ITALIAN SHROPSHIRE
HIGH STREET
SHREWSBURY

Town Centre
High Street
Total Gross floor area: 402 sqm
Survey date: TUESDAY *20/06/23* *Survey Type: MANUAL*

18 WM-06-B-04 WAGAMAMA WEST MIDLANDS
EDGBASTON STREET
BIRMINGHAM
BULL RING
Town Centre
Development Zone
Total Gross floor area: 275 sqm
Survey date: FRIDAY *28/11/08* *Survey Type: MANUAL*

19 WM-06-B-05 AKBARS WEST MIDLANDS
THE BUTTS
COVENTRY

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 600 sqm
Survey date: THURSDAY *17/11/16* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 3.15

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	425	0.000	1	425	0.000	1	425	0.000
10:00 - 11:00	10	612	0.408	10	612	0.098	10	612	0.506
11:00 - 12:00	17	559	0.569	17	559	0.284	17	559	0.853
12:00 - 13:00	18	555	1.420	18	555	0.360	18	555	1.780
13:00 - 14:00	18	555	1.480	18	555	1.120	18	555	2.600
14:00 - 15:00	18	555	1.020	18	555	1.450	18	555	2.470
15:00 - 16:00	18	555	0.980	18	555	1.180	18	555	2.160
16:00 - 17:00	19	558	1.019	19	558	0.764	19	558	1.783
17:00 - 18:00	19	558	1.434	19	558	1.066	19	558	2.500
18:00 - 19:00	19	558	1.953	19	558	1.331	19	558	3.284
19:00 - 20:00	19	558	2.331	19	558	2.010	19	558	4.341
20:00 - 21:00	19	558	1.302	19	558	1.802	19	558	3.104
21:00 - 22:00	19	558	0.906	19	558	1.746	19	558	2.652
22:00 - 23:00	17	593	0.486	17	593	1.458	17	593	1.944
23:00 - 24:00	13	653	0.106	13	653	0.448	13	653	0.554
Total Rates:			15.414			15.117			30.531

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	110 - 2400 (units: sqm)
Survey date date range:	01/01/05 - 23/06/23
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	4
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL TAXIS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	425	0.000	1	425	0.000	1	425	0.000
10:00 - 11:00	10	612	0.000	10	612	0.000	10	612	0.000
11:00 - 12:00	17	559	0.000	17	559	0.000	17	559	0.000
12:00 - 13:00	18	555	0.050	18	555	0.050	18	555	0.100
13:00 - 14:00	18	555	0.050	18	555	0.050	18	555	0.100
14:00 - 15:00	18	555	0.030	18	555	0.030	18	555	0.060
15:00 - 16:00	18	555	0.010	18	555	0.010	18	555	0.020
16:00 - 17:00	19	558	0.028	19	558	0.009	19	558	0.037
17:00 - 18:00	19	558	0.075	19	558	0.075	19	558	0.150
18:00 - 19:00	19	558	0.142	19	558	0.151	19	558	0.293
19:00 - 20:00	19	558	0.293	19	558	0.283	19	558	0.576
20:00 - 21:00	19	558	0.208	19	558	0.226	19	558	0.434
21:00 - 22:00	19	558	0.208	19	558	0.208	19	558	0.416
22:00 - 23:00	17	593	0.149	17	593	0.139	17	593	0.288
23:00 - 24:00	13	653	0.082	13	653	0.094	13	653	0.176
Total Rates:			1.325			1.325			2.650

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	425	0.000	1	425	0.000	1	425	0.000
10:00 - 11:00	10	612	0.033	10	612	0.033	10	612	0.066
11:00 - 12:00	17	559	0.000	17	559	0.000	17	559	0.000
12:00 - 13:00	18	555	0.000	18	555	0.000	18	555	0.000
13:00 - 14:00	18	555	0.000	18	555	0.000	18	555	0.000
14:00 - 15:00	18	555	0.000	18	555	0.000	18	555	0.000
15:00 - 16:00	18	555	0.000	18	555	0.000	18	555	0.000
16:00 - 17:00	19	558	0.000	19	558	0.000	19	558	0.000
17:00 - 18:00	19	558	0.000	19	558	0.000	19	558	0.000
18:00 - 19:00	19	558	0.000	19	558	0.000	19	558	0.000
19:00 - 20:00	19	558	0.000	19	558	0.000	19	558	0.000
20:00 - 21:00	19	558	0.000	19	558	0.000	19	558	0.000
21:00 - 22:00	19	558	0.000	19	558	0.000	19	558	0.000
22:00 - 23:00	17	593	0.000	17	593	0.000	17	593	0.000
23:00 - 24:00	13	653	0.000	13	653	0.000	13	653	0.000
Total Rates:			0.033			0.033			0.066

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	425	0.000	1	425	0.000	1	425	0.000
10:00 - 11:00	10	612	0.000	10	612	0.000	10	612	0.000
11:00 - 12:00	17	559	0.000	17	559	0.000	17	559	0.000
12:00 - 13:00	18	555	0.010	18	555	0.000	18	555	0.010
13:00 - 14:00	18	555	0.010	18	555	0.000	18	555	0.010
14:00 - 15:00	18	555	0.010	18	555	0.020	18	555	0.030
15:00 - 16:00	18	555	0.000	18	555	0.000	18	555	0.000
16:00 - 17:00	19	558	0.009	19	558	0.019	19	558	0.028
17:00 - 18:00	19	558	0.000	19	558	0.000	19	558	0.000
18:00 - 19:00	19	558	0.019	19	558	0.000	19	558	0.019
19:00 - 20:00	19	558	0.028	19	558	0.028	19	558	0.056
20:00 - 21:00	19	558	0.019	19	558	0.009	19	558	0.028
21:00 - 22:00	19	558	0.000	19	558	0.028	19	558	0.028
22:00 - 23:00	17	593	0.000	17	593	0.000	17	593	0.000
23:00 - 24:00	13	653	0.000	13	653	0.000	13	653	0.000
Total Rates:			0.105			0.104			0.209

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	425	0.000	1	425	0.000	1	425	0.000
10:00 - 11:00	10	612	0.523	10	612	0.098	10	612	0.621
11:00 - 12:00	17	559	0.948	17	559	0.400	17	559	1.348
12:00 - 13:00	18	555	2.701	18	555	0.620	18	555	3.321
13:00 - 14:00	18	555	2.841	18	555	2.231	18	555	5.072
14:00 - 15:00	18	555	1.911	18	555	2.811	18	555	4.722
15:00 - 16:00	18	555	1.640	18	555	2.121	18	555	3.761
16:00 - 17:00	19	558	2.274	19	558	1.368	19	558	3.642
17:00 - 18:00	19	558	3.067	19	558	2.076	19	558	5.143
18:00 - 19:00	19	558	3.878	19	558	2.831	19	558	6.709
19:00 - 20:00	19	558	4.511	19	558	3.680	19	558	8.191
20:00 - 21:00	19	558	2.369	19	558	3.275	19	558	5.644
21:00 - 22:00	19	558	1.302	19	558	3.501	19	558	4.803
22:00 - 23:00	17	593	0.575	17	593	2.548	17	593	3.123
23:00 - 24:00	13	653	0.082	13	653	0.872	13	653	0.954
Total Rates:			28.622			28.432			57.054

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	425	0.000	1	425	0.000	1	425	0.000
10:00 - 11:00	10	612	0.147	10	612	0.082	10	612	0.229
11:00 - 12:00	17	559	0.579	17	559	0.274	17	559	0.853
12:00 - 13:00	18	555	1.330	18	555	0.550	18	555	1.880
13:00 - 14:00	18	555	1.000	18	555	1.110	18	555	2.110
14:00 - 15:00	18	555	0.830	18	555	1.410	18	555	2.240
15:00 - 16:00	18	555	0.660	18	555	0.940	18	555	1.600
16:00 - 17:00	19	558	0.661	19	558	0.727	19	558	1.388
17:00 - 18:00	19	558	1.085	19	558	0.472	19	558	1.557
18:00 - 19:00	19	558	1.708	19	558	0.859	19	558	2.567
19:00 - 20:00	19	558	1.944	19	558	1.415	19	558	3.359
20:00 - 21:00	19	558	1.132	19	558	1.274	19	558	2.406
21:00 - 22:00	19	558	0.425	19	558	1.614	19	558	2.039
22:00 - 23:00	17	593	0.278	17	593	1.130	17	593	1.408
23:00 - 24:00	13	653	0.153	13	653	0.660	13	653	0.813
Total Rates:			11.932			12.517			24.449

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	425	0.235	1	425	0.000	1	425	0.235
10:00 - 11:00	10	612	0.147	10	612	0.033	10	612	0.180
11:00 - 12:00	17	559	0.263	17	559	0.105	17	559	0.368
12:00 - 13:00	18	555	0.520	18	555	0.190	18	555	0.710
13:00 - 14:00	18	555	0.510	18	555	0.410	18	555	0.920
14:00 - 15:00	18	555	0.290	18	555	0.540	18	555	0.830
15:00 - 16:00	18	555	0.280	18	555	0.420	18	555	0.700
16:00 - 17:00	19	558	0.321	19	558	0.349	19	558	0.670
17:00 - 18:00	19	558	0.453	19	558	0.302	19	558	0.755
18:00 - 19:00	19	558	0.604	19	558	0.425	19	558	1.029
19:00 - 20:00	19	558	0.689	19	558	0.377	19	558	1.066
20:00 - 21:00	19	558	0.330	19	558	0.434	19	558	0.764
21:00 - 22:00	19	558	0.104	19	558	0.538	19	558	0.642
22:00 - 23:00	17	593	0.010	17	593	0.327	17	593	0.337
23:00 - 24:00	13	653	0.000	13	653	0.082	13	653	0.082
Total Rates:			4.756			4.532			9.288

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL TOTAL RAIL PASSENGERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	425	0.000	1	425	0.000	1	425	0.000
10:00 - 11:00	10	612	0.000	10	612	0.000	10	612	0.000
11:00 - 12:00	17	559	0.084	17	559	0.021	17	559	0.105
12:00 - 13:00	18	555	0.560	18	555	0.180	18	555	0.740
13:00 - 14:00	18	555	0.310	18	555	0.270	18	555	0.580
14:00 - 15:00	18	555	0.240	18	555	0.430	18	555	0.670
15:00 - 16:00	18	555	0.230	18	555	0.260	18	555	0.490
16:00 - 17:00	19	558	0.189	19	558	0.132	19	558	0.321
17:00 - 18:00	19	558	0.160	19	558	0.085	19	558	0.245
18:00 - 19:00	19	558	0.359	19	558	0.085	19	558	0.444
19:00 - 20:00	19	558	0.500	19	558	0.226	19	558	0.726
20:00 - 21:00	19	558	0.170	19	558	0.236	19	558	0.406
21:00 - 22:00	19	558	0.047	19	558	0.189	19	558	0.236
22:00 - 23:00	17	593	0.040	17	593	0.198	17	593	0.238
23:00 - 24:00	13	653	0.000	13	653	0.071	13	653	0.071
Total Rates:			2.889			2.383			5.272

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	425	0.235	1	425	0.000	1	425	0.235
10:00 - 11:00	10	612	0.147	10	612	0.033	10	612	0.180
11:00 - 12:00	17	559	0.347	17	559	0.126	17	559	0.473
12:00 - 13:00	18	555	1.080	18	555	0.370	18	555	1.450
13:00 - 14:00	18	555	0.820	18	555	0.680	18	555	1.500
14:00 - 15:00	18	555	0.530	18	555	0.970	18	555	1.500
15:00 - 16:00	18	555	0.510	18	555	0.680	18	555	1.190
16:00 - 17:00	19	558	0.510	19	558	0.481	19	558	0.991
17:00 - 18:00	19	558	0.613	19	558	0.387	19	558	1.000
18:00 - 19:00	19	558	0.963	19	558	0.510	19	558	1.473
19:00 - 20:00	19	558	1.189	19	558	0.604	19	558	1.793
20:00 - 21:00	19	558	0.500	19	558	0.670	19	558	1.170
21:00 - 22:00	19	558	0.151	19	558	0.727	19	558	0.878
22:00 - 23:00	17	593	0.050	17	593	0.526	17	593	0.576
23:00 - 24:00	13	653	0.000	13	653	0.153	13	653	0.153
Total Rates:			7.645			6.917			14.562

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 3.15

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	425	0.235	1	425	0.000	1	425	0.235
10:00 - 11:00	10	612	0.816	10	612	0.212	10	612	1.028
11:00 - 12:00	17	559	1.874	17	559	0.800	17	559	2.674
12:00 - 13:00	18	555	5.122	18	555	1.540	18	555	6.662
13:00 - 14:00	18	555	4.671	18	555	4.021	18	555	8.692
14:00 - 15:00	18	555	3.281	18	555	5.212	18	555	8.493
15:00 - 16:00	18	555	2.811	18	555	3.741	18	555	6.552
16:00 - 17:00	19	558	3.454	19	558	2.595	19	558	6.049
17:00 - 18:00	19	558	4.765	19	558	2.935	19	558	7.700
18:00 - 19:00	19	558	6.568	19	558	4.199	19	558	10.767
19:00 - 20:00	19	558	7.672	19	558	5.728	19	558	13.400
20:00 - 21:00	19	558	4.020	19	558	5.228	19	558	9.248
21:00 - 22:00	19	558	1.878	19	558	5.870	19	558	7.748
22:00 - 23:00	17	593	0.902	17	593	4.204	17	593	5.106
23:00 - 24:00	13	653	0.236	13	653	1.685	13	653	1.921
Total Rates:			48.305			47.970			96.275

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Link Transport Planning Tondu Enterprise Centre Bridgend Licence No: 118301

Calculation Reference: AUDIT-118301-250703-0714

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : N - RETIREMENT FLATS
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	HF	HERTFORDSHIRE	1 days
	KC	KENT	1 days
	WS	WEST SUSSEX	1 days
04	EAST ANGLIA		
	NF	NORFOLK	1 days
05	EAST MIDLANDS		
	DY	DERBY	1 days
06	WEST MIDLANDS		
	WK	WARWICKSHIRE	1 days
09	NORTH		
	CU	CUMBERLAND	1 days
10	WALES		
	PS	POWYS	1 days
11	SCOTLAND		
	EB	CITY OF EDINBURGH	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
Actual Range: 33 to 52 (units:)
Range Selected by User: 17 to 76 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/05 to 24/06/24

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	3 days
Wednesday	2 days
Thursday	2 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	9 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Town Centre	1
Edge of Town Centre	8

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	5
Built-Up Zone	2
No Sub Category	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	8 days - Selected
Servicing vehicles Excluded	4 days - Selected

Secondary Filtering selection:

Use Class:

C3	9 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	1 days
20,001 to 25,000	1 days
25,001 to 50,000	4 days
50,001 to 100,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
75,001 to 100,000	1 days
100,001 to 125,000	2 days
125,001 to 250,000	2 days
250,001 to 500,000	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	4 days
1.1 to 1.5	4 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	1 days
No	8 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	9 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 CU-03-N-01 RETIREMENT FLATS CUMBERLAND
FRIARGATE
PENRITH

Edge of Town Centre
Residential Zone
Total No of Dwellings: 48
Survey date: MONDAY *24/06/24* *Survey Type: MANUAL*

2 DY-03-N-02 RETIREMENT FLATS DERBY
LEAPER STREET
DERBY

Edge of Town Centre
Residential Zone
Total No of Dwellings: 35
Survey date: WEDNESDAY *20/10/21* *Survey Type: MANUAL*

3 EB-03-N-01 RETIREMENT FLATS CITY OF EDINBURGH
POLWARTH GARDENS
EDINBURGH
MERCHISTON
Edge of Town Centre
Residential Zone
Total No of Dwellings: 33
Survey date: FRIDAY *22/05/15* *Survey Type: MANUAL*

4 HF-03-N-01 RETIREMENT FLATS HERTFORDSHIRE
POUND AVENUE
STEVENAGE

Edge of Town Centre
Residential Zone
Total No of Dwellings: 35
Survey date: THURSDAY *02/11/23* *Survey Type: MANUAL*

5 KC-03-N-05 RETIREMENT FLATS KENT
HARDRES STREET
RAMSGATE

Edge of Town Centre
No Sub Category
Total No of Dwellings: 41
Survey date: MONDAY *07/12/09* *Survey Type: MANUAL*

6 NF-03-N-01 RETIREMENT FLATS NORFOLK
RECORDER ROAD
NORWICH

Town Centre
Built-Up Zone
Total No of Dwellings: 38
Survey date: WEDNESDAY *17/10/12* *Survey Type: MANUAL*

7 PS-03-N-01 RETIREMENT FLATS POWYS
HEOL GOUESNOU
BRECON

Edge of Town Centre
No Sub Category
Total No of Dwellings: 52
Survey date: FRIDAY *05/09/08* *Survey Type: MANUAL*

8 WK-03-N-01 RETIREMENT FLATS WARWICKSHIRE
REGENT STREET
ROYAL LEAMINGTON SPA

Edge of Town Centre
Built-Up Zone
Total No of Dwellings: 34
Survey date: MONDAY *21/11/22* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

9 WS-03-N-03 RETIREMENT FLATS WEST SUSSEX
FITZALAN ROAD
LITTLEHAMPTON

Edge of Town Centre
Residential Zone
Total No of Dwellings: 38
Survey date: THURSDAY *23/09/21* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
BG-03-N-01	COVID

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.42

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	39	0.040	9	39	0.048	9	39	0.088
08:00 - 09:00	9	39	0.062	9	39	0.068	9	39	0.130
09:00 - 10:00	9	39	0.090	9	39	0.085	9	39	0.175
10:00 - 11:00	9	39	0.076	9	39	0.093	9	39	0.169
11:00 - 12:00	9	39	0.082	9	39	0.065	9	39	0.147
12:00 - 13:00	9	39	0.088	9	39	0.082	9	39	0.170
13:00 - 14:00	9	39	0.059	9	39	0.056	9	39	0.115
14:00 - 15:00	9	39	0.059	9	39	0.073	9	39	0.132
15:00 - 16:00	9	39	0.059	9	39	0.062	9	39	0.121
16:00 - 17:00	9	39	0.076	9	39	0.051	9	39	0.127
17:00 - 18:00	9	39	0.045	9	39	0.045	9	39	0.090
18:00 - 19:00	9	39	0.037	9	39	0.034	9	39	0.071
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.773			0.762			1.535

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter summary

Trip rate parameter range selected:	33 - 52 (units:)
Survey date date range:	01/01/05 - 24/06/24
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	1

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS
MULTI-MODAL TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	39	0.003	9	39	0.003	9	39	0.006
08:00 - 09:00	9	39	0.003	9	39	0.003	9	39	0.006
09:00 - 10:00	9	39	0.014	9	39	0.014	9	39	0.028
10:00 - 11:00	9	39	0.014	9	39	0.014	9	39	0.028
11:00 - 12:00	9	39	0.006	9	39	0.006	9	39	0.012
12:00 - 13:00	9	39	0.008	9	39	0.008	9	39	0.016
13:00 - 14:00	9	39	0.006	9	39	0.006	9	39	0.012
14:00 - 15:00	9	39	0.006	9	39	0.006	9	39	0.012
15:00 - 16:00	9	39	0.014	9	39	0.014	9	39	0.028
16:00 - 17:00	9	39	0.008	9	39	0.008	9	39	0.016
17:00 - 18:00	9	39	0.003	9	39	0.003	9	39	0.006
18:00 - 19:00	9	39	0.003	9	39	0.003	9	39	0.006
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.088			0.088			0.176

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS
MULTI-MODAL PSVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	39	0.000	9	39	0.000	9	39	0.000
08:00 - 09:00	9	39	0.000	9	39	0.000	9	39	0.000
09:00 - 10:00	9	39	0.000	9	39	0.000	9	39	0.000
10:00 - 11:00	9	39	0.000	9	39	0.000	9	39	0.000
11:00 - 12:00	9	39	0.003	9	39	0.003	9	39	0.006
12:00 - 13:00	9	39	0.000	9	39	0.000	9	39	0.000
13:00 - 14:00	9	39	0.000	9	39	0.000	9	39	0.000
14:00 - 15:00	9	39	0.000	9	39	0.000	9	39	0.000
15:00 - 16:00	9	39	0.000	9	39	0.000	9	39	0.000
16:00 - 17:00	9	39	0.000	9	39	0.000	9	39	0.000
17:00 - 18:00	9	39	0.000	9	39	0.000	9	39	0.000
18:00 - 19:00	9	39	0.000	9	39	0.000	9	39	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.003			0.003			0.006

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	39	0.006	9	39	0.008	9	39	0.014
08:00 - 09:00	9	39	0.006	9	39	0.000	9	39	0.006
09:00 - 10:00	9	39	0.000	9	39	0.000	9	39	0.000
10:00 - 11:00	9	39	0.006	9	39	0.003	9	39	0.009
11:00 - 12:00	9	39	0.003	9	39	0.003	9	39	0.006
12:00 - 13:00	9	39	0.003	9	39	0.000	9	39	0.003
13:00 - 14:00	9	39	0.006	9	39	0.003	9	39	0.009
14:00 - 15:00	9	39	0.000	9	39	0.006	9	39	0.006
15:00 - 16:00	9	39	0.000	9	39	0.003	9	39	0.003
16:00 - 17:00	9	39	0.000	9	39	0.003	9	39	0.003
17:00 - 18:00	9	39	0.003	9	39	0.003	9	39	0.006
18:00 - 19:00	9	39	0.000	9	39	0.000	9	39	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.033			0.032			0.065

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	39	0.040	9	39	0.056	9	39	0.096
08:00 - 09:00	9	39	0.068	9	39	0.073	9	39	0.141
09:00 - 10:00	9	39	0.096	9	39	0.102	9	39	0.198
10:00 - 11:00	9	39	0.093	9	39	0.116	9	39	0.209
11:00 - 12:00	9	39	0.099	9	39	0.076	9	39	0.175
12:00 - 13:00	9	39	0.093	9	39	0.107	9	39	0.200
13:00 - 14:00	9	39	0.082	9	39	0.065	9	39	0.147
14:00 - 15:00	9	39	0.059	9	39	0.088	9	39	0.147
15:00 - 16:00	9	39	0.073	9	39	0.065	9	39	0.138
16:00 - 17:00	9	39	0.107	9	39	0.054	9	39	0.161
17:00 - 18:00	9	39	0.054	9	39	0.062	9	39	0.116
18:00 - 19:00	9	39	0.040	9	39	0.034	9	39	0.074
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.904			0.898			1.802

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	39	0.025	9	39	0.068	9	39	0.093
08:00 - 09:00	9	39	0.042	9	39	0.059	9	39	0.101
09:00 - 10:00	9	39	0.068	9	39	0.085	9	39	0.153
10:00 - 11:00	9	39	0.056	9	39	0.096	9	39	0.152
11:00 - 12:00	9	39	0.102	9	39	0.102	9	39	0.204
12:00 - 13:00	9	39	0.062	9	39	0.062	9	39	0.124
13:00 - 14:00	9	39	0.076	9	39	0.062	9	39	0.138
14:00 - 15:00	9	39	0.082	9	39	0.065	9	39	0.147
15:00 - 16:00	9	39	0.056	9	39	0.059	9	39	0.115
16:00 - 17:00	9	39	0.062	9	39	0.034	9	39	0.096
17:00 - 18:00	9	39	0.048	9	39	0.042	9	39	0.090
18:00 - 19:00	9	39	0.028	9	39	0.023	9	39	0.051
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.707			0.757			1.464

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	39	0.000	9	39	0.020	9	39	0.020
08:00 - 09:00	9	39	0.011	9	39	0.031	9	39	0.042
09:00 - 10:00	9	39	0.008	9	39	0.020	9	39	0.028
10:00 - 11:00	9	39	0.017	9	39	0.011	9	39	0.028
11:00 - 12:00	9	39	0.017	9	39	0.017	9	39	0.034
12:00 - 13:00	9	39	0.020	9	39	0.011	9	39	0.031
13:00 - 14:00	9	39	0.020	9	39	0.006	9	39	0.026
14:00 - 15:00	9	39	0.014	9	39	0.014	9	39	0.028
15:00 - 16:00	9	39	0.025	9	39	0.020	9	39	0.045
16:00 - 17:00	9	39	0.023	9	39	0.006	9	39	0.029
17:00 - 18:00	9	39	0.023	9	39	0.000	9	39	0.023
18:00 - 19:00	9	39	0.003	9	39	0.006	9	39	0.009
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.181			0.162			0.343

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS
MULTI-MODAL TOTAL RAIL PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	39	0.000	9	39	0.014	9	39	0.014
08:00 - 09:00	9	39	0.000	9	39	0.006	9	39	0.006
09:00 - 10:00	9	39	0.000	9	39	0.000	9	39	0.000
10:00 - 11:00	9	39	0.000	9	39	0.000	9	39	0.000
11:00 - 12:00	9	39	0.000	9	39	0.003	9	39	0.003
12:00 - 13:00	9	39	0.003	9	39	0.000	9	39	0.003
13:00 - 14:00	9	39	0.003	9	39	0.000	9	39	0.003
14:00 - 15:00	9	39	0.000	9	39	0.000	9	39	0.000
15:00 - 16:00	9	39	0.000	9	39	0.000	9	39	0.000
16:00 - 17:00	9	39	0.003	9	39	0.003	9	39	0.006
17:00 - 18:00	9	39	0.006	9	39	0.000	9	39	0.006
18:00 - 19:00	9	39	0.006	9	39	0.000	9	39	0.006
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.021			0.026			0.047

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS
MULTI-MODAL COACH PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	39	0.000	9	39	0.000	9	39	0.000
08:00 - 09:00	9	39	0.000	9	39	0.000	9	39	0.000
09:00 - 10:00	9	39	0.000	9	39	0.000	9	39	0.000
10:00 - 11:00	9	39	0.000	9	39	0.000	9	39	0.000
11:00 - 12:00	9	39	0.000	9	39	0.006	9	39	0.006
12:00 - 13:00	9	39	0.000	9	39	0.000	9	39	0.000
13:00 - 14:00	9	39	0.000	9	39	0.000	9	39	0.000
14:00 - 15:00	9	39	0.000	9	39	0.000	9	39	0.000
15:00 - 16:00	9	39	0.000	9	39	0.000	9	39	0.000
16:00 - 17:00	9	39	0.000	9	39	0.000	9	39	0.000
17:00 - 18:00	9	39	0.000	9	39	0.000	9	39	0.000
18:00 - 19:00	9	39	0.000	9	39	0.000	9	39	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.006			0.006

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	39	0.000	9	39	0.034	9	39	0.034
08:00 - 09:00	9	39	0.011	9	39	0.037	9	39	0.048
09:00 - 10:00	9	39	0.008	9	39	0.020	9	39	0.028
10:00 - 11:00	9	39	0.017	9	39	0.011	9	39	0.028
11:00 - 12:00	9	39	0.017	9	39	0.025	9	39	0.042
12:00 - 13:00	9	39	0.023	9	39	0.011	9	39	0.034
13:00 - 14:00	9	39	0.023	9	39	0.006	9	39	0.029
14:00 - 15:00	9	39	0.014	9	39	0.014	9	39	0.028
15:00 - 16:00	9	39	0.025	9	39	0.020	9	39	0.045
16:00 - 17:00	9	39	0.025	9	39	0.008	9	39	0.033
17:00 - 18:00	9	39	0.028	9	39	0.000	9	39	0.028
18:00 - 19:00	9	39	0.008	9	39	0.006	9	39	0.014
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.199			0.192			0.391

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.42

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	39	0.071	9	39	0.167	9	39	0.238
08:00 - 09:00	9	39	0.127	9	39	0.169	9	39	0.296
09:00 - 10:00	9	39	0.172	9	39	0.206	9	39	0.378
10:00 - 11:00	9	39	0.172	9	39	0.226	9	39	0.398
11:00 - 12:00	9	39	0.220	9	39	0.206	9	39	0.426
12:00 - 13:00	9	39	0.181	9	39	0.181	9	39	0.362
13:00 - 14:00	9	39	0.186	9	39	0.136	9	39	0.322
14:00 - 15:00	9	39	0.155	9	39	0.172	9	39	0.327
15:00 - 16:00	9	39	0.155	9	39	0.147	9	39	0.302
16:00 - 17:00	9	39	0.195	9	39	0.099	9	39	0.294
17:00 - 18:00	9	39	0.133	9	39	0.107	9	39	0.240
18:00 - 19:00	9	39	0.076	9	39	0.062	9	39	0.138
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.843			1.878			3.721

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Calculation Reference: AUDIT-118301-250704-0708

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	1 days
03	SOUTH WEST		
	GS	GLOUCESTERSHIRE	1 days
	SG	SOUTH GLOUCESTERSHIRE	1 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
	NN	NORTH NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS		
	WM	WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	DR	DONCASTER	1 days
	NY	NORTH YORKSHIRE	1 days
	SE	SHEFFIELD	1 days
08	NORTH WEST		
	AC	CHESHIRE WEST & CHESTER	2 days
09	NORTH		
	CU	CUMBERLAND	1 days
	TV	TEES VALLEY	2 days
	TW	TYNE & WEAR	2 days
11	SCOTLAND		
	EB	CITY OF EDINBURGH	1 days
	FI	FIFE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	Gross floor area
Actual Range:	200 to 1840 (units: sqm)
Range Selected by User:	200 to 2500 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 18/06/24

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	2 days
Tuesday	4 days
Wednesday	3 days
Thursday	4 days
Friday	4 days
Saturday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	19 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	5
Neighbourhood Centre (PPS6 Local Centre)	14

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	19

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	1 days - Selected
Servicing vehicles Excluded	20 days - Selected

Secondary Filtering selection:

Use Class:

n/a	18 days
Not Known	1 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	1 days
10,001 to 15,000	4 days
15,001 to 20,000	3 days
20,001 to 25,000	3 days
25,001 to 50,000	6 days
50,001 to 100,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	4 days
75,001 to 100,000	1 days
100,001 to 125,000	3 days
125,001 to 250,000	5 days
250,001 to 500,000	5 days
500,001 or More	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	7 days
1.1 to 1.5	12 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	19 days

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

Not Known	1 days
No	18 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	19 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 AC-01-I-02 LOCAL SHOPS CHESHIRE WEST & CHESTER
CHRISTLETON ROAD
CHESTER
BOUGHTON HEATH
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 260 sqm
Survey date: TUESDAY *15/05/12* *Survey Type: MANUAL*

2 AC-01-I-03 LOCAL SHOPS CHESHIRE WEST & CHESTER
MILL LANE
CHESTER
BACHE
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 365 sqm
Survey date: THURSDAY *17/05/12* *Survey Type: MANUAL*

3 CU-01-I-02 LOCAL SHOPS CUMBERLAND
WIGTON ROAD
CARLISLE

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 704 sqm
Survey date: TUESDAY *18/06/24* *Survey Type: MANUAL*

4 DR-01-I-01 LOCAL SHOPS DONCASTER
EVERINGHAM ROAD
DONCASTER
CANTLEY
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 1645 sqm
Survey date: FRIDAY *17/09/21* *Survey Type: MANUAL*

5 DS-01-I-01 LOCAL SHOPS DERBYSHIRE
STONELOW ROAD
DRONFIELD
HOLMESDALE
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 1130 sqm
Survey date: WEDNESDAY *21/06/06* *Survey Type: MANUAL*

6 EB-01-I-01 LOCAL SHOPS CITY OF EDINBURGH
COLINTON ROAD
EDINBURGH
CRAIGLOCKHART
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 825 sqm
Survey date: THURSDAY *28/10/10* *Survey Type: MANUAL*

7 ES-01-I-02 LOCAL SHOPS EAST SUSSEX
BROWNS CLOSE
UCKFIELD
MANOR PARK
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 676 sqm
Survey date: SATURDAY *31/03/01* *Survey Type: MANUAL*

8 FI-01-I-01 LOCAL SHOPS FIFE
53 BIGHTY AVENUE
GLENROTHES

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 824 sqm
Survey date: SATURDAY *21/05/05* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

9 GS-01-I-01 LOCAL SHOPS GLOUCESTERSHIRE
SALISBURY AVENUE
CHELTENHAM
WARDEN HILL
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 525 sqm
Survey date: MONDAY *26/04/10* *Survey Type: MANUAL*

10 HC-01-I-02 LOCAL SHOPS HAMPSHIRE
OLIVER'S BATTERY ROAD S.
WINCHESTER
OLIVERS BATTERY
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 1605 sqm
Survey date: TUESDAY *20/11/07* *Survey Type: MANUAL*

11 NN-01-I-01 LOCAL SHOPS NORTH NORTHAMPTONSHIRE
OCCUPATION ROAD
CORBY

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 755 sqm
Survey date: WEDNESDAY *19/11/08* *Survey Type: MANUAL*

12 NY-01-I-01 LOCAL SHOPS NORTH YORKSHIRE
NEWLANDS PARK DRIVE
SCARBOROUGH

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 1200 sqm
Survey date: FRIDAY *28/09/07* *Survey Type: MANUAL*

13 SE-01-I-01 LOCAL SHOPS SHEFFIELD
TYLER STREET
SHEFFIELD

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 200 sqm
Survey date: THURSDAY *22/06/23* *Survey Type: MANUAL*

14 SG-01-I-01 LOCAL SHOPS SOUTH GLOUCESTERSHIRE
BURLEY GROVE
BRISTOL
KINGSWOOD
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 240 sqm
Survey date: FRIDAY *06/10/06* *Survey Type: MANUAL*

15 TV-01-I-03 LOCAL SHOPS TEES VALLEY
ACKLAM ROAD
MIDDLESBROUGH
ACKLAM
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 1840 sqm
Survey date: FRIDAY *04/10/13* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

16	TV-01-I-04	LOCAL SHOPS		TEES VALLEY
	CARGO FLEET LANE			
	MIDDLESBROUGH			
	ORMESBY			
	Neighbourhood Centre (PPS6 Local Centre)			
	Residential Zone			
	Total Gross floor area:		585 sqm	
	Survey date: MONDAY		*07/10/13*	*Survey Type: MANUAL*
17	TW-01-I-01	LOCAL SHOPS		TYNE & WEAR
	FARRINGDON ROAD			
	NORTH SHIELDS			
	MARDEN			
	Neighbourhood Centre (PPS6 Local Centre)			
	Residential Zone			
	Total Gross floor area:		850 sqm	
	Survey date: TUESDAY		*17/10/06*	*Survey Type: MANUAL*
18	TW-01-I-02	LOCAL SHOPS		TYNE & WEAR
	DURHAM ROAD			
	SUNDERLAND			
	BARNES PARK			
	Neighbourhood Centre (PPS6 Local Centre)			
	Residential Zone			
	Total Gross floor area:		540 sqm	
	Survey date: WEDNESDAY		*21/11/12*	*Survey Type: MANUAL*
19	WM-01-I-01	LOCAL SHOPS		WEST MIDLANDS
	HOLYHEAD ROAD			
	COVENTRY			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross floor area:		1550 sqm	
	Survey date: THURSDAY		*27/09/07*	*Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.28

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	2	452	0.111	2	452	0.111	2	452	0.222
06:00 - 07:00	4	772	0.906	4	772	0.712	4	772	1.618
07:00 - 08:00	19	859	3.419	19	859	3.088	19	859	6.507
08:00 - 09:00	19	859	4.271	19	859	3.836	19	859	8.107
09:00 - 10:00	19	859	4.939	19	859	4.473	19	859	9.412
10:00 - 11:00	19	859	4.970	19	859	4.688	19	859	9.658
11:00 - 12:00	19	859	5.147	19	859	5.196	19	859	10.343
12:00 - 13:00	19	859	5.515	19	859	5.368	19	859	10.883
13:00 - 14:00	19	859	4.988	19	859	4.982	19	859	9.970
14:00 - 15:00	19	859	4.676	19	859	4.841	19	859	9.517
15:00 - 16:00	19	859	4.522	19	859	4.749	19	859	9.271
16:00 - 17:00	19	859	4.908	19	859	4.823	19	859	9.731
17:00 - 18:00	19	859	5.245	19	859	5.613	19	859	10.858
18:00 - 19:00	19	859	5.019	19	859	5.172	19	859	10.191
19:00 - 20:00	17	923	3.900	17	923	4.199	17	923	8.099
20:00 - 21:00	13	913	2.646	13	913	2.873	13	913	5.519
21:00 - 22:00	9	838	2.401	9	838	2.494	9	838	4.895
22:00 - 23:00	2	452	0.774	2	452	0.996	2	452	1.770
23:00 - 24:00	1	704	0.426	1	704	0.568	1	704	0.994
Total Rates:			68.783			68.782			137.565

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	200 - 1840 (units: sqm)
Survey date date range:	01/01/00 - 18/06/24
Number of weekdays (Monday-Friday):	17
Number of Saturdays:	2
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	2	452	0.000	2	452	0.000	2	452	0.000
06:00 - 07:00	4	772	0.000	4	772	0.000	4	772	0.000
07:00 - 08:00	19	859	0.116	19	859	0.092	19	859	0.208
08:00 - 09:00	19	859	0.086	19	859	0.080	19	859	0.166
09:00 - 10:00	19	859	0.129	19	859	0.116	19	859	0.245
10:00 - 11:00	19	859	0.067	19	859	0.074	19	859	0.141
11:00 - 12:00	19	859	0.067	19	859	0.061	19	859	0.128
12:00 - 13:00	19	859	0.061	19	859	0.055	19	859	0.116
13:00 - 14:00	19	859	0.025	19	859	0.037	19	859	0.062
14:00 - 15:00	19	859	0.031	19	859	0.031	19	859	0.062
15:00 - 16:00	19	859	0.018	19	859	0.025	19	859	0.043
16:00 - 17:00	19	859	0.025	19	859	0.025	19	859	0.050
17:00 - 18:00	19	859	0.012	19	859	0.031	19	859	0.043
18:00 - 19:00	19	859	0.012	19	859	0.025	19	859	0.037
19:00 - 20:00	17	923	0.006	17	923	0.006	17	923	0.012
20:00 - 21:00	13	913	0.000	13	913	0.000	13	913	0.000
21:00 - 22:00	9	838	0.013	9	838	0.013	9	838	0.026
22:00 - 23:00	2	452	0.111	2	452	0.000	2	452	0.111
23:00 - 24:00	1	704	0.000	1	704	0.142	1	704	0.142
Total Rates:			0.779			0.813			1.592

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	2	452	0.000	2	452	0.000	2	452	0.000
06:00 - 07:00	4	772	0.000	4	772	0.000	4	772	0.000
07:00 - 08:00	19	859	0.025	19	859	0.025	19	859	0.050
08:00 - 09:00	19	859	0.000	19	859	0.000	19	859	0.000
09:00 - 10:00	19	859	0.000	19	859	0.000	19	859	0.000
10:00 - 11:00	19	859	0.012	19	859	0.012	19	859	0.024
11:00 - 12:00	19	859	0.006	19	859	0.006	19	859	0.012
12:00 - 13:00	19	859	0.012	19	859	0.006	19	859	0.018
13:00 - 14:00	19	859	0.006	19	859	0.012	19	859	0.018
14:00 - 15:00	19	859	0.006	19	859	0.000	19	859	0.006
15:00 - 16:00	19	859	0.006	19	859	0.012	19	859	0.018
16:00 - 17:00	19	859	0.012	19	859	0.012	19	859	0.024
17:00 - 18:00	19	859	0.000	19	859	0.000	19	859	0.000
18:00 - 19:00	19	859	0.000	19	859	0.000	19	859	0.000
19:00 - 20:00	17	923	0.000	17	923	0.000	17	923	0.000
20:00 - 21:00	13	913	0.008	13	913	0.008	13	913	0.016
21:00 - 22:00	9	838	0.027	9	838	0.027	9	838	0.054
22:00 - 23:00	2	452	0.000	2	452	0.000	2	452	0.000
23:00 - 24:00	1	704	0.000	1	704	0.000	1	704	0.000
Total Rates:			0.120			0.120			0.240

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	2	452	0.000	2	452	0.000	2	452	0.000
06:00 - 07:00	4	772	0.032	4	772	0.000	4	772	0.032
07:00 - 08:00	19	859	0.227	19	859	0.172	19	859	0.399
08:00 - 09:00	19	859	0.147	19	859	0.135	19	859	0.282
09:00 - 10:00	19	859	0.104	19	859	0.123	19	859	0.227
10:00 - 11:00	19	859	0.135	19	859	0.092	19	859	0.227
11:00 - 12:00	19	859	0.129	19	859	0.123	19	859	0.252
12:00 - 13:00	19	859	0.074	19	859	0.080	19	859	0.154
13:00 - 14:00	19	859	0.086	19	859	0.123	19	859	0.209
14:00 - 15:00	19	859	0.135	19	859	0.172	19	859	0.307
15:00 - 16:00	19	859	0.208	19	859	0.165	19	859	0.373
16:00 - 17:00	19	859	0.276	19	859	0.221	19	859	0.497
17:00 - 18:00	19	859	0.098	19	859	0.172	19	859	0.270
18:00 - 19:00	19	859	0.221	19	859	0.214	19	859	0.435
19:00 - 20:00	17	923	0.089	17	923	0.108	17	923	0.197
20:00 - 21:00	13	913	0.051	13	913	0.076	13	913	0.127
21:00 - 22:00	9	838	0.159	9	838	0.133	9	838	0.292
22:00 - 23:00	2	452	0.111	2	452	0.221	2	452	0.332
23:00 - 24:00	1	704	0.000	1	704	0.000	1	704	0.000
Total Rates:			2.282			2.330			4.612

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	2	452	0.221	2	452	0.221	2	452	0.442
06:00 - 07:00	4	772	1.036	4	772	0.777	4	772	1.813
07:00 - 08:00	19	859	3.928	19	859	3.444	19	859	7.372
08:00 - 09:00	19	859	5.294	19	859	4.657	19	859	9.951
09:00 - 10:00	19	859	5.883	19	859	5.368	19	859	11.251
10:00 - 11:00	19	859	5.926	19	859	5.478	19	859	11.404
11:00 - 12:00	19	859	6.281	19	859	6.348	19	859	12.629
12:00 - 13:00	19	859	6.875	19	859	6.667	19	859	13.542
13:00 - 14:00	19	859	6.018	19	859	6.048	19	859	12.066
14:00 - 15:00	19	859	5.907	19	859	6.171	19	859	12.078
15:00 - 16:00	19	859	6.097	19	859	6.299	19	859	12.396
16:00 - 17:00	19	859	6.232	19	859	6.281	19	859	12.513
17:00 - 18:00	19	859	6.826	19	859	7.347	19	859	14.173
18:00 - 19:00	19	859	6.563	19	859	6.796	19	859	13.359
19:00 - 20:00	17	923	5.282	17	923	5.614	17	923	10.896
20:00 - 21:00	13	913	3.598	13	913	3.834	13	913	7.432
21:00 - 22:00	9	838	3.197	9	838	3.170	9	838	6.367
22:00 - 23:00	2	452	0.996	2	452	1.106	2	452	2.102
23:00 - 24:00	1	704	0.426	1	704	0.852	1	704	1.278
Total Rates:			86.586			86.478			173.064

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	2	452	0.000	2	452	0.000	2	452	0.000
06:00 - 07:00	4	772	0.842	4	772	0.615	4	772	1.457
07:00 - 08:00	19	859	2.623	19	859	2.255	19	859	4.878
08:00 - 09:00	19	859	5.944	19	859	5.803	19	859	11.747
09:00 - 10:00	19	859	4.878	19	859	4.590	19	859	9.468
10:00 - 11:00	19	859	4.908	19	859	4.700	19	859	9.608
11:00 - 12:00	19	859	4.596	19	859	4.430	19	859	9.026
12:00 - 13:00	19	859	5.815	19	859	5.068	19	859	10.883
13:00 - 14:00	19	859	4.467	19	859	4.915	19	859	9.382
14:00 - 15:00	19	859	4.155	19	859	4.191	19	859	8.346
15:00 - 16:00	19	859	6.606	19	859	6.594	19	859	13.200
16:00 - 17:00	19	859	4.191	19	859	4.443	19	859	8.634
17:00 - 18:00	19	859	4.142	19	859	4.504	19	859	8.646
18:00 - 19:00	19	859	3.738	19	859	4.032	19	859	7.770
19:00 - 20:00	17	923	3.103	17	923	3.505	17	923	6.608
20:00 - 21:00	13	913	2.393	13	913	2.646	13	913	5.039
21:00 - 22:00	9	838	1.910	9	838	2.215	9	838	4.125
22:00 - 23:00	2	452	0.221	2	452	0.221	2	452	0.442
23:00 - 24:00	1	704	0.000	1	704	0.000	1	704	0.000
Total Rates:			64.532			64.727			129.259

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	2	452	0.000	2	452	0.000	2	452	0.000
06:00 - 07:00	4	772	0.129	4	772	0.194	4	772	0.323
07:00 - 08:00	19	859	0.098	19	859	0.116	19	859	0.214
08:00 - 09:00	19	859	0.092	19	859	0.172	19	859	0.264
09:00 - 10:00	19	859	0.123	19	859	0.080	19	859	0.203
10:00 - 11:00	19	859	0.178	19	859	0.141	19	859	0.319
11:00 - 12:00	19	859	0.208	19	859	0.208	19	859	0.416
12:00 - 13:00	19	859	0.227	19	859	0.190	19	859	0.417
13:00 - 14:00	19	859	0.178	19	859	0.165	19	859	0.343
14:00 - 15:00	19	859	0.208	19	859	0.184	19	859	0.392
15:00 - 16:00	19	859	0.294	19	859	0.123	19	859	0.417
16:00 - 17:00	19	859	0.116	19	859	0.110	19	859	0.226
17:00 - 18:00	19	859	0.141	19	859	0.135	19	859	0.276
18:00 - 19:00	19	859	0.067	19	859	0.098	19	859	0.165
19:00 - 20:00	17	923	0.070	17	923	0.057	17	923	0.127
20:00 - 21:00	13	913	0.042	13	913	0.059	13	913	0.101
21:00 - 22:00	9	838	0.080	9	838	0.133	9	838	0.213
22:00 - 23:00	2	452	0.000	2	452	0.000	2	452	0.000
23:00 - 24:00	1	704	0.000	1	704	0.000	1	704	0.000
Total Rates:			2.251			2.165			4.416

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.28

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	2	452	0.221	2	452	0.221	2	452	0.442
06:00 - 07:00	4	772	2.039	4	772	1.586	4	772	3.625
07:00 - 08:00	19	859	6.875	19	859	5.987	19	859	12.862
08:00 - 09:00	19	859	11.477	19	859	10.767	19	859	22.244
09:00 - 10:00	19	859	10.987	19	859	10.160	19	859	21.147
10:00 - 11:00	19	859	11.147	19	859	10.411	19	859	21.558
11:00 - 12:00	19	859	11.214	19	859	11.110	19	859	22.324
12:00 - 13:00	19	859	12.991	19	859	12.004	19	859	24.995
13:00 - 14:00	19	859	10.748	19	859	11.251	19	859	21.999
14:00 - 15:00	19	859	10.405	19	859	10.718	19	859	21.123
15:00 - 16:00	19	859	13.205	19	859	13.181	19	859	26.386
16:00 - 17:00	19	859	10.816	19	859	11.055	19	859	21.871
17:00 - 18:00	19	859	11.208	19	859	12.158	19	859	23.366
18:00 - 19:00	19	859	10.589	19	859	11.140	19	859	21.729
19:00 - 20:00	17	923	8.545	17	923	9.284	17	923	17.829
20:00 - 21:00	13	913	6.083	13	913	6.614	13	913	12.697
21:00 - 22:00	9	838	5.346	9	838	5.651	9	838	10.997
22:00 - 23:00	2	452	1.327	2	452	1.549	2	452	2.876
23:00 - 24:00	1	704	0.426	1	704	0.852	1	704	1.278
Total Rates:			155.649			155.699			311.348

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Calculation Reference: AUDIT-118301-250703-0752

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
Category : K - FITNESS CLUB (PRIVATE)
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

05	EAST MIDLANDS		
	NG	NOTTINGHAM	1 days
09	NORTH		
	TW	TYNE & WEAR	1 days
11	SCOTLAND		
	AD	ABERDEEN CITY	1 days
	FA	FALKIRK	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	Gross floor area
Actual Range:	167 to 6000 (units: sqm)
Range Selected by User:	167 to 13856 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/05 to 17/04/24

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Thursday	2 days
Friday	1 days
Sunday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	4 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Town Centre	1
Edge of Town Centre	3

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Commercial Zone	1
Retail Zone	1
Built-Up Zone	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	X days - Selected
Servicing vehicles Excluded	4 days - Selected

Secondary Filtering selection:

Use Class:

n/a	1 days
Not Known	2 days
E(d)	1 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

15,001 to 20,000	2 days
25,001 to 50,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

100,001 to 125,000	1 days
125,001 to 250,000	1 days
500,001 or More	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	4 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	4 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	4 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	AD-07-K-01 JUSTICE MILL LANE ABERDEEN	CANNONS		ABERDEEN CITY
	Edge of Town Centre Built-Up Zone			
	Total Gross floor area:		5400 sqm	
	Survey date: THURSDAY		*26/05/05*	*Survey Type: MANUAL*
2	FA-07-K-01 STIRLING ROAD FALKIRK	BANNATYNE'S		FALKIRK
	Edge of Town Centre Built-Up Zone			
	Total Gross floor area:		3000 sqm	
	Survey date: SUNDAY		*22/04/07*	*Survey Type: MANUAL*
3	NG-07-K-01 LONDON ROAD NOTTINGHAM	VIRGIN ACTIVE		NOTTINGHAM
	Edge of Town Centre Commercial Zone			
	Total Gross floor area:		6000 sqm	
	Survey date: THURSDAY		*27/06/13*	*Survey Type: MANUAL*
4	TW-07-K-03 HIGH BRIDGE NEWCASTLE UPON TYNE	FITNESS CLUB		TYNE & WEAR
	Town Centre Retail Zone			
	Total Gross floor area:		167 sqm	
	Survey date: FRIDAY		*08/09/23*	*Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.49

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	3056	0.971	3	3056	0.065	3	3056	1.036
07:00 - 08:00	4	3642	0.577	4	3642	0.549	4	3642	1.126
08:00 - 09:00	4	3642	0.535	4	3642	0.934	4	3642	1.469
09:00 - 10:00	4	3642	1.133	4	3642	0.330	4	3642	1.463
10:00 - 11:00	4	3642	0.838	4	3642	0.638	4	3642	1.476
11:00 - 12:00	4	3642	0.549	4	3642	1.160	4	3642	1.709
12:00 - 13:00	4	3642	0.597	4	3642	0.659	4	3642	1.256
13:00 - 14:00	4	3642	0.563	4	3642	0.625	4	3642	1.188
14:00 - 15:00	4	3642	0.487	4	3642	0.501	4	3642	0.988
15:00 - 16:00	4	3642	0.748	4	3642	0.515	4	3642	1.263
16:00 - 17:00	4	3642	0.906	4	3642	0.577	4	3642	1.483
17:00 - 18:00	4	3642	2.190	4	3642	0.686	4	3642	2.876
18:00 - 19:00	4	3642	1.517	4	3642	1.517	4	3642	3.034
19:00 - 20:00	4	3642	1.119	4	3642	1.867	4	3642	2.986
20:00 - 21:00	4	3642	0.487	4	3642	1.421	4	3642	1.908
21:00 - 22:00	3	4800	0.097	3	4800	0.792	3	4800	0.889
22:00 - 23:00	1	6000	0.017	1	6000	0.267	1	6000	0.284
23:00 - 24:00									
Total Rates:			13.331			13.103			26.434

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	167 - 6000 (units: sqm)
Survey date date range:	01/01/05 - 17/04/24
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	1
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
MULTI-MODAL OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	3056	0.000	3	3056	0.000	3	3056	0.000
07:00 - 08:00	4	3642	0.007	4	3642	0.007	4	3642	0.014
08:00 - 09:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
09:00 - 10:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
10:00 - 11:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
11:00 - 12:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
12:00 - 13:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
13:00 - 14:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
14:00 - 15:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
15:00 - 16:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
16:00 - 17:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
17:00 - 18:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
18:00 - 19:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
19:00 - 20:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
20:00 - 21:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
21:00 - 22:00	3	4800	0.000	3	4800	0.000	3	4800	0.000
22:00 - 23:00	1	6000	0.000	1	6000	0.000	1	6000	0.000
23:00 - 24:00									
Total Rates:			0.007			0.007			0.014

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	3056	0.044	3	3056	0.000	3	3056	0.044
07:00 - 08:00	4	3642	0.014	4	3642	0.014	4	3642	0.028
08:00 - 09:00	4	3642	0.007	4	3642	0.021	4	3642	0.028
09:00 - 10:00	4	3642	0.034	4	3642	0.007	4	3642	0.041
10:00 - 11:00	4	3642	0.014	4	3642	0.014	4	3642	0.028
11:00 - 12:00	4	3642	0.027	4	3642	0.048	4	3642	0.075
12:00 - 13:00	4	3642	0.021	4	3642	0.014	4	3642	0.035
13:00 - 14:00	4	3642	0.021	4	3642	0.021	4	3642	0.042
14:00 - 15:00	4	3642	0.021	4	3642	0.000	4	3642	0.021
15:00 - 16:00	4	3642	0.014	4	3642	0.027	4	3642	0.041
16:00 - 17:00	4	3642	0.007	4	3642	0.000	4	3642	0.007
17:00 - 18:00	4	3642	0.027	4	3642	0.007	4	3642	0.034
18:00 - 19:00	4	3642	0.014	4	3642	0.041	4	3642	0.055
19:00 - 20:00	4	3642	0.007	4	3642	0.021	4	3642	0.028
20:00 - 21:00	4	3642	0.014	4	3642	0.021	4	3642	0.035
21:00 - 22:00	3	4800	0.000	3	4800	0.035	3	4800	0.035
22:00 - 23:00	1	6000	0.000	1	6000	0.000	1	6000	0.000
23:00 - 24:00									
Total Rates:			0.286			0.291			0.577

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	3056	1.058	3	3056	0.065	3	3056	1.123
07:00 - 08:00	4	3642	0.618	4	3642	0.556	4	3642	1.174
08:00 - 09:00	4	3642	0.597	4	3642	1.030	4	3642	1.627
09:00 - 10:00	4	3642	1.263	4	3642	0.350	4	3642	1.613
10:00 - 11:00	4	3642	0.947	4	3642	0.741	4	3642	1.688
11:00 - 12:00	4	3642	0.604	4	3642	1.325	4	3642	1.929
12:00 - 13:00	4	3642	0.714	4	3642	0.783	4	3642	1.497
13:00 - 14:00	4	3642	0.680	4	3642	0.748	4	3642	1.428
14:00 - 15:00	4	3642	0.563	4	3642	0.577	4	3642	1.140
15:00 - 16:00	4	3642	0.865	4	3642	0.590	4	3642	1.455
16:00 - 17:00	4	3642	0.975	4	3642	0.673	4	3642	1.648
17:00 - 18:00	4	3642	2.595	4	3642	1.002	4	3642	3.597
18:00 - 19:00	4	3642	1.778	4	3642	1.854	4	3642	3.632
19:00 - 20:00	4	3642	1.325	4	3642	2.162	4	3642	3.487
20:00 - 21:00	4	3642	0.556	4	3642	1.730	4	3642	2.286
21:00 - 22:00	3	4800	0.104	3	4800	0.854	3	4800	0.958
22:00 - 23:00	1	6000	0.017	1	6000	0.300	1	6000	0.317
23:00 - 24:00									
Total Rates:			15.259			15.340			30.599

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	3056	0.033	3	3056	0.022	3	3056	0.055
07:00 - 08:00	4	3642	0.089	4	3642	0.089	4	3642	0.178
08:00 - 09:00	4	3642	0.034	4	3642	0.034	4	3642	0.068
09:00 - 10:00	4	3642	0.172	4	3642	0.089	4	3642	0.261
10:00 - 11:00	4	3642	0.144	4	3642	0.172	4	3642	0.316
11:00 - 12:00	4	3642	0.220	4	3642	0.172	4	3642	0.392
12:00 - 13:00	4	3642	0.309	4	3642	0.247	4	3642	0.556
13:00 - 14:00	4	3642	0.227	4	3642	0.288	4	3642	0.515
14:00 - 15:00	4	3642	0.124	4	3642	0.089	4	3642	0.213
15:00 - 16:00	4	3642	0.172	4	3642	0.124	4	3642	0.296
16:00 - 17:00	4	3642	0.192	4	3642	0.103	4	3642	0.295
17:00 - 18:00	4	3642	0.659	4	3642	0.165	4	3642	0.824
18:00 - 19:00	4	3642	0.426	4	3642	0.288	4	3642	0.714
19:00 - 20:00	4	3642	0.192	4	3642	0.563	4	3642	0.755
20:00 - 21:00	4	3642	0.158	4	3642	0.508	4	3642	0.666
21:00 - 22:00	3	4800	0.014	3	4800	0.111	3	4800	0.125
22:00 - 23:00	1	6000	0.000	1	6000	0.067	1	6000	0.067
23:00 - 24:00									
Total Rates:			3.165			3.131			6.296

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	3056	0.011	3	3056	0.000	3	3056	0.011
07:00 - 08:00	4	3642	0.021	4	3642	0.021	4	3642	0.042
08:00 - 09:00	4	3642	0.041	4	3642	0.021	4	3642	0.062
09:00 - 10:00	4	3642	0.151	4	3642	0.103	4	3642	0.254
10:00 - 11:00	4	3642	0.089	4	3642	0.034	4	3642	0.123
11:00 - 12:00	4	3642	0.055	4	3642	0.076	4	3642	0.131
12:00 - 13:00	4	3642	0.089	4	3642	0.117	4	3642	0.206
13:00 - 14:00	4	3642	0.034	4	3642	0.144	4	3642	0.178
14:00 - 15:00	4	3642	0.096	4	3642	0.041	4	3642	0.137
15:00 - 16:00	4	3642	0.027	4	3642	0.055	4	3642	0.082
16:00 - 17:00	4	3642	0.014	4	3642	0.021	4	3642	0.035
17:00 - 18:00	4	3642	0.055	4	3642	0.041	4	3642	0.096
18:00 - 19:00	4	3642	0.062	4	3642	0.014	4	3642	0.076
19:00 - 20:00	4	3642	0.014	4	3642	0.069	4	3642	0.083
20:00 - 21:00	4	3642	0.007	4	3642	0.014	4	3642	0.021
21:00 - 22:00	3	4800	0.000	3	4800	0.007	3	4800	0.007
22:00 - 23:00	1	6000	0.000	1	6000	0.000	1	6000	0.000
23:00 - 24:00									
Total Rates:			0.766			0.778			1.544

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
MULTI-MODAL TOTAL RAIL PASSENGERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	3056	0.022	3	3056	0.000	3	3056	0.022
07:00 - 08:00	4	3642	0.007	4	3642	0.021	4	3642	0.028
08:00 - 09:00	4	3642	0.007	4	3642	0.000	4	3642	0.007
09:00 - 10:00	4	3642	0.021	4	3642	0.014	4	3642	0.035
10:00 - 11:00	4	3642	0.007	4	3642	0.014	4	3642	0.021
11:00 - 12:00	4	3642	0.007	4	3642	0.000	4	3642	0.007
12:00 - 13:00	4	3642	0.007	4	3642	0.000	4	3642	0.007
13:00 - 14:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
14:00 - 15:00	4	3642	0.000	4	3642	0.007	4	3642	0.007
15:00 - 16:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
16:00 - 17:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
17:00 - 18:00	4	3642	0.014	4	3642	0.000	4	3642	0.014
18:00 - 19:00	4	3642	0.014	4	3642	0.007	4	3642	0.021
19:00 - 20:00	4	3642	0.000	4	3642	0.021	4	3642	0.021
20:00 - 21:00	4	3642	0.000	4	3642	0.000	4	3642	0.000
21:00 - 22:00	3	4800	0.000	3	4800	0.000	3	4800	0.000
22:00 - 23:00	1	6000	0.000	1	6000	0.000	1	6000	0.000
23:00 - 24:00									
Total Rates:			0.106			0.084			0.190

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	3056	0.033	3	3056	0.000	3	3056	0.033
07:00 - 08:00	4	3642	0.027	4	3642	0.041	4	3642	0.068
08:00 - 09:00	4	3642	0.048	4	3642	0.021	4	3642	0.069
09:00 - 10:00	4	3642	0.172	4	3642	0.117	4	3642	0.289
10:00 - 11:00	4	3642	0.096	4	3642	0.048	4	3642	0.144
11:00 - 12:00	4	3642	0.062	4	3642	0.076	4	3642	0.138
12:00 - 13:00	4	3642	0.096	4	3642	0.117	4	3642	0.213
13:00 - 14:00	4	3642	0.034	4	3642	0.144	4	3642	0.178
14:00 - 15:00	4	3642	0.096	4	3642	0.048	4	3642	0.144
15:00 - 16:00	4	3642	0.027	4	3642	0.055	4	3642	0.082
16:00 - 17:00	4	3642	0.014	4	3642	0.021	4	3642	0.035
17:00 - 18:00	4	3642	0.069	4	3642	0.041	4	3642	0.110
18:00 - 19:00	4	3642	0.076	4	3642	0.021	4	3642	0.097
19:00 - 20:00	4	3642	0.014	4	3642	0.089	4	3642	0.103
20:00 - 21:00	4	3642	0.007	4	3642	0.014	4	3642	0.021
21:00 - 22:00	3	4800	0.000	3	4800	0.007	3	4800	0.007
22:00 - 23:00	1	6000	0.000	1	6000	0.000	1	6000	0.000
23:00 - 24:00									
Total Rates:			0.871			0.860			1.731

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.49

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	3	3056	1.167	3	3056	0.087	3	3056	1.254
07:00 - 08:00	4	3642	0.748	4	3642	0.700	4	3642	1.448
08:00 - 09:00	4	3642	0.686	4	3642	1.105	4	3642	1.791
09:00 - 10:00	4	3642	1.641	4	3642	0.563	4	3642	2.204
10:00 - 11:00	4	3642	1.201	4	3642	0.975	4	3642	2.176
11:00 - 12:00	4	3642	0.913	4	3642	1.620	4	3642	2.533
12:00 - 13:00	4	3642	1.140	4	3642	1.160	4	3642	2.300
13:00 - 14:00	4	3642	0.961	4	3642	1.201	4	3642	2.162
14:00 - 15:00	4	3642	0.803	4	3642	0.714	4	3642	1.517
15:00 - 16:00	4	3642	1.078	4	3642	0.796	4	3642	1.874
16:00 - 17:00	4	3642	1.188	4	3642	0.796	4	3642	1.984
17:00 - 18:00	4	3642	3.350	4	3642	1.215	4	3642	4.565
18:00 - 19:00	4	3642	2.293	4	3642	2.204	4	3642	4.497
19:00 - 20:00	4	3642	1.538	4	3642	2.835	4	3642	4.373
20:00 - 21:00	4	3642	0.735	4	3642	2.272	4	3642	3.007
21:00 - 22:00	3	4800	0.118	3	4800	1.007	3	4800	1.125
22:00 - 23:00	1	6000	0.017	1	6000	0.367	1	6000	0.384
23:00 - 24:00									
Total Rates:			19.577			19.617			39.194

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Link Transport Planning Tondu Enterprise Centre Bridgend Licence No: 118301

Calculation Reference: AUDIT-118301-250703-0740

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : G - OTHER INDIVIDUAL NON-FOOD SUPERSTORE
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
06	WEST MIDLANDS		
	WO	WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	YO	YORK	1 days
08	NORTH WEST		
	EC	CHESHIRE EAST	1 days
09	NORTH		
	CU	CUMBERLAND	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	Gross floor area
Actual Range:	1000 to 2500 (units: sqm)
Range Selected by User:	300 to 3000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/05 to 18/09/21

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	1 days
Thursday	1 days
Friday	1 days
Saturday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Town Centre	2
Edge of Town Centre	4

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Commercial Zone	1
Retail Zone	2
Built-Up Zone	3

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	2 days - Selected
Servicing vehicles Excluded	5 days - Selected

Secondary Filtering selection:

Use Class:

E(a)	6 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	1 days
15,001 to 20,000	2 days
20,001 to 25,000	1 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	1 days
1.1 to 1.5	3 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	6 days

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

No	6 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	6 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 CA-01-G-01 JUST FOR PETS CAMBRIDGESHIRE
BACK LANE
CAMBOURNE
GREAT CAMBOURNE
Town Centre
Retail Zone
Total Gross floor area: 1068 sqm
Survey date: THURSDAY *07/06/18* *Survey Type: MANUAL*

2 CU-01-G-02 STAPLES CUMBERLAND
JAMES STREET
CARLISLE

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 2500 sqm
Survey date: FRIDAY *05/02/10* *Survey Type: MANUAL*

3 EC-01-G-01 MAGNET CHESHIRE EAST
KING EDWARD STREET
MACCLESFIELD

Town Centre
Built-Up Zone
Total Gross floor area: 1000 sqm
Survey date: MONDAY *06/11/17* *Survey Type: MANUAL*

4 LN-01-G-01 PETS AT HOME LINCOLNSHIRE
TRITTON ROAD
LINCOLN
TRITTON RETAIL PARK
Edge of Town Centre
Retail Zone
Total Gross floor area: 1600 sqm
Survey date: TUESDAY *31/10/17* *Survey Type: MANUAL*

5 WO-01-G-01 PC WORLD WORCESTERSHIRE
TYBRIDGE STREET
WORCESTER

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 2000 sqm
Survey date: SATURDAY *20/06/09* *Survey Type: MANUAL*

6 YO-01-G-01 ALLIED CARPETS YORK
LAYERTHORPE ROAD
YORK
LAYERTHORPE
Edge of Town Centre
Commercial Zone
Total Gross floor area: 2300 sqm
Survey date: SATURDAY *21/05/05* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
LO-01-G-01	COVID

TRIP RATE for Land Use 01 - RETAIL/G - OTHER INDIVIDUAL NON-FOOD SUPERSTORE
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.69

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	1933	0.086	3	1933	0.034	3	1933	0.120
08:00 - 09:00	6	1745	0.334	6	1745	0.210	6	1745	0.544
09:00 - 10:00	6	1745	1.175	6	1745	0.783	6	1745	1.958
10:00 - 11:00	6	1745	1.385	6	1745	1.127	6	1745	2.512
11:00 - 12:00	6	1745	1.414	6	1745	1.433	6	1745	2.847
12:00 - 13:00	6	1745	1.462	6	1745	1.366	6	1745	2.828
13:00 - 14:00	6	1745	1.261	6	1745	1.548	6	1745	2.809
14:00 - 15:00	6	1745	1.481	6	1745	1.251	6	1745	2.732
15:00 - 16:00	6	1745	1.385	6	1745	1.232	6	1745	2.617
16:00 - 17:00	6	1745	1.395	6	1745	1.347	6	1745	2.742
17:00 - 18:00	6	1745	1.070	6	1745	1.404	6	1745	2.474
18:00 - 19:00	5	1894	0.518	5	1894	0.834	5	1894	1.352
19:00 - 20:00	4	1792	0.335	4	1792	0.711	4	1792	1.046
20:00 - 21:00	3	2033	0.000	3	2033	0.180	3	2033	0.180
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			13.301			13.460			26.761

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	1000 - 2500 (units: sqm)
Survey date date range:	01/01/05 - 18/09/21
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	2
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	1

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 01 - RETAIL/G - OTHER INDIVIDUAL NON-FOOD SUPERSTORE
MULTI-MODAL OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	1933	0.000	3	1933	0.000	3	1933	0.000
08:00 - 09:00	6	1745	0.000	6	1745	0.000	6	1745	0.000
09:00 - 10:00	6	1745	0.010	6	1745	0.000	6	1745	0.010
10:00 - 11:00	6	1745	0.010	6	1745	0.010	6	1745	0.020
11:00 - 12:00	6	1745	0.019	6	1745	0.010	6	1745	0.029
12:00 - 13:00	6	1745	0.000	6	1745	0.010	6	1745	0.010
13:00 - 14:00	6	1745	0.019	6	1745	0.029	6	1745	0.048
14:00 - 15:00	6	1745	0.010	6	1745	0.010	6	1745	0.020
15:00 - 16:00	6	1745	0.019	6	1745	0.019	6	1745	0.038
16:00 - 17:00	6	1745	0.000	6	1745	0.000	6	1745	0.000
17:00 - 18:00	6	1745	0.000	6	1745	0.000	6	1745	0.000
18:00 - 19:00	5	1894	0.000	5	1894	0.000	5	1894	0.000
19:00 - 20:00	4	1792	0.000	4	1792	0.000	4	1792	0.000
20:00 - 21:00	3	2033	0.000	3	2033	0.000	3	2033	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.087			0.088			0.175

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/G - OTHER INDIVIDUAL NON-FOOD SUPERSTORE
MULTI-MODAL PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	1933	0.000	3	1933	0.000	3	1933	0.000
08:00 - 09:00	6	1745	0.000	6	1745	0.000	6	1745	0.000
09:00 - 10:00	6	1745	0.000	6	1745	0.010	6	1745	0.010
10:00 - 11:00	6	1745	0.010	6	1745	0.134	6	1745	0.144
11:00 - 12:00	6	1745	0.038	6	1745	0.134	6	1745	0.172
12:00 - 13:00	6	1745	0.000	6	1745	0.019	6	1745	0.019
13:00 - 14:00	6	1745	0.029	6	1745	0.010	6	1745	0.039
14:00 - 15:00	6	1745	0.000	6	1745	0.000	6	1745	0.000
15:00 - 16:00	6	1745	0.038	6	1745	0.019	6	1745	0.057
16:00 - 17:00	6	1745	0.019	6	1745	0.038	6	1745	0.057
17:00 - 18:00	6	1745	0.000	6	1745	0.000	6	1745	0.000
18:00 - 19:00	5	1894	0.000	5	1894	0.000	5	1894	0.000
19:00 - 20:00	4	1792	0.000	4	1792	0.000	4	1792	0.000
20:00 - 21:00	3	2033	0.000	3	2033	0.000	3	2033	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.134			0.364			0.498

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/G - OTHER INDIVIDUAL NON-FOOD SUPERSTORE
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	1933	0.017	3	1933	0.000	3	1933	0.017
08:00 - 09:00	6	1745	0.000	6	1745	0.000	6	1745	0.000
09:00 - 10:00	6	1745	0.029	6	1745	0.019	6	1745	0.048
10:00 - 11:00	6	1745	0.000	6	1745	0.000	6	1745	0.000
11:00 - 12:00	6	1745	0.010	6	1745	0.010	6	1745	0.020
12:00 - 13:00	6	1745	0.010	6	1745	0.000	6	1745	0.010
13:00 - 14:00	6	1745	0.010	6	1745	0.019	6	1745	0.029
14:00 - 15:00	6	1745	0.000	6	1745	0.000	6	1745	0.000
15:00 - 16:00	6	1745	0.010	6	1745	0.010	6	1745	0.020
16:00 - 17:00	6	1745	0.000	6	1745	0.000	6	1745	0.000
17:00 - 18:00	6	1745	0.019	6	1745	0.029	6	1745	0.048
18:00 - 19:00	5	1894	0.000	5	1894	0.011	5	1894	0.011
19:00 - 20:00	4	1792	0.000	4	1792	0.000	4	1792	0.000
20:00 - 21:00	3	2033	0.000	3	2033	0.000	3	2033	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.105			0.098			0.203

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/G - OTHER INDIVIDUAL NON-FOOD SUPERSTORE
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	1933	0.103	3	1933	0.052	3	1933	0.155
08:00 - 09:00	6	1745	0.382	6	1745	0.220	6	1745	0.602
09:00 - 10:00	6	1745	1.758	6	1745	1.051	6	1745	2.809
10:00 - 11:00	6	1745	1.920	6	1745	1.509	6	1745	3.429
11:00 - 12:00	6	1745	2.159	6	1745	1.997	6	1745	4.156
12:00 - 13:00	6	1745	2.121	6	1745	1.853	6	1745	3.974
13:00 - 14:00	6	1745	1.958	6	1745	2.321	6	1745	4.279
14:00 - 15:00	6	1745	2.274	6	1745	1.939	6	1745	4.213
15:00 - 16:00	6	1745	2.073	6	1745	2.025	6	1745	4.098
16:00 - 17:00	6	1745	2.159	6	1745	2.302	6	1745	4.461
17:00 - 18:00	6	1745	1.462	6	1745	2.245	6	1745	3.707
18:00 - 19:00	5	1894	0.803	5	1894	1.130	5	1894	1.933
19:00 - 20:00	4	1792	0.474	4	1792	1.088	4	1792	1.562
20:00 - 21:00	3	2033	0.000	3	2033	0.213	3	2033	0.213
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			19.646			19.945			39.591

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/G - OTHER INDIVIDUAL NON-FOOD SUPERSTORE
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	1933	0.069	3	1933	0.052	3	1933	0.121
08:00 - 09:00	6	1745	0.086	6	1745	0.076	6	1745	0.162
09:00 - 10:00	6	1745	0.115	6	1745	0.105	6	1745	0.220
10:00 - 11:00	6	1745	0.105	6	1745	0.096	6	1745	0.201
11:00 - 12:00	6	1745	0.162	6	1745	0.182	6	1745	0.344
12:00 - 13:00	6	1745	0.239	6	1745	0.201	6	1745	0.440
13:00 - 14:00	6	1745	0.229	6	1745	0.210	6	1745	0.439
14:00 - 15:00	6	1745	0.277	6	1745	0.248	6	1745	0.525
15:00 - 16:00	6	1745	0.248	6	1745	0.267	6	1745	0.515
16:00 - 17:00	6	1745	0.258	6	1745	0.287	6	1745	0.545
17:00 - 18:00	6	1745	0.162	6	1745	0.182	6	1745	0.344
18:00 - 19:00	5	1894	0.053	5	1894	0.148	5	1894	0.201
19:00 - 20:00	4	1792	0.028	4	1792	0.098	4	1792	0.126
20:00 - 21:00	3	2033	0.000	3	2033	0.016	3	2033	0.016
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.031			2.168			4.199

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/G - OTHER INDIVIDUAL NON-FOOD SUPERSTORE
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	1933	0.000	3	1933	0.000	3	1933	0.000
08:00 - 09:00	6	1745	0.029	6	1745	0.000	6	1745	0.029
09:00 - 10:00	6	1745	0.038	6	1745	0.010	6	1745	0.048
10:00 - 11:00	6	1745	0.057	6	1745	0.076	6	1745	0.133
11:00 - 12:00	6	1745	0.076	6	1745	0.057	6	1745	0.133
12:00 - 13:00	6	1745	0.086	6	1745	0.057	6	1745	0.143
13:00 - 14:00	6	1745	0.086	6	1745	0.086	6	1745	0.172
14:00 - 15:00	6	1745	0.029	6	1745	0.029	6	1745	0.058
15:00 - 16:00	6	1745	0.038	6	1745	0.057	6	1745	0.095
16:00 - 17:00	6	1745	0.038	6	1745	0.057	6	1745	0.095
17:00 - 18:00	6	1745	0.029	6	1745	0.048	6	1745	0.077
18:00 - 19:00	5	1894	0.011	5	1894	0.042	5	1894	0.053
19:00 - 20:00	4	1792	0.028	4	1792	0.042	4	1792	0.070
20:00 - 21:00	3	2033	0.000	3	2033	0.000	3	2033	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.545			0.561			1.106

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/G - OTHER INDIVIDUAL NON-FOOD SUPERSTORE
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 1.69

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	1933	0.190	3	1933	0.103	3	1933	0.293
08:00 - 09:00	6	1745	0.497	6	1745	0.296	6	1745	0.793
09:00 - 10:00	6	1745	1.939	6	1745	1.185	6	1745	3.124
10:00 - 11:00	6	1745	2.083	6	1745	1.681	6	1745	3.764
11:00 - 12:00	6	1745	2.407	6	1745	2.245	6	1745	4.652
12:00 - 13:00	6	1745	2.455	6	1745	2.111	6	1745	4.566
13:00 - 14:00	6	1745	2.283	6	1745	2.637	6	1745	4.920
14:00 - 15:00	6	1745	2.579	6	1745	2.216	6	1745	4.795
15:00 - 16:00	6	1745	2.369	6	1745	2.360	6	1745	4.729
16:00 - 17:00	6	1745	2.455	6	1745	2.646	6	1745	5.101
17:00 - 18:00	6	1745	1.672	6	1745	2.503	6	1745	4.175
18:00 - 19:00	5	1894	0.866	5	1894	1.331	5	1894	2.197
19:00 - 20:00	4	1792	0.530	4	1792	1.228	4	1792	1.758
20:00 - 21:00	3	2033	0.000	3	2033	0.230	3	2033	0.230
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			22.325			22.772			45.097

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Calculation Reference: AUDIT-118301-250801-0850

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
Category : A - PRIMARY
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	3 days
09	NORTH		
	TW	TYNE & WEAR	1 days
10	WALES		
	WR	WREXHAM	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	Number of pupils
Actual Range:	156 to 371 (units:)
Range Selected by User:	92 to 538 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/16 to 20/06/24

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	3 days
Tuesday	1 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town Centre	5

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	2
Built-Up Zone	1
No Sub Category	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	4 days - Selected
Servicing vehicles Excluded	1 days - Selected

Secondary Filtering selection:

Use Class:

F1(a)	5 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

10,001 to 15,000	2 days
20,001 to 25,000	1 days
25,001 to 50,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	1 days
100,001 to 125,000	1 days
500,001 or More	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	2 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	5 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	5 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 NY-04-A-04 CATHOLIC PRIMARY SCHOOL NORTH YORKSHIRE
GARGRAVE ROAD
SKIPTON

Edge of Town Centre
Built-Up Zone
Total Number of pupils: 243
Survey date: FRIDAY *15/03/19* *Survey Type: MANUAL*

2 NY-04-A-05 PRIMARY SCHOOL NORTH YORKSHIRE
CHURCH LANE
RIPON

Edge of Town Centre
No Sub Category
Total Number of pupils: 156
Survey date: TUESDAY *17/05/22* *Survey Type: MANUAL*

3 NY-04-A-06 PRIMARY SCHOOL NORTH YORKSHIRE
CHURCH LANE
RIPON

Edge of Town Centre
No Sub Category
Total Number of pupils: 245
Survey date: MONDAY *23/05/22* *Survey Type: MANUAL*

4 TW-04-A-03 PRIMARY SCHOOL TYNE & WEAR
SUMMERHILL TERRACE
NEWCASTLE UPON TYNE
CITY CENTRE
Edge of Town Centre
Residential Zone
Total Number of pupils: 233
Survey date: MONDAY *11/09/23* *Survey Type: MANUAL*

5 WR-04-A-01 PRIMARY SCHOOL WREXHAM
BODHYFRYD
WREXHAM

Edge of Town Centre
Residential Zone
Total Number of pupils: 371
Survey date: MONDAY *20/05/24* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.23

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.045	5	250	0.006	5	250	0.051
08:00 - 09:00	5	250	0.459	5	250	0.296	5	250	0.755
09:00 - 10:00	5	250	0.023	5	250	0.129	5	250	0.152
10:00 - 11:00	5	250	0.005	5	250	0.006	5	250	0.011
11:00 - 12:00	5	250	0.017	5	250	0.017	5	250	0.034
12:00 - 13:00	5	250	0.018	5	250	0.017	5	250	0.035
13:00 - 14:00	5	250	0.009	5	250	0.015	5	250	0.024
14:00 - 15:00	5	250	0.054	5	250	0.022	5	250	0.076
15:00 - 16:00	5	250	0.284	5	250	0.361	5	250	0.645
16:00 - 17:00	5	250	0.011	5	250	0.042	5	250	0.053
17:00 - 18:00	5	250	0.007	5	250	0.021	5	250	0.028
18:00 - 19:00	5	250	0.000	5	250	0.000	5	250	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.932			0.932			1.864

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	156 - 371 (units:)
Survey date date range:	01/01/16 - 20/06/24
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL TAXIS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.001	5	250	0.001	5	250	0.002
08:00 - 09:00	5	250	0.014	5	250	0.013	5	250	0.027
09:00 - 10:00	5	250	0.001	5	250	0.001	5	250	0.002
10:00 - 11:00	5	250	0.000	5	250	0.000	5	250	0.000
11:00 - 12:00	5	250	0.001	5	250	0.001	5	250	0.002
12:00 - 13:00	5	250	0.001	5	250	0.001	5	250	0.002
13:00 - 14:00	5	250	0.000	5	250	0.000	5	250	0.000
14:00 - 15:00	5	250	0.005	5	250	0.003	5	250	0.008
15:00 - 16:00	5	250	0.010	5	250	0.013	5	250	0.023
16:00 - 17:00	5	250	0.000	5	250	0.000	5	250	0.000
17:00 - 18:00	5	250	0.001	5	250	0.001	5	250	0.002
18:00 - 19:00	5	250	0.000	5	250	0.000	5	250	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.034			0.034			0.068

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL OGVS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.000	5	250	0.000	5	250	0.000
08:00 - 09:00	5	250	0.000	5	250	0.000	5	250	0.000
09:00 - 10:00	5	250	0.001	5	250	0.001	5	250	0.002
10:00 - 11:00	5	250	0.000	5	250	0.000	5	250	0.000
11:00 - 12:00	5	250	0.002	5	250	0.001	5	250	0.003
12:00 - 13:00	5	250	0.000	5	250	0.001	5	250	0.001
13:00 - 14:00	5	250	0.000	5	250	0.000	5	250	0.000
14:00 - 15:00	5	250	0.000	5	250	0.000	5	250	0.000
15:00 - 16:00	5	250	0.000	5	250	0.000	5	250	0.000
16:00 - 17:00	5	250	0.000	5	250	0.000	5	250	0.000
17:00 - 18:00	5	250	0.000	5	250	0.000	5	250	0.000
18:00 - 19:00	5	250	0.000	5	250	0.000	5	250	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.003			0.003			0.006

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL PSVS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.000	5	250	0.000	5	250	0.000
08:00 - 09:00	5	250	0.001	5	250	0.001	5	250	0.002
09:00 - 10:00	5	250	0.000	5	250	0.000	5	250	0.000
10:00 - 11:00	5	250	0.000	5	250	0.000	5	250	0.000
11:00 - 12:00	5	250	0.000	5	250	0.000	5	250	0.000
12:00 - 13:00	5	250	0.000	5	250	0.000	5	250	0.000
13:00 - 14:00	5	250	0.000	5	250	0.000	5	250	0.000
14:00 - 15:00	5	250	0.000	5	250	0.000	5	250	0.000
15:00 - 16:00	5	250	0.001	5	250	0.001	5	250	0.002
16:00 - 17:00	5	250	0.000	5	250	0.000	5	250	0.000
17:00 - 18:00	5	250	0.000	5	250	0.000	5	250	0.000
18:00 - 19:00	5	250	0.000	5	250	0.000	5	250	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.002			0.002			0.004

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL CYCLISTS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.000	5	250	0.000	5	250	0.000
08:00 - 09:00	5	250	0.022	5	250	0.001	5	250	0.023
09:00 - 10:00	5	250	0.001	5	250	0.001	5	250	0.002
10:00 - 11:00	5	250	0.000	5	250	0.000	5	250	0.000
11:00 - 12:00	5	250	0.001	5	250	0.001	5	250	0.002
12:00 - 13:00	5	250	0.000	5	250	0.001	5	250	0.001
13:00 - 14:00	5	250	0.000	5	250	0.000	5	250	0.000
14:00 - 15:00	5	250	0.002	5	250	0.002	5	250	0.004
15:00 - 16:00	5	250	0.002	5	250	0.023	5	250	0.025
16:00 - 17:00	5	250	0.000	5	250	0.000	5	250	0.000
17:00 - 18:00	5	250	0.000	5	250	0.000	5	250	0.000
18:00 - 19:00	5	250	0.000	5	250	0.001	5	250	0.001
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.028			0.030			0.058

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.050	5	250	0.006	5	250	0.056
08:00 - 09:00	5	250	0.664	5	250	0.114	5	250	0.778
09:00 - 10:00	5	250	0.034	5	250	0.020	5	250	0.054
10:00 - 11:00	5	250	0.006	5	250	0.006	5	250	0.012
11:00 - 12:00	5	250	0.021	5	250	0.024	5	250	0.045
12:00 - 13:00	5	250	0.020	5	250	0.021	5	250	0.041
13:00 - 14:00	5	250	0.009	5	250	0.022	5	250	0.031
14:00 - 15:00	5	250	0.068	5	250	0.038	5	250	0.106
15:00 - 16:00	5	250	0.037	5	250	0.526	5	250	0.563
16:00 - 17:00	5	250	0.011	5	250	0.053	5	250	0.064
17:00 - 18:00	5	250	0.010	5	250	0.033	5	250	0.043
18:00 - 19:00	5	250	0.000	5	250	0.000	5	250	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.930			0.863			1.793

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.008	5	250	0.000	5	250	0.008
08:00 - 09:00	5	250	0.633	5	250	0.252	5	250	0.885
09:00 - 10:00	5	250	0.035	5	250	0.037	5	250	0.072
10:00 - 11:00	5	250	0.036	5	250	0.017	5	250	0.053
11:00 - 12:00	5	250	0.021	5	250	0.027	5	250	0.048
12:00 - 13:00	5	250	0.042	5	250	0.027	5	250	0.069
13:00 - 14:00	5	250	0.022	5	250	0.029	5	250	0.051
14:00 - 15:00	5	250	0.079	5	250	0.026	5	250	0.105
15:00 - 16:00	5	250	0.189	5	250	0.675	5	250	0.864
16:00 - 17:00	5	250	0.013	5	250	0.034	5	250	0.047
17:00 - 18:00	5	250	0.001	5	250	0.006	5	250	0.007
18:00 - 19:00	5	250	0.000	5	250	0.001	5	250	0.001
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.079			1.131			2.210

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.002	5	250	0.000	5	250	0.002
08:00 - 09:00	5	250	0.026	5	250	0.011	5	250	0.037
09:00 - 10:00	5	250	0.002	5	250	0.001	5	250	0.003
10:00 - 11:00	5	250	0.000	5	250	0.000	5	250	0.000
11:00 - 12:00	5	250	0.000	5	250	0.000	5	250	0.000
12:00 - 13:00	5	250	0.000	5	250	0.000	5	250	0.000
13:00 - 14:00	5	250	0.000	5	250	0.003	5	250	0.003
14:00 - 15:00	5	250	0.002	5	250	0.002	5	250	0.004
15:00 - 16:00	5	250	0.009	5	250	0.040	5	250	0.049
16:00 - 17:00	5	250	0.001	5	250	0.003	5	250	0.004
17:00 - 18:00	5	250	0.000	5	250	0.000	5	250	0.000
18:00 - 19:00	5	250	0.000	5	250	0.000	5	250	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.042			0.060			0.102

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL COACH PASSENGERS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.000	5	250	0.000	5	250	0.000
08:00 - 09:00	5	250	0.004	5	250	0.000	5	250	0.004
09:00 - 10:00	5	250	0.000	5	250	0.000	5	250	0.000
10:00 - 11:00	5	250	0.000	5	250	0.000	5	250	0.000
11:00 - 12:00	5	250	0.000	5	250	0.000	5	250	0.000
12:00 - 13:00	5	250	0.000	5	250	0.000	5	250	0.000
13:00 - 14:00	5	250	0.000	5	250	0.000	5	250	0.000
14:00 - 15:00	5	250	0.000	5	250	0.000	5	250	0.000
15:00 - 16:00	5	250	0.000	5	250	0.004	5	250	0.004
16:00 - 17:00	5	250	0.000	5	250	0.000	5	250	0.000
17:00 - 18:00	5	250	0.000	5	250	0.000	5	250	0.000
18:00 - 19:00	5	250	0.000	5	250	0.000	5	250	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.004			0.004			0.008

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.002	5	250	0.000	5	250	0.002
08:00 - 09:00	5	250	0.030	5	250	0.011	5	250	0.041
09:00 - 10:00	5	250	0.002	5	250	0.001	5	250	0.003
10:00 - 11:00	5	250	0.000	5	250	0.000	5	250	0.000
11:00 - 12:00	5	250	0.000	5	250	0.000	5	250	0.000
12:00 - 13:00	5	250	0.000	5	250	0.000	5	250	0.000
13:00 - 14:00	5	250	0.000	5	250	0.003	5	250	0.003
14:00 - 15:00	5	250	0.002	5	250	0.002	5	250	0.004
15:00 - 16:00	5	250	0.009	5	250	0.044	5	250	0.053
16:00 - 17:00	5	250	0.001	5	250	0.003	5	250	0.004
17:00 - 18:00	5	250	0.000	5	250	0.000	5	250	0.000
18:00 - 19:00	5	250	0.000	5	250	0.000	5	250	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.046			0.064			0.110

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.23

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.059	5	250	0.006	5	250	0.065
08:00 - 09:00	5	250	1.350	5	250	0.377	5	250	1.727
09:00 - 10:00	5	250	0.073	5	250	0.058	5	250	0.131
10:00 - 11:00	5	250	0.042	5	250	0.022	5	250	0.064
11:00 - 12:00	5	250	0.042	5	250	0.052	5	250	0.094
12:00 - 13:00	5	250	0.062	5	250	0.049	5	250	0.111
13:00 - 14:00	5	250	0.030	5	250	0.054	5	250	0.084
14:00 - 15:00	5	250	0.151	5	250	0.067	5	250	0.218
15:00 - 16:00	5	250	0.236	5	250	1.268	5	250	1.504
16:00 - 17:00	5	250	0.025	5	250	0.090	5	250	0.115
17:00 - 18:00	5	250	0.011	5	250	0.038	5	250	0.049
18:00 - 19:00	5	250	0.000	5	250	0.002	5	250	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.081			2.083			4.164

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL CARS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.042	5	250	0.003	5	250	0.045
08:00 - 09:00	5	250	0.442	5	250	0.282	5	250	0.724
09:00 - 10:00	5	250	0.020	5	250	0.126	5	250	0.146
10:00 - 11:00	5	250	0.003	5	250	0.003	5	250	0.006
11:00 - 12:00	5	250	0.013	5	250	0.013	5	250	0.026
12:00 - 13:00	5	250	0.016	5	250	0.014	5	250	0.030
13:00 - 14:00	5	250	0.008	5	250	0.014	5	250	0.022
14:00 - 15:00	5	250	0.048	5	250	0.018	5	250	0.066
15:00 - 16:00	5	250	0.271	5	250	0.346	5	250	0.617
16:00 - 17:00	5	250	0.011	5	250	0.040	5	250	0.051
17:00 - 18:00	5	250	0.006	5	250	0.020	5	250	0.026
18:00 - 19:00	5	250	0.000	5	250	0.000	5	250	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.880			0.879			1.759

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL LGVS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	250	0.002	5	250	0.002	5	250	0.004
08:00 - 09:00	5	250	0.003	5	250	0.001	5	250	0.004
09:00 - 10:00	5	250	0.002	5	250	0.002	5	250	0.004
10:00 - 11:00	5	250	0.002	5	250	0.002	5	250	0.004
11:00 - 12:00	5	250	0.002	5	250	0.002	5	250	0.004
12:00 - 13:00	5	250	0.002	5	250	0.001	5	250	0.003
13:00 - 14:00	5	250	0.001	5	250	0.001	5	250	0.002
14:00 - 15:00	5	250	0.001	5	250	0.001	5	250	0.002
15:00 - 16:00	5	250	0.002	5	250	0.002	5	250	0.004
16:00 - 17:00	5	250	0.000	5	250	0.002	5	250	0.002
17:00 - 18:00	5	250	0.000	5	250	0.000	5	250	0.000
18:00 - 19:00	5	250	0.000	5	250	0.000	5	250	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.017			0.016			0.033

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Calculation Reference: AUDIT-118301-250703-0741

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
Category : Q - COMMUNITY CENTRE
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

03	SOUTH WEST		
	BA	BATH & NORTH EAST SOMERSET	2 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
10	WALES		
	SW	SWANSEA	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	Gross floor area
Actual Range:	415 to 900 (units: sqm)
Range Selected by User:	100 to 1486 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 07/06/18

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	1 days
Thursday	1 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	4 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town Centre	4

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	1
Built-Up Zone	1
High Street	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	X days - Selected
Servicing vehicles Excluded	4 days - Selected

Secondary Filtering selection:

Use Class:

F2(b)	4 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

5,001 to 10,000	1 days
25,001 to 50,000	3 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	1 days
100,001 to 125,000	2 days
125,001 to 250,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	3 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	4 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	4 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	BA-07-Q-01 SAINT MARKS ROAD BATH	COMMUNITY CENTRE		BATH & NORTH EAST SOMERSET
	Edge of Town Centre Built-Up Zone			
	Total Gross floor area:		900 sqm	
	Survey date: FRIDAY		*29/09/06*	*Survey Type: MANUAL*
2	BA-07-Q-02 OFF THE A36 BATH	COMMUNITY CENTRE		BATH & NORTH EAST SOMERSET
	Edge of Town Centre Residential Zone			
	Total Gross floor area:		415 sqm	
	Survey date: MONDAY		*02/10/06*	*Survey Type: MANUAL*
3	CA-07-Q-02 HIGH STREET CAMBOURNE	COMMUNITY CENTRE		CAMBRIDGESHIRE
	Edge of Town Centre High Street			
	Total Gross floor area:		629 sqm	
	Survey date: THURSDAY		*07/06/18*	*Survey Type: MANUAL*
4	SW-07-Q-01 HIGH STREET SWANSEA	COMMUNITY CENTRE		SWANSEA
	Edge of Town Centre High Street			
	Total Gross floor area:		500 sqm	
	Survey date: TUESDAY		*22/10/13*	*Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 07 - LEISURE/Q - COMMUNITY CENTRE
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 3.70

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	676	0.148	3	676	0.049	3	676	0.197
08:00 - 09:00	4	611	0.696	4	611	0.123	4	611	0.819
09:00 - 10:00	4	611	0.941	4	611	0.573	4	611	1.514
10:00 - 11:00	4	611	0.573	4	611	0.286	4	611	0.859
11:00 - 12:00	4	611	0.123	4	611	0.941	4	611	1.064
12:00 - 13:00	4	611	0.409	4	611	0.286	4	611	0.695
13:00 - 14:00	4	611	0.286	4	611	0.245	4	611	0.531
14:00 - 15:00	4	611	0.123	4	611	0.123	4	611	0.246
15:00 - 16:00	4	611	0.614	4	611	0.900	4	611	1.514
16:00 - 17:00	4	611	0.041	4	611	0.041	4	611	0.082
17:00 - 18:00	4	611	1.146	4	611	0.655	4	611	1.801
18:00 - 19:00	4	611	0.900	4	611	0.450	4	611	1.350
19:00 - 20:00	4	611	0.655	4	611	1.432	4	611	2.087
20:00 - 21:00	4	611	0.000	4	611	0.450	4	611	0.450
21:00 - 22:00	1	415	0.482	1	415	0.964	1	415	1.446
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			7.137			7.518			14.655

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	415 - 900 (units: sqm)
Survey date date range:	01/01/00 - 07/06/18
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/Q - COMMUNITY CENTRE
MULTI-MODAL TAXIS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	676	0.000	3	676	0.000	3	676	0.000
08:00 - 09:00	4	611	0.000	4	611	0.000	4	611	0.000
09:00 - 10:00	4	611	0.041	4	611	0.041	4	611	0.082
10:00 - 11:00	4	611	0.000	4	611	0.000	4	611	0.000
11:00 - 12:00	4	611	0.000	4	611	0.000	4	611	0.000
12:00 - 13:00	4	611	0.000	4	611	0.000	4	611	0.000
13:00 - 14:00	4	611	0.000	4	611	0.000	4	611	0.000
14:00 - 15:00	4	611	0.000	4	611	0.000	4	611	0.000
15:00 - 16:00	4	611	0.000	4	611	0.000	4	611	0.000
16:00 - 17:00	4	611	0.000	4	611	0.000	4	611	0.000
17:00 - 18:00	4	611	0.000	4	611	0.000	4	611	0.000
18:00 - 19:00	4	611	0.000	4	611	0.000	4	611	0.000
19:00 - 20:00	4	611	0.000	4	611	0.000	4	611	0.000
20:00 - 21:00	4	611	0.000	4	611	0.000	4	611	0.000
21:00 - 22:00	1	415	0.000	1	415	0.000	1	415	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.041			0.041			0.082

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/Q - COMMUNITY CENTRE
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	676	0.000	3	676	0.000	3	676	0.000
08:00 - 09:00	4	611	0.000	4	611	0.000	4	611	0.000
09:00 - 10:00	4	611	0.041	4	611	0.041	4	611	0.082
10:00 - 11:00	4	611	0.000	4	611	0.000	4	611	0.000
11:00 - 12:00	4	611	0.082	4	611	0.041	4	611	0.123
12:00 - 13:00	4	611	0.000	4	611	0.041	4	611	0.041
13:00 - 14:00	4	611	0.000	4	611	0.000	4	611	0.000
14:00 - 15:00	4	611	0.000	4	611	0.000	4	611	0.000
15:00 - 16:00	4	611	0.041	4	611	0.000	4	611	0.041
16:00 - 17:00	4	611	0.041	4	611	0.082	4	611	0.123
17:00 - 18:00	4	611	0.041	4	611	0.000	4	611	0.041
18:00 - 19:00	4	611	0.041	4	611	0.000	4	611	0.041
19:00 - 20:00	4	611	0.082	4	611	0.082	4	611	0.164
20:00 - 21:00	4	611	0.000	4	611	0.082	4	611	0.082
21:00 - 22:00	1	415	0.000	1	415	0.000	1	415	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.369			0.369			0.738

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/Q - COMMUNITY CENTRE
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	765	0.262	2	765	0.000	2	765	0.262
08:00 - 09:00	3	648	1.492	3	648	0.000	3	648	1.492
09:00 - 10:00	3	648	1.903	3	648	0.720	3	648	2.623
10:00 - 11:00	3	648	1.286	3	648	0.772	3	648	2.058
11:00 - 12:00	3	648	0.206	3	648	2.212	3	648	2.418
12:00 - 13:00	3	648	0.257	3	648	0.309	3	648	0.566
13:00 - 14:00	3	648	0.154	3	648	0.257	3	648	0.411
14:00 - 15:00	3	648	0.154	3	648	0.206	3	648	0.360
15:00 - 16:00	3	648	0.257	3	648	1.183	3	648	1.440
16:00 - 17:00	3	648	0.051	3	648	0.051	3	648	0.102
17:00 - 18:00	3	648	2.469	3	648	0.772	3	648	3.241
18:00 - 19:00	3	648	1.337	3	648	0.669	3	648	2.006
19:00 - 20:00	3	648	0.926	3	648	3.498	3	648	4.424
20:00 - 21:00	3	648	0.000	3	648	0.617	3	648	0.617
21:00 - 22:00	1	415	0.000	1	415	0.964	1	415	0.964
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			10.754			12.230			22.984

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/Q - COMMUNITY CENTRE
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	676	0.345	3	676	0.099	3	676	0.444
08:00 - 09:00	4	611	0.859	4	611	0.614	4	611	1.473
09:00 - 10:00	4	611	3.682	4	611	0.409	4	611	4.091
10:00 - 11:00	4	611	2.046	4	611	2.087	4	611	4.133
11:00 - 12:00	4	611	1.105	4	611	3.273	4	611	4.378
12:00 - 13:00	4	611	1.473	4	611	1.309	4	611	2.782
13:00 - 14:00	4	611	1.187	4	611	1.350	4	611	2.537
14:00 - 15:00	4	611	0.245	4	611	0.164	4	611	0.409
15:00 - 16:00	4	611	1.432	4	611	0.900	4	611	2.332
16:00 - 17:00	4	611	0.655	4	611	1.146	4	611	1.801
17:00 - 18:00	4	611	1.146	4	611	0.859	4	611	2.005
18:00 - 19:00	4	611	0.818	4	611	0.614	4	611	1.432
19:00 - 20:00	4	611	0.532	4	611	1.391	4	611	1.923
20:00 - 21:00	4	611	0.000	4	611	0.573	4	611	0.573
21:00 - 22:00	1	415	0.000	1	415	1.446	1	415	1.446
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			15.525			16.234			31.759

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/Q - COMMUNITY CENTRE
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	676	0.000	3	676	0.000	3	676	0.000
08:00 - 09:00	4	611	0.041	4	611	0.000	4	611	0.041
09:00 - 10:00	4	611	0.000	4	611	0.000	4	611	0.000
10:00 - 11:00	4	611	0.082	4	611	0.000	4	611	0.082
11:00 - 12:00	4	611	0.000	4	611	0.082	4	611	0.082
12:00 - 13:00	4	611	0.123	4	611	0.000	4	611	0.123
13:00 - 14:00	4	611	0.082	4	611	0.000	4	611	0.082
14:00 - 15:00	4	611	0.000	4	611	0.000	4	611	0.000
15:00 - 16:00	4	611	0.000	4	611	0.123	4	611	0.123
16:00 - 17:00	4	611	0.000	4	611	0.000	4	611	0.000
17:00 - 18:00	4	611	0.000	4	611	0.082	4	611	0.082
18:00 - 19:00	4	611	0.000	4	611	0.000	4	611	0.000
19:00 - 20:00	4	611	0.000	4	611	0.000	4	611	0.000
20:00 - 21:00	4	611	0.000	4	611	0.000	4	611	0.000
21:00 - 22:00	1	415	0.000	1	415	0.000	1	415	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.328			0.287			0.615

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/Q - COMMUNITY CENTRE
MULTI-MODAL TOTAL RAIL PASSENGERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	676	0.000	3	676	0.000	3	676	0.000
08:00 - 09:00	4	611	0.000	4	611	0.000	4	611	0.000
09:00 - 10:00	4	611	0.082	4	611	0.000	4	611	0.082
10:00 - 11:00	4	611	0.000	4	611	0.000	4	611	0.000
11:00 - 12:00	4	611	0.000	4	611	0.082	4	611	0.082
12:00 - 13:00	4	611	0.041	4	611	0.000	4	611	0.041
13:00 - 14:00	4	611	0.000	4	611	0.000	4	611	0.000
14:00 - 15:00	4	611	0.000	4	611	0.000	4	611	0.000
15:00 - 16:00	4	611	0.000	4	611	0.041	4	611	0.041
16:00 - 17:00	4	611	0.000	4	611	0.000	4	611	0.000
17:00 - 18:00	4	611	0.000	4	611	0.000	4	611	0.000
18:00 - 19:00	4	611	0.000	4	611	0.000	4	611	0.000
19:00 - 20:00	4	611	0.000	4	611	0.000	4	611	0.000
20:00 - 21:00	4	611	0.000	4	611	0.000	4	611	0.000
21:00 - 22:00	1	415	0.000	1	415	0.000	1	415	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.123			0.123			0.246

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/Q - COMMUNITY CENTRE
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	676	0.000	3	676	0.000	3	676	0.000
08:00 - 09:00	4	611	0.041	4	611	0.000	4	611	0.041
09:00 - 10:00	4	611	0.082	4	611	0.000	4	611	0.082
10:00 - 11:00	4	611	0.082	4	611	0.000	4	611	0.082
11:00 - 12:00	4	611	0.000	4	611	0.164	4	611	0.164
12:00 - 13:00	4	611	0.164	4	611	0.000	4	611	0.164
13:00 - 14:00	4	611	0.082	4	611	0.000	4	611	0.082
14:00 - 15:00	4	611	0.000	4	611	0.000	4	611	0.000
15:00 - 16:00	4	611	0.000	4	611	0.164	4	611	0.164
16:00 - 17:00	4	611	0.000	4	611	0.000	4	611	0.000
17:00 - 18:00	4	611	0.000	4	611	0.082	4	611	0.082
18:00 - 19:00	4	611	0.000	4	611	0.000	4	611	0.000
19:00 - 20:00	4	611	0.000	4	611	0.000	4	611	0.000
20:00 - 21:00	4	611	0.000	4	611	0.000	4	611	0.000
21:00 - 22:00	1	415	0.000	1	415	0.000	1	415	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.451			0.410			0.861

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 07 - LEISURE/Q - COMMUNITY CENTRE
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 3.70

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	676	0.542	3	676	0.099	3	676	0.641
08:00 - 09:00	4	611	2.087	4	611	0.614	4	611	2.701
09:00 - 10:00	4	611	5.319	4	611	1.023	4	611	6.342
10:00 - 11:00	4	611	3.151	4	611	2.700	4	611	5.851
11:00 - 12:00	4	611	1.350	4	611	5.237	4	611	6.587
12:00 - 13:00	4	611	1.841	4	611	1.596	4	611	3.437
13:00 - 14:00	4	611	1.391	4	611	1.555	4	611	2.946
14:00 - 15:00	4	611	0.368	4	611	0.327	4	611	0.695
15:00 - 16:00	4	611	1.678	4	611	2.005	4	611	3.683
16:00 - 17:00	4	611	0.736	4	611	1.268	4	611	2.004
17:00 - 18:00	4	611	3.151	4	611	1.555	4	611	4.706
18:00 - 19:00	4	611	1.923	4	611	1.146	4	611	3.069
19:00 - 20:00	4	611	1.350	4	611	4.255	4	611	5.605
20:00 - 21:00	4	611	0.000	4	611	1.146	4	611	1.146
21:00 - 22:00	1	415	0.000	1	415	2.410	1	415	2.410
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			24.887			26.936			51.823

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Calculation Reference: AUDIT-118301-250703-0746

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

01	GREATER LONDON		
	KN	KENSINGTON AND CHELSEA	1 days
02	SOUTH EAST		
	CT	CENTRAL BEDFORDSHIRE	3 days
	SS	SOUTHEND ON SEA	2 days
04	EAST ANGLIA		
	NF	NORFOLK	1 days
	SF	SUFFOLK	1 days
09	NORTH		
	CU	CUMBERLAND	1 days
10	WALES		
	CO	CONWY	1 days
11	SCOTLAND		
	HI	HIGHLAND	1 days
	SA	SOUTH AYRSHIRE	1 days
	SR	STIRLING	2 days
14	LEINSTER		
	LU	LOUTH	3 days
	WX	WEXFORD	1 days
16	ULSTER (REPUBLIC OF IRELAND)		
	MG	MONAGHAN	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
Actual Range: 6 to 175 (units:)
Range Selected by User: 6 to 724 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 05/09/24

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	3 days
Tuesday	6 days
Wednesday	3 days
Thursday	5 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	19 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Town Centre	1
Edge of Town Centre	18

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	12
Built-Up Zone	4
No Sub Category	3

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	24 days - Selected
Servicing vehicles Excluded	23 days - Selected

Secondary Filtering selection:

Use Class:

C3	19 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	5 days
10,001 to 15,000	4 days
15,001 to 20,000	3 days
25,001 to 50,000	6 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	5 days
50,001 to 75,000	6 days
75,001 to 100,000	3 days
125,001 to 250,000	4 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	16 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	19 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	18 days
5 Very Good	1 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 CO-03-C-01 BLOCKS OF FLATS CONWY
MOSTYN BROADWAY
LLANDUDNO

Edge of Town Centre
Built-Up Zone
Total No of Dwellings: 37
Survey date: MONDAY *26/03/18* *Survey Type: MANUAL*

2 CT-03-C-01 BLOCKS OF FLATS CENTRAL BEDFORDSHIRE
WING ROAD
LEIGHTON BUZZARD
LINSLADE
Edge of Town Centre
Residential Zone
Total No of Dwellings: 175
Survey date: TUESDAY *15/05/18* *Survey Type: MANUAL*

3 CT-03-C-02 BLOCKS OF FLATS CENTRAL BEDFORDSHIRE
STANBRIDGE ROAD
LEIGHTON BUZZARD

Edge of Town Centre
Residential Zone
Total No of Dwellings: 62
Survey date: TUESDAY *15/05/18* *Survey Type: MANUAL*

4 CT-03-C-03 BLOCKS OF FLATS CENTRAL BEDFORDSHIRE
COURT DRIVE
DUNSTABLE

Edge of Town Centre
No Sub Category
Total No of Dwellings: 146
Survey date: TUESDAY *15/05/18* *Survey Type: MANUAL*

5 CU-03-C-01 BLOCK OF FLATS CUMBERLAND
KING STREET
CARLISLE

Town Centre
Built-Up Zone
Total No of Dwellings: 40
Survey date: THURSDAY *12/06/14* *Survey Type: MANUAL*

6 HI-03-C-02 BLOCK OF FLATS HIGHLAND
KING STREET
NAIRN

Edge of Town Centre
Residential Zone
Total No of Dwellings: 16
Survey date: WEDNESDAY *19/04/23* *Survey Type: MANUAL*

7 KN-03-C-03 BLOCK OF FLATS KENSINGTON AND CHELSEA
ALLEN STREET
KENSINGTON

Edge of Town Centre
Residential Zone
Total No of Dwellings: 72
Survey date: FRIDAY *11/05/12* *Survey Type: MANUAL*

8 LU-03-C-01 BLOCKS OF FLATS LOUTH
DONORE ROAD
DROGHEDA

Edge of Town Centre
Residential Zone
Total No of Dwellings: 52
Survey date: THURSDAY *12/09/13* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

9 LU-03-C-02 BLOCK OF FLATS LOUTH
NICHOLAS STREET
DUNDALK

Edge of Town Centre
Residential Zone
Total No of Dwellings: 33
Survey date: MONDAY *16/09/13* *Survey Type: MANUAL*

10 LU-03-C-03 BLOCK OF FLATS LOUTH
NICHOLAS STREET
DUNDALK

Edge of Town Centre
Residential Zone
Total No of Dwellings: 20
Survey date: MONDAY *16/09/13* *Survey Type: MANUAL*

11 MG-03-C-01 BLOCK OF FLATS MONAGHAN
MALL ROAD
MONAGHAN

Edge of Town Centre
No Sub Category
Total No of Dwellings: 28
Survey date: FRIDAY *06/09/13* *Survey Type: MANUAL*

12 NF-03-C-01 BLOCKS OF FLATS NORFOLK
PAGE STAIR LANE
KING'S LYNN

Edge of Town Centre
Built-Up Zone
Total No of Dwellings: 51
Survey date: THURSDAY *11/12/14* *Survey Type: MANUAL*

13 SA-03-C-01 BLOCK OF FLATS SOUTH AYRSHIRE
RACECOURSE ROAD
AYR

Edge of Town Centre
Residential Zone
Total No of Dwellings: 51
Survey date: TUESDAY *16/09/14* *Survey Type: MANUAL*

14 SF-03-C-01 BLOCKS OF FLATS SUFFOLK
STATION HILL
BURY ST EDMUNDS

Edge of Town Centre
Built-Up Zone
Total No of Dwellings: 85
Survey date: THURSDAY *18/12/14* *Survey Type: MANUAL*

15 SR-03-C-01 FLATS STIRLING
FORTHSIDE WAY
STIRLING

Edge of Town Centre
No Sub Category
Total No of Dwellings: 80
Survey date: WEDNESDAY *18/06/14* *Survey Type: MANUAL*

16 SR-03-C-02 FLATS STIRLING
ROSEBERRY TERRACE
STIRLING

Edge of Town Centre
Residential Zone
Total No of Dwellings: 48
Survey date: WEDNESDAY *18/06/14* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

17 SS-03-C-01 FLATS SOUTHEND ON SEA
WESTCLIFF PARADE
SOUTHEND-ON-SEA
WESTCLIFF
Edge of Town Centre
Residential Zone
Total No of Dwellings: 6
Survey date: TUESDAY *22/10/13* *Survey Type: MANUAL*

18 SS-03-C-02 BLOCK OF FLATS SOUTHEND ON SEA
WESTCLIFF PARADE
SOUTHEND-ON-SEA
WESTCLIFF
Edge of Town Centre
Residential Zone
Total No of Dwellings: 94
Survey date: TUESDAY *22/10/13* *Survey Type: MANUAL*

19 WX-03-C-01 BLOCKS OF FLATS WEXFORD
UPPER GEORGE'S STREET
WEXFORD

Edge of Town Centre
Residential Zone
Total No of Dwellings: 28
Survey date: THURSDAY *20/04/23* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
MA-03-C-01	COVID
MS-03-C-04	COVID
SF-03-C-05	COVID

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.36

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	19	59	0.036	19	59	0.133	19	59	0.169
08:00 - 09:00	19	59	0.060	19	59	0.183	19	59	0.243
09:00 - 10:00	19	59	0.070	19	59	0.087	19	59	0.157
10:00 - 11:00	19	59	0.069	19	59	0.089	19	59	0.158
11:00 - 12:00	19	59	0.074	19	59	0.091	19	59	0.165
12:00 - 13:00	19	59	0.115	19	59	0.089	19	59	0.204
13:00 - 14:00	19	59	0.087	19	59	0.094	19	59	0.181
14:00 - 15:00	19	59	0.077	19	59	0.090	19	59	0.167
15:00 - 16:00	19	59	0.103	19	59	0.077	19	59	0.180
16:00 - 17:00	19	59	0.128	19	59	0.082	19	59	0.210
17:00 - 18:00	19	59	0.172	19	59	0.105	19	59	0.277
18:00 - 19:00	19	59	0.176	19	59	0.101	19	59	0.277
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.167			1.221			2.388

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	6 - 175 (units:)
Survey date date range:	01/01/10 - 05/09/24
Number of weekdays (Monday-Friday):	19
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	3

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Calculation Reference: AUDIT-118301-250703-0749

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : A - HOTELS
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	BH	BRIGHTON & HOVE	1 days
03	SOUTH WEST		
	PL	PLYMOUTH	1 days
	SD	SWINDON	1 days
04	EAST ANGLIA		
	NF	NORFOLK	2 days
05	EAST MIDLANDS		
	DY	DERBY	1 days
	NG	NOTTINGHAM	1 days
	NN	NORTH NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS		
	HE	HEREFORDSHIRE	1 days
	WM	WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	AL	CALDERDALE	1 days
	NY	NORTH YORKSHIRE	1 days
08	NORTH WEST		
	GM	GREATER MANCHESTER	1 days
09	NORTH		
	CU	CUMBERLAND	1 days
	DH	DURHAM	1 days
	TV	TEES VALLEY	1 days
	TW	TYNE & WEAR	1 days
10	WALES		
	CF	CARDIFF	2 days
	NW	NEWPORT	1 days
11	SCOTLAND		
	HI	HIGHLAND	2 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	Gross floor area
Actual Range:	1200 to 10300 (units: sqm)
Range Selected by User:	720 to 17624 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/05 to 12/11/21

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	7 days
Tuesday	4 days
Wednesday	4 days
Thursday	5 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	22 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Town Centre	13
Edge of Town Centre	9

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Commercial Zone	2
Development Zone	2
Residential Zone	2
Built-Up Zone	8
High Street	3
No Sub Category	5

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	7 days - Selected
Servicing vehicles Excluded	17 days - Selected

Secondary Filtering selection:

Use Class:

C1	22 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	1 days
15,001 to 20,000	2 days
20,001 to 25,000	5 days
25,001 to 50,000	11 days
50,001 to 100,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	2 days
75,001 to 100,000	5 days
125,001 to 250,000	4 days
250,001 to 500,000	7 days
500,001 or More	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.5 or Less	3 days
0.6 to 1.0	12 days
1.1 to 1.5	7 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	22 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	22 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 AL-06-A-01 TRAVELODGE CALDERDALE
DEAN CLOUGH
HALIFAX

Edge of Town Centre
Development Zone
Total Gross floor area: 2675 sqm
Survey date: MONDAY 22/10/18 Survey Type: MANUAL

2 BH-06-A-01 HOTEL BRIGHTON & HOVE
KINGS ROAD
BRIGHTON

Town Centre
Built-Up Zone
Total Gross floor area: 10300 sqm
Survey date: WEDNESDAY 16/10/19 Survey Type: MANUAL

3 CF-06-A-03 HOLIDAY INN EXPRESS CARDIFF
LONGUEIL CLOSE
CARDIFF

Edge of Town Centre
Residential Zone
Total Gross floor area: 2725 sqm
Survey date: MONDAY 16/07/12 Survey Type: MANUAL

4 CF-06-A-04 TRAVELODGE CARDIFF
THE FRIARY
CARDIFF

Town Centre
Built-Up Zone
Total Gross floor area: 3500 sqm
Survey date: MONDAY 16/07/12 Survey Type: MANUAL

5 CU-06-A-01 HOTEL CUMBERLAND
ENGLISH STREET
CARLISLE

Town Centre
High Street
Total Gross floor area: 2450 sqm
Survey date: MONDAY 20/06/16 Survey Type: MANUAL

6 DH-06-A-01 PREMIER INN DURHAM
FREEMANS PLACE
DURHAM
MILLENNIUM PLACE
Edge of Town Centre
Development Zone
Total Gross floor area: 3570 sqm
Survey date: THURSDAY 04/12/08 Survey Type: MANUAL

7 DY-06-A-02 JURY'S INN DERBY
KING STREET
DERBY

Town Centre
Commercial Zone
Total Gross floor area: 1200 sqm
Survey date: TUESDAY 19/07/11 Survey Type: MANUAL

8 GM-06-A-08 IBIS GREATER MANCHESTER
PORTLAND STREET
MANCHESTER

Town Centre
Built-Up Zone
Total Gross floor area: 3600 sqm
Survey date: MONDAY 26/09/16 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

9 HE-06-A-01 HOTEL HEREFORDSHIRE
BROAD STREET
HEREFORD

Town Centre
No Sub Category
Total Gross floor area: 3096 sqm
Survey date: THURSDAY *02/03/06* *Survey Type: MANUAL*

10 HI-06-A-04 HOTEL HIGHLAND
ACADEMY STREET
INVERNESS

Town Centre
High Street
Total Gross floor area: 5460 sqm
Survey date: FRIDAY *13/05/11* *Survey Type: MANUAL*

11 HI-06-A-05 BEST WESTERN HIGHLAND
NESS WALK
INVERNESS

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 2990 sqm
Survey date: THURSDAY *19/04/18* *Survey Type: MANUAL*

12 NF-06-A-01 HOTEL NORFOLK
PALACE STREET
NORWICH
TOMBLANDS
Edge of Town Centre
No Sub Category
Total Gross floor area: 3530 sqm
Survey date: WEDNESDAY *16/05/07* *Survey Type: MANUAL*

13 NF-06-A-04 HOTEL NORFOLK
THORPE ROAD
NORWICH
THORPE HAMLET
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 1650 sqm
Survey date: MONDAY *25/11/19* *Survey Type: MANUAL*

14 NG-06-A-02 PREMIER INN NOTTINGHAM
LONDON ROAD
NOTTINGHAM

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 6000 sqm
Survey date: MONDAY *24/06/13* *Survey Type: MANUAL*

15 NN-06-A-01 COMFORT INN NORTH NORTHAMPTONSHIRE
HIGH STREET
KETTERING

Town Centre
No Sub Category
Total Gross floor area: 5868 sqm
Survey date: FRIDAY *06/05/05* *Survey Type: MANUAL*

16 NW-06-A-01 TRAVELODGE NEWPORT
BRIDGE STREET
NEWPORT

Town Centre
High Street
Total Gross floor area: 3750 sqm
Survey date: THURSDAY *14/10/10* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

17 NY-06-A-01 ASCEND HOTEL NORTH YORKSHIRE
PARK PARADE
HARROGATE

Edge of Town Centre
Residential Zone
Total Gross floor area: 5140 sqm
Survey date: TUESDAY 23/10/18 Survey Type: MANUAL

18 PL-06-A-02 PREMIER INN PLYMOUTH
SUTTON ROAD
PLYMOUTH
SUTTON HARBOUR
Edge of Town Centre
No Sub Category
Total Gross floor area: 3420 sqm
Survey date: WEDNESDAY 21/10/09 Survey Type: MANUAL

19 SD-06-A-02 HOLIDAY INN EXPRESS SWINDON
BRIDGE STREET
SWINDON

Town Centre
Built-Up Zone
Total Gross floor area: 2227 sqm
Survey date: WEDNESDAY 27/11/13 Survey Type: MANUAL

20 TV-06-A-04 THISTLE TEES VALLEY
FRY STREET
MIDDLESBROUGH

Town Centre
Commercial Zone
Total Gross floor area: 9850 sqm
Survey date: THURSDAY 03/10/13 Survey Type: MANUAL

21 TW-06-A-03 HOTEL TYNE & WEAR
SANDHILL
NEWCASTLE UPON TYNE
QUAYSIDE
Town Centre
Built-Up Zone
Total Gross floor area: 1450 sqm
Survey date: TUESDAY 14/06/16 Survey Type: MANUAL

22 WM-06-A-01 HOTEL WEST MIDLANDS
LICHFIELD ROAD
WOLVERHAMPTON

Town Centre
No Sub Category
Total Gross floor area: 5768 sqm
Survey date: TUESDAY 21/02/06 Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
MULTI-MODAL TOTAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.85

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	10300	0.029	1	10300	0.019	1	10300	0.048
07:00 - 08:00	22	4101	0.136	22	4101	0.215	22	4101	0.351
08:00 - 09:00	22	4101	0.234	22	4101	0.300	22	4101	0.534
09:00 - 10:00	22	4101	0.231	22	4101	0.262	22	4101	0.493
10:00 - 11:00	22	4101	0.209	22	4101	0.209	22	4101	0.418
11:00 - 12:00	22	4101	0.143	22	4101	0.193	22	4101	0.336
12:00 - 13:00	22	4101	0.182	22	4101	0.186	22	4101	0.368
13:00 - 14:00	22	4101	0.163	22	4101	0.137	22	4101	0.300
14:00 - 15:00	22	4101	0.165	22	4101	0.144	22	4101	0.309
15:00 - 16:00	22	4101	0.182	22	4101	0.205	22	4101	0.387
16:00 - 17:00	22	4101	0.207	22	4101	0.182	22	4101	0.389
17:00 - 18:00	22	4101	0.243	22	4101	0.174	22	4101	0.417
18:00 - 19:00	22	4101	0.234	22	4101	0.143	22	4101	0.377
19:00 - 20:00	20	4068	0.203	20	4068	0.143	20	4068	0.346
20:00 - 21:00	20	4068	0.133	20	4068	0.107	20	4068	0.240
21:00 - 22:00	20	4068	0.116	20	4068	0.081	20	4068	0.197
22:00 - 23:00	1	3570	0.308	1	3570	0.392	1	3570	0.700
23:00 - 24:00									
Total Rates:			3.118			3.092			6.210

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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Parameter summary

Trip rate parameter range selected:	1200 - 10300 (units: sqm)
Survey date date range:	01/01/05 - 12/11/21
Number of weekdays (Monday-Friday):	22
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
MULTI-MODAL OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	10300	0.000	1	10300	0.000	1	10300	0.000
07:00 - 08:00	22	4101	0.006	22	4101	0.004	22	4101	0.010
08:00 - 09:00	22	4101	0.009	22	4101	0.009	22	4101	0.018
09:00 - 10:00	22	4101	0.009	22	4101	0.008	22	4101	0.017
10:00 - 11:00	22	4101	0.001	22	4101	0.002	22	4101	0.003
11:00 - 12:00	22	4101	0.001	22	4101	0.001	22	4101	0.002
12:00 - 13:00	22	4101	0.003	22	4101	0.004	22	4101	0.007
13:00 - 14:00	22	4101	0.002	22	4101	0.001	22	4101	0.003
14:00 - 15:00	22	4101	0.002	22	4101	0.003	22	4101	0.005
15:00 - 16:00	22	4101	0.001	22	4101	0.001	22	4101	0.002
16:00 - 17:00	22	4101	0.001	22	4101	0.001	22	4101	0.002
17:00 - 18:00	22	4101	0.001	22	4101	0.001	22	4101	0.002
18:00 - 19:00	22	4101	0.001	22	4101	0.001	22	4101	0.002
19:00 - 20:00	20	4068	0.000	20	4068	0.000	20	4068	0.000
20:00 - 21:00	20	4068	0.000	20	4068	0.000	20	4068	0.000
21:00 - 22:00	20	4068	0.000	20	4068	0.000	20	4068	0.000
22:00 - 23:00	1	3570	0.000	1	3570	0.000	1	3570	0.000
23:00 - 24:00									
Total Rates:			0.037			0.036			0.073

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
MULTI-MODAL PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	10300	0.000	1	10300	0.000	1	10300	0.000
07:00 - 08:00	22	4101	0.001	22	4101	0.001	22	4101	0.002
08:00 - 09:00	22	4101	0.001	22	4101	0.002	22	4101	0.003
09:00 - 10:00	22	4101	0.001	22	4101	0.001	22	4101	0.002
10:00 - 11:00	22	4101	0.000	22	4101	0.000	22	4101	0.000
11:00 - 12:00	22	4101	0.000	22	4101	0.000	22	4101	0.000
12:00 - 13:00	22	4101	0.000	22	4101	0.000	22	4101	0.000
13:00 - 14:00	22	4101	0.000	22	4101	0.000	22	4101	0.000
14:00 - 15:00	22	4101	0.000	22	4101	0.000	22	4101	0.000
15:00 - 16:00	22	4101	0.001	22	4101	0.002	22	4101	0.003
16:00 - 17:00	22	4101	0.001	22	4101	0.000	22	4101	0.001
17:00 - 18:00	22	4101	0.003	22	4101	0.003	22	4101	0.006
18:00 - 19:00	22	4101	0.001	22	4101	0.001	22	4101	0.002
19:00 - 20:00	20	4068	0.000	20	4068	0.000	20	4068	0.000
20:00 - 21:00	20	4068	0.000	20	4068	0.000	20	4068	0.000
21:00 - 22:00	20	4068	0.000	20	4068	0.000	20	4068	0.000
22:00 - 23:00	1	3570	0.000	1	3570	0.000	1	3570	0.000
23:00 - 24:00									
Total Rates:			0.009			0.010			0.019

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	10300	0.000	1	10300	0.000	1	10300	0.000
07:00 - 08:00	22	4101	0.008	22	4101	0.000	22	4101	0.008
08:00 - 09:00	22	4101	0.003	22	4101	0.004	22	4101	0.007
09:00 - 10:00	22	4101	0.001	22	4101	0.002	22	4101	0.003
10:00 - 11:00	22	4101	0.001	22	4101	0.001	22	4101	0.002
11:00 - 12:00	22	4101	0.002	22	4101	0.001	22	4101	0.003
12:00 - 13:00	22	4101	0.001	22	4101	0.004	22	4101	0.005
13:00 - 14:00	22	4101	0.002	22	4101	0.003	22	4101	0.005
14:00 - 15:00	22	4101	0.004	22	4101	0.004	22	4101	0.008
15:00 - 16:00	22	4101	0.007	22	4101	0.003	22	4101	0.010
16:00 - 17:00	22	4101	0.001	22	4101	0.008	22	4101	0.009
17:00 - 18:00	22	4101	0.002	22	4101	0.002	22	4101	0.004
18:00 - 19:00	22	4101	0.007	22	4101	0.003	22	4101	0.010
19:00 - 20:00	20	4068	0.002	20	4068	0.001	20	4068	0.003
20:00 - 21:00	20	4068	0.001	20	4068	0.000	20	4068	0.001
21:00 - 22:00	20	4068	0.001	20	4068	0.000	20	4068	0.001
22:00 - 23:00	1	3570	0.000	1	3570	0.000	1	3570	0.000
23:00 - 24:00									
Total Rates:			0.043			0.036			0.079

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	10300	0.010	1	10300	0.019	1	10300	0.029
07:00 - 08:00	22	4101	0.163	22	4101	0.279	22	4101	0.442
08:00 - 09:00	22	4101	0.299	22	4101	0.415	22	4101	0.714
09:00 - 10:00	22	4101	0.300	22	4101	0.400	22	4101	0.700
10:00 - 11:00	22	4101	0.286	22	4101	0.307	22	4101	0.593
11:00 - 12:00	22	4101	0.198	22	4101	0.313	22	4101	0.511
12:00 - 13:00	22	4101	0.280	22	4101	0.273	22	4101	0.553
13:00 - 14:00	22	4101	0.238	22	4101	0.182	22	4101	0.420
14:00 - 15:00	22	4101	0.265	22	4101	0.187	22	4101	0.452
15:00 - 16:00	22	4101	0.269	22	4101	0.263	22	4101	0.532
16:00 - 17:00	22	4101	0.326	22	4101	0.252	22	4101	0.578
17:00 - 18:00	22	4101	0.336	22	4101	0.214	22	4101	0.550
18:00 - 19:00	22	4101	0.333	22	4101	0.203	22	4101	0.536
19:00 - 20:00	20	4068	0.317	20	4068	0.203	20	4068	0.520
20:00 - 21:00	20	4068	0.207	20	4068	0.140	20	4068	0.347
21:00 - 22:00	20	4068	0.152	20	4068	0.096	20	4068	0.248
22:00 - 23:00	1	3570	0.364	1	3570	0.448	1	3570	0.812
23:00 - 24:00									
Total Rates:			4.343			4.194			8.537

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	10300	0.029	1	10300	0.000	1	10300	0.029
07:00 - 08:00	22	4101	0.069	22	4101	0.059	22	4101	0.128
08:00 - 09:00	22	4101	0.131	22	4101	0.183	22	4101	0.314
09:00 - 10:00	22	4101	0.142	22	4101	0.196	22	4101	0.338
10:00 - 11:00	22	4101	0.174	22	4101	0.255	22	4101	0.429
11:00 - 12:00	22	4101	0.195	22	4101	0.227	22	4101	0.422
12:00 - 13:00	22	4101	0.273	22	4101	0.224	22	4101	0.497
13:00 - 14:00	22	4101	0.213	22	4101	0.295	22	4101	0.508
14:00 - 15:00	22	4101	0.217	22	4101	0.276	22	4101	0.493
15:00 - 16:00	22	4101	0.181	22	4101	0.196	22	4101	0.377
16:00 - 17:00	22	4101	0.200	22	4101	0.231	22	4101	0.431
17:00 - 18:00	22	4101	0.282	22	4101	0.257	22	4101	0.539
18:00 - 19:00	22	4101	0.284	22	4101	0.318	22	4101	0.602
19:00 - 20:00	20	4068	0.257	20	4068	0.304	20	4068	0.561
20:00 - 21:00	20	4068	0.218	20	4068	0.202	20	4068	0.420
21:00 - 22:00	20	4068	0.227	20	4068	0.112	20	4068	0.339
22:00 - 23:00	1	3570	0.000	1	3570	0.000	1	3570	0.000
23:00 - 24:00									
Total Rates:			3.092			3.335			6.427

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	10300	0.068	1	10300	0.039	1	10300	0.107
07:00 - 08:00	22	4101	0.063	22	4101	0.017	22	4101	0.080
08:00 - 09:00	22	4101	0.030	22	4101	0.114	22	4101	0.144
09:00 - 10:00	22	4101	0.039	22	4101	0.081	22	4101	0.120
10:00 - 11:00	22	4101	0.030	22	4101	0.041	22	4101	0.071
11:00 - 12:00	22	4101	0.044	22	4101	0.032	22	4101	0.076
12:00 - 13:00	22	4101	0.032	22	4101	0.042	22	4101	0.074
13:00 - 14:00	22	4101	0.094	22	4101	0.063	22	4101	0.157
14:00 - 15:00	22	4101	0.093	22	4101	0.085	22	4101	0.178
15:00 - 16:00	22	4101	0.094	22	4101	0.079	22	4101	0.173
16:00 - 17:00	22	4101	0.064	22	4101	0.034	22	4101	0.098
17:00 - 18:00	22	4101	0.094	22	4101	0.010	22	4101	0.104
18:00 - 19:00	22	4101	0.055	22	4101	0.028	22	4101	0.083
19:00 - 20:00	20	4068	0.028	20	4068	0.033	20	4068	0.061
20:00 - 21:00	20	4068	0.022	20	4068	0.006	20	4068	0.028
21:00 - 22:00	20	4068	0.014	20	4068	0.001	20	4068	0.015
22:00 - 23:00	1	3570	0.000	1	3570	0.000	1	3570	0.000
23:00 - 24:00									
Total Rates:			0.864			0.705			1.569

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.85

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	10300	0.107	1	10300	0.058	1	10300	0.165
07:00 - 08:00	22	4101	0.303	22	4101	0.355	22	4101	0.658
08:00 - 09:00	22	4101	0.463	22	4101	0.716	22	4101	1.179
09:00 - 10:00	22	4101	0.482	22	4101	0.679	22	4101	1.161
10:00 - 11:00	22	4101	0.491	22	4101	0.604	22	4101	1.095
11:00 - 12:00	22	4101	0.440	22	4101	0.573	22	4101	1.013
12:00 - 13:00	22	4101	0.586	22	4101	0.543	22	4101	1.129
13:00 - 14:00	22	4101	0.548	22	4101	0.543	22	4101	1.091
14:00 - 15:00	22	4101	0.580	22	4101	0.553	22	4101	1.133
15:00 - 16:00	22	4101	0.551	22	4101	0.541	22	4101	1.092
16:00 - 17:00	22	4101	0.591	22	4101	0.524	22	4101	1.115
17:00 - 18:00	22	4101	0.714	22	4101	0.483	22	4101	1.197
18:00 - 19:00	22	4101	0.678	22	4101	0.552	22	4101	1.230
19:00 - 20:00	20	4068	0.605	20	4068	0.541	20	4068	1.146
20:00 - 21:00	20	4068	0.447	20	4068	0.348	20	4068	0.795
21:00 - 22:00	20	4068	0.395	20	4068	0.209	20	4068	0.604
22:00 - 23:00	1	3570	0.364	1	3570	0.448	1	3570	0.812
23:00 - 24:00									
Total Rates:			8.345			8.270			16.615

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use: 07 - LEISURE

Category: C - LEISURE CENTRE

Selected Vehicle Type: Total Vehicles

Selected regions and areas:

07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	NY	NORTH YORKSHIRE	1 day
09	**NORTH**		
	CU	CUMBERLAND	1 day
10	**WALES**		
	WR	WREXHAM	1 day
13	**MUNSTER**		
	TI	TIPPERARY	1 day

This section displays the number of survey days per TRICS® sub-region in the selected set.

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Primary Filtering Selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	GFA
Actual Range:	360 to 17000 (units:sqm)
Range Selected by User:	360 to 17000 (units:sqm)
Parking Spaces Range:	0 - 690

Public Transport Provision:

Selection by:	All Surveys Included
Date Range:	01/01/10 to 21/06/24

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Thursday	1 days
Wednesday	3 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	4
Direction ATC Count	0

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines

Selected Locations:

Edge of Town Centre	2 days
Town Centre	2 days

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Built-Up Zone	3 days
No Sub Category	1 days

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicle Counts:

Servicing vehicles Excluded	4 days

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Secondary Filtering Selection:

Use Class:

F2(d)	1 surveys
N/A	3 surveys

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

200 - 8560

Population within 1 mile:

25,001 to 50,000	2 surveys
5,001 to 10,000	2 surveys

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 surveys
75,001 to 100,000	2 surveys

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 surveys
1.1 to 1.5	3 surveys

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

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Petrol filling station:

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

No	4 surveys

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	4 surveys

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

COVID-19 Restrictions:

No

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1 **CU-07-C-03** **SWIMMING & FITNESS CENTRE** **CUMBERLAND**
JAMES STREET
CARLISLE
Edge of Town Centre
Built-Up Zone
Site area: 0.58 hect
Survey date: Wednesday 22/06/2016 Survey Type: Unknown

2 **NY-07-C-01** **SWIMMING POOL** **NORTH YORKSHIRE**
MILL LANE
PICKERING
Edge of Town Centre
No Sub Category
Site area: 0.43 hect
Survey date: Thursday 13/10/2011 Survey Type: Unknown

3 **TI-07-C-01** **SWIMMING POOL** **TIPPERARY**
MICK DELAHUNTY SQUARE
CLONMEL
Town Centre
Built-Up Zone
Site area: 0.41 hect
Survey date: Wednesday 22/06/2011 Survey Type: Unknown

4 **WR-07-C-01** **SWIMMING POOL** **WREXHAM**
BODHYFRYD
WREXHAM
Town Centre
Built-Up Zone
Site area: 0.79 hect
Survey date: Wednesday 12/10/2011 Survey Type: Unknown

DESELECTED SURVEYS

Site Ref	Survey Date	Reason for Deselection
AN-07-C-01	22-06-2010	Not swimming pool only
DN-07-C-01	29-11-2011	Not swimming pool only
DO-07-C-01	21-11-2018	Not swimming pool only
DV-07-C-02	05-07-2017	Not swimming pool only
DY-07-C-01	25-09-2019	Not swimming pool only
EL-07-C-01	25-04-2018	Not swimming pool only
NF-07-C-05	20-09-2022	Not swimming pool only
NG-07-C-03	26-06-2013	Not swimming pool only
RO-07-C-01	10-10-2012	Not swimming pool only
SD-07-C-01	21-09-2016	Not swimming pool only
WS-07-C-07	13-05-2022	Not swimming pool only

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

Total Vehicles

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.385**	**0.077**	**0.462**
07:00-08:00	**4**	**1888**	**0.887**	**0.305**	**1.192**
08:00-09:00	**4**	**1888**	**0.940**	**0.742**	**1.682**
09:00-10:00	**4**	**1888**	**1.020**	**0.728**	**1.748**
10:00-11:00	**4**	**1888**	**1.033**	**0.781**	**1.814**
11:00-12:00	**4**	**1888**	**0.742**	**0.967**	**1.709**
12:00-13:00	**4**	**1888**	**0.768**	**0.675**	**1.443**
13:00-14:00	**4**	**1888**	**0.795**	**0.583**	**1.378**
14:00-15:00	**4**	**1888**	**0.808**	**0.570**	**1.378**
15:00-16:00	**4**	**1888**	**1.205**	**0.755**	**1.960**
16:00-17:00	**4**	**1888**	**2.013**	**1.391**	**3.404**
17:00-18:00	**4**	**1888**	**1.868**	**1.881**	**3.749**
18:00-19:00	**4**	**1888**	**2.000**	**2.026**	**4.026**
19:00-20:00	**4**	**1888**	**0.940**	**1.656**	**2.596**
20:00-21:00	**4**	**1888**	**0.397**	**1.695**	**2.092**
21:00-22:00	**4**	**1888**	**0.066**	**0.887**	**0.953**
22:00-23:00	**1**	**2800**	**0.000**	**0.036**	**0.036**
23:00-00:00					
Total Rates:			**15.867**	**15.755**	**31.622**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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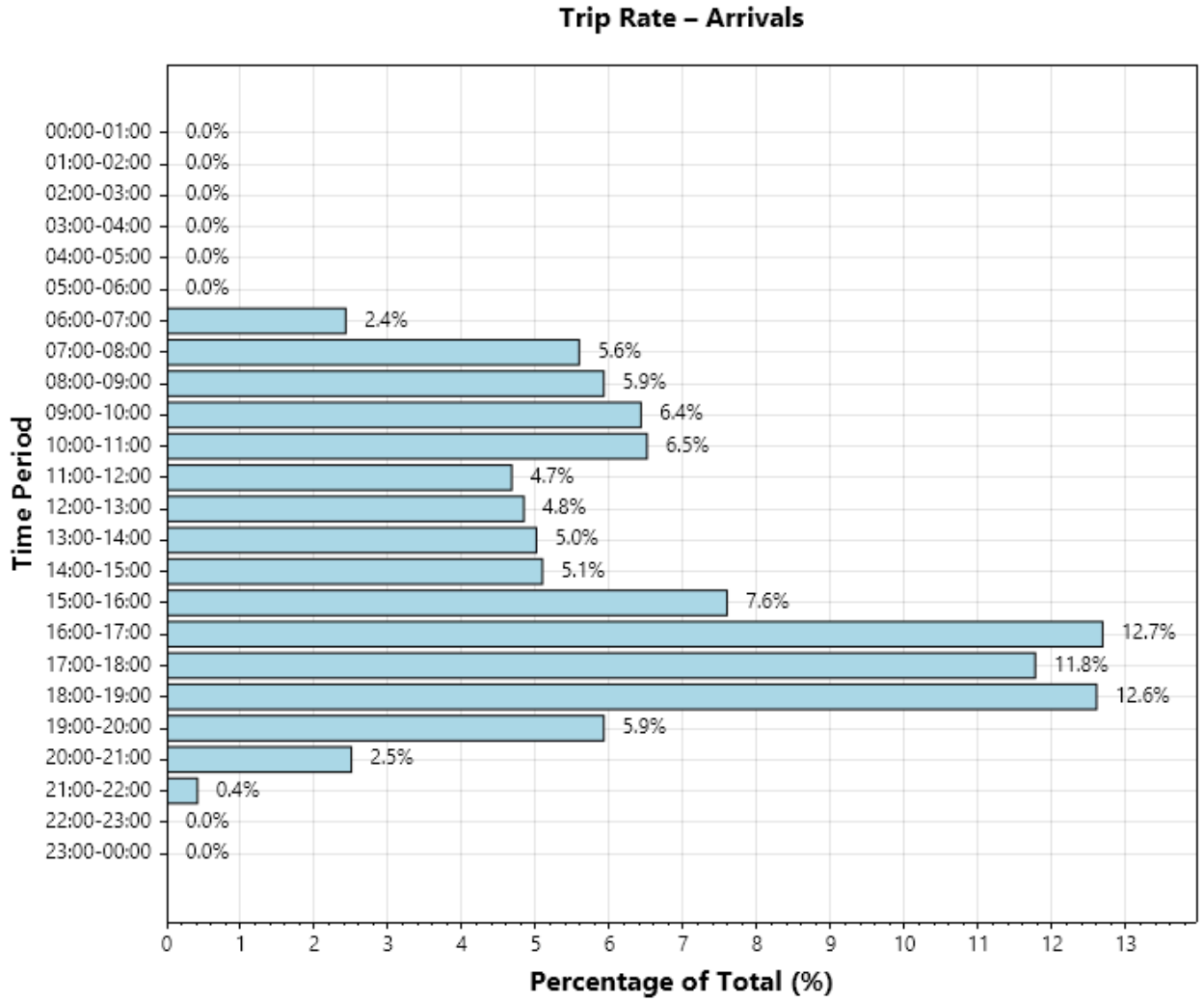
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	22/06/2011 - 22/06/2016
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate Total Vehicles – Arrivals

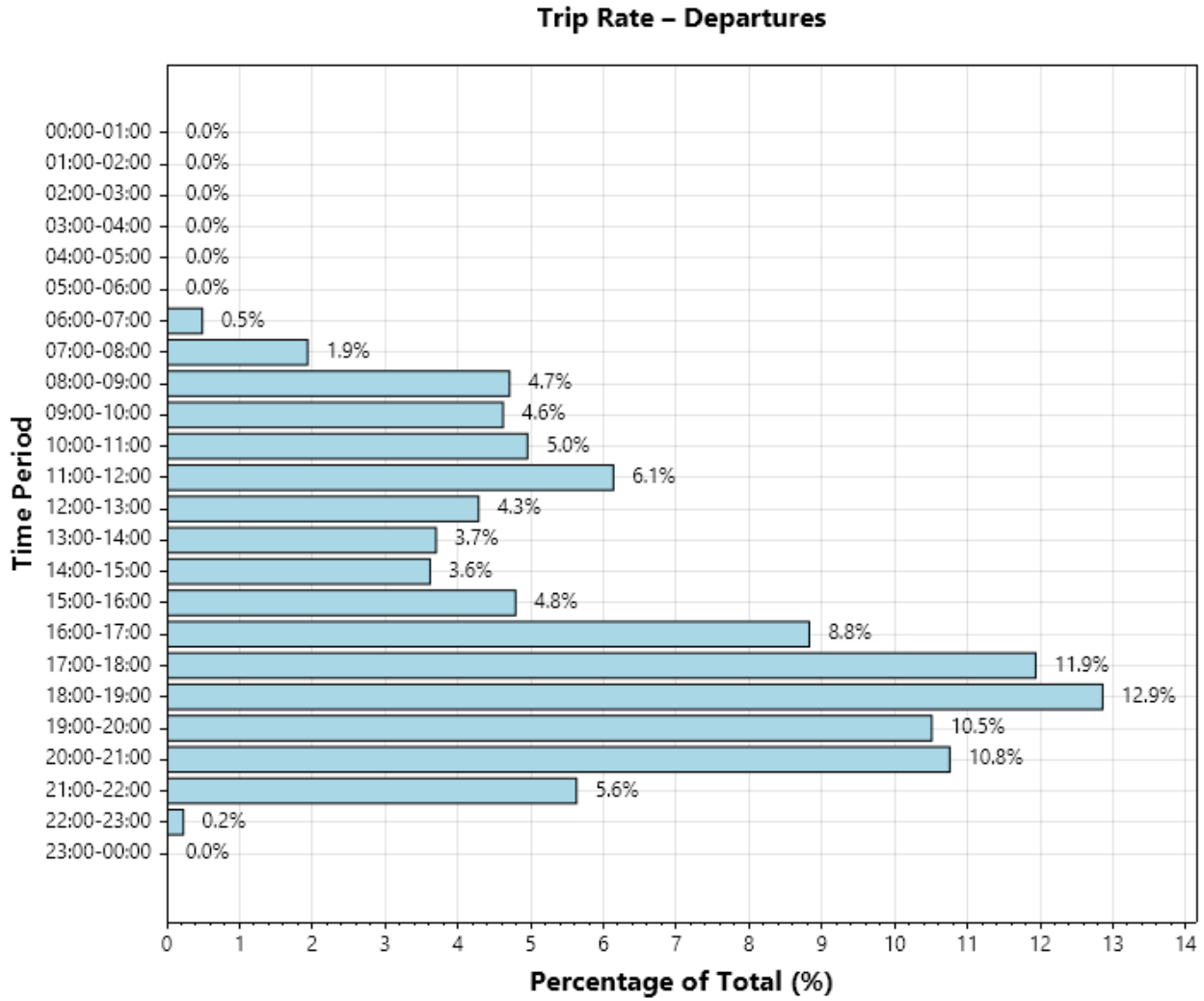


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Total Vehicles – Departures

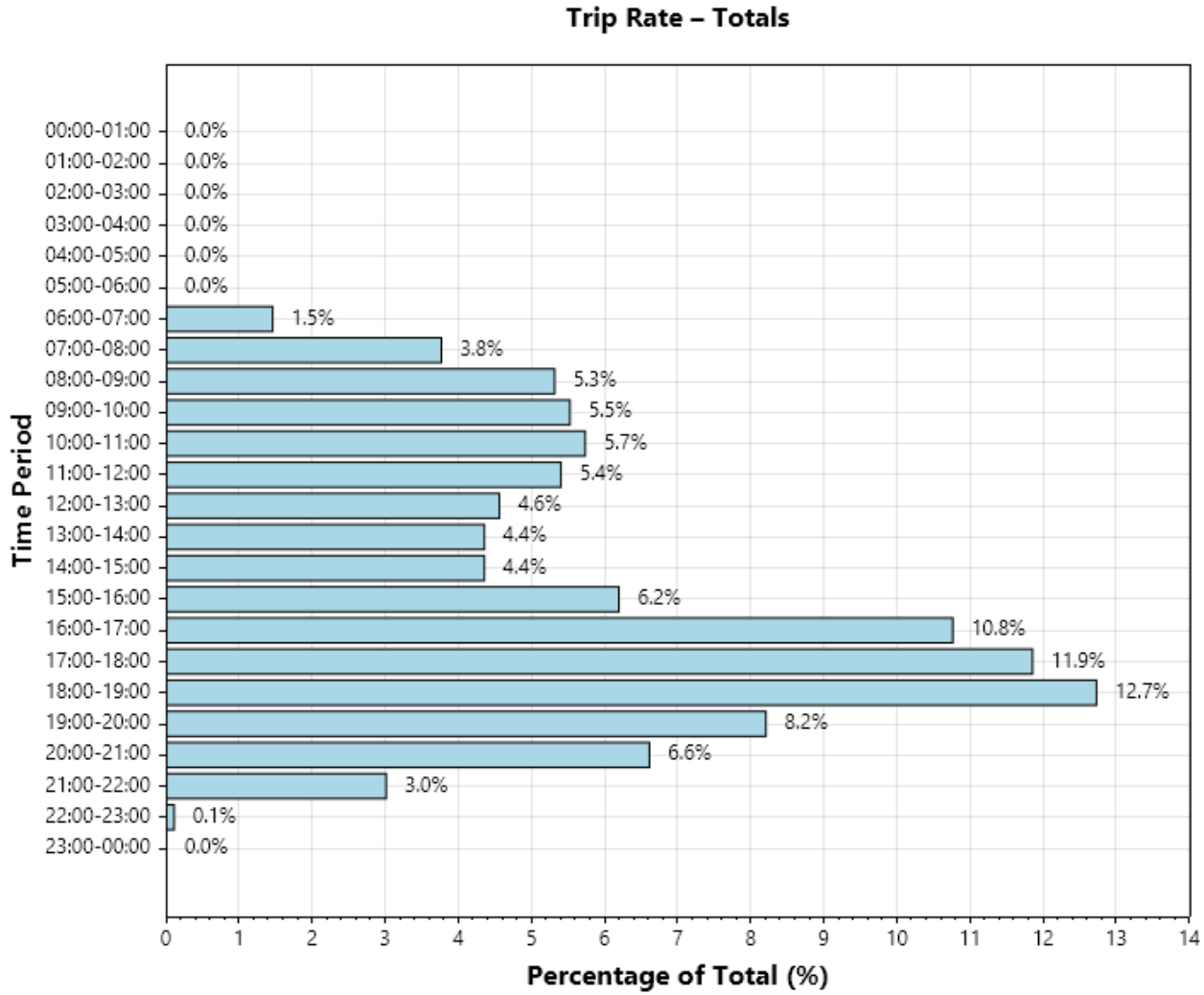


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Total Vehicles – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

Total People

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.487**	**0.077**	**0.564**
07:00-08:00	**4**	**1888**	**1.179**	**0.344**	**1.523**
08:00-09:00	**4**	**1888**	**1.364**	**1.060**	**2.424**
09:00-10:00	**4**	**1888**	**3.695**	**1.205**	**4.900**
10:00-11:00	**4**	**1888**	**3.457**	**1.947**	**5.404**
11:00-12:00	**4**	**1888**	**2.450**	**4.742**	**7.192**
12:00-13:00	**4**	**1888**	**1.377**	**2.159**	**3.536**
13:00-14:00	**4**	**1888**	**2.596**	**1.391**	**3.987**
14:00-15:00	**4**	**1888**	**1.748**	**2.013**	**3.761**
15:00-16:00	**4**	**1888**	**2.993**	**1.775**	**4.768**
16:00-17:00	**4**	**1888**	**4.795**	**2.848**	**7.643**
17:00-18:00	**4**	**1888**	**3.788**	**4.066**	**7.854**
18:00-19:00	**4**	**1888**	**3.404**	**3.828**	**7.232**
19:00-20:00	**4**	**1888**	**1.722**	**3.563**	**5.285**
20:00-21:00	**4**	**1888**	**0.556**	**3.126**	**3.682**
21:00-22:00	**4**	**1888**	**0.066**	**1.205**	**1.271**
22:00-23:00	**1**	**2800**	**0.000**	**0.071**	**0.071**
23:00-00:00					
Total Rates:			**35.677**	**35.420**	**71.097**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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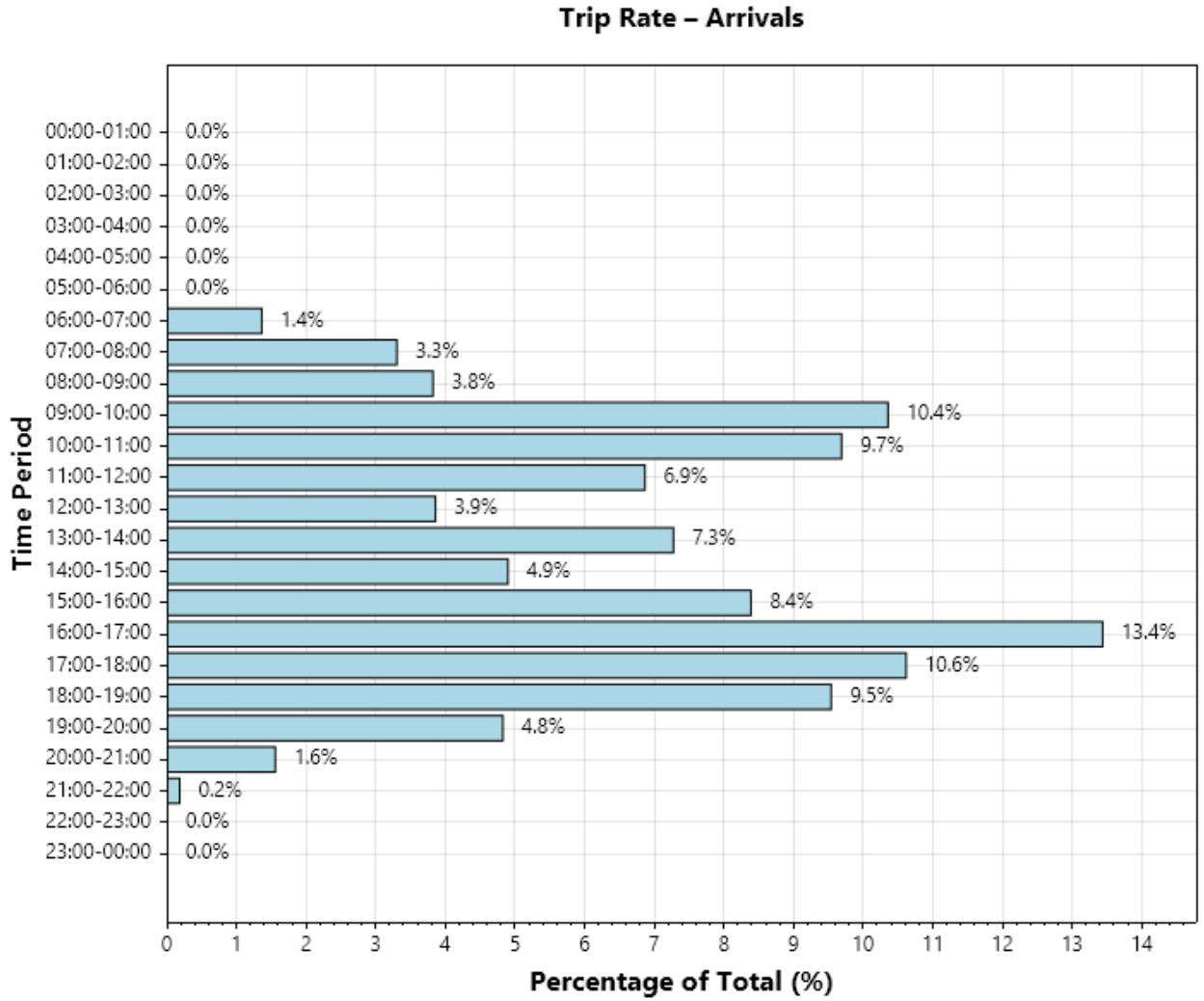
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	22/06/2011 - 22/06/2016
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate Total People – Arrivals

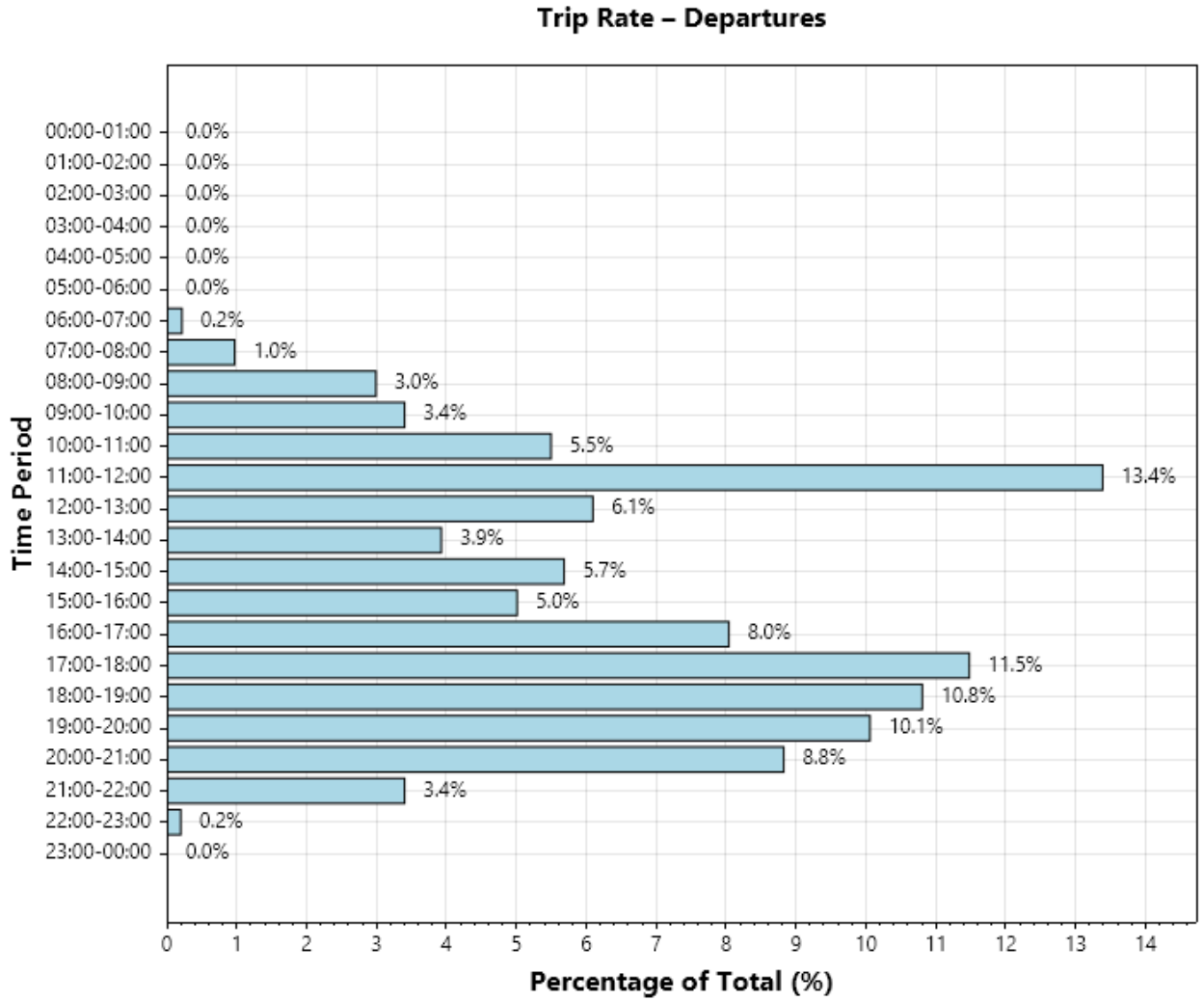


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Total People – Departures

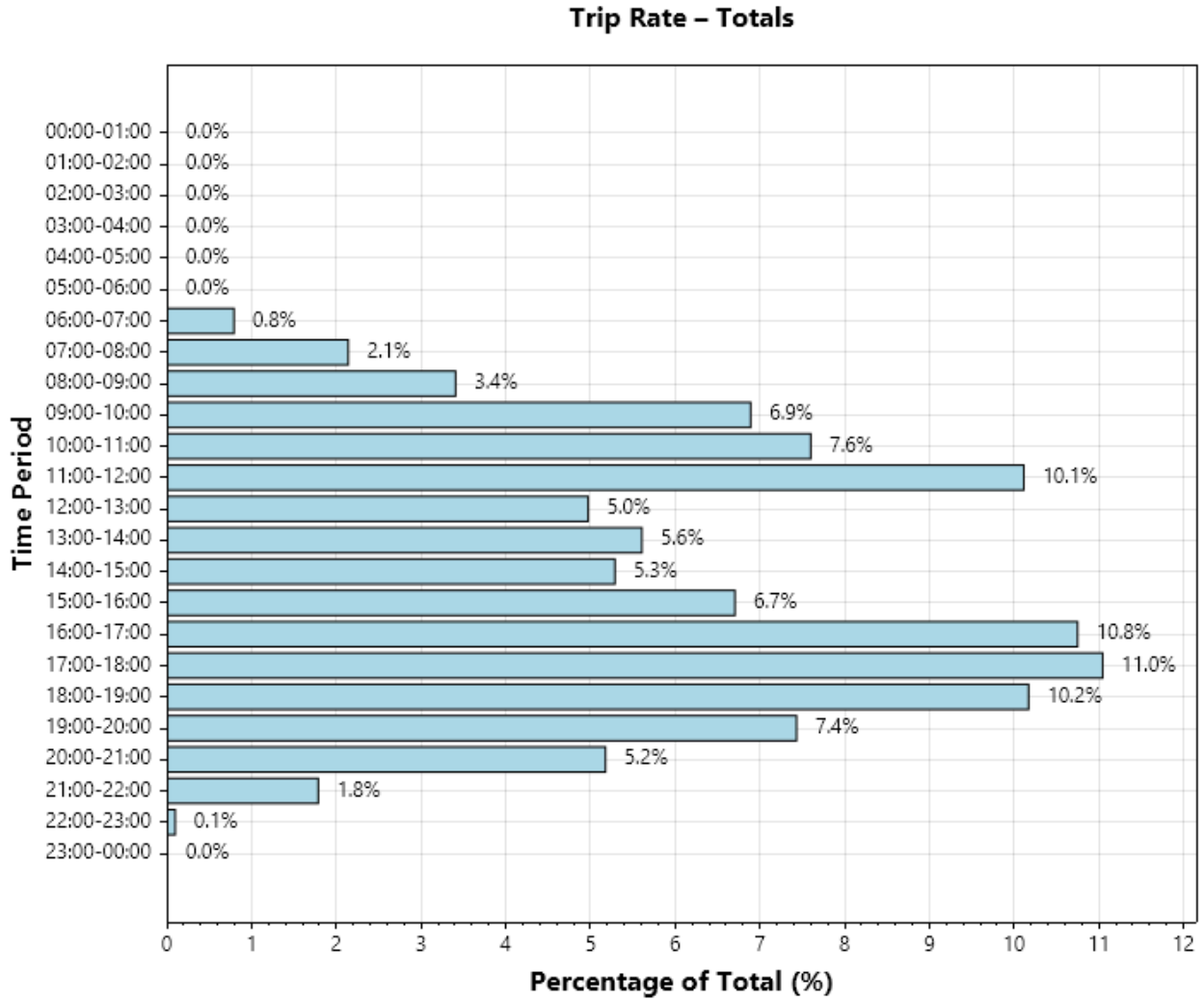


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Total People – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

Cyclists

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.000**	**0.000**	**0.000**
07:00-08:00	**4**	**1888**	**0.013**	**0.000**	**0.013**
08:00-09:00	**4**	**1888**	**0.026**	**0.013**	**0.039**
09:00-10:00	**4**	**1888**	**0.079**	**0.026**	**0.105**
10:00-11:00	**4**	**1888**	**0.040**	**0.053**	**0.093**
11:00-12:00	**4**	**1888**	**0.053**	**0.026**	**0.079**
12:00-13:00	**4**	**1888**	**0.000**	**0.026**	**0.026**
13:00-14:00	**4**	**1888**	**0.000**	**0.013**	**0.013**
14:00-15:00	**4**	**1888**	**0.013**	**0.013**	**0.026**
15:00-16:00	**4**	**1888**	**0.013**	**0.000**	**0.013**
16:00-17:00	**4**	**1888**	**0.040**	**0.026**	**0.066**
17:00-18:00	**4**	**1888**	**0.013**	**0.013**	**0.026**
18:00-19:00	**4**	**1888**	**0.026**	**0.026**	**0.052**
19:00-20:00	**4**	**1888**	**0.013**	**0.066**	**0.079**
20:00-21:00	**4**	**1888**	**0.000**	**0.026**	**0.026**
21:00-22:00	**4**	**1888**	**0.000**	**0.013**	**0.013**
22:00-23:00	**1**	**2800**	**0.000**	**0.000**	**0.000**
23:00-00:00					
Total Rates:			**0.329**	**0.340**	**0.669**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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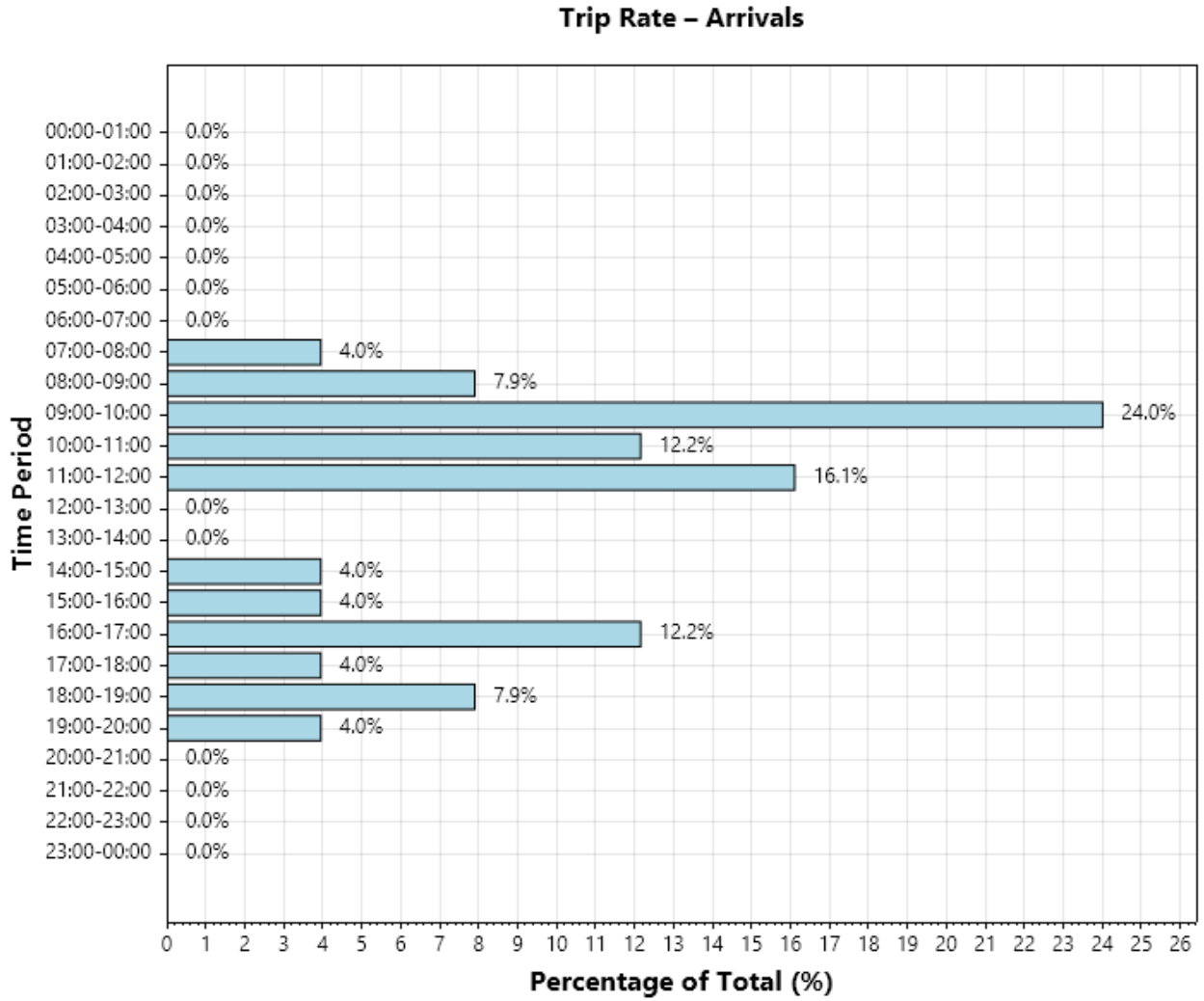
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	22/06/2011 - 22/06/2016
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate Cyclists – Arrivals

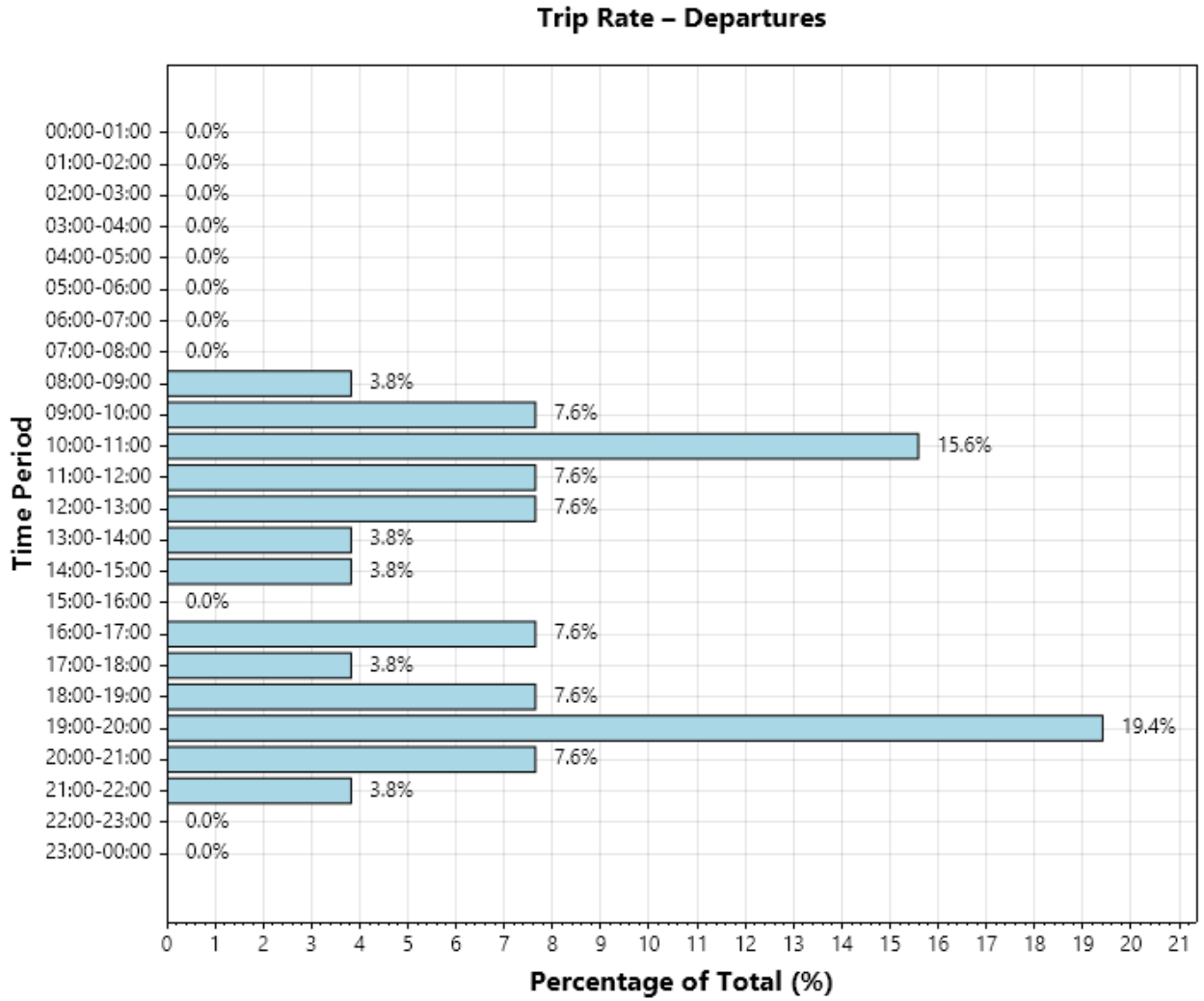


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Cyclists – Departures

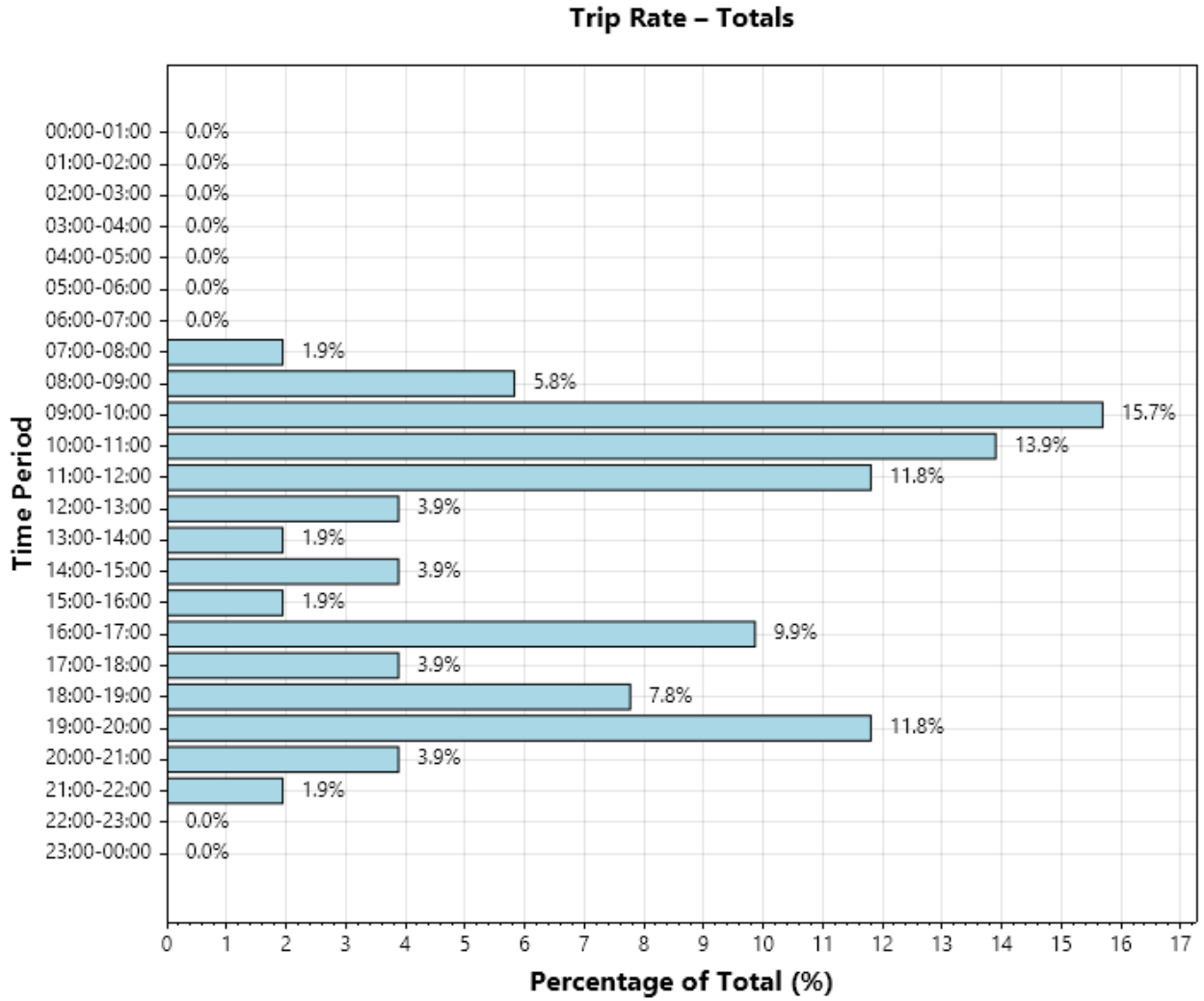


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Cyclists – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

PSVs

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.000**	**0.000**	**0.000**
07:00-08:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
08:00-09:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
09:00-10:00	**4**	**1888**	**0.066**	**0.026**	**0.092**
10:00-11:00	**4**	**1888**	**0.079**	**0.066**	**0.145**
11:00-12:00	**4**	**1888**	**0.026**	**0.053**	**0.079**
12:00-13:00	**4**	**1888**	**0.013**	**0.013**	**0.026**
13:00-14:00	**4**	**1888**	**0.040**	**0.053**	**0.093**
14:00-15:00	**4**	**1888**	**0.026**	**0.040**	**0.066**
15:00-16:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
16:00-17:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
17:00-18:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
18:00-19:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
19:00-20:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
20:00-21:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
21:00-22:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
22:00-23:00	**1**	**2800**	**0.000**	**0.000**	**0.000**
23:00-00:00					
Total Rates:			**0.250**	**0.251**	**0.501**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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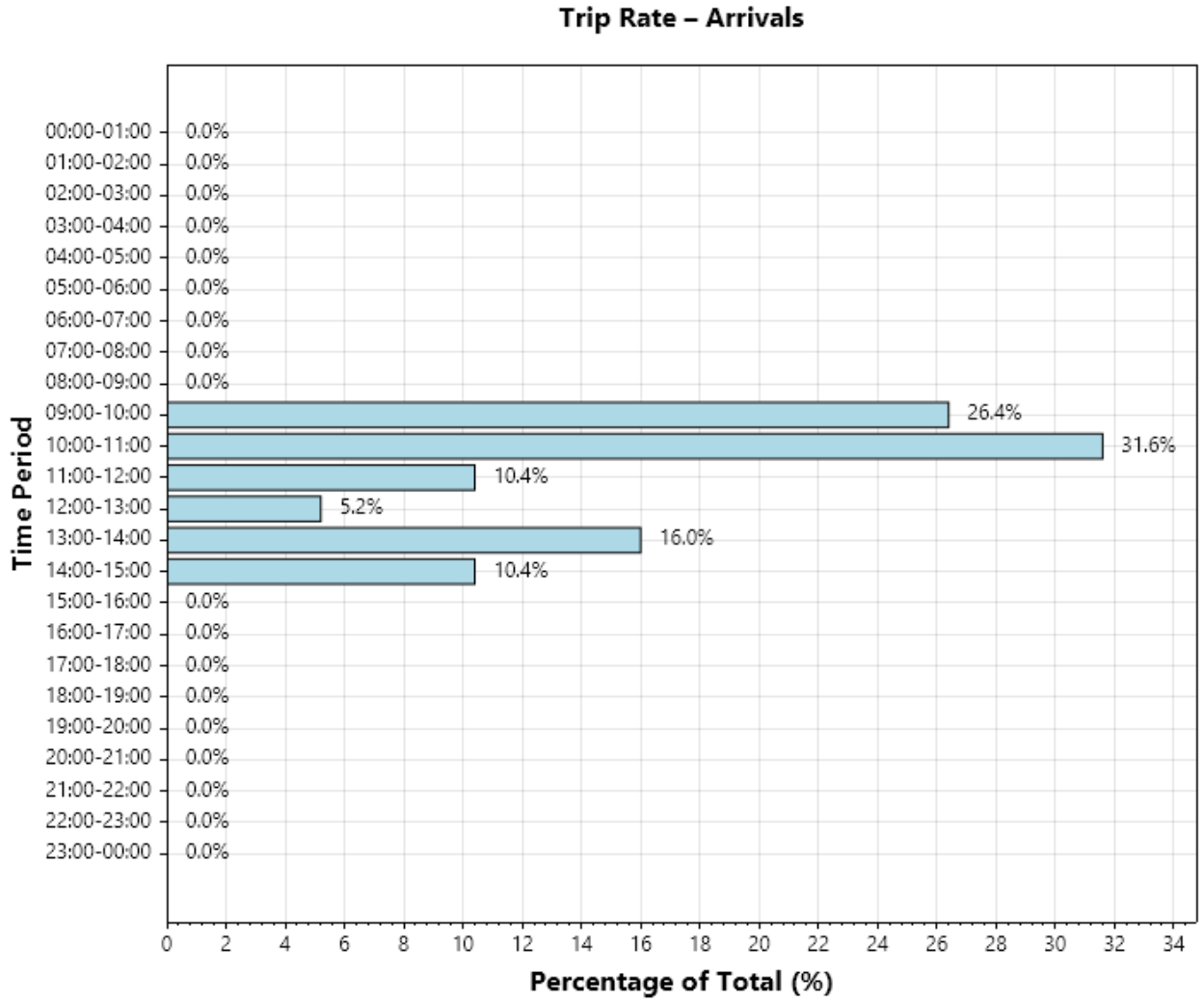
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	12/10/2011 - 22/06/2016
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate PSVs – Arrivals

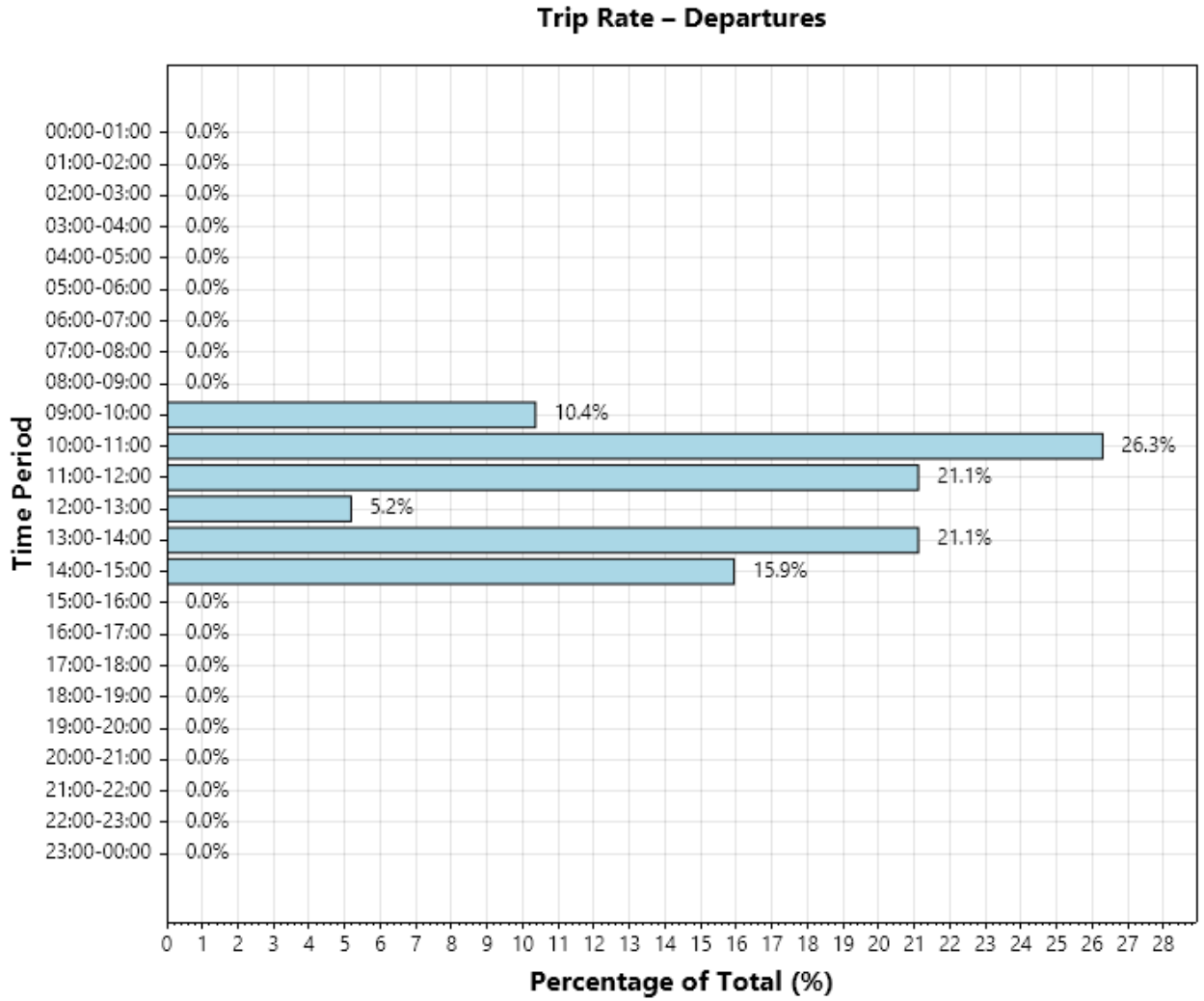


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate PSVs – Departures

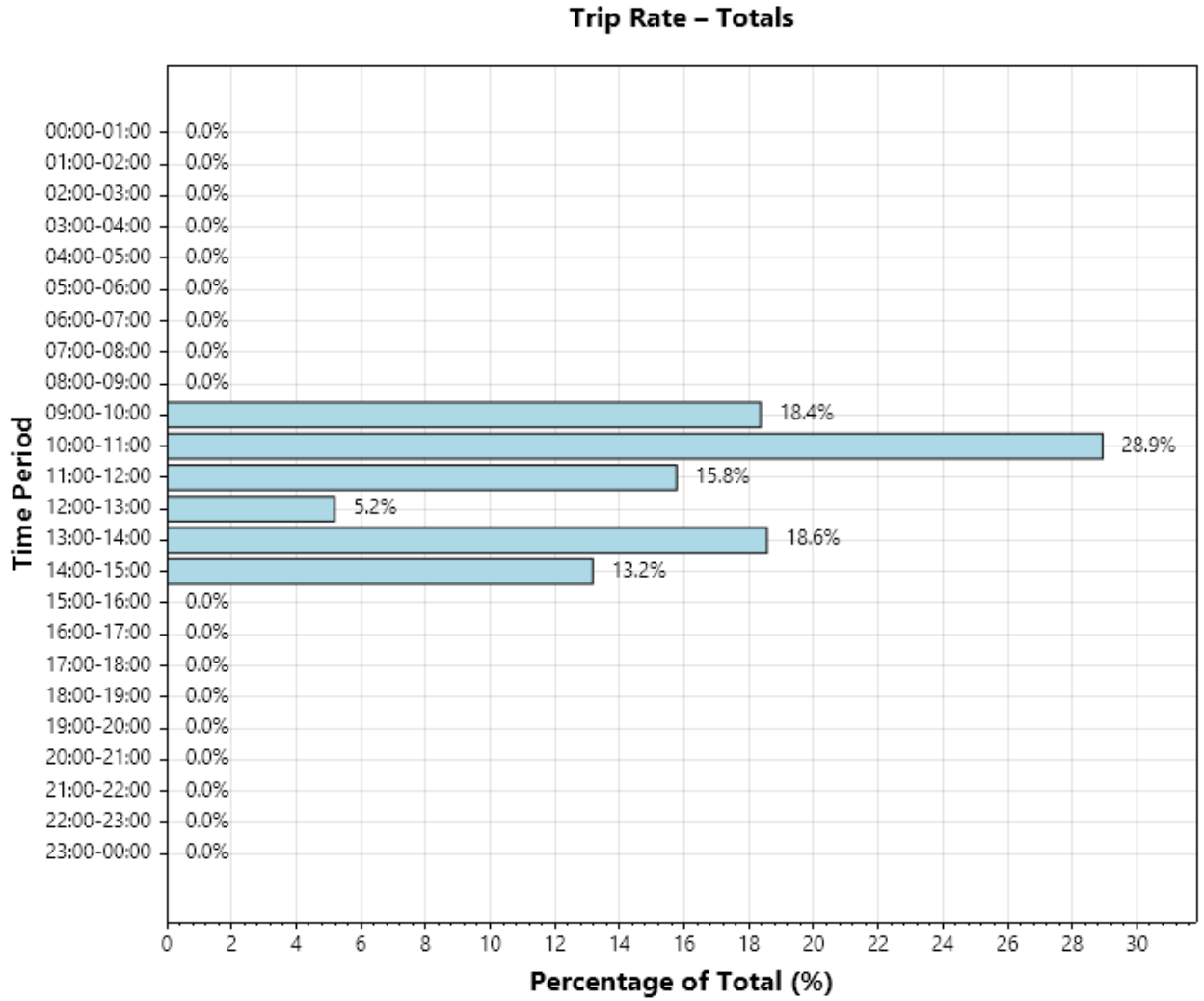


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate PSVs – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

OGVs

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.000**	**0.000**	**0.000**
07:00-08:00	**4**	**1888**	**0.013**	**0.013**	**0.026**
08:00-09:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
09:00-10:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
10:00-11:00	**4**	**1888**	**0.013**	**0.013**	**0.026**
11:00-12:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
12:00-13:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
13:00-14:00	**4**	**1888**	**0.013**	**0.013**	**0.026**
14:00-15:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
15:00-16:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
16:00-17:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
17:00-18:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
18:00-19:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
19:00-20:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
20:00-21:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
21:00-22:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
22:00-23:00	**1**	**2800**	**0.000**	**0.000**	**0.000**
23:00-00:00					
Total Rates:			**0.039**	**0.039**	**0.078**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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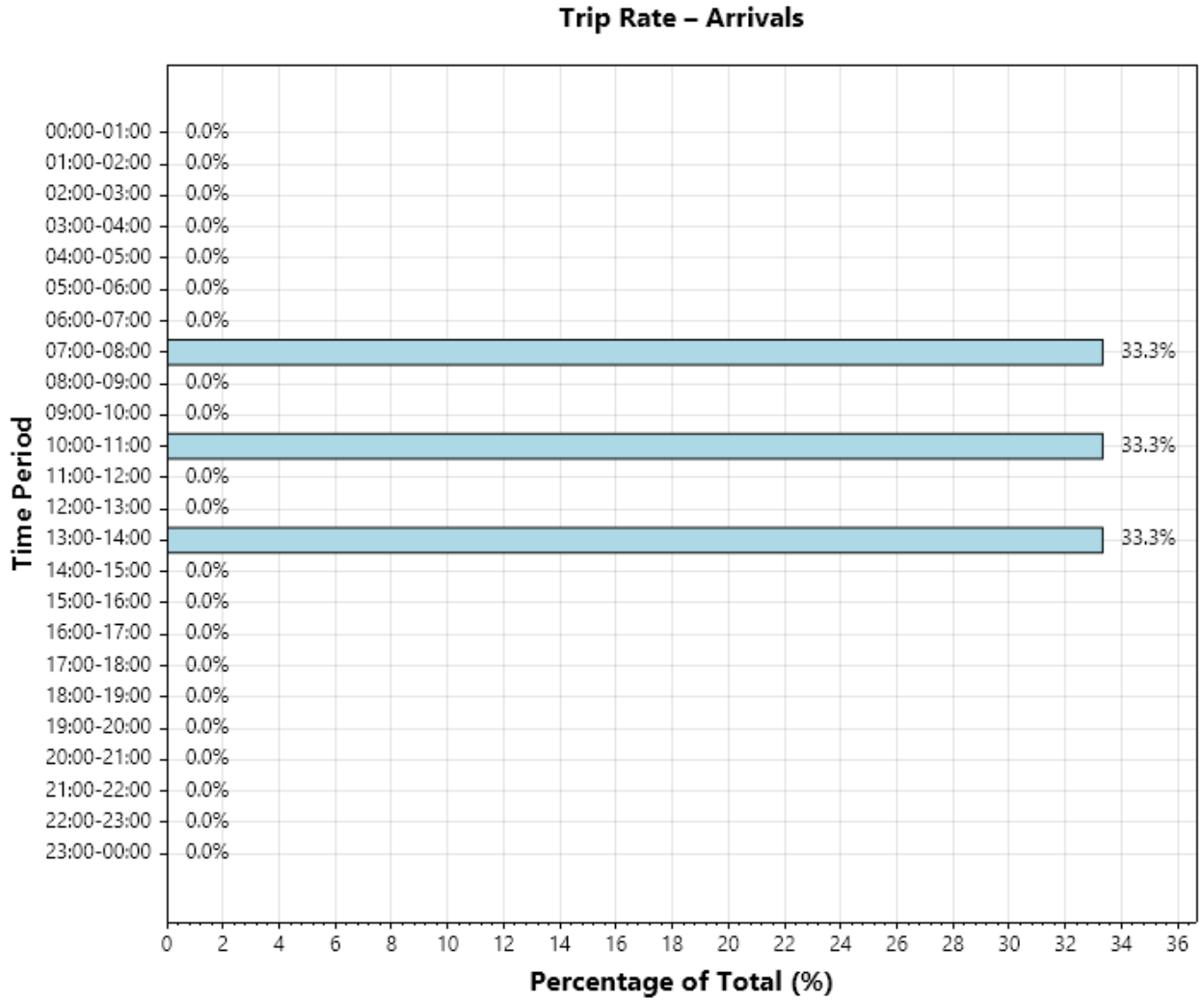
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	12/10/2011 - 13/10/2011
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate OGVs – Arrivals

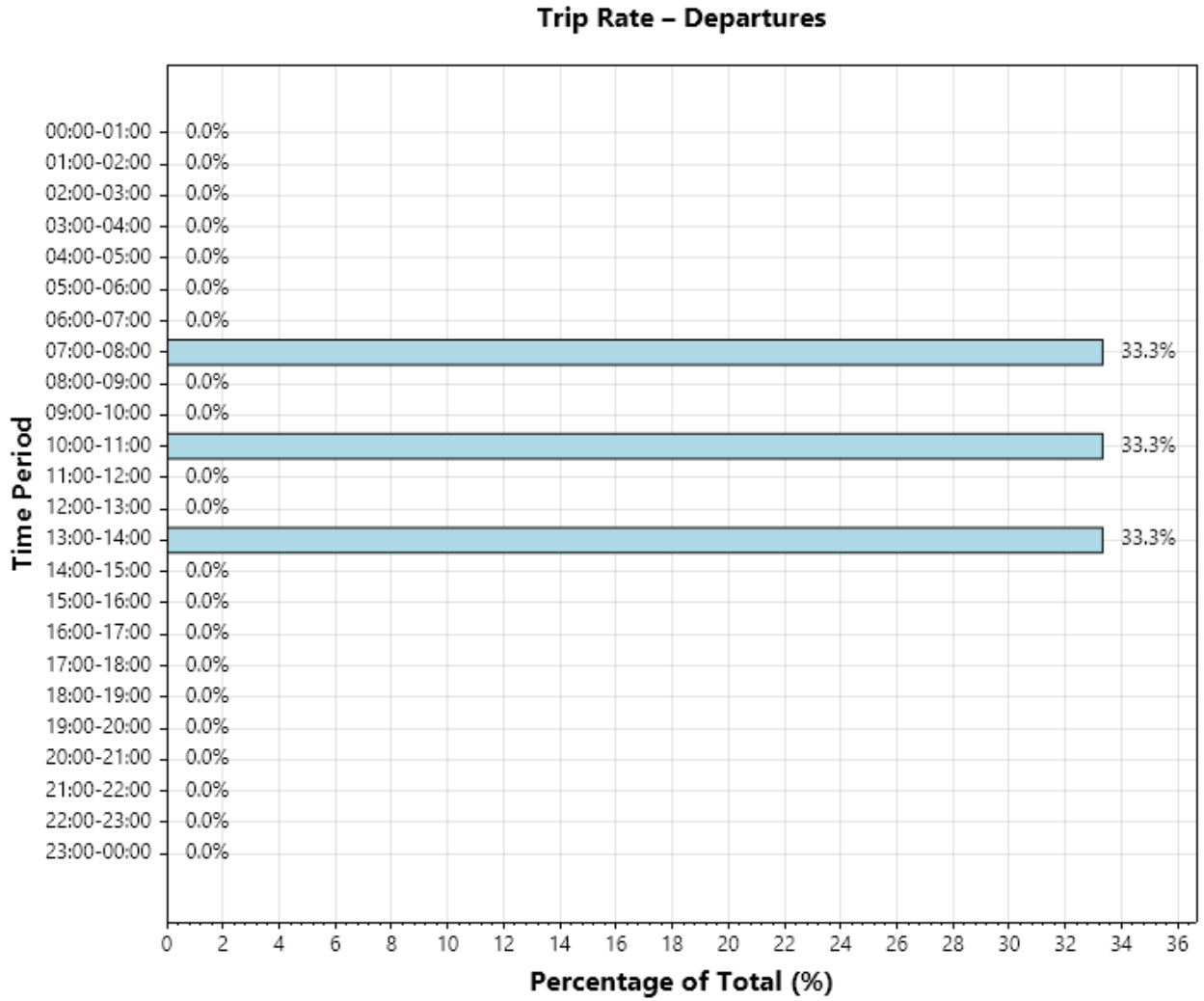


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate OGVs – Departures

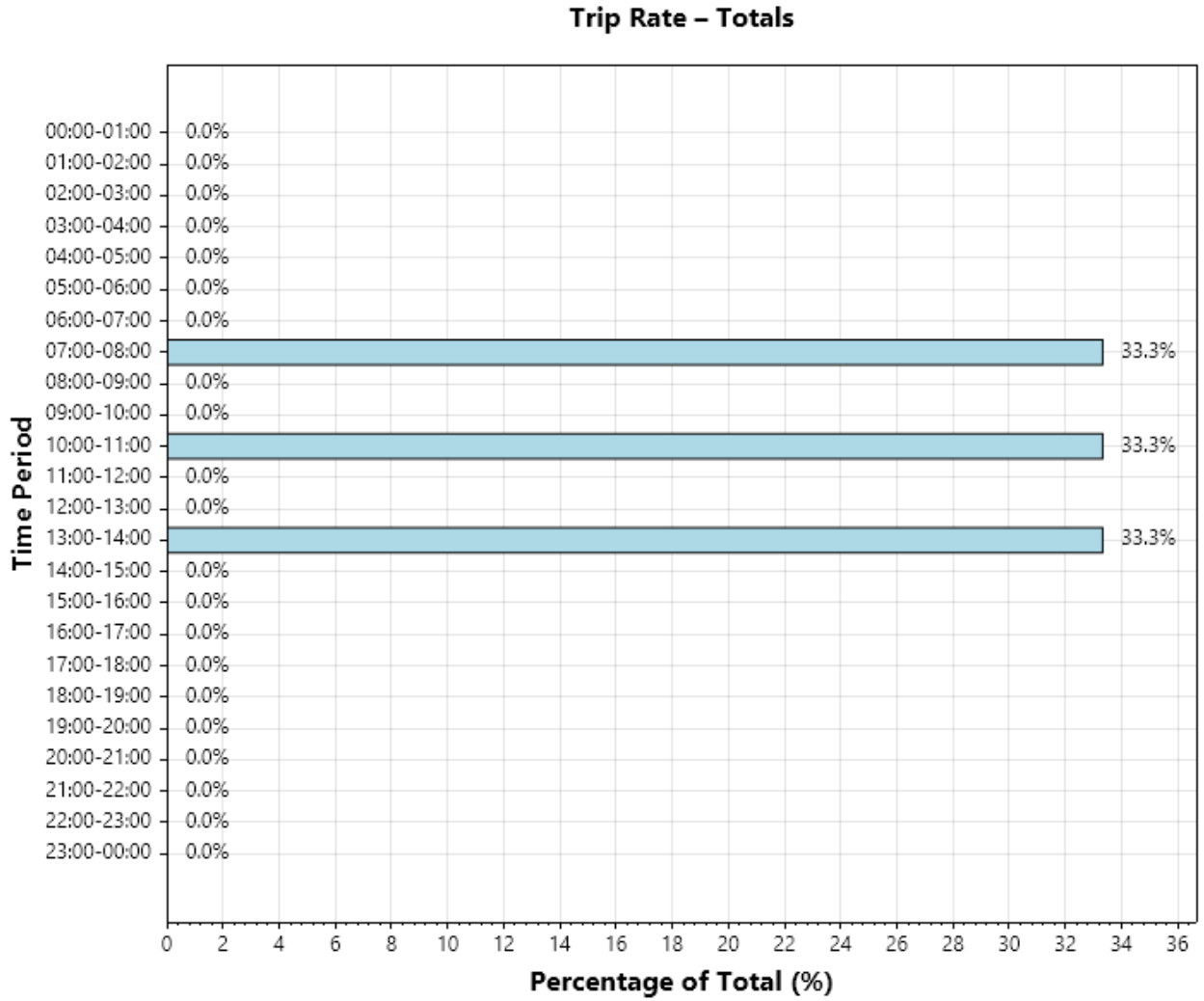


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate OGVs – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

Taxis

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.000**	**0.000**	**0.000**
07:00-08:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
08:00-09:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
09:00-10:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
10:00-11:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
11:00-12:00	**4**	**1888**	**0.013**	**0.013**	**0.026**
12:00-13:00	**4**	**1888**	**0.013**	**0.013**	**0.026**
13:00-14:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
14:00-15:00	**4**	**1888**	**0.013**	**0.013**	**0.026**
15:00-16:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
16:00-17:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
17:00-18:00	**4**	**1888**	**0.013**	**0.013**	**0.026**
18:00-19:00	**4**	**1888**	**0.013**	**0.013**	**0.026**
19:00-20:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
20:00-21:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
21:00-22:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
22:00-23:00	**1**	**2800**	**0.000**	**0.000**	**0.000**
23:00-00:00					
Total Rates:			**0.065**	**0.065**	**0.130**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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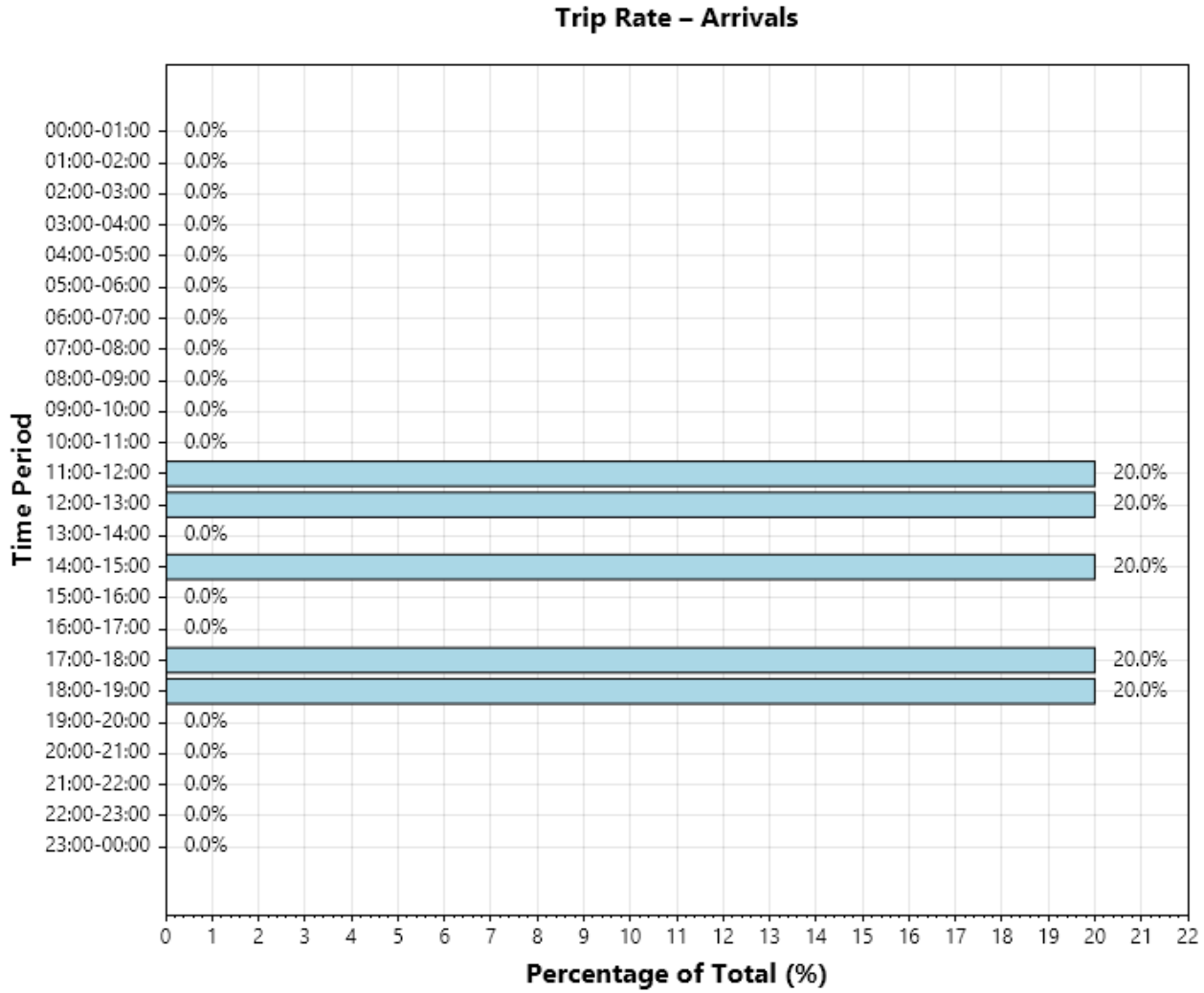
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	12/10/2011 - 22/06/2016
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate Taxis – Arrivals

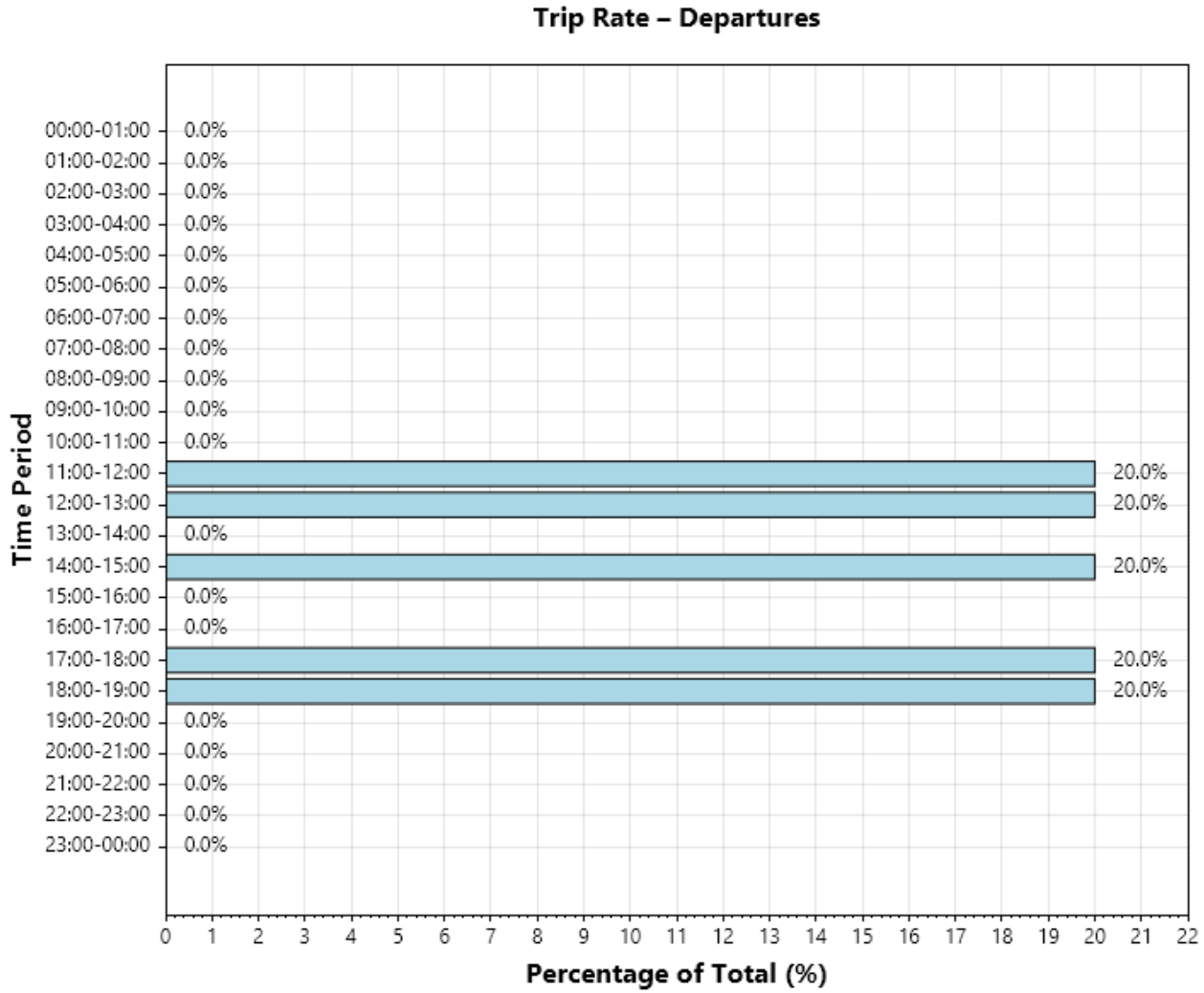


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Taxis – Departures

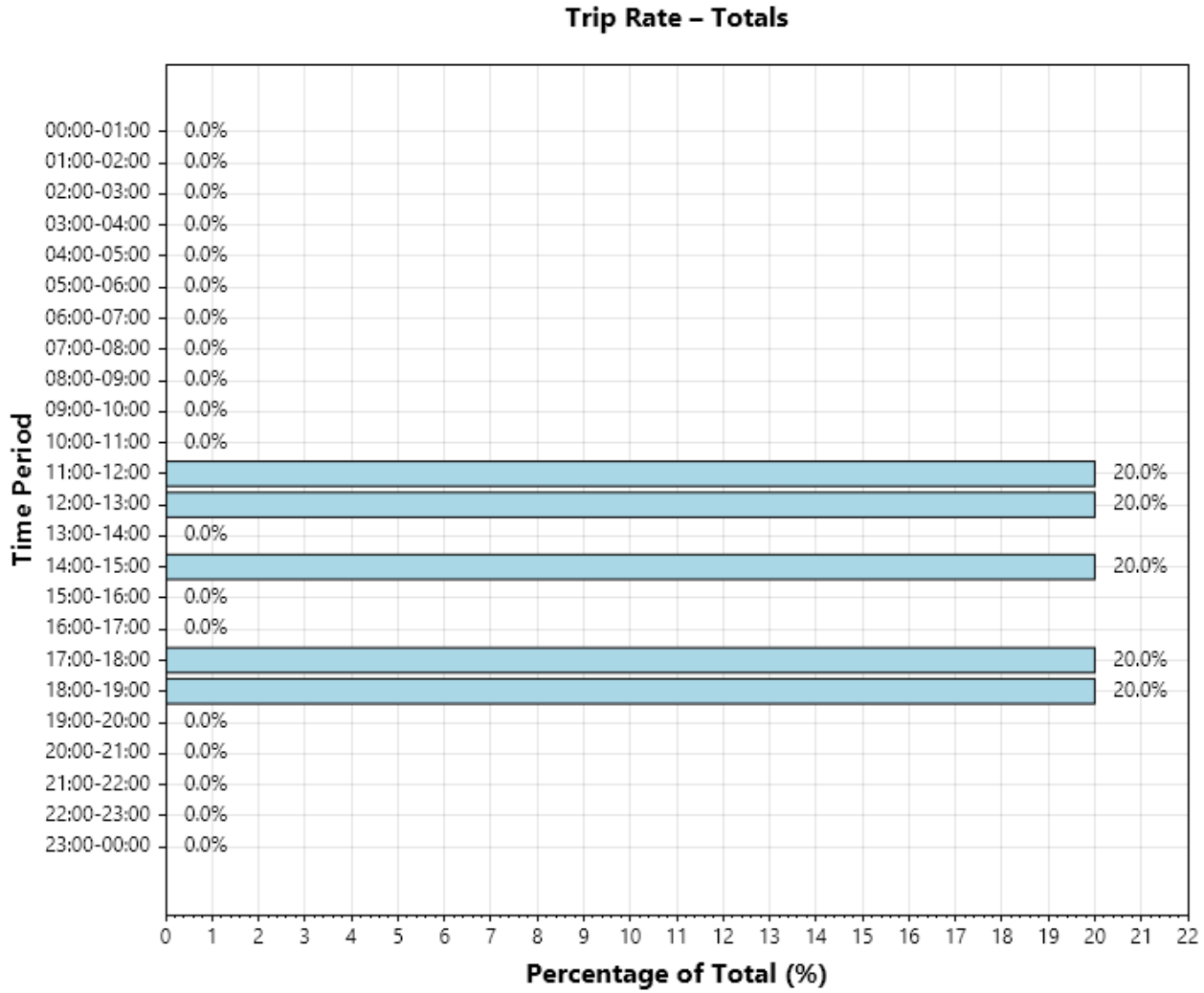


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Taxis – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

Cars

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.000**	**0.000**	**0.000**
07:00-08:00	**4**	**1888**	**0.291**	**0.000**	**0.291**
08:00-09:00	**4**	**1888**	**0.238**	**0.146**	**0.384**
09:00-10:00	**4**	**1888**	**0.278**	**0.278**	**0.556**
10:00-11:00	**4**	**1888**	**0.225**	**0.199**	**0.424**
11:00-12:00	**4**	**1888**	**0.199**	**0.305**	**0.504**
12:00-13:00	**4**	**1888**	**0.185**	**0.278**	**0.463**
13:00-14:00	**4**	**1888**	**0.212**	**0.066**	**0.278**
14:00-15:00	**4**	**1888**	**0.172**	**0.185**	**0.357**
15:00-16:00	**4**	**1888**	**0.397**	**0.199**	**0.596**
16:00-17:00	**4**	**1888**	**0.874**	**0.543**	**1.417**
17:00-18:00	**4**	**1888**	**0.450**	**0.742**	**1.192**
18:00-19:00	**4**	**1888**	**0.556**	**0.556**	**1.112**
19:00-20:00	**4**	**1888**	**0.278**	**0.437**	**0.715**
20:00-21:00	**4**	**1888**	**0.185**	**0.477**	**0.662**
21:00-22:00	**4**	**1888**	**0.066**	**0.212**	**0.278**
22:00-23:00	**1**	**2800**	**0.000**	**0.000**	**0.000**
23:00-00:00					
Total Rates:			**4.606**	**4.623**	**9.229**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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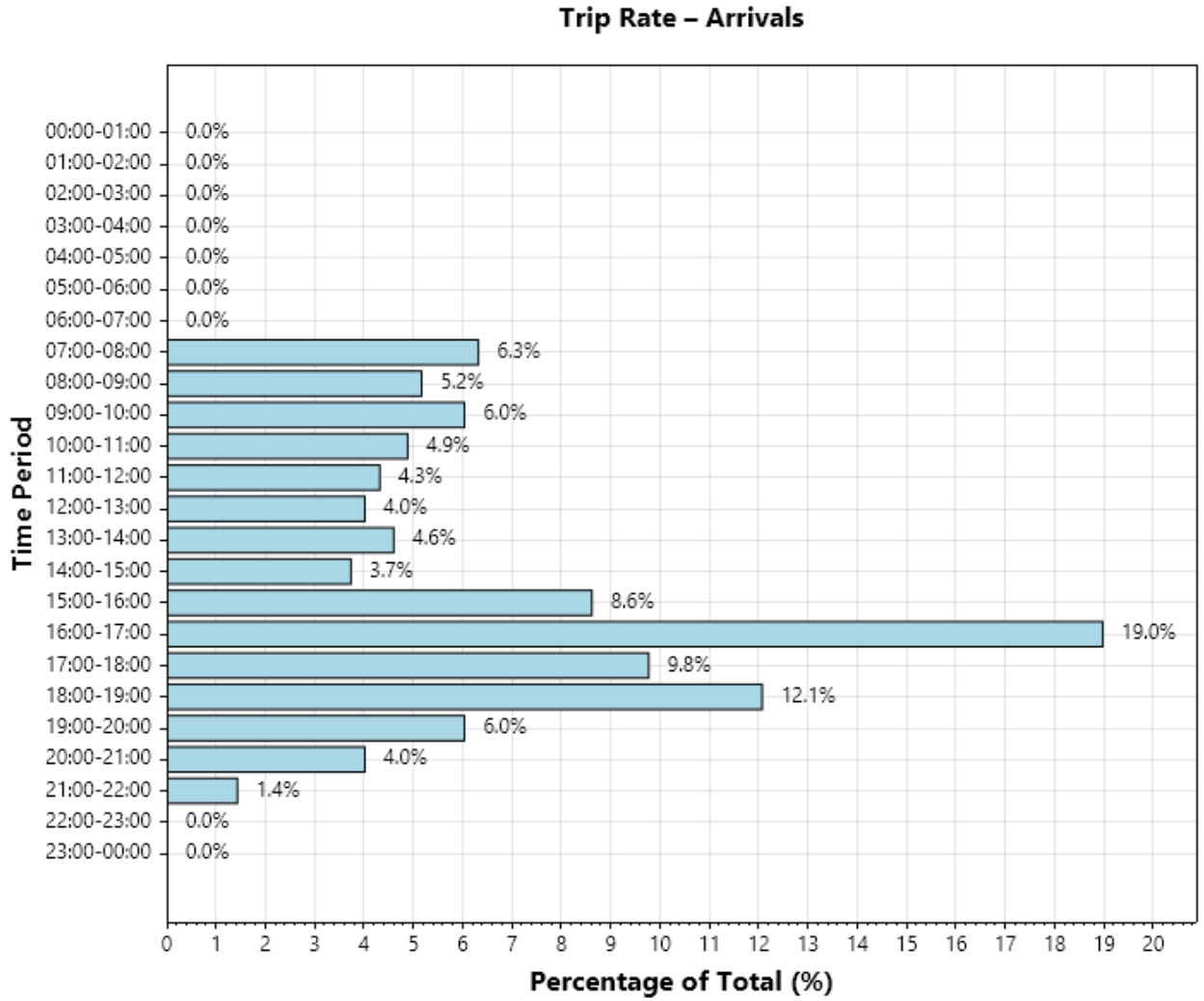
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	22/06/2016 - 22/06/2016
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate Cars – Arrivals

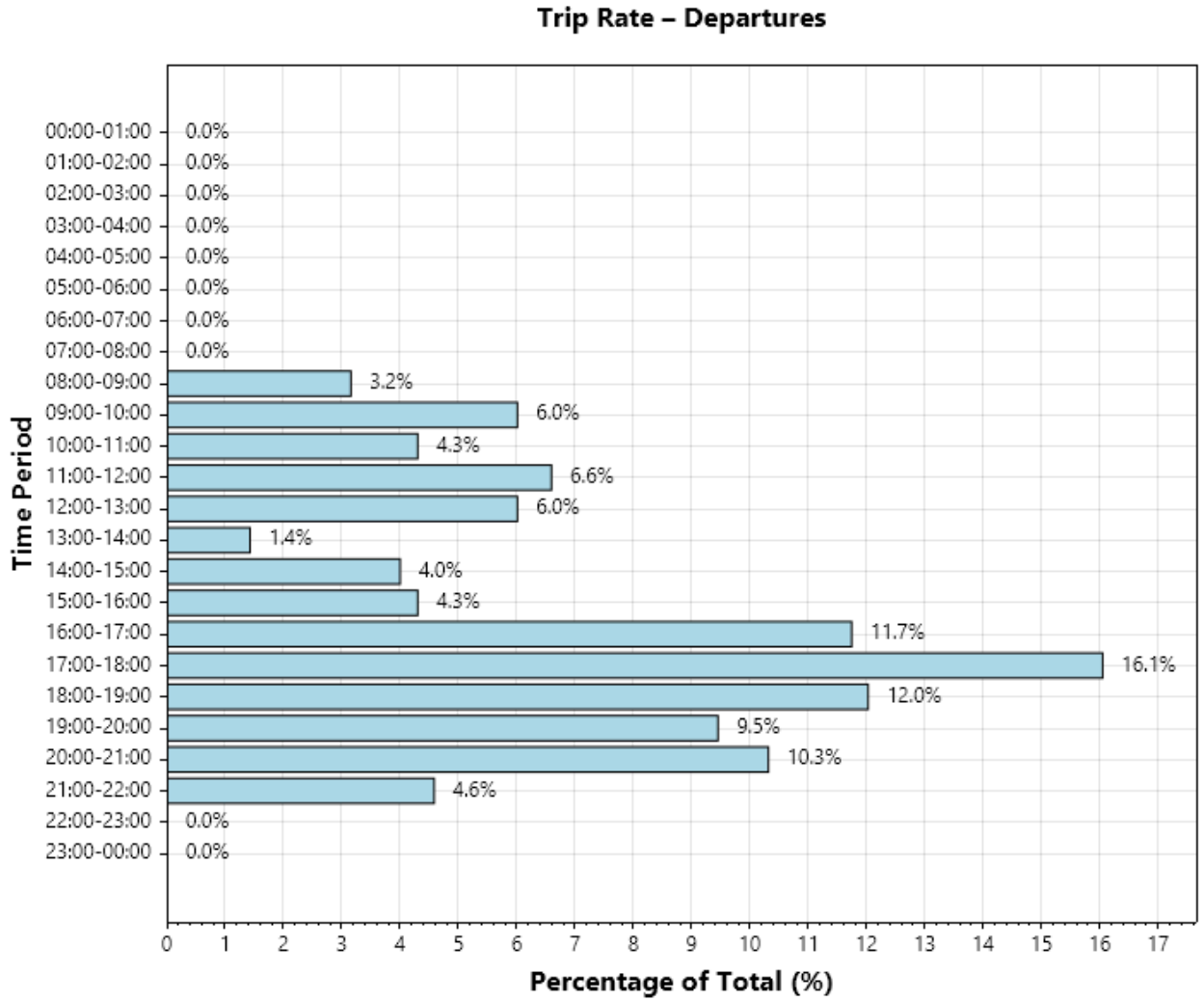


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Cars – Departures

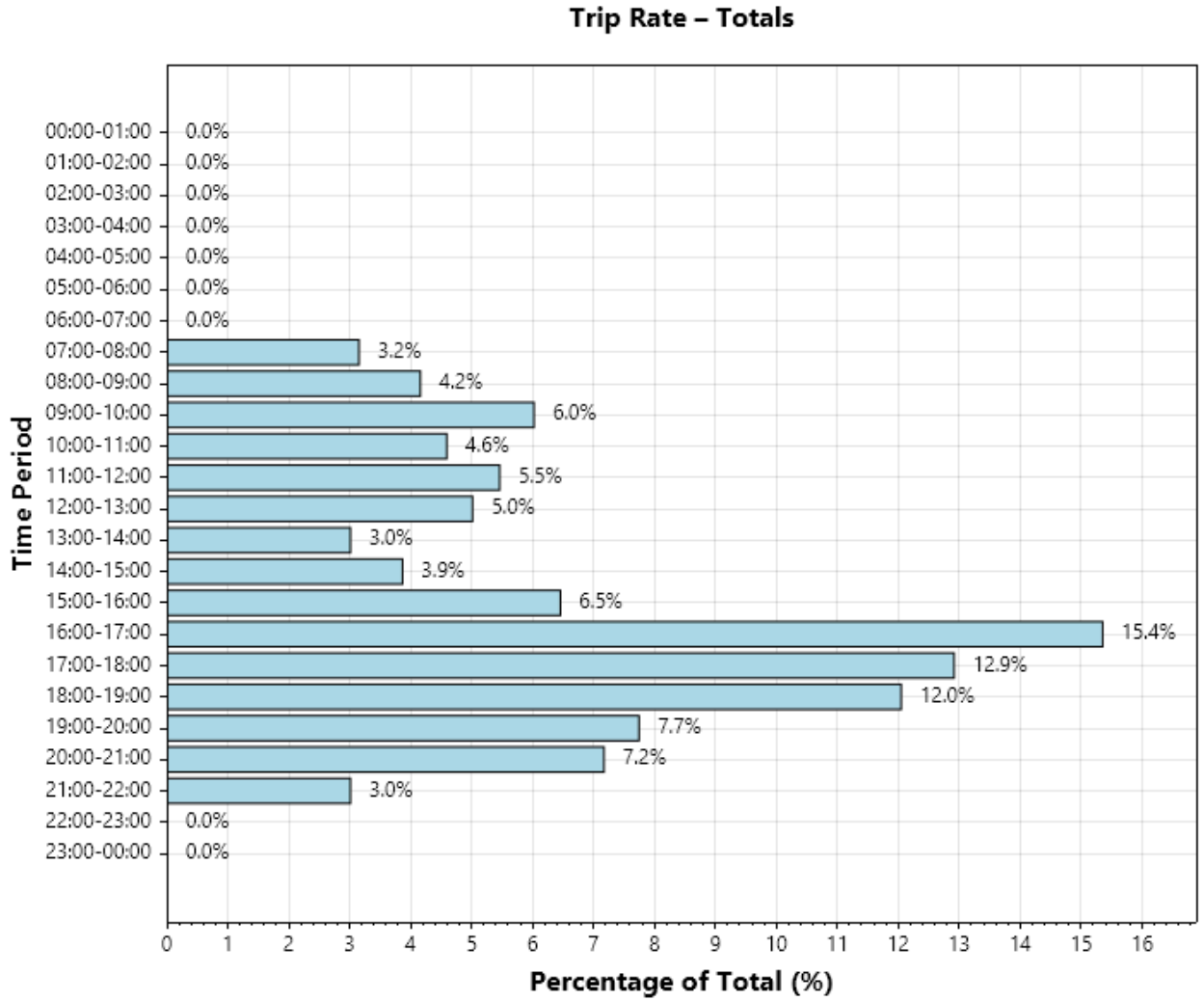


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Cars – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

LGVs

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.000**	**0.000**	**0.000**
07:00-08:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
08:00-09:00	**4**	**1888**	**0.040**	**0.013**	**0.053**
09:00-10:00	**4**	**1888**	**0.000**	**0.026**	**0.026**
10:00-11:00	**4**	**1888**	**0.026**	**0.026**	**0.052**
11:00-12:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
12:00-13:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
13:00-14:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
14:00-15:00	**4**	**1888**	**0.013**	**0.000**	**0.013**
15:00-16:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
16:00-17:00	**4**	**1888**	**0.013**	**0.013**	**0.026**
17:00-18:00	**4**	**1888**	**0.026**	**0.013**	**0.039**
18:00-19:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
19:00-20:00	**4**	**1888**	**0.000**	**0.013**	**0.013**
20:00-21:00	**4**	**1888**	**0.013**	**0.026**	**0.039**
21:00-22:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
22:00-23:00	**1**	**2800**	**0.000**	**0.000**	**0.000**
23:00-00:00					
Total Rates:			**0.131**	**0.130**	**0.261**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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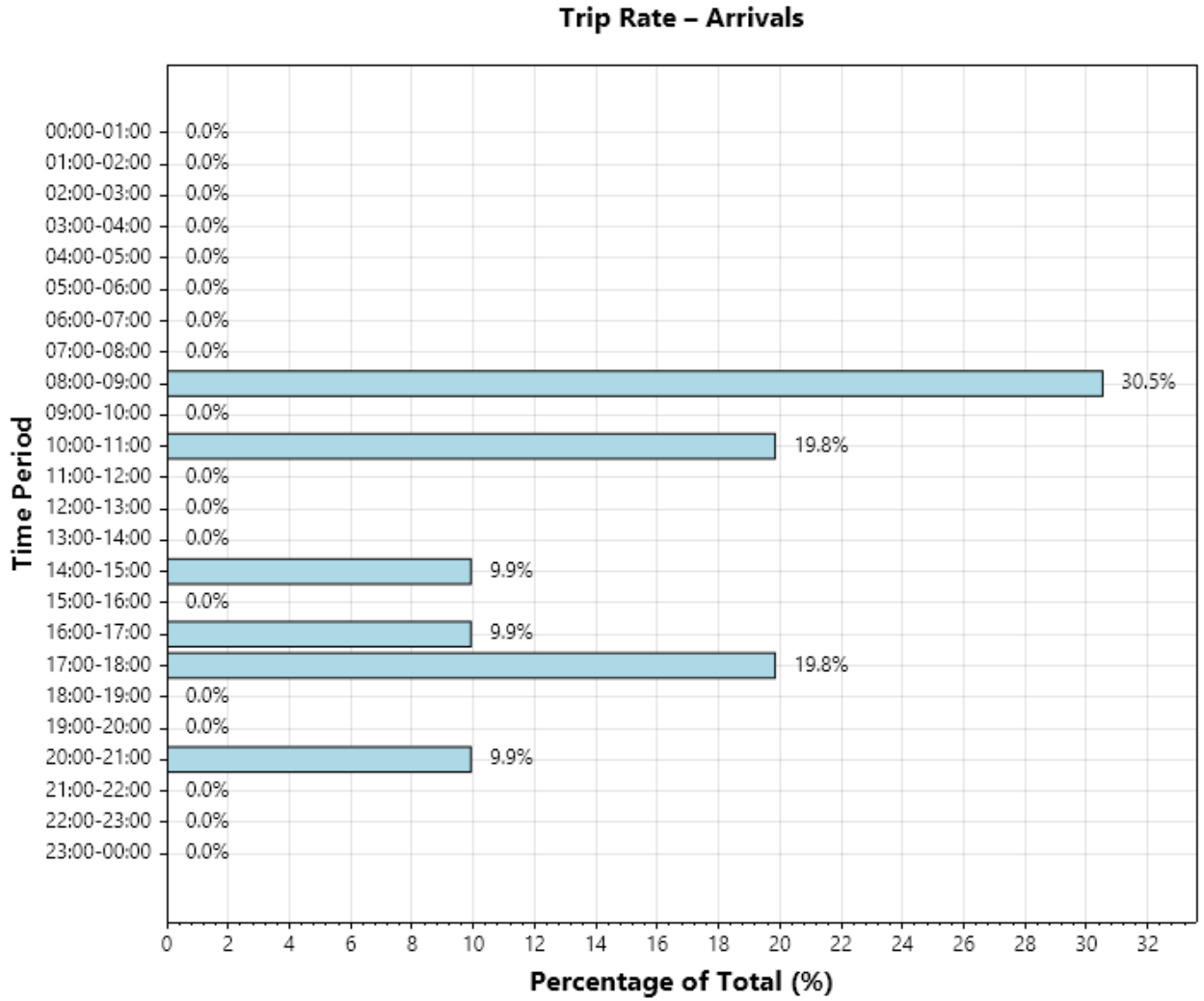
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	22/06/2016 - 22/06/2016
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate LGVs – Arrivals

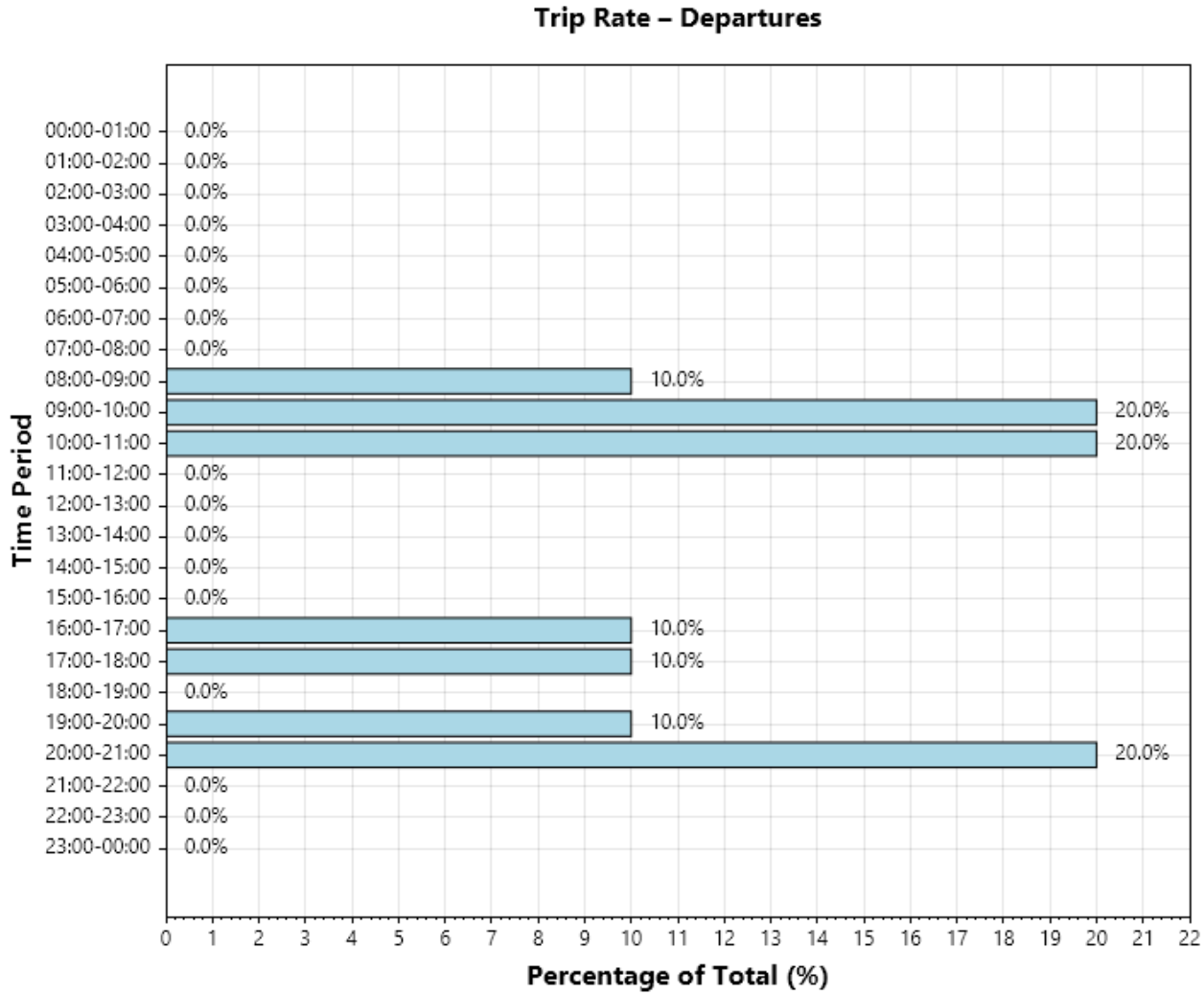


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate LGVs – Departures

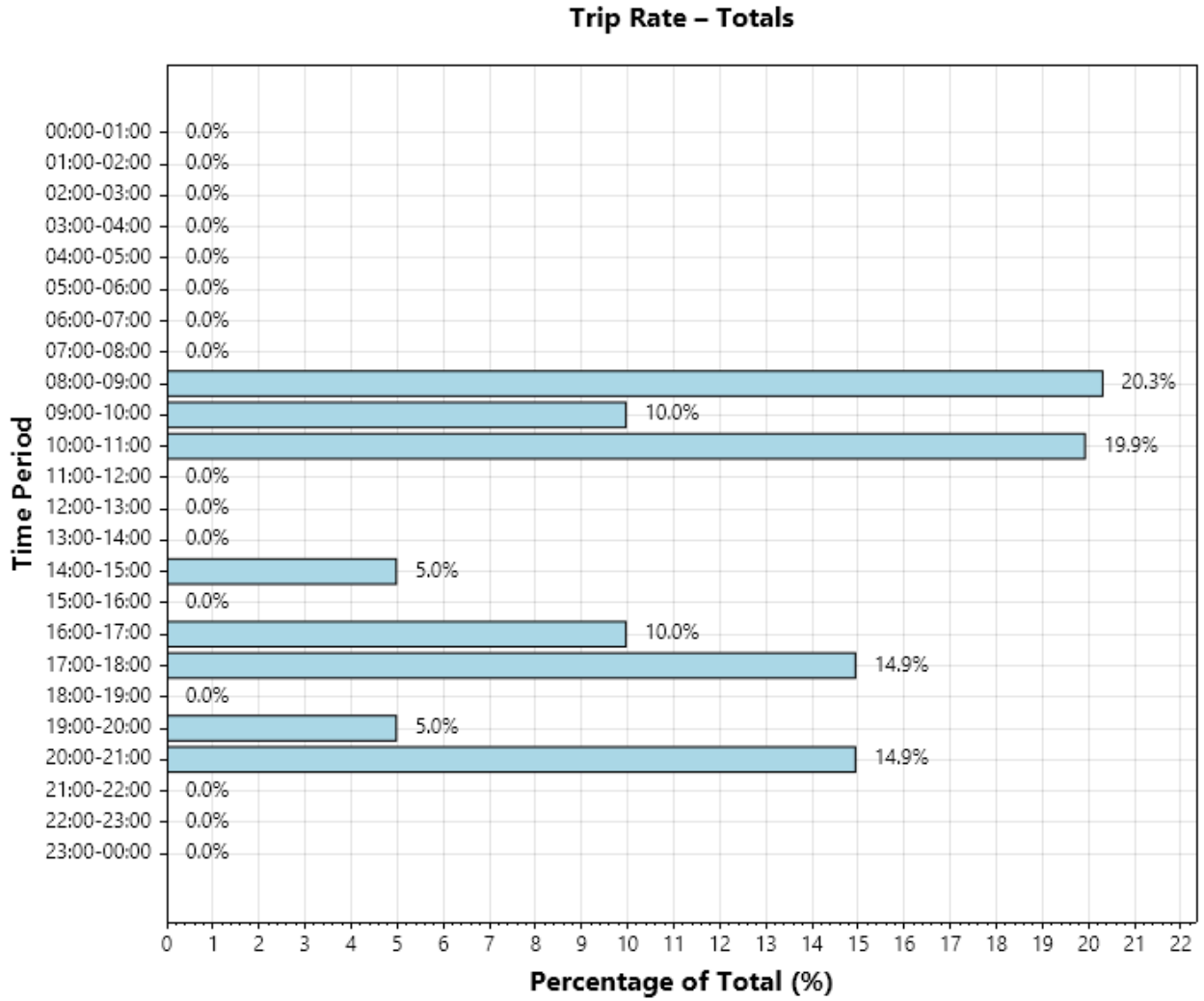


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate LGVs – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

Motorcycles

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.000**	**0.000**	**0.000**
07:00-08:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
08:00-09:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
09:00-10:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
10:00-11:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
11:00-12:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
12:00-13:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
13:00-14:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
14:00-15:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
15:00-16:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
16:00-17:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
17:00-18:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
18:00-19:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
19:00-20:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
20:00-21:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
21:00-22:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
22:00-23:00	**1**	**2800**	**0.000**	**0.000**	**0.000**
23:00-00:00					
Total Rates:			**0.000**	**0.000**	**0.000**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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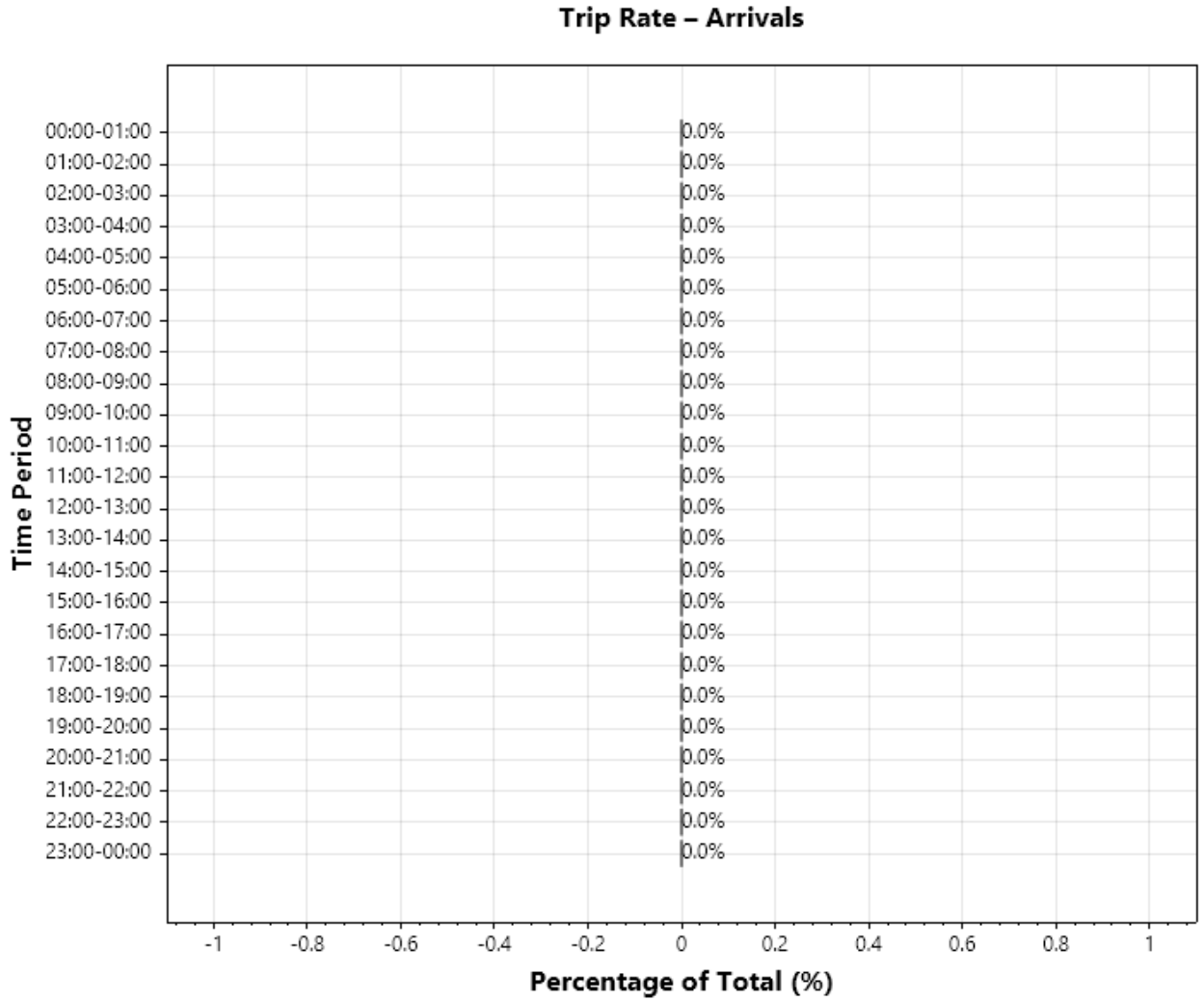
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	N/A - N/A
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate Motorcycles – Arrivals

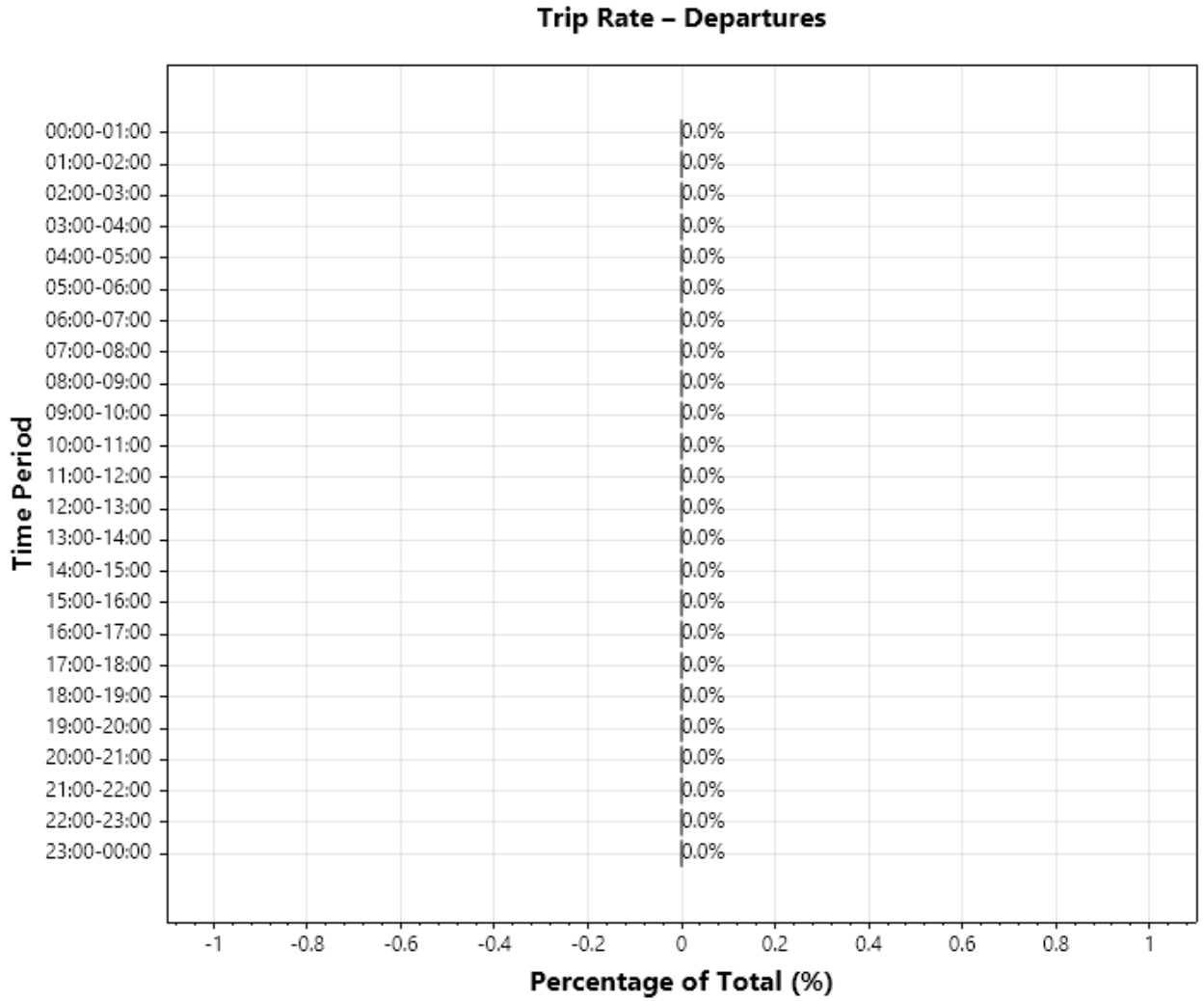


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Motorcycles – Departures

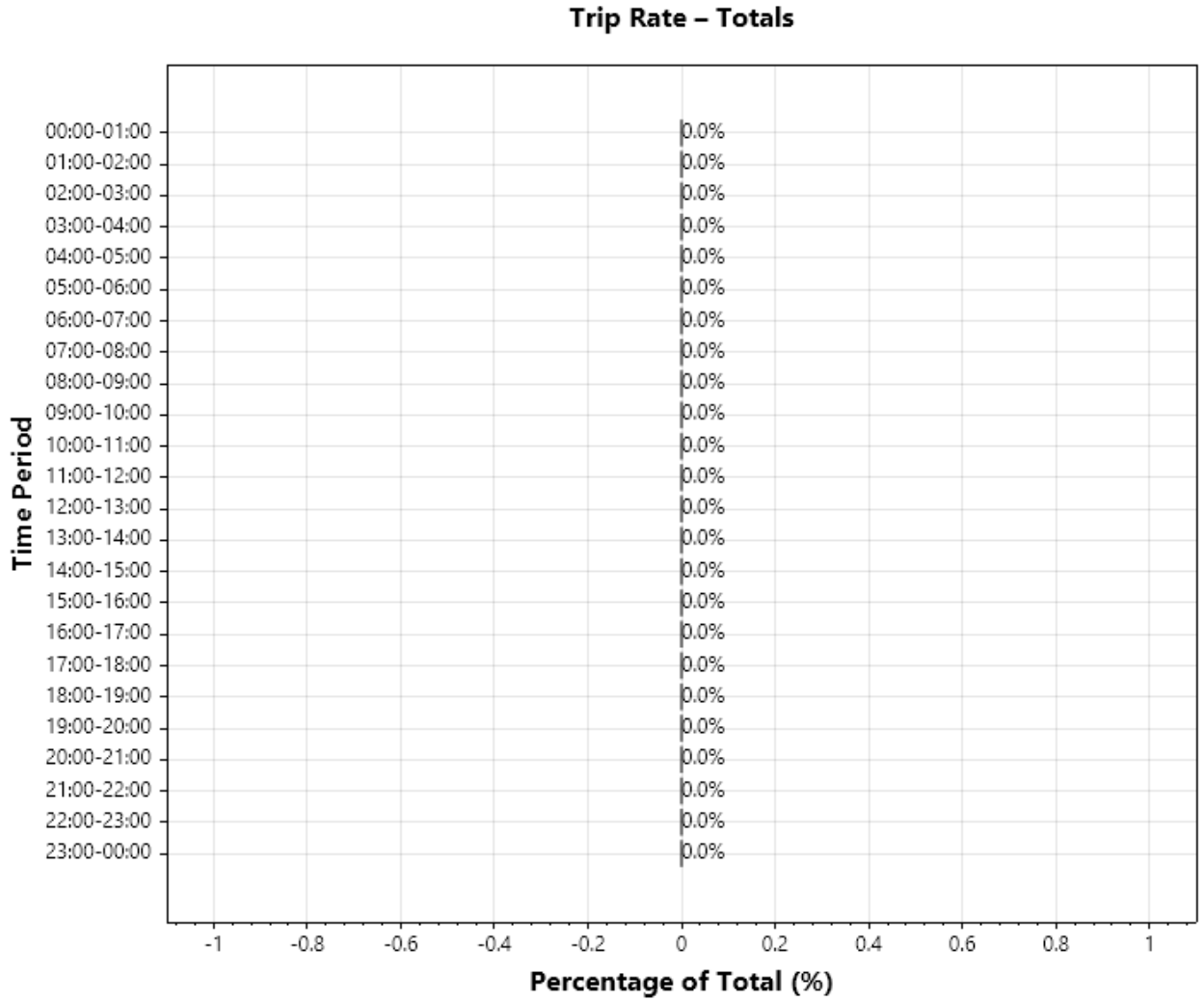


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Motorcycles – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

Vehicle Occupants

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.436**	**0.077**	**0.513**
07:00-08:00	**4**	**1888**	**0.980**	**0.318**	**1.298**
08:00-09:00	**4**	**1888**	**1.007**	**0.927**	**1.934**
09:00-10:00	**4**	**1888**	**1.166**	**0.768**	**1.934**
10:00-11:00	**4**	**1888**	**1.497**	**0.834**	**2.331**
11:00-12:00	**4**	**1888**	**1.272**	**1.430**	**2.702**
12:00-13:00	**4**	**1888**	**0.940**	**1.046**	**1.986**
13:00-14:00	**4**	**1888**	**1.033**	**0.742**	**1.775**
14:00-15:00	**4**	**1888**	**0.980**	**0.808**	**1.788**
15:00-16:00	**4**	**1888**	**2.411**	**1.046**	**3.457**
16:00-17:00	**4**	**1888**	**3.934**	**2.305**	**6.239**
17:00-18:00	**4**	**1888**	**3.126**	**3.735**	**6.861**
18:00-19:00	**4**	**1888**	**3.219**	**3.219**	**6.438**
19:00-20:00	**4**	**1888**	**1.417**	**3.046**	**4.463**
20:00-21:00	**4**	**1888**	**0.543**	**2.781**	**3.324**
21:00-22:00	**4**	**1888**	**0.066**	**1.166**	**1.232**
22:00-23:00	**1**	**2800**	**0.000**	**0.036**	**0.036**
23:00-00:00					
Total Rates:			**24.027**	**24.284**	**48.311**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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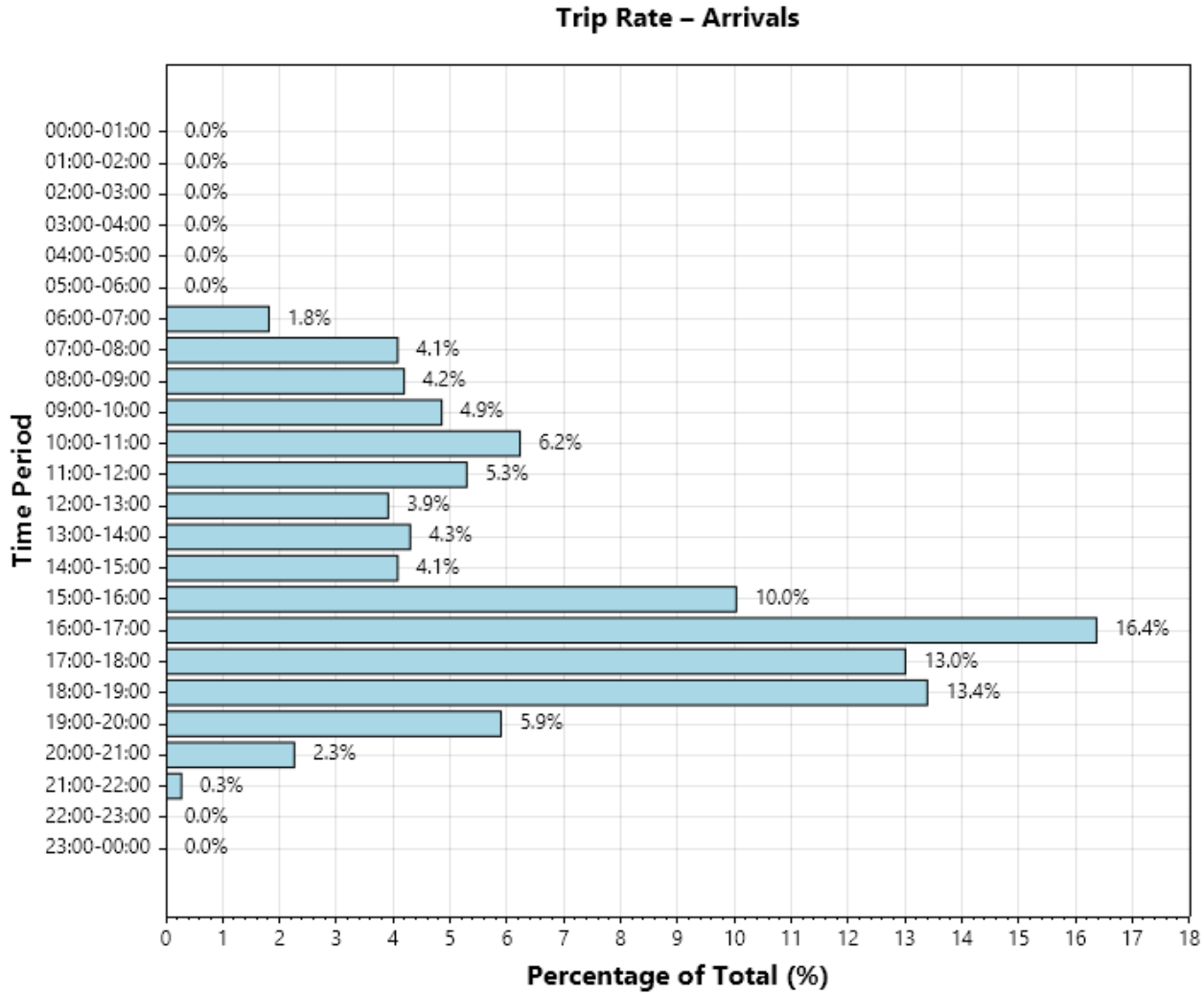
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	22/06/2011 - 22/06/2016
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate Vehicle Occupants – Arrivals

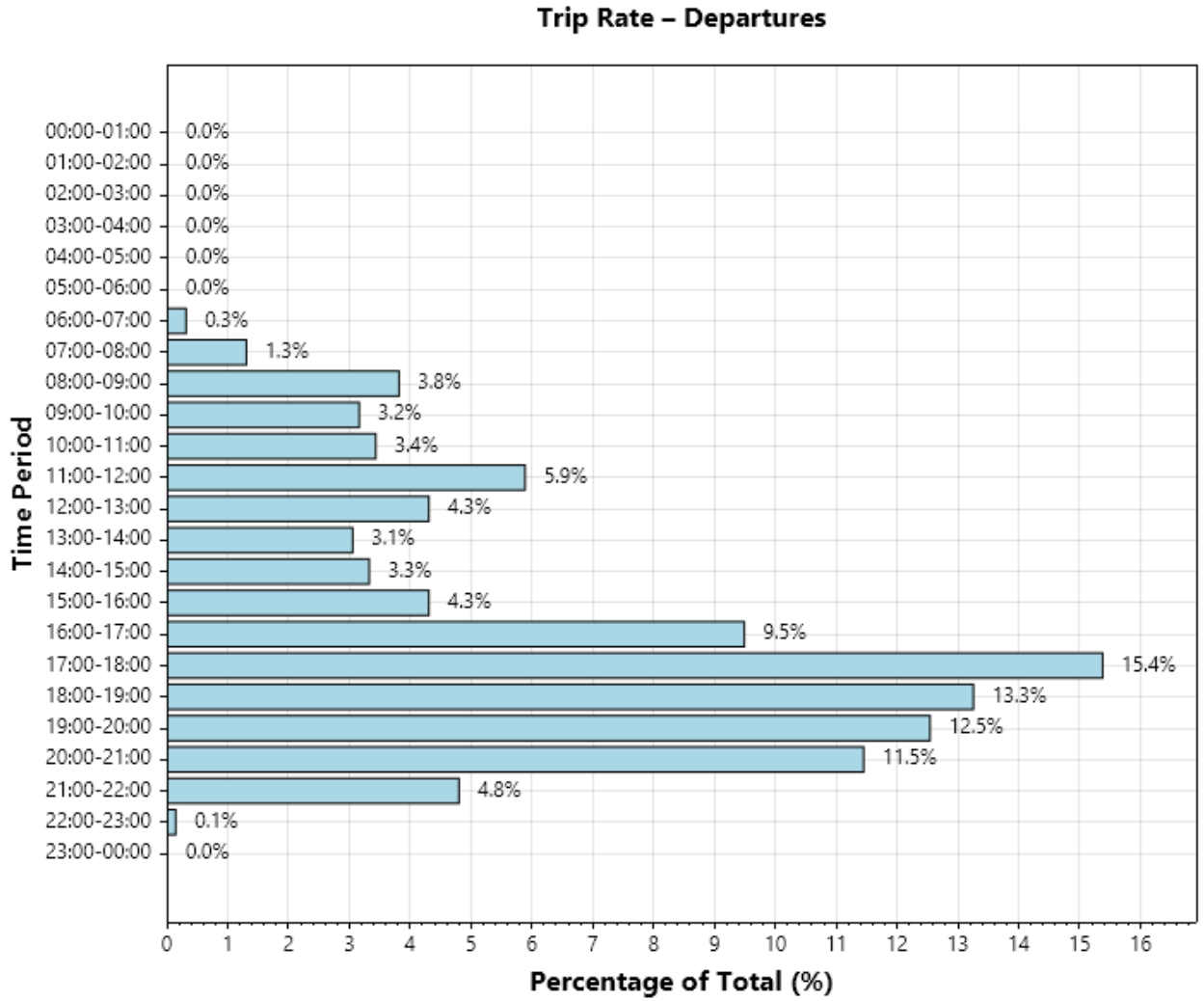


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Vehicle Occupants – Departures

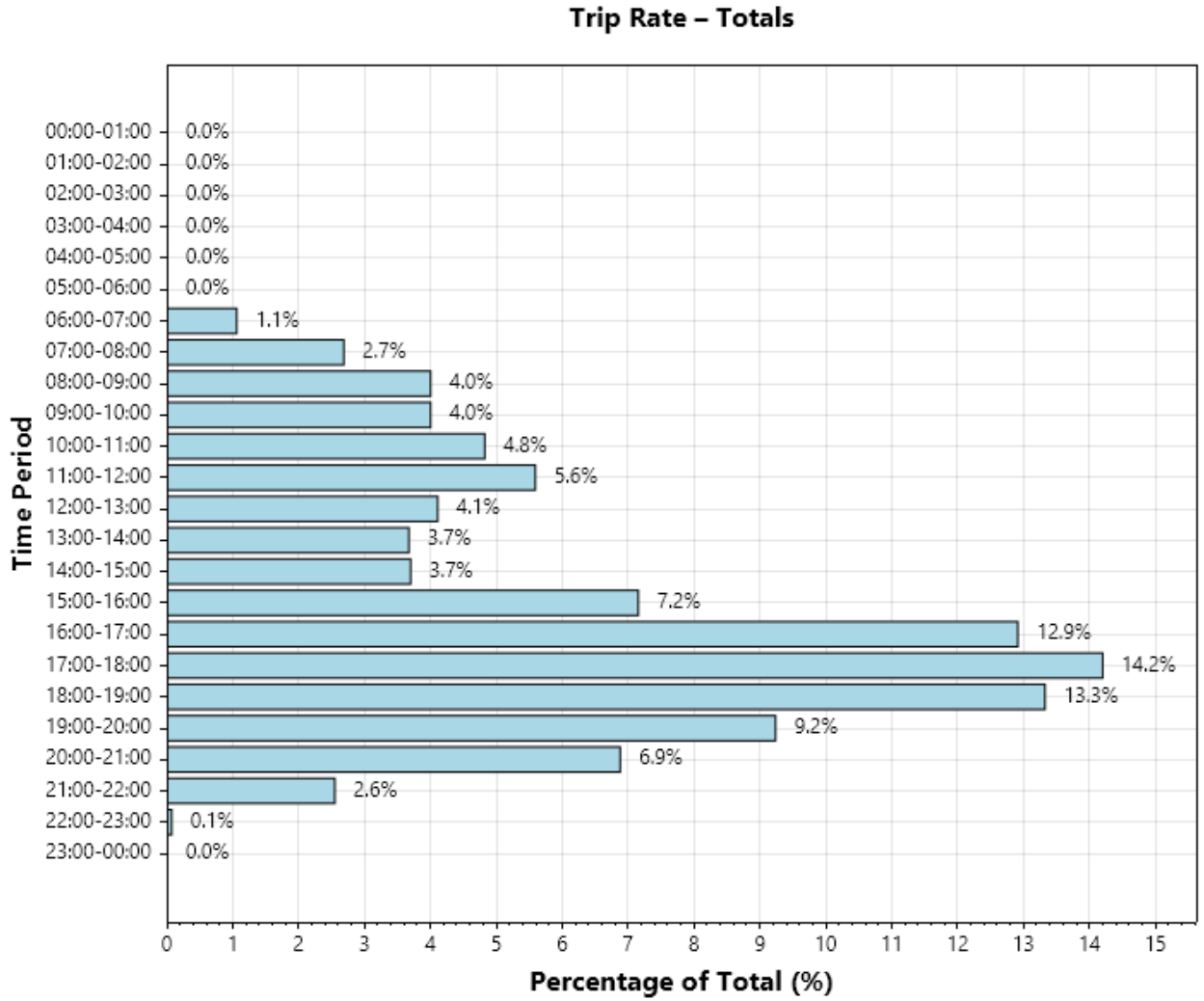


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Vehicle Occupants – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

Pedestrians

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.051**	**0.000**	**0.051**
07:00-08:00	**4**	**1888**	**0.146**	**0.026**	**0.172**
08:00-09:00	**4**	**1888**	**0.291**	**0.119**	**0.410**
09:00-10:00	**4**	**1888**	**1.245**	**0.358**	**1.603**
10:00-11:00	**4**	**1888**	**0.384**	**0.371**	**0.755**
11:00-12:00	**4**	**1888**	**0.437**	**1.285**	**1.722**
12:00-13:00	**4**	**1888**	**0.371**	**0.397**	**0.768**
13:00-14:00	**4**	**1888**	**0.331**	**0.199**	**0.530**
14:00-15:00	**4**	**1888**	**0.636**	**0.424**	**1.060**
15:00-16:00	**4**	**1888**	**0.437**	**0.596**	**1.033**
16:00-17:00	**4**	**1888**	**0.689**	**0.437**	**1.126**
17:00-18:00	**4**	**1888**	**0.556**	**0.305**	**0.861**
18:00-19:00	**4**	**1888**	**0.159**	**0.397**	**0.556**
19:00-20:00	**4**	**1888**	**0.278**	**0.384**	**0.662**
20:00-21:00	**4**	**1888**	**0.013**	**0.291**	**0.304**
21:00-22:00	**4**	**1888**	**0.000**	**0.026**	**0.026**
22:00-23:00	**1**	**2800**	**0.000**	**0.036**	**0.036**
23:00-00:00					
Total Rates:			**6.024**	**5.651**	**11.675**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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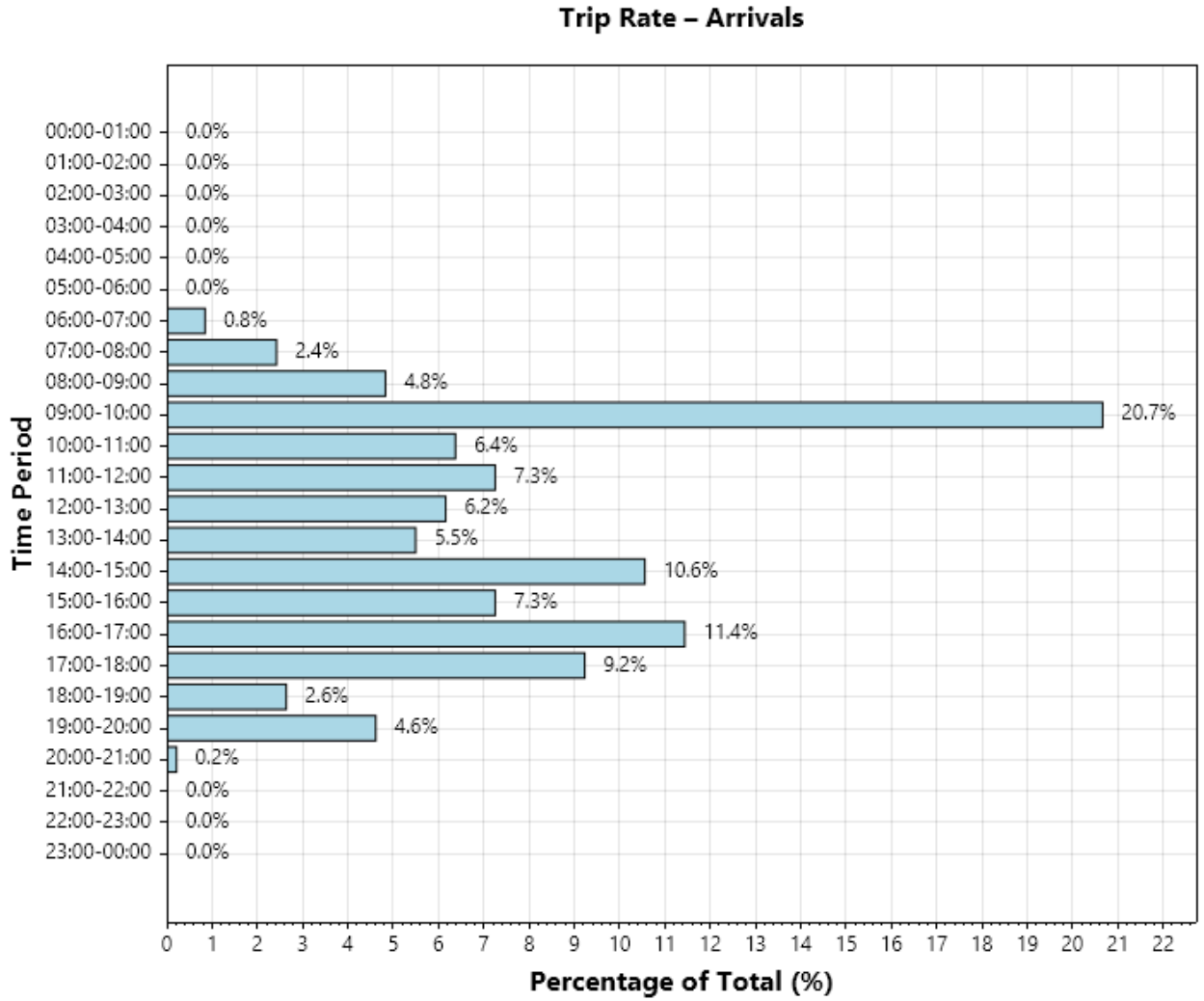
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	22/06/2011 - 22/06/2016
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate Pedestrians – Arrivals

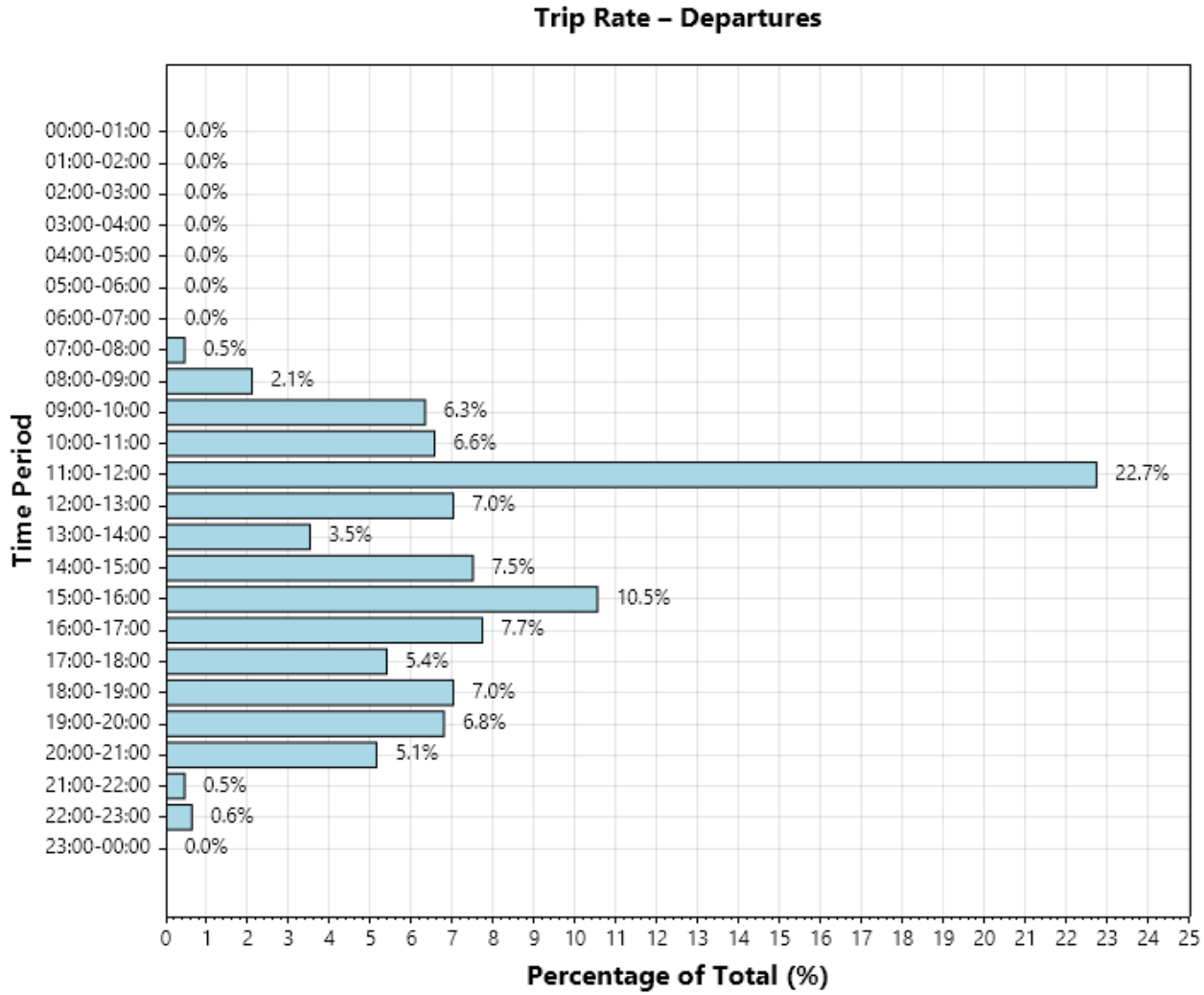


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Pedestrians – Departures

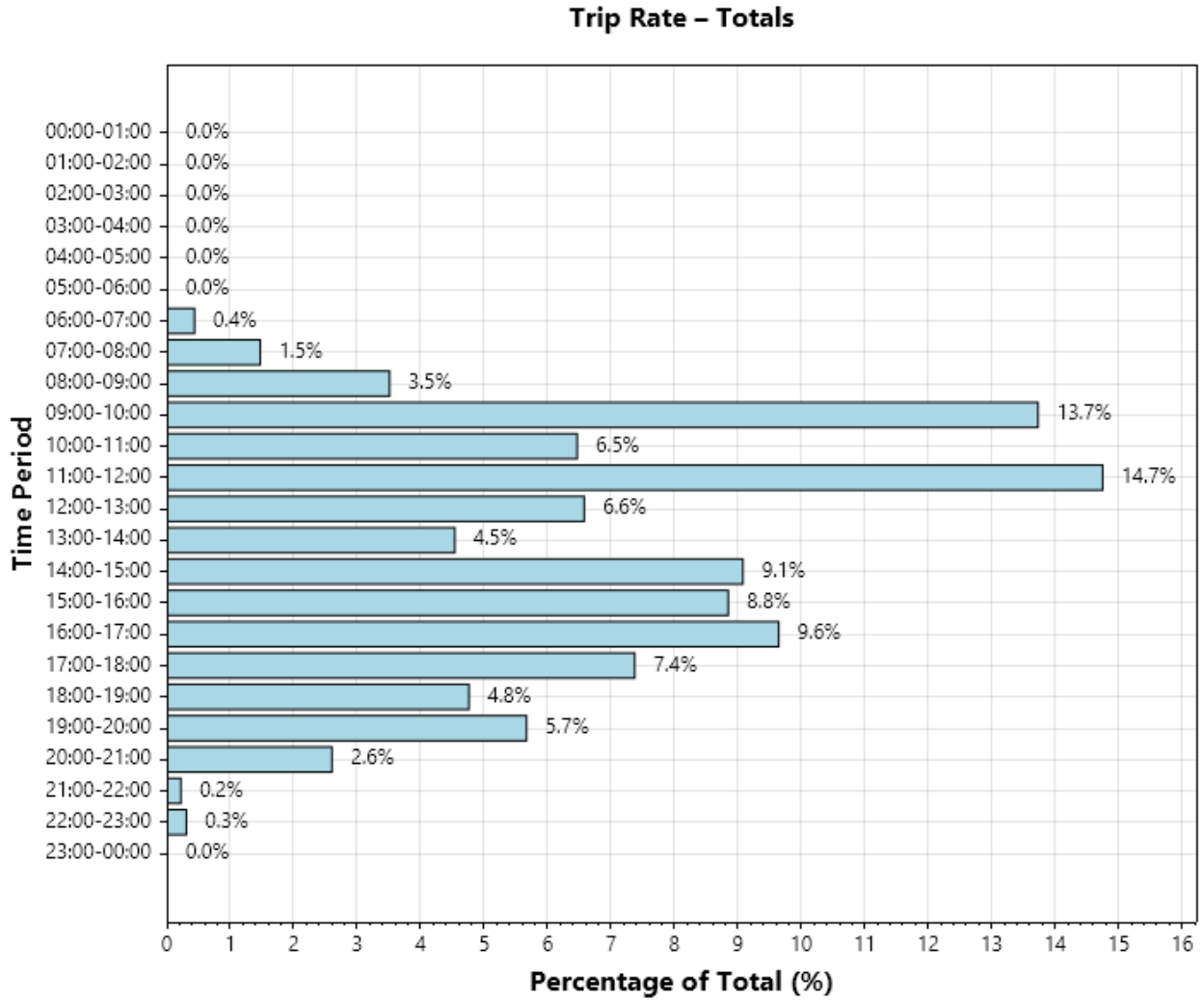


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Pedestrians – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

Public Transport Users

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.000**	**0.000**	**0.000**
07:00-08:00	**4**	**1888**	**0.040**	**0.000**	**0.040**
08:00-09:00	**4**	**1888**	**0.040**	**0.000**	**0.040**
09:00-10:00	**4**	**1888**	**1.205**	**0.053**	**1.258**
10:00-11:00	**4**	**1888**	**1.536**	**0.689**	**2.225**
11:00-12:00	**4**	**1888**	**0.689**	**2.000**	**2.689**
12:00-13:00	**4**	**1888**	**0.066**	**0.689**	**0.755**
13:00-14:00	**4**	**1888**	**1.232**	**0.437**	**1.669**
14:00-15:00	**4**	**1888**	**0.119**	**0.768**	**0.887**
15:00-16:00	**4**	**1888**	**0.132**	**0.132**	**0.264**
16:00-17:00	**4**	**1888**	**0.132**	**0.079**	**0.211**
17:00-18:00	**4**	**1888**	**0.093**	**0.013**	**0.106**
18:00-19:00	**4**	**1888**	**0.000**	**0.185**	**0.185**
19:00-20:00	**4**	**1888**	**0.013**	**0.066**	**0.079**
20:00-21:00	**4**	**1888**	**0.000**	**0.026**	**0.026**
21:00-22:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
22:00-23:00	**1**	**2800**	**0.000**	**0.000**	**0.000**
23:00-00:00					
Total Rates:			**5.297**	**5.137**	**10.434**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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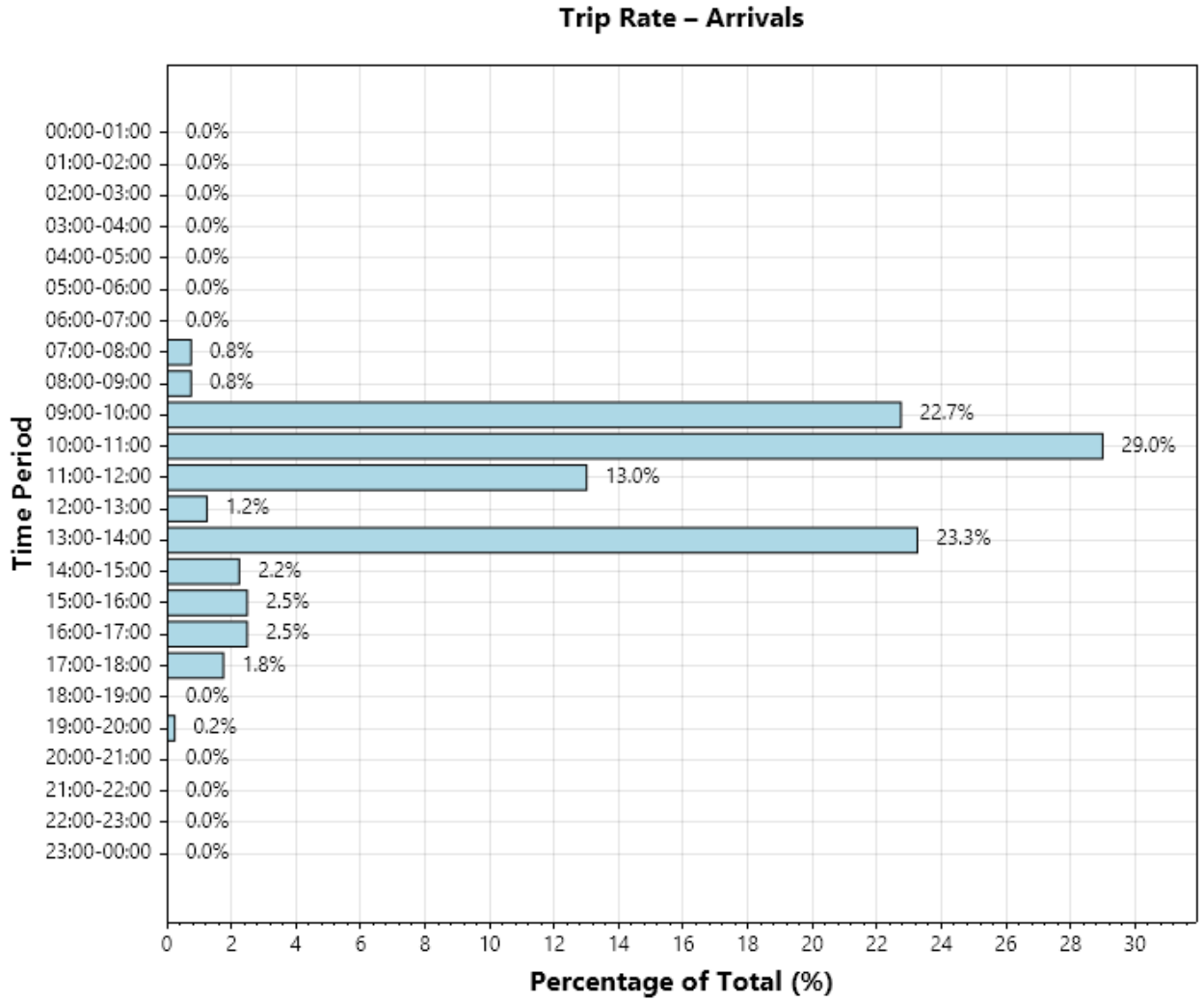
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	22/06/2011 - 22/06/2016
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate Public Transport Users – Arrivals

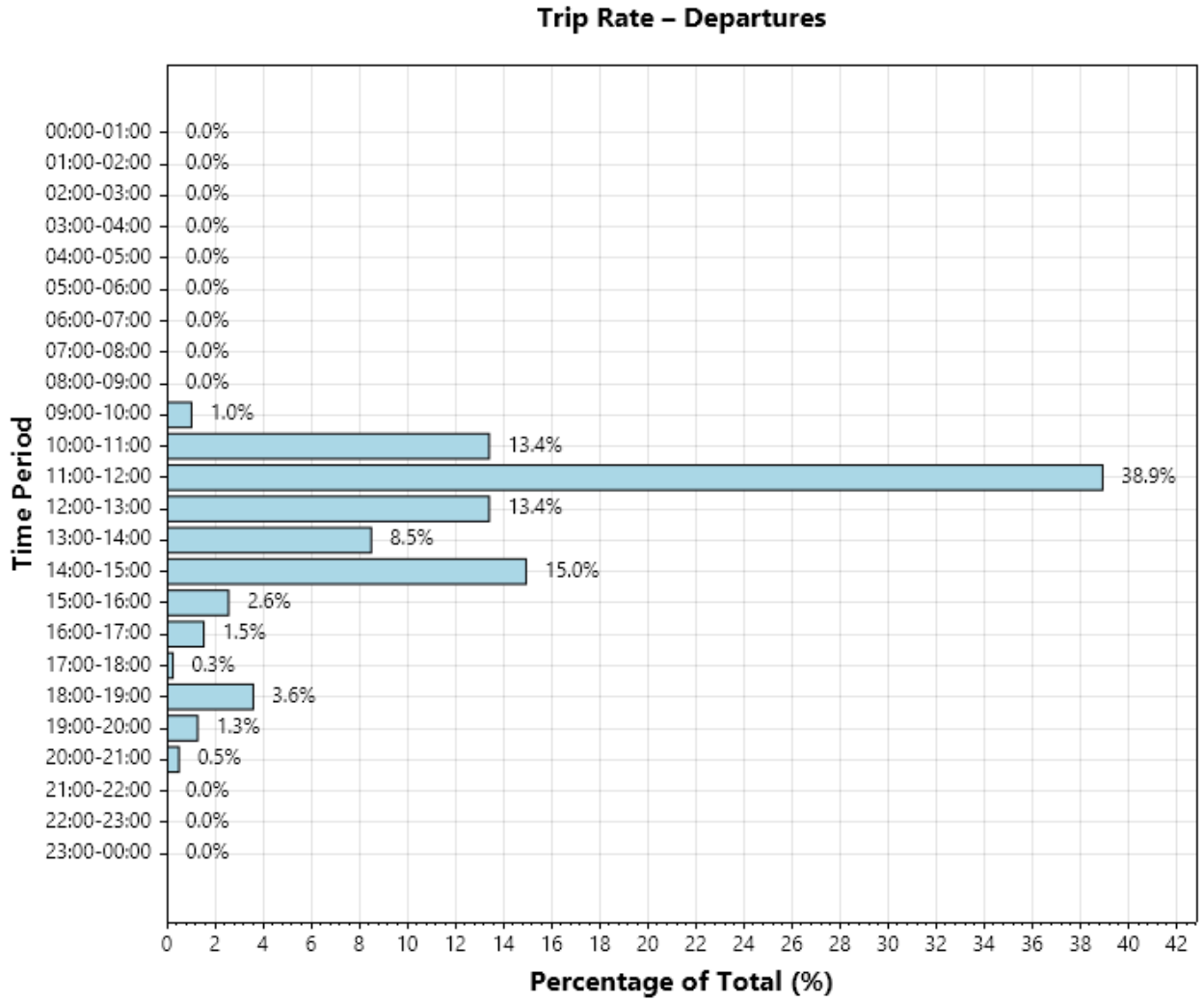


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Public Transport Users – Departures

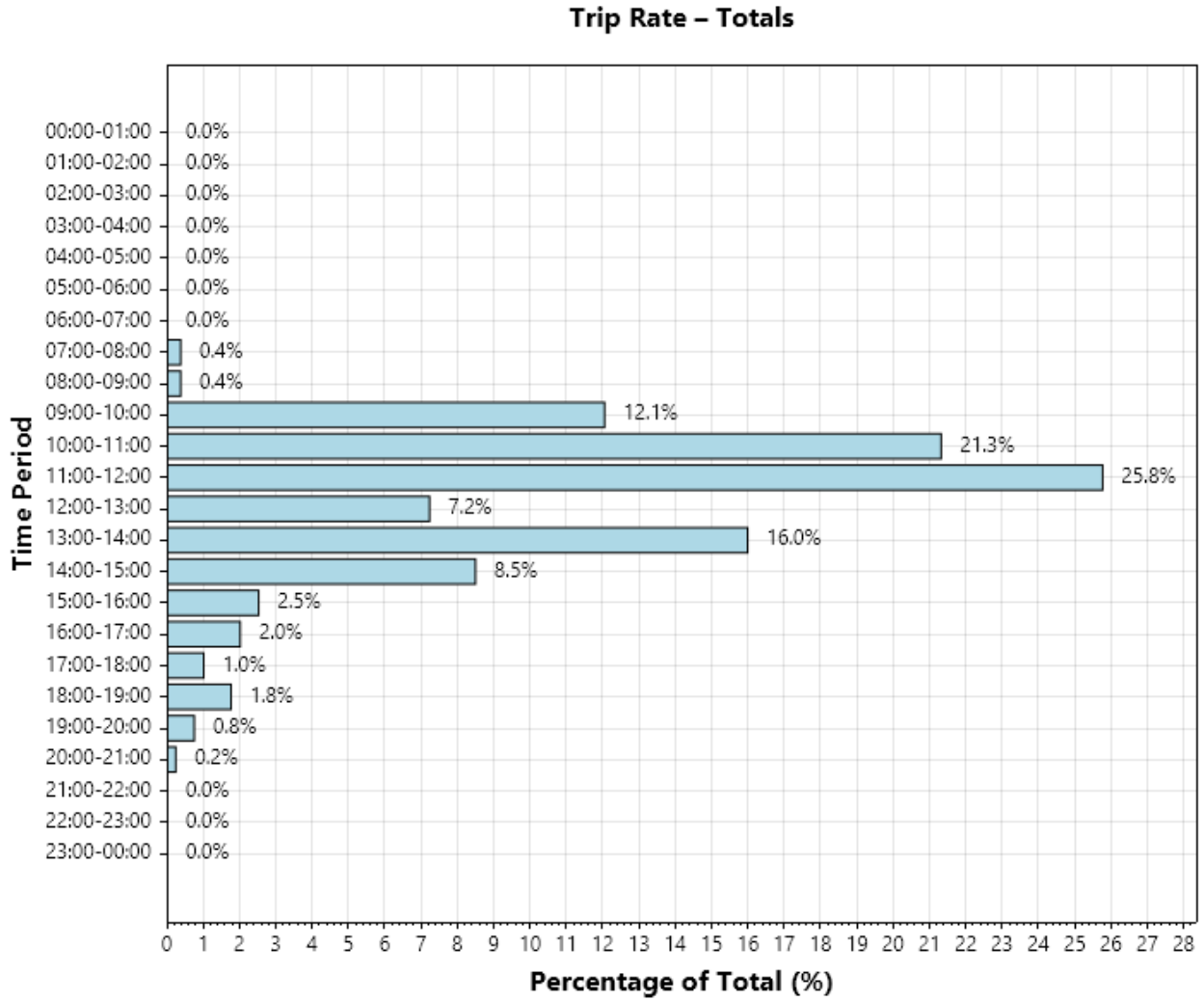


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Public Transport Users – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

Bus/Tram Passengers

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.000**	**0.000**	**0.000**
07:00-08:00	**4**	**1888**	**0.040**	**0.000**	**0.040**
08:00-09:00	**4**	**1888**	**0.026**	**0.000**	**0.026**
09:00-10:00	**4**	**1888**	**0.053**	**0.026**	**0.079**
10:00-11:00	**4**	**1888**	**0.066**	**0.053**	**0.119**
11:00-12:00	**4**	**1888**	**0.040**	**0.013**	**0.053**
12:00-13:00	**4**	**1888**	**0.066**	**0.053**	**0.119**
13:00-14:00	**4**	**1888**	**0.079**	**0.040**	**0.119**
14:00-15:00	**4**	**1888**	**0.093**	**0.000**	**0.093**
15:00-16:00	**4**	**1888**	**0.132**	**0.119**	**0.251**
16:00-17:00	**4**	**1888**	**0.132**	**0.066**	**0.198**
17:00-18:00	**4**	**1888**	**0.093**	**0.013**	**0.106**
18:00-19:00	**4**	**1888**	**0.000**	**0.185**	**0.185**
19:00-20:00	**4**	**1888**	**0.013**	**0.066**	**0.079**
20:00-21:00	**4**	**1888**	**0.000**	**0.026**	**0.026**
21:00-22:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
22:00-23:00	**1**	**2800**	**0.000**	**0.000**	**0.000**
23:00-00:00					
Total Rates:			**0.833**	**0.660**	**1.493**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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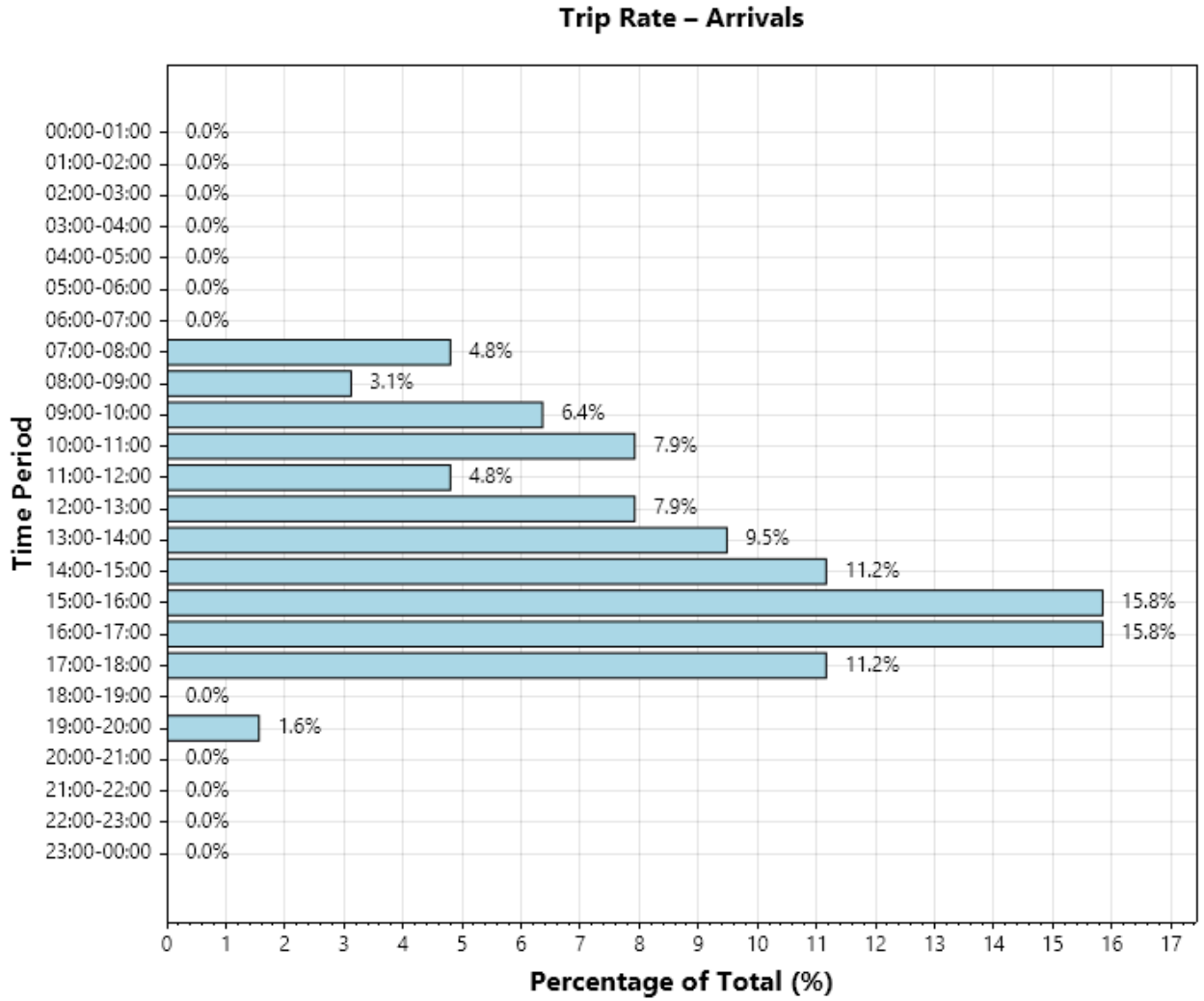
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	12/10/2011 - 22/06/2016
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate Bus/Tram Passengers – Arrivals

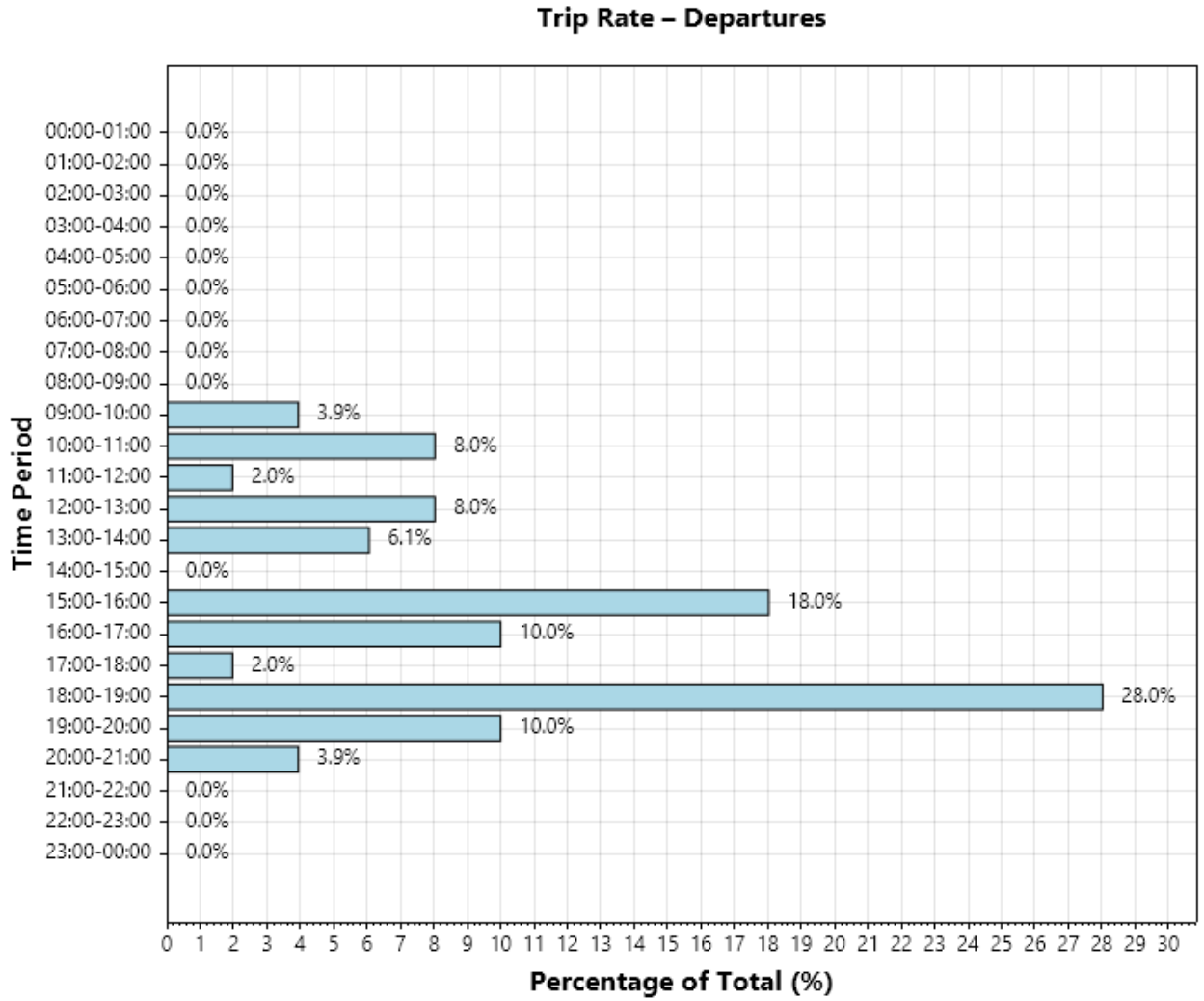


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Bus/Tram Passengers – Departures

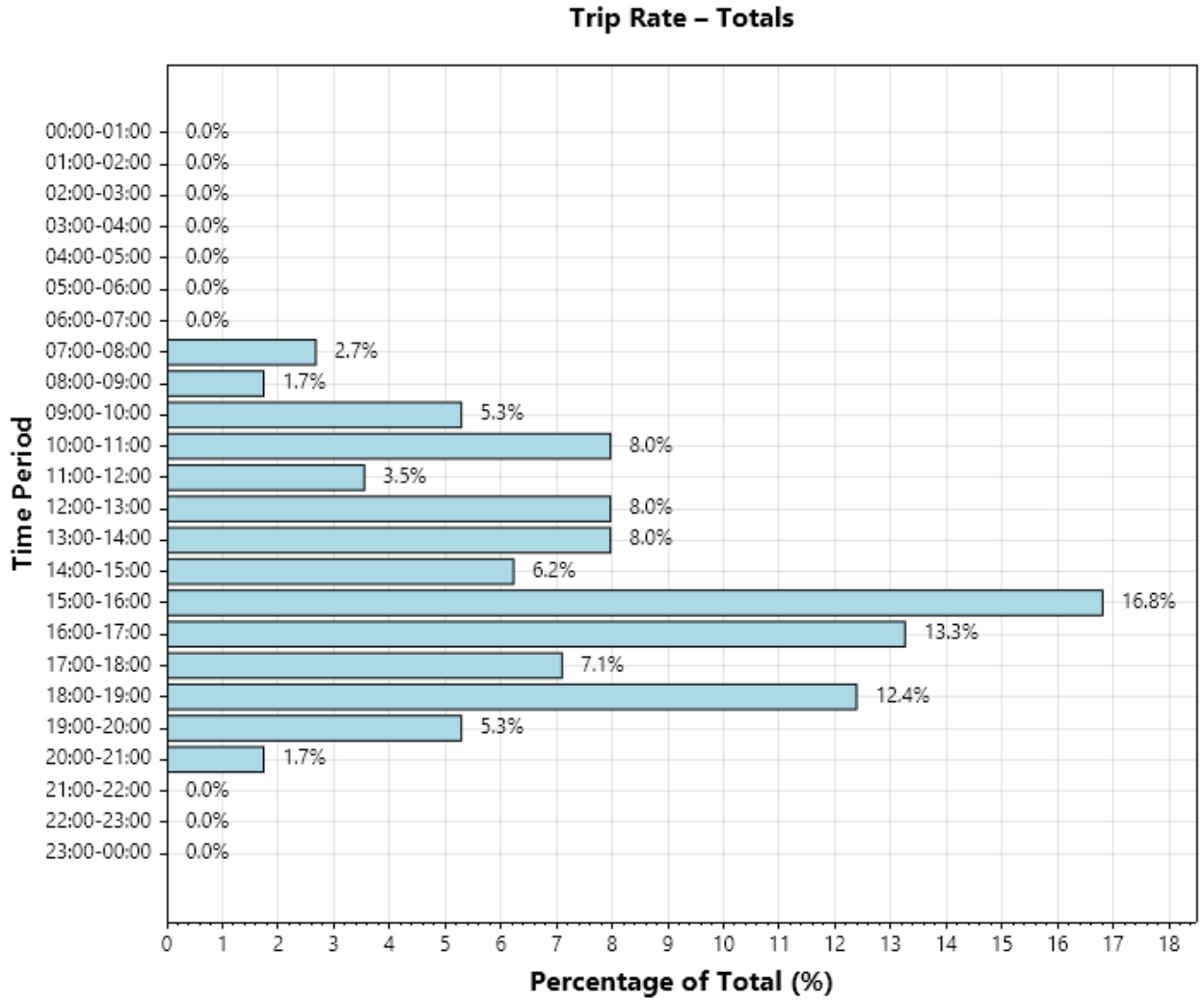


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Bus/Tram Passengers – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

Coach Passengers

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.000**	**0.000**	**0.000**
07:00-08:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
08:00-09:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
09:00-10:00	**4**	**1888**	**1.152**	**0.026**	**1.178**
10:00-11:00	**4**	**1888**	**1.457**	**0.609**	**2.066**
11:00-12:00	**4**	**1888**	**0.649**	**1.987**	**2.636**
12:00-13:00	**4**	**1888**	**0.000**	**0.636**	**0.636**
13:00-14:00	**4**	**1888**	**1.139**	**0.397**	**1.536**
14:00-15:00	**4**	**1888**	**0.026**	**0.768**	**0.794**
15:00-16:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
16:00-17:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
17:00-18:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
18:00-19:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
19:00-20:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
20:00-21:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
21:00-22:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
22:00-23:00	**1**	**2800**	**0.000**	**0.000**	**0.000**
23:00-00:00					
Total Rates:			**4.423**	**4.423**	**8.846**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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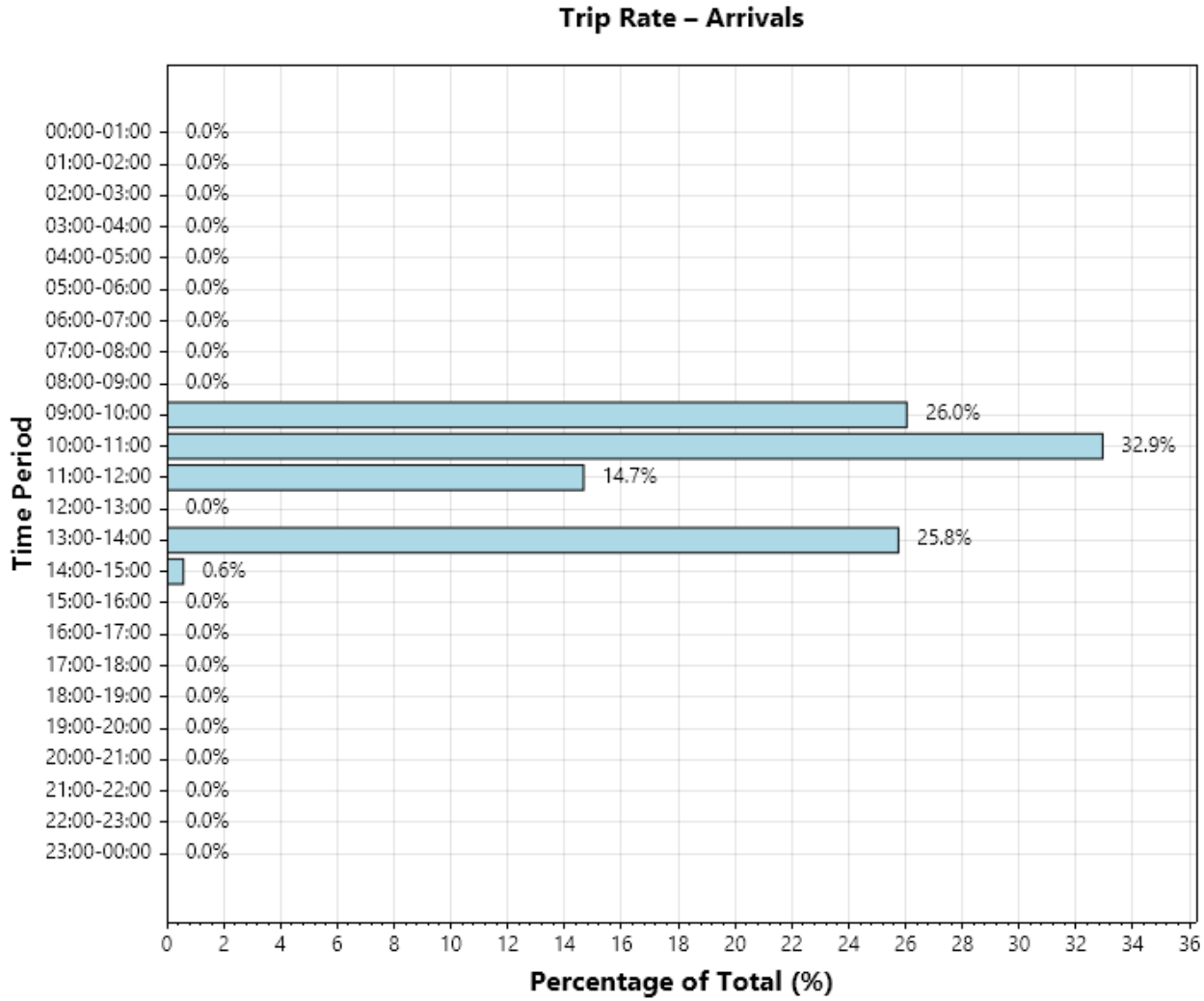
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	22/06/2011 - 22/06/2016
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate Coach Passengers – Arrivals

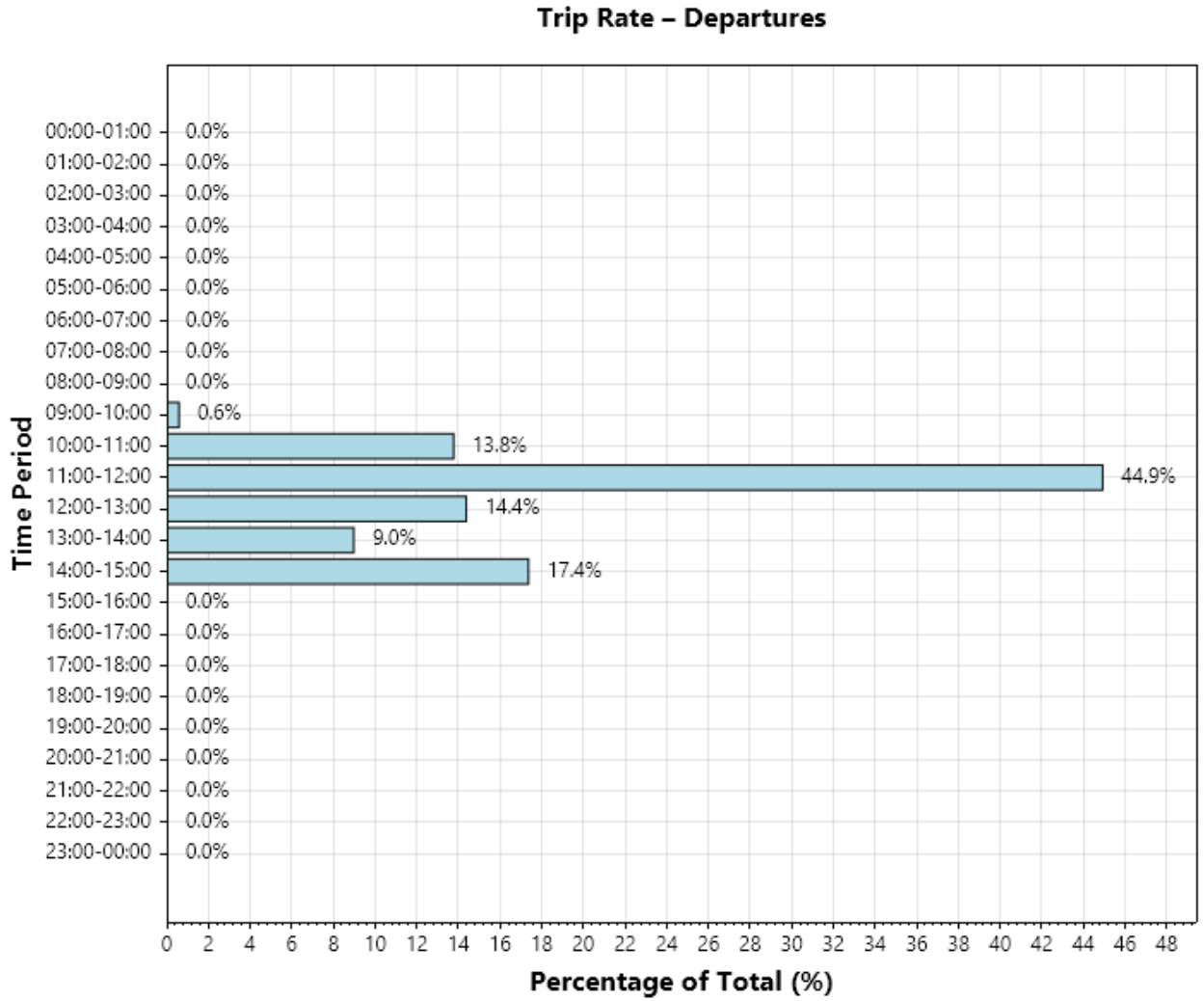


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Coach Passengers – Departures

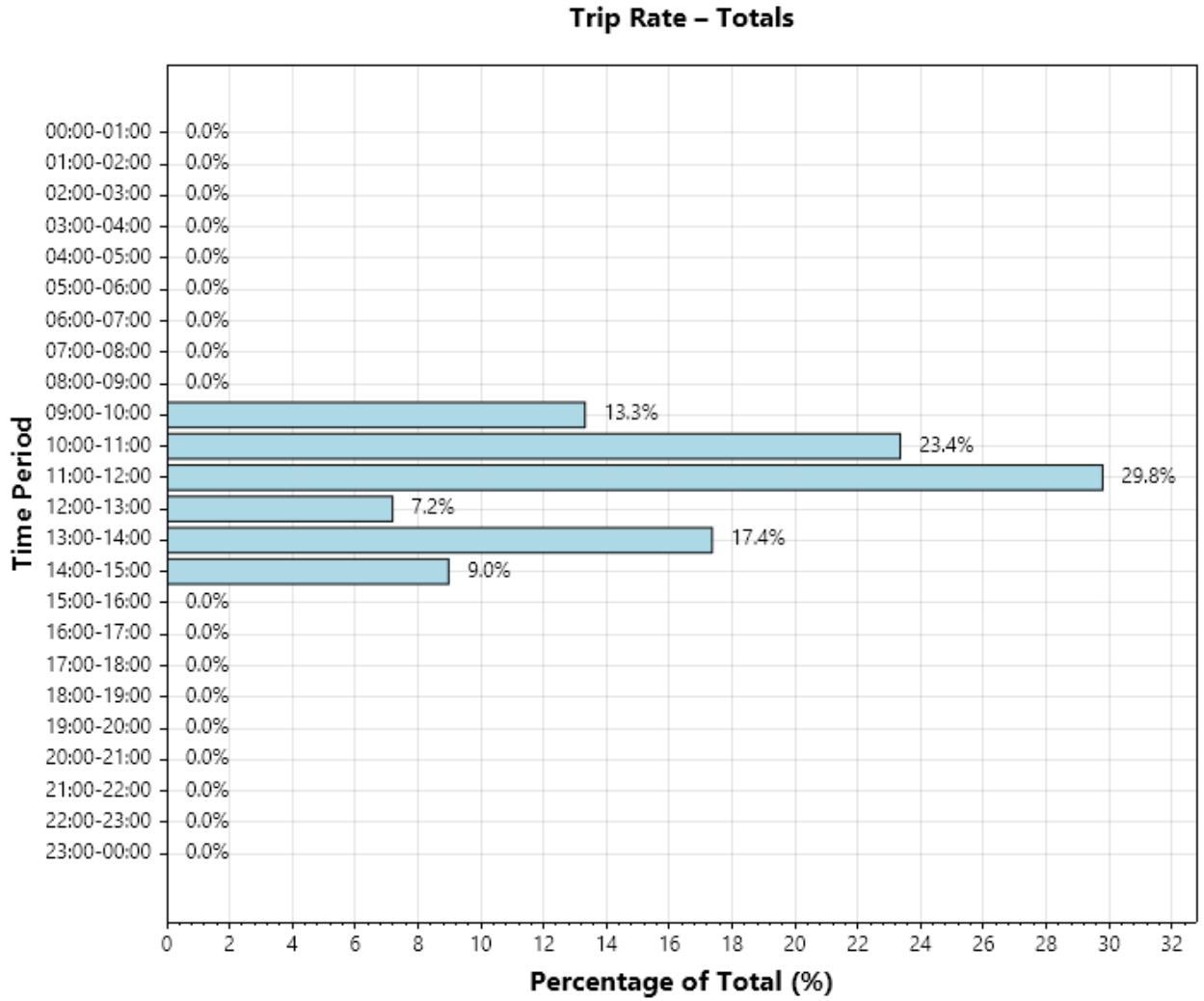


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Coach Passengers – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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TRIP RATE for Land Use 07 - LEISURE/C - LEISURE CENTRE

Total Rail Passengers

Calculation factor: 100 sqm

**BOLD print indicates peak (busiest) period*

Time Range	No. Days	Ave. GFA	Arrivals	Departures	Totals
00:00-01:00					
01:00-02:00					
02:00-03:00					
03:00-04:00					
04:00-05:00					
05:00-06:00					
06:00-07:00	**2**	**1950**	**0.000**	**0.000**	**0.000**
07:00-08:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
08:00-09:00	**4**	**1888**	**0.013**	**0.000**	**0.013**
09:00-10:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
10:00-11:00	**4**	**1888**	**0.013**	**0.026**	**0.039**
11:00-12:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
12:00-13:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
13:00-14:00	**4**	**1888**	**0.013**	**0.000**	**0.013**
14:00-15:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
15:00-16:00	**4**	**1888**	**0.000**	**0.013**	**0.013**
16:00-17:00	**4**	**1888**	**0.000**	**0.013**	**0.013**
17:00-18:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
18:00-19:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
19:00-20:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
20:00-21:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
21:00-22:00	**4**	**1888**	**0.000**	**0.000**	**0.000**
22:00-23:00	**1**	**2800**	**0.000**	**0.000**	**0.000**
23:00-00:00					
Total Rates:			**0.039**	**0.052**	**0.091**

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

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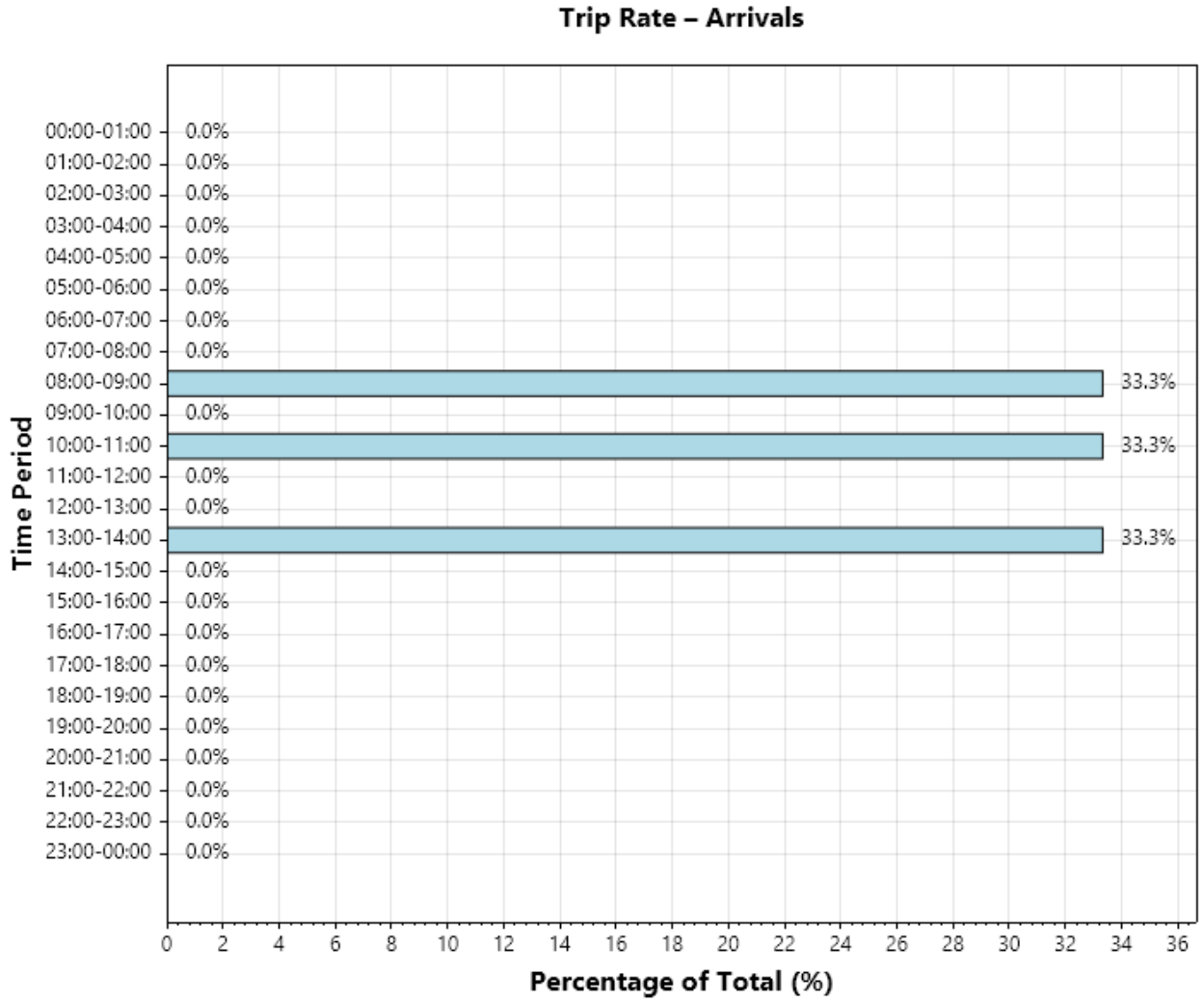
Parameter Summary:

Trip rate parameter range selected:	360 - 17000 (units: sqm)
Survey date date range:	12/10/2011 - 22/06/2016
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	12
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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Trip Rate Total Rail Passengers – Arrivals

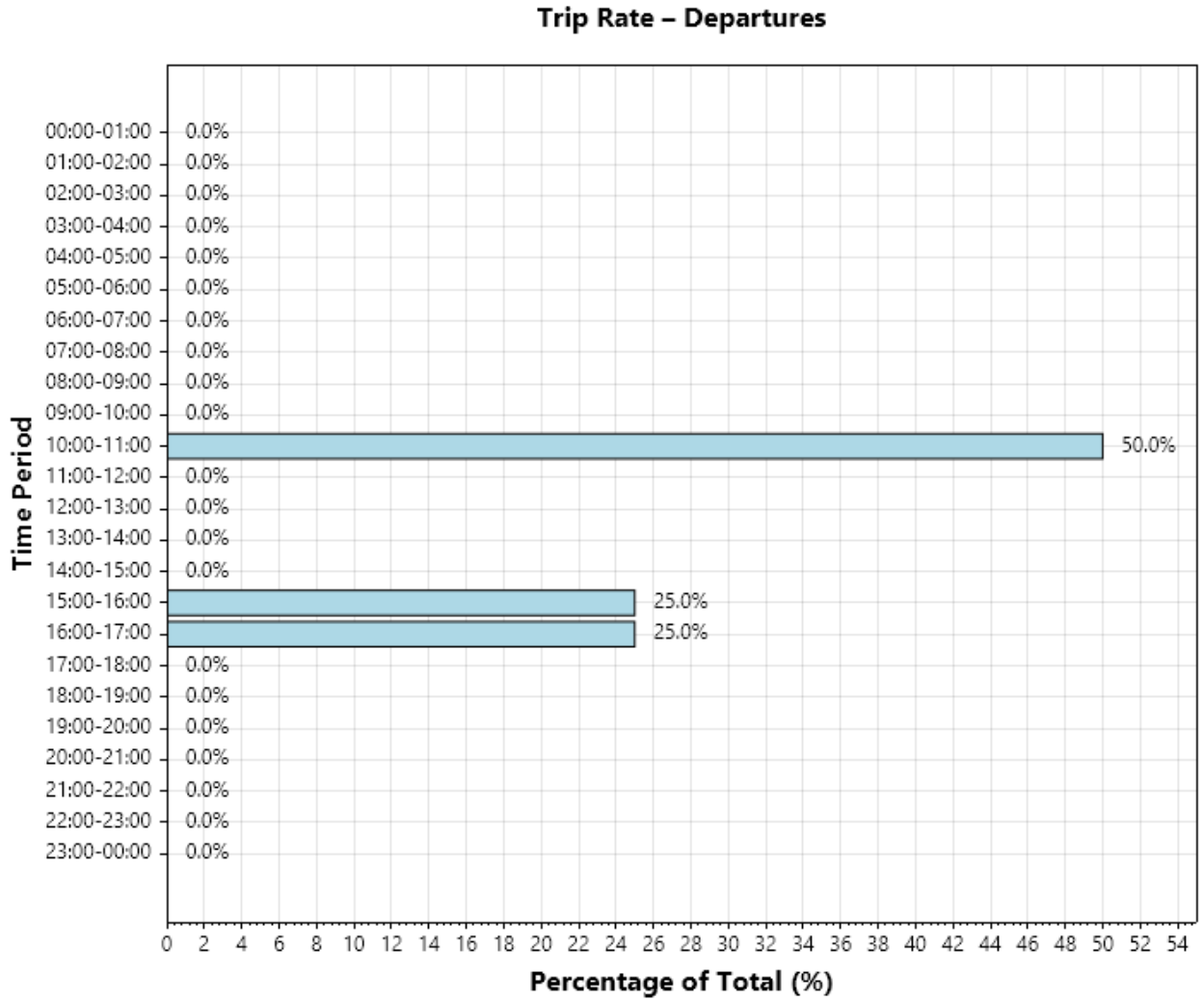


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Trip Rate Total Rail Passengers – Departures

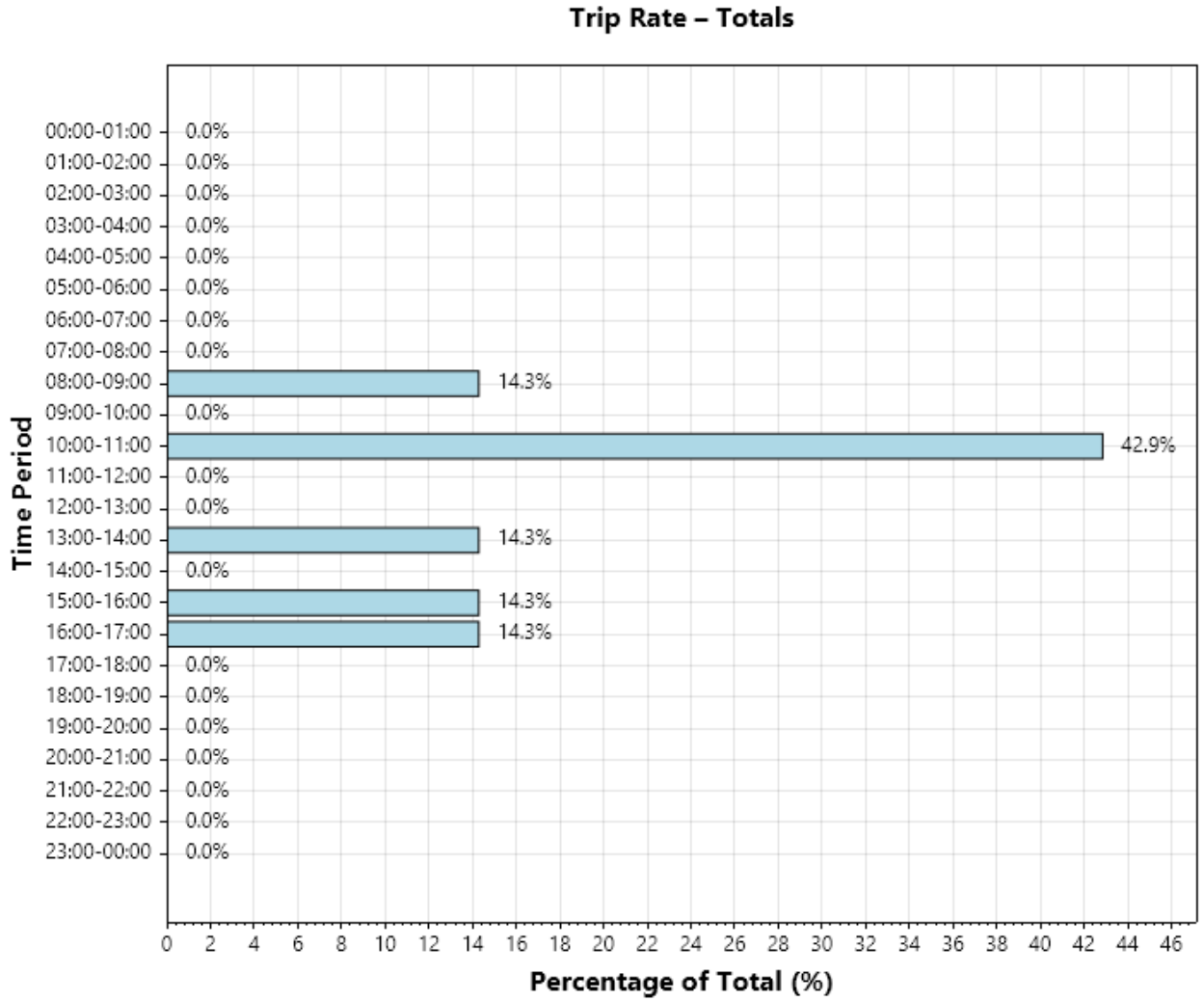


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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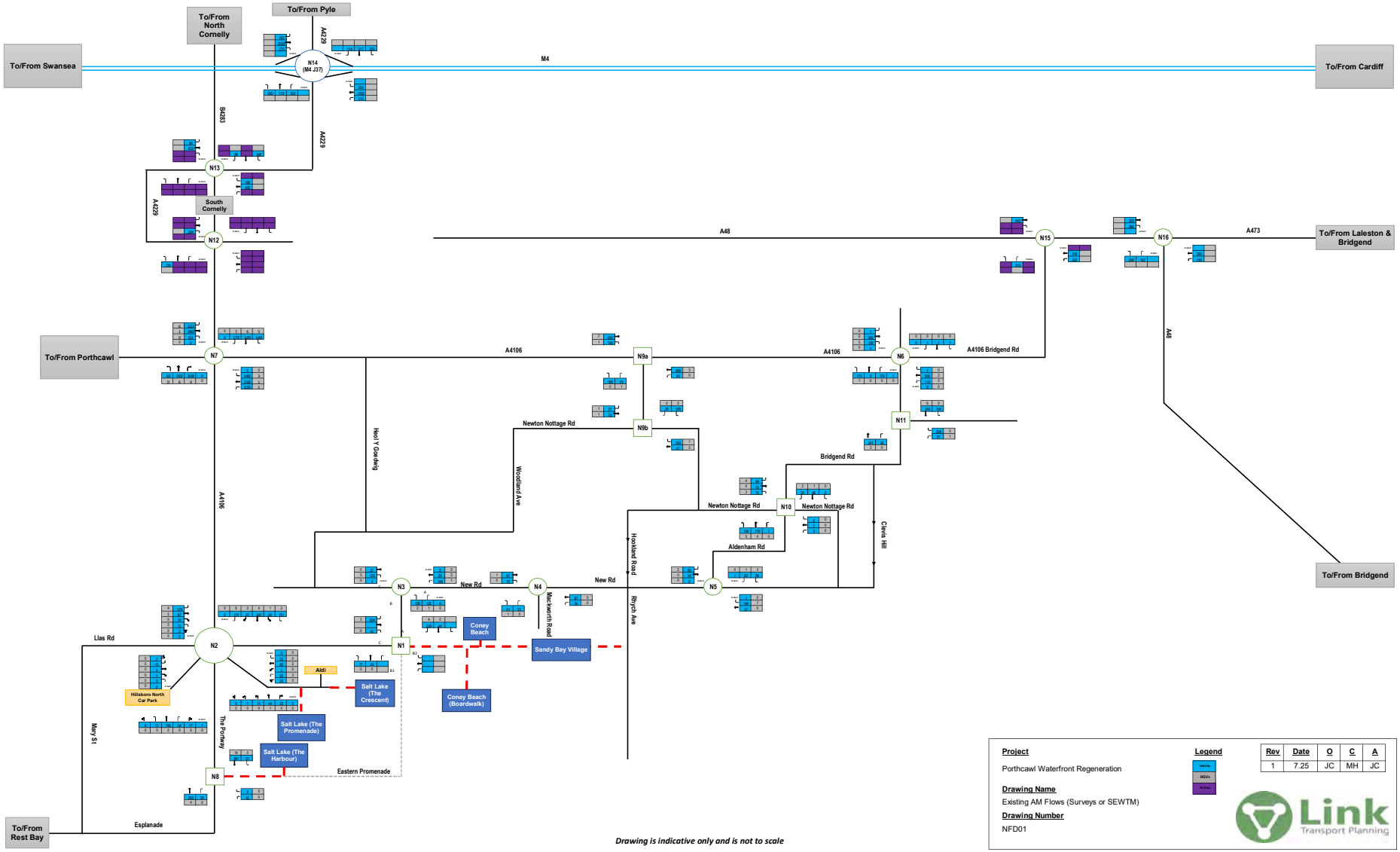
Trip Rate Total Rail Passengers – Totals



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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Project
Porthcawl Waterfront Regeneration

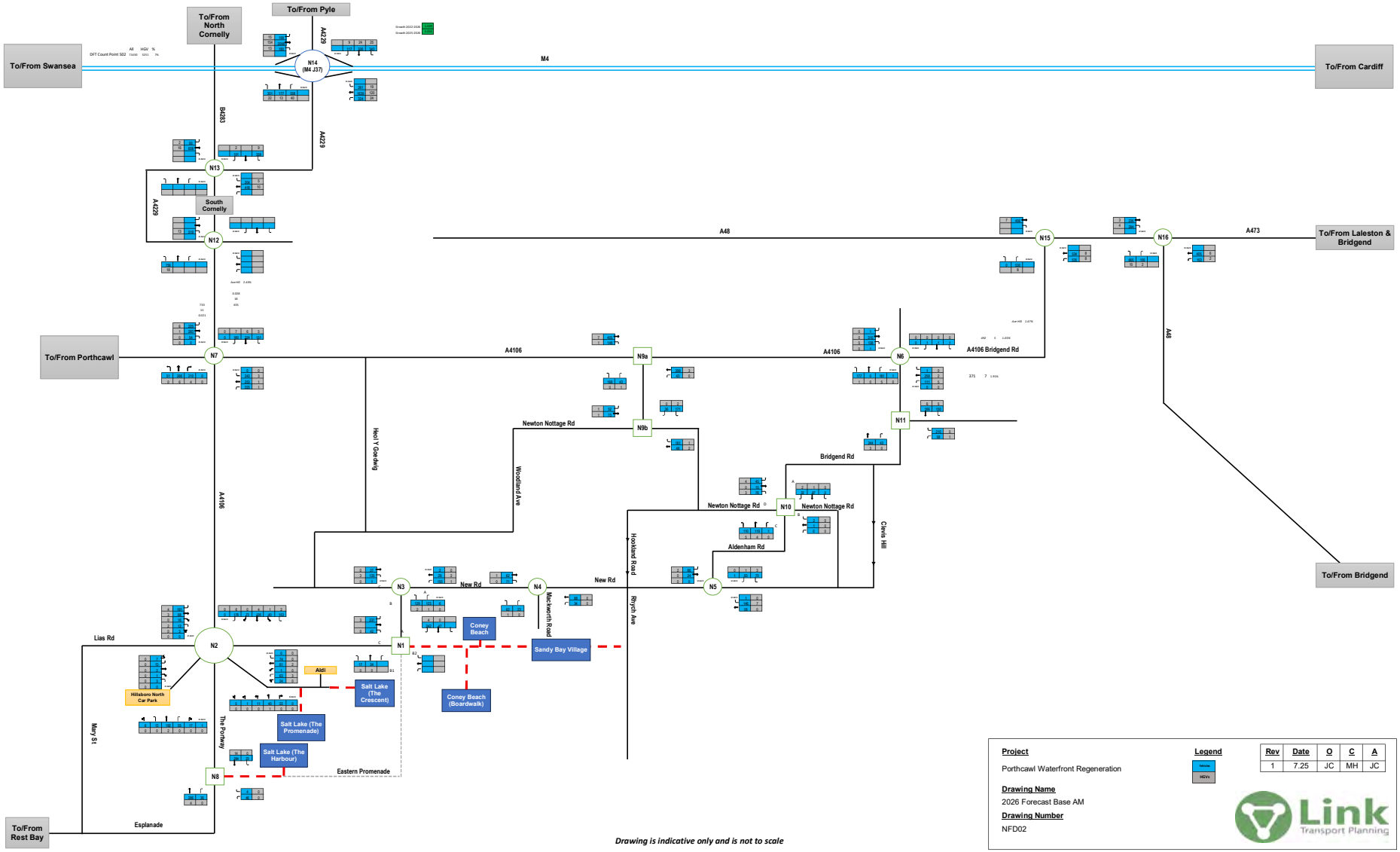
Drawing Name
Existing AM Flows (Surveys or SEWTM)

Drawing Number
NFD01

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Drawing is indicative only and is not to scale

Project
Porthcawl Waterfront Regeneration

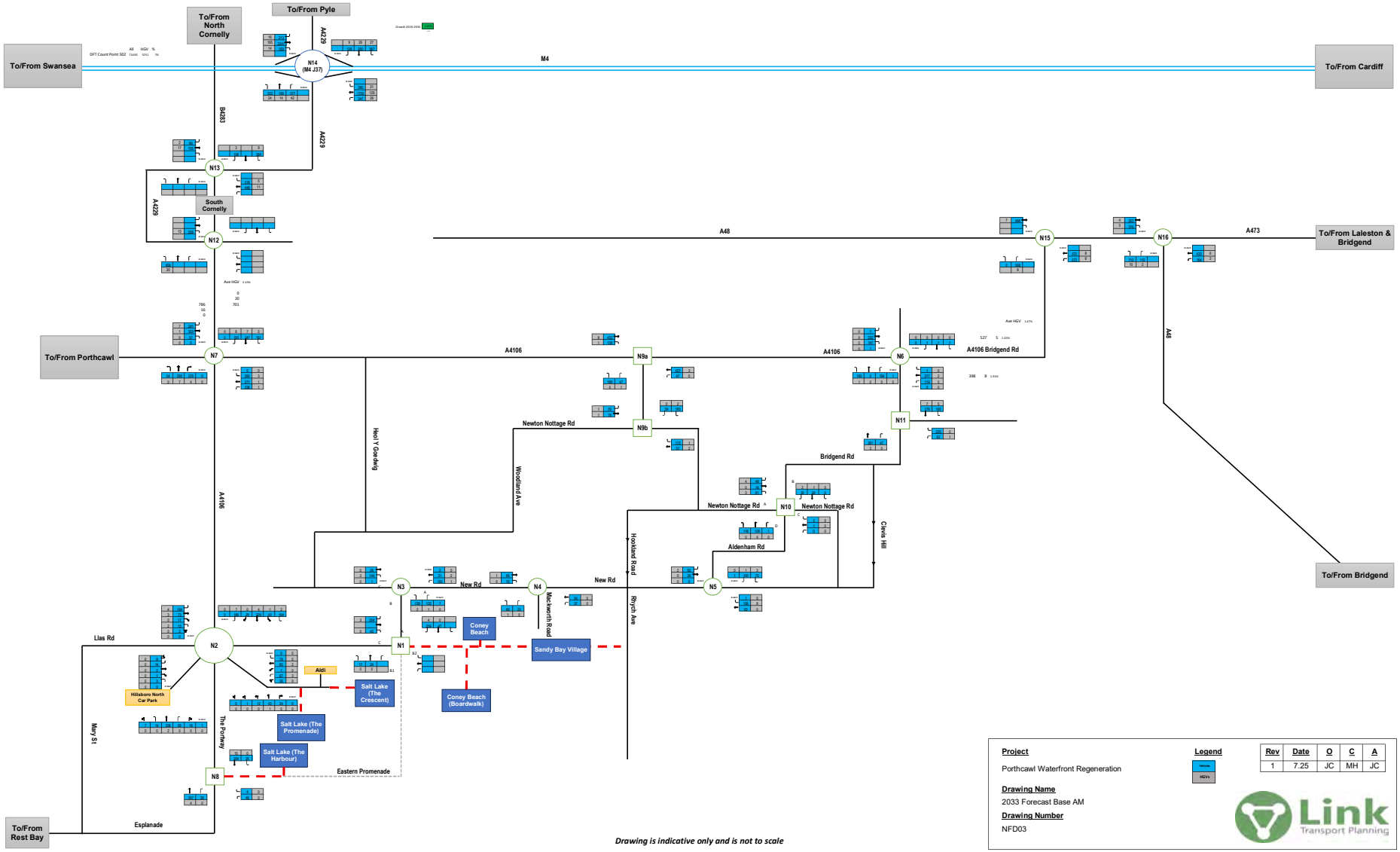
Drawing Name
2026 Forecast Base AM

Drawing Number
NFD02

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



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Project
Porthcawl Waterfront Regeneration

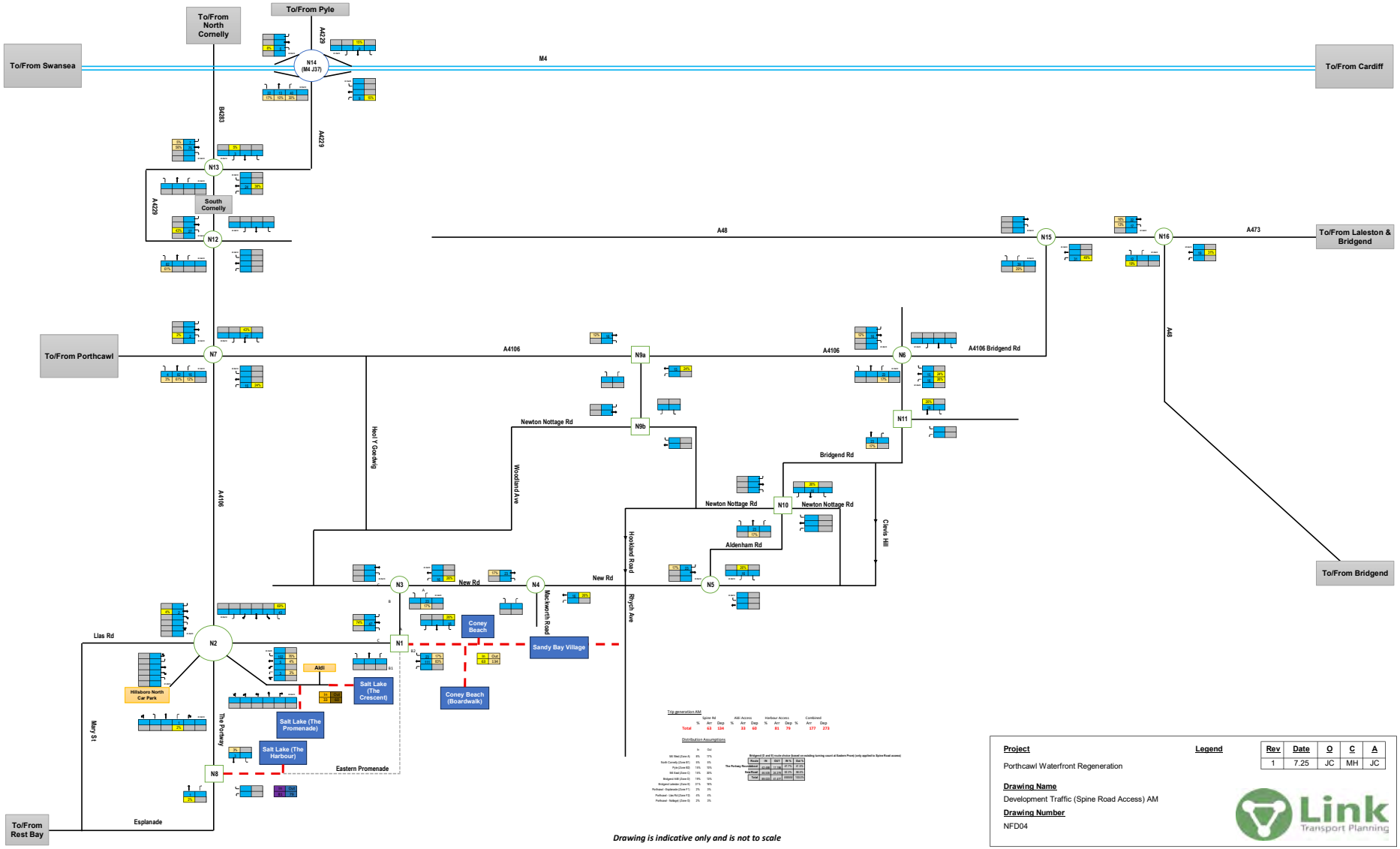
Drawing Name
2033 Forecast Base AM

Drawing Number
NFD03

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



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Project

Porthcawl Waterfront Regeneration

Drawing Name

Development Traffic (Spine Road Access) AM

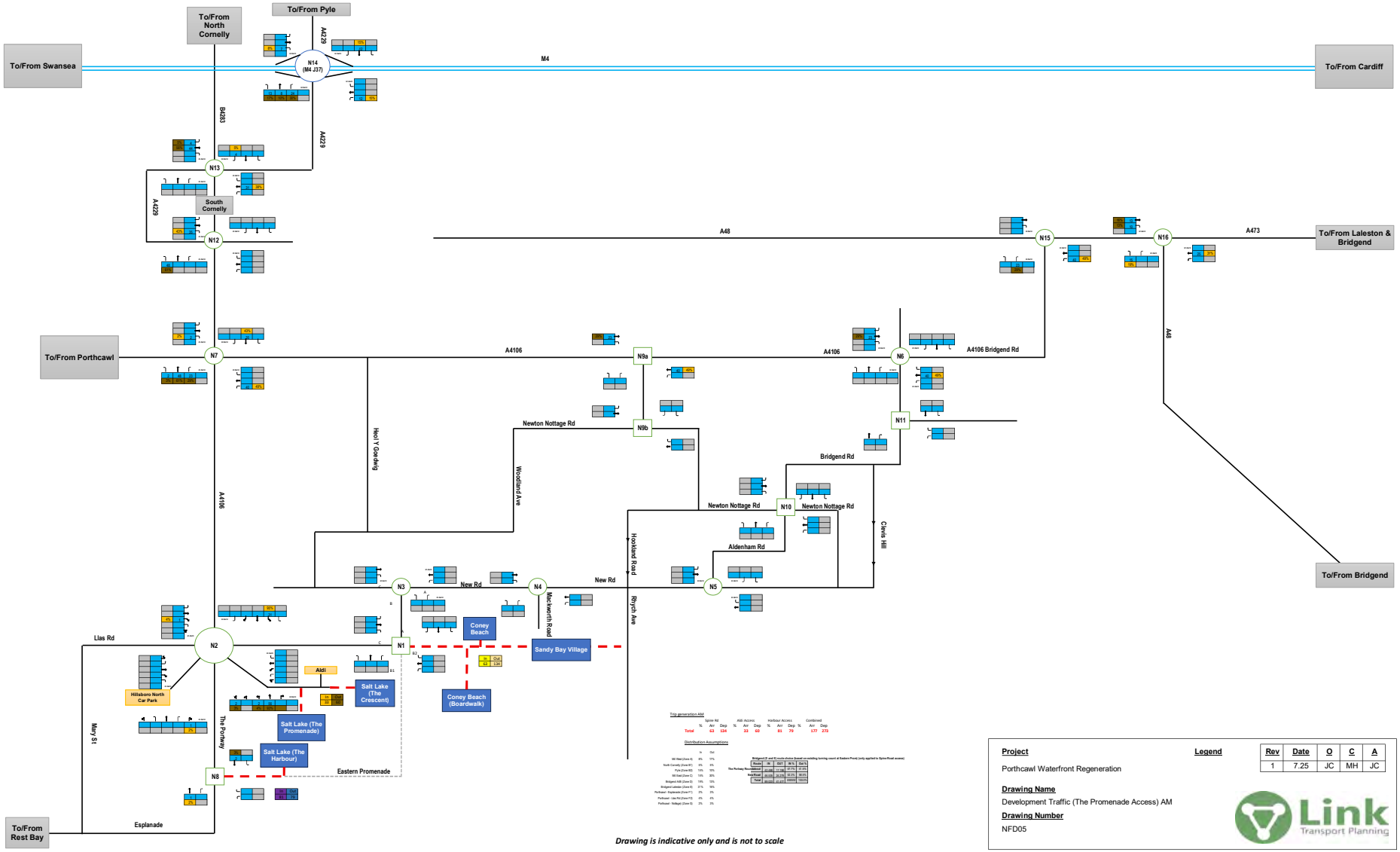
Drawing Number

NFD04

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



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Project
Porthcawl Waterfront Regeneration

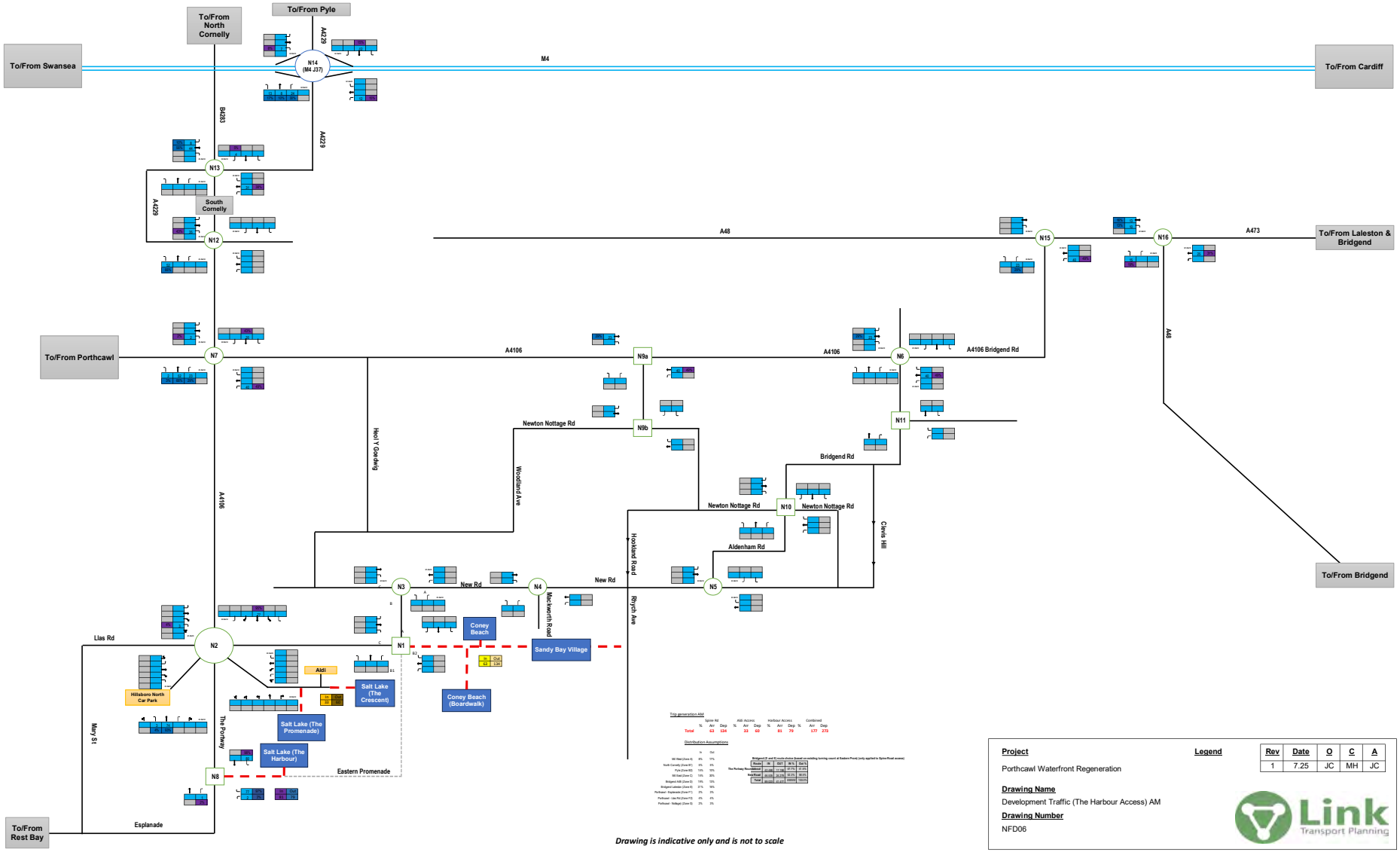
Drawing Name
Development Traffic (The Promenade Access) AM

Drawing Number
NFD05

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



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Project
Porthcawl Waterfront Regeneration

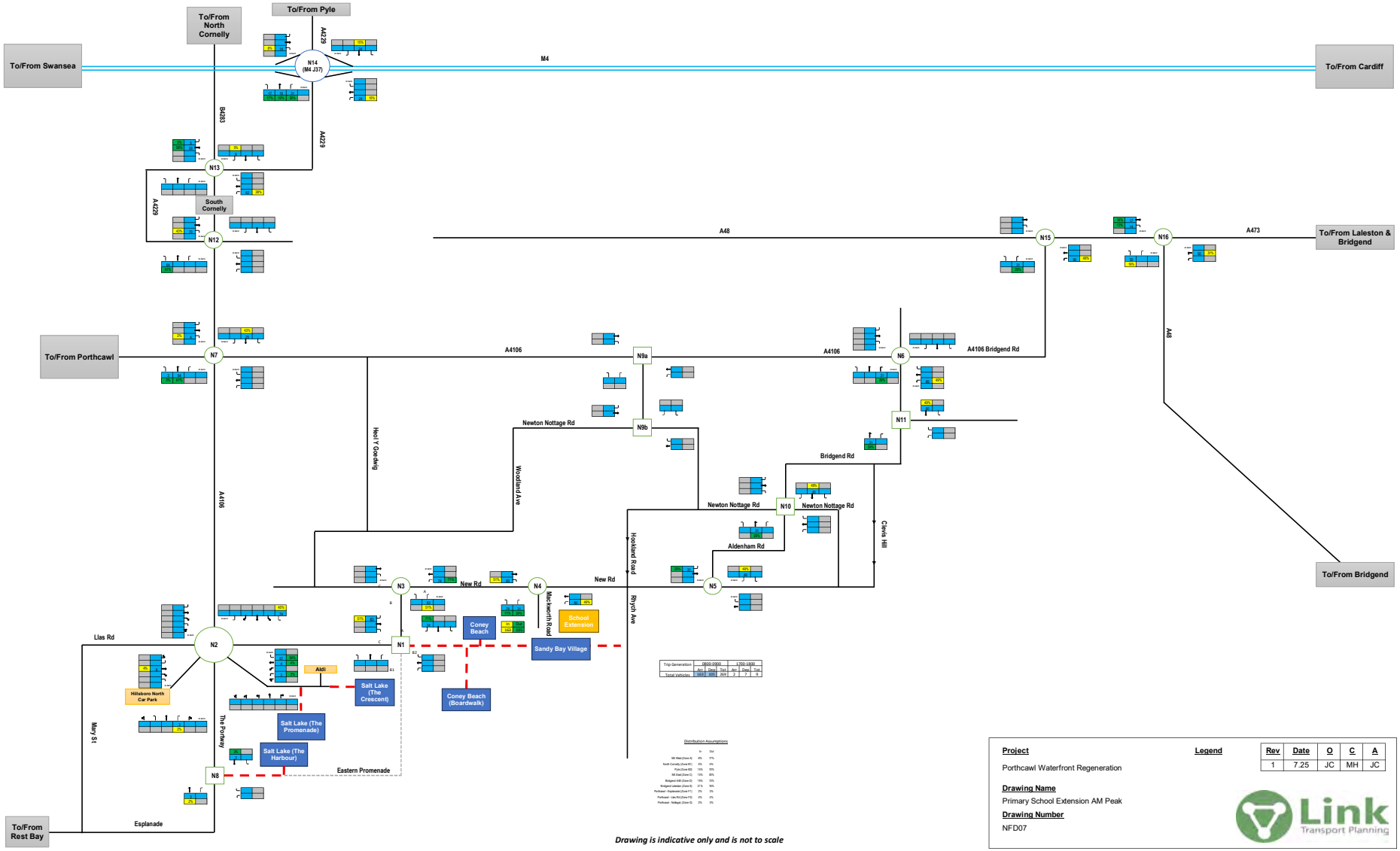
Drawing Name
Development Traffic (The Harbour Access) AM

Drawing Number
NFD06

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



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Project
Porthcawl Waterfront Regeneration

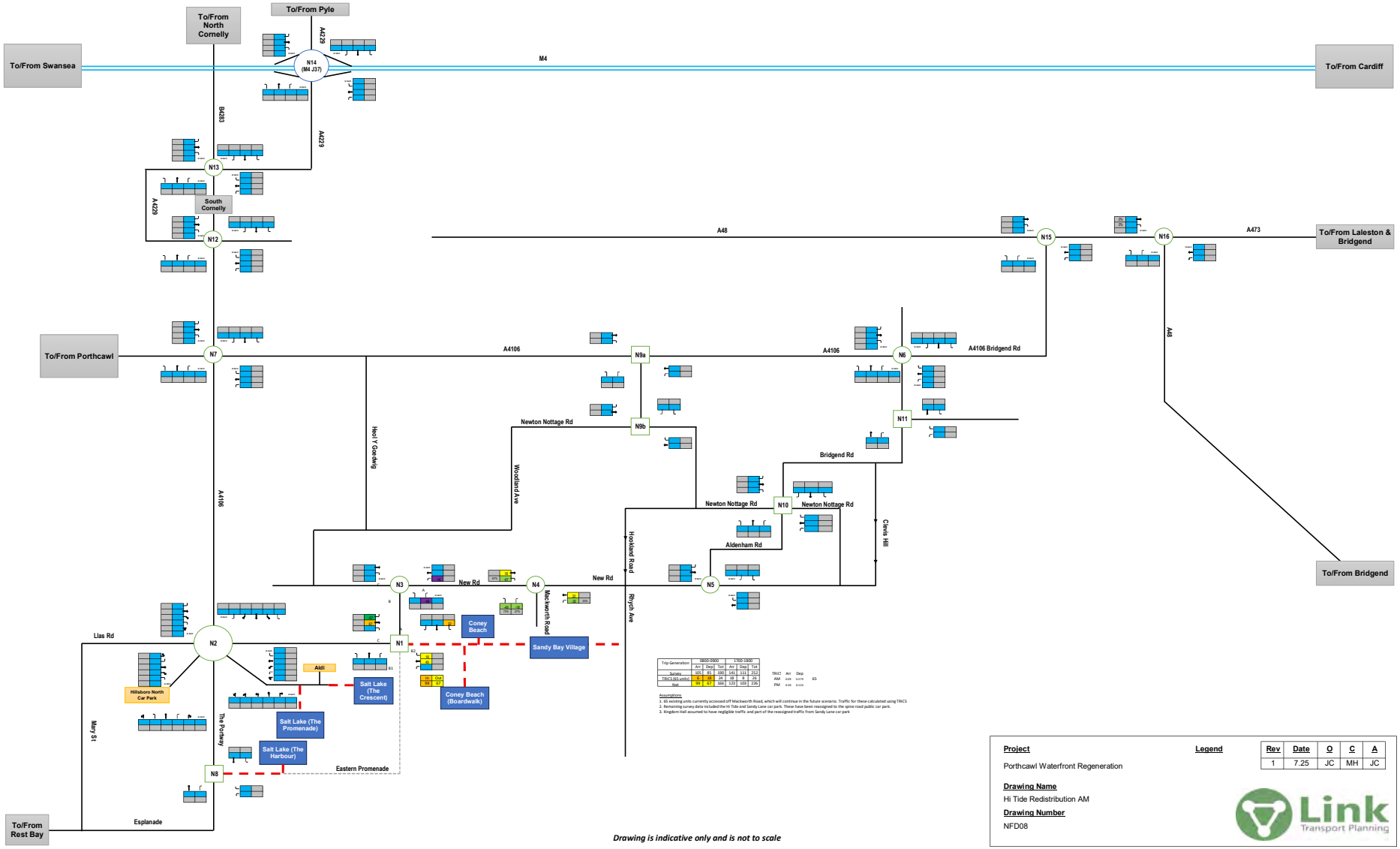
Drawing Name
Primary School Extension AM Peak

Drawing Number
NFD07

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Trip Generation	0800-0900			1700-1800		
	Arr	Dep	Tot	Arr	Dep	Tot
Survey	105	35	140	141	111	252
TRICS (85 units)	75	24	99	33	8	41
Net	99	67	166	123	103	226

TRICS Arr Dep
AM 0.09 0.279 65
PM 0.28 0.114

Assumptions
1. 65 existing units currently accessed off Mackworth Road, which will continue in the future scenario. Traffic for these calculated using TRICS
2. Remaining survey data included the Hi Tide and Sandy Lane car park. These have been reassigned to the spine road public car park.
3. Kingdom Hall assumed to have negligible traffic and part of the reassigned traffic from Sandy Lane car park

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Project
Porthcawl Waterfront Regeneration

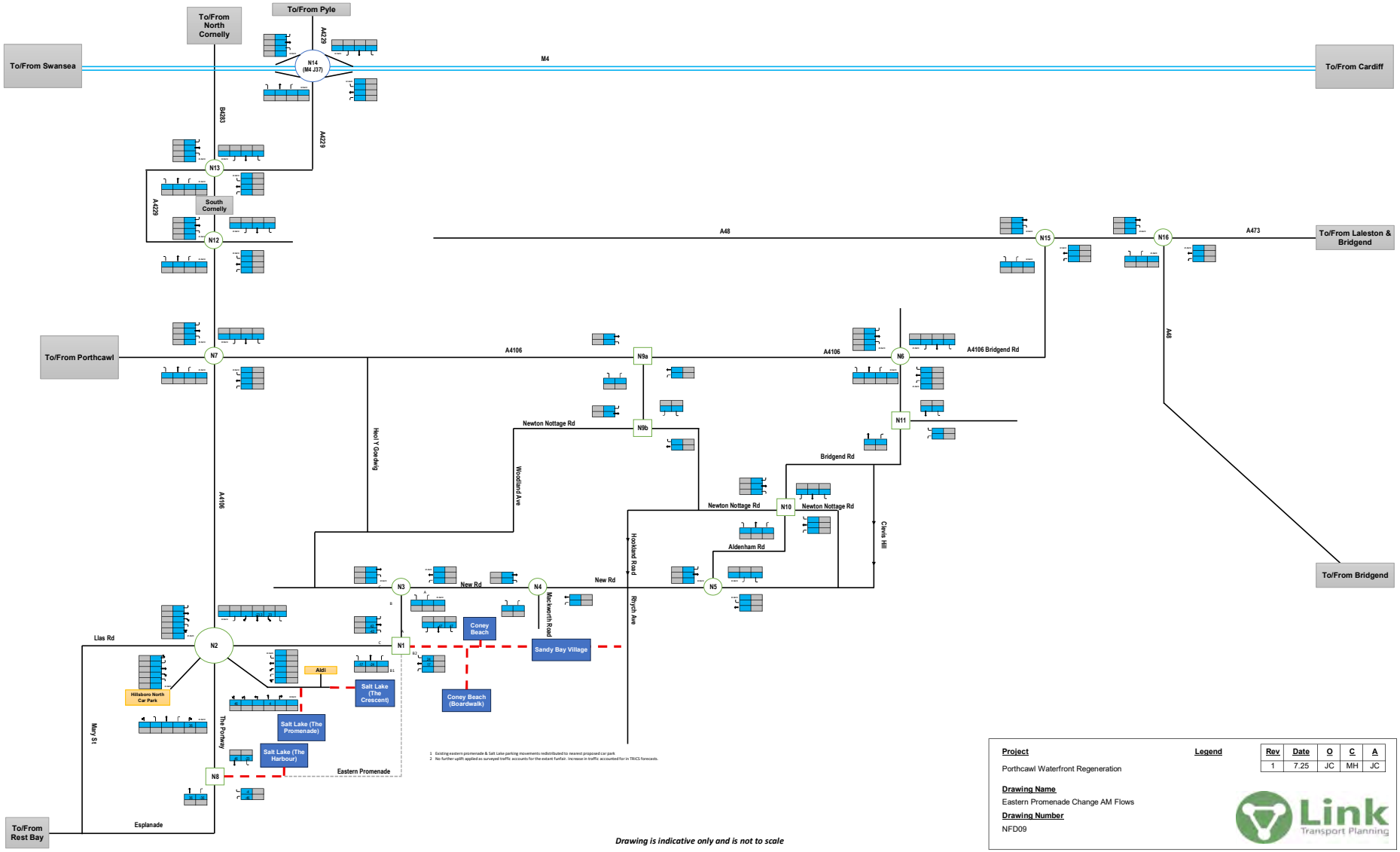
Drawing Name
Hi Tide Redistribution AM

Drawing Number
NFD08

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



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Project
Porthcawl Waterfront Regeneration

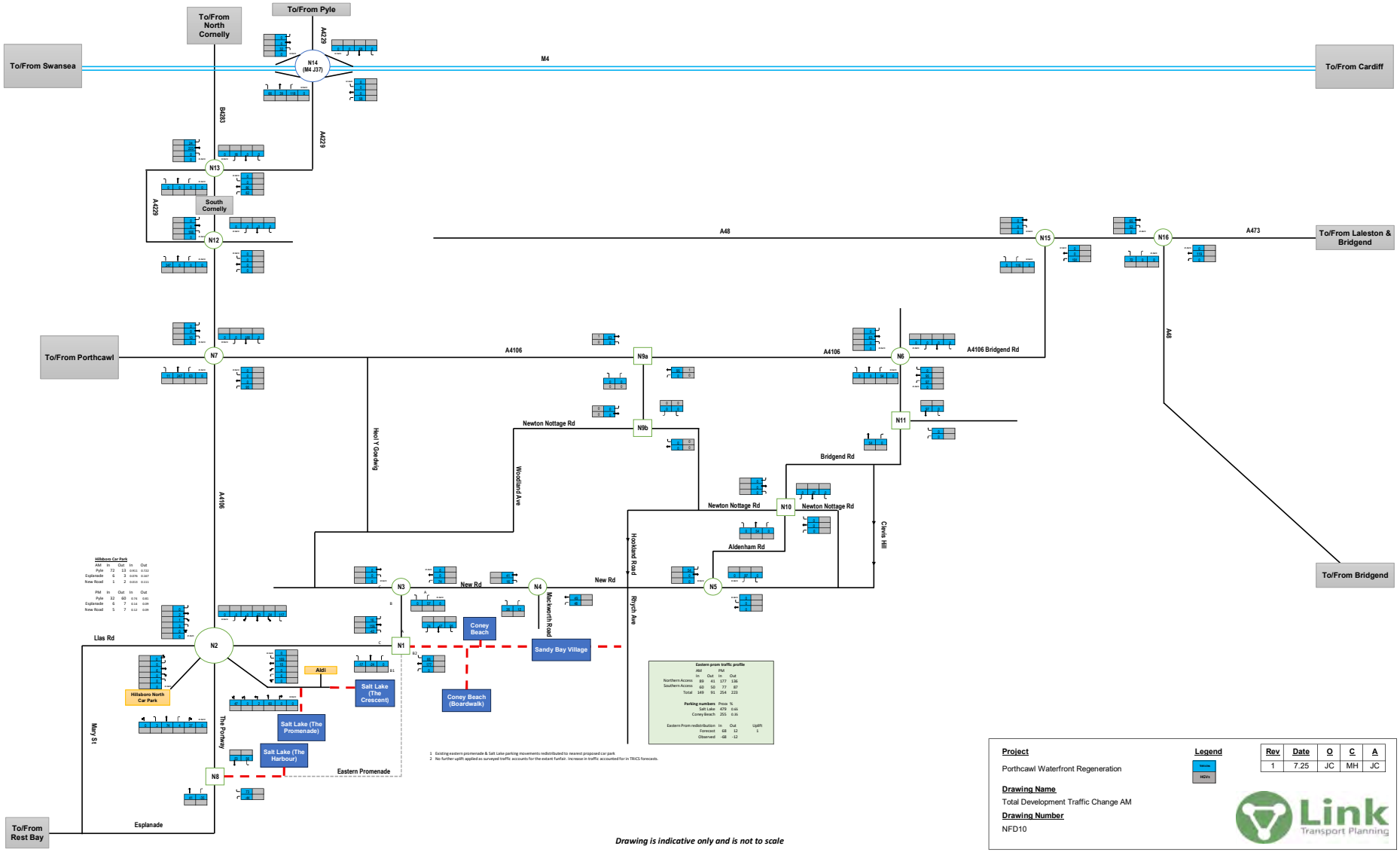
Drawing Name
Eastern Promenade Change AM Flows

Drawing Number
NFD09

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Project
Porthcawl Waterfront Regeneration

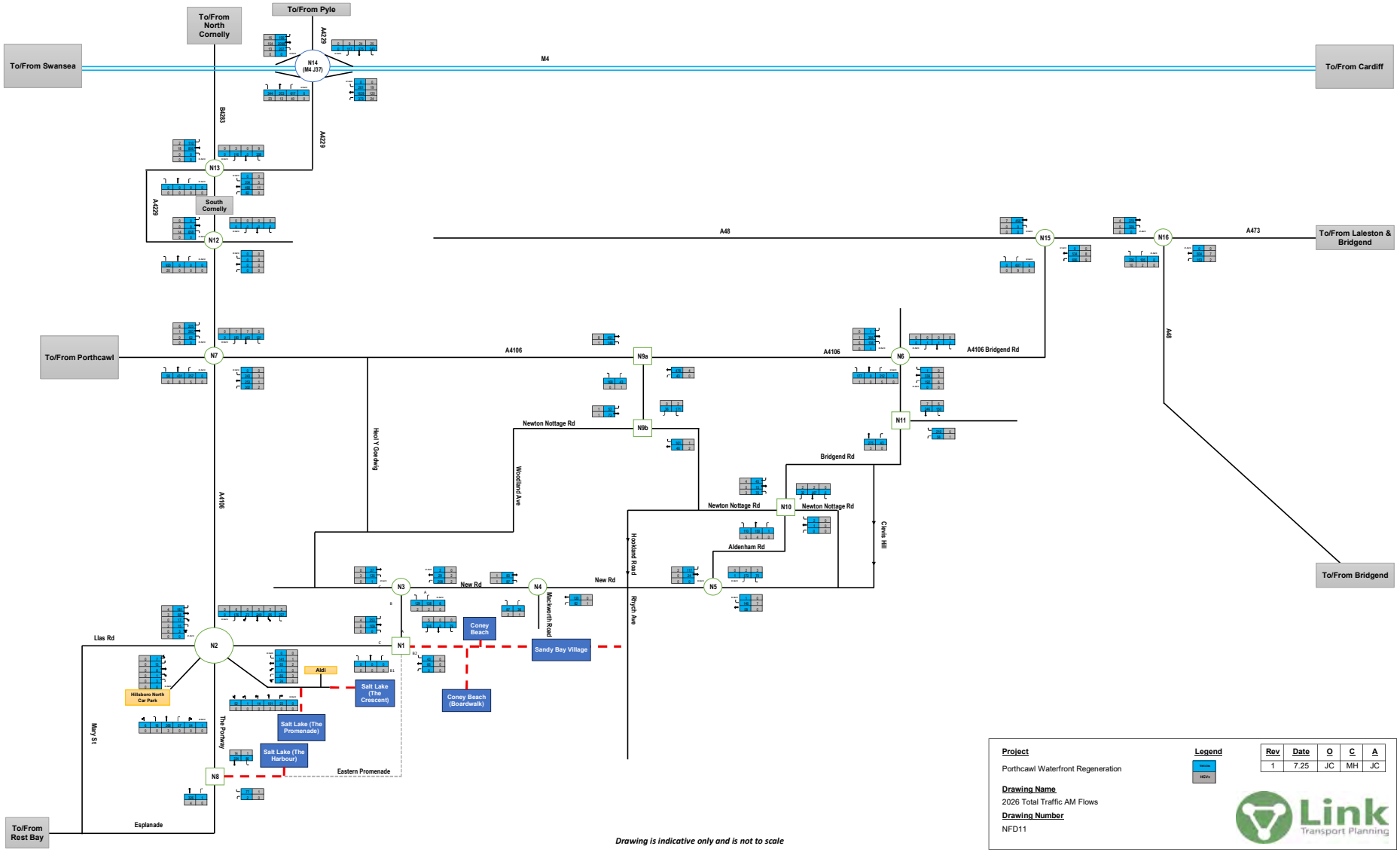
Drawing Name
Total Development Traffic Change AM

Drawing Number
NFD10

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



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Project
Porthcawl Waterfront Regeneration

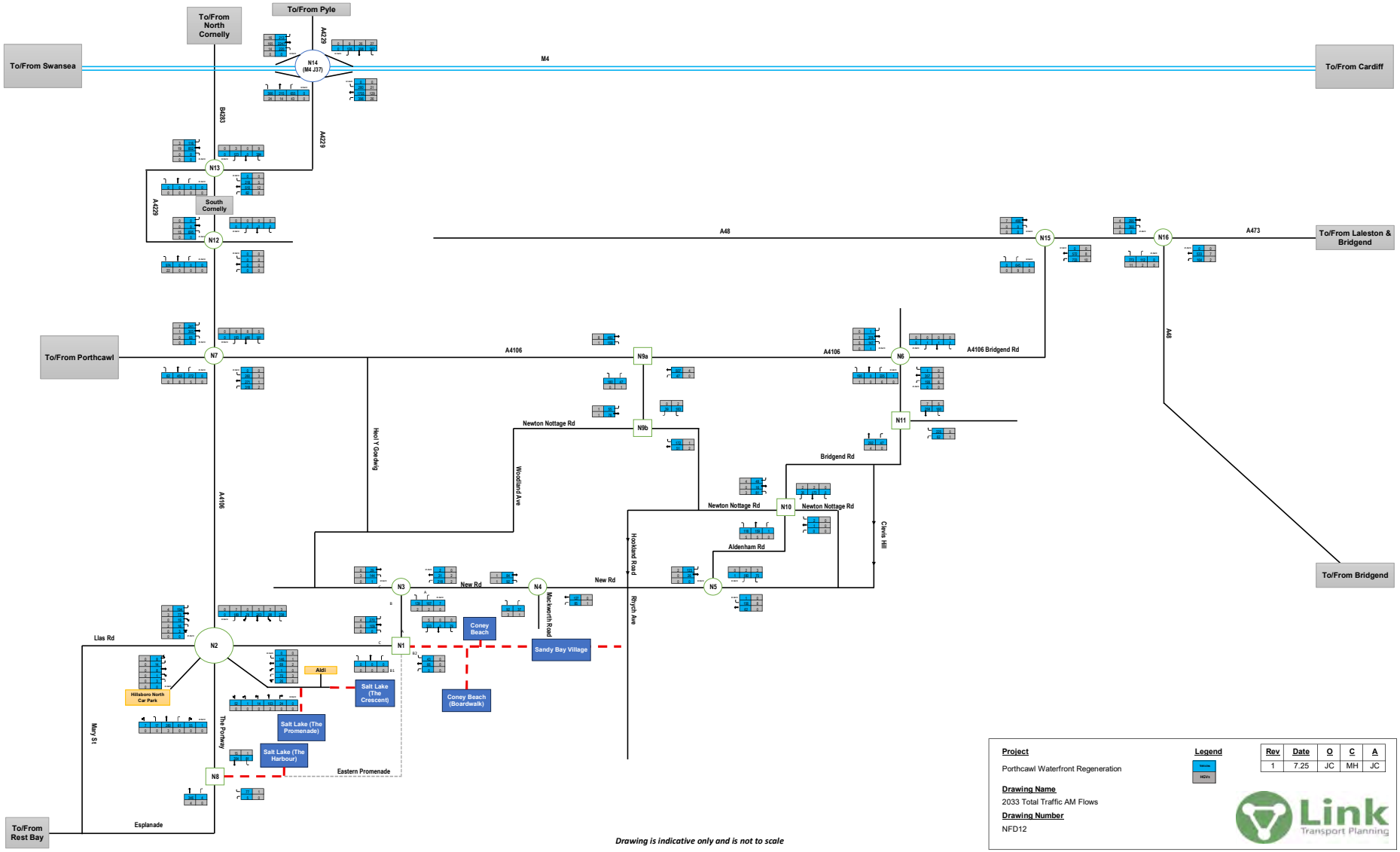
Drawing Name
2026 Total Traffic AM Flows

Drawing Number
NFD11

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Drawing is indicative only and is not to scale

Project
Porthcawl Waterfront Regeneration

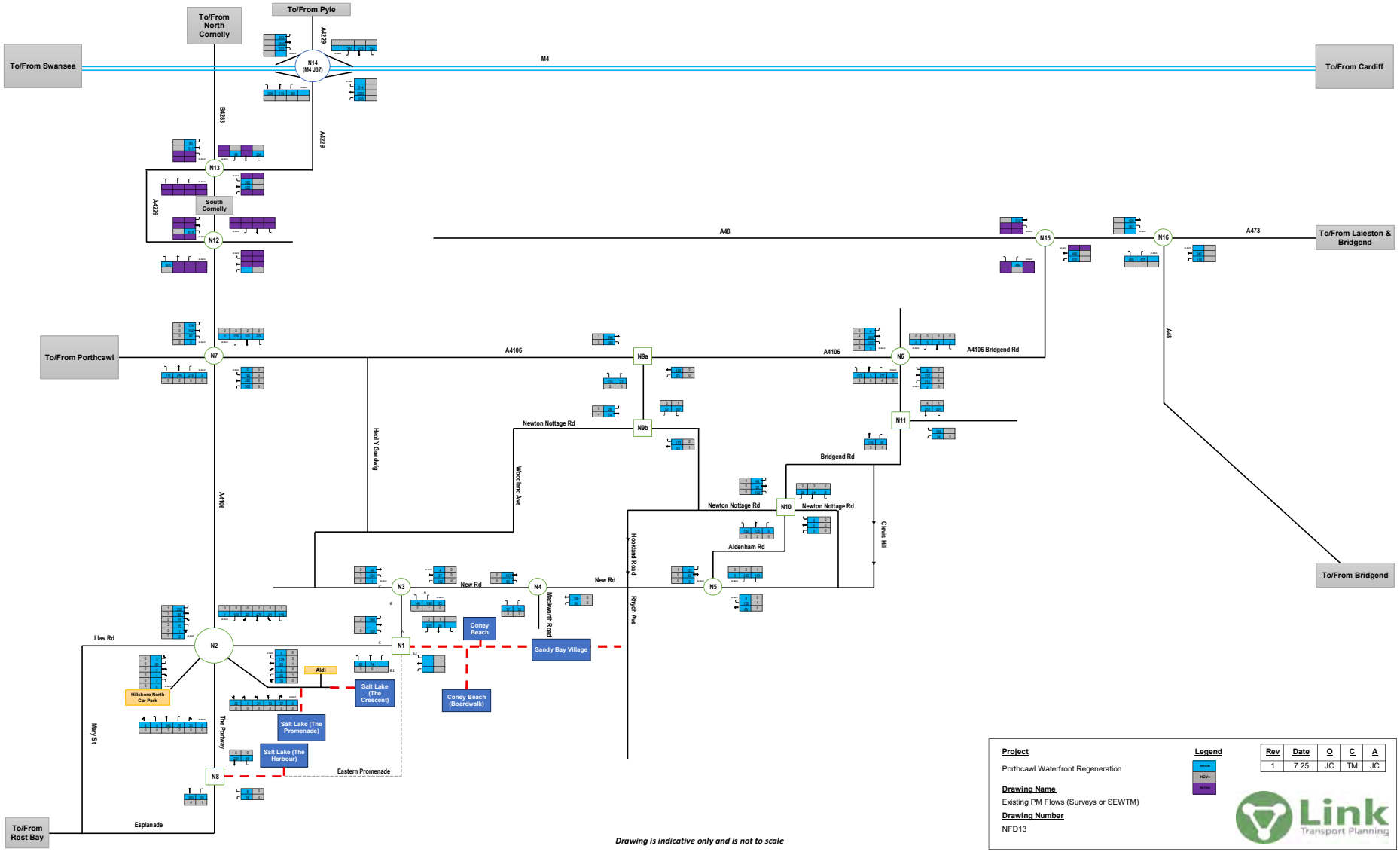
Drawing Name
2033 Total Traffic AM Flows

Drawing Number
NFD12

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Drawing is indicative only and is not to scale

Project
Porthcawl Waterfront Regeneration

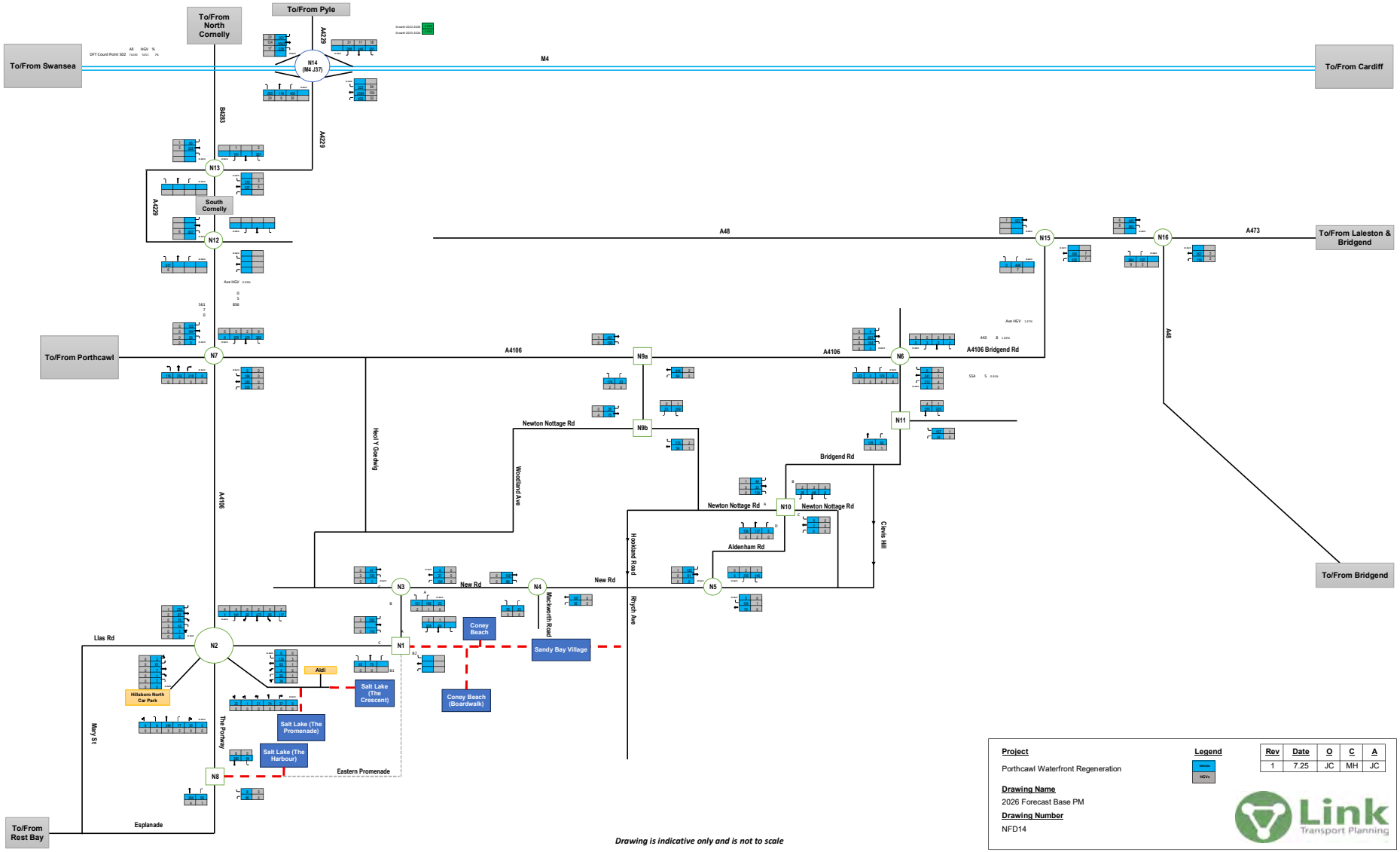
Drawing Name
Existing PM Flows (Surveys or SEWTM)

Drawing Number
NFD13

Legend

Rev	Date	O	C	A
1	7.25	JC	TM	JC

Link Transport Planning



Drawing is indicative only and is not to scale

Project
Porthcawl Waterfront Regeneration

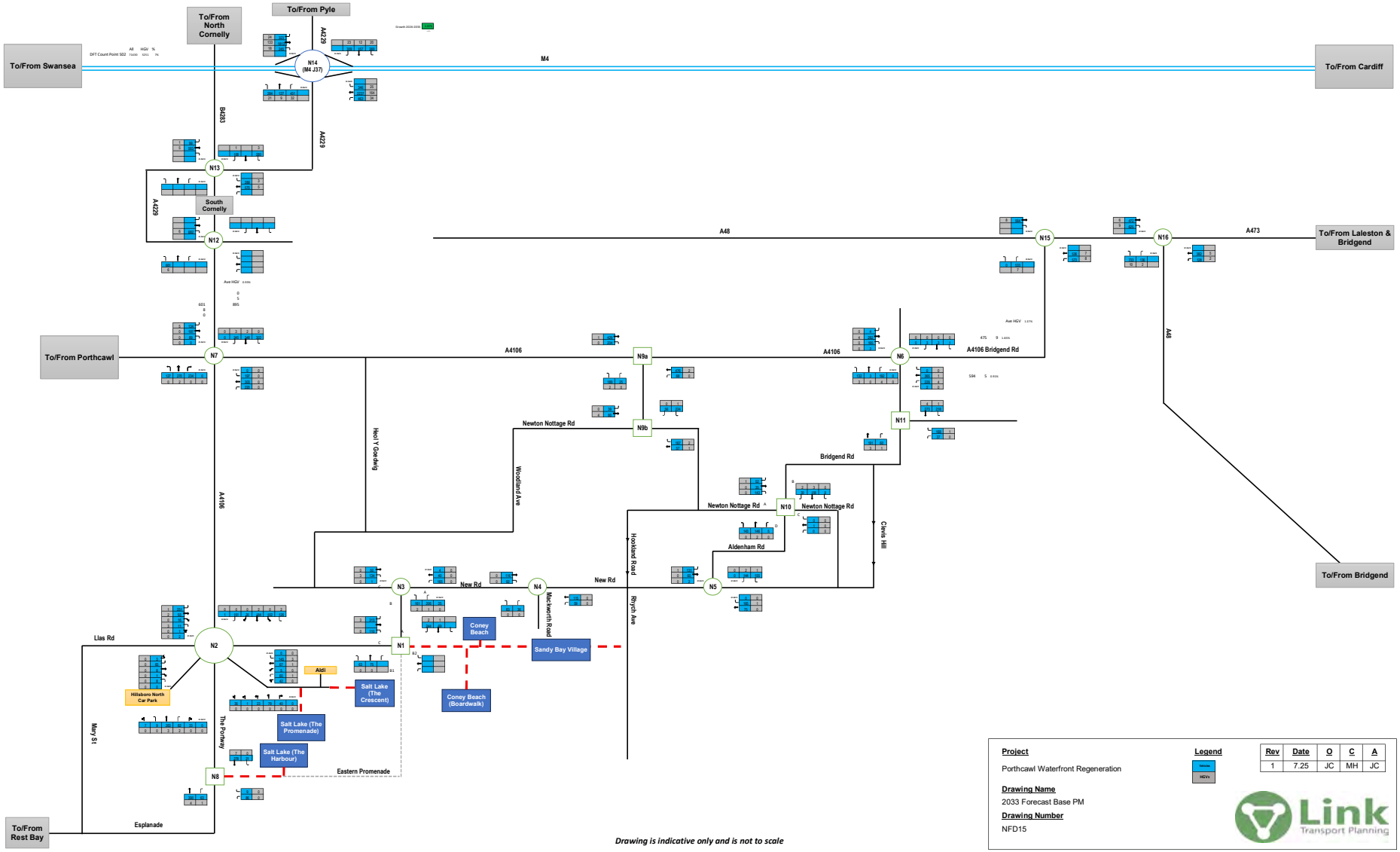
Drawing Name
2026 Forecast Base PM

Drawing Number
NFD14

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Drawing is indicative only and is not to scale

Project
Porthcawl Waterfront Regeneration

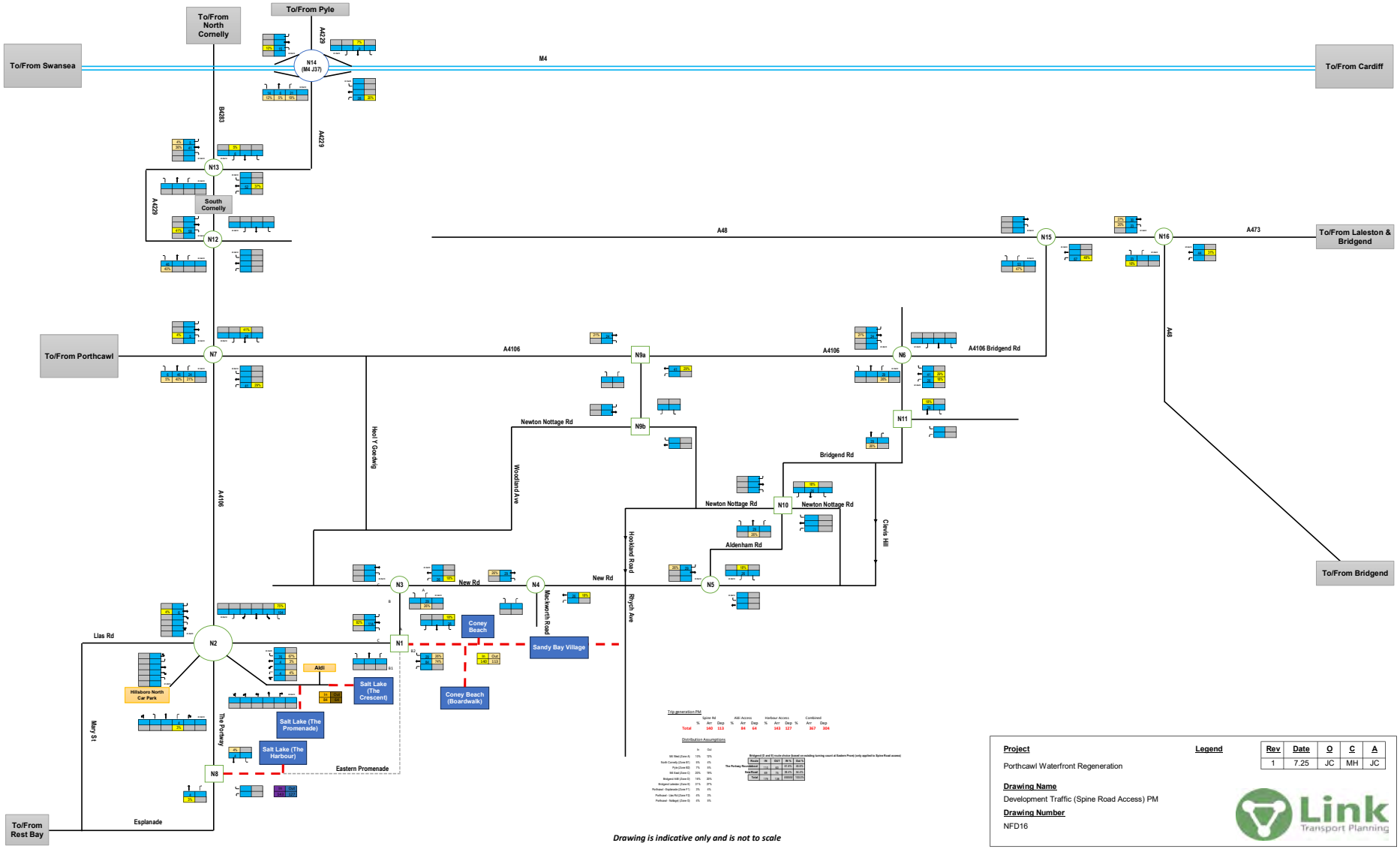
Drawing Name
2033 Forecast Base PM

Drawing Number
NFD15

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



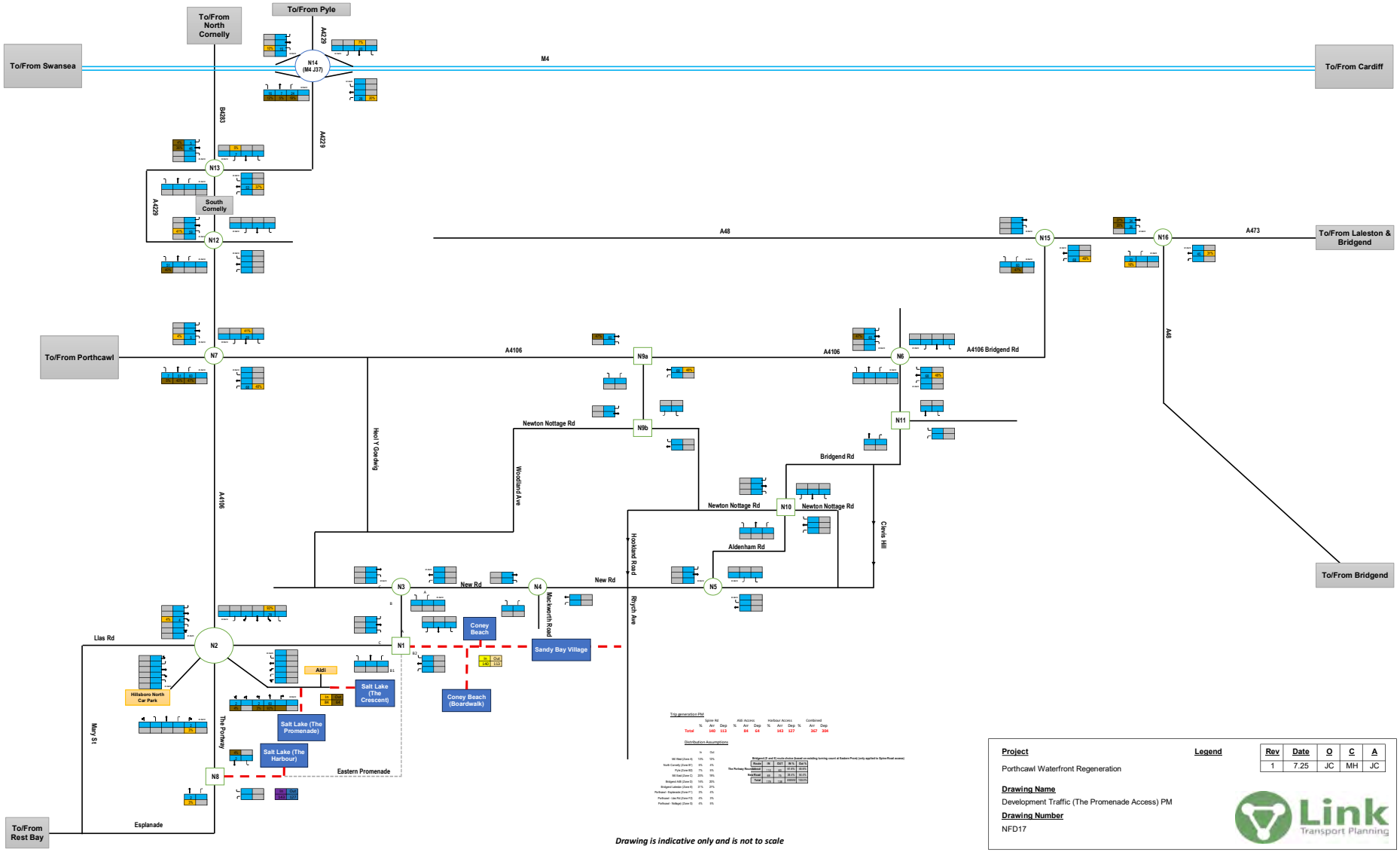
Drawing is indicative only and is not to scale

Project	Porthcawl Waterfront Regeneration
Drawing Name	Development Traffic (Spine Road Access) PM
Drawing Number	NFD16

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning

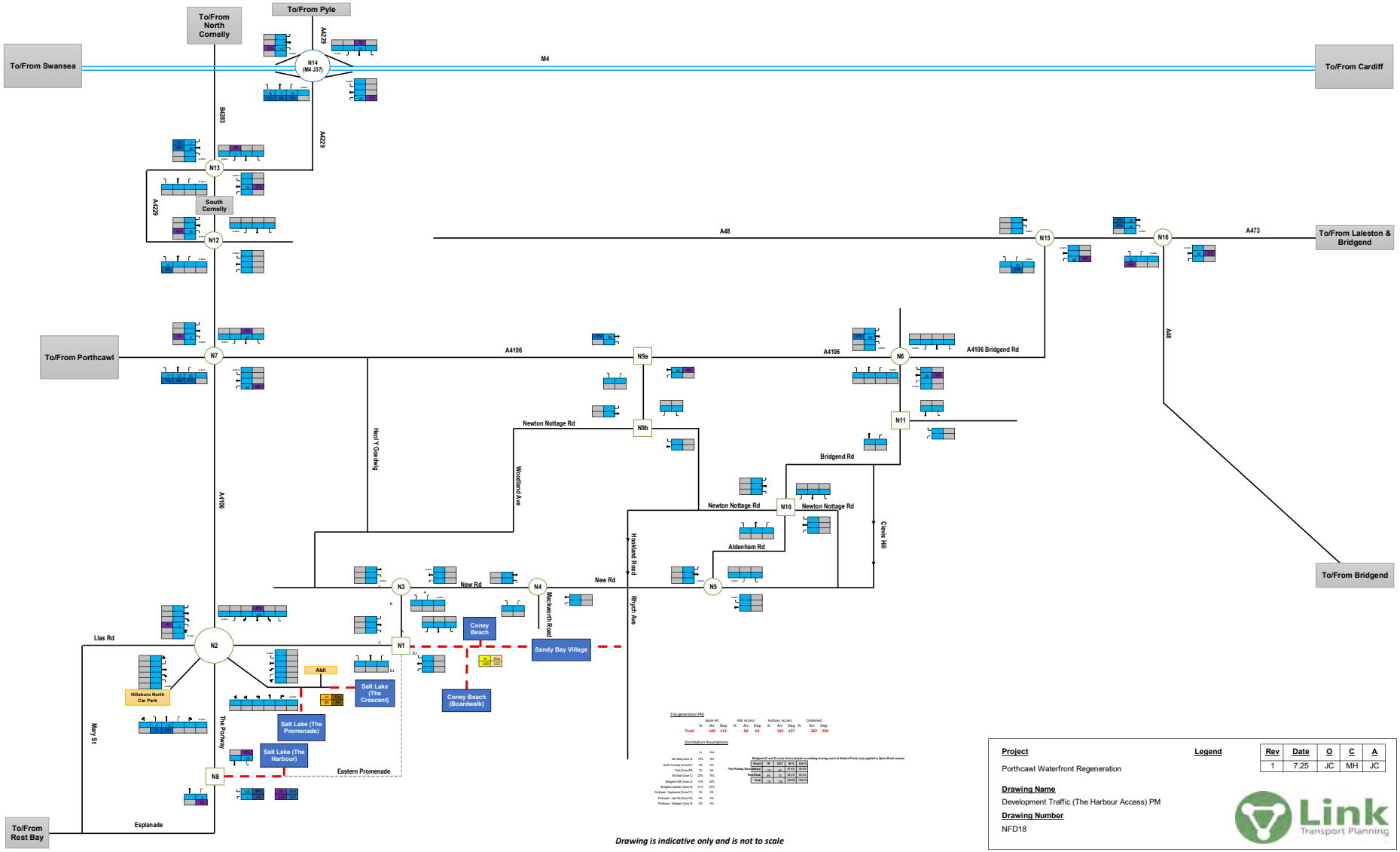


Drawing is indicative only and is not to scale

Project	Legend
Porthcawl Waterfront Regeneration	
Drawing Name	
Development Traffic (The Promenade Access) PM	
Drawing Number	
NFD17	

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Drawing is indicative only and is not to scale

Project
Porthcawl Waterfront Regeneration

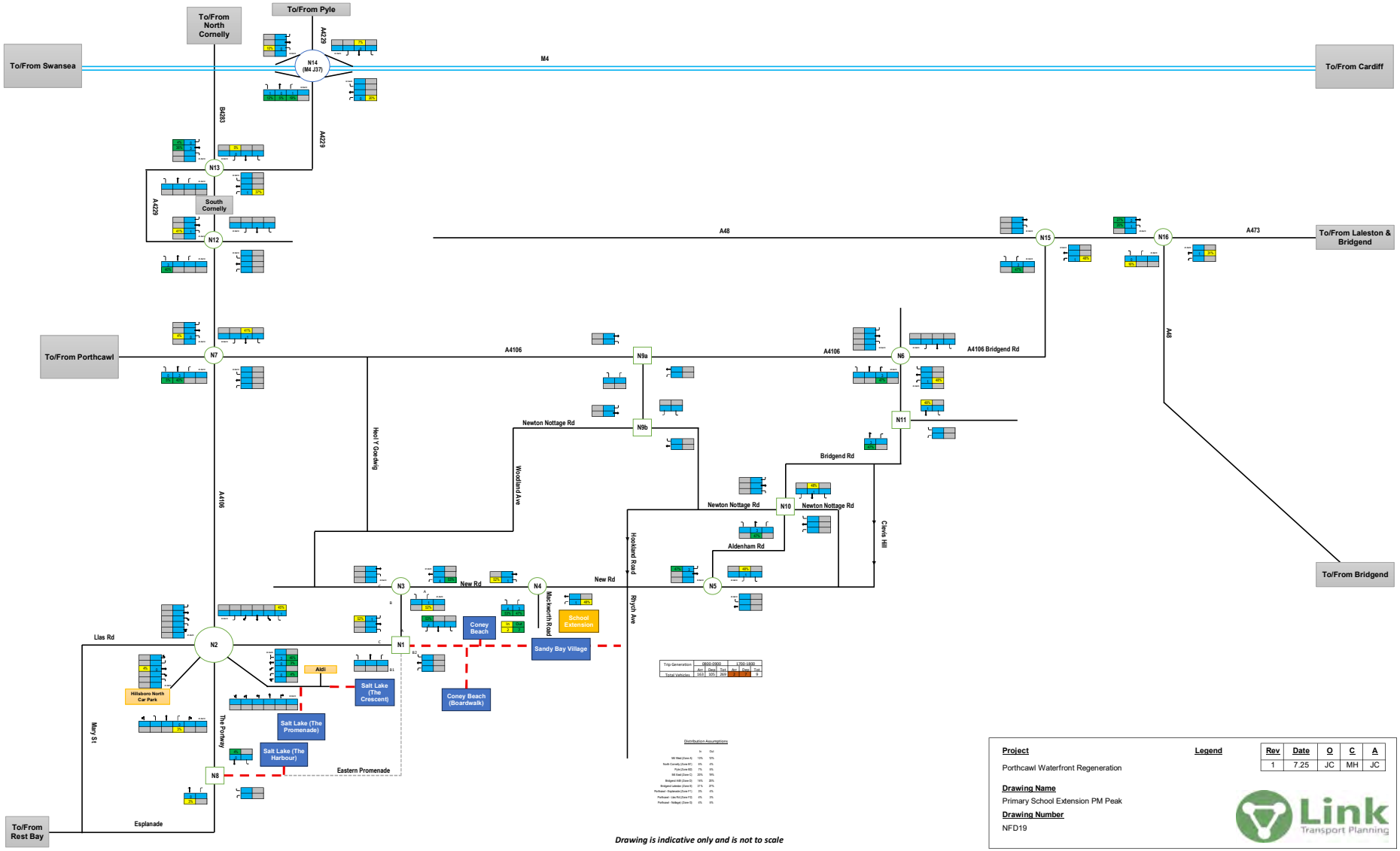
Drawing Name
Development Traffic (The Harbour Access) PM

Drawing Number
NFD18

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Drawing is indicative only and is not to scale

Project
Porthcawl Waterfront Regeneration

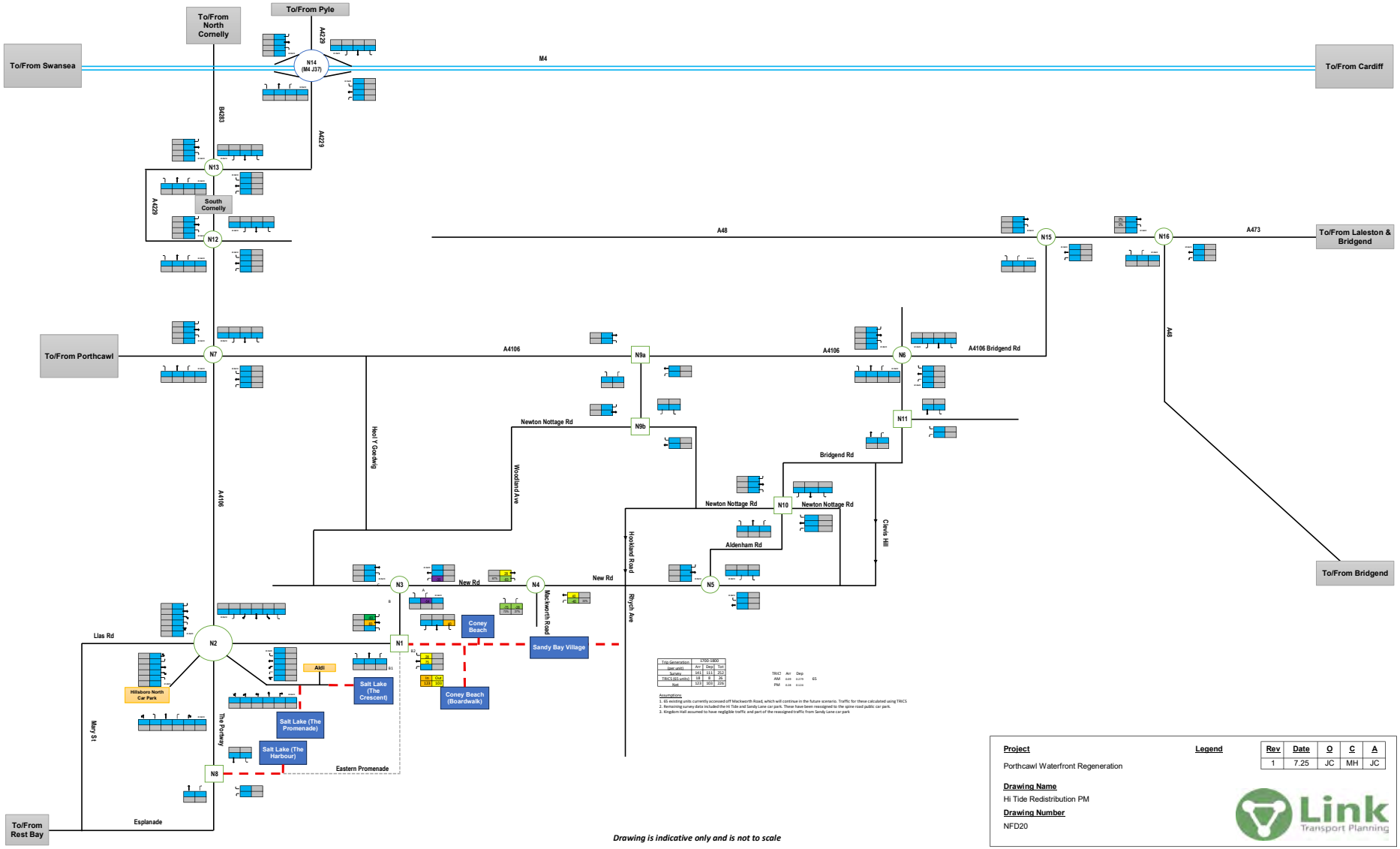
Drawing Name
Primary School Extension PM Peak

Drawing Number
NFD19

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Trip Generation (per unit)	1700-1800		
	Arr	Dep	Tot
Survey	161	111	252
TRICS (81 units)	18	8	26
Net	129	103	226

TRICS Arr Dep
AM 0.09 0.279 65
PM 0.28 0.114

Assumptions
1. 65 existing units currently accessed off Mackworth Road, which will continue in the future scenario. Traffic for these calculated using TRICS
2. Remaining survey data included the Hi Tide and Sandy Lane car park. These have been reassigned to the spine road public car park.
3. Kingdom Hall assumed to have negligible traffic and part of the reassigned traffic from Sandy Lane car park

Drawing is indicative only and is not to scale

Project
Porthcawl Waterfront Regeneration

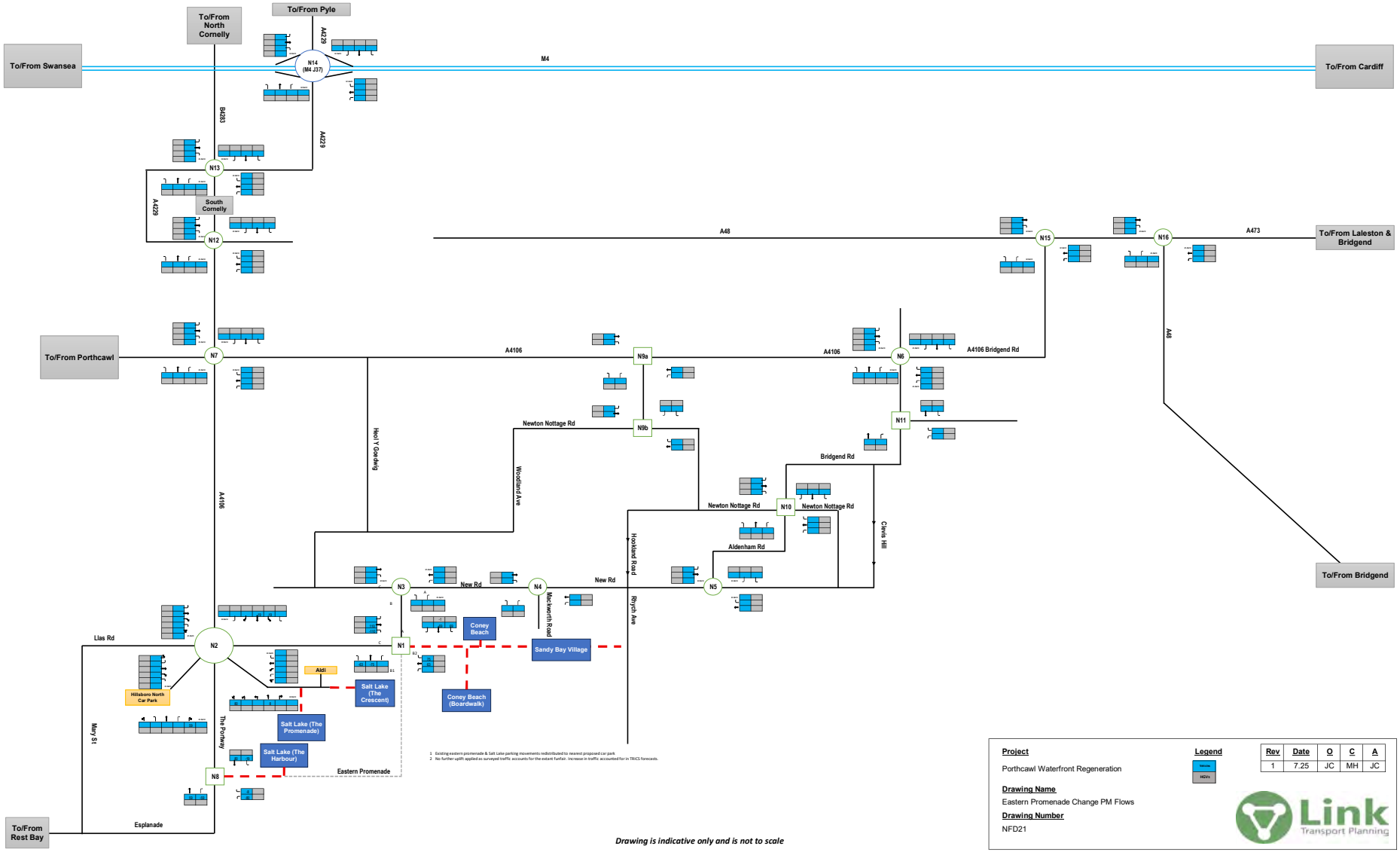
Drawing Name
Hi Tide Redistribution PM

Drawing Number
NFD20

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Drawing is indicative only and is not to scale

Project
Porthcawl Waterfront Regeneration

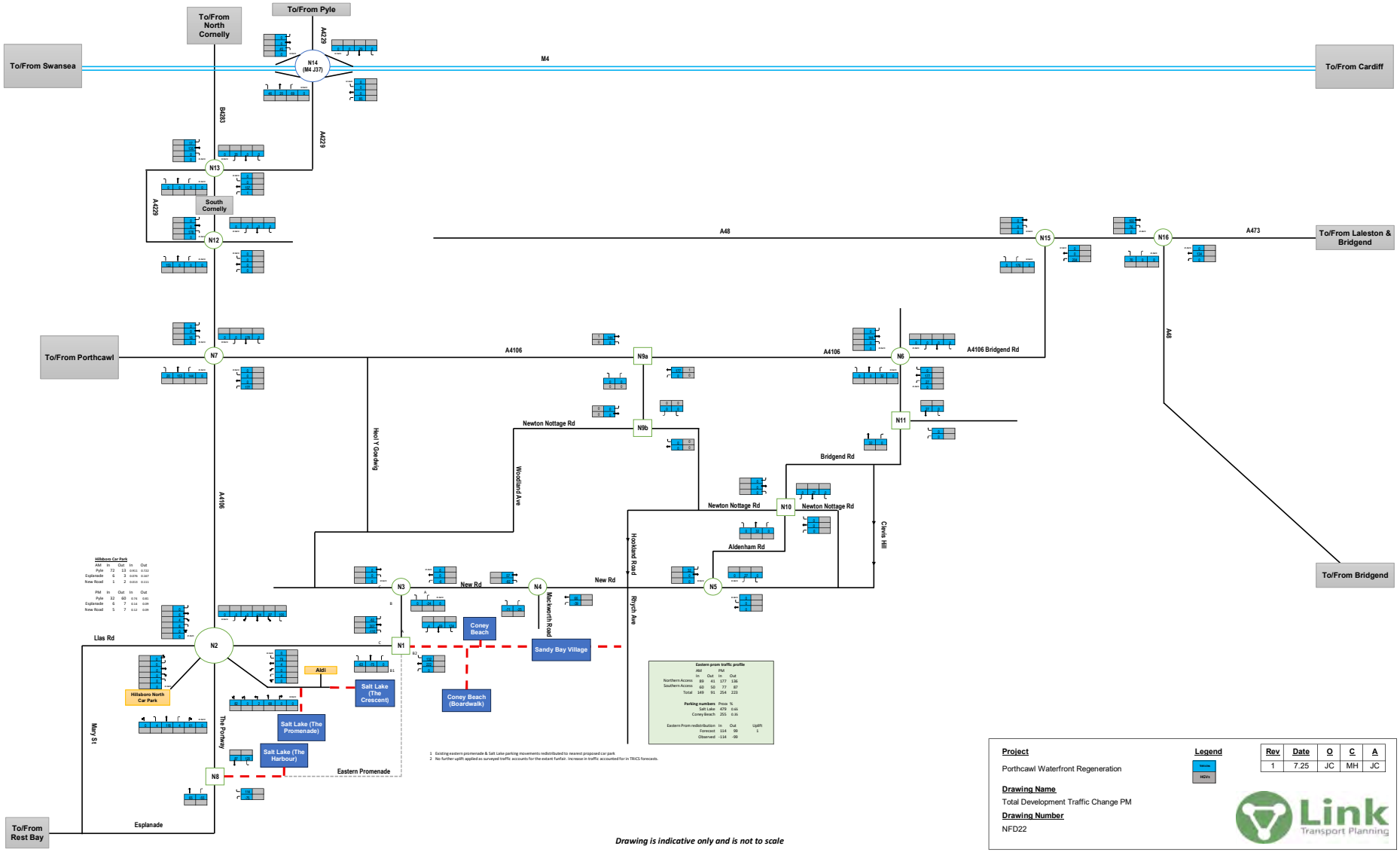
Drawing Name
Eastern Promenade Change PM Flows

Drawing Number
NFD21

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Drawing is indicative only and is not to scale

Project
Porthcawl Waterfront Regeneration

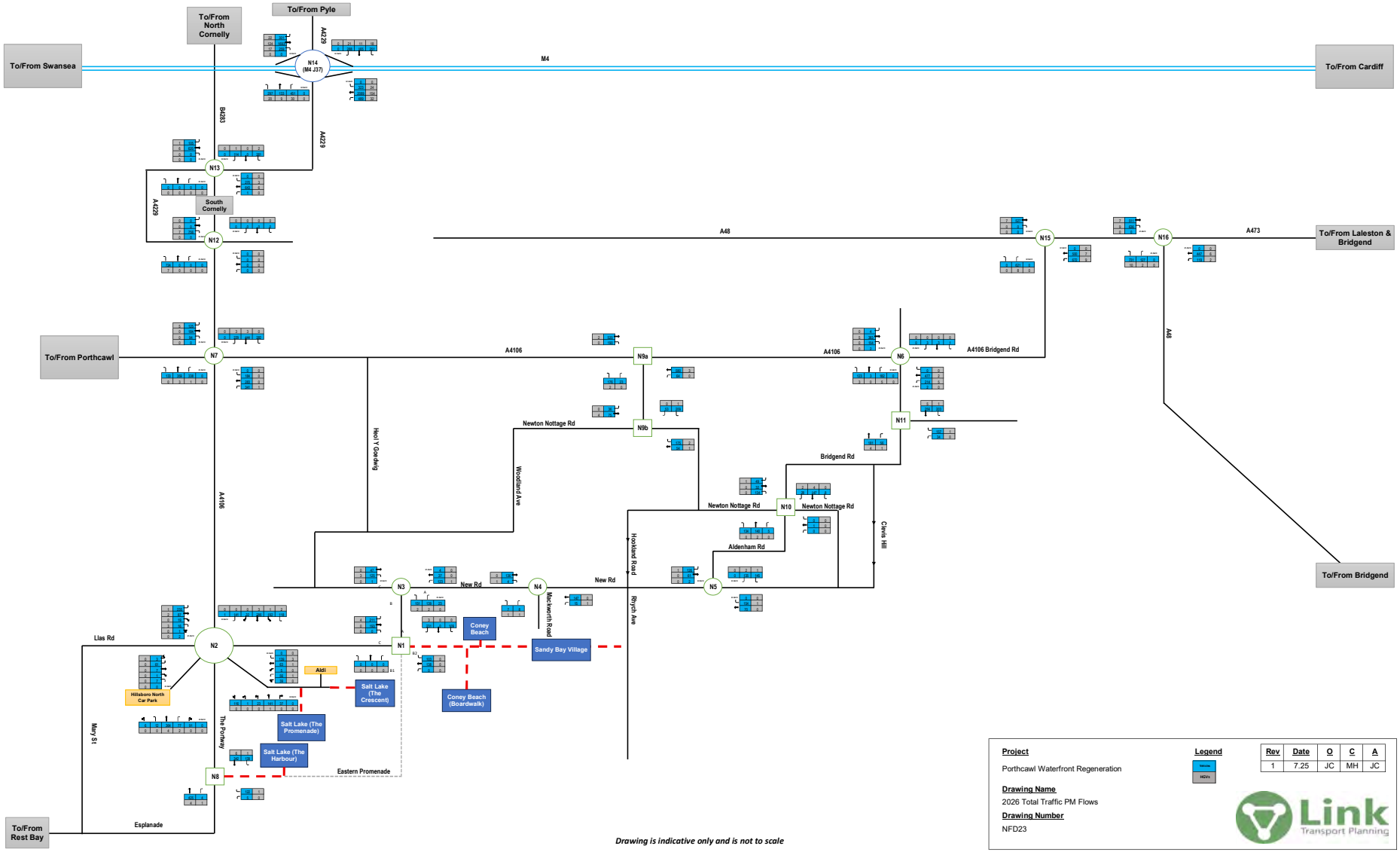
Drawing Name
Total Development Traffic Change PM

Drawing Number
NFD22

Legend
Vehicles
HGVs

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Drawing is indicative only and is not to scale

Project
Porthcawl Waterfront Regeneration

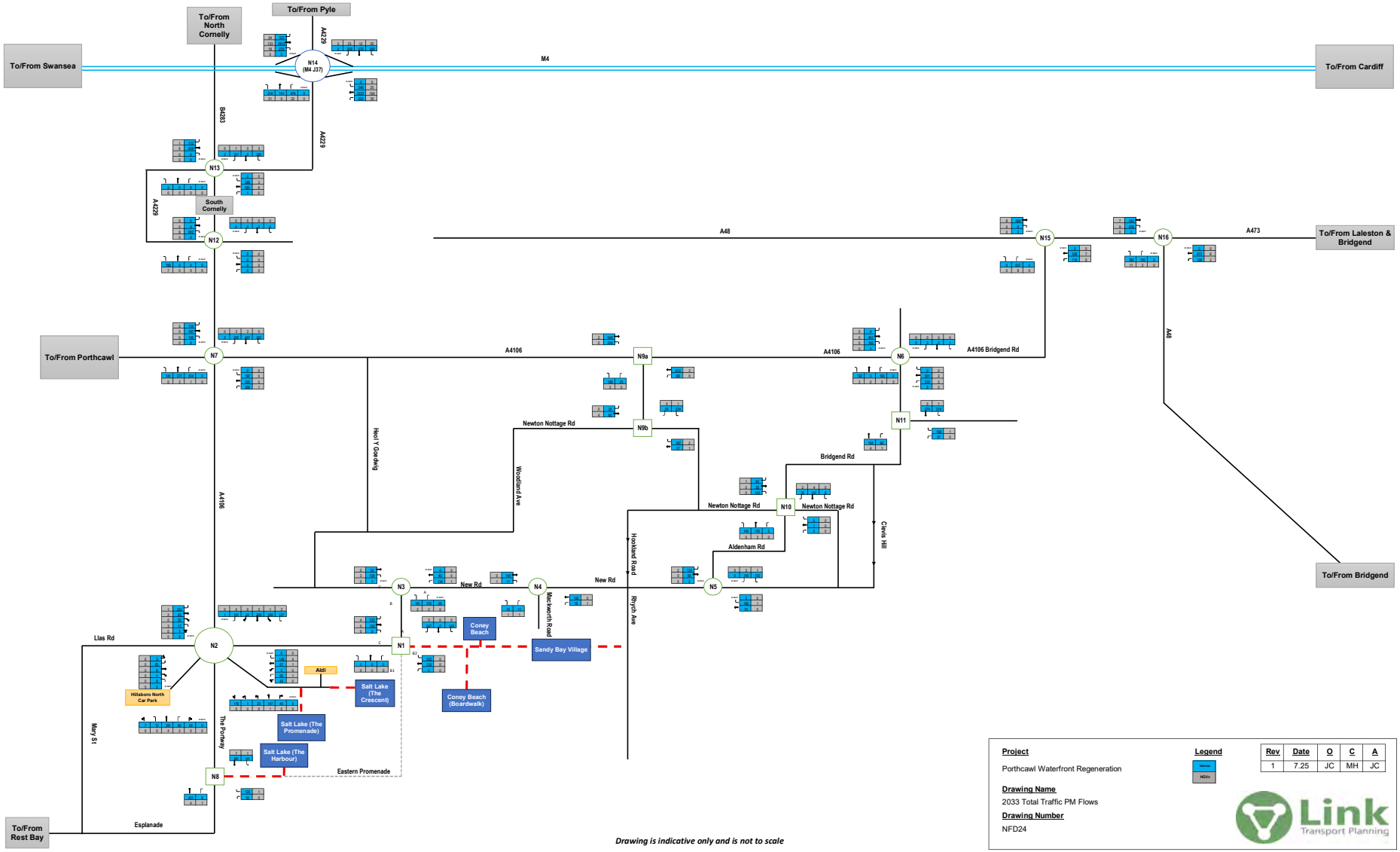
Drawing Name
2026 Total Traffic PM Flows

Drawing Number
NFD23

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning



Drawing is indicative only and is not to scale

Project
Porthcawl Waterfront Regeneration

Drawing Name
2033 Total Traffic PM Flows

Drawing Number
NFD24

Legend

Rev	Date	O	C	A
1	7.25	JC	MH	JC

Link Transport Planning

Junctions 11

ARCADY 11 - Roundabout Module
PICADY 11 - Priority Intersection Module

Version: 11.1.0.2307
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Filename: New Development Junctions_30m ICD.j11
Path: C:\LinkTP\Porthcawl_Waterfront\01 - Junctions 10
Report generation date: 11/11/2025 18:33:49

Scenario 1 - Core Growth - D3 - 2026 | Total Traffic | AM
Scenario 1 - Core Growth - D4 - 2026 | Total Traffic | PM
Scenario 1 - Core Growth - D7 - 2033 | Total Traffic | AM
Scenario 1 - Core Growth - D8 - 2033 | Total Traffic | PM
Scenario 2 - Sensitivity Test - D3 - 2026 | Total Traffic | AM
Scenario 2 - Sensitivity Test - D4 - 2026 | Total Traffic | PM
Scenario 2 - Sensitivity Test - D7 - 2033 | Total Traffic | AM
Scenario 2 - Sensitivity Test - D8 - 2033 | Total Traffic | PM

Summary of junction performance

	AM											
	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (min)	RFC	LOS	Junction Delay (min)	Junction LOS	Network Residual Capacity	Set ID	Queue (Veh)	9 Q (
	Scenario 1 - Core Growth - 2026 - To											
N1 - Spine Access - 1 - New Road North	A1 D3	0.5	2.5	0.08	0.35	A	0.07	A	79 % [N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC]	A1 D4	0.5	
N1 - Spine Access - 2 - Proposed Spine Road		0.2	0.5	0.09	0.15	A					0.5	
N1 - Spine Access - 3 - The Portway West		0.4	1.6	0.06	0.29	A					0.5	
N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC		0.3	1.5	0.23	0.25	B	0.02	A			0.7	
N8 - Eastern Prom/Harbour Quarter Access - Stream C-AB		0.0	0.5	0.08	0.00	A					0.0	
N8a - Proposed Hillsboro South Car Park Access - Stream B-AC		0.3	1.4	0.22	0.24	B	0.02	A			0.7	
N8a - Proposed Hillsboro South Car Park Access - Stream C-AB		0.0	0.5	0.08	0.00	A					0.0	
	Scenario 1 - Core Growth - 2033 - To											
N1 - Spine Access - 1 - New Road North	A1 D7	0.6	2.6	0.08	0.37	A	0.07	A	72 % [N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC]	A1 D8	0.5	
N1 - Spine Access - 2 - Proposed Spine Road		0.2	0.5	0.09	0.16	A					0.5	
N1 - Spine Access - 3 - The Portway West		0.4	1.8	0.06	0.31	A					0.5	
N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC		0.4	1.2	0.24	0.26	B	0.02	A			0.7	
N8 - Eastern Prom/Harbour Quarter Access - Stream C-AB		0.0	0.5	0.08	0.01	A					0.0	
N8a - Proposed Hillsboro South Car Park Access - Stream B-AC		0.3	1.5	0.22	0.25	B	0.02	A			0.7	
N8a - Proposed Hillsboro South Car Park Access - Stream C-AB		0.0	0.5	0.08	0.01	A					0.0	
	Scenario 2 - Sensitivity Test - 2026 - T											
N1 - Spine Access - 1 - New Road North	A2 D3	0.8	2.4	0.09	0.44	A	0.08	A	43 % [N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC]	A2 D4	0.7	
N1 - Spine Access - 2 - Proposed Spine Road		0.3	1.1	0.10	0.20	A					0.7	
N1 - Spine Access - 3 - The Portway West		0.6	2.6	0.07	0.37	A					0.7	
N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC		0.5	2.3	0.28	0.34	C	0.03	A			1.3	
N8 - Eastern Prom/Harbour Quarter Access - Stream C-AB		0.0	0.5	0.08	0.00	A					0.0	
N8a - Proposed Hillsboro South Car Park Access - Stream B-AC		0.5	2.1	0.27	0.33	C	0.03	A			1.3	
N8a - Proposed Hillsboro South Car Park Access - Stream C-AB		0.0	0.5	0.08	0.00	A					0.0	
	Scenario 2 - Sensitivity Test - 2033 - T											
N1 - Spine Access - 1 - New Road North	A2 D7	0.8	2.1	0.09	0.46	A	0.08	A	37 % [N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC]	A2 D8	0.7	
N1 - Spine Access - 2 - Proposed Spine Road		0.3	1.1	0.10	0.20	A					0.7	
N1 - Spine Access - 3 - The Portway West		0.6	2.6	0.07	0.38	A					0.8	
N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC		0.5	2.5	0.29	0.36	C	0.03	A			1.5	
N8 - Eastern Prom/Harbour Quarter Access - Stream C-AB		0.0	0.5	0.08	0.02	A					0.1	
N8a - Proposed Hillsboro South Car Park Access - Stream B-AC		0.5	2.4	0.28	0.35	C	0.03	A			1.5	
N8a - Proposed Hillsboro South Car Park Access - Stream C-AB		0.0	0.5	0.08	0.01	A					0.1	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

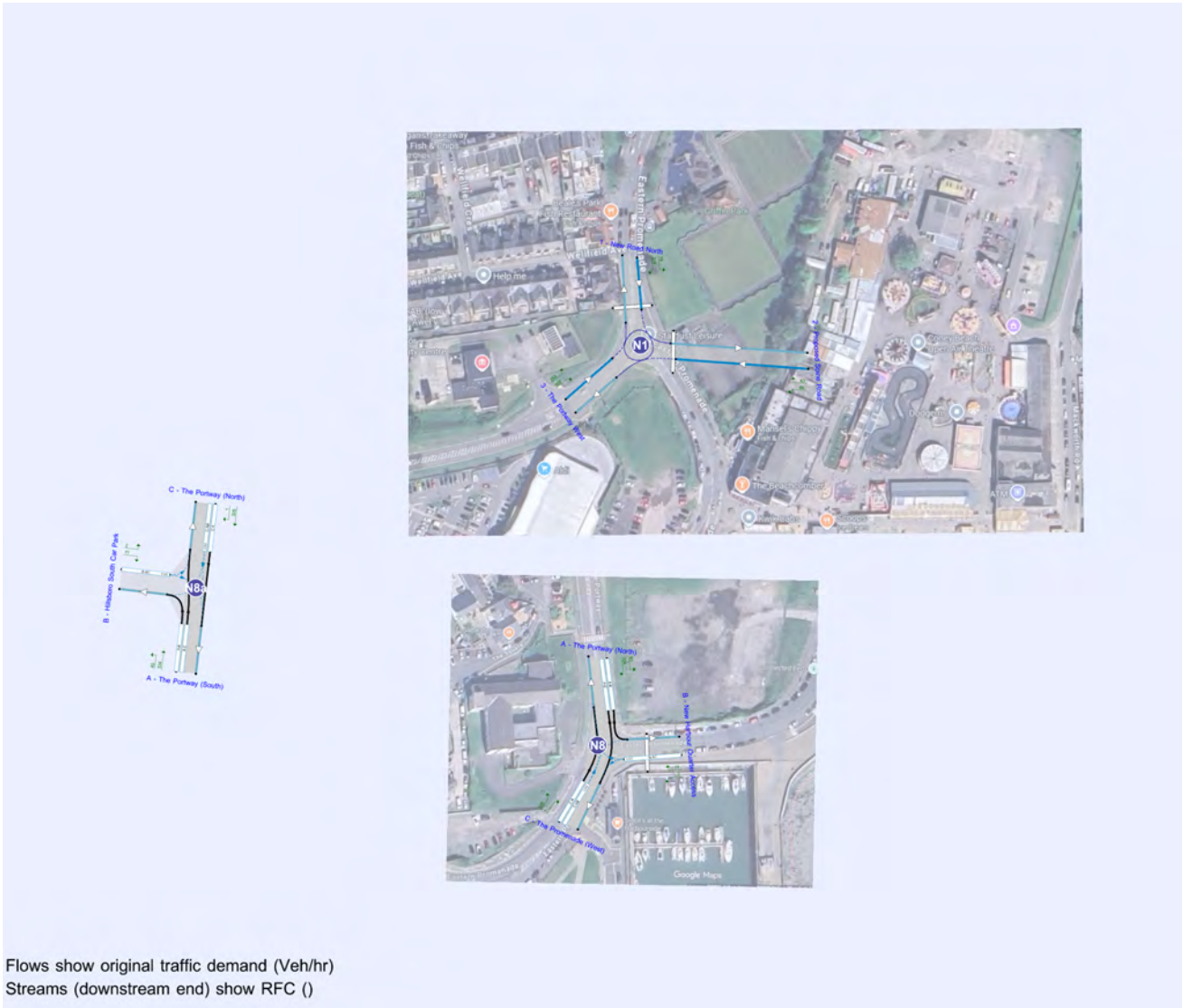
File summary

File Description

Title	
Location	
Site number	
Date	31/07/2025
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AzureAD\JosephCassinelli
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	min	-Min	perMin



Flows show original traffic demand (Veh/hr)
Streams (downstream end) show RFC ()

The junction diagram reflects the last run of Junctions.

Analysis Options

PICADY short flare model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (min)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
JUNCTIONS 11.1	5.75	✓				✓	Delay	0.85	0.60	20.00		

Demand Set Summary

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2026	Total Traffic	AM	ONE HOUR	07:45	09:15	15	✓
D4	2026	Total Traffic	PM	ONE HOUR	16:45	18:15	15	✓
D7	2033	Total Traffic	AM	ONE HOUR	07:45	09:15	15	✓
D8	2033	Total Traffic	PM	ONE HOUR	16:45	18:15	15	✓

Scenario 1 - Core Growth - D3 - 2026 | Total Traffic | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Scenario 1 - Core Growth	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (min)	Junction LOS
N1	Spine Access	Standard Roundabout					1, 2, 3	0.07	A
N8	Eastern Prom/Harbour Quarter Access	T-Junction	Two-way	Two-way	Two-way			0.02	A
N8a	Proposed Hillsboro South Car Park Access	T-Junction	Two-way	Two-way	Two-way			0.02	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (min)	Network LOS
Left	Normal/unknown	79	N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC	0.04	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N1 - Spine Access	1	New Road North			
	2	Proposed Spine Road			
	3	The Portway West			
N8 - Eastern Prom/Harbour Quarter Access	A	The Portway (North)			Major
	B	New Harbour Quarter Access	Former Eastern Promenade		Minor
	C	The Promenade (West)			Major
N8a - Proposed Hillsboro South Car Park Access	A	The Portway (South)			Major
	B	Hillsboro South Car Park			Minor
	C	The Portway (North)			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N1 - Spine Access	1 - New Road North	3.63	5.90	13.2	12.6	30.0	21.5		
	2 - Proposed Spine Road	3.38	3.80	30.0	36.4	30.0	22.0		
	3 - The Portway West	4.56	4.56	0.0	45.0	30.0	33.0		

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	7.30			104.0	✓	0.00
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	8.00			186.0	✓	0.00

Major Arm Geometry Notes

Junction	Arm	Notes
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	Assumed that right turn holder lane will be removed as part of dtailed design process
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	One lane	3.00	92	24
N8a - Proposed Hillsboro South Car Park Access	B - Hillsboro South Car Park	One lane	3.00	28	34

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N1 - Spine Access	1 - New Road North	4.00	3.00	2.90	1.00	6.00	6.00	7.00
	2 - Proposed Spine Road	3.00	3.00	2.90	1.00	6.00	6.00	7.00
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	1.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N1 - Spine Access	1 - New Road North	0.626	1544
	2 - Proposed Spine Road	0.572	1203
	3 - The Portway West	0.603	1405

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8 - Eastern Prom/Harbour Quarter Access	B-A	519	0.089	0.225	0.142	0.322
	B-C	639	0.092	0.233	-	-
	C-B	634	0.232	0.232	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8a - Proposed Hillsboro South Car Park Access	B-A	503	0.084	0.212	0.133	0.302
	B-C	645	0.090	0.228	-	-
	C-B	682	0.241	0.241	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2026	Total Traffic	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N1 - Spine Access	1 - New Road North		ONE HOUR	✓	395	100.000
	2 - Proposed Spine Road		ONE HOUR	✓	109	100.000
	3 - The Portway West		ONE HOUR	✓	362	100.000
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		ONE HOUR	✓	414	100.000
	B - New Harbour Quarter Access		ONE HOUR	✓	79	100.000
	C - The Promenade (West)		ONE HOUR	✓	327	100.000
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		ONE HOUR	✓	414	100.000
	B - Hillsboro South Car Park		ONE HOUR	✓	79	100.000
	C - The Portway (North)		ONE HOUR	✓	327	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N1 - Spine Access	1 - New Road North	[ONEHOUR]	120.00
	2 - Proposed Spine Road	[ONEHOUR]	200.00
	3 - The Portway West		
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		
	B - New Harbour Quarter Access	[ONEHOUR]	60.00
	C - The Promenade (West)		
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		
	B - Hillsboro South Car Park		
	C - The Portway (North)		

Origin-Destination Data

N1 - Spine Access

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	79	316
	-	43	0	66
	-	253	109	0

N8 - Eastern Prom/Harbour Quarter Access

Demand (Veh/hr)

		To		
		- The Portway	- New Harbour	- The
From	-	0	80	334
	-	77	0	2
	-	326	1	0

N8a - Proposed Hillsboro South Car Park Access

Demand (Veh/hr)

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	80	334
	-	77	0	2
	-	326	1	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N1 - Spine Access

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	2
	-	0	0	0
	-	1	0	0

N8 - Eastern Prom/Harbour Quarter Access

Heavy Vehicle %

		To		
		- The Portway	- New Harbour	- The
From	-	0	1	4
	-	1	0	1
	-	1	1	0

N8a - Proposed Hillsboro South Car Park Access

Heavy Vehicle %

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	1	4
	-	1	0	1
	-	1	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N1 - Spine Access	1 - New Road North	0.35	0.08	0.5	2.5	A	362	544
	2 - Proposed Spine Road	0.15	0.09	0.2	0.5	A	100	150
	3 - The Portway West	0.29	0.06	0.4	1.6	A	332	498

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N8 - Eastern Prom/Harbour Quarter Access	B-AC	0.25	0.23	0.3	1.5	B	72	109
	C-AB	0.00	0.08	0.0	0.5	A	2	2
	C-A						298	448
	A-B						73	110
	A-C						306	460
N8a - Proposed Hillsboro South Car Park Access	B-AC	0.24	0.22	0.3	1.4	B	72	109
	C-AB	0.00	0.08	0.0	0.5	A	2	2
	C-A						299	448
	A-B						73	110
	A-C						306	460

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	297	74	82	90.34	1283	0.232	296
	2 - Proposed Spine Road	-	82	21	237	150.57	868	0.095	82
	3 - The Portway West	-	273	68	32		1376	0.198	272
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	59	15		45.17	388	0.153	59
	-	C-AB	1	0.29		0.00	722	0.002	1
	-	C-A	245	61		0.00			245
	-	A-B	60	15		0.00			60
	-	A-C	251	63		0.00			251
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	59	15		0.00	407	0.146	59
	-	C-AB	1	0.28		0.00	760	0.001	1
	-	C-A	245	61		0.00			245
	-	A-B	60	15		0.00			60
	-	A-C	251	63		0.00			251

08:00 - 08:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	355	89	98	107.88	1262	0.281	355
	2 - Proposed Spine Road	-	98	24	284	179.80	829	0.118	98
	3 - The Portway West	-	325	81	39		1372	0.237	325
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	71	18		53.94	371	0.191	71
	-	C-AB	1	0.37		0.00	742	0.002	1
	-	C-A	292	73		0.00			292
	-	A-B	72	18		0.00			72
	-	A-C	300	75		0.00			300
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	71	18		0.00	389	0.182	71
	-	C-AB	1	0.36		0.00	779	0.002	1
	-	C-A	293	73		0.00			293
	-	A-B	72	18		0.00			72
	-	A-C	300	75		0.00			300

08:15 - 08:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	435	109	120	132.12	1231	0.353	434
	2 - Proposed Spine Road	-	120	30	347	220.20	778	0.154	120
	3 - The Portway West	-	399	100	47		1367	0.292	398
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	87	22		66.06	346	0.251	87
	-	C-AB	2	0.52		0.00	773	0.003	2
	-	C-A	358	89		0.00			358
	-	A-B	88	22		0.00			88
	-	A-C	368	92		0.00			368
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	87	22		0.00	365	0.239	87
	-	C-AB	2	0.50		0.00	807	0.002	2
	-	C-A	358	90		0.00			358
	-	A-B	88	22		0.00			88
	-	A-C	368	92		0.00			368

08:30 - 08:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	435	109	120	132.12	1237	0.351	435
	2 - Proposed Spine Road	-	120	30	348	220.20	780	0.154	120
	3 - The Portway West	-	399	100	47		1367	0.292	399
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	87	22		66.06	349	0.249	87
	-	C-AB	2	0.52		0.00	773	0.003	2
	-	C-A	358	89		0.00			358
	-	A-B	88	22		0.00			88
	-	A-C	368	92		0.00			368
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	87	22		0.00	365	0.239	87
	-	C-AB	2	0.50		0.00	807	0.002	2
	-	C-A	358	90		0.00			358
	-	A-B	88	22		0.00			88
	-	A-C	368	92		0.00			368

08:45 - 09:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	355	89	98	107.88	1271	0.279	356
	2 - Proposed Spine Road	-	98	24	285	179.80	832	0.118	98
	3 - The Portway West	-	325	81	39		1372	0.237	326
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	71	18		53.94	375	0.190	71
	-	C-AB	1	0.37		0.00	742	0.002	1
	-	C-A	292	73		0.00			292
	-	A-B	72	18		0.00			72
	-	A-C	300	75		0.00			300
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	71	18		0.00	389	0.182	71
	-	C-AB	1	0.36		0.00	779	0.002	1
	-	C-A	293	73		0.00			293
	-	A-B	72	18		0.00			72
	-	A-C	300	75		0.00			300

09:00 - 09:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	297	74	82	90.34	1295	0.230	298
	2 - Proposed Spine Road	-	82	21	238	150.57	873	0.094	82
	3 - The Portway West	-	273	68	32		1376	0.198	273
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	59	15		45.17	393	0.151	60
	-	C-AB	1	0.29		0.00	722	0.002	1
	-	C-A	245	61		0.00			245
	-	A-B	60	15		0.00			60
	-	A-C	251	63		0.00			251
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	59	15		0.00	407	0.146	60
	-	C-AB	1	0.28		0.00	760	0.001	1
	-	C-A	245	61		0.00			245
	-	A-B	60	15		0.00			60
	-	A-C	251	63		0.00			251

Queue Variation Results for each time segment

07:45 - 08:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.30	0.00	0.00	0.30	0.30			N/A	N/
	2 - Proposed Spine Road	-	0.10	0.00	0.00	0.10	0.10			N/A	N/
	3 - The Portway West	-	0.25	0.00	0.00	0.25	0.25			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.18	0.00	0.00	0.18	0.18			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.17	0.00	0.00	0.17	0.17			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/

08:00 - 08:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.39	0.00	0.00	0.39	0.39			N/A	N/
	2 - Proposed Spine Road	-	0.13	0.00	0.00	0.13	0.13			N/A	N/
	3 - The Portway West	-	0.31	0.00	0.00	0.31	0.31			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.23	0.00	0.00	0.23	0.23			N/A	N/
	-	C-AB	0.00	0.00	0.25	0.45	0.48			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.22	0.00	0.00	0.22	0.22			N/A	N/
	-	C-AB	0.00	0.00	0.25	0.45	0.48			N/A	N/

08:15 - 08:30

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.54	0.03	0.25	0.54	0.54			N/A	N/
	2 - Proposed Spine Road	-	0.18	0.03	0.26	0.46	0.49			N/A	N/
	3 - The Portway West	-	0.41	0.03	0.25	0.45	0.48			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.33	0.03	0.26	0.46	0.49			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.31	0.03	0.26	0.46	0.49			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/

08:30 - 08:45

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.54	0.03	0.30	1.32	2.53			N/A	N/
	2 - Proposed Spine Road	-	0.18	0.03	0.25	0.45	0.48			N/A	N/
	3 - The Portway West	-	0.41	0.03	0.32	1.32	1.60			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.33	0.03	0.31	1.15	1.50			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.31	0.03	0.31	1.10	1.43			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/

08:45 - 09:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.39	0.00	0.00	0.39	0.39			N/A	N/
	2 - Proposed Spine Road	-	0.13	0.00	0.00	0.13	0.13			N/A	N/
	3 - The Portway West	-	0.31	0.00	0.00	0.31	0.31			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.24	0.00	0.00	0.24	0.24			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.23	0.00	0.00	0.23	0.23			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/

09:00 - 09:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.30	0.00	0.00	0.30	0.30			N/A	N/
	2 - Proposed Spine Road	-	0.10	0.00	0.00	0.10	0.10			N/A	N/
	3 - The Portway West	-	0.25	0.00	0.00	0.25	0.25			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.18	0.00	0.00	0.18	0.18			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.17	0.00	0.00	0.17	0.17			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/

Scenario 1 - Core Growth - D4 - 2026 | Total Traffic | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Scenario 1 - Core Growth	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (min)	Junction LOS
N1	Spine Access	Standard Roundabout					1, 2, 3	0.08	A
N8	Eastern Prom/Harbour Quarter Access	T-Junction	Two-way	Two-way	Two-way			0.04	A
N8a	Proposed Hillsboro South Car Park Access	T-Junction	Two-way	Two-way	Two-way			0.04	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (min)	Network LOS
Left	Normal/unknown	36	N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC	0.05	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N1 - Spine Access	1	New Road North			
	2	Proposed Spine Road			
	3	The Portway West			
N8 - Eastern Prom/Harbour Quarter Access	A	The Portway (North)			Major
	B	New Harbour Quarter Access	Former Eastern Promenade		Minor
	C	The Promenade (West)			Major
N8a - Proposed Hillsboro South Car Park Access	A	The Portway (South)			Major
	B	Hillsboro South Car Park			Minor
	C	The Portway (North)			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N1 - Spine Access	1 - New Road North	3.63	5.90	13.2	12.6	30.0	21.5		
	2 - Proposed Spine Road	3.38	3.80	30.0	36.4	30.0	22.0		
	3 - The Portway West	4.56	4.56	0.0	45.0	30.0	33.0		

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	7.30			104.0	✓	0.00
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	8.00			186.0	✓	0.00

Major Arm Geometry Notes

Junction	Arm	Notes
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	Assumed that right turn holder lane will be removed as part of dtailed design process
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	One lane	3.00	92	24
N8a - Proposed Hillsboro South Car Park Access	B - Hillsboro South Car Park	One lane	3.00	28	34

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N1 - Spine Access	1 - New Road North	4.00	3.00	2.90	1.00	6.00	6.00	7.00
	2 - Proposed Spine Road	3.00	3.00	2.90	1.00	6.00	6.00	7.00
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	1.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N1 - Spine Access	1 - New Road North	0.626	1544
	2 - Proposed Spine Road	0.572	1203
	3 - The Portway West	0.603	1405

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8 - Eastern Prom/Harbour Quarter Access	B-A	519	0.089	0.225	0.142	0.322
	B-C	639	0.092	0.233	-	-
	C-B	634	0.232	0.232	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8a - Proposed Hillsboro South Car Park Access	B-A	503	0.084	0.212	0.133	0.302
	B-C	645	0.090	0.228	-	-
	C-B	682	0.241	0.241	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2026	Total Traffic	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N1 - Spine Access	1 - New Road North		ONE HOUR	✓	340	100.000
	2 - Proposed Spine Road		ONE HOUR	✓	241	100.000
	3 - The Portway West		ONE HOUR	✓	404	100.000
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		ONE HOUR	✓	481	100.000
	B - New Harbour Quarter Access		ONE HOUR	✓	127	100.000
	C - The Promenade (West)		ONE HOUR	✓	429	100.000
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		ONE HOUR	✓	481	100.000
	B - Hillsboro South Car Park		ONE HOUR	✓	127	100.000
	C - The Portway (North)		ONE HOUR	✓	429	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N1 - Spine Access	1 - New Road North	[ONEHOUR]	120.00
	2 - Proposed Spine Road	[ONEHOUR]	200.00
	3 - The Portway West		
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		
	B - New Harbour Quarter Access	[ONEHOUR]	60.00
	C - The Promenade (West)		
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		
	B - Hillsboro South Car Park		
	C - The Portway (North)		

Origin-Destination Data

N1 - Spine Access

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	109	231
	-	103	0	138
	-	211	193	0

N8 - Eastern Prom/Harbour Quarter Access

Demand (Veh/hr)

		To		
		- The Portway	- New Harbour	- The
From	-	0	139	342
	-	122	0	5
	-	425	4	0

N8a - Proposed Hillsboro South Car Park Access

Demand (Veh/hr)

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	139	342
	-	122	0	5
	-	425	4	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N1 - Spine Access

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	1
	-	0	0	0
	-	2	0	0

N8 - Eastern Prom/Harbour Quarter Access

Heavy Vehicle %

		To		
		- The Portway	- New Harbour	- The
From	-	0	0.70	2
	-	0.79	0	0.79
	-	0.96	27	0

N8a - Proposed Hillsboro South Car Park Access

Heavy Vehicle %

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	0.70	2
	-	0.79	0	0.79
	-	0.96	27	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N1 - Spine Access	1 - New Road North	0.31	0.07	0.5	1.9	A	312	468
	2 - Proposed Spine Road	0.31	0.10	0.5	1.9	A	221	332
	3 - The Portway West	0.34	0.07	0.5	2.3	A	371	556

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N8 - Eastern Prom/Harbour Quarter Access	B-AC	0.41	0.29	0.7	3.0	C	117	175
	C-AB	0.01	0.09	0.0	0.5	A	8	12
	C-A						385	578
	A-B						128	191
	A-C						314	471
N8a - Proposed Hillsboro South Car Park Access	B-AC	0.40	0.29	0.7	3.1	C	117	175
	C-AB	0.01	0.09	0.0	0.5	A	8	12
	C-A						386	579
	A-B						128	191
	A-C						314	471

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	256	64	145	90.34	1259	0.203	255
	2 - Proposed Spine Road	-	181	45	173	150.57	903	0.201	180
	3 - The Portway West	-	304	76	77		1344	0.226	303
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	96	24		45.17	380	0.251	94
	-	C-AB	6	1		0.00	674	0.008	6
	-	C-A	317	79		0.00			317
	-	A-B	105	26		0.00			105
	-	A-C	257	64		0.00			257
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	96	24		0.00	397	0.241	94
	-	C-AB	6	1		0.00	703	0.008	5
	-	C-A	317	79		0.00			317
	-	A-B	105	26		0.00			105
	-	A-C	257	64		0.00			257

17:00 - 17:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	306	76	173	107.88	1230	0.249	305
	2 - Proposed Spine Road	-	217	54	207	179.80	880	0.246	216
	3 - The Portway West	-	363	91	92		1335	0.272	363
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	114	29		53.94	366	0.312	114
	-	C-AB	8	2		0.00	711	0.011	8
	-	C-A	378	94		0.00			378
	-	A-B	125	31		0.00			125
	-	A-C	307	77		0.00			307
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	114	29		0.00	376	0.304	114
	-	C-AB	7	2		0.00	738	0.010	7
	-	C-A	378	95		0.00			378
	-	A-B	125	31		0.00			125
	-	A-C	307	77		0.00			307

17:15 - 17:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	374	94	212	132.12	1188	0.315	374
	2 - Proposed Spine Road	-	265	66	254	220.20	844	0.314	265
	3 - The Portway West	-	445	111	113		1323	0.336	444
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	140	35		66.06	343	0.407	139
	-	C-AB	11	3		0.00	764	0.015	11
	-	C-A	461	115		0.00			461
	-	A-B	153	38		0.00			153
	-	A-C	377	94		0.00			377
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	140	35		0.00	347	0.403	139
	-	C-AB	11	3		0.00	789	0.014	11
	-	C-A	461	115		0.00			461
	-	A-B	153	38		0.00			153
	-	A-C	377	94		0.00			377

17:30 - 17:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	374	94	212	132.12	1194	0.314	374
	2 - Proposed Spine Road	-	265	66	254	220.20	851	0.312	265
	3 - The Portway West	-	445	111	113		1323	0.336	445
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	140	35		66.06	349	0.401	140
	-	C-AB	11	3		0.00	764	0.015	11
	-	C-A	461	115		0.00			461
	-	A-B	153	38		0.00			153
	-	A-C	377	94		0.00			377
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	140	35		0.00	347	0.403	140
	-	C-AB	11	3		0.00	789	0.014	11
	-	C-A	461	115		0.00			461
	-	A-B	153	38		0.00			153
	-	A-C	377	94		0.00			377

17:45 - 18:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	306	76	174	107.88	1237	0.247	306
	2 - Proposed Spine Road	-	217	54	208	179.80	890	0.244	217
	3 - The Portway West	-	363	91	93		1335	0.272	364
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	114	29		53.94	373	0.306	115
	-	C-AB	8	2		0.00	712	0.011	8
	-	C-A	378	94		0.00			378
	-	A-B	125	31		0.00			125
	-	A-C	307	77		0.00			307
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	114	29		0.00	376	0.304	115
	-	C-AB	7	2		0.00	739	0.010	8
	-	C-A	378	95		0.00			378
	-	A-B	125	31		0.00			125
	-	A-C	307	77		0.00			307

18:00 - 18:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	256	64	145	90.34	1269	0.202	256
	2 - Proposed Spine Road	-	181	45	174	150.57	917	0.198	182
	3 - The Portway West	-	304	76	78		1344	0.226	304
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	96	24		45.17	389	0.246	96
	-	C-AB	6	1		0.00	675	0.009	6
	-	C-A	317	79		0.00			317
	-	A-B	105	26		0.00			105
	-	A-C	257	64		0.00			257
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	96	24		0.00	397	0.241	96
	-	C-AB	6	1		0.00	703	0.008	6
	-	C-A	317	79		0.00			317
	-	A-B	105	26		0.00			105
	-	A-C	257	64		0.00			257

Queue Variation Results for each time segment

16:45 - 17:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.25	0.00	0.00	0.25	0.25			N/A	N/
	2 - Proposed Spine Road	-	0.25	0.00	0.00	0.25	0.25			N/A	N/
	3 - The Portway West	-	0.29	0.00	0.00	0.29	0.29			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.33	0.00	0.00	0.33	0.33			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.31	0.00	0.00	0.31	0.31			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

17:00 - 17:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.33	0.00	0.00	0.33	0.33			N/A	N/
	2 - Proposed Spine Road	-	0.32	0.00	0.00	0.32	0.32			N/A	N/
	3 - The Portway West	-	0.37	0.00	0.00	0.37	0.37			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.44	0.00	0.00	0.44	0.44			N/A	N/
	-	C-AB	0.01	0.01	0.25	0.45	0.48			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.43	0.00	0.00	0.43	0.43			N/A	N/
	-	C-AB	0.01	0.01	0.25	0.45	0.48			N/A	N/

17:15 - 17:30

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.46	0.03	0.25	0.46	0.48			N/A	N/
	2 - Proposed Spine Road	-	0.45	0.03	0.25	0.46	0.48			N/A	N/
	3 - The Portway West	-	0.50	0.03	0.25	0.50	0.50			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.67	0.03	0.26	0.67	0.67			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.65	0.03	0.26	0.65	0.65			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/

17:30 - 17:45

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.46	0.03	0.31	1.37	1.92			N/A	N/
	2 - Proposed Spine Road	-	0.45	0.03	0.31	1.36	1.94			N/A	N/
	3 - The Portway West	-	0.50	0.03	0.30	1.35	2.30			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.67	0.03	0.29	1.31	3.04			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.66	0.03	0.29	1.38	3.10			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/

17:45 - 18:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.33	0.00	0.00	0.33	0.33			N/A	N/
	2 - Proposed Spine Road	-	0.32	0.00	0.00	0.32	0.32			N/A	N/
	3 - The Portway West	-	0.38	0.00	0.00	0.38	0.38			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.45	0.04	0.38	1.20	1.35			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.45	0.04	0.36	1.18	1.34			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

18:00 - 18:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.25	0.00	0.00	0.25	0.25			N/A	N/
	2 - Proposed Spine Road	-	0.25	0.00	0.00	0.25	0.25			N/A	N/
	3 - The Portway West	-	0.29	0.00	0.00	0.29	0.29			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.33	0.03	0.28	0.51	1.00			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.32	0.03	0.27	0.49	0.82			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

Scenario 1 - Core Growth - D7 - 2033 | Total Traffic | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Scenario 1 - Core Growth	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (min)	Junction LOS
N1	Spine Access	Standard Roundabout					1, 2, 3	0.07	A
N8	Eastern Prom/Harbour Quarter Access	T-Junction	Two-way	Two-way	Two-way			0.02	A
N8a	Proposed Hillsboro South Car Park Access	T-Junction	Two-way	Two-way	Two-way			0.02	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (min)	Network LOS
Left	Normal/unknown	72	N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC	0.04	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N1 - Spine Access	1	New Road North			
	2	Proposed Spine Road			
	3	The Portway West			
N8 - Eastern Prom/Harbour Quarter Access	A	The Portway (North)			Major
	B	New Harbour Quarter Access	Former Eastern Promenade		Minor
	C	The Promenade (West)			Major
N8a - Proposed Hillsboro South Car Park Access	A	The Portway (South)			Major
	B	Hillsboro South Car Park			Minor
	C	The Portway (North)			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N1 - Spine Access	1 - New Road North	3.63	5.90	13.2	12.6	30.0	21.5		
	2 - Proposed Spine Road	3.38	3.80	30.0	36.4	30.0	22.0		
	3 - The Portway West	4.56	4.56	0.0	45.0	30.0	33.0		

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	7.30			104.0	✓	0.00
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	8.00			186.0	✓	0.00

Major Arm Geometry Notes

Junction	Arm	Notes
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	Assumed that right turn holder lane will be removed as part of dtailed design process
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	One lane	3.00	92	24
N8a - Proposed Hillsboro South Car Park Access	B - Hillsboro South Car Park	One lane	3.00	28	34

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N1 - Spine Access	1 - New Road North	4.00	3.00	2.90	1.00	6.00	6.00	7.00
	2 - Proposed Spine Road	3.00	3.00	2.90	1.00	6.00	6.00	7.00
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	1.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N1 - Spine Access	1 - New Road North	0.626	1544
	2 - Proposed Spine Road	0.572	1203
	3 - The Portway West	0.603	1405

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8 - Eastern Prom/Harbour Quarter Access	B-A	519	0.089	0.225	0.142	0.322
	B-C	639	0.092	0.233	-	-
	C-B	634	0.232	0.232	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8a - Proposed Hillsboro South Car Park Access	B-A	503	0.084	0.212	0.133	0.302
	B-C	645	0.090	0.228	-	-
	C-B	682	0.241	0.241	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2033	Total Traffic	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N1 - Spine Access	1 - New Road North		ONE HOUR	✓	412	100.000
	2 - Proposed Spine Road		ONE HOUR	✓	109	100.000
	3 - The Portway West		ONE HOUR	✓	379	100.000
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		ONE HOUR	✓	435	100.000
	B - New Harbour Quarter Access		ONE HOUR	✓	82	100.000
	C - The Promenade (West)		ONE HOUR	✓	350	100.000
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		ONE HOUR	✓	435	100.000
	B - Hillsboro South Car Park		ONE HOUR	✓	82	100.000
	C - The Portway (North)		ONE HOUR	✓	350	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N1 - Spine Access	1 - New Road North	[ONEHOUR]	120.00
	2 - Proposed Spine Road	[ONEHOUR]	200.00
	3 - The Portway West		
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		
	B - New Harbour Quarter Access	[ONEHOUR]	60.00
	C - The Promenade (West)		
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		
	B - Hillsboro South Car Park		
	C - The Portway (North)		

Origin-Destination Data

N1 - Spine Access

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	79	333
	-	43	0	66
	-	270	109	0

N8 - Eastern Prom/Harbour Quarter Access

Demand (Veh/hr)

		To		
		- The Portway	- New Harbour	- The
From	-	0	81	354
	-	77	0	5
	-	346	4	0

Demand (Veh/hr)

N8a - Proposed Hillsboro South Car Park Access

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	81	354
	-	77	0	5
	-	346	4	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

N1 - Spine Access

		To		
		-	-	-
From	-	0	0	2
	-	0	0	0
	-	1	0	0

Heavy Vehicle %

N8 - Eastern Prom/Harbour Quarter Access

		To		
		- The Portway	- New Harbour	- The
From	-	0	1	4
	-	1	0	0.48
	-	1	0.42	0

Heavy Vehicle %

N8a - Proposed Hillsboro South Car Park Access

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	1	4
	-	1	0	0.48
	-	1	0.42	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N1 - Spine Access	1 - New Road North	0.37	0.08	0.6	2.6	A	378	567
	2 - Proposed Spine Road	0.16	0.09	0.2	0.5	A	100	150
	3 - The Portway West	0.31	0.06	0.4	1.8	A	348	522

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N8 - Eastern Prom/Harbour Quarter Access	B-AC	0.26	0.24	0.4	1.2	B	75	113
	C-AB	0.01	0.08	0.0	0.5	A	6	10
	C-A						315	472
	A-B						74	111
	A-C						325	487
N8a - Proposed Hillsboro South Car Park Access	B-AC	0.25	0.22	0.3	1.5	B	75	113
	C-AB	0.01	0.08	0.0	0.5	A	6	9
	C-A						315	472
	A-B						74	111
	A-C						325	487

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	310	78	82	90.34	1283	0.242	309
	2 - Proposed Spine Road	-	82	21	250	150.57	862	0.095	82
	3 - The Portway West	-	285	71	32		1376	0.207	284
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	62	15		45.17	386	0.160	61
	-	C-AB	5	1		0.00	733	0.006	5
	-	C-A	259	65		0.00			259
	-	A-B	61	15		0.00			61
	-	A-C	267	67		0.00			267
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	62	15		0.00	406	0.152	61
	-	C-AB	5	1		0.00	770	0.006	5
	-	C-A	259	65		0.00			259
	-	A-B	61	15		0.00			61
	-	A-C	267	67		0.00			267

08:00 - 08:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	370	93	98	107.88	1264	0.293	370
	2 - Proposed Spine Road	-	98	24	299	179.80	822	0.119	98
	3 - The Portway West	-	341	85	39		1372	0.248	340
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	74	18		53.94	369	0.200	73
	-	C-AB	6	2		0.00	755	0.008	6
	-	C-A	309	77		0.00			309
	-	A-B	73	18		0.00			73
	-	A-C	318	80		0.00			318
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	74	18		0.00	387	0.191	73
	-	C-AB	6	1		0.00	791	0.008	6
	-	C-A	309	77		0.00			309
	-	A-B	73	18		0.00			73
	-	A-C	318	80		0.00			318

08:15 - 08:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	454	113	120	132.12	1234	0.368	453
	2 - Proposed Spine Road	-	120	30	366	220.20	770	0.156	120
	3 - The Portway West	-	417	104	47		1367	0.305	417
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	90	23		66.06	343	0.263	90
	-	C-AB	9	2		0.00	787	0.011	9
	-	C-A	377	94		0.00			377
	-	A-B	89	22		0.00			89
	-	A-C	390	97		0.00			390
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	90	23		0.00	360	0.251	90
	-	C-AB	8	2		0.00	821	0.010	8
	-	C-A	377	94		0.00			377
	-	A-B	89	22		0.00			89
	-	A-C	390	97		0.00			390

08:30 - 08:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	454	113	120	132.12	1240	0.366	454
	2 - Proposed Spine Road	-	120	30	367	220.20	772	0.155	120
	3 - The Portway West	-	417	104	47		1367	0.305	417
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	90	23		66.06	345	0.261	90
	-	C-AB	9	2		0.00	787	0.011	9
	-	C-A	377	94		0.00			377
	-	A-B	89	22		0.00			89
	-	A-C	390	97		0.00			390
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	90	23		0.00	360	0.251	90
	-	C-AB	8	2		0.00	821	0.010	8
	-	C-A	377	94		0.00			377
	-	A-B	89	22		0.00			89
	-	A-C	390	97		0.00			390

08:45 - 09:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	370	93	98	107.88	1273	0.291	371
	2 - Proposed Spine Road	-	98	24	300	179.80	825	0.119	98
	3 - The Portway West	-	341	85	39		1372	0.248	341
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	74	18		53.94	372	0.198	74
	-	C-AB	6	2		0.00	755	0.008	6
	-	C-A	309	77		0.00			309
	-	A-B	73	18		0.00			73
	-	A-C	318	80		0.00			318
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	74	18		0.00	387	0.191	74
	-	C-AB	6	1		0.00	791	0.008	6
	-	C-A	309	77		0.00			309
	-	A-B	73	18		0.00			73
	-	A-C	318	80		0.00			318

09:00 - 09:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	310	78	82	90.34	1296	0.239	311
	2 - Proposed Spine Road	-	82	21	251	150.57	867	0.095	82
	3 - The Portway West	-	285	71	32		1375	0.207	286
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	62	15		45.17	391	0.158	62
	-	C-AB	5	1		0.00	733	0.006	5
	-	C-A	259	65		0.00			259
	-	A-B	61	15		0.00			61
	-	A-C	267	67		0.00			267
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	62	15		0.00	406	0.152	62
	-	C-AB	5	1		0.00	770	0.006	5
	-	C-A	259	65		0.00			259
	-	A-B	61	15		0.00			61
	-	A-C	267	67		0.00			267

Queue Variation Results for each time segment

07:45 - 08:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.32	0.00	0.00	0.32	0.32			N/A	N/
	2 - Proposed Spine Road	-	0.10	0.00	0.00	0.10	0.10			N/A	N/
	3 - The Portway West	-	0.26	0.00	0.00	0.26	0.26			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.19	0.00	0.00	0.19	0.19			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.18	0.00	0.00	0.18	0.18			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

08:00 - 08:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.41	0.00	0.00	0.41	0.41			N/A	N/
	2 - Proposed Spine Road	-	0.13	0.00	0.00	0.13	0.13			N/A	N/
	3 - The Portway West	-	0.33	0.00	0.00	0.33	0.33			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.25	0.00	0.00	0.25	0.25			N/A	N/
	-	C-AB	0.01	0.01	0.25	0.45	0.48			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.23	0.00	0.00	0.23	0.23			N/A	N/
	-	C-AB	0.01	0.01	0.25	0.45	0.48			N/A	N/

08:15 - 08:30

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.58	0.03	0.25	0.58	0.58			N/A	N/
	2 - Proposed Spine Road	-	0.18	0.03	0.26	0.46	0.49			N/A	N/
	3 - The Portway West	-	0.44	0.03	0.25	0.45	0.48			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.35	0.03	0.26	0.46	0.49			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.33	0.03	0.26	0.46	0.49			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

08:30 - 08:45

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.58	0.03	0.29	1.23	2.65			N/A	N/
	2 - Proposed Spine Road	-	0.18	0.03	0.25	0.45	0.48			N/A	N/
	3 - The Portway West	-	0.44	0.03	0.31	1.36	1.82			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.35	0.03	0.31	1.20	1.25			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.33	0.03	0.31	1.16	1.50			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

08:45 - 09:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.41	0.00	0.00	0.41	0.41			N/A	N/
	2 - Proposed Spine Road	-	0.14	0.00	0.00	0.14	0.14			N/A	N/
	3 - The Portway West	-	0.33	0.00	0.00	0.33	0.33			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.25	0.00	0.00	0.25	0.25			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.24	0.00	0.00	0.24	0.24			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

09:00 - 09:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.32	0.00	0.00	0.32	0.32			N/A	N/
	2 - Proposed Spine Road	-	0.11	0.00	0.00	0.11	0.11			N/A	N/
	3 - The Portway West	-	0.26	0.00	0.00	0.26	0.26			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.19	0.00	0.00	0.19	0.19			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.18	0.00	0.00	0.18	0.18			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

Scenario 1 - Core Growth - D8 - 2033 | Total Traffic | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Scenario 1 - Core Growth	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (min)	Junction LOS
N1	Spine Access	Standard Roundabout					1, 2, 3	0.08	A
N8	Eastern Prom/Harbour Quarter Access	T-Junction	Two-way	Two-way	Two-way			0.04	A
N8a	Proposed Hillsboro South Car Park Access	T-Junction	Two-way	Two-way	Two-way			0.04	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (min)	Network LOS
Left	Normal/unknown	30	N8a - Proposed Hillsboro South Car Park Access - Stream B-AC	0.05	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N1 - Spine Access	1	New Road North			
	2	Proposed Spine Road			
	3	The Portway West			
N8 - Eastern Prom/Harbour Quarter Access	A	The Portway (North)			Major
	B	New Harbour Quarter Access	Former Eastern Promenade		Minor
	C	The Promenade (West)			Major
N8a - Proposed Hillsboro South Car Park Access	A	The Portway (South)			Major
	B	Hillsboro South Car Park			Minor
	C	The Portway (North)			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N1 - Spine Access	1 - New Road North	3.63	5.90	13.2	12.6	30.0	21.5		
	2 - Proposed Spine Road	3.38	3.80	30.0	36.4	30.0	22.0		
	3 - The Portway West	4.56	4.56	0.0	45.0	30.0	33.0		

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	7.30			104.0	✓	0.00
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	8.00			186.0	✓	0.00

Major Arm Geometry Notes

Junction	Arm	Notes
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	Assumed that right turn holder lane will be removed as part of dtailed design process
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	One lane	3.00	92	24
N8a - Proposed Hillsboro South Car Park Access	B - Hillsboro South Car Park	One lane	3.00	28	34

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N1 - Spine Access	1 - New Road North	4.00	3.00	2.90	1.00	6.00	6.00	7.00
	2 - Proposed Spine Road	3.00	3.00	2.90	1.00	6.00	6.00	7.00
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	1.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N1 - Spine Access	1 - New Road North	0.626	1544
	2 - Proposed Spine Road	0.572	1203
	3 - The Portway West	0.603	1405

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8 - Eastern Prom/Harbour Quarter Access	B-A	519	0.089	0.225	0.142	0.322
	B-C	639	0.092	0.233	-	-
	C-B	634	0.232	0.232	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8a - Proposed Hillsboro South Car Park Access	B-A	503	0.084	0.212	0.133	0.302
	B-C	645	0.090	0.228	-	-
	C-B	682	0.241	0.241	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2033	Total Traffic	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N1 - Spine Access	1 - New Road North		ONE HOUR	✓	356	100.000
	2 - Proposed Spine Road		ONE HOUR	✓	241	100.000
	3 - The Portway West		ONE HOUR	✓	425	100.000
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		ONE HOUR	✓	502	100.000
	B - New Harbour Quarter Access		ONE HOUR	✓	133	100.000
	C - The Promenade (West)		ONE HOUR	✓	459	100.000
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		ONE HOUR	✓	502	100.000
	B - Hillsboro South Car Park		ONE HOUR	✓	133	100.000
	C - The Portway (North)		ONE HOUR	✓	459	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N1 - Spine Access	1 - New Road North	[ONEHOUR]	120.00
	2 - Proposed Spine Road	[ONEHOUR]	200.00
	3 - The Portway West		
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		
	B - New Harbour Quarter Access	[ONEHOUR]	60.00
	C - The Promenade (West)		
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		
	B - Hillsboro South Car Park		
	C - The Portway (North)		

Origin-Destination Data

Demand (Veh/hr)

N1 - Spine Access

		To		
		-	-	-
From	-	0	109	247
	-	103	0	138
	-	232	193	0

Demand (Veh/hr)

N8 - Eastern Prom/Harbour Quarter Access

		To		
		- The Portway	- New Harbour	- The
From	-	0	141	361
	-	123	0	10
	-	451	8	0

N8a - Proposed Hillsboro South Car Park Access

Demand (Veh/hr)

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	141	361
	-	123	0	10
	-	451	8	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N1 - Spine Access

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	1
	-	0	0	0
	-	2	0	0

N8 - Eastern Prom/Harbour Quarter Access

Heavy Vehicle %

		To		
		- The Portway	- New Harbour	- The
From	-	0	0.69	2
	-	0.78	0	0.36
	-	0.97	14	0

N8a - Proposed Hillsboro South Car Park Access

Heavy Vehicle %

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	0.69	2
	-	0.78	0	0.36
	-	0.97	14	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N1 - Spine Access	1 - New Road North	0.33	0.08	0.5	2.2	A	327	490
	2 - Proposed Spine Road	0.32	0.10	0.5	2.0	A	221	332
	3 - The Portway West	0.35	0.07	0.5	2.5	A	390	585

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N8 - Eastern Prom/Harbour Quarter Access	B-AC	0.43	0.31	0.7	3.3	C	122	183
	C-AB	0.03	0.08	0.0	0.5	A	16	25
	C-A						405	607
	A-B						129	194
	A-C						331	497
N8a - Proposed Hillsboro South Car Park Access	B-AC	0.43	0.31	0.7	3.4	C	122	183
	C-AB	0.03	0.08	0.0	0.5	A	16	24
	C-A						405	608
	A-B						129	194
	A-C						331	497

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	268	67	145	90.34	1259	0.213	267
	2 - Proposed Spine Road	-	181	45	185	150.57	898	0.202	180
	3 - The Portway West	-	320	80	77		1344	0.238	319
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	100	25		45.17	378	0.265	99
	-	C-AB	11	3		0.00	727	0.016	11
	-	C-A	334	84		0.00			334
	-	A-B	106	27		0.00			106
	-	A-C	272	68		0.00			272
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	100	25		0.00	395	0.254	99
	-	C-AB	11	3		0.00	758	0.014	11
	-	C-A	335	84		0.00			335
	-	A-B	106	27		0.00			106
	-	A-C	272	68		0.00			272

17:00 - 17:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	320	80	173	107.88	1231	0.260	320
	2 - Proposed Spine Road	-	217	54	222	179.80	874	0.248	216
	3 - The Portway West	-	382	96	92		1334	0.286	382
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	120	30		53.94	363	0.329	119
	-	C-AB	15	4		0.00	764	0.020	15
	-	C-A	397	99		0.00			397
	-	A-B	127	32		0.00			127
	-	A-C	325	81		0.00			325
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	120	30		0.00	373	0.321	119
	-	C-AB	15	4		0.00	793	0.019	15
	-	C-A	398	99		0.00			398
	-	A-B	127	32		0.00			127
	-	A-C	325	81		0.00			325

17:15 - 17:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	392	98	212	132.12	1191	0.329	391
	2 - Proposed Spine Road	-	265	66	272	220.20	837	0.317	265
	3 - The Portway West	-	468	117	113		1322	0.354	467
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	146	37		66.06	341	0.430	145
	-	C-AB	23	6		0.00	816	0.028	23
	-	C-A	483	121		0.00			483
	-	A-B	155	39		0.00			155
	-	A-C	397	99		0.00			397
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	146	37		0.00	342	0.428	145
	-	C-AB	22	5		0.00	843	0.026	21
	-	C-A	484	121		0.00			484
	-	A-B	155	39		0.00			155
	-	A-C	397	99		0.00			397

17:30 - 17:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	392	98	212	132.12	1196	0.328	392
	2 - Proposed Spine Road	-	265	66	272	220.20	844	0.314	265
	3 - The Portway West	-	468	117	113		1322	0.354	468
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	146	37		66.06	346	0.423	146
	-	C-AB	23	6		0.00	816	0.028	23
	-	C-A	483	121		0.00			483
	-	A-B	155	39		0.00			155
	-	A-C	397	99		0.00			397
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	146	37		0.00	342	0.428	146
	-	C-AB	22	5		0.00	843	0.026	22
	-	C-A	484	121		0.00			484
	-	A-B	155	39		0.00			155
	-	A-C	397	99		0.00			397

17:45 - 18:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	320	80	174	107.88	1239	0.258	321
	2 - Proposed Spine Road	-	217	54	222	179.80	883	0.245	217
	3 - The Portway West	-	382	96	93		1334	0.286	383
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	120	30		53.94	371	0.322	121
	-	C-AB	15	4		0.00	764	0.020	15
	-	C-A	397	99		0.00			397
	-	A-B	127	32		0.00			127
	-	A-C	325	81		0.00			325
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	120	30		0.00	373	0.321	121
	-	C-AB	15	4		0.00	793	0.019	15
	-	C-A	398	99		0.00			398
	-	A-B	127	32		0.00			127
	-	A-C	325	81		0.00			325

18:00 - 18:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	268	67	145	90.34	1270	0.211	268
	2 - Proposed Spine Road	-	181	45	186	150.57	912	0.199	182
	3 - The Portway West	-	320	80	78		1343	0.238	320
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	100	25		45.17	387	0.259	101
	-	C-AB	11	3		0.00	727	0.016	11
	-	C-A	334	84		0.00			334
	-	A-B	106	27		0.00			106
	-	A-C	272	68		0.00			272
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	100	25		0.00	395	0.254	101
	-	C-AB	11	3		0.00	759	0.014	11
	-	C-A	335	84		0.00			335
	-	A-B	106	27		0.00			106
	-	A-C	272	68		0.00			272

Queue Variation Results for each time segment

16:45 - 17:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.27	0.00	0.00	0.27	0.27			N/A	N/
	2 - Proposed Spine Road	-	0.25	0.00	0.00	0.25	0.25			N/A	N/
	3 - The Portway West	-	0.31	0.00	0.00	0.31	0.31			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.35	0.00	0.00	0.35	0.35			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.33	0.00	0.00	0.33	0.33			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/

17:00 - 17:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.35	0.00	0.00	0.35	0.35			N/A	N/
	2 - Proposed Spine Road	-	0.33	0.00	0.00	0.33	0.33			N/A	N/
	3 - The Portway West	-	0.40	0.00	0.00	0.40	0.40			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.48	0.00	0.00	0.48	0.48			N/A	N/
	-	C-AB	0.02	0.02	0.25	0.45	0.48			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.46	0.00	0.00	0.46	0.46			N/A	N/
	-	C-AB	0.02	0.02	0.25	0.45	0.48			N/A	N/

17:15 - 17:30

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.49	0.03	0.25	0.49	0.49			N/A	N/
	2 - Proposed Spine Road	-	0.46	0.03	0.25	0.46	0.48			N/A	N/
	3 - The Portway West	-	0.54	0.03	0.25	0.54	0.54			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.73	0.03	0.26	0.73	0.73			N/A	N/
	-	C-AB	0.04	0.00	0.00	0.04	0.04			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.72	0.03	0.26	0.72	0.72			N/A	N/
	-	C-AB	0.03	0.00	0.00	0.03	0.03			N/A	N/

17:30 - 17:45

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.49	0.03	0.30	1.38	2.17			N/A	N/
	2 - Proposed Spine Road	-	0.46	0.03	0.31	1.36	1.97			N/A	N/
	3 - The Portway West	-	0.55	0.03	0.29	1.29	2.54			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.73	0.03	0.29	1.28	3.28			N/A	N/
	-	C-AB	0.04	0.00	0.00	0.04	0.04			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.74	0.03	0.29	1.38	3.42			N/A	N/
	-	C-AB	0.03	0.00	0.00	0.03	0.03			N/A	N/

17:45 - 18:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.35	0.00	0.00	0.35	0.35			N/A	N/
	2 - Proposed Spine Road	-	0.33	0.00	0.00	0.33	0.33			N/A	N/
	3 - The Portway West	-	0.40	0.00	0.00	0.40	0.40			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.49	0.04	0.43	1.26	1.38			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.48	0.04	0.43	1.26	1.38			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/

18:00 - 18:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.27	0.00	0.00	0.27	0.27			N/A	N/
	2 - Proposed Spine Road	-	0.25	0.00	0.00	0.25	0.25			N/A	N/
	3 - The Portway West	-	0.31	0.00	0.00	0.31	0.31			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.35	0.03	0.30	0.93	1.21			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.35	0.03	0.29	0.83	1.17			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/

Scenario 2 - Sensitivity Test - D3 - 2026 | Total Traffic | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Scenario 2 - Sensitivity Test	Sensitivity test with +25% network traffic allowance.	✓	125.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (min)	Junction LOS
N1	Spine Access	Standard Roundabout					1, 2, 3	0.08	A
N8	Eastern Prom/Harbour Quarter Access	T-Junction	Two-way	Two-way	Two-way			0.03	A
N8a	Proposed Hillsboro South Car Park Access	T-Junction	Two-way	Two-way	Two-way			0.03	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (min)	Network LOS
Left	Normal/unknown	43	N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC	0.05	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N1 - Spine Access	1	New Road North			
	2	Proposed Spine Road			
	3	The Portway West			
N8 - Eastern Prom/Harbour Quarter Access	A	The Portway (North)			Major
	B	New Harbour Quarter Access	Former Eastern Promenade		Minor
	C	The Promenade (West)			Major
N8a - Proposed Hillsboro South Car Park Access	A	The Portway (South)			Major
	B	Hillsboro South Car Park			Minor
	C	The Portway (North)			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N1 - Spine Access	1 - New Road North	3.63	5.90	13.2	12.6	30.0	21.5		
	2 - Proposed Spine Road	3.38	3.80	30.0	36.4	30.0	22.0		
	3 - The Portway West	4.56	4.56	0.0	45.0	30.0	33.0		

Major Arm Geometry

		Width of (m)	Has kerbed reserve	Has right-storage	Visibility for (m)		Blocking (PCU)
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	7.30			104.0	✓	0.00
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	8.00			186.0	✓	0.00

Major Arm Geometry Notes

Junction	Arm	Notes
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	Assumed that right turn holder lane will be removed as part of dtailed design process
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	One lane	3.00	92	24
N8a - Proposed Hillsboro South Car Park Access	B - Hillsboro South Car Park	One lane	3.00	28	34

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N1 - Spine Access	1 - New Road North	4.00	3.00	2.90	1.00	6.00	6.00	7.00
	2 - Proposed Spine Road	3.00	3.00	2.90	1.00	6.00	6.00	7.00
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	1.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N1 - Spine Access	1 - New Road North	0.626	1544
	2 - Proposed Spine Road	0.572	1203
	3 - The Portway West	0.603	1405

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8 - Eastern Prom/Harbour Quarter Access	B-A	519	0.089	0.225	0.142	0.322
	B-C	639	0.092	0.233	-	-
	C-B	634	0.232	0.232	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8a - Proposed Hillsboro South Car Park Access	B-A	503	0.084	0.212	0.133	0.302
	B-C	645	0.090	0.228	-	-
	C-B	682	0.241	0.241	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2026	Total Traffic	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N1 - Spine Access	1 - New Road North		ONE HOUR	✓	395	100.000
	2 - Proposed Spine Road		ONE HOUR	✓	109	100.000
	3 - The Portway West		ONE HOUR	✓	362	100.000
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		ONE HOUR	✓	414	100.000
	B - New Harbour Quarter Access		ONE HOUR	✓	79	100.000
	C - The Promenade (West)		ONE HOUR	✓	327	100.000
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		ONE HOUR	✓	414	100.000
	B - Hillsboro South Car Park		ONE HOUR	✓	79	100.000
	C - The Portway (North)		ONE HOUR	✓	327	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N1 - Spine Access	1 - New Road North	[ONEHOUR]	120.00
	2 - Proposed Spine Road	[ONEHOUR]	200.00
	3 - The Portway West		
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		
	B - New Harbour Quarter Access	[ONEHOUR]	60.00
	C - The Promenade (West)		
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		
	B - Hillsboro South Car Park		
	C - The Portway (North)		

Origin-Destination Data

Demand (Veh/hr)

N1 - Spine Access

		To		
		-	-	-
From	-	0	79	316
	-	43	0	66
	-	253	109	0

Demand (Veh/hr)

N8 - Eastern Prom/Harbour Quarter Access

		To		
		- The Portway	- New Harbour	- The
From	-	0	80	334
	-	77	0	2
	-	326	1	0

Demand (Veh/hr)

N8a - Proposed Hillsboro South Car Park Access

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	80	334
	-	77	0	2
	-	326	1	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

N1 - Spine Access

		To		
		-	-	-
From	-	0	0	2
	-	0	0	0
	-	1	0	0

Heavy Vehicle %

N8 - Eastern Prom/Harbour Quarter Access

		To		
		- The Portway	- New Harbour	- The
From	-	0	1	4
	-	1	0	1
	-	1	1	0

Heavy Vehicle %

N8a - Proposed Hillsboro South Car Park Access

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	1	4
	-	1	0	1
	-	1	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N1 - Spine Access	1 - New Road North	0.44	0.09	0.8	2.4	A	453	680
	2 - Proposed Spine Road	0.20	0.10	0.3	1.1	A	125	188
	3 - The Portway West	0.37	0.07	0.6	2.6	A	415	623

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N8 - Eastern Prom/Harbour Quarter Access	B-AC	0.34	0.28	0.5	2.3	C	91	136
	C-AB	0.00	0.08	0.0	0.5	A	2	3
	C-A						373	559
	A-B						92	138
	A-C						383	575
N8a - Proposed Hillsboro South Car Park Access	B-AC	0.33	0.27	0.5	2.1	C	91	136
	C-AB	0.00	0.08	0.0	0.5	A	2	3
	C-A						373	559
	A-B						92	138
	A-C						383	575

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	372	93	102	90.34	1276	0.291	370
	2 - Proposed Spine Road	-	103	26	296	150.57	841	0.122	102
	3 - The Portway West	-	341	85	40		1371	0.248	339
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	74	19		45.17	367	0.203	73
	-	C-AB	2	0.40		0.00	749	0.002	2
	-	C-A	306	77		0.00			306
	-	A-B	75	19		0.00			75
	-	A-C	314	79		0.00			314
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	74	19		0.00	384	0.193	73
	-	C-AB	2	0.39		0.00	784	0.002	2
	-	C-A	306	77		0.00			306
	-	A-B	75	19		0.00			75
	-	A-C	314	79		0.00			314

08:00 - 08:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	444	111	122	107.88	1259	0.352	443
	2 - Proposed Spine Road	-	122	31	355	179.80	800	0.153	122
	3 - The Portway West	-	407	102	48		1366	0.298	406
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	89	22		53.94	348	0.255	88
	-	C-AB	2	0.53		0.00	776	0.003	2
	-	C-A	365	91		0.00			365
	-	A-B	90	22		0.00			90
	-	A-C	375	94		0.00			375
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	89	22		0.00	362	0.245	88
	-	C-AB	2	0.51		0.00	810	0.003	2
	-	C-A	365	91		0.00			365
	-	A-B	90	22		0.00			90
	-	A-C	375	94		0.00			375

08:15 - 08:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	544	136	150	132.12	1233	0.441	543
	2 - Proposed Spine Road	-	150	38	434	220.20	745	0.201	150
	3 - The Portway West	-	498	125	59		1360	0.366	498
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	109	27		66.06	321	0.339	108
	-	C-AB	3	0.77		0.00	816	0.004	3
	-	C-A	447	112		0.00			447
	-	A-B	110	28		0.00			110
	-	A-C	460	115		0.00			460
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	109	27		0.00	331	0.329	108
	-	C-AB	3	0.73		0.00	847	0.003	3
	-	C-A	447	112		0.00			447
	-	A-B	110	28		0.00			110
	-	A-C	460	115		0.00			460

08:30 - 08:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	544	136	150	132.12	1243	0.438	544
	2 - Proposed Spine Road	-	150	38	435	220.20	749	0.200	150
	3 - The Portway West	-	498	125	59		1360	0.366	498
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	109	27		66.06	325	0.334	109
	-	C-AB	3	0.77		0.00	816	0.004	3
	-	C-A	447	112		0.00			447
	-	A-B	110	28		0.00			110
	-	A-C	460	115		0.00			460
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	109	27		0.00	331	0.329	109
	-	C-AB	3	0.73		0.00	847	0.003	3
	-	C-A	447	112		0.00			447
	-	A-B	110	28		0.00			110
	-	A-C	460	115		0.00			460

08:45 - 09:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	444	111	123	107.88	1273	0.349	445
	2 - Proposed Spine Road	-	122	31	356	179.80	805	0.152	123
	3 - The Portway West	-	407	102	48		1366	0.298	407
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	89	22		53.94	354	0.251	89
	-	C-AB	2	0.53		0.00	776	0.003	2
	-	C-A	365	91		0.00			365
	-	A-B	90	22		0.00			90
	-	A-C	375	94		0.00			375
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	89	22		0.00	362	0.245	89
	-	C-AB	2	0.51		0.00	810	0.003	2
	-	C-A	365	91		0.00			365
	-	A-B	90	22		0.00			90
	-	A-C	375	94		0.00			375

09:00 - 09:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	372	93	103	90.34	1292	0.288	372
	2 - Proposed Spine Road	-	103	26	298	150.57	848	0.121	103
	3 - The Portway West	-	341	85	41		1371	0.249	341
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	74	19		45.17	373	0.199	75
	-	C-AB	2	0.40		0.00	749	0.002	2
	-	C-A	306	77		0.00			306
	-	A-B	75	19		0.00			75
	-	A-C	314	79		0.00			314
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	74	19		0.00	384	0.193	75
	-	C-AB	2	0.39		0.00	784	0.002	2
	-	C-A	306	77		0.00			306
	-	A-B	75	19		0.00			75
	-	A-C	314	79		0.00			314

Queue Variation Results for each time segment

07:45 - 08:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.41	0.00	0.00	0.41	0.41			N/A	N/
	2 - Proposed Spine Road	-	0.14	0.00	0.00	0.14	0.14			N/A	N/
	3 - The Portway West	-	0.33	0.00	0.00	0.33	0.33			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.25	0.00	0.00	0.25	0.25			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.24	0.00	0.00	0.24	0.24			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/

08:00 - 08:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.54	0.54	1.00	1.40	1.45			N/A	N/
	2 - Proposed Spine Road	-	0.18	0.00	0.00	0.18	0.18			N/A	N/
	3 - The Portway West	-	0.42	0.00	0.00	0.42	0.42			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.34	0.00	0.00	0.34	0.34			N/A	N/
	-	C-AB	0.00	0.00	0.25	0.45	0.48			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.32	0.00	0.00	0.32	0.32			N/A	N/
	-	C-AB	0.00	0.00	0.25	0.45	0.48			N/A	N/

08:15 - 08:30

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.78	0.03	0.25	0.78	0.78			N/A	N/
	2 - Proposed Spine Road	-	0.25	0.03	0.25	0.46	0.48			N/A	N/
	3 - The Portway West	-	0.57	0.03	0.25	0.57	0.57			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.50	0.03	0.26	0.50	0.50			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.48	0.03	0.26	0.48	0.49			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/

08:30 - 08:45

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.78	0.03	0.28	0.78	2.37			N/A	N/
	2 - Proposed Spine Road	-	0.25	0.03	0.29	0.70	1.11			N/A	N/
	3 - The Portway West	-	0.58	0.03	0.29	1.20	2.62			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.50	0.03	0.30	1.37	2.26			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.48	0.03	0.31	1.38	2.14			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/

08:45 - 09:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.54	0.54	1.00	1.40	1.45			N/A	N/
	2 - Proposed Spine Road	-	0.18	0.00	0.00	0.18	0.18			N/A	N/
	3 - The Portway West	-	0.43	0.00	0.00	0.43	0.43			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.34	0.03	0.25	0.45	0.48			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.33	0.00	0.00	0.33	0.33			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/

09:00 - 09:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.41	0.00	0.00	0.41	0.41			N/A	N/
	2 - Proposed Spine Road	-	0.14	0.00	0.00	0.14	0.14			N/A	N/
	3 - The Portway West	-	0.33	0.00	0.00	0.33	0.33			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.25	0.03	0.25	0.45	0.48			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.24	0.03	0.25	0.45	0.48			N/A	N/
	-	C-AB	0.00	0.00	0.00	0.00	0.00			N/A	N/

Scenario 2 - Sensitivity Test - D4 - 2026 | Total Traffic | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Scenario 2 - Sensitivity Test	Sensitivity test with +25% network traffic allowance.	✓	125.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (min)	Junction LOS
N1	Spine Access	Standard Roundabout					1, 2, 3	0.09	A
N8	Eastern Prom/Harbour Quarter Access	T-Junction	Two-way	Two-way	Two-way			0.05	A
N8a	Proposed Hillsboro South Car Park Access	T-Junction	Two-way	Two-way	Two-way			0.06	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (min)	Network LOS
Left	Normal/unknown	9	N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC	0.07	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N1 - Spine Access	1	New Road North			
	2	Proposed Spine Road			
	3	The Portway West			
N8 - Eastern Prom/Harbour Quarter Access	A	The Portway (North)			Major
	B	New Harbour Quarter Access	Former Eastern Promenade		Minor
	C	The Promenade (West)			Major
N8a - Proposed Hillsboro South Car Park Access	A	The Portway (South)			Major
	B	Hillsboro South Car Park			Minor
	C	The Portway (North)			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N1 - Spine Access	1 - New Road North	3.63	5.90	13.2	12.6	30.0	21.5		
	2 - Proposed Spine Road	3.38	3.80	30.0	36.4	30.0	22.0		
	3 - The Portway West	4.56	4.56	0.0	45.0	30.0	33.0		

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	7.30			104.0	✓	0.00
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	8.00			186.0	✓	0.00

Major Arm Geometry Notes

Junction	Arm	Notes
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	Assumed that right turn holder lane will be removed as part of dtailed design process
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	One lane	3.00	92	24
N8a - Proposed Hillsboro South Car Park Access	B - Hillsboro South Car Park	One lane	3.00	28	34

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N1 - Spine Access	1 - New Road North	4.00	3.00	2.90	1.00	6.00	6.00	7.00
	2 - Proposed Spine Road	3.00	3.00	2.90	1.00	6.00	6.00	7.00
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	1.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N1 - Spine Access	1 - New Road North	0.626	1544
	2 - Proposed Spine Road	0.572	1203
	3 - The Portway West	0.603	1405

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8 - Eastern Prom/Harbour Quarter Access	B-A	519	0.089	0.225	0.142	0.322
	B-C	639	0.092	0.233	-	-
	C-B	634	0.232	0.232	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8a - Proposed Hillsboro South Car Park Access	B-A	503	0.084	0.212	0.133	0.302
	B-C	645	0.090	0.228	-	-
	C-B	682	0.241	0.241	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2026	Total Traffic	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N1 - Spine Access	1 - New Road North		ONE HOUR	✓	340	100.000
	2 - Proposed Spine Road		ONE HOUR	✓	241	100.000
	3 - The Portway West		ONE HOUR	✓	404	100.000
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		ONE HOUR	✓	481	100.000
	B - New Harbour Quarter Access		ONE HOUR	✓	127	100.000
	C - The Promenade (West)		ONE HOUR	✓	429	100.000
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		ONE HOUR	✓	481	100.000
	B - Hillsboro South Car Park		ONE HOUR	✓	127	100.000
	C - The Portway (North)		ONE HOUR	✓	429	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N1 - Spine Access	1 - New Road North	[ONEHOUR]	120.00
	2 - Proposed Spine Road	[ONEHOUR]	200.00
	3 - The Portway West		
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		
	B - New Harbour Quarter Access	[ONEHOUR]	60.00
	C - The Promenade (West)		
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		
	B - Hillsboro South Car Park		
	C - The Portway (North)		

Origin-Destination Data

Demand (Veh/hr)

N1 - Spine Access

		To		
		-	-	-
From	-	0	109	231
	-	103	0	138
	-	211	193	0

Demand (Veh/hr)

N8 - Eastern Prom/Harbour Quarter Access

		To		
		- The Portway	- New Harbour	- The
From	-	0	139	342
	-	122	0	5
	-	425	4	0

N8a - Proposed Hillsboro South Car Park Access

Demand (Veh/hr)

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	139	342
	-	122	0	5
	-	425	4	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N1 - Spine Access

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	1
	-	0	0	0
	-	2	0	0

N8 - Eastern Prom/Harbour Quarter Access

Heavy Vehicle %

		To		
		- The Portway	- New Harbour	- The
From	-	0	0.70	2
	-	0.79	0	0.79
	-	0.96	27	0

N8a - Proposed Hillsboro South Car Park Access

Heavy Vehicle %

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	0.70	2
	-	0.79	0	0.79
	-	0.96	27	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N1 - Spine Access	1 - New Road North	0.40	0.08	0.7	2.7	A	390	585
	2 - Proposed Spine Road	0.40	0.12	0.7	2.8	A	276	415
	3 - The Portway West	0.43	0.08	0.7	2.5	A	463	695

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N8 - Eastern Prom/Harbour Quarter Access	B-AC	0.56	0.44	1.3	5.6	D	146	219
	C-AB	0.02	0.08	0.0	0.5	A	13	19
	C-A						479	719
	A-B						159	239
	A-C						392	588
N8a - Proposed Hillsboro South Car Park Access	B-AC	0.57	0.45	1.3	5.7	D	146	219
	C-AB	0.02	0.08	0.0	0.5	A	12	18
	C-A						480	720
	A-B						159	239
	A-C						392	588

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	320	80	181	90.34	1242	0.258	319
	2 - Proposed Spine Road	-	227	57	216	150.57	887	0.256	225
	3 - The Portway West	-	380	95	96		1333	0.285	379
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	120	30		45.17	357	0.335	118
	-	C-AB	8	2		0.00	722	0.012	8
	-	C-A	395	99		0.00			395
	-	A-B	131	33		0.00			131
	-	A-C	322	80		0.00			322
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	120	30		0.00	370	0.323	118
	-	C-AB	8	2		0.00	748	0.011	8
	-	C-A	396	99		0.00			396
	-	A-B	131	33		0.00			131
	-	A-C	322	80		0.00			322

17:00 - 17:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	382	96	217	107.88	1215	0.314	382
	2 - Proposed Spine Road	-	271	68	259	179.80	867	0.312	270
	3 - The Portway West	-	454	113	116		1321	0.344	453
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	143	36		53.94	343	0.416	142
	-	C-AB	12	3		0.00	770	0.015	12
	-	C-A	470	118		0.00			470
	-	A-B	156	39		0.00			156
	-	A-C	384	96		0.00			384
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	143	36		0.00	344	0.415	142
	-	C-AB	11	3		0.00	794	0.014	11
	-	C-A	471	118		0.00			471
	-	A-B	156	39		0.00			156
	-	A-C	384	96		0.00			384

17:15 - 17:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	468	117	265	132.12	1175	0.398	467
	2 - Proposed Spine Road	-	332	83	317	220.20	834	0.398	331
	3 - The Portway West	-	556	139	141		1306	0.426	555
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	175	44		66.06	310	0.564	173
	-	C-AB	18	5		0.00	838	0.022	18
	-	C-A	572	143		0.00			572
	-	A-B	191	48		0.00			191
	-	A-C	471	118		0.00			471
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	175	44		0.00	308	0.568	173
	-	C-AB	17	4		0.00	860	0.020	17
	-	C-A	573	143		0.00			573
	-	A-B	191	48		0.00			191
	-	A-C	471	118		0.00			471

17:30 - 17:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	468	117	266	132.12	1183	0.396	468
	2 - Proposed Spine Road	-	332	83	318	220.20	844	0.393	332
	3 - The Portway West	-	556	139	142		1306	0.426	556
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	175	44		66.06	310	0.564	175
	-	C-AB	18	5		0.00	838	0.022	18
	-	C-A	572	143		0.00			572
	-	A-B	191	48		0.00			191
	-	A-C	471	118		0.00			471
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	175	44		0.00	308	0.568	175
	-	C-AB	17	4		0.00	860	0.020	17
	-	C-A	573	143		0.00			573
	-	A-B	191	48		0.00			191
	-	A-C	471	118		0.00			471

17:45 - 18:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	382	96	217	107.88	1226	0.312	383
	2 - Proposed Spine Road	-	271	68	260	179.80	881	0.307	272
	3 - The Portway West	-	454	113	116		1321	0.344	455
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	143	36		53.94	349	0.409	145
	-	C-AB	12	3		0.00	770	0.015	12
	-	C-A	470	118		0.00			470
	-	A-B	156	39		0.00			156
	-	A-C	384	96		0.00			384
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	143	36		0.00	344	0.415	145
	-	C-AB	11	3		0.00	795	0.014	11
	-	C-A	471	118		0.00			471
	-	A-B	156	39		0.00			156
	-	A-C	384	96		0.00			384

18:00 - 18:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	320	80	182	90.34	1256	0.255	320
	2 - Proposed Spine Road	-	227	57	218	150.57	906	0.250	227
	3 - The Portway West	-	380	95	97		1332	0.285	381
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	120	30		45.17	370	0.323	120
	-	C-AB	8	2		0.00	722	0.012	8
	-	C-A	395	99		0.00			395
	-	A-B	131	33		0.00			131
	-	A-C	322	80		0.00			322
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	120	30		0.00	370	0.323	120
	-	C-AB	8	2		0.00	749	0.011	8
	-	C-A	396	99		0.00			396
	-	A-B	131	33		0.00			131
	-	A-C	322	80		0.00			322

Queue Variation Results for each time segment

16:45 - 17:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.34	0.00	0.00	0.34	0.34			N/A	N/
	2 - Proposed Spine Road	-	0.34	0.00	0.00	0.34	0.34			N/A	N/
	3 - The Portway West	-	0.40	0.00	0.00	0.40	0.40			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.49	0.00	0.00	0.49	0.49			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.47	0.00	0.00	0.47	0.47			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

17:00 - 17:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.46	0.00	0.00	0.46	0.46			N/A	N/
	2 - Proposed Spine Road	-	0.45	0.00	0.00	0.45	0.45			N/A	N/
	3 - The Portway West	-	0.52	0.52	1.00	1.40	1.45			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.69	0.22	0.94	1.39	1.44			N/A	N/
	-	C-AB	0.02	0.02	0.25	0.45	0.48			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.69	0.20	0.93	1.39	1.44			N/A	N/
	-	C-AB	0.02	0.02	0.25	0.45	0.48			N/A	N/

17:15 - 17:30

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.66	0.03	0.25	0.66	0.66			N/A	N/
	2 - Proposed Spine Road	-	0.65	0.03	0.26	0.65	0.65			N/A	N/
	3 - The Portway West	-	0.73	0.03	0.25	0.73	0.73			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	1.22	0.03	0.29	1.25	4.86			N/A	N/
	-	C-AB	0.03	0.00	0.00	0.03	0.03			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	1.24	0.03	0.29	1.32	5.05			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/

17:30 - 17:45

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.66	0.03	0.28	1.00	2.72			N/A	N/
	2 - Proposed Spine Road	-	0.65	0.03	0.29	1.05	2.75			N/A	N/
	3 - The Portway West	-	0.74	0.03	0.28	0.74	2.47			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	1.25	0.03	0.29	1.25	5.61			N/A	N/
	-	C-AB	0.03	0.00	0.00	0.03	0.03			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	1.27	0.03	0.29	1.27	5.75			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/

17:45 - 18:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.46	0.00	0.00	0.46	0.46			N/A	N/
	2 - Proposed Spine Road	-	0.45	0.00	0.00	0.45	0.45			N/A	N/
	3 - The Portway West	-	0.53	0.53	1.00	1.40	1.45			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.72	0.05	0.53	1.19	1.74			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.73	0.05	0.56	1.24	1.77			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/

18:00 - 18:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.34	0.00	0.00	0.34	0.34			N/A	N/
	2 - Proposed Spine Road	-	0.34	0.00	0.00	0.34	0.34			N/A	N/
	3 - The Portway West	-	0.40	0.00	0.00	0.40	0.40			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.49	0.04	0.38	1.21	1.21			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.49	0.04	0.38	1.25	1.25			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

Scenario 2 - Sensitivity Test - D7 - 2033 | Total Traffic | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Scenario 2 - Sensitivity Test	Sensitivity test with +25% network traffic allowance.	✓	125.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (min)	Junction LOS
N1	Spine Access	Standard Roundabout					1, 2, 3	0.08	A
N8	Eastern Prom/Harbour Quarter Access	T-Junction	Two-way	Two-way	Two-way			0.03	A
N8a	Proposed Hillsboro South Car Park Access	T-Junction	Two-way	Two-way	Two-way			0.03	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (min)	Network LOS
Left	Normal/unknown	37	N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC	0.05	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N1 - Spine Access	1	New Road North			
	2	Proposed Spine Road			
	3	The Portway West			
N8 - Eastern Prom/Harbour Quarter Access	A	The Portway (North)			Major
	B	New Harbour Quarter Access	Former Eastern Promenade		Minor
	C	The Promenade (West)			Major
N8a - Proposed Hillsboro South Car Park Access	A	The Portway (South)			Major
	B	Hillsboro South Car Park			Minor
	C	The Portway (North)			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N1 - Spine Access	1 - New Road North	3.63	5.90	13.2	12.6	30.0	21.5		
	2 - Proposed Spine Road	3.38	3.80	30.0	36.4	30.0	22.0		
	3 - The Portway West	4.56	4.56	0.0	45.0	30.0	33.0		

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	7.30			104.0	✓	0.00
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	8.00			186.0	✓	0.00

Major Arm Geometry Notes

Junction	Arm	Notes
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	Assumed that right turn holder lane will be removed as part of dtailed design process
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	One lane	3.00	92	24
N8a - Proposed Hillsboro South Car Park Access	B - Hillsboro South Car Park	One lane	3.00	28	34

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N1 - Spine Access	1 - New Road North	4.00	3.00	2.90	1.00	6.00	6.00	7.00
	2 - Proposed Spine Road	3.00	3.00	2.90	1.00	6.00	6.00	7.00
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	1.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N1 - Spine Access	1 - New Road North	0.626	1544
	2 - Proposed Spine Road	0.572	1203
	3 - The Portway West	0.603	1405

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8 - Eastern Prom/Harbour Quarter Access	B-A	519	0.089	0.225	0.142	0.322
	B-C	639	0.092	0.233	-	-
	C-B	634	0.232	0.232	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8a - Proposed Hillsboro South Car Park Access	B-A	503	0.084	0.212	0.133	0.302
	B-C	645	0.090	0.228	-	-
	C-B	682	0.241	0.241	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2033	Total Traffic	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N1 - Spine Access	1 - New Road North		ONE HOUR	✓	412	100.000
	2 - Proposed Spine Road		ONE HOUR	✓	109	100.000
	3 - The Portway West		ONE HOUR	✓	379	100.000
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		ONE HOUR	✓	435	100.000
	B - New Harbour Quarter Access		ONE HOUR	✓	82	100.000
	C - The Promenade (West)		ONE HOUR	✓	350	100.000
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		ONE HOUR	✓	435	100.000
	B - Hillsboro South Car Park		ONE HOUR	✓	82	100.000
	C - The Portway (North)		ONE HOUR	✓	350	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N1 - Spine Access	1 - New Road North	[ONEHOUR]	120.00
	2 - Proposed Spine Road	[ONEHOUR]	200.00
	3 - The Portway West		
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		
	B - New Harbour Quarter Access	[ONEHOUR]	60.00
	C - The Promenade (West)		
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		
	B - Hillsboro South Car Park		
	C - The Portway (North)		

Origin-Destination Data

N1 - Spine Access

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	79	333
	-	43	0	66
	-	270	109	0

N8 - Eastern Prom/Harbour Quarter Access

Demand (Veh/hr)

		To		
		- The Portway	- New Harbour	- The
From	-	0	81	354
	-	77	0	5
	-	346	4	0

N8a - Proposed Hillsboro South Car Park Access

Demand (Veh/hr)

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	81	354
	-	77	0	5
	-	346	4	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N1 - Spine Access

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	2
	-	0	0	0
	-	1	0	0

N8 - Eastern Prom/Harbour Quarter Access

Heavy Vehicle %

		To		
		- The Portway	- New Harbour	- The
From	-	0	1	4
	-	1	0	0.48
	-	1	0.42	0

N8a - Proposed Hillsboro South Car Park Access

Heavy Vehicle %

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	1	4
	-	1	0	0.48
	-	1	0.42	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N1 - Spine Access	1 - New Road North	0.46	0.09	0.8	2.1	A	473	709
	2 - Proposed Spine Road	0.20	0.10	0.3	1.1	A	125	188
	3 - The Portway West	0.38	0.07	0.6	2.6	A	435	652

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N8 - Eastern Prom/Harbour Quarter Access	B-AC	0.36	0.29	0.5	2.5	C	94	141
	C-AB	0.02	0.08	0.0	0.5	A	9	14
	C-A						392	588
	A-B						93	139
	A-C						406	609
N8a - Proposed Hillsboro South Car Park Access	B-AC	0.35	0.28	0.5	2.4	C	94	141
	C-AB	0.01	0.08	0.0	0.5	A	9	14
	C-A						392	589
	A-B						93	139
	A-C						406	609

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	388	97	102	90.34	1276	0.304	386
	2 - Proposed Spine Road	-	103	26	312	150.57	833	0.123	102
	3 - The Portway West	-	357	89	40		1371	0.260	355
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	77	19		45.17	364	0.212	76
	-	C-AB	7	2		0.00	761	0.009	7
	-	C-A	323	81		0.00			323
	-	A-B	76	19		0.00			76
	-	A-C	333	83		0.00			333
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	77	19		0.00	381	0.202	76
	-	C-AB	6	2		0.00	797	0.008	6
	-	C-A	323	81		0.00			323
	-	A-B	76	19		0.00			76
	-	A-C	333	83		0.00			333

08:00 - 08:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	463	116	122	107.88	1261	0.367	462
	2 - Proposed Spine Road	-	122	31	374	179.80	791	0.155	122
	3 - The Portway West	-	426	106	48		1366	0.312	425
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	92	23		53.94	344	0.268	92
	-	C-AB	9	2		0.00	791	0.011	9
	-	C-A	384	96		0.00			384
	-	A-B	91	23		0.00			91
	-	A-C	398	99		0.00			398
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	92	23		0.00	357	0.258	92
	-	C-AB	9	2		0.00	824	0.010	9
	-	C-A	385	96		0.00			385
	-	A-B	91	23		0.00			91
	-	A-C	398	99		0.00			398

08:15 - 08:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	567	142	150	132.12	1237	0.458	566
	2 - Proposed Spine Road	-	150	38	457	220.20	735	0.204	150
	3 - The Portway West	-	522	130	59		1360	0.384	521
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	113	28		66.06	316	0.357	112
	-	C-AB	13	3		0.00	834	0.015	13
	-	C-A	469	117		0.00			469
	-	A-B	111	28		0.00			111
	-	A-C	487	122		0.00			487
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	113	28		0.00	324	0.348	112
	-	C-AB	12	3		0.00	864	0.014	12
	-	C-A	469	117		0.00			469
	-	A-B	111	28		0.00			111
	-	A-C	487	122		0.00			487

08:30 - 08:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	567	142	150	132.12	1247	0.455	567
	2 - Proposed Spine Road	-	150	38	458	220.20	739	0.203	150
	3 - The Portway West	-	522	130	59		1359	0.384	522
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	113	28		66.06	321	0.352	113
	-	C-AB	13	3		0.00	834	0.015	13
	-	C-A	469	117		0.00			469
	-	A-B	111	28		0.00			111
	-	A-C	487	122		0.00			487
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	113	28		0.00	324	0.348	113
	-	C-AB	12	3		0.00	864	0.014	12
	-	C-A	469	117		0.00			469
	-	A-B	111	28		0.00			111
	-	A-C	487	122		0.00			487

08:45 - 09:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	463	116	123	107.88	1276	0.363	464
	2 - Proposed Spine Road	-	122	31	375	179.80	796	0.154	123
	3 - The Portway West	-	426	106	48		1366	0.312	427
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	92	23		53.94	350	0.263	93
	-	C-AB	9	2		0.00	791	0.011	9
	-	C-A	384	96		0.00			384
	-	A-B	91	23		0.00			91
	-	A-C	398	99		0.00			398
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	92	23		0.00	357	0.258	93
	-	C-AB	9	2		0.00	824	0.010	9
	-	C-A	385	96		0.00			385
	-	A-B	91	23		0.00			91
	-	A-C	398	99		0.00			398

09:00 - 09:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	388	97	103	90.34	1294	0.300	388
	2 - Proposed Spine Road	-	103	26	314	150.57	840	0.122	103
	3 - The Portway West	-	357	89	41		1371	0.260	357
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	77	19		45.17	370	0.208	78
	-	C-AB	7	2		0.00	761	0.009	7
	-	C-A	323	81		0.00			323
	-	A-B	76	19		0.00			76
	-	A-C	333	83		0.00			333
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	77	19		0.00	381	0.202	78
	-	C-AB	6	2		0.00	797	0.008	6
	-	C-A	323	81		0.00			323
	-	A-B	76	19		0.00			76
	-	A-C	333	83		0.00			333

Queue Variation Results for each time segment

07:45 - 08:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.43	0.00	0.00	0.43	0.43			N/A	N/
	2 - Proposed Spine Road	-	0.14	0.00	0.00	0.14	0.14			N/A	N/
	3 - The Portway West	-	0.35	0.00	0.00	0.35	0.35			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.26	0.00	0.00	0.26	0.26			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.25	0.00	0.00	0.25	0.25			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

08:00 - 08:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.58	0.10	0.82	1.36	1.43			N/A	N/
	2 - Proposed Spine Road	-	0.18	0.00	0.00	0.18	0.18			N/A	N/
	3 - The Portway West	-	0.45	0.00	0.00	0.45	0.45			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.36	0.00	0.00	0.36	0.36			N/A	N/
	-	C-AB	0.01	0.01	0.25	0.45	0.48			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.34	0.00	0.00	0.34	0.34			N/A	N/
	-	C-AB	0.01	0.01	0.25	0.45	0.48			N/A	N/

08:15 - 08:30

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.84	0.03	0.26	0.84	0.84			N/A	N/
	2 - Proposed Spine Road	-	0.25	0.03	0.25	0.46	0.48			N/A	N/
	3 - The Portway West	-	0.62	0.03	0.25	0.62	0.62			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.54	0.03	0.26	0.54	0.54			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.52	0.03	0.26	0.52	0.52			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/

08:30 - 08:45

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.84	0.03	0.27	0.84	2.11			N/A	N/
	2 - Proposed Spine Road	-	0.25	0.03	0.29	0.76	1.14			N/A	N/
	3 - The Portway West	-	0.62	0.03	0.29	1.03	2.63			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.54	0.03	0.30	1.39	2.52			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.53	0.03	0.30	1.41	2.42			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/

08:45 - 09:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.57	0.55	1.00	1.40	1.45			N/A	N/
	2 - Proposed Spine Road	-	0.18	0.00	0.00	0.18	0.18			N/A	N/
	3 - The Portway West	-	0.46	0.00	0.00	0.46	0.46			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.36	0.03	0.26	0.48	0.61			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.35	0.03	0.26	0.46	0.49			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

09:00 - 09:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.43	0.00	0.00	0.43	0.43			N/A	N/
	2 - Proposed Spine Road	-	0.14	0.00	0.00	0.14	0.14			N/A	N/
	3 - The Portway West	-	0.35	0.00	0.00	0.35	0.35			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.27	0.03	0.25	0.45	0.48			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.26	0.03	0.25	0.45	0.48			N/A	N/
	-	C-AB	0.01	0.00	0.00	0.01	0.01			N/A	N/

Scenario 2 - Sensitivity Test - D8 - 2033 | Total Traffic | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Scenario 2 - Sensitivity Test	Sensitivity test with +25% network traffic allowance.	✓	125.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Arm order	Junction Delay (min)	Junction LOS
N1	Spine Access	Standard Roundabout					1, 2, 3	0.09	A
N8	Eastern Prom/Harbour Quarter Access	T-Junction	Two-way	Two-way	Two-way			0.06	A
N8a	Proposed Hillsboro South Car Park Access	T-Junction	Two-way	Two-way	Two-way			0.06	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (min)	Network LOS
Left	Normal/unknown	4	N8 - Eastern Prom/Harbour Quarter Access - Stream B-AC	0.07	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N1 - Spine Access	1	New Road North			
	2	Proposed Spine Road			
	3	The Portway West			
N8 - Eastern Prom/Harbour Quarter Access	A	The Portway (North)			Major
	B	New Harbour Quarter Access	Former Eastern Promenade		Minor
	C	The Promenade (West)			Major
N8a - Proposed Hillsboro South Car Park Access	A	The Portway (South)			Major
	B	Hillsboro South Car Park			Minor
	C	The Portway (North)			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N1 - Spine Access	1 - New Road North	3.63	5.90	13.2	12.6	30.0	21.5		
	2 - Proposed Spine Road	3.38	3.80	30.0	36.4	30.0	22.0		
	3 - The Portway West	4.56	4.56	0.0	45.0	30.0	33.0		

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	7.30			104.0	✓	0.00
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	8.00			186.0	✓	0.00

Major Arm Geometry Notes

Junction	Arm	Notes
N8 - Eastern Prom/Harbour Quarter Access	C - The Promenade (West)	Assumed that right turn holder lane will be removed as part of dtailed design process
N8a - Proposed Hillsboro South Car Park Access	C - The Portway (North)	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	One lane	3.00	92	24
N8a - Proposed Hillsboro South Car Park Access	B - Hillsboro South Car Park	One lane	3.00	28	34

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N1 - Spine Access	1 - New Road North	4.00	3.00	2.90	1.00	6.00	6.00	7.00
	2 - Proposed Spine Road	3.00	3.00	2.90	1.00	6.00	6.00	7.00
N8 - Eastern Prom/Harbour Quarter Access	B - New Harbour Quarter Access	1.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N1 - Spine Access	1 - New Road North	0.626	1544
	2 - Proposed Spine Road	0.572	1203
	3 - The Portway West	0.603	1405

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8 - Eastern Prom/Harbour Quarter Access	B-A	519	0.089	0.225	0.142	0.322
	B-C	639	0.092	0.233	-	-
	C-B	634	0.232	0.232	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N8a - Proposed Hillsboro South Car Park Access	B-A	503	0.084	0.212	0.133	0.302
	B-C	645	0.090	0.228	-	-
	C-B	682	0.241	0.241	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2033	Total Traffic	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N1 - Spine Access	1 - New Road North		ONE HOUR	✓	356	100.000
	2 - Proposed Spine Road		ONE HOUR	✓	241	100.000
	3 - The Portway West		ONE HOUR	✓	425	100.000
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		ONE HOUR	✓	502	100.000
	B - New Harbour Quarter Access		ONE HOUR	✓	133	100.000
	C - The Promenade (West)		ONE HOUR	✓	459	100.000
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		ONE HOUR	✓	502	100.000
	B - Hillsboro South Car Park		ONE HOUR	✓	133	100.000
	C - The Portway (North)		ONE HOUR	✓	459	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N1 - Spine Access	1 - New Road North	[ONEHOUR]	120.00
	2 - Proposed Spine Road	[ONEHOUR]	200.00
	3 - The Portway West		
N8 - Eastern Prom/Harbour Quarter Access	A - The Portway (North)		
	B - New Harbour Quarter Access	[ONEHOUR]	60.00
	C - The Promenade (West)		
N8a - Proposed Hillsboro South Car Park Access	A - The Portway (South)		
	B - Hillsboro South Car Park		
	C - The Portway (North)		

Origin-Destination Data

Demand (Veh/hr)

N1 - Spine Access

		To		
		-	-	-
From	-	0	109	247
	-	103	0	138
	-	232	193	0

Demand (Veh/hr)

N8 - Eastern Prom/Harbour Quarter Access

		To		
		- The Portway	- New Harbour	- The
From	-	0	141	361
	-	123	0	10
	-	451	8	0

N8a - Proposed Hillsboro South Car Park Access

Demand (Veh/hr)

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	141	361
	-	123	0	10
	-	451	8	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N1 - Spine Access

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	1
	-	0	0	0
	-	2	0	0

N8 - Eastern Prom/Harbour Quarter Access

Heavy Vehicle %

		To		
		- The Portway	- New Harbour	- The
From	-	0	0.69	2
	-	0.78	0	0.36
	-	0.97	14	0

N8a - Proposed Hillsboro South Car Park Access

Heavy Vehicle %

		To		
		- The Portway	- Hillsboro South	- The Portway
From	-	0	0.69	2
	-	0.78	0	0.36
	-	0.97	14	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N1 - Spine Access	1 - New Road North	0.42	0.09	0.7	2.7	A	408	613
	2 - Proposed Spine Road	0.40	0.12	0.7	2.8	A	276	415
	3 - The Portway West	0.45	0.08	0.8	2.2	A	487	731

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (min)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N8 - Eastern Prom/Harbour Quarter Access	B-AC	0.61	0.50	1.5	6.9	D	153	229
	C-AB	0.04	0.08	0.1	0.5	A	26	38
	C-A						501	751
	A-B						162	243
	A-C						414	621
N8a - Proposed Hillsboro South Car Park Access	B-AC	0.61	0.51	1.5	7.0	D	153	229
	C-AB	0.04	0.08	0.1	0.5	A	24	36
	C-A						502	753
	A-B						162	243
	A-C						414	621

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	335	84	181	90.34	1243	0.270	334
	2 - Proposed Spine Road	-	227	57	231	150.57	880	0.258	225
	3 - The Portway West	-	400	100	96		1332	0.300	398
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	125	31		45.17	354	0.354	123
	-	C-AB	17	4		0.00	774	0.022	17
	-	C-A	415	104		0.00			415
	-	A-B	133	33		0.00			133
	-	A-C	340	85		0.00			340
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	125	31		0.00	366	0.342	123
	-	C-AB	16	4		0.00	803	0.020	16
	-	C-A	416	104		0.00			416
	-	A-B	133	33		0.00			133
	-	A-C	340	85		0.00			340

17:00 - 17:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	400	100	217	107.88	1217	0.329	400
	2 - Proposed Spine Road	-	271	68	277	179.80	859	0.315	270
	3 - The Portway West	-	478	119	116		1321	0.362	477
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	149	37		53.94	340	0.439	149
	-	C-AB	24	6		0.00	822	0.029	23
	-	C-A	492	123		0.00			492
	-	A-B	158	40		0.00			158
	-	A-C	406	101		0.00			406
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	149	37		0.00	339	0.441	148
	-	C-AB	22	6		0.00	849	0.026	22
	-	C-A	493	123		0.00			493
	-	A-B	158	40		0.00			158
	-	A-C	406	101		0.00			406

17:15 - 17:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	490	122	265	132.12	1179	0.416	489
	2 - Proposed Spine Road	-	332	83	339	220.20	825	0.402	331
	3 - The Portway West	-	585	146	141		1305	0.448	584
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	183	46		66.06	302	0.607	180
	-	C-AB	36	9		0.00	891	0.041	36
	-	C-A	595	149		0.00			595
	-	A-B	194	49		0.00			194
	-	A-C	497	124		0.00			497
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	183	46		0.00	300	0.610	180
	-	C-AB	34	9		0.00	914	0.038	34
	-	C-A	597	149		0.00			597
	-	A-B	194	49		0.00			194
	-	A-C	497	124		0.00			497

17:30 - 17:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	490	122	266	132.12	1187	0.413	490
	2 - Proposed Spine Road	-	332	83	340	220.20	836	0.397	332
	3 - The Portway West	-	585	146	142		1305	0.448	585
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	183	46		66.06	302	0.607	183
	-	C-AB	36	9		0.00	891	0.041	36
	-	C-A	595	149		0.00			595
	-	A-B	194	49		0.00			194
	-	A-C	497	124		0.00			497
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	183	46		0.00	300	0.610	183
	-	C-AB	34	9		0.00	914	0.038	34
	-	C-A	597	149		0.00			597
	-	A-B	194	49		0.00			194
	-	A-C	497	124		0.00			497

17:45 - 18:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	400	100	217	107.88	1229	0.326	401
	2 - Proposed Spine Road	-	271	68	278	179.80	874	0.310	272
	3 - The Portway West	-	478	119	116		1320	0.362	479
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	149	37		53.94	342	0.436	152
	-	C-AB	24	6		0.00	822	0.029	24
	-	C-A	492	123		0.00			492
	-	A-B	158	40		0.00			158
	-	A-C	406	101		0.00			406
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	149	37		0.00	339	0.441	152
	-	C-AB	22	6		0.00	849	0.026	22
	-	C-A	493	123		0.00			493
	-	A-B	158	40		0.00			158
	-	A-C	406	101		0.00			406

18:00 - 18:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)
N1 - Spine Access	1 - New Road North	-	335	84	182	90.34	1258	0.266	336
	2 - Proposed Spine Road	-	227	57	233	150.57	899	0.252	227
	3 - The Portway West	-	400	100	97		1332	0.300	401
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	125	31		45.17	368	0.340	126
	-	C-AB	17	4		0.00	775	0.022	17
	-	C-A	415	104		0.00			415
	-	A-B	133	33		0.00			133
	-	A-C	340	85		0.00			340
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	125	31		0.00	366	0.342	126
	-	C-AB	16	4		0.00	803	0.020	16
	-	C-A	416	104		0.00			416
	-	A-B	133	33		0.00			133
	-	A-C	340	85		0.00			340

Queue Variation Results for each time segment

16:45 - 17:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.37	0.00	0.00	0.37	0.37			N/A	N/
	2 - Proposed Spine Road	-	0.34	0.00	0.00	0.34	0.34			N/A	N/
	3 - The Portway West	-	0.43	0.00	0.00	0.43	0.43			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.53	0.53	1.00	1.40	1.45			N/A	N/
	-	C-AB	0.03	0.00	0.00	0.03	0.03			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.51	0.51	1.00	1.40	1.45			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/

17:00 - 17:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.49	0.00	0.00	0.49	0.49			N/A	N/
	2 - Proposed Spine Road	-	0.46	0.00	0.00	0.46	0.46			N/A	N/
	3 - The Portway West	-	0.56	0.09	0.81	1.36	1.43			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.76	0.19	0.93	1.39	1.45			N/A	N/
	-	C-AB	0.04	0.03	0.25	0.45	0.48			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.76	0.18	0.93	1.39	1.45			N/A	N/
	-	C-AB	0.03	0.03	0.25	0.45	0.48			N/A	N/

17:15 - 17:30

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.70	0.03	0.25	0.70	0.70			N/A	N/
	2 - Proposed Spine Road	-	0.66	0.03	0.26	0.66	0.66			N/A	N/
	3 - The Portway West	-	0.80	0.03	0.25	0.80	0.80			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	1.43	0.03	0.30	1.76	6.79			N/A	N/
	-	C-AB	0.06	0.03	0.25	0.45	0.48			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	1.45	0.03	0.30	1.84	6.93			N/A	N/
	-	C-AB	0.05	0.03	0.25	0.45	0.48			N/A	N/

17:30 - 17:45

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.70	0.03	0.28	0.79	2.68			N/A	N/
	2 - Proposed Spine Road	-	0.66	0.03	0.29	1.03	2.77			N/A	N/
	3 - The Portway West	-	0.81	0.03	0.27	0.81	2.18			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	1.48	0.03	0.30	1.68	6.88			N/A	N/
	-	C-AB	0.06	0.00	0.00	0.06	0.06			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	1.50	0.03	0.30	1.71	6.97			N/A	N/
	-	C-AB	0.05	0.00	0.00	0.05	0.05			N/A	N/

17:45 - 18:00

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.49	0.00	0.00	0.49	0.49			N/A	N/
	2 - Proposed Spine Road	-	0.45	0.00	0.00	0.45	0.45			N/A	N/
	3 - The Portway West	-	0.57	0.55	1.00	1.40	1.45			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.80	0.05	0.49	1.60	2.21			N/A	N/
	-	C-AB	0.04	0.00	0.00	0.04	0.04			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.82	0.05	0.50	1.64	2.29			N/A	N/
	-	C-AB	0.03	0.00	0.00	0.03	0.03			N/A	N/

18:00 - 18:15

Junction	Arm	Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Proba of ex reac mar
N1 - Spine Access	1 - New Road North	-	0.37	0.00	0.00	0.37	0.37			N/A	N/
	2 - Proposed Spine Road	-	0.34	0.00	0.00	0.34	0.34			N/A	N/
	3 - The Portway West	-	0.43	0.00	0.00	0.43	0.43			N/A	N/
N8 - Eastern Prom/Harbour Quarter Access	-	B-AC	0.53	0.04	0.37	1.46	1.67			N/A	N/
	-	C-AB	0.03	0.00	0.00	0.03	0.03			N/A	N/
N8a - Proposed Hillsboro South Car Park Access	-	B-AC	0.53	0.04	0.37	1.47	1.70			N/A	N/
	-	C-AB	0.02	0.00	0.00	0.02	0.02			N/A	N/

Junctions 11

ARCADY 11 - Roundabout Module
PICADY 11 - Priority Intersection Module

Version: 11.1.0.2307
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Filename: Existing Network - Off Site Junctions V2.j11
Path: C:\LinkTP\Porthcawl_Waterfront\01 - Junctions 10
Report generation date: 11/11/2025 18:51:38

Core Assessment - D1 - 2026 | Forecast Base | AM
Core Assessment - D2 - 2026 | Forecast Base | PM
Core Assessment - D3 - 2026 | Total Traffic | AM
Core Assessment - D4 - 2026 | Total Traffic | PM
Core Assessment - D5 - 2033 | Forecast Base | AM
Core Assessment - D6 - 2033 | Forecast Base | PM
Core Assessment - D7 - 2033 | Total Traffic | AM
Core Assessment - D8 - 2033 | Total Traffic | PM
Sensitivity Test - D1 - 2026 | Forecast Base | AM
Sensitivity Test - D2 - 2026 | Forecast Base | PM
Sensitivity Test - D3 - 2026 | Total Traffic | AM
Sensitivity Test - D4 - 2026 | Total Traffic | PM
Sensitivity Test - D5 - 2033 | Forecast Base | AM
Sensitivity Test - D6 - 2033 | Forecast Base | PM
Sensitivity Test - D7 - 2033 | Total Traffic | AM
Sensitivity Test - D8 - 2033 | Total Traffic | PM

Summary of junction performance

	AM											
	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (Veh)	95% Queue (Veh)
	Core Assessment - 2026 - Forecast B											
N2 - Portway Roundabout - 1 - Eastern Prom		0.2	0.5	3.11	0.18	A	3.64	A			0.3	1.3
N2 - Portway Roundabout - 2 - Aldi		0.1	0.5	4.18	0.09	A					0.2	0.7
N2 - Portway Roundabout - 3 - The Portway		0.3	1.4	3.87	0.25	A					0.5	2.2
N2 - Portway Roundabout - 4 - Hillsboro North Car Park		0.0	0.5	3.14	0.02	A					0.1	0.5
N2 - Portway Roundabout - 5 - Lias Road		0.7	2.6	5.36	0.42	A					1.4	1.8
N2 - Portway Roundabout - 6 - A4106 (North)		0.5	2.0	2.46	0.32	A					0.4	1.3
N3 - New Road/Eastern Prom - 1 - New Road East		0.2	0.5	3.41	0.16	A	2.94	A			0.2	0.5
N3 - New Road/Eastern Prom - 2 - Eastern Prom (South)		0.2	0.5	2.57	0.17	A					0.3	1.3
N3 - New Road/Eastern Prom - 3 - New Road West		0.2	0.5	3.01	0.13	A					0.2	0.5
N4 - New Road/Mackworth Rd - 1 - New Rd (East)		0.2	0.5	4.73	0.15	A	4.53	A			0.3	1.1
N4 - New Road/Mackworth Rd - 2 - Mackworth Road		0.1	0.5	4.83	0.11	A					0.2	0.5
N4 - New Road/Mackworth Rd - 3 - New Rd (West)		0.2	0.5	4.16	0.14	A					0.3	1.2
N5 - New Road/Aldenham - 1 - Aldenham Road (North)		0.2	1.1	4.90	0.20	A	5.94	A			0.5	2.4
N5 - New Road/Aldenham - 2 - New Road (East)		0.4	1.9	7.16	0.31	A					0.5	2.4
N5 - New Road/Aldenham - 3 - New Road (West)		0.2	0.5	5.18	0.15	A					0.3	1.4

N6 - A4106/Bridgend Road - 1 - A4106 Bridgend Rd (East)	A1 D1	0.0	0.5	2.36	0.00	A	2.36	A	26 % [N11 - Bridgend Road/Manor Grove - Stream B-A]	A1 D2	0.8	2.4
N6 - A4106/Bridgend Road - 2 - Bridgend Road (South)		0.0	~1	0.00	0.00	A					0.3	1.3
N6 - A4106/Bridgend Road - 3 - A4106 (West)		0.0	~1	0.00	0.00	A					0.5	2.1
N6 - A4106/Bridgend Road - 4 - Tyn-y-Caeau Lane		0.0	~1	0.00	0.00	A					0.0	0.5
N7 - A4106/A4229/Fulmar Rd - 1 - A4106 (East)		1.2	1.5	5.60	0.55	A	5.18	A			1.1	1.4
N7 - A4106/A4229/Fulmar Rd - 2 - A4106 (South)		0.4	1.5	2.61	0.30	A					0.5	2.0
N7 - A4106/A4229/Fulmar Rd - 3 - Fulmar Road		1.2	1.8	7.17	0.55	A					0.6	2.7
N7 - A4106/A4229/Fulmar Rd - 4 - A4229 Pyle Road (North)		1.0	1.6	5.09	0.50	A					1.6	2.0
N9a - A4106 Junction (North) - Stream B-C		0.5	2.1	9.37	0.33	A	2.86	A			0.5	2.4
N9a - A4106 Junction (North) - Stream B-A		0.2	0.6	15.04	0.17	C					0.1	0.5
N9a - A4106 Junction (North) - Stream C-AB		0.4	1.4	8.35	0.27	A					0.6	2.6
N9b - A4106 Junction (South) - Stream B-C		0.4	1.4	7.07	0.27	A	5.48	A			0.5	2.3
N9b - A4106 Junction (South) - Stream B-A		0.1	0.5	9.07	0.09	A					0.2	0.5
N9b - A4106 Junction (South) - Stream C-AB		0.5	2.0	8.30	0.31	A					0.5	2.5
N10 - Newton Nottage Road/Aldenham Road - Stream B-ACD		0.0	~1	0.00	0.00	A	3.07	A			0.0	~1
N10 - Newton Nottage Road/Aldenham Road - Stream A-BCD		0.1	0.5	6.46	0.07	A					0.1	0.6
N10 - Newton Nottage Road/Aldenham Road - Stream D-AB		0.1	0.5	7.74	0.11	A					0.2	0.5
N10 - Newton Nottage Road/Aldenham Road - Stream D-BC		0.2	1.2	9.99	0.20	A					0.5	2.5
N10 - Newton Nottage Road/Aldenham Road - Stream C-ABD		0.0	0.5	4.94	0.00	A					0.0	0.5
N11 - Bridgend Road/Manor Grove - Stream B-C		0.2	0.5	10.04	0.15	B	5.50	A			0.1	0.5
N11 - Bridgend Road/Manor Grove - Stream B-A		1.2	4.3	18.33	0.54	C					0.7	3.1
N11 - Bridgend Road/Manor Grove - Stream C-AB		0.2	1.0	5.67	0.11	A					0.2	0.5
	Core Assessment - 2026 - Total Traf											
N2 - Portway Roundabout - 1 - Eastern Prom	A1 D3	0.3	1.4	3.54	0.26	A	4.23	A	17 % [N11 - Bridgend Road/Manor Grove - Stream B-A]	A1 D4	0.5	1.9
N2 - Portway Roundabout - 2 - Aldi		0.3	1.2	5.01	0.22	A					0.6	2.8
N2 - Portway Roundabout - 3 - The Portway		0.6	2.8	4.79	0.38	A					1.3	1.5
N2 - Portway Roundabout - 4 - Hillsboro North Car Park		0.0	~1	0.00	0.00	A					0.0	0.5
N2 - Portway Roundabout - 5 - Lias Road		0.9	2.6	6.38	0.47	A					2.1	6.2
N2 - Portway Roundabout - 6 - A4106 (North)		0.6	2.8	2.74	0.39	A					0.6	2.8
N3 - New Road/Eastern Prom - 1 - New Road East		0.3	1.1	3.62	0.21	A	3.10	A			0.2	0.5
N3 - New Road/Eastern Prom - 2 - Eastern Prom (South)		0.2	0.5	2.65	0.19	A					0.3	0.9
N3 - New Road/Eastern Prom - 3 - New Road West		0.2	0.5	3.13	0.13	A					0.2	0.5
N4 - New Road/Mackworth Rd - 1 - New Rd (East)		0.3	1.5	5.46	0.25	A	5.09	A			0.2	1.0
N4 - New Road/Mackworth Rd - 2 - Mackworth Road		0.2	0.5	5.37	0.17	A					0.0	0.5
N4 - New Road/Mackworth Rd - 3 - New Rd (West)		0.2	0.7	4.43	0.18	A					0.2	0.5
N5 - New Road/Aldenham - 1 - Aldenham Road (North)		0.4	1.7	5.52	0.29	A	6.36	A			0.5	2.4
N5 - New Road/Aldenham - 2 - New Road (East)		0.5	2.2	7.98	0.33	A					0.5	2.4
N5 - New Road/Aldenham - 3 - New Road (West)		0.2	1.0	5.44	0.19	A					0.3	1.5
N6 - A4106/Bridgend Road - 1 - A4106 Bridgend Rd (East)		0.7	2.6	4.32	0.41	A	4.12	A			1.2	1.5
N6 - A4106/Bridgend Road - 2 - Bridgend Road (South)		0.4	1.8	3.72	0.31	A					0.4	1.5
N6 - A4106/Bridgend Road - 3 - A4106 (West)		0.6	2.7	4.22	0.39	A					0.7	2.5
N6 - A4106/Bridgend Road - 4 - Tyn-y-Caeau Lane		0.0	~1	0.00	0.00	A					0.0	0.5
N7 - A4106/A4229/Fulmar Rd - 1 - A4106 (East)		1.8	2.5	7.57	0.65	A	6.54	A			2.0	2.8
N7 - A4106/A4229/Fulmar Rd - 2 - A4106 (South)		0.7	2.7	3.15	0.42	A					0.9	1.9
N7 - A4106/A4229/Fulmar Rd - 3 - Fulmar Road		1.6	2.4	9.18	0.62	A					0.7	2.9
N7 - A4106/A4229/Fulmar Rd - 4 - A4229 Pyle Road (North)		1.6	2.0	6.79	0.62	A					2.8	8.7
N9a - A4106 Junction (North) - Stream B-C		0.5	2.3	10.07	0.34	B	2.80	A			0.6	2.7
N9a - A4106 Junction (North) - Stream B-A		0.2	1.0	17.06	0.18	C					0.1	0.5
N9a - A4106 Junction (North) - Stream C-AB		0.4	1.6	8.84	0.29	A					0.6	2.9
N9b - A4106 Junction (South) - Stream B-C		0.4	1.4	7.07	0.27	A	5.48	A			0.5	2.3
N9b - A4106 Junction (South) - Stream B-A		0.1	0.5	9.07	0.09	A					0.2	0.5
N9b - A4106 Junction (South) - Stream C-AB		0.5	2.0	8.30	0.31	A					0.5	2.5
N10 - Newton Nottage Road/Aldenham Road - Stream B-ACD		0.0	~1	0.00	0.00	A	2.64	A			0.0	~1
N10 - Newton Nottage Road/Aldenham Road - Stream A-BCD		0.1	0.8	5.98	0.08	A					0.1	0.6
N10 - Newton Nottage Road/Aldenham Road - Stream D-AB		0.1	0.5	7.96	0.12	A					0.2	0.5
N10 - Newton Nottage Road/Aldenham Road - Stream D-BC		0.3	1.3	10.59	0.21	B					0.5	2.5
N10 - Newton Nottage Road/Aldenham Road - Stream C-ABD		0.0	0.5	4.93	0.00	A					0.0	0.5

N11 - Bridgend Road/Manor Grove - Stream B-C		0.2	0.5	11.11	0.16	B					0.1	0.5
N11 - Bridgend Road/Manor Grove - Stream B-A		1.3	5.2	21.20	0.58	C	5.59	A			0.7	3.1
N11 - Bridgend Road/Manor Grove - Stream C-AB		0.2	1.2	5.65	0.11	A					0.2	0.5
Core Assessment - 2033 - Forecast B												
N2 - Portway Roundabout - 1 - Eastern Prom		0.2	0.5	3.23	0.19	A					0.3	1.4
N2 - Portway Roundabout - 2 - Aldi		0.1	0.5	4.33	0.10	A					0.2	0.6
N2 - Portway Roundabout - 3 - The Portway		0.4	1.2	4.02	0.27	A	3.84	A			0.5	2.1
N2 - Portway Roundabout - 4 - Hillsboro North Car Park		0.0	0.5	3.21	0.03	A					0.1	0.5
N2 - Portway Roundabout - 5 - Lias Road		0.8	2.3	5.77	0.46	A					1.8	2.8
N2 - Portway Roundabout - 6 - A4106 (North)		0.5	2.5	2.57	0.35	A					0.5	1.8
N3 - New Road/Eastern Prom - 1 - New Road East		0.2	0.5	3.47	0.17	A					0.2	0.5
N3 - New Road/Eastern Prom - 2 - Eastern Prom (South)		0.2	0.5	2.62	0.18	A	3.00	A			0.3	1.4
N3 - New Road/Eastern Prom - 3 - New Road West		0.2	0.5	3.08	0.14	A					0.2	0.5
N4 - New Road/Mackworth Rd - 1 - New Rd (East)		0.2	0.5	4.81	0.16	A					0.3	1.2
N4 - New Road/Mackworth Rd - 2 - Mackworth Road		0.1	0.5	4.90	0.12	A	4.60	A			0.2	0.5
N4 - New Road/Mackworth Rd - 3 - New Rd (West)		0.2	0.5	4.22	0.15	A					0.3	1.3
N5 - New Road/Aldenham - 1 - Aldenham Road (North)		0.3	1.2	5.00	0.21	A					0.6	2.6
N5 - New Road/Aldenham - 2 - New Road (East)		0.5	2.2	7.45	0.33	A	6.12	A			0.6	2.7
N5 - New Road/Aldenham - 3 - New Road (West)		0.2	0.5	5.29	0.16	A					0.4	1.2
N6 - A4106/Bridgend Road - 1 - A4106 Bridgend Rd (East)		0.4	1.9	3.70	0.31	A					0.9	1.9
N6 - A4106/Bridgend Road - 2 - Bridgend Road (South)		0.4	1.6	3.55	0.29	A	3.80	A	18 %		0.4	1.5
N6 - A4106/Bridgend Road - 3 - A4106 (West)		0.6	2.7	4.08	0.37	A					0.5	2.5
N6 - A4106/Bridgend Road - 4 - Tyn-y-Caeau Lane	A1 D5	0.0	~1	0.00	0.00	A			[N11 - Bridgend Road/Manor Grove - Stream B-A]	A1 D6	0.0	0.5
N7 - A4106/A4229/Fulmar Rd - 1 - A4106 (East)		1.5	1.8	6.36	0.60	A					1.3	1.5
N7 - A4106/A4229/Fulmar Rd - 2 - A4106 (South)		0.5	1.9	2.75	0.32	A	5.83	A			0.6	2.6
N7 - A4106/A4229/Fulmar Rd - 3 - Fulmar Road		1.5	1.9	8.28	0.60	A					0.7	2.8
N7 - A4106/A4229/Fulmar Rd - 4 - A4229 Pyle Road (North)		1.2	1.5	5.65	0.55	A					2.0	3.0
N9a - A4106 Junction (North) - Stream B-C		0.6	2.6	10.10	0.36	B					0.6	2.8
N9a - A4106 Junction (North) - Stream B-A		0.2	1.1	16.60	0.19	C	3.07	A			0.1	0.5
N9a - A4106 Junction (North) - Stream C-AB		0.4	1.8	8.77	0.30	A					0.6	2.9
N9b - A4106 Junction (South) - Stream B-C		0.4	1.7	7.31	0.29	A					0.6	2.6
N9b - A4106 Junction (South) - Stream B-A		0.1	0.5	9.35	0.10	A	5.69	A			0.2	0.5
N9b - A4106 Junction (South) - Stream C-AB		0.5	2.4	8.59	0.33	A					0.6	2.8
N10 - Newton Nottage Road/Aldenham Road - Stream B-ACD		0.0	~1	0.00	0.00	A					0.0	~1
N10 - Newton Nottage Road/Aldenham Road - Stream A-BCD		0.1	0.5	6.51	0.08	A					0.1	0.7
N10 - Newton Nottage Road/Aldenham Road - Stream D-AB		0.1	0.5	7.93	0.12	A	3.15	A			0.2	0.9
N10 - Newton Nottage Road/Aldenham Road - Stream D-BC		0.3	1.3	10.32	0.22	B					0.6	2.8
N10 - Newton Nottage Road/Aldenham Road - Stream C-ABD		0.0	0.5	4.90	0.00	A					0.0	0.5
N11 - Bridgend Road/Manor Grove - Stream B-C		0.2	0.6	11.17	0.17	B					0.1	0.5
N11 - Bridgend Road/Manor Grove - Stream B-A		1.4	5.4	21.13	0.59	C	6.27	A			0.8	3.5
N11 - Bridgend Road/Manor Grove - Stream C-AB		0.2	1.1	5.67	0.12	A					0.3	0.5
Core Assessment - 2033 - Total Traf												
N2 - Portway Roundabout - 1 - Eastern Prom		0.4	1.2	3.70	0.28	A					0.5	2.4
N2 - Portway Roundabout - 2 - Aldi		0.3	1.3	5.21	0.24	A					0.7	3.0
N2 - Portway Roundabout - 3 - The Portway		0.7	2.8	5.01	0.41	A	4.50	A			1.4	1.7
N2 - Portway Roundabout - 4 - Hillsboro North Car Park		0.0	~1	0.00	0.00	A					0.0	0.5
N2 - Portway Roundabout - 5 - Lias Road		1.0	2.2	6.99	0.51	A					2.8	12.4
N2 - Portway Roundabout - 6 - A4106 (North)		0.7	2.6	2.88	0.41	A					0.7	2.7
N3 - New Road/Eastern Prom - 1 - New Road East		0.3	1.2	3.69	0.22	A					0.2	0.5
N3 - New Road/Eastern Prom - 2 - Eastern Prom (South)		0.3	0.9	2.69	0.21	A	3.15	A			0.3	1.2
N3 - New Road/Eastern Prom - 3 - New Road West		0.2	0.5	3.20	0.15	A					0.2	0.5
N4 - New Road/Mackworth Rd - 1 - New Rd (East)		0.4	1.2	5.58	0.27	A					0.3	1.2
N4 - New Road/Mackworth Rd - 2 - Mackworth Road		0.2	0.5	5.46	0.18	A	5.17	A			0.0	0.5
N4 - New Road/Mackworth Rd - 3 - New Rd (West)		0.2	1.0	4.49	0.19	A					0.2	0.5
N5 - New Road/Aldenham - 1 - Aldenham Road (North)		0.4	1.9	5.65	0.31	A					0.6	2.6
N5 - New Road/Aldenham - 2 - New Road (East)		0.6	2.6	8.35	0.36	A	6.58	A			0.6	2.7
N5 - New Road/Aldenham - 3 - New Road (West)		0.3	1.1	5.56	0.20	A					0.4	1.3

N6 - A4106/Bridgend Road - 1 - A4106 Bridgend Rd (East)	A1 D7	0.8	2.3	4.50	0.43	A	4.31	A	10 % [N11 - Bridgend Road/Manor Grove - Stream B-A]	A1 D8	1.3	1.6
N6 - A4106/Bridgend Road - 2 - Bridgend Road (South)		0.5	2.2	3.88	0.33	A					0.4	1.4
N6 - A4106/Bridgend Road - 3 - A4106 (West)		0.7	2.6	4.44	0.42	A					0.8	2.2
N6 - A4106/Bridgend Road - 4 - Tyn-y-Caeau Lane		0.0	~1	0.00	0.00	A					0.0	0.5
N7 - A4106/A4229/Fulmar Rd - 1 - A4106 (East)		2.3	5.3	9.04	0.70	A	7.67	A			2.5	7.2
N7 - A4106/A4229/Fulmar Rd - 2 - A4106 (South)		0.8	2.3	3.37	0.45	A					1.0	1.5
N7 - A4106/A4229/Fulmar Rd - 3 - Fulmar Road		2.0	5.4	11.08	0.67	B					0.9	2.8
N7 - A4106/A4229/Fulmar Rd - 4 - A4229 Pyle Road (North)		2.0	2.9	7.85	0.67	A					3.7	17.0
N9a - A4106 Junction (North) - Stream B-C		0.6	2.8	10.96	0.38	B	3.05	A			0.7	3.1
N9a - A4106 Junction (North) - Stream B-A		0.3	1.3	19.16	0.22	C					0.2	0.5
N9a - A4106 Junction (North) - Stream C-AB		0.4	1.9	9.32	0.31	A					0.7	3.2
N9b - A4106 Junction (South) - Stream B-C		0.4	1.7	7.31	0.29	A	5.69	A			0.6	2.6
N9b - A4106 Junction (South) - Stream B-A		0.1	0.5	9.35	0.10	A					0.2	0.5
N9b - A4106 Junction (South) - Stream C-AB		0.5	2.4	8.59	0.33	A					0.6	2.8
N10 - Newton Nottage Road/Aldenham Road - Stream B-ACD		0.0	~1	0.00	0.00	A	2.75	A			0.0	~1
N10 - Newton Nottage Road/Aldenham Road - Stream A-BCD		0.1	0.8	6.01	0.08	A					0.1	0.7
N10 - Newton Nottage Road/Aldenham Road - Stream D-AB		0.1	0.5	8.16	0.13	A					0.2	0.9
N10 - Newton Nottage Road/Aldenham Road - Stream D-BC		0.3	1.4	10.96	0.23	B					0.6	2.8
N10 - Newton Nottage Road/Aldenham Road - Stream C-ABD		0.0	0.5	4.88	0.00	A					0.0	0.5
N11 - Bridgend Road/Manor Grove - Stream B-C		0.2	1.0	12.70	0.19	B	6.57	A			0.1	0.5
N11 - Bridgend Road/Manor Grove - Stream B-A		1.7	7.6	25.04	0.63	D					0.8	3.6
N11 - Bridgend Road/Manor Grove - Stream C-AB		0.3	1.2	5.65	0.13	A					0.3	0.5
Sensitivity Test - 2026 - Forecast Ba												
N2 - Portway Roundabout - 1 - Eastern Prom	A2 D1	0.3	1.3	3.58	0.23	A	4.48	A	1 % [N11 - Bridgend Road/Manor Grove - Stream B-A]	A2 D2	0.5	1.9
N2 - Portway Roundabout - 2 - Aldi		0.1	0.5	4.77	0.13	A					0.3	1.5
N2 - Portway Roundabout - 3 - The Portway		0.5	2.1	4.45	0.33	A					0.7	2.7
N2 - Portway Roundabout - 4 - Hillsboro North Car Park		0.0	0.5	3.39	0.03	A					0.1	0.5
N2 - Portway Roundabout - 5 - Lias Road		1.2	1.6	7.15	0.55	A					3.6	18.1
N2 - Portway Roundabout - 6 - A4106 (North)		0.7	2.6	2.92	0.42	A					0.6	2.8
N3 - New Road/Eastern Prom - 1 - New Road East		0.3	1.0	3.66	0.20	A	3.15	A			0.3	1.2
N3 - New Road/Eastern Prom - 2 - Eastern Prom (South)		0.3	1.1	2.72	0.21	A					0.4	1.7
N3 - New Road/Eastern Prom - 3 - New Road West		0.2	0.5	3.25	0.17	A					0.2	0.9
N4 - New Road/Mackworth Rd - 1 - New Rd (East)		0.2	0.9	5.02	0.19	A	4.78	A			0.3	1.5
N4 - New Road/Mackworth Rd - 2 - Mackworth Road		0.2	0.5	5.10	0.14	A					0.2	0.9
N4 - New Road/Mackworth Rd - 3 - New Rd (West)		0.2	0.5	4.37	0.18	A					0.4	1.2
N5 - New Road/Aldenham - 1 - Aldenham Road (North)		0.3	1.4	5.24	0.25	A	6.66	A			0.7	2.6
N5 - New Road/Aldenham - 2 - New Road (East)		0.6	2.7	8.34	0.39	A					0.8	2.9
N5 - New Road/Aldenham - 3 - New Road (West)		0.2	1.0	5.60	0.19	A					0.5	2.0
N6 - A4106/Bridgend Road - 1 - A4106 Bridgend Rd (East)		0.0	0.5	2.36	0.00	A	2.36	A			1.2	1.5
N6 - A4106/Bridgend Road - 2 - Bridgend Road (South)		0.0	~1	0.00	0.00	A					0.5	1.9
N6 - A4106/Bridgend Road - 3 - A4106 (West)		0.0	~1	0.00	0.00	A					0.7	2.6
N6 - A4106/Bridgend Road - 4 - Tyn-y-Caeau Lane		0.0	~1	0.00	0.00	A					0.0	0.5
N7 - A4106/A4229/Fulmar Rd - 1 - A4106 (East)		2.6	8.0	9.76	0.73	A	8.76	A			2.3	5.3
N7 - A4106/A4229/Fulmar Rd - 2 - A4106 (South)		0.6	2.9	3.20	0.39	A					0.8	2.6
N7 - A4106/A4229/Fulmar Rd - 3 - Fulmar Road		2.9	12.4	13.73	0.75	B					1.0	2.4
N7 - A4106/A4229/Fulmar Rd - 4 - A4229 Pyle Road (North)		2.0	2.8	7.92	0.67	A					4.0	18.5
N9a - A4106 Junction (North) - Stream B-C		0.8	3.4	12.62	0.45	B	3.78	A			0.9	3.5
N9a - A4106 Junction (North) - Stream B-A		0.4	1.1	22.40	0.27	C					0.2	0.6
N9a - A4106 Junction (North) - Stream C-AB		0.6	2.6	10.08	0.36	B					0.9	3.5
N9b - A4106 Junction (South) - Stream B-C		0.5	2.4	8.03	0.34	A	6.29	A			0.7	2.9
N9b - A4106 Junction (South) - Stream B-A		0.1	0.5	10.16	0.12	B					0.2	1.1
N9b - A4106 Junction (South) - Stream C-AB		0.7	3.2	9.48	0.39	A					0.8	3.4
N10 - Newton Nottage Road/Aldenham Road - Stream B-ACD		0.0	~1	0.00	0.00	A	3.40	A			0.0	~1
N10 - Newton Nottage Road/Aldenham Road - Stream A-BCD		0.1	0.6	6.57	0.09	A					0.1	0.9
N10 - Newton Nottage Road/Aldenham Road - Stream D-AB		0.2	0.5	8.49	0.15	A					0.3	1.4
N10 - Newton Nottage Road/Aldenham Road - Stream D-BC		0.3	1.2	11.26	0.26	B					0.8	3.5
N10 - Newton Nottage Road/Aldenham Road - Stream C-ABD		0.0	0.5	4.80	0.00	A					0.0	0.5

N11 - Bridgend Road/Manor Grove - Stream B-C		0.4	1.5	17.34	0.28	C	9.83	A			0.1	0.5
N11 - Bridgend Road/Manor Grove - Stream B-A		2.6	13.1	34.09	0.74	D					1.3	5.3
N11 - Bridgend Road/Manor Grove - Stream C-AB		0.3	1.1	5.64	0.14	A					0.4	1.3
Sensitivity Test - 2026 - Total Traffi												
N2 - Portway Roundabout - 1 - Eastern Prom	A2 D3	0.5	2.4	4.34	0.35	A	5.67	A	-6 % [N11 - Bridgend Road/Manor Grove - Stream B-A]	A2 D4	0.8	3.0
N2 - Portway Roundabout - 2 - Aldi		0.4	1.8	6.22	0.31	A					1.1	3.0
N2 - Portway Roundabout - 3 - The Portway		1.0	2.0	6.08	0.50	A					2.4	7.8
N2 - Portway Roundabout - 4 - Hillsboro North Car Park		0.0	~1	0.00	0.00	A					0.0	0.5
N2 - Portway Roundabout - 5 - Lias Road		1.6	2.5	9.74	0.62	A					12.5	57.7
N2 - Portway Roundabout - 6 - A4106 (North)		1.0	1.5	3.46	0.50	A					1.0	1.4
N3 - New Road/Eastern Prom - 1 - New Road East		0.4	1.0	3.98	0.27	A	3.36	A			0.2	0.5
N3 - New Road/Eastern Prom - 2 - Eastern Prom (South)		0.3	1.3	2.83	0.24	A					0.3	1.4
N3 - New Road/Eastern Prom - 3 - New Road West		0.2	0.5	3.42	0.18	A					0.2	0.5
N4 - New Road/Mackworth Rd - 1 - New Rd (East)		0.5	2.0	6.09	0.32	A	5.57	A			0.3	1.4
N4 - New Road/Mackworth Rd - 2 - Mackworth Road		0.3	1.2	5.84	0.22	A					0.0	0.5
N4 - New Road/Mackworth Rd - 3 - New Rd (West)		0.3	1.3	4.74	0.23	A					0.2	0.8
N5 - New Road/Aldenham - 1 - Aldenham Road (North)		0.6	2.6	6.19	0.36	A	7.41	A			0.7	2.6
N5 - New Road/Aldenham - 2 - New Road (East)		0.8	3.0	9.81	0.43	A					0.8	2.9
N5 - New Road/Aldenham - 3 - New Road (West)		0.3	1.4	5.98	0.24	A					0.5	2.1
N6 - A4106/Bridgend Road - 1 - A4106 Bridgend Rd (East)		1.1	1.5	5.42	0.52	A	5.11	A			2.1	3.6
N6 - A4106/Bridgend Road - 2 - Bridgend Road (South)		0.7	2.8	4.48	0.40	A					0.5	2.5
N6 - A4106/Bridgend Road - 3 - A4106 (West)		1.0	1.5	5.27	0.50	A					1.1	1.5
N6 - A4106/Bridgend Road - 4 - Tyn-y-Caeau Lane		0.0	~1	0.00	0.00	A					0.0	0.5
N7 - A4106/A4229/Fulmar Rd - 1 - A4106 (East)		6.3	31.4	21.69	0.87	C	16.70	C			7.8	42.5
N7 - A4106/A4229/Fulmar Rd - 2 - A4106 (South)		1.2	1.5	4.34	0.55	A					1.6	2.0
N7 - A4106/A4229/Fulmar Rd - 3 - Fulmar Road		5.7	30.5	27.80	0.86	D					1.4	2.8
N7 - A4106/A4229/Fulmar Rd - 4 - A4229 Pyle Road (North)		4.5	22.6	15.43	0.83	C					19.7	82.9
N9a - A4106 Junction (North) - Stream B-C		0.9	3.9	14.68	0.49	B	4.00	A			1.1	4.6
N9a - A4106 Junction (North) - Stream B-A		0.5	1.8	28.93	0.32	D					0.3	1.4
N9a - A4106 Junction (North) - Stream C-AB		0.6	2.9	11.00	0.38	B					1.1	4.3
N9b - A4106 Junction (South) - Stream B-C		0.5	2.4	8.03	0.34	A	6.29	A			0.7	2.9
N9b - A4106 Junction (South) - Stream B-A		0.1	0.5	10.16	0.12	B					0.2	1.1
N9b - A4106 Junction (South) - Stream C-AB		0.7	3.2	9.48	0.39	A					0.8	3.4
N10 - Newton Nottage Road/Aldenham Road - Stream B-ACD		0.0	~1	0.00	0.00	A	2.98	A			0.0	~1
N10 - Newton Nottage Road/Aldenham Road - Stream A-BCD		0.2	0.9	5.96	0.10	A					0.1	0.9
N10 - Newton Nottage Road/Aldenham Road - Stream D-AB		0.2	0.5	8.86	0.16	A					0.3	1.4
N10 - Newton Nottage Road/Aldenham Road - Stream D-BC		0.4	1.5	12.25	0.28	B					0.8	3.5
N10 - Newton Nottage Road/Aldenham Road - Stream C-ABD		0.0	0.5	4.78	0.00	A					0.0	0.5
N11 - Bridgend Road/Manor Grove - Stream B-C		0.6	2.0	26.49	0.37	D	12.52	B			0.1	0.5
N11 - Bridgend Road/Manor Grove - Stream B-A		3.7	20.0	49.09	0.81	E					1.3	5.3
N11 - Bridgend Road/Manor Grove - Stream C-AB		0.3	1.2	5.63	0.16	A					0.4	1.3
Sensitivity Test - 2033 - Forecast Ba												
N2 - Portway Roundabout - 1 - Eastern Prom		0.3	1.4	3.78	0.26	A	4.89	A			0.5	2.4
N2 - Portway Roundabout - 2 - Aldi		0.2	0.5	5.02	0.14	A					0.4	1.5
N2 - Portway Roundabout - 3 - The Portway		0.5	2.6	4.71	0.35	A					0.8	2.7
N2 - Portway Roundabout - 4 - Hillsboro North Car Park		0.0	0.5	3.49	0.04	A					0.1	0.5
N2 - Portway Roundabout - 5 - Lias Road		1.5	1.7	8.11	0.60	A					5.9	31.1
N2 - Portway Roundabout - 6 - A4106 (North)		0.8	2.0	3.13	0.45	A					0.7	2.8
N3 - New Road/Eastern Prom - 1 - New Road East		0.3	1.2	3.75	0.22	A	3.23	A			0.3	1.3
N3 - New Road/Eastern Prom - 2 - Eastern Prom (South)		0.3	1.2	2.79	0.23	A					0.5	2.0
N3 - New Road/Eastern Prom - 3 - New Road West		0.2	0.5	3.35	0.18	A					0.3	1.2
N4 - New Road/Mackworth Rd - 1 - New Rd (East)		0.3	1.2	5.13	0.20	A	4.88	A			0.4	1.4
N4 - New Road/Mackworth Rd - 2 - Mackworth Road		0.2	0.5	5.20	0.15	A					0.3	1.1
N4 - New Road/Mackworth Rd - 3 - New Rd (West)		0.2	1.0	4.44	0.19	A					0.4	1.6
N5 - New Road/Aldenham - 1 - Aldenham Road (North)		0.4	1.2	5.38	0.26	A	6.96	A			0.8	2.4
N5 - New Road/Aldenham - 2 - New Road (East)		0.7	2.8	8.85	0.42	A					0.9	2.9
N5 - New Road/Aldenham - 3 - New Road (West)		0.3	1.2	5.76	0.21	A					0.5	2.3

N6 - A4106/Bridgend Road - 1 - A4106 Bridgend Rd (East)	A2 D5	0.6	2.7	4.29	0.39	A	4.53	A	-6 % [N11 - Bridgend Road/Manor Grove - Stream B-A]	A2 D6	1.4	1.8
N6 - A4106/Bridgend Road - 2 - Bridgend Road (South)		0.6	2.7	4.17	0.38	A					0.5	2.4
N6 - A4106/Bridgend Road - 3 - A4106 (West)		0.9	1.8	5.02	0.48	A					0.8	2.2
N6 - A4106/Bridgend Road - 4 - Tyn-y-Caeau Lane		0.0	~1	0.00	0.00	A					0.0	0.5
N7 - A4106/A4229/Fulmar Rd - 1 - A4106 (East)		3.7	17.2	13.12	0.80	B	11.73	B			3.2	13.3
N7 - A4106/A4229/Fulmar Rd - 2 - A4106 (South)		0.7	2.7	3.47	0.43	A					0.9	2.0
N7 - A4106/A4229/Fulmar Rd - 3 - Fulmar Road		4.4	22.7	20.02	0.82	C					1.2	2.1
N7 - A4106/A4229/Fulmar Rd - 4 - A4229 Pyle Road (North)		2.6	7.7	9.83	0.73	A					6.5	33.0
N9a - A4106 Junction (North) - Stream B-C		1.0	4.0	14.80	0.50	B	4.39	A			1.1	4.0
N9a - A4106 Junction (North) - Stream B-A		0.5	1.9	27.67	0.33	D					0.3	1.2
N9a - A4106 Junction (North) - Stream C-AB		0.7	2.9	10.86	0.40	B					1.1	3.9
N9b - A4106 Junction (South) - Stream B-C		0.6	2.7	8.45	0.37	A	6.66	A			0.9	2.9
N9b - A4106 Junction (South) - Stream B-A		0.2	0.5	10.64	0.14	B					0.3	1.2
N9b - A4106 Junction (South) - Stream C-AB		0.8	3.4	9.97	0.42	A					0.9	3.6
N10 - Newton Nottage Road/Aldenham Road - Stream B-ACD		0.0	~1	0.00	0.00	A	3.53	A			0.0	~1
N10 - Newton Nottage Road/Aldenham Road - Stream A-BCD		0.1	0.5	6.63	0.10	A					0.2	1.0
N10 - Newton Nottage Road/Aldenham Road - Stream D-AB		0.2	0.5	8.80	0.16	A					0.4	1.1
N10 - Newton Nottage Road/Aldenham Road - Stream D-BC		0.4	1.6	11.80	0.28	B					1.0	3.9
N10 - Newton Nottage Road/Aldenham Road - Stream C-ABD		0.0	0.5	4.75	0.00	A					0.0	0.5
N11 - Bridgend Road/Manor Grove - Stream B-C		0.6	2.4	27.39	0.40	D	14.09	B			0.2	0.5
N11 - Bridgend Road/Manor Grove - Stream B-A		3.9	21.3	48.85	0.82	E					1.7	7.6
N11 - Bridgend Road/Manor Grove - Stream C-AB		0.3	1.0	5.67	0.16	A					0.4	1.4
Sensitivity Test - 2033 - Total Traffi												
N2 - Portway Roundabout - 1 - Eastern Prom	A2 D7	0.6	2.8	4.65	0.37	A	6.37	A	-12 % [N11 - Bridgend Road/Manor Grove - Stream B-A]	A2 D8	0.9	2.8
N2 - Portway Roundabout - 2 - Aldi		0.5	2.1	6.61	0.33	A					1.2	3.0
N2 - Portway Roundabout - 3 - The Portway		1.1	1.7	6.53	0.53	A					2.9	12.3
N2 - Portway Roundabout - 4 - Hillsboro North Car Park		0.0	~1	0.00	0.00	A					0.0	0.5
N2 - Portway Roundabout - 5 - Lias Road		2.1	6.3	11.67	0.68	B					34.8	84.0
N2 - Portway Roundabout - 6 - A4106 (North)		1.1	1.5	3.74	0.53	A					1.2	1.5
N3 - New Road/Eastern Prom - 1 - New Road East		0.4	1.4	4.09	0.28	A	3.45	A			0.2	0.9
N3 - New Road/Eastern Prom - 2 - Eastern Prom (South)		0.3	1.4	2.89	0.26	A					0.4	1.3
N3 - New Road/Eastern Prom - 3 - New Road West		0.2	0.5	3.53	0.19	A					0.3	1.0
N4 - New Road/Mackworth Rd - 1 - New Rd (East)		0.5	2.3	6.27	0.34	A	5.70	A			0.3	1.1
N4 - New Road/Mackworth Rd - 2 - Mackworth Road		0.3	1.3	5.97	0.23	A					0.0	0.5
N4 - New Road/Mackworth Rd - 3 - New Rd (West)		0.3	1.4	4.82	0.24	A					0.3	1.2
N5 - New Road/Aldenham - 1 - Aldenham Road (North)		0.6	2.6	6.38	0.38	A	7.80	A			0.9	2.4
N5 - New Road/Aldenham - 2 - New Road (East)		0.9	3.0	10.52	0.47	B					0.9	2.9
N5 - New Road/Aldenham - 3 - New Road (West)		0.3	1.1	6.16	0.26	A					0.5	2.4
N6 - A4106/Bridgend Road - 1 - A4106 Bridgend Rd (East)		1.2	1.5	5.78	0.55	A	5.48	A			2.6	7.7
N6 - A4106/Bridgend Road - 2 - Bridgend Road (South)		0.8	2.6	4.78	0.43	A					0.6	2.8
N6 - A4106/Bridgend Road - 3 - A4106 (West)		1.1	1.5	5.72	0.54	A					1.3	1.5
N6 - A4106/Bridgend Road - 4 - Tyn-y-Caeau Lane		0.0	~1	0.00	0.00	A					0.0	0.5
N7 - A4106/A4229/Fulmar Rd - 1 - A4106 (East)		12.6	64.6	41.33	0.95	E	30.14	D			14.2	69.3
N7 - A4106/A4229/Fulmar Rd - 2 - A4106 (South)		1.4	1.8	4.86	0.59	A					1.8	2.8
N7 - A4106/A4229/Fulmar Rd - 3 - Fulmar Road		12.4	58.3	56.39	0.95	F					1.8	3.9
N7 - A4106/A4229/Fulmar Rd - 4 - A4229 Pyle Road (North)		7.2	38.0	23.64	0.89	C					52.8	117.7
N9a - A4106 Junction (North) - Stream B-C		1.2	5.2	18.36	0.56	C	4.93	A			1.6	6.9
N9a - A4106 Junction (North) - Stream B-A		0.7	3.0	38.82	0.41	E					0.6	1.9
N9a - A4106 Junction (North) - Stream C-AB		0.7	3.1	11.94	0.42	B					1.5	5.6
N9b - A4106 Junction (South) - Stream B-C		0.6	2.7	8.45	0.37	A	6.65	A			0.9	2.9
N9b - A4106 Junction (South) - Stream B-A		0.2	0.5	10.64	0.14	B					0.3	1.2
N9b - A4106 Junction (South) - Stream C-AB		0.8	3.4	9.97	0.42	A					0.9	3.6
N10 - Newton Nottage Road/Aldenham Road - Stream B-ACD		0.0	~1	0.00	0.00	A	3.15	A			0.0	~1
N10 - Newton Nottage Road/Aldenham Road - Stream A-BCD		0.2	0.9	6.00	0.11	A					0.2	1.0
N10 - Newton Nottage Road/Aldenham Road - Stream D-AB		0.2	0.6	9.22	0.17	A					0.4	1.2
N10 - Newton Nottage Road/Aldenham Road - Stream D-BC		0.4	1.8	12.89	0.30	B					1.0	3.9
N10 - Newton Nottage Road/Aldenham Road - Stream C-ABD		0.0	0.5	4.72	0.00	A					0.0	0.5

N11 - Bridgend Road/Manor Grove - Stream B-C		1.9	6.6	86.26	0.71	F	23.05	C			0.2	0.5
N11 - Bridgend Road/Manor Grove - Stream B-A		6.4	31.2	80.90	0.90	F					1.7	7.7
N11 - Bridgend Road/Manor Grove - Stream C-AB		0.4	1.3	5.68	0.18	A					0.4	1.4

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Porthcawl Waterfront Regeneration
Location	Porthcawl
Site number	
Date	15/10/2025
Version	
Status	Planning
Identifier	
Client	BCBC
Jobnumber	2541
Enumerator	LTP
Description	Existing network analysis of off-site junctions

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Mini-roundabout model	PICADY short flare model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Us iteratio HC rounda
JUNCTIONS 9	JUNCTIONS 11.1	5.75	✓				✓	Delay	0.85	36.00	20.00		

Demand Set Summary

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2026	Forecast Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2026	Forecast Base	PM	ONE HOUR	16:45	18:15	15	✓
D3	2026	Total Traffic	AM	ONE HOUR	07:45	09:15	15	✓
D4	2026	Total Traffic	PM	ONE HOUR	16:45	18:15	15	✓
D5	2033	Forecast Base	AM	ONE HOUR	07:45	09:15	15	✓
D6	2033	Forecast Base	PM	ONE HOUR	16:45	18:15	15	✓
D7	2033	Total Traffic	AM	ONE HOUR	07:45	09:15	15	✓
D8	2033	Total Traffic	PM	ONE HOUR	16:45	18:15	15	✓

Core Assessment - D1 - 2026 | Forecast Base | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix	N6 - A4106/Bridgend Road	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Core Assessment	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	3.64	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	2.94	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	4.53	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	5.94	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	2.36	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	5.18	A
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				2.86	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				5.48	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			3.07	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				5.50	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		26	N11 - Bridgend Road/Manor Grove - Stream B-A	4.35	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	681	-	-	-	-	-	-	0.251	-	0.099	-	-	-
	D-B, nearside lane	532	0.147	0.147	0.333	-	-	-	0.233	0.233	0.092	-	-	-
	D-B, offside lane	540	0.149	0.149	0.338	-	-	-	0.237	0.237	0.094	-	-	-
	D-C	540	-	0.149	0.338	0.118	0.237	0.237	0.237	0.237	0.094	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	563	0.097	0.244	0.154	0.349
	B-C	644	0.093	0.235	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	536	0.094	0.237	0.149	0.339
	B-C	724	0.108	0.273	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	543	0.099	0.250	0.157	0.357
	B-C	754	0.116	0.292	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2026	Forecast Base	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	223	100.000
	2 - Aldi		ONE HOUR	✓	79	100.000
	3 - The Portway		ONE HOUR	✓	284	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	26	100.000
	5 - Lias Road		ONE HOUR	✓	449	100.000
	6 - A4106 (North)		ONE HOUR	✓	637	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	181	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	258	100.000
	3 - New Road West		ONE HOUR	✓	163	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	122	100.000
	2 - Mackworth Road		ONE HOUR	✓	85	100.000
	3 - New Rd (West)		ONE HOUR	✓	133	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	163	100.000
	2 - New Road (East)		ONE HOUR	✓	204	100.000
	3 - New Road (West)		ONE HOUR	✓	110	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	5	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	3	100.000
	3 - A4106 (West)		ONE HOUR	✓	4	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	0	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	719	100.000
	2 - A4106 (South)		ONE HOUR	✓	527	100.000
	3 - Fulmar Road		ONE HOUR	✓	562	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	655	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	442	100.000
	B - Unclassified link		ONE HOUR	✓	211	100.000
	C - A4106 West		ONE HOUR	✓	553	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	125	100.000
	B - Unclassified link		ONE HOUR	✓	207	100.000
	C - Newton Nottage East		ONE HOUR	✓	209	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	124	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	230	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	136	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	316	100.000
	B - Manor Grove		ONE HOUR	✓	268	100.000
	C - Bridgend Road South		ONE HOUR	✓	287	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	24	63	1	61	74
	-	22	0	5	1	11	40
	-	55	17	1	6	13	192
	-	2	1	3	0	7	13
	-	68	16	181	3	0	181
	-	153	40	195	73	176	0

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	2	150	29
	-	123	6	129
	-	27	135	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	34	88
	-	23	0	62
	-	62	71	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	70	93
	-	146	0	58
	-	86	24	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	5	87	32
	-	0	0	0	0
	-	119	1	0	110
	-	45	15	76	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	150	166
	-	210	0	58
	-	244	43	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	5	0.78	0
	-	3	0	0.57	0
	-	0	4	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	223	253	243
	-	210	0	51	266
	-	283	54	0	225
	-	151	324	180	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	43	399
	-	43	0	168
	-	405	148	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	52	73
	-	36	0	171
	-	48	161	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	5	0	3	0
	-	0	0	0	0	0	3
	-	0	0	0	0	0	1
	-	0	0	0	0	0	0
	-	4	0	2	0	0	2
	-	1	3	2	0	3	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.68	7
	-	0.82	0	2
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0
	-	0	0	2
	-	2	0	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	4	1
	-	5	0	0
	-	2	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	1	6
	-	0	0	0	0
	-	3	0	0	5
	-	9	0	4	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	3	4
	-	2	0	2
	-	1	0	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	0	0	0
	-	0	0	0	0
	-	0	0	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0.45	0.40	1
	-	2	0	0	2
	-	0.36	0	0	3
	-	3	2	4	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.76
	-	2	0	0
	-	2	0.68	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	2	1
	-	0	0	1
	-	4	0.63	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.18	3.11	0.2	0.5	A	205	307
	2 - Aldi	0.09	4.18	0.1	0.5	A	72	109
	3 - The Portway	0.25	3.87	0.3	1.4	A	261	391
	4 - Hillsboro North Car Park	0.02	3.14	0.0	0.5	A	24	36
	5 - Lias Road	0.42	5.36	0.7	2.6	A	412	618
	6 - A4106 (North)	0.32	2.46	0.5	2.0	A	585	877
N3 - New Road/Eastern Prom	1 - New Road East	0.16	3.41	0.2	0.5	A	166	249
	2 - Eastern Prom (South)	0.17	2.57	0.2	0.5	A	237	355
	3 - New Road West	0.13	3.01	0.2	0.5	A	150	224
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.15	4.73	0.2	0.5	A	112	168
	2 - Mackworth Road	0.11	4.83	0.1	0.5	A	78	117
	3 - New Rd (West)	0.14	4.16	0.2	0.5	A	122	183
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.20	4.90	0.2	1.1	A	150	224
	2 - New Road (East)	0.31	7.16	0.4	1.9	A	187	281
	3 - New Road (West)	0.15	5.18	0.2	0.5	A	101	151
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.00	2.36	0.0	0.5	A	5	7
	2 - Bridgend Road (South)	0.00	0.00	0.0	~1	A	0	0
	3 - A4106 (West)	0.00	0.00	0.0	~1	A	0	0
	4 - Tyn-y-Caeau Lane	0.00	0.00	0.0	~1	A	0	0
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.55	5.60	1.2	1.5	A	660	990
	2 - A4106 (South)	0.30	2.61	0.4	1.5	A	484	725
	3 - Fulmar Road	0.55	7.17	1.2	1.8	A	516	774
	4 - A4229 Pyle Road (North)	0.50	5.09	1.0	1.6	A	601	902

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.33	9.37	0.5	2.1	A	154	231
	B-A	0.17	15.04	0.2	0.6	C	39	59
	C-AB	0.27	8.35	0.4	1.4	A	136	204
	C-A						372	557
	A-B						39	59
	A-C						366	549
N9b - A4106 Junction (South)	B-C	0.27	7.07	0.4	1.4	A	157	235
	B-A	0.09	9.07	0.1	0.5	A	33	50
	C-AB	0.31	8.30	0.5	2.0	A	159	239
	C-A						32	49
	A-B						48	72
	A-C						67	100
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.07	6.46	0.1	0.5	A	34	52
	A-B						4	6
	A-C						75	113
	D-AB	0.11	7.74	0.1	0.5	A	49	74
	D-BC	0.20	9.99	0.2	1.2	A	76	113
	C-ABD	0.00	4.94	0.0	0.5	A	1	2
	C-D						101	151
	C-A						109	164
N11 - Bridgend Road/Manor Grove	B-C	0.15	10.04	0.2	0.5	B	53	80
	B-A	0.54	18.33	1.2	4.3	C	193	289
	C-AB	0.11	5.67	0.2	1.0	A	59	89
	C-A						204	307
	A-B						138	206
	A-C						152	228

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix	N4 - New Road/Mackworth Rd	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Core Assessment	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	4.74	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.10	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	4.84	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	6.46	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	3.99	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	4.98	A
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				3.00	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				6.26	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			3.94	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				3.52	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		38	N2 - Portway Roundabout - 5 - Lias Road	4.44	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	674	-	-	-	-	-	-	0.249	-	0.098	-	-	-
	D-B, nearside lane	526	0.145	0.145	0.329	-	-	-	0.231	0.231	0.091	-	-	-
	D-B, offside lane	546	0.151	0.151	0.342	-	-	-	0.239	0.239	0.095	-	-	-
	D-C	546	-	0.151	0.342	0.120	0.239	0.239	0.239	0.239	0.095	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	566	0.097	0.246	0.155	0.351
	B-C	640	0.093	0.234	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	528	0.092	0.234	0.147	0.334
	B-C	734	0.110	0.277	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	546	0.099	0.251	0.158	0.359
	B-C	751	0.115	0.291	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2026	Forecast Base	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	299	100.000
	2 - Aldi		ONE HOUR	✓	166	100.000
	3 - The Portway		ONE HOUR	✓	367	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	79	100.000
	5 - Lias Road		ONE HOUR	✓	575	100.000
	6 - A4106 (North)		ONE HOUR	✓	558	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	195	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	366	100.000
	3 - New Road West		ONE HOUR	✓	173	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	162	100.000
	2 - Mackworth Road		ONE HOUR	✓	111	100.000
	3 - New Rd (West)		ONE HOUR	✓	194	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	280	100.000
	2 - New Road (East)		ONE HOUR	✓	224	100.000
	3 - New Road (West)		ONE HOUR	✓	183	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	554	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	305	100.000
	3 - A4106 (West)		ONE HOUR	✓	421	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	7	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	672	100.000
	2 - A4106 (South)		ONE HOUR	✓	588	100.000
	3 - Fulmar Road		ONE HOUR	✓	392	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	836	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	508	100.000
	B - Unclassified link		ONE HOUR	✓	199	100.000
	C - A4106 West		ONE HOUR	✓	591	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	111	100.000
	B - Unclassified link		ONE HOUR	✓	262	100.000
	C - Newton Nottage East		ONE HOUR	✓	229	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	182	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	276	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	215	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	458	100.000
	B - Manor Grove		ONE HOUR	✓	191	100.000
	C - Bridgend Road South		ONE HOUR	✓	234	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	39	56	5	63	136
	-	37	0	33	1	21	74
	-	77	30	0	6	8	246
	-	7	1	7	0	3	61
	-	87	15	235	1	2	235
	-	117	95	172	32	141	1

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	4	154	37
	-	192	23	151
	-	47	125	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	55	107
	-	33	0	78
	-	108	86	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	145	135
	-	154	0	70
	-	122	61	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	8	146	28
	-	0	0	0	0
	-	137	5	0	134
	-	49	32	134	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	203	255
	-	157	0	34
	-	178	56	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	213	341	0
	-	179	0	123	3
	-	263	154	0	4
	- Tyn-y-	1	3	3	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	205	283	184
	-	218	0	118	252
	-	184	83	0	125
	-	282	325	229	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	64	444
	-	23	0	176
	-	401	190	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	36	75
	-	53	0	209
	-	54	175	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	2	0	2	2
	-	0	0	0	0	0	0
	-	3	0	0	0	0	1
	-	0	0	0	0	0	0
	-	2	0	0.43	0	0	0.43
	-	2	0	1	0	0	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0
	-	0.53	0	1
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0
	-	0	0	0
	-	0	0	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	0.70	2
	-	0.66	0	0
	-	0.83	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	2	7
	-	0	0	0	0
	-	1	0	0	0
	-	2	0	0	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	0.50	2
	-	0.65	0	0
	-	2	2	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	2	0.30	0
	-	2	0	2	0
	-	2	0	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0	0	0
	-	0	0	0	0.80
	-	0	0	0	4
	-	0	0.62	1	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.46
	-	0	0	1
	-	0.25	0	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	0	5
	-	0	0	0.48
	-	2	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.23	3.35	0.3	1.3	A	274	412
	2 - Aldi	0.19	4.61	0.2	0.7	A	152	228
	3 - The Portway	0.33	4.40	0.5	2.2	A	337	505
	4 - Hillsboro North Car Park	0.08	3.57	0.1	0.5	A	72	109
	5 - Lias Road	0.59	8.16	1.4	1.8	A	528	791
	6 - A4106 (North)	0.29	2.40	0.4	1.3	A	512	768
N3 - New Road/Eastern Prom	1 - New Road East	0.17	3.40	0.2	0.5	A	179	268
	2 - Eastern Prom (South)	0.24	2.81	0.3	1.3	A	336	504
	3 - New Road West	0.15	3.35	0.2	0.5	A	159	238
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.20	5.08	0.3	1.1	A	149	223
	2 - Mackworth Road	0.15	5.05	0.2	0.5	A	102	153
	3 - New Rd (West)	0.21	4.51	0.3	1.2	A	178	267
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.34	6.02	0.5	2.4	A	257	385
	2 - New Road (East)	0.34	7.59	0.5	2.4	A	206	308
	3 - New Road (West)	0.24	5.77	0.3	1.4	A	168	252
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.43	4.45	0.8	2.4	A	508	763
	2 - Bridgend Road (South)	0.24	3.43	0.3	1.3	A	280	420
	3 - A4106 (West)	0.33	3.76	0.5	2.1	A	386	579
	4 - Tyn-y-Caeau Lane	0.01	6.55	0.0	0.5	A	6	10
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.53	5.40	1.1	1.4	A	617	925
	2 - A4106 (South)	0.33	2.70	0.5	2.0	A	540	809
	3 - Fulmar Road	0.37	4.96	0.6	2.7	A	360	540
	4 - A4229 Pyle Road (North)	0.62	6.25	1.6	2.0	A	767	1151

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.34	9.62	0.5	2.4	A	162	242
	B-A	0.10	15.24	0.1	0.5	C	21	32
	C-AB	0.36	9.74	0.6	2.6	A	174	262
	C-A						368	552
	A-B						59	88
	A-C						407	611
N9b - A4106 Junction (South)	B-C	0.33	7.82	0.5	2.3	A	192	288
	B-A	0.14	9.82	0.2	0.5	A	49	73
	C-AB	0.34	8.59	0.5	2.5	A	175	262
	C-A						35	53
	A-B						33	50
	A-C						69	103
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.07	6.10	0.1	0.6	A	34	50
	A-B						7	10
	A-C						127	190
	D-AB	0.16	9.00	0.2	0.5	A	64	95
	D-BC	0.35	12.21	0.5	2.5	B	134	200
	C-ABD	0.01	4.88	0.0	0.5	A	7	10
	C-D						122	183
	C-A						125	187
N11 - Bridgend Road/Manor Grove	B-C	0.08	8.48	0.1	0.5	A	31	47
	B-A	0.41	14.74	0.7	3.1	B	144	216
	C-AB	0.14	6.69	0.2	0.5	A	71	106
	C-A						144	216
	A-B						186	279
	A-C						234	351

Core Assessment - D3 - 2026 | Total Traffic | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Core Assessment	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	4.23	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.10	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	5.09	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	6.36	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	4.12	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	6.54	A
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				2.80	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				5.48	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			2.64	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				5.59	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		17	N11 - Bridgend Road/Manor Grove - Stream B-A	4.79	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	681	-	-	-	-	-	-	0.251	-	0.099	-	-	-
	D-B, nearside lane	532	0.147	0.147	0.333	-	-	-	0.233	0.233	0.092	-	-	-
	D-B, offside lane	540	0.149	0.149	0.338	-	-	-	0.237	0.237	0.094	-	-	-
	D-C	540	-	0.149	0.338	0.118	0.237	0.237	0.237	0.237	0.094	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	563	0.097	0.244	0.154	0.349
	B-C	644	0.093	0.235	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	536	0.094	0.237	0.149	0.339
	B-C	724	0.108	0.273	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	543	0.099	0.250	0.157	0.357
	B-C	754	0.116	0.292	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2026	Total Traffic	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	319	100.000
	2 - Aldi		ONE HOUR	✓	189	100.000
	3 - The Portway		ONE HOUR	✓	424	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	3	100.000
	5 - Lias Road		ONE HOUR	✓	447	100.000
	6 - A4106 (North)		ONE HOUR	✓	754	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	239	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	293	100.000
	3 - New Road West		ONE HOUR	✓	163	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	202	100.000
	2 - Mackworth Road		ONE HOUR	✓	123	100.000
	3 - New Rd (West)		ONE HOUR	✓	167	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	243	100.000
	2 - New Road (East)		ONE HOUR	✓	204	100.000
	3 - New Road (West)		ONE HOUR	✓	141	100.000
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	532	100.000
	2 - Bridgend Road (South)		ONE HOUR	✓	389	100.000
	3 - A4106 (West)		ONE HOUR	✓	495	100.000

	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	3	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	798	100.000
	2 - A4106 (South)		ONE HOUR	✓	746	100.000
	3 - Fulmar Road		ONE HOUR	✓	570	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	794	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	521	100.000
	B - Unclassified link		ONE HOUR	✓	211	100.000
	C - A4106 West		ONE HOUR	✓	599	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	125	100.000
	B - Unclassified link		ONE HOUR	✓	207	100.000
	C - Newton Nottage East		ONE HOUR	✓	209	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	204	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	261	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	136	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	396	100.000
	B - Manor Grove		ONE HOUR	✓	268	100.000
	C - Bridgend Road South		ONE HOUR	✓	318	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	25	68	0	72	154
	-	22	0	52	0	14	101
	-	65	55	1	1	23	279
	-	1	0	0	0	1	1
	-	68	17	181	0	0	181
	-	227	95	249	7	176	0

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	2	208	29
	-	158	6	129
	-	27	135	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	82	120
	-	36	0	87
	-	80	87	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	70	173
	-	146	0	58
	-	117	24	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	5	167	32
	-	0	0	0	0
	-	150	1	0	110
	-	45	15	76	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	150	246
	-	210	0	58
	-	275	43	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	192	339	1
	-	212	0	177	0
	-	356	138	0	1
	- Tyn-y-	1	1	1	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	302	253	243
	-	257	0	58	431
	-	283	62	0	225
	-	151	463	180	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	43	478
	-	43	0	168
	-	451	148	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	52	73
	-	36	0	171
	-	48	161	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	5	0	3	0.45
	-	0	0	0.05	0	0.30	2
	-	0.03	0.03	0	0	0.25	1
	-	0.46	0	0	0	0	0
	-	4	0.21	2	0	0	2
	-	1	2	2	0	3	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.83	7
	-	0.96	0	2
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	1	0
	-	2	0	3
	-	1	1	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	4	0.87
	-	5	0	0
	-	2	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	0.90	6
	-	0	0	0	0
	-	3	0	0	5
	-	9	0	4	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	3	3
	-	2	0	2
	-	1	0	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	3	0.89	0
	-	3	0	0.57	0
	-	0.16	4	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0.66	0.40	1
	-	2	0	0.14	2
	-	0.36	0.12	0	3
	-	3	2	4	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.84
	-	2	0	0
	-	2	0.68	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	2	1
	-	0	0	1
	-	4	0.63	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.26	3.54	0.3	1.4	A	293	439
	2 - Aldi	0.22	5.01	0.3	1.2	A	173	260
	3 - The Portway	0.38	4.79	0.6	2.8	A	389	584
	4 - Hillsboro North Car Park	0.00	0.00	0.0	~1	A	0	0
	5 - Lias Road	0.47	6.38	0.9	2.6	A	410	615
	6 - A4106 (North)	0.39	2.74	0.6	2.8	A	692	1038
N3 - New Road/Eastern Prom	1 - New Road East	0.21	3.62	0.3	1.1	A	219	329
	2 - Eastern Prom (South)	0.19	2.65	0.2	0.5	A	269	403
	3 - New Road West	0.13	3.13	0.2	0.5	A	150	224
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.25	5.46	0.3	1.5	A	185	278
	2 - Mackworth Road	0.17	5.37	0.2	0.5	A	113	169
	3 - New Rd (West)	0.18	4.43	0.2	0.7	A	153	230
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.29	5.52	0.4	1.7	A	223	334
	2 - New Road (East)	0.33	7.98	0.5	2.2	A	187	281
	3 - New Road (West)	0.19	5.44	0.2	1.0	A	129	194
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.41	4.32	0.7	2.6	A	488	732
	2 - Bridgend Road (South)	0.31	3.72	0.4	1.8	A	357	535
	3 - A4106 (West)	0.39	4.22	0.6	2.7	A	454	681
	4 - Tyn-y-Caeau Lane	0.00	0.00	0.0	~1	A	0	0
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.65	7.57	1.8	2.5	A	732	1098
	2 - A4106 (South)	0.42	3.15	0.7	2.7	A	685	1027
	3 - Fulmar Road	0.62	9.18	1.6	2.4	A	523	785
	4 - A4229 Pyle Road (North)	0.62	6.79	1.6	2.0	A	729	1093

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.34	10.07	0.5	2.3	B	154	231
	B-A	0.18	17.06	0.2	1.0	C	39	59
	C-AB	0.29	8.84	0.4	1.6	A	136	204
	C-A						414	621
	A-B						39	59
	A-C						439	658
N9b - A4106 Junction (South)	B-C	0.27	7.07	0.4	1.4	A	157	235
	B-A	0.09	9.07	0.1	0.5	A	33	50
	C-AB	0.31	8.30	0.5	2.0	A	159	239
	C-A						32	49
	A-B						48	72
	A-C						67	100
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.08	5.98	0.1	0.8	A	39	59
	A-B						4	6
	A-C						144	215
	D-AB	0.12	7.96	0.1	0.5	A	49	74
	D-BC	0.21	10.59	0.3	1.3	B	75	113
	C-ABD	0.00	4.93	0.0	0.5	A	1	2
	C-D						101	151
	C-A						137	206
N11 - Bridgend Road/Manor Grove	B-C	0.16	11.11	0.2	0.5	B	53	80
	B-A	0.58	21.20	1.3	5.2	C	193	289
	C-AB	0.11	5.65	0.2	1.2	A	63	94
	C-A						229	344
	A-B						138	206
	A-C						226	339

Core Assessment - D4 - 2026 | Total Traffic | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	N4 - New Road/Mackworth Rd	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 94% of the total flow for the roundabout for one or more time segments]
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Core Assessment	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	6.34	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	2.98	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	4.54	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	6.48	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	4.76	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	7.00	A
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				2.88	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				6.26	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			3.93	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				3.51	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		19	N2 - Portway Roundabout - 5 - Lias Road	5.33	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	674	-	-	-	-	-	-	0.249	-	0.098	-	-	-
	D-B, nearside lane	526	0.145	0.145	0.329	-	-	-	0.231	0.231	0.091	-	-	-
	D-B, offside lane	546	0.151	0.151	0.342	-	-	-	0.239	0.239	0.095	-	-	-
	D-C	546	-	0.151	0.342	0.120	0.239	0.239	0.239	0.239	0.095	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	566	0.097	0.246	0.155	0.351
	B-C	640	0.093	0.234	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	528	0.092	0.234	0.147	0.334
	B-C	734	0.110	0.277	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	546	0.099	0.251	0.158	0.359
	B-C	751	0.115	0.291	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2026	Total Traffic	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	369	100.000
	2 - Aldi		ONE HOUR	✓	317	100.000
	3 - The Portway		ONE HOUR	✓	617	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	8	100.000
	5 - Lias Road		ONE HOUR	✓	578	100.000
	6 - A4106 (North)		ONE HOUR	✓	741	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	164	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	313	100.000
	3 - New Road West		ONE HOUR	✓	173	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	162	100.000
	2 - Mackworth Road		ONE HOUR	✓	15	100.000
	3 - New Rd (West)		ONE HOUR	✓	140	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	280	100.000
	2 - New Road (East)		ONE HOUR	✓	224	100.000
	3 - New Road (West)		ONE HOUR	✓	187	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	691	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	308	100.000
	3 - A4106 (West)		ONE HOUR	✓	541	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	7	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	808	100.000
	2 - A4106 (South)		ONE HOUR	✓	830	100.000
	3 - Fulmar Road		ONE HOUR	✓	403	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	955	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	644	100.000
	B - Unclassified link		ONE HOUR	✓	199	100.000
	C - A4106 West		ONE HOUR	✓	710	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	111	100.000
	B - Unclassified link		ONE HOUR	✓	262	100.000
	C - Newton Nottage East		ONE HOUR	✓	229	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	183	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	279	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	215	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	459	100.000
	B - Manor Grove		ONE HOUR	✓	191	100.000
	C - Bridgend Road South		ONE HOUR	✓	237	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	40	63	1	66	199
	-	37	0	116	0	23	141
	-	84	92	0	1	15	425
	-	1	0	1	0	0	6
	-	87	19	235	0	2	235
	-	118	192	286	3	141	1

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	4	123	37
	-	139	23	151
	-	47	125	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	15	147
	-	8	0	7
	-	136	4	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	145	135
	-	154	0	70
	-	126	61	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	8	147	28
	-	0	0	0	0
	-	140	5	0	134
	-	49	32	134	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	203	256
	-	157	0	34
	-	181	56	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	214	477	0
	-	182	0	123	3
	-	383	154	0	4
	- Tyn-y-	1	3	3	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	341	283	184
	-	338	0	133	359
	-	184	94	0	125
	-	282	444	229	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	64	580
	-	23	0	176
	-	520	190	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	36	75
	-	53	0	209
	-	54	175	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	2	0	2	3
	-	0	0	0.03	0	0.14	0.66
	-	3	0.03	0	0	0.27	1
	-	0.62	0	0	0	0	0
	-	2	0.23	0.43	0	0	0.43
	-	2	0.48	1	0	0	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.43	0
	-	1	0	1
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	5	0
	-	9	0	19
	-	0	27	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	0.70	2
	-	0.66	0	0
	-	1	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	2	7
	-	0	0	0	0
	-	2	0	0	0
	-	2	0	0	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	0.50	2
	-	0.65	0	0
	-	2	2	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	2	0.41	0
	-	2	0	2	0
	-	1	0	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0.28	0	0
	-	0.28	0	0.12	0.91
	-	0	0.12	0	4
	-	0	0.74	1	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.51
	-	0	0	1
	-	0.38	0	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	0	5
	-	0	0	0.48
	-	2	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.32	4.13	0.5	1.9	A	339	508
	2 - Aldi	0.38	6.36	0.6	2.8	A	291	436
	3 - The Portway	0.56	6.72	1.3	1.5	A	566	849
	4 - Hillsboro North Car Park	0.01	3.98	0.0	0.5	A	7	11
	5 - Lias Road	0.68	11.87	2.1	6.2	B	530	796
	6 - A4106 (North)	0.39	2.85	0.6	2.8	A	680	1020
N3 - New Road/Eastern Prom	1 - New Road East	0.14	3.31	0.2	0.5	A	150	226
	2 - Eastern Prom (South)	0.21	2.70	0.3	0.9	A	287	431
	3 - New Road West	0.14	3.16	0.2	0.5	A	159	238
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.19	4.81	0.2	1.0	A	149	223
	2 - Mackworth Road	0.02	5.19	0.0	0.5	A	14	21
	3 - New Rd (West)	0.15	4.15	0.2	0.5	A	128	193
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.34	6.03	0.5	2.4	A	257	385
	2 - New Road (East)	0.34	7.59	0.5	2.4	A	206	308
	3 - New Road (West)	0.25	5.83	0.3	1.5	A	172	257
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.54	5.48	1.2	1.5	A	634	951
	2 - Bridgend Road (South)	0.26	3.77	0.4	1.5	A	283	424
	3 - A4106 (West)	0.42	4.37	0.7	2.5	A	496	745
	4 - Tyn-y-Caeau Lane	0.02	7.35	0.0	0.5	A	6	10
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.67	8.10	2.0	2.8	A	741	1112
	2 - A4106 (South)	0.46	3.38	0.9	1.9	A	762	1142
	3 - Fulmar Road	0.42	5.95	0.7	2.9	A	370	555
	4 - A4229 Pyle Road (North)	0.74	9.65	2.8	8.7	A	876	1314

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.37	10.92	0.6	2.7	B	162	242
	B-A	0.12	19.86	0.1	0.5	C	21	32
	C-AB	0.39	10.97	0.6	2.9	B	174	262
	C-A						477	716
	A-B						59	88
	A-C						532	798
N9b - A4106 Junction (South)	B-C	0.33	7.82	0.5	2.3	A	192	288
	B-A	0.14	9.82	0.2	0.5	A	49	73
	C-AB	0.34	8.59	0.5	2.5	A	175	262
	C-A						35	53
	A-B						33	50
	A-C						69	103
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.07	6.10	0.1	0.6	A	34	50
	A-B						7	10
	A-C						127	191
	D-AB	0.16	9.03	0.2	0.5	A	64	95
	D-BC	0.35	12.26	0.5	2.5	B	134	200
	C-ABD	0.01	4.87	0.0	0.5	A	7	10
	C-D						122	183
	C-A						127	191
N11 - Bridgend Road/Manor Grove	B-C	0.08	8.50	0.1	0.5	A	31	47
	B-A	0.42	14.80	0.7	3.1	B	144	216
	C-AB	0.14	6.67	0.2	0.5	A	71	106
	C-A						146	220
	A-B						186	279
	A-C						235	352

Core Assessment - D5 - 2033 | Forecast Base | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Core Assessment	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	3.84	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.00	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	4.60	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	6.12	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	3.80	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	5.83	A
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				3.07	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				5.69	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			3.15	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				6.27	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		18	N11 - Bridgend Road/Manor Grove - Stream B-A	4.61	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	681	-	-	-	-	-	-	0.251	-	0.099	-	-	-
	D-B, nearside lane	532	0.147	0.147	0.333	-	-	-	0.233	0.233	0.092	-	-	-
	D-B, offside lane	540	0.149	0.149	0.338	-	-	-	0.237	0.237	0.094	-	-	-
	D-C	540	-	0.149	0.338	0.118	0.237	0.237	0.237	0.237	0.094	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	563	0.097	0.244	0.154	0.349
	B-C	644	0.093	0.235	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	536	0.094	0.237	0.149	0.339
	B-C	724	0.108	0.273	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	544	0.099	0.250	0.157	0.358
	B-C	754	0.116	0.292	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2033	Forecast Base	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	238	100.000
	2 - Aldi		ONE HOUR	✓	85	100.000
	3 - The Portway		ONE HOUR	✓	305	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	28	100.000
	5 - Lias Road		ONE HOUR	✓	481	100.000
	6 - A4106 (North)		ONE HOUR	✓	683	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	193	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	278	100.000
	3 - New Road West		ONE HOUR	✓	174	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	131	100.000
	2 - Mackworth Road		ONE HOUR	✓	91	100.000
	3 - New Rd (West)		ONE HOUR	✓	142	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	175	100.000
	2 - New Road (East)		ONE HOUR	✓	218	100.000
	3 - New Road (West)		ONE HOUR	✓	118	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	397	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	384	100.000
	3 - A4106 (West)		ONE HOUR	✓	480	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	3	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	769	100.000
	2 - A4106 (South)		ONE HOUR	✓	564	100.000
	3 - Fulmar Road		ONE HOUR	✓	601	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	701	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	474	100.000
	B - Unclassified link		ONE HOUR	✓	227	100.000
	C - A4106 West		ONE HOUR	✓	591	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	133	100.000
	B - Unclassified link		ONE HOUR	✓	222	100.000
	C - Newton Nottage East		ONE HOUR	✓	223	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	133	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	247	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	145	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	338	100.000
	B - Manor Grove		ONE HOUR	✓	287	100.000
	C - Bridgend Road South		ONE HOUR	✓	308	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	26	67	1	65	79
	-	24	0	5	1	12	43
	-	59	18	1	7	14	206
	-	2	1	3	0	8	14
	-	73	17	194	3	0	194
	-	164	43	209	78	189	0

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	2	160	31
	-	132	7	139
	-	29	144	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	37	94
	-	25	0	66
	-	66	76	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	75	100
	-	156	0	62
	-	92	26	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	5	93	35
	-	0	0	0	0
	-	128	1	0	118
	-	48	16	81	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	160	178
	-	225	0	62
	-	261	47	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	119	277	1
	-	194	0	190	0
	-	332	147	0	1
	- Tyn-y-	1	1	1	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	238	271	260
	-	225	0	54	285
	-	303	57	0	241
	-	161	347	193	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	47	427
	-	47	0	180
	-	433	158	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	55	78
	-	39	0	183
	-	51	172	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	5	0	3	0
	-	0	0	0	0	0	3
	-	0	0	0	0	0	1
	-	0	0	0	0	0	0
	-	4	0	2	0	0	2
	-	1	3	2	0	3	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.68	7
	-	0.82	0	2
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0
	-	0	0	2
	-	2	0	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	4	1
	-	5	0	0
	-	2	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	1	6
	-	0	0	0	0
	-	3	0	0	5
	-	9	0	4	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	3	4
	-	2	0	2
	-	1	0	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	5	0.78	0
	-	3	0	0.57	0
	-	0	4	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0.45	0.40	1
	-	2	0	0	2
	-	0.36	0	0	3
	-	3	2	4	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.76
	-	2	0	0
	-	2	0.68	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	2	1
	-	0	0	1
	-	4	0.63	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.19	3.23	0.2	0.5	A	218	328
	2 - Aldi	0.10	4.33	0.1	0.5	A	78	117
	3 - The Portway	0.27	4.02	0.4	1.2	A	280	420
	4 - Hillsboro North Car Park	0.03	3.21	0.0	0.5	A	26	39
	5 - Lias Road	0.46	5.77	0.8	2.3	A	441	662
	6 - A4106 (North)	0.35	2.57	0.5	2.5	A	627	940
N3 - New Road/Eastern Prom	1 - New Road East	0.17	3.47	0.2	0.5	A	177	266
	2 - Eastern Prom (South)	0.18	2.62	0.2	0.5	A	255	383
	3 - New Road West	0.14	3.08	0.2	0.5	A	160	239
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.16	4.81	0.2	0.5	A	120	180
	2 - Mackworth Road	0.12	4.90	0.1	0.5	A	84	125
	3 - New Rd (West)	0.15	4.22	0.2	0.5	A	130	195
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.21	5.00	0.3	1.2	A	161	241
	2 - New Road (East)	0.33	7.45	0.5	2.2	A	200	300
	3 - New Road (West)	0.16	5.29	0.2	0.5	A	108	162
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.31	3.70	0.4	1.9	A	364	546
	2 - Bridgend Road (South)	0.29	3.55	0.4	1.6	A	352	529
	3 - A4106 (West)	0.37	4.08	0.6	2.7	A	440	661
	4 - Tyn-y-Caeau Lane	0.00	0.00	0.0	~1	A	0	0
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.60	6.36	1.5	1.8	A	706	1058
	2 - A4106 (South)	0.32	2.75	0.5	1.9	A	518	776
	3 - Fulmar Road	0.60	8.28	1.5	1.9	A	551	827
	4 - A4229 Pyle Road (North)	0.55	5.65	1.2	1.5	A	643	965

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.36	10.10	0.6	2.6	B	165	248
	B-A	0.19	16.60	0.2	1.1	C	43	65
	C-AB	0.30	8.77	0.4	1.8	A	145	217
	C-A						397	596
	A-B						43	65
	A-C						392	588
N9b - A4106 Junction (South)	B-C	0.29	7.31	0.4	1.7	A	168	252
	B-A	0.10	9.35	0.1	0.5	A	36	54
	C-AB	0.33	8.59	0.5	2.4	A	171	257
	C-A						34	50
	A-B						50	76
	A-C						72	107
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.08	6.51	0.1	0.5	A	38	57
	A-B						4	6
	A-C						80	120
	D-AB	0.12	7.93	0.1	0.5	A	53	79
	D-BC	0.22	10.32	0.3	1.3	B	80	121
	C-ABD	0.00	4.90	0.0	0.5	A	1	2
	C-D						108	162
	C-A						117	176
N11 - Bridgend Road/Manor Grove	B-C	0.17	11.17	0.2	0.6	B	57	85
	B-A	0.59	21.13	1.4	5.4	C	206	310
	C-AB	0.12	5.67	0.2	1.1	A	66	100
	C-A						216	324
	A-B						147	220
	A-C						163	245

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Pedestrian Crossing	N2 - Portway Roundabout - 2 - Aldi - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	N2 - Portway Roundabout - 3 - The Portway - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix	N4 - New Road/Mackworth Rd	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Core Assessment	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	5.09	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.18	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	4.95	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	6.75	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	4.21	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	5.63	A
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				3.26	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				6.54	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			4.16	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				3.83	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		29	N2 - Portway Roundabout - 5 - Lias Road	4.79	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	674	-	-	-	-	-	-	0.249	-	0.098	-	-	-
	D-B, nearside lane	526	0.145	0.145	0.330	-	-	-	0.231	0.231	0.091	-	-	-
	D-B, offside lane	546	0.150	0.150	0.342	-	-	-	0.239	0.239	0.095	-	-	-
	D-C	546	-	0.150	0.342	0.120	0.239	0.239	0.239	0.239	0.095	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	565	0.097	0.246	0.154	0.351
	B-C	640	0.093	0.234	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	528	0.092	0.234	0.147	0.334
	B-C	734	0.110	0.277	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	545	0.099	0.251	0.158	0.359
	B-C	752	0.115	0.291	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2033	Forecast Base	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	319	100.000
	2 - Aldi		ONE HOUR	✓	179	100.000
	3 - The Portway		ONE HOUR	✓	394	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	85	100.000
	5 - Lias Road		ONE HOUR	✓	614	100.000
	6 - A4106 (North)		ONE HOUR	✓	599	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	209	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	392	100.000
	3 - New Road West		ONE HOUR	✓	185	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	174	100.000
	2 - Mackworth Road		ONE HOUR	✓	119	100.000
	3 - New Rd (West)		ONE HOUR	✓	208	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	299	100.000
	2 - New Road (East)		ONE HOUR	✓	240	100.000
	3 - New Road (West)		ONE HOUR	✓	196	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	594	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	327	100.000
	3 - A4106 (West)		ONE HOUR	✓	451	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	7	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	720	100.000
	2 - A4106 (South)		ONE HOUR	✓	631	100.000
	3 - Fulmar Road		ONE HOUR	✓	420	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	895	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	544	100.000
	B - Unclassified link		ONE HOUR	✓	214	100.000
	C - A4106 West		ONE HOUR	✓	633	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	119	100.000
	B - Unclassified link		ONE HOUR	✓	280	100.000
	C - Newton Nottage East		ONE HOUR	✓	244	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	195	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	294	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	230	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	491	100.000
	B - Manor Grove		ONE HOUR	✓	205	100.000
	C - Bridgend Road South		ONE HOUR	✓	251	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	0.00
	3 - The Portway	[ONEHOUR]	0.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	42	60	5	67	145
	-	40	0	36	1	23	79
	-	82	33	0	7	9	263
	-	8	1	8	0	3	65
	-	93	16	251	1	2	251
	-	126	102	184	35	151	1

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	4	165	40
	-	206	25	161
	-	50	134	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	59	115
	-	36	0	83
	-	116	92	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	155	144
	-	165	0	75
	-	131	65	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	9	156	30
	-	0	0	0	0
	-	146	5	0	143
	-	52	35	143	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	218	273
	-	168	0	37
	-	191	60	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	229	365	0
	-	192	0	132	3
	-	282	165	0	4
	- Tyn-y-	1	3	3	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	220	303	197
	-	234	0	127	270
	-	197	89	0	134
	-	302	348	245	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	68	476
	-	25	0	189
	-	429	204	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	39	80
	-	56	0	224
	-	57	187	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	2	0	2	2
	-	0	0	0	0	0	0
	-	3	0	0	0	0	1
	-	0	0	0	0	0	0
	-	2	0	0.43	0	0	0.43
	-	2	0	1	0	0	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0
	-	0.53	0	1
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0
	-	0	0	0
	-	0	0	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	0.70	2
	-	0.66	0	0
	-	0.83	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	2	7
	-	0	0	0	0
	-	1	0	0	0
	-	2	0	0	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	0.50	2
	-	0.65	0	0
	-	2	2	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	2	0.30	0
	-	2	0	2	0
	-	2	0	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0	0	0
	-	0	0	0	0.80
	-	0	0	0	4
	-	0	0.62	1	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.46
	-	0	0	1
	-	0.25	0	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	0	5
	-	0	0	0.48
	-	2	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.26	3.51	0.3	1.4	A	293	439
	2 - Aldi	0.19	4.29	0.2	0.6	A	164	246
	3 - The Portway	0.33	4.05	0.5	2.1	A	362	542
	4 - Hillsboro North Car Park	0.09	3.69	0.1	0.5	A	78	117
	5 - Lias Road	0.64	9.53	1.8	2.8	A	563	845
	6 - A4106 (North)	0.31	2.51	0.5	1.8	A	550	824
N3 - New Road/Eastern Prom	1 - New Road East	0.18	3.48	0.2	0.5	A	192	288
	2 - Eastern Prom (South)	0.26	2.88	0.3	1.4	A	360	540
	3 - New Road West	0.16	3.46	0.2	0.5	A	170	255
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.22	5.20	0.3	1.2	A	160	239
	2 - Mackworth Road	0.16	5.15	0.2	0.5	A	109	164
	3 - New Rd (West)	0.23	4.61	0.3	1.3	A	191	286
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.36	6.26	0.6	2.6	A	274	412
	2 - New Road (East)	0.37	7.99	0.6	2.7	A	220	330
	3 - New Road (West)	0.26	5.97	0.4	1.2	A	180	270
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.46	4.75	0.9	1.9	A	545	818
	2 - Bridgend Road (South)	0.26	3.56	0.4	1.5	A	300	450
	3 - A4106 (West)	0.35	3.93	0.5	2.5	A	414	621
	4 - Tyn-y-Caeau Lane	0.01	6.81	0.0	0.5	A	6	10
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.57	6.11	1.3	1.5	A	661	991
	2 - A4106 (South)	0.36	2.87	0.6	2.6	A	579	869
	3 - Fulmar Road	0.41	5.36	0.7	2.8	A	385	578
	4 - A4229 Pyle Road (North)	0.67	7.31	2.0	3.0	A	821	1232

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.38	10.38	0.6	2.8	B	173	260
	B-A	0.11	16.88	0.1	0.5	C	23	34
	C-AB	0.40	10.49	0.6	2.9	B	187	281
	C-A						394	590
	A-B						62	94
	A-C						437	655
N9b - A4106 Junction (South)	B-C	0.36	8.20	0.6	2.6	A	206	308
	B-A	0.15	10.21	0.2	0.5	B	51	77
	C-AB	0.36	8.92	0.6	2.8	A	188	282
	C-A						36	54
	A-B						36	54
	A-C						73	110
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.07	6.09	0.1	0.7	A	37	55
	A-B						8	12
	A-C						135	202
	D-AB	0.18	9.48	0.2	0.9	A	68	103
	D-BC	0.38	12.99	0.6	2.8	B	143	214
	C-ABD	0.01	4.83	0.0	0.5	A	7	11
	C-D						130	195
	C-A						133	199
N11 - Bridgend Road/Manor Grove	B-C	0.09	9.00	0.1	0.5	A	34	51
	B-A	0.46	16.26	0.8	3.5	C	154	231
	C-AB	0.16	6.77	0.3	0.5	A	78	116
	C-A						153	229
	A-B						200	300
	A-C						251	376

Core Assessment - D7 - 2033 | Total Traffic | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Core Assessment	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	4.50	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.15	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	5.17	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	6.58	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	4.31	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	7.67	A
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				3.05	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				5.69	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			2.75	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				6.57	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		10	N11 - Bridgend Road/Manor Grove - Stream B-A	5.29	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	681	-	-	-	-	-	-	0.251	-	0.099	-	-	-
	D-B, nearside lane	532	0.147	0.147	0.333	-	-	-	0.233	0.233	0.092	-	-	-
	D-B, offside lane	540	0.149	0.149	0.338	-	-	-	0.237	0.237	0.094	-	-	-
	D-C	540	-	0.149	0.338	0.118	0.237	0.237	0.237	0.237	0.094	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	563	0.097	0.244	0.154	0.349
	B-C	644	0.093	0.235	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	536	0.094	0.237	0.149	0.339
	B-C	724	0.108	0.273	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	544	0.099	0.250	0.157	0.358
	B-C	754	0.116	0.292	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2033	Total Traffic	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	337	100.000
	2 - Aldi		ONE HOUR	✓	193	100.000
	3 - The Portway		ONE HOUR	✓	446	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	3	100.000
	5 - Lias Road		ONE HOUR	✓	480	100.000
	6 - A4106 (North)		ONE HOUR	✓	796	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	251	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	313	100.000
	3 - New Road West		ONE HOUR	✓	174	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	212	100.000
	2 - Mackworth Road		ONE HOUR	✓	129	100.000
	3 - New Rd (West)		ONE HOUR	✓	176	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	255	100.000
	2 - New Road (East)		ONE HOUR	✓	218	100.000
	3 - New Road (West)		ONE HOUR	✓	149	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	557	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	415	100.000
	3 - A4106 (West)		ONE HOUR	✓	526	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	3	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	849	100.000
	2 - A4106 (South)		ONE HOUR	✓	784	100.000
	3 - Fulmar Road		ONE HOUR	✓	609	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	840	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	554	100.000
	B - Unclassified link		ONE HOUR	✓	227	100.000
	C - A4106 West		ONE HOUR	✓	638	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	133	100.000
	B - Unclassified link		ONE HOUR	✓	222	100.000
	C - Newton Nottage East		ONE HOUR	✓	223	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	213	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	278	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	145	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	418	100.000
	B - Manor Grove		ONE HOUR	✓	287	100.000
	C - Bridgend Road South		ONE HOUR	✓	339	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	27	73	0	77	160
	-	24	0	52	0	14	103
	-	69	56	1	1	25	294
	-	1	0	0	0	1	1
	-	73	19	194	0	0	194
	-	238	98	263	8	189	0

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	2	218	31
	-	167	7	139
	-	29	144	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	85	127
	-	37	0	92
	-	84	92	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	75	180
	-	156	0	62
	-	123	26	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	5	173	35
	-	0	0	0	0
	-	159	1	0	118
	-	48	16	81	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	160	258
	-	225	0	62
	-	292	47	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	199	357	1
	-	225	0	190	0
	-	378	147	0	1
	- Tyn-y-	1	1	1	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	318	271	260
	-	272	0	62	450
	-	303	65	0	241
	-	161	486	193	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	47	507
	-	47	0	180
	-	480	158	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	55	78
	-	39	0	183
	-	51	172	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	5	0	3	0.44
	-	0	0	0.05	0	0.28	2
	-	0.03	0.03	0	0	0.24	1
	-	0.45	0	0	0	0	0
	-	4	0.20	2	0	0	2
	-	1	2	2	0	3	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.82	7
	-	0.96	0	2
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.97	0
	-	2	0	3
	-	1	1	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	4	0.88
	-	5	0	0
	-	2	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	0.91	6
	-	0	0	0	0
	-	3	0	0	5
	-	9	0	4	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	3	3
	-	2	0	2
	-	1	0	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	3	0.88	0
	-	3	0	0.57	0
	-	0.16	4	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0.65	0.40	1
	-	2	0	0.14	2
	-	0.36	0.11	0	3
	-	3	2	4	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.84
	-	2	0	0
	-	2	0.68	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	2	1
	-	0	0	1
	-	4	0.63	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.28	3.70	0.4	1.2	A	309	464
	2 - Aldi	0.24	5.21	0.3	1.3	A	177	266
	3 - The Portway	0.41	5.01	0.7	2.8	A	409	614
	4 - Hillsboro North Car Park	0.00	0.00	0.0	~1	A	0	0
	5 - Lias Road	0.51	6.99	1.0	2.2	A	440	661
	6 - A4106 (North)	0.41	2.88	0.7	2.6	A	730	1096
N3 - New Road/Eastern Prom	1 - New Road East	0.22	3.69	0.3	1.2	A	230	345
	2 - Eastern Prom (South)	0.21	2.69	0.3	0.9	A	287	431
	3 - New Road West	0.15	3.20	0.2	0.5	A	160	239
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.27	5.58	0.4	1.2	A	195	292
	2 - Mackworth Road	0.18	5.46	0.2	0.5	A	118	178
	3 - New Rd (West)	0.19	4.49	0.2	1.0	A	162	242
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.31	5.65	0.4	1.9	A	234	351
	2 - New Road (East)	0.36	8.35	0.6	2.6	A	200	300
	3 - New Road (West)	0.20	5.56	0.3	1.1	A	137	205
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.43	4.50	0.8	2.3	A	511	767
	2 - Bridgend Road (South)	0.33	3.88	0.5	2.2	A	381	571
	3 - A4106 (West)	0.42	4.44	0.7	2.6	A	483	724
	4 - Tyn-y-Caeau Lane	0.00	0.00	0.0	~1	A	0	0
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.70	9.04	2.3	5.3	A	779	1169
	2 - A4106 (South)	0.45	3.37	0.8	2.3	A	719	1079
	3 - Fulmar Road	0.67	11.08	2.0	5.4	B	559	838
	4 - A4229 Pyle Road (North)	0.67	7.85	2.0	2.9	A	771	1156

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.38	10.96	0.6	2.8	B	165	248
	B-A	0.22	19.16	0.3	1.3	C	43	65
	C-AB	0.31	9.32	0.4	1.9	A	145	217
	C-A						440	661
	A-B						43	65
	A-C						465	698
N9b - A4106 Junction (South)	B-C	0.29	7.31	0.4	1.7	A	168	252
	B-A	0.10	9.35	0.1	0.5	A	36	54
	C-AB	0.33	8.59	0.5	2.4	A	171	257
	C-A						34	50
	A-B						50	76
	A-C						72	107
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.08	6.01	0.1	0.8	A	44	65
	A-B						4	6
	A-C						148	221
	D-AB	0.13	8.16	0.1	0.5	A	53	79
	D-BC	0.23	10.96	0.3	1.4	B	80	121
	C-ABD	0.00	4.88	0.0	0.5	A	1	2
	C-D						108	162
	C-A						146	218
N11 - Bridgend Road/Manor Grove	B-C	0.19	12.70	0.2	1.0	B	57	85
	B-A	0.63	25.04	1.7	7.6	D	206	310
	C-AB	0.13	5.65	0.3	1.2	A	71	106
	C-A						240	361
	A-B						147	220
	A-C						237	355

Core Assessment - D8 - 2033 | Total Traffic | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	N4 - New Road/Mackworth Rd	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 92% of the total flow for the roundabout for one or more time segments]
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Core Assessment	✓	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	7.35	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.05	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	4.63	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	6.77	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	5.07	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	8.50	A
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				3.20	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				6.54	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			4.15	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				3.82	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		12	N2 - Portway Roundabout - 5 - Lias Road	6.04	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	674	-	-	-	-	-	-	0.249	-	0.098	-	-	-
	D-B, nearside lane	526	0.145	0.145	0.330	-	-	-	0.231	0.231	0.091	-	-	-
	D-B, offside lane	546	0.150	0.150	0.342	-	-	-	0.239	0.239	0.095	-	-	-
	D-C	546	-	0.150	0.342	0.120	0.239	0.239	0.239	0.239	0.095	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	565	0.097	0.246	0.154	0.351
	B-C	640	0.093	0.234	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	528	0.092	0.234	0.147	0.334
	B-C	734	0.110	0.277	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	545	0.099	0.251	0.158	0.359
	B-C	752	0.115	0.291	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2033	Total Traffic	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	395	100.000
	2 - Aldi		ONE HOUR	✓	330	100.000
	3 - The Portway		ONE HOUR	✓	648	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	9	100.000
	5 - Lias Road		ONE HOUR	✓	617	100.000
	6 - A4106 (North)		ONE HOUR	✓	779	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	178	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	339	100.000
	3 - New Road West		ONE HOUR	✓	185	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	174	100.000
	2 - Mackworth Road		ONE HOUR	✓	23	100.000
	3 - New Rd (West)		ONE HOUR	✓	155	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	300	100.000
	2 - New Road (East)		ONE HOUR	✓	240	100.000
	3 - New Road (West)		ONE HOUR	✓	199	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	731	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	330	100.000
	3 - A4106 (West)		ONE HOUR	✓	570	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	7	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	856	100.000
	2 - A4106 (South)		ONE HOUR	✓	872	100.000
	3 - Fulmar Road		ONE HOUR	✓	431	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	1014	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	680	100.000
	B - Unclassified link		ONE HOUR	✓	214	100.000
	C - A4106 West		ONE HOUR	✓	753	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	119	100.000
	B - Unclassified link		ONE HOUR	✓	280	100.000
	C - Newton Nottage East		ONE HOUR	✓	244	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	196	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	298	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	230	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	492	100.000
	B - Manor Grove		ONE HOUR	✓	205	100.000
	C - Bridgend Road South		ONE HOUR	✓	254	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	43	67	1	71	213
	-	40	0	118	0	25	147
	-	90	95	0	1	16	446
	-	1	0	1	0	0	7
	-	93	20	251	0	2	251
	-	127	199	298	3	151	1

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	4	134	40
	-	153	25	161
	-	50	134	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	19	155
	-	11	0	12
	-	144	11	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	155	145
	-	165	0	75
	-	134	65	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	9	157	30
	-	0	0	0	0
	-	150	5	0	143
	-	52	35	143	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	218	274
	-	168	0	37
	-	194	60	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	230	501	0
	-	195	0	132	3
	-	401	165	0	4
	- Tyn-y-	1	3	3	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	356	303	197
	-	354	0	141	377
	-	197	100	0	134
	-	302	467	245	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	68	612
	-	25	0	189
	-	549	204	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	39	80
	-	56	0	224
	-	57	187	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	2	0	2	3
	-	0	0	0.03	0	0.13	0.63
	-	3	0.03	0	0	0.25	1
	-	0.58	0	0	0	0	0
	-	2	0.22	0.43	0	0	0.43
	-	2	0.47	1	0	0	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.40	0
	-	1	0	1
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	4	0
	-	7	0	10
	-	0	11	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	0.70	2
	-	0.66	0	0
	-	1	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	2	7
	-	0	0	0	0
	-	2	0	0	0
	-	2	0	0	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	0.50	2
	-	0.65	0	0
	-	2	2	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	2	0.41	0
	-	2	0	2	0
	-	1	0	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0.27	0	0
	-	0.27	0	0.12	0.90
	-	0	0.11	0	4
	-	0	0.73	1	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.51
	-	0	0	1
	-	0.37	0	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	0	5
	-	0	0	0.48
	-	2	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.35	4.40	0.5	2.4	A	362	544
	2 - Aldi	0.41	6.80	0.7	3.0	A	303	454
	3 - The Portway	0.59	7.32	1.4	1.7	A	595	892
	4 - Hillsboro North Car Park	0.01	4.13	0.0	0.5	A	8	12
	5 - Lias Road	0.74	15.16	2.8	12.4	C	566	849
	6 - A4106 (North)	0.42	3.00	0.7	2.7	A	715	1072
N3 - New Road/Eastern Prom	1 - New Road East	0.16	3.38	0.2	0.5	A	163	245
	2 - Eastern Prom (South)	0.22	2.76	0.3	1.2	A	311	467
	3 - New Road West	0.16	3.25	0.2	0.5	A	170	255
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.21	4.92	0.3	1.2	A	160	239
	2 - Mackworth Road	0.03	5.05	0.0	0.5	A	21	32
	3 - New Rd (West)	0.17	4.24	0.2	0.5	A	142	213
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.37	6.29	0.6	2.6	A	275	413
	2 - New Road (East)	0.37	8.01	0.6	2.7	A	220	330
	3 - New Road (West)	0.27	6.02	0.4	1.3	A	183	274
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.57	5.94	1.3	1.6	A	671	1006
	2 - Bridgend Road (South)	0.28	3.94	0.4	1.4	A	303	454
	3 - A4106 (West)	0.44	4.59	0.8	2.2	A	523	785
	4 - Tyn-y-Caeau Lane	0.02	7.67	0.0	0.5	A	6	10
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.72	9.80	2.5	7.2	A	785	1178
	2 - A4106 (South)	0.49	3.65	1.0	1.5	A	800	1200
	3 - Fulmar Road	0.46	6.53	0.9	2.8	A	395	593
	4 - A4229 Pyle Road (North)	0.79	12.42	3.7	17.0	B	930	1396

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.41	11.96	0.7	3.1	B	173	260
	B-A	0.15	22.76	0.2	0.5	C	23	34
	C-AB	0.43	11.91	0.7	3.2	B	187	281
	C-A						504	755
	A-B						62	94
	A-C						562	842
N9b - A4106 Junction (South)	B-C	0.36	8.20	0.6	2.6	A	206	308
	B-A	0.15	10.21	0.2	0.5	B	51	77
	C-AB	0.36	8.92	0.6	2.8	A	188	282
	C-A						36	54
	A-B						36	54
	A-C						73	110
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.07	6.09	0.1	0.7	A	37	55
	A-B						8	12
	A-C						135	203
	D-AB	0.18	9.52	0.2	0.9	A	68	103
	D-BC	0.38	13.05	0.6	2.8	B	143	214
	C-ABD	0.01	4.82	0.0	0.5	A	7	11
	C-D						130	195
	C-A						136	205
N11 - Bridgend Road/Manor Grove	B-C	0.09	9.02	0.1	0.5	A	34	51
	B-A	0.46	16.33	0.8	3.6	C	154	231
	C-AB	0.16	6.75	0.3	0.5	A	78	117
	C-A						155	233
	A-B						200	300
	A-C						251	377

Sensitivity Test - D1 - 2026 | Forecast Base | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix	N6 - A4106/Bridgend Road	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Sensitivity Test	Extra 25% of network traffic	✓	125.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	4.48	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.15	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	4.78	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	6.66	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	2.36	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	8.76	A
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				3.78	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				6.29	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			3.40	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				9.83	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		1	N11 - Bridgend Road/Manor Grove - Stream B-A	6.22	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	681	-	-	-	-	-	-	0.251	-	0.099	-	-	-
	D-B, nearside lane	532	0.147	0.147	0.333	-	-	-	0.233	0.233	0.092	-	-	-
	D-B, offside lane	540	0.149	0.149	0.338	-	-	-	0.237	0.237	0.094	-	-	-
	D-C	540	-	0.149	0.338	0.118	0.237	0.237	0.237	0.237	0.094	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	563	0.097	0.244	0.154	0.349
	B-C	644	0.093	0.235	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	536	0.094	0.237	0.149	0.339
	B-C	724	0.108	0.273	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	543	0.099	0.250	0.157	0.357
	B-C	754	0.116	0.292	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2026	Forecast Base	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	223	100.000
	2 - Aldi		ONE HOUR	✓	79	100.000
	3 - The Portway		ONE HOUR	✓	284	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	26	100.000
	5 - Lias Road		ONE HOUR	✓	449	100.000
	6 - A4106 (North)		ONE HOUR	✓	637	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	181	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	258	100.000
	3 - New Road West		ONE HOUR	✓	163	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	122	100.000
	2 - Mackworth Road		ONE HOUR	✓	85	100.000
	3 - New Rd (West)		ONE HOUR	✓	133	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	163	100.000
	2 - New Road (East)		ONE HOUR	✓	204	100.000
	3 - New Road (West)		ONE HOUR	✓	110	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	5	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	3	100.000
	3 - A4106 (West)		ONE HOUR	✓	4	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	0	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	719	100.000
	2 - A4106 (South)		ONE HOUR	✓	527	100.000
	3 - Fulmar Road		ONE HOUR	✓	562	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	655	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	442	100.000
	B - Unclassified link		ONE HOUR	✓	211	100.000
	C - A4106 West		ONE HOUR	✓	553	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	125	100.000
	B - Unclassified link		ONE HOUR	✓	207	100.000
	C - Newton Nottage East		ONE HOUR	✓	209	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	124	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	230	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	136	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	316	100.000
	B - Manor Grove		ONE HOUR	✓	268	100.000
	C - Bridgend Road South		ONE HOUR	✓	287	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	24	63	1	61	74
	-	22	0	5	1	11	40
	-	55	17	1	6	13	192
	-	2	1	3	0	7	13
	-	68	16	181	3	0	181
	-	153	40	195	73	176	0

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	2	150	29
	-	123	6	129
	-	27	135	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	34	88
	-	23	0	62
	-	62	71	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	70	93
	-	146	0	58
	-	86	24	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	5	87	32
	-	0	0	0	0
	-	119	1	0	110
	-	45	15	76	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	150	166
	-	210	0	58
	-	244	43	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	5	0.78	0
	-	3	0	0.57	0
	-	0	4	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	223	253	243
	-	210	0	51	266
	-	283	54	0	225
	-	151	324	180	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	43	399
	-	43	0	168
	-	405	148	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	52	73
	-	36	0	171
	-	48	161	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	5	0	3	0
	-	0	0	0	0	0	3
	-	0	0	0	0	0	1
	-	0	0	0	0	0	0
	-	4	0	2	0	0	2
	-	1	3	2	0	3	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.68	7
	-	0.82	0	2
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0
	-	0	0	2
	-	2	0	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	4	1
	-	5	0	0
	-	2	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	1	6
	-	0	0	0	0
	-	3	0	0	5
	-	9	0	4	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	3	4
	-	2	0	2
	-	1	0	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	0	0	0
	-	0	0	0	0
	-	0	0	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0.45	0.40	1
	-	2	0	0	2
	-	0.36	0	0	3
	-	3	2	4	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.76
	-	2	0	0
	-	2	0.68	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	2	1
	-	0	0	1
	-	4	0.63	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.23	3.58	0.3	1.3	A	256	384
	2 - Aldi	0.13	4.77	0.1	0.5	A	91	136
	3 - The Portway	0.33	4.45	0.5	2.1	A	326	489
	4 - Hillsboro North Car Park	0.03	3.39	0.0	0.5	A	30	45
	5 - Lias Road	0.55	7.15	1.2	1.6	A	515	773
	6 - A4106 (North)	0.42	2.92	0.7	2.6	A	731	1096
N3 - New Road/Eastern Prom	1 - New Road East	0.20	3.66	0.3	1.0	A	208	311
	2 - Eastern Prom (South)	0.21	2.72	0.3	1.1	A	296	444
	3 - New Road West	0.17	3.25	0.2	0.5	A	187	280
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.19	5.02	0.2	0.9	A	140	210
	2 - Mackworth Road	0.14	5.10	0.2	0.5	A	97	146
	3 - New Rd (West)	0.18	4.37	0.2	0.5	A	153	229
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.25	5.24	0.3	1.4	A	187	280
	2 - New Road (East)	0.39	8.34	0.6	2.7	A	234	351
	3 - New Road (West)	0.19	5.60	0.2	1.0	A	126	189
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.00	2.36	0.0	0.5	A	6	9
	2 - Bridgend Road (South)	0.00	0.00	0.0	~1	A	0	0
	3 - A4106 (West)	0.00	0.00	0.0	~1	A	0	0
	4 - Tyn-y-Caeau Lane	0.00	0.00	0.0	~1	A	0	0
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.73	9.76	2.6	8.0	A	825	1237
	2 - A4106 (South)	0.39	3.20	0.6	2.9	A	604	907
	3 - Fulmar Road	0.75	13.73	2.9	12.4	B	645	967
	4 - A4229 Pyle Road (North)	0.67	7.92	2.0	2.8	A	751	1127

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.45	12.62	0.8	3.4	B	193	289
	B-A	0.27	22.40	0.4	1.1	C	49	74
	C-AB	0.36	10.08	0.6	2.6	B	170	255
	C-A						465	697
	A-B						49	74
	A-C						458	686
N9b - A4106 Junction (South)	B-C	0.34	8.03	0.5	2.4	A	196	294
	B-A	0.12	10.16	0.1	0.5	B	41	62
	C-AB	0.39	9.48	0.7	3.2	A	203	305
	C-A						37	55
	A-B						60	89
	A-C						84	126
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.09	6.57	0.1	0.6	A	45	67
	A-B						5	8
	A-C						92	138
	D-AB	0.15	8.49	0.2	0.5	A	62	93
	D-BC	0.26	11.26	0.3	1.2	B	94	141
	C-ABD	0.00	4.80	0.0	0.5	A	2	3
	C-D						126	189
	C-A						136	204
N11 - Bridgend Road/Manor Grove	B-C	0.28	17.34	0.4	1.5	C	67	100
	B-A	0.74	34.09	2.6	13.1	D	241	361
	C-AB	0.14	5.64	0.3	1.1	A	82	123
	C-A						247	371
	A-B						172	258
	A-C						190	286

Sensitivity Test - D2 - 2026 | Forecast Base | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Last Run	Last Run	N3 - New Road/Eastern Prom - 3 - New Road West - Capacity	Pedestrian Crossing causes blocking on previous arm due to traffic queing to leave the junction in 2 timesegment(s).
Warning	Vehicle Mix	N4 - New Road/Mackworth Rd	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Sensitivity Test	Extra 25% of network traffic	✓	125.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	7.71	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.40	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	5.23	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	7.61	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	4.88	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	8.61	A
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				4.05	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				7.46	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			4.91	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				4.97	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		10	N2 - Portway Roundabout - 5 - Lias Road	6.36	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	674	-	-	-	-	-	-	0.249	-	0.098	-	-	-
	D-B, nearside lane	526	0.145	0.145	0.329	-	-	-	0.231	0.231	0.091	-	-	-
	D-B, offside lane	546	0.151	0.151	0.342	-	-	-	0.239	0.239	0.095	-	-	-
	D-C	546	-	0.151	0.342	0.120	0.239	0.239	0.239	0.239	0.095	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	566	0.097	0.246	0.155	0.351
	B-C	640	0.093	0.234	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	528	0.092	0.234	0.147	0.334
	B-C	734	0.110	0.277	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	546	0.099	0.251	0.158	0.359
	B-C	751	0.115	0.291	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2026	Forecast Base	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	299	100.000
	2 - Aldi		ONE HOUR	✓	166	100.000
	3 - The Portway		ONE HOUR	✓	367	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	79	100.000
	5 - Lias Road		ONE HOUR	✓	575	100.000
	6 - A4106 (North)		ONE HOUR	✓	558	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	195	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	366	100.000
	3 - New Road West		ONE HOUR	✓	173	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	162	100.000
	2 - Mackworth Road		ONE HOUR	✓	111	100.000
	3 - New Rd (West)		ONE HOUR	✓	194	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	280	100.000
	2 - New Road (East)		ONE HOUR	✓	224	100.000
	3 - New Road (West)		ONE HOUR	✓	183	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	554	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	305	100.000
	3 - A4106 (West)		ONE HOUR	✓	421	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	7	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	672	100.000
	2 - A4106 (South)		ONE HOUR	✓	588	100.000
	3 - Fulmar Road		ONE HOUR	✓	392	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	836	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	508	100.000
	B - Unclassified link		ONE HOUR	✓	199	100.000
	C - A4106 West		ONE HOUR	✓	591	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	111	100.000
	B - Unclassified link		ONE HOUR	✓	262	100.000
	C - Newton Nottage East		ONE HOUR	✓	229	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	182	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	276	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	215	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	458	100.000
	B - Manor Grove		ONE HOUR	✓	191	100.000
	C - Bridgend Road South		ONE HOUR	✓	234	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	39	56	5	63	136
	-	37	0	33	1	21	74
	-	77	30	0	6	8	246
	-	7	1	7	0	3	61
	-	87	15	235	1	2	235
	-	117	95	172	32	141	1

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	4	154	37
	-	192	23	151
	-	47	125	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	55	107
	-	33	0	78
	-	108	86	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	145	135
	-	154	0	70
	-	122	61	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	8	146	28
	-	0	0	0	0
	-	137	5	0	134
	-	49	32	134	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	203	255
	-	157	0	34
	-	178	56	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	213	341	0
	-	179	0	123	3
	-	263	154	0	4
	- Tyn-y-	1	3	3	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	205	283	184
	-	218	0	118	252
	-	184	83	0	125
	-	282	325	229	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	64	444
	-	23	0	176
	-	401	190	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	36	75
	-	53	0	209
	-	54	175	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	2	0	2	2
	-	0	0	0	0	0	0
	-	3	0	0	0	0	1
	-	0	0	0	0	0	0
	-	2	0	0.43	0	0	0.43
	-	2	0	1	0	0	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0
	-	0.53	0	1
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0
	-	0	0	0
	-	0	0	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	0.70	2
	-	0.66	0	0
	-	0.83	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	2	7
	-	0	0	0	0
	-	1	0	0	0
	-	2	0	0	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	0.50	2
	-	0.65	0	0
	-	2	2	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	2	0.30	0
	-	2	0	2	0
	-	2	0	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0	0	0
	-	0	0	0	0.80
	-	0	0	0	4
	-	0	0.62	1	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.46
	-	0	0	1
	-	0.25	0	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	0	5
	-	0	0	0.48
	-	2	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.31	4.00	0.5	1.9	A	343	514
	2 - Aldi	0.26	5.52	0.3	1.5	A	190	286
	3 - The Portway	0.43	5.34	0.7	2.7	A	421	631
	4 - Hillsboro North Car Park	0.11	4.04	0.1	0.5	A	91	136
	5 - Lias Road	0.79	17.03	3.6	18.1	C	660	989
	6 - A4106 (North)	0.38	2.83	0.6	2.8	A	640	960
N3 - New Road/Eastern Prom	1 - New Road East	0.22	3.67	0.3	1.2	A	224	336
	2 - Eastern Prom (South)	0.30	3.07	0.4	1.7	A	420	630
	3 - New Road West	0.20	3.78	0.2	0.9	A	198	298
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.25	5.52	0.3	1.5	A	186	279
	2 - Mackworth Road	0.19	5.43	0.2	0.9	A	127	191
	3 - New Rd (West)	0.27	4.87	0.4	1.2	A	223	334
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.43	7.02	0.7	2.6	A	321	482
	2 - New Road (East)	0.44	9.23	0.8	2.9	A	257	385
	3 - New Road (West)	0.31	6.52	0.5	2.0	A	210	315
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.55	5.71	1.2	1.5	A	635	953
	2 - Bridgend Road (South)	0.32	3.96	0.5	1.9	A	350	525
	3 - A4106 (West)	0.42	4.43	0.7	2.6	A	483	724
	4 - Tyn-y-Caeau Lane	0.02	7.58	0.0	0.5	A	8	12
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.70	9.11	2.3	5.3	A	771	1156
	2 - A4106 (South)	0.43	3.39	0.8	2.6	A	674	1012
	3 - Fulmar Road	0.50	6.67	1.0	2.4	A	450	674
	4 - A4229 Pyle Road (North)	0.80	12.78	4.0	18.5	B	959	1438

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.47	12.92	0.9	3.5	B	202	303
	B-A	0.17	23.01	0.2	0.6	C	26	40
	C-AB	0.48	12.87	0.9	3.5	B	218	327
	C-A						460	689
	A-B						73	110
	A-C						509	764
N9b - A4106 Junction (South)	B-C	0.43	9.40	0.7	2.9	A	240	360
	B-A	0.19	11.57	0.2	1.1	B	61	91
	C-AB	0.43	9.96	0.8	3.4	A	223	335
	C-A						39	59
	A-B						41	62
	A-C						86	129
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.09	6.08	0.1	0.9	A	45	68
	A-B						9	13
	A-C						155	233
	D-AB	0.23	11.10	0.3	1.4	B	81	122
	D-BC	0.46	15.63	0.8	3.5	C	166	248
	C-ABD	0.02	4.73	0.0	0.5	A	10	14
	C-D						152	228
	C-A						155	233
N11 - Bridgend Road/Manor Grove	B-C	0.12	10.97	0.1	0.5	B	39	58
	B-A	0.57	21.94	1.3	5.3	C	180	270
	C-AB	0.20	7.00	0.4	1.3	A	97	145
	C-A						172	258
	A-B						233	349
	A-C						292	439

Sensitivity Test - D3 - 2026 | Total Traffic | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Sensitivity Test	Extra 25% of network traffic	✓	125.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	5.67	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.36	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	5.57	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	7.41	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	5.11	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	16.70	C
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				4.00	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				6.29	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			2.98	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				12.52	B

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-6	N11 - Bridgend Road/Manor Grove - Stream B-A	8.57	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	681	-	-	-	-	-	-	0.251	-	0.099	-	-	-
	D-B, nearside lane	532	0.147	0.147	0.333	-	-	-	0.233	0.233	0.092	-	-	-
	D-B, offside lane	540	0.149	0.149	0.338	-	-	-	0.237	0.237	0.094	-	-	-
	D-C	540	-	0.149	0.338	0.118	0.237	0.237	0.237	0.237	0.094	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	563	0.097	0.244	0.154	0.349
	B-C	644	0.093	0.235	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	536	0.094	0.237	0.149	0.339
	B-C	724	0.108	0.273	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	543	0.099	0.250	0.157	0.357
	B-C	754	0.116	0.292	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2026	Total Traffic	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	319	100.000
	2 - Aldi		ONE HOUR	✓	189	100.000
	3 - The Portway		ONE HOUR	✓	424	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	3	100.000
	5 - Lias Road		ONE HOUR	✓	447	100.000
	6 - A4106 (North)		ONE HOUR	✓	754	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	239	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	293	100.000
	3 - New Road West		ONE HOUR	✓	163	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	202	100.000
	2 - Mackworth Road		ONE HOUR	✓	123	100.000
	3 - New Rd (West)		ONE HOUR	✓	167	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	243	100.000
	2 - New Road (East)		ONE HOUR	✓	204	100.000
	3 - New Road (West)		ONE HOUR	✓	141	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	532	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	389	100.000
	3 - A4106 (West)		ONE HOUR	✓	495	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	3	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	798	100.000
	2 - A4106 (South)		ONE HOUR	✓	746	100.000
	3 - Fulmar Road		ONE HOUR	✓	570	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	794	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	521	100.000
	B - Unclassified link		ONE HOUR	✓	211	100.000
	C - A4106 West		ONE HOUR	✓	599	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	125	100.000
	B - Unclassified link		ONE HOUR	✓	207	100.000
	C - Newton Nottage East		ONE HOUR	✓	209	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	204	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	261	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	136	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	396	100.000
	B - Manor Grove		ONE HOUR	✓	268	100.000
	C - Bridgend Road South		ONE HOUR	✓	318	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	25	68	0	72	154
	-	22	0	52	0	14	101
	-	65	55	1	1	23	279
	-	1	0	0	0	1	1
	-	68	17	181	0	0	181
	-	227	95	249	7	176	0

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	2	208	29
	-	158	6	129
	-	27	135	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	82	120
	-	36	0	87
	-	80	87	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	70	173
	-	146	0	58
	-	117	24	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	5	167	32
	-	0	0	0	0
	-	150	1	0	110
	-	45	15	76	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	150	246
	-	210	0	58
	-	275	43	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	192	339	1
	-	212	0	177	0
	-	356	138	0	1
	- Tyn-y-	1	1	1	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	302	253	243
	-	257	0	58	431
	-	283	62	0	225
	-	151	463	180	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	43	478
	-	43	0	168
	-	451	148	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	52	73
	-	36	0	171
	-	48	161	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	5	0	3	0.45
	-	0	0	0.05	0	0.30	2
	-	0.03	0.03	0	0	0.25	1
	-	0.46	0	0	0	0	0
	-	4	0.21	2	0	0	2
	-	1	2	2	0	3	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.83	7
	-	0.96	0	2
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	1	0
	-	2	0	3
	-	1	1	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	4	0.87
	-	5	0	0
	-	2	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	0.90	6
	-	0	0	0	0
	-	3	0	0	5
	-	9	0	4	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	3	3
	-	2	0	2
	-	1	0	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	3	0.89	0
	-	3	0	0.57	0
	-	0.16	4	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0.66	0.40	1
	-	2	0	0.14	2
	-	0.36	0.12	0	3
	-	3	2	4	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.84
	-	2	0	0
	-	2	0.68	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	2	1
	-	0	0	1
	-	4	0.63	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.35	4.34	0.5	2.4	A	366	549
	2 - Aldi	0.31	6.22	0.4	1.8	A	217	325
	3 - The Portway	0.50	6.08	1.0	2.0	A	486	730
	4 - Hillsboro North Car Park	0.00	0.00	0.0	~1	A	0	0
	5 - Lias Road	0.62	9.74	1.6	2.5	A	513	769
	6 - A4106 (North)	0.50	3.46	1.0	1.5	A	865	1297
N3 - New Road/Eastern Prom	1 - New Road East	0.27	3.98	0.4	1.0	A	274	411
	2 - Eastern Prom (South)	0.24	2.83	0.3	1.3	A	336	504
	3 - New Road West	0.18	3.42	0.2	0.5	A	187	280
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.32	6.09	0.5	2.0	A	232	348
	2 - Mackworth Road	0.22	5.84	0.3	1.2	A	141	212
	3 - New Rd (West)	0.23	4.74	0.3	1.3	A	192	287
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.36	6.19	0.6	2.6	A	279	418
	2 - New Road (East)	0.43	9.81	0.8	3.0	A	234	351
	3 - New Road (West)	0.24	5.98	0.3	1.4	A	162	243
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.52	5.42	1.1	1.5	A	610	915
	2 - Bridgend Road (South)	0.40	4.48	0.7	2.8	A	446	669
	3 - A4106 (West)	0.50	5.27	1.0	1.5	A	568	852
	4 - Tyn-y-Caeau Lane	0.00	0.00	0.0	~1	A	0	0
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.87	21.69	6.3	31.4	C	915	1373
	2 - A4106 (South)	0.55	4.34	1.2	1.5	A	856	1284
	3 - Fulmar Road	0.86	27.80	5.7	30.5	D	654	981
	4 - A4229 Pyle Road (North)	0.83	15.43	4.5	22.6	C	911	1366

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.49	14.68	0.9	3.9	B	193	289
	B-A	0.32	28.93	0.5	1.8	D	49	74
	C-AB	0.38	11.00	0.6	2.9	B	170	255
	C-A						517	776
	A-B						49	74
	A-C						548	822
N9b - A4106 Junction (South)	B-C	0.34	8.03	0.5	2.4	A	196	294
	B-A	0.12	10.16	0.1	0.5	B	41	62
	C-AB	0.39	9.48	0.7	3.2	A	203	305
	C-A						37	55
	A-B						60	89
	A-C						84	126
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.10	5.96	0.2	0.9	A	53	80
	A-B						5	8
	A-C						176	263
	D-AB	0.16	8.86	0.2	0.5	A	62	93
	D-BC	0.28	12.25	0.4	1.5	B	94	141
	C-ABD	0.00	4.78	0.0	0.5	A	2	3
	C-D						126	189
	C-A						172	257
N11 - Bridgend Road/Manor Grove	B-C	0.37	26.49	0.6	2.0	D	67	100
	B-A	0.81	49.09	3.7	20.0	E	241	361
	C-AB	0.16	5.63	0.3	1.2	A	89	134
	C-A						276	414
	A-B						172	258
	A-C						282	423

Sensitivity Test - D4 - 2026 | Total Traffic | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	N4 - New Road/Mackworth Rd	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 94% of the total flow for the roundabout for one or more time segments]
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Sensitivity Test	Extra 25% of network traffic	✓	125.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	18.44	C
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.21	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	4.79	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	7.64	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	6.53	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	27.59	D
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				4.46	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				7.46	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			4.90	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				4.98	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-5	N2 - Portway Roundabout - 5 - Lias Road	13.47	B

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	674	-	-	-	-	-	-	0.249	-	0.098	-	-	-
	D-B, nearside lane	526	0.145	0.145	0.329	-	-	-	0.231	0.231	0.091	-	-	-
	D-B, offside lane	546	0.151	0.151	0.342	-	-	-	0.239	0.239	0.095	-	-	-
	D-C	546	-	0.151	0.342	0.120	0.239	0.239	0.239	0.239	0.095	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	566	0.097	0.246	0.155	0.351
	B-C	640	0.093	0.234	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	528	0.092	0.234	0.147	0.334
	B-C	734	0.110	0.277	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	546	0.099	0.251	0.158	0.359
	B-C	751	0.115	0.291	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2026	Total Traffic	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	369	100.000
	2 - Aldi		ONE HOUR	✓	317	100.000
	3 - The Portway		ONE HOUR	✓	617	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	8	100.000
	5 - Lias Road		ONE HOUR	✓	578	100.000
	6 - A4106 (North)		ONE HOUR	✓	741	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	164	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	313	100.000
	3 - New Road West		ONE HOUR	✓	173	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	162	100.000
	2 - Mackworth Road		ONE HOUR	✓	15	100.000
	3 - New Rd (West)		ONE HOUR	✓	140	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	280	100.000
	2 - New Road (East)		ONE HOUR	✓	224	100.000
	3 - New Road (West)		ONE HOUR	✓	187	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	691	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	308	100.000
	3 - A4106 (West)		ONE HOUR	✓	541	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	7	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	808	100.000
	2 - A4106 (South)		ONE HOUR	✓	830	100.000
	3 - Fulmar Road		ONE HOUR	✓	403	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	955	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	644	100.000
	B - Unclassified link		ONE HOUR	✓	199	100.000
	C - A4106 West		ONE HOUR	✓	710	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	111	100.000
	B - Unclassified link		ONE HOUR	✓	262	100.000
	C - Newton Nottage East		ONE HOUR	✓	229	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	183	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	279	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	215	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	459	100.000
	B - Manor Grove		ONE HOUR	✓	191	100.000
	C - Bridgend Road South		ONE HOUR	✓	237	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	40	63	1	66	199
	-	37	0	116	0	23	141
	-	84	92	0	1	15	425
	-	1	0	1	0	0	6
	-	87	19	235	0	2	235
	-	118	192	286	3	141	1

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	4	123	37
	-	139	23	151
	-	47	125	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	15	147
	-	8	0	7
	-	136	4	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	145	135
	-	154	0	70
	-	126	61	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	8	147	28
	-	0	0	0	0
	-	140	5	0	134
	-	49	32	134	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	203	256
	-	157	0	34
	-	181	56	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	214	477	0
	-	182	0	123	3
	-	383	154	0	4
	- Tyn-y-	1	3	3	0

N7 - A4106/A4229/Fulmar

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	338	0	133	359
	-	184	94	0	125
	-	282	444	229	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	64	580
	-	23	0	176
	-	520	190	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	36	75
	-	53	0	209
	-	54	175	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	2	0	2	3
	-	0	0	0.03	0	0.14	0.66
	-	3	0.03	0	0	0.27	1
	-	0.62	0	0	0	0	0
	-	2	0.23	0.43	0	0	0.43
	-	2	0.48	1	0	0	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.43	0
	-	1	0	1
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	5	0
	-	9	0	19
	-	0	27	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	0.70	2
	-	0.66	0	0
	-	1	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	2	7
	-	0	0	0	0
	-	2	0	0	0
	-	2	0	0	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	0.50	2
	-	0.65	0	0
	-	2	2	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	2	0.41	0
	-	2	0	2	0
	-	1	0	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0.28	0	0
	-	0.28	0	0.12	0.91
	-	0	0.12	0	4
	-	0	0.74	1	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.51
	-	0	0	1
	-	0.38	0	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	0	5
	-	0	0	0.48
	-	2	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.44	5.53	0.8	3.0	A	423	635
	2 - Aldi	0.52	9.03	1.1	3.0	A	364	545
	3 - The Portway	0.71	10.35	2.4	7.8	B	708	1062
	4 - Hillsboro North Car Park	0.01	4.73	0.0	0.5	A	9	14
	5 - Lias Road	0.96	59.72	12.5	57.7	F	663	994
	6 - A4106 (North)	0.51	3.69	1.0	1.4	A	850	1275
N3 - New Road/Eastern Prom	1 - New Road East	0.18	3.53	0.2	0.5	A	188	282
	2 - Eastern Prom (South)	0.26	2.90	0.3	1.4	A	359	539
	3 - New Road West	0.19	3.47	0.2	0.5	A	198	298
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.24	5.12	0.3	1.4	A	186	279
	2 - Mackworth Road	0.03	5.39	0.0	0.5	A	17	26
	3 - New Rd (West)	0.19	4.35	0.2	0.8	A	161	241
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.43	7.04	0.7	2.6	A	321	482
	2 - New Road (East)	0.44	9.24	0.8	2.9	A	257	385
	3 - New Road (West)	0.32	6.61	0.5	2.1	A	214	322
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.68	8.14	2.1	3.6	A	793	1189
	2 - Bridgend Road (South)	0.35	4.56	0.5	2.5	A	353	530
	3 - A4106 (West)	0.54	5.58	1.1	1.5	A	621	931
	4 - Tyn-y-Caeau Lane	0.02	8.99	0.0	0.5	A	8	12
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.90	26.71	7.8	42.5	D	927	1390
	2 - A4106 (South)	0.61	4.94	1.6	2.0	A	952	1428
	3 - Fulmar Road	0.59	9.24	1.4	2.8	A	462	693
	4 - A4229 Pyle Road (North)	0.98	55.79	19.7	82.9	F	1095	1643

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.53	17.00	1.1	4.6	C	202	303
	B-A	0.26	40.78	0.3	1.4	E	26	40
	C-AB	0.54	15.66	1.1	4.3	C	219	329
	C-A						595	893
	A-B						73	110
	A-C						665	998
N9b - A4106 Junction (South)	B-C	0.43	9.40	0.7	2.9	A	240	360
	B-A	0.19	11.57	0.2	1.1	B	61	91
	C-AB	0.43	9.96	0.8	3.4	A	223	335
	C-A						39	59
	A-B						41	62
	A-C						86	129
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.09	6.08	0.1	0.9	A	45	68
	A-B						9	13
	A-C						156	234
	D-AB	0.23	11.15	0.3	1.4	B	81	122
	D-BC	0.46	15.73	0.8	3.5	C	166	248
	C-ABD	0.02	4.72	0.0	0.5	A	10	14
	C-D						152	228
	C-A						159	238
N11 - Bridgend Road/Manor Grove	B-C	0.13	11.01	0.1	0.5	B	39	58
	B-A	0.57	22.10	1.3	5.3	C	180	270
	C-AB	0.20	6.98	0.4	1.3	A	97	146
	C-A						174	262
	A-B						233	349
	A-C						294	440

Sensitivity Test - D5 - 2033 | Forecast Base | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Sensitivity Test	Extra 25% of network traffic	✓	125.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	4.89	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.23	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	4.88	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	6.96	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	4.53	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	11.73	B
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				4.39	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				6.66	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			3.53	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				14.09	B

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-6	N11 - Bridgend Road/Manor Grove - Stream B-A	7.33	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	681	-	-	-	-	-	-	0.251	-	0.099	-	-	-
	D-B, nearside lane	532	0.147	0.147	0.333	-	-	-	0.233	0.233	0.092	-	-	-
	D-B, offside lane	540	0.149	0.149	0.338	-	-	-	0.237	0.237	0.094	-	-	-
	D-C	540	-	0.149	0.338	0.118	0.237	0.237	0.237	0.237	0.094	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	563	0.097	0.244	0.154	0.349
	B-C	644	0.093	0.235	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	536	0.094	0.237	0.149	0.339
	B-C	724	0.108	0.273	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	544	0.099	0.250	0.157	0.358
	B-C	754	0.116	0.292	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2033	Forecast Base	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	238	100.000
	2 - Aldi		ONE HOUR	✓	85	100.000
	3 - The Portway		ONE HOUR	✓	305	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	28	100.000
	5 - Lias Road		ONE HOUR	✓	481	100.000
	6 - A4106 (North)		ONE HOUR	✓	683	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	193	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	278	100.000
	3 - New Road West		ONE HOUR	✓	174	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	131	100.000
	2 - Mackworth Road		ONE HOUR	✓	91	100.000
	3 - New Rd (West)		ONE HOUR	✓	142	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	175	100.000
	2 - New Road (East)		ONE HOUR	✓	218	100.000
	3 - New Road (West)		ONE HOUR	✓	118	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	397	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	384	100.000
	3 - A4106 (West)		ONE HOUR	✓	480	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	3	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	769	100.000
	2 - A4106 (South)		ONE HOUR	✓	564	100.000
	3 - Fulmar Road		ONE HOUR	✓	601	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	701	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	474	100.000
	B - Unclassified link		ONE HOUR	✓	227	100.000
	C - A4106 West		ONE HOUR	✓	591	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	133	100.000
	B - Unclassified link		ONE HOUR	✓	222	100.000
	C - Newton Nottage East		ONE HOUR	✓	223	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	133	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	247	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	145	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	338	100.000
	B - Manor Grove		ONE HOUR	✓	287	100.000
	C - Bridgend Road South		ONE HOUR	✓	308	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	26	67	1	65	79
	-	24	0	5	1	12	43
	-	59	18	1	7	14	206
	-	2	1	3	0	8	14
	-	73	17	194	3	0	194
	-	164	43	209	78	189	0

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	2	160	31
	-	132	7	139
	-	29	144	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	37	94
	-	25	0	66
	-	66	76	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	75	100
	-	156	0	62
	-	92	26	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	5	93	35
	-	0	0	0	0
	-	128	1	0	118
	-	48	16	81	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	160	178
	-	225	0	62
	-	261	47	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	119	277	1
	-	194	0	190	0
	-	332	147	0	1
	- Tyn-y-	1	1	1	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	238	271	260
	-	225	0	54	285
	-	303	57	0	241
	-	161	347	193	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	47	427
	-	47	0	180
	-	433	158	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	55	78
	-	39	0	183
	-	51	172	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	5	0	3	0
	-	0	0	0	0	0	3
	-	0	0	0	0	0	1
	-	0	0	0	0	0	0
	-	4	0	2	0	0	2
	-	1	3	2	0	3	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.68	7
	-	0.82	0	2
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0
	-	0	0	2
	-	2	0	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	4	1
	-	5	0	0
	-	2	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	1	6
	-	0	0	0	0
	-	3	0	0	5
	-	9	0	4	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	3	4
	-	2	0	2
	-	1	0	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	5	0.78	0
	-	3	0	0.57	0
	-	0	4	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0.45	0.40	1
	-	2	0	0	2
	-	0.36	0	0	3
	-	3	2	4	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.76
	-	2	0	0
	-	2	0.68	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	2	1
	-	0	0	1
	-	4	0.63	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.26	3.78	0.3	1.4	A	273	409
	2 - Aldi	0.14	5.02	0.2	0.5	A	97	146
	3 - The Portway	0.35	4.71	0.5	2.6	A	350	525
	4 - Hillsboro North Car Park	0.04	3.49	0.0	0.5	A	32	48
	5 - Lias Road	0.60	8.11	1.5	1.7	A	552	828
	6 - A4106 (North)	0.45	3.13	0.8	2.0	A	783	1175
N3 - New Road/Eastern Prom	1 - New Road East	0.22	3.75	0.3	1.2	A	221	332
	2 - Eastern Prom (South)	0.23	2.79	0.3	1.2	A	319	478
	3 - New Road West	0.18	3.35	0.2	0.5	A	200	299
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.20	5.13	0.3	1.2	A	150	225
	2 - Mackworth Road	0.15	5.20	0.2	0.5	A	104	157
	3 - New Rd (West)	0.19	4.44	0.2	1.0	A	163	244
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.26	5.38	0.4	1.2	A	201	301
	2 - New Road (East)	0.42	8.85	0.7	2.8	A	250	375
	3 - New Road (West)	0.21	5.76	0.3	1.2	A	135	203
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.39	4.29	0.6	2.7	A	455	683
	2 - Bridgend Road (South)	0.38	4.17	0.6	2.7	A	440	661
	3 - A4106 (West)	0.48	5.02	0.9	1.8	A	551	826
	4 - Tyn-y-Caeau Lane	0.00	0.00	0.0	~1	A	0	0
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.80	13.12	3.7	17.2	B	882	1323
	2 - A4106 (South)	0.43	3.47	0.7	2.7	A	647	970
	3 - Fulmar Road	0.82	20.02	4.4	22.7	C	689	1034
	4 - A4229 Pyle Road (North)	0.73	9.83	2.6	7.7	A	804	1206

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.50	14.80	1.0	4.0	B	206	310
	B-A	0.33	27.67	0.5	1.9	D	54	81
	C-AB	0.40	10.86	0.7	2.9	B	181	272
	C-A						497	745
	A-B						54	81
	A-C						490	735
N9b - A4106 Junction (South)	B-C	0.37	8.45	0.6	2.7	A	210	315
	B-A	0.14	10.64	0.2	0.5	B	45	67
	C-AB	0.42	9.97	0.8	3.4	A	218	328
	C-A						37	56
	A-B						63	95
	A-C						89	134
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.10	6.63	0.1	0.5	A	50	75
	A-B						5	8
	A-C						98	146
	D-AB	0.16	8.80	0.2	0.5	A	66	99
	D-BC	0.28	11.80	0.4	1.6	B	100	150
	C-ABD	0.00	4.75	0.0	0.5	A	2	3
	C-D						135	203
	C-A						146	220
N11 - Bridgend Road/Manor Grove	B-C	0.40	27.39	0.6	2.4	D	71	107
	B-A	0.82	48.85	3.9	21.3	E	258	387
	C-AB	0.16	5.67	0.3	1.0	A	93	140
	C-A						260	390
	A-B						184	275
	A-C						204	306

Sensitivity Test - D6 - 2033 | Forecast Base | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Pedestrian Crossing	N2 - Portway Roundabout - 2 - Aldi - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	N2 - Portway Roundabout - 3 - The Portway - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Last Run	Last Run	N3 - New Road/Eastern Prom - 3 - New Road West - Capacity	Pedestrian Crossing causes blocking on previous arm due to traffic queing to leave the junction in 2 timesegment(s).
Warning	Vehicle Mix	N4 - New Road/Mackworth Rd	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Sensitivity Test	Extra 25% of network traffic	✓	125.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	10.39	B
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.52	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	5.39	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	8.11	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	5.31	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	12.02	B
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				4.69	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				8.00	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			5.40	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				5.89	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		3	N2 - Portway Roundabout - 5 - Lias Road	7.92	A

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	674	-	-	-	-	-	-	0.249	-	0.098	-	-	-
	D-B, nearside lane	526	0.145	0.145	0.330	-	-	-	0.231	0.231	0.091	-	-	-
	D-B, offside lane	546	0.150	0.150	0.342	-	-	-	0.239	0.239	0.095	-	-	-
	D-C	546	-	0.150	0.342	0.120	0.239	0.239	0.239	0.239	0.095	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	565	0.097	0.246	0.154	0.351
	B-C	640	0.093	0.234	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	528	0.092	0.234	0.147	0.334
	B-C	734	0.110	0.277	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	545	0.099	0.251	0.158	0.359
	B-C	752	0.115	0.291	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2033	Forecast Base	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	319	100.000
	2 - Aldi		ONE HOUR	✓	179	100.000
	3 - The Portway		ONE HOUR	✓	394	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	85	100.000
	5 - Lias Road		ONE HOUR	✓	614	100.000
	6 - A4106 (North)		ONE HOUR	✓	599	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	209	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	392	100.000
	3 - New Road West		ONE HOUR	✓	185	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	174	100.000
	2 - Mackworth Road		ONE HOUR	✓	119	100.000
	3 - New Rd (West)		ONE HOUR	✓	208	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	299	100.000
	2 - New Road (East)		ONE HOUR	✓	240	100.000
	3 - New Road (West)		ONE HOUR	✓	196	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	594	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	327	100.000
	3 - A4106 (West)		ONE HOUR	✓	451	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	7	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	720	100.000
	2 - A4106 (South)		ONE HOUR	✓	631	100.000
	3 - Fulmar Road		ONE HOUR	✓	420	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	895	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	544	100.000
	B - Unclassified link		ONE HOUR	✓	214	100.000
	C - A4106 West		ONE HOUR	✓	633	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	119	100.000
	B - Unclassified link		ONE HOUR	✓	280	100.000
	C - Newton Nottage East		ONE HOUR	✓	244	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	195	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	294	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	230	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	491	100.000
	B - Manor Grove		ONE HOUR	✓	205	100.000
	C - Bridgend Road South		ONE HOUR	✓	251	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	0.00
	3 - The Portway	[ONEHOUR]	0.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	42	60	5	67	145
	-	40	0	36	1	23	79
	-	82	33	0	7	9	263
	-	8	1	8	0	3	65
	-	93	16	251	1	2	251
	-	126	102	184	35	151	1

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	4	165	40
	-	206	25	161
	-	50	134	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	59	115
	-	36	0	83
	-	116	92	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	155	144
	-	165	0	75
	-	131	65	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	9	156	30
	-	0	0	0	0
	-	146	5	0	143
	-	52	35	143	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	218	273
	-	168	0	37
	-	191	60	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	229	365	0
	-	192	0	132	3
	-	282	165	0	4
	- Tyn-y-	1	3	3	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	220	303	197
	-	234	0	127	270
	-	197	89	0	134
	-	302	348	245	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	68	476
	-	25	0	189
	-	429	204	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	39	80
	-	56	0	224
	-	57	187	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	2	0	2	2
	-	0	0	0	0	0	0
	-	3	0	0	0	0	1
	-	0	0	0	0	0	0
	-	2	0	0.43	0	0	0.43
	-	2	0	1	0	0	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0
	-	0.53	0	1
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0
	-	0	0	0
	-	0	0	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	0.70	2
	-	0.66	0	0
	-	0.83	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	2	7
	-	0	0	0	0
	-	1	0	0	0
	-	2	0	0	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	0.50	2
	-	0.65	0	0
	-	2	2	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	2	0.30	0
	-	2	0	2	0
	-	2	0	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0	0	0
	-	0	0	0	0.80
	-	0	0	0	4
	-	0	0.62	1	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.46
	-	0	0	1
	-	0.25	0	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	0	5
	-	0	0	0.48
	-	2	1	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.34	4.29	0.5	2.4	A	366	549
	2 - Aldi	0.27	5.27	0.4	1.5	A	205	308
	3 - The Portway	0.43	5.03	0.8	2.7	A	452	678
	4 - Hillsboro North Car Park	0.12	4.25	0.1	0.5	A	97	146
	5 - Lias Road	0.87	26.56	5.9	31.1	D	704	1056
	6 - A4106 (North)	0.41	3.03	0.7	2.8	A	687	1031
N3 - New Road/Eastern Prom	1 - New Road East	0.23	3.78	0.3	1.3	A	240	360
	2 - Eastern Prom (South)	0.32	3.18	0.5	2.0	A	450	674
	3 - New Road West	0.22	3.96	0.3	1.2	A	212	318
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.28	5.71	0.4	1.4	A	200	299
	2 - Mackworth Road	0.20	5.58	0.3	1.1	A	136	205
	3 - New Rd (West)	0.29	5.02	0.4	1.6	A	239	358
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.46	7.44	0.8	2.4	A	343	514
	2 - New Road (East)	0.48	9.99	0.9	2.9	A	275	413
	3 - New Road (West)	0.34	6.84	0.5	2.3	A	225	337
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.59	6.35	1.4	1.8	A	681	1022
	2 - Bridgend Road (South)	0.34	4.19	0.5	2.4	A	375	563
	3 - A4106 (West)	0.45	4.73	0.8	2.2	A	517	776
	4 - Tyn-y-Caeau Lane	0.02	8.02	0.0	0.5	A	8	12
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.77	12.01	3.2	13.3	B	826	1239
	2 - A4106 (South)	0.47	3.74	0.9	2.0	A	724	1086
	3 - Fulmar Road	0.55	7.60	1.2	2.1	A	482	723
	4 - A4229 Pyle Road (North)	0.88	19.94	6.5	33.0	C	1027	1540

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.52	14.98	1.1	4.0	B	217	325
	B-A	0.21	28.49	0.3	1.2	D	29	43
	C-AB	0.53	14.51	1.1	3.9	B	235	352
	C-A						491	737
	A-B						78	117
	A-C						546	819
N9b - A4106 Junction (South)	B-C	0.46	10.13	0.9	2.9	B	257	385
	B-A	0.21	12.37	0.3	1.2	B	64	96
	C-AB	0.46	10.56	0.9	3.6	B	240	360
	C-A						40	60
	A-B						45	67
	A-C						92	138
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.10	6.08	0.2	1.0	A	49	74
	A-B						10	14
	A-C						165	247
	D-AB	0.27	12.24	0.4	1.1	B	87	131
	D-BC	0.50	17.34	1.0	3.9	C	176	265
	C-ABD	0.02	4.67	0.0	0.5	A	10	15
	C-D						162	243
	C-A						165	248
N11 - Bridgend Road/Manor Grove	B-C	0.15	12.72	0.2	0.5	B	42	64
	B-A	0.63	26.57	1.7	7.6	D	193	289
	C-AB	0.22	7.14	0.4	1.4	A	107	161
	C-A						181	271
	A-B						250	375
	A-C						313	470

Sensitivity Test - D7 - 2033 | Total Traffic | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Sensitivity Test	Extra 25% of network traffic	✓	125.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	6.37	A
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.45	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	5.70	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	7.80	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	5.48	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	30.14	D
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				4.93	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				6.65	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			3.15	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				23.05	C

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-12	N11 - Bridgend Road/Manor Grove - Stream B-A	13.14	B

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	681	-	-	-	-	-	-	0.251	-	0.099	-	-	-
	D-B, nearside lane	532	0.147	0.147	0.333	-	-	-	0.233	0.233	0.092	-	-	-
	D-B, offside lane	540	0.149	0.149	0.338	-	-	-	0.237	0.237	0.094	-	-	-
	D-C	540	-	0.149	0.338	0.118	0.237	0.237	0.237	0.237	0.094	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	563	0.097	0.244	0.154	0.349
	B-C	644	0.093	0.235	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	536	0.094	0.237	0.149	0.339
	B-C	724	0.108	0.273	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	544	0.099	0.250	0.157	0.358
	B-C	754	0.116	0.292	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2033	Total Traffic	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	337	100.000
	2 - Aldi		ONE HOUR	✓	193	100.000
	3 - The Portway		ONE HOUR	✓	446	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	3	100.000
	5 - Lias Road		ONE HOUR	✓	480	100.000
	6 - A4106 (North)		ONE HOUR	✓	796	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	251	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	313	100.000
	3 - New Road West		ONE HOUR	✓	174	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	212	100.000
	2 - Mackworth Road		ONE HOUR	✓	129	100.000
	3 - New Rd (West)		ONE HOUR	✓	176	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	255	100.000
	2 - New Road (East)		ONE HOUR	✓	218	100.000
	3 - New Road (West)		ONE HOUR	✓	149	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	557	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	415	100.000
	3 - A4106 (West)		ONE HOUR	✓	526	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	3	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	849	100.000
	2 - A4106 (South)		ONE HOUR	✓	784	100.000
	3 - Fulmar Road		ONE HOUR	✓	609	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	840	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	554	100.000
	B - Unclassified link		ONE HOUR	✓	227	100.000
	C - A4106 West		ONE HOUR	✓	638	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	133	100.000
	B - Unclassified link		ONE HOUR	✓	222	100.000
	C - Newton Nottage East		ONE HOUR	✓	223	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	213	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	278	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	145	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	418	100.000
	B - Manor Grove		ONE HOUR	✓	287	100.000
	C - Bridgend Road South		ONE HOUR	✓	339	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	27	73	0	77	160
	-	24	0	52	0	14	103
	-	69	56	1	1	25	294
	-	1	0	0	0	1	1
	-	73	19	194	0	0	194
	-	238	98	263	8	189	0

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	2	218	31
	-	167	7	139
	-	29	144	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	85	127
	-	37	0	92
	-	84	92	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	75	180
	-	156	0	62
	-	123	26	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	5	173	35
	-	0	0	0	0
	-	159	1	0	118
	-	48	16	81	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	160	258
	-	225	0	62
	-	292	47	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	199	357	1
	-	225	0	190	0
	-	378	147	0	1
	- Tyn-y-	1	1	1	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	318	271	260
	-	272	0	62	450
	-	303	65	0	241
	-	161	486	193	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	47	507
	-	47	0	180
	-	480	158	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	55	78
	-	39	0	183
	-	51	172	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	5	0	3	0.44
	-	0	0	0.05	0	0.28	2
	-	0.03	0.03	0	0	0.24	1
	-	0.45	0	0	0	0	0
	-	4	0.20	2	0	0	2
	-	1	2	2	0	3	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.82	7
	-	0.96	0	2

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.97	0
	-	2	0	3
	-	1	1	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	4	0.88
	-	5	0	0
	-	2	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	0.91	6
	-	0	0	0	0
	-	3	0	0	5
	-	9	0	4	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	3	3
	-	2	0	2
	-	1	0	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	3	0.88	0
	-	3	0	0.57	0
	-	0.16	4	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0.65	0.40	1
	-	2	0	0.14	2
	-	0.36	0.11	0	3
	-	3	2	4	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.84
	-	2	0	0
	-	2	0.68	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	2	1
	-	0	0	1
	-	4	0.63	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.37	4.65	0.6	2.8	A	387	580
	2 - Aldi	0.33	6.61	0.5	2.1	A	221	332
	3 - The Portway	0.53	6.53	1.1	1.7	A	512	767
	4 - Hillsboro North Car Park	0.00	0.00	0.0	~1	A	0	0
	5 - Lias Road	0.68	11.67	2.1	6.3	B	551	826
	6 - A4106 (North)	0.53	3.74	1.1	1.5	A	913	1370
N3 - New Road/Eastern Prom	1 - New Road East	0.28	4.09	0.4	1.4	A	288	432
	2 - Eastern Prom (South)	0.26	2.89	0.3	1.4	A	359	539
	3 - New Road West	0.19	3.53	0.2	0.5	A	200	299
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.34	6.27	0.5	2.3	A	243	365
	2 - Mackworth Road	0.23	5.97	0.3	1.3	A	148	222
	3 - New Rd (West)	0.24	4.82	0.3	1.4	A	202	303
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.38	6.38	0.6	2.6	A	292	439
	2 - New Road (East)	0.47	10.52	0.9	3.0	B	250	375
	3 - New Road (West)	0.26	6.16	0.3	1.1	A	171	256
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.55	5.78	1.2	1.5	A	639	958
	2 - Bridgend Road (South)	0.43	4.78	0.8	2.6	A	476	714
	3 - A4106 (West)	0.54	5.72	1.1	1.5	A	603	905
	4 - Tyn-y-Caeau Lane	0.00	0.00	0.0	~1	A	0	0
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.95	41.33	12.6	64.6	E	974	1461
	2 - A4106 (South)	0.59	4.86	1.4	1.8	A	899	1349
	3 - Fulmar Road	0.95	56.39	12.4	58.3	F	699	1048
	4 - A4229 Pyle Road (North)	0.89	23.64	7.2	38.0	C	963	1445

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.56	18.36	1.2	5.2	C	206	310
	B-A	0.41	38.82	0.7	3.0	E	54	81
	C-AB	0.42	11.94	0.7	3.1	B	181	272
	C-A						550	826
	A-B						54	81
	A-C						582	872
N9b - A4106 Junction (South)	B-C	0.37	8.45	0.6	2.7	A	210	315
	B-A	0.14	10.64	0.2	0.5	B	45	67
	C-AB	0.42	9.97	0.8	3.4	A	218	328
	C-A						37	56
	A-B						63	95
	A-C						89	134
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.11	6.00	0.2	0.9	A	59	89
	A-B						5	8
	A-C						180	270
	D-AB	0.17	9.22	0.2	0.6	A	66	100
	D-BC	0.30	12.89	0.4	1.8	B	100	150
	C-ABD	0.00	4.72	0.0	0.5	A	2	3
	C-D						135	203
	C-A						182	273
N11 - Bridgend Road/Manor Grove	B-C	0.71	86.26	1.9	6.6	F	71	107
	B-A	0.90	80.90	6.4	31.2	F	258	387
	C-AB	0.18	5.68	0.4	1.3	A	101	152
	C-A						288	431
	A-B						184	275
	A-C						296	444

Sensitivity Test - D8 - 2033 | Total Traffic | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	N4 - New Road/Mackworth Rd	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 1 and 3 have 92% of the total flow for the roundabout for one or more time segments]
Warning	Geometry	N3 - New Road/Eastern Prom - 2 - Eastern Prom (South) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Sensitivity Test	Extra 25% of network traffic	✓	125.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
N2	Portway Roundabout	Standard Roundabout						1, 2, 3, 4, 5, 6	36.47	E
N3	New Road/Eastern Prom	Standard Roundabout						1, 2, 3	3.32	A
N4	New Road/Mackworth Rd	Mini-roundabout						1, 2, 3	4.93	A
N5	New Road/Aldenham	Mini-roundabout						1, 2, 3	8.15	A
N6	A4106/Bridgend Road	Standard Roundabout						1, 2, 3, 4	7.36	A
N7	A4106/A4229/Fulmar Rd	Standard Roundabout						1, 2, 3, 4	55.13	F
N9a	A4106 Junction (North)	T-Junction	Two-way	Two-way	Two-way				5.78	A
N9b	A4106 Junction (South)	T-Junction	Two-way	Two-way	Two-way				8.00	A
N10	Newton Nottage Road/Aldenham Road	Crossroads	Two-way	Exit Only	Two-way	Two-way			5.40	A
N11	Bridgend Road/Manor Grove	T-Junction	Two-way	Two-way	Two-way				5.91	A

Junction Network

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		-10	N2 - Portway Roundabout - 5 - Lias Road	24.13	C

Arms

Arms

Junction	Arm	Name	Description	No give-way line	Arm type
N2 - Portway Roundabout	1	Eastern Prom	To/from the proposed Spine Road		
	2	Aldi	Aldi and Sandy Bay access		
	3	The Portway			
	4	Hillsboro North Car Park			
	5	Lias Road			
	6	A4106 (North)			
N3 - New Road/Eastern Prom	1	New Road East			
	2	Eastern Prom (South)			
	3	New Road West			
N4 - New Road/Mackworth Rd	1	New Rd (East)			
	2	Mackworth Road			
	3	New Rd (West)			
N5 - New Road/Aldenham	1	Aldenham Road (North)			
	2	New Road (East)			
	3	New Road (West)			
N6 - A4106/Bridgend Road	1	A4106 Bridgend Rd (East)			
	2	Bridgend Road (South)			
	3	A4106 (West)			
	4	Tyn-y-Caeau Lane			
N7 - A4106/A4229/Fulmar Rd	1	A4106 (East)			
	2	A4106 (South)			
	3	Fulmar Road			
	4	A4229 Pyle Road (North)			
N9a - A4106 Junction (North)	A	A4106 East			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	A4106 West			Major
N9b - A4106 Junction (South)	A	Newton Nottage West			Major
	B	Unclassified link	Link between 9a and 9b		Minor
	C	Newton Nottage East			Major
N10 - Newton Nottage Road/Aldenham Road	A	Bridgend Road (Northeast)			Major
	B	Newton Nottage Road (Southeast)			Minor
	C	Aldenham Road (Southwest)			Major
	D	Newton Nottage Road (Northwest)			Minor
N11 - Bridgend Road/Manor Grove	A	Bridgend Road North			Major
	B	Manor Grove			Minor
	C	Bridgend Road South			Major

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
N2 - Portway Roundabout	1 - Eastern Prom	5.26	7.22	3.9	18.0	99.4	32.0		
	2 - Aldi	3.71	5.99	6.5	20.7	94.1	28.0		
	3 - The Portway	4.62	7.00	4.9	17.3	88.7	41.0		
	4 - Hillsboro North Car Park	4.48	5.49	3.3	17.8	99.4	34.0		
	5 - Lias Road	3.50	6.12	8.7	16.4	99.1	44.0		
	6 - A4106 (North)	7.29	9.34	4.0	20.2	88.7	30.0		
N3 - New Road/Eastern Prom	1 - New Road East	3.00	4.90	17.3	116.2	31.9	30.0		
	2 - Eastern Prom (South)	3.63	6.50	50.6	16.3	31.0	44.0		
	3 - New Road West	3.02	6.60	13.2	183.7	32.0	31.0		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	3.71	6.87	6.4	18.6	52.0	22.0		
	2 - Bridgend Road (South)	3.64	5.50	19.3	35.7	51.3	14.0		
	3 - A4106 (West)	3.72	7.12	6.5	35.3	51.6	28.0		
	4 - Tyn-y-Caeau Lane	2.00	3.91	4.9	8.4	51.6	16.0		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	3.24	8.27	13.7	57.9	79.3	27.0		
	2 - A4106 (South)	7.08	9.70	5.1	16.1	79.7	28.0		
	3 - Fulmar Road	3.70	8.08	6.3	18.8	79.3	38.0		
	4 - A4229 Pyle Road (North)	3.62	6.65	15.8	19.1	79.7	11.0		

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
N4 - New Road/Mackworth Rd	1 - New Rd (East)	3.74	2.75	3.74	45.0	14.68	10.04	0.0	✓
	2 - Mackworth Road	3.72	2.78	4.46	25.3	11.10	6.56	0.0	
	3 - New Rd (West)	3.58	3.58	4.53	10.2	16.26	15.50	0.0	
N5 - New Road/Aldenham	1 - Aldenham Road (North)	3.00	2.80	3.80	45.0	11.90	8.48	0.0	✓
	2 - New Road (East)	3.00	3.00	3.40	5.7	12.80	10.20	0.0	
	3 - New Road (West)	3.00	2.80	3.80	3.8	15.40	13.60	0.0	✓

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
N9a - A4106 Junction (North)	C - A4106 West	6.75		✓	3.20	150.0	✓	7.60
N9b - A4106 Junction (South)	C - Newton Nottage East	6.00				97.8	✓	0.00
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)	7.10				83.0	✓	0.00
	C - Aldenham Road (Southwest)	7.10				122.0	✓	0.00
N11 - Bridgend Road/Manor Grove	C - Bridgend Road South	7.30				60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visi to (
N9a - A4106 Junction (North)	B - Unclassified link	One lane plus flare		10.00	5.25	3.80	3.60	3.50	✓	1.00	8
N9b - A4106 Junction (South)	B - Unclassified link	One lane plus flare		10.00	5.70	4.10	3.70	3.30	✓	1.00	3
N10 - Newton Nottage Road/Aldenham Road	B - Newton Nottage Road (Southeast)										
	D - Newton Nottage Road (Northwest)	One lane plus flare		10.00	5.46	4.11	3.80	3.80	✓	1.00	2
N11 - Bridgend Road/Manor Grove	B - Manor Grove	One lane plus flare		10.00	4.70	3.52	3.52	3.31	✓	1.00	7

Zebra Crossings

Junction	Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
N3 - New Road/Eastern Prom	1 - New Road East	1.00	1.00	✓	Distance			5.04	3.60	7.25	5.18
N4 - New Road/Mackworth Rd	1 - New Rd (East)	5.55	5.08		Distance	8.04	5.74				

Pelican/Puffin Crossings

Junction	Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
N2 - Portway Roundabout	2 - Aldi	1.69	3.00	2.90	1.00	6.00	6.00	7.00
	3 - The Portway	3.19	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
N2 - Portway Roundabout	1 - Eastern Prom	0.461	1799
	2 - Aldi	0.421	1462
	3 - The Portway	0.434	1606
	4 - Hillsboro North Car Park	0.415	1482
	5 - Lias Road	0.392	1378
	6 - A4106 (North)	0.564	2445
N3 - New Road/Eastern Prom	1 - New Road East	0.605	1389
	2 - Eastern Prom (South)	0.644	1726
	3 - New Road West	0.638	1555
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.507	934
	2 - Mackworth Road	0.635	910
	3 - New Rd (West)	0.672	1036
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.508	950
	2 - New Road (East)	0.605	815
	3 - New Road (West)	0.504	916
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.575	1532
	2 - Bridgend Road (South)	0.615	1652
	3 - A4106 (West)	0.582	1554
	4 - Tyn-y-Caeau Lane	0.436	847
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.491	1753
	2 - A4106 (South)	0.580	2434
	3 - Fulmar Road	0.435	1486
	4 - A4229 Pyle Road (North)	0.497	1771

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
N10 - Newton Nottage Road/Aldenham Road	A-D	622	-	-	-	-	-	-	0.229	0.328	0.229	-	-	-
	B-A	440	0.076	0.193	0.193	-	-	-	0.121	0.275	-	0.193	0.193	0.096
	B-C	574	0.084	0.212	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	B-D, offside lane	440	0.076	0.193	0.193	-	-	-	0.121	0.275	0.121	-	-	-
	C-B	645	0.238	0.238	0.340	-	-	-	-	-	-	-	-	-
	D-A	674	-	-	-	-	-	-	0.249	-	0.098	-	-	-
	D-B, nearside lane	526	0.145	0.145	0.330	-	-	-	0.231	0.231	0.091	-	-	-
	D-B, offside lane	546	0.150	0.150	0.342	-	-	-	0.239	0.239	0.095	-	-	-
	D-C	546	-	0.150	0.342	0.120	0.239	0.239	0.239	0.239	0.095	-	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N11 - Bridgend Road/Manor Grove	B-A	565	0.097	0.246	0.154	0.351
	B-C	640	0.093	0.234	-	-
	C-B	609	0.223	0.223	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9a - A4106 Junction (North)	B-A	528	0.092	0.234	0.147	0.334
	B-C	734	0.110	0.277	-	-
	C-B	733	0.275	0.275	-	-

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
N9b - A4106 Junction (South)	B-A	545	0.099	0.251	0.158	0.359
	B-C	752	0.115	0.291	-	-
	C-B	631	0.244	0.244	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2033	Total Traffic	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
N2 - Portway Roundabout	1 - Eastern Prom		ONE HOUR	✓	395	100.000
	2 - Aldi		ONE HOUR	✓	330	100.000
	3 - The Portway		ONE HOUR	✓	648	100.000
	4 - Hillsboro North Car Park		ONE HOUR	✓	9	100.000
	5 - Lias Road		ONE HOUR	✓	617	100.000
	6 - A4106 (North)		ONE HOUR	✓	779	100.000
N3 - New Road/Eastern Prom	1 - New Road East		ONE HOUR	✓	178	100.000
	2 - Eastern Prom (South)		ONE HOUR	✓	339	100.000
	3 - New Road West		ONE HOUR	✓	185	100.000
N4 - New Road/Mackworth Rd	1 - New Rd (East)		ONE HOUR	✓	174	100.000
	2 - Mackworth Road		ONE HOUR	✓	23	100.000
	3 - New Rd (West)		ONE HOUR	✓	155	100.000
N5 - New Road/Aldenham	1 - Aldenham Road (North)		ONE HOUR	✓	300	100.000
	2 - New Road (East)		ONE HOUR	✓	240	100.000
	3 - New Road (West)		ONE HOUR	✓	199	100.000
	1 - A4106 Bridgend Rd (East)		ONE HOUR	✓	731	100.000

N6 - A4106/Bridgend Road	**2 - Bridgend Road (South)**		ONE HOUR	✓	330	100.000
	3 - A4106 (West)		ONE HOUR	✓	570	100.000
	4 - Tyn-y-Caeau Lane		ONE HOUR	✓	7	100.000
N7 - A4106/A4229/Fulmar Rd	**1 - A4106 (East)**		ONE HOUR	✓	856	100.000
	2 - A4106 (South)		ONE HOUR	✓	872	100.000
	3 - Fulmar Road		ONE HOUR	✓	431	100.000
	4 - A4229 Pyle Road (North)		ONE HOUR	✓	1014	100.000
N9a - A4106 Junction (North)	**A - A4106 East**		ONE HOUR	✓	680	100.000
	B - Unclassified link		ONE HOUR	✓	214	100.000
	C - A4106 West		ONE HOUR	✓	753	100.000
N9b - A4106 Junction (South)	**A - Newton Nottage West**		ONE HOUR	✓	119	100.000
	B - Unclassified link		ONE HOUR	✓	280	100.000
	C - Newton Nottage East		ONE HOUR	✓	244	100.000
N10 - Newton Nottage Road/Aldenham Road	**A - Bridgend Road (Northeast)**		ONE HOUR	✓	196	100.000
	B - Newton Nottage Road (Southeast)		ONE HOUR	✓	0	100.000
	C - Aldenham Road (Southwest)		ONE HOUR	✓	298	100.000
	D - Newton Nottage Road (Northwest)		ONE HOUR	✓	230	100.000
N11 - Bridgend Road/Manor Grove	**A - Bridgend Road North**		ONE HOUR	✓	492	100.000
	B - Manor Grove		ONE HOUR	✓	205	100.000
	C - Bridgend Road South		ONE HOUR	✓	254	100.000

Demand overview (Pedestrians)

Junction	Arm	Profile type	Average pedestrian flow (Ped/hr)
N2 - Portway Roundabout	1 - Eastern Prom		
	2 - Aldi	[ONEHOUR]	60.00
	3 - The Portway	[ONEHOUR]	60.00
	4 - Hillsboro North Car Park		
	5 - Lias Road		
	6 - A4106 (North)		
N3 - New Road/Eastern Prom	1 - New Road East	[ONEHOUR]	60.00
	2 - Eastern Prom (South)		
	3 - New Road West		
N4 - New Road/Mackworth Rd	1 - New Rd (East)	[ONEHOUR]	60.00
	2 - Mackworth Road		
	3 - New Rd (West)		
N5 - New Road/Aldenham	1 - Aldenham Road (North)		
	2 - New Road (East)		
	3 - New Road (West)		
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)		
	2 - Bridgend Road (South)		
	3 - A4106 (West)		
	4 - Tyn-y-Caeau Lane		
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)		
	2 - A4106 (South)		
	3 - Fulmar Road		
	4 - A4229 Pyle Road (North)		
N9a - A4106 Junction (North)	A - A4106 East		
	B - Unclassified link		
	C - A4106 West		
N9b - A4106 Junction (South)	A - Newton Nottage West		
	B - Unclassified link		
	C - Newton Nottage East		
N10 - Newton Nottage Road/Aldenham Road	A - Bridgend Road (Northeast)		
	B - Newton Nottage Road (Southeast)		
	C - Aldenham Road (Southwest)		
	D - Newton Nottage Road (Northwest)		
N11 - Bridgend Road/Manor Grove	A - Bridgend Road North		
	B - Manor Grove		
	C - Bridgend Road South		

Origin-Destination Data

Demand (Veh/hr)

N2 - Portway Roundabout

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	43	67	1	71	213
	-	40	0	118	0	25	147
	-	90	95	0	1	16	446
	-	1	0	1	0	0	7
	-	93	20	251	0	2	251
	-	127	199	298	3	151	1

N3 - New Road/Eastern Prom

Demand (Veh/hr)

		To		
		-	-	-
From	-	4	134	40
	-	153	25	161
	-	50	134	1

N4 - New Road/Mackworth Rd

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	19	155
	-	11	0	12
	-	144	11	0

N5 - New Road/Aldenham

Demand (Veh/hr)

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	155	145
	-	165	0	75
	-	134	65	0

N10 - Newton Nottage Road/Aldenham Road

Demand (Veh/hr)

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	9	157	30
	-	0	0	0	0
	-	150	5	0	143
	-	52	35	143	0

N11 - Bridgend Road/Manor Grove

Demand (Veh/hr)

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	218	274
	-	168	0	37
	-	194	60	0

N6 - A4106/Bridgend Road

Demand (Veh/hr)

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	230	501	0
	-	195	0	132	3
	-	401	165	0	4
	- Tyn-y-	1	3	3	0

N7 - A4106/A4229/Fulmar Rd

Demand (Veh/hr)

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	356	303	197
	-	354	0	141	377
	-	197	100	0	134
	-	302	467	245	0

N9a - A4106 Junction (North)

Demand (Veh/hr)

		To		
		-	-	-
From	-	0	68	612
	-	25	0	189
	-	549	204	0

N9b - A4106 Junction (South)

Demand (Veh/hr)

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	39	80
	-	56	0	224
	-	57	187	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

N2 - Portway Roundabout

Heavy Vehicle %

		To					
		- Eastern	-	- The	- Hillsboro	- Lias	- A4106
From	-	0	0	2	0	2	3
	-	0	0	0.03	0	0.13	0.63
	-	3	0.03	0	0	0.25	1
	-	0.58	0	0	0	0	0
	-	2	0.22	0.43	0	0	0.43
	-	2	0.47	1	0	0	0

N3 - New Road/Eastern Prom

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0.40	0
	-	1	0	1
	-	0	2	0

N4 - New Road/Mackworth Rd

Heavy Vehicle %

		To		
		-	-	-
From	-	0	4	0
	-	7	0	10
	-	0	11	0

N5 - New Road/Aldenham

Heavy Vehicle %

		To		
		- Aldenham Road	- New Road	- New Road
From	-	0	0.70	2
	-	0.66	0	0
	-	1	0	0

N10 - Newton Nottage Road/Aldenham Road

Heavy Vehicle %

		To			
		- Bridgend Road	- Newton Nottage Road	- Aldenham Road	- Newton Nottage Road
From	-	0	0	2	7
	-	0	0	0	0
	-	2	0	0	0
	-	2	0	0	0

N11 - Bridgend Road/Manor Grove

Heavy Vehicle %

		To		
		- Bridgend Road	- Manor	- Bridgend Road
From	-	0	0.50	2
	-	0.65	0	0
	-	2	2	0

N6 - A4106/Bridgend Road

Heavy Vehicle %

		To			
		- A4106 Bridgend	- Bridgend Road	- A4106	- Tyn-y-
From	-	0	2	0.41	0
	-	2	0	2	0
	-	1	0	0	0
	- Tyn-y-	0	0	0	0

N7 - A4106/A4229/Fulmar Rd

Heavy Vehicle %

		To			
		- A4106	- A4106	- Fulmar	- A4229 Pyle Road
From	-	0	0.27	0	0
	-	0.27	0	0.12	0.90
	-	0	0.11	0	4
	-	0	0.73	1	0

N9a - A4106 Junction (North)

Heavy Vehicle %

		To		
		-	-	-
From	-	0	0	0.51
	-	0	0	1
	-	0.37	0	0

N9b - A4106 Junction (South)

Heavy Vehicle %

		To		
		- Newton Nottage	- Unclassified	- Newton Nottage
From	-	0	0	5
	-	0	0	0.48
	-	2	1	0

Results

Results Summary for whole modelled period

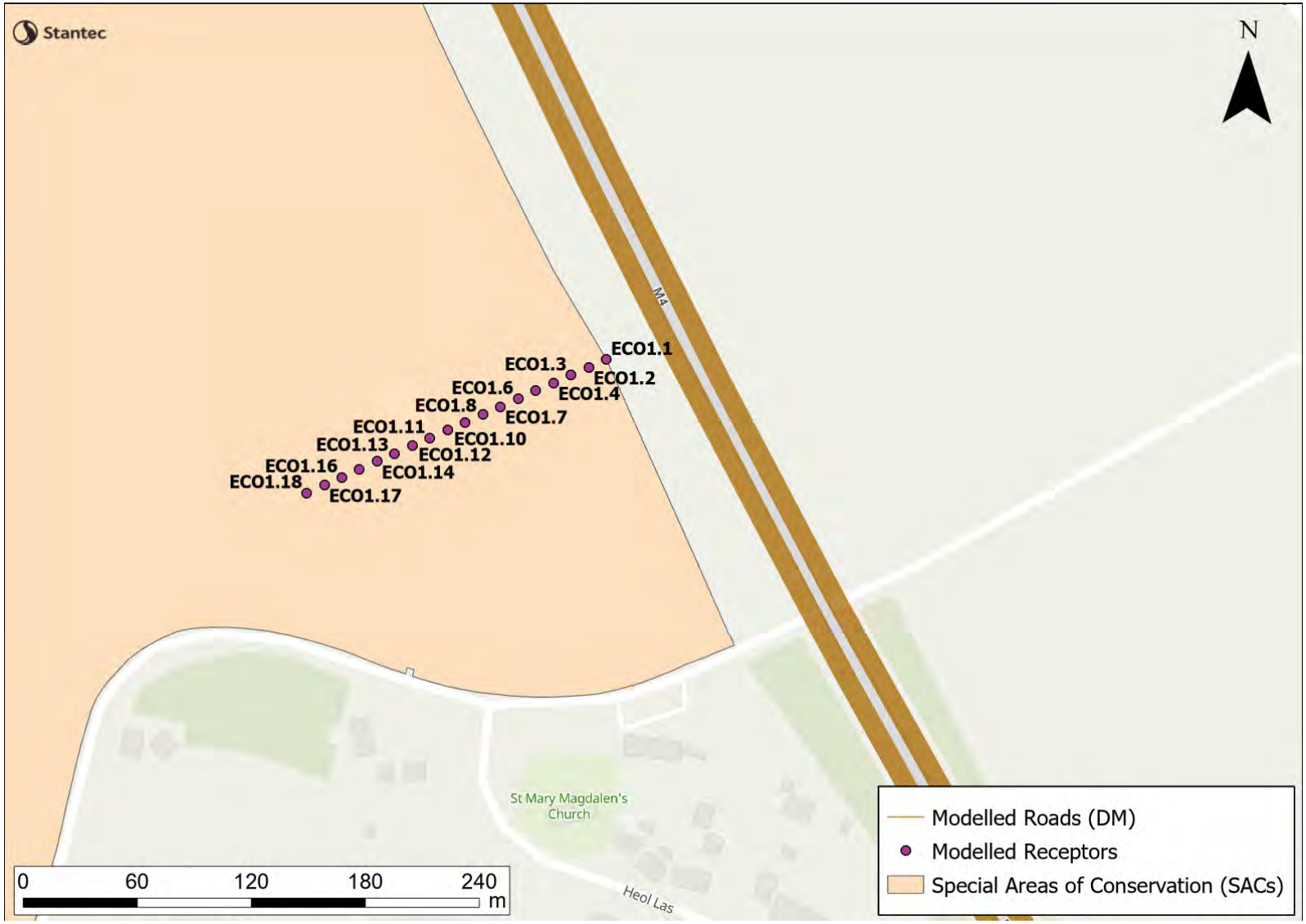
Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N2 - Portway Roundabout	1 - Eastern Prom	0.48	6.07	0.9	2.8	A	453	680
	2 - Aldi	0.56	9.94	1.2	3.0	A	379	568
	3 - The Portway	0.75	11.86	2.9	12.3	B	743	1115
	4 - Hillsboro North Car Park	0.02	5.00	0.0	0.5	A	10	15
	5 - Lias Road	1.06	137.83	34.8	84.0	F	708	1062
	6 - A4106 (North)	0.54	3.96	1.2	1.5	A	894	1340
N3 - New Road/Eastern Prom	1 - New Road East	0.20	3.63	0.2	0.9	A	204	306
	2 - Eastern Prom (South)	0.28	3.00	0.4	1.3	A	389	583
	3 - New Road West	0.20	3.62	0.3	1.0	A	212	318
N4 - New Road/Mackworth Rd	1 - New Rd (East)	0.26	5.28	0.3	1.1	A	200	299
	2 - Mackworth Road	0.04	5.29	0.0	0.5	A	26	40
	3 - New Rd (West)	0.21	4.48	0.3	1.2	A	178	267
N5 - New Road/Aldenham	1 - Aldenham Road (North)	0.46	7.49	0.9	2.4	A	344	516
	2 - New Road (East)	0.48	10.02	0.9	2.9	B	275	413
	3 - New Road (West)	0.34	6.92	0.5	2.4	A	228	342
N6 - A4106/Bridgend Road	1 - A4106 Bridgend Rd (East)	0.73	9.51	2.6	7.7	A	838	1258
	2 - Bridgend Road (South)	0.38	4.86	0.6	2.8	A	379	568
	3 - A4106 (West)	0.57	6.05	1.3	1.5	A	654	981
	4 - Tyn-y-Caeau Lane	0.03	9.61	0.0	0.5	A	8	12
N7 - A4106/A4229/Fulmar Rd	1 - A4106 (East)	0.96	45.93	14.2	69.3	E	982	1473
	2 - A4106 (South)	0.65	5.59	1.8	2.8	A	1000	1500
	3 - Fulmar Road	0.65	11.10	1.8	3.9	B	494	742
	4 - A4229 Pyle Road (North)	1.06	124.22	52.8	117.7	F	1163	1745

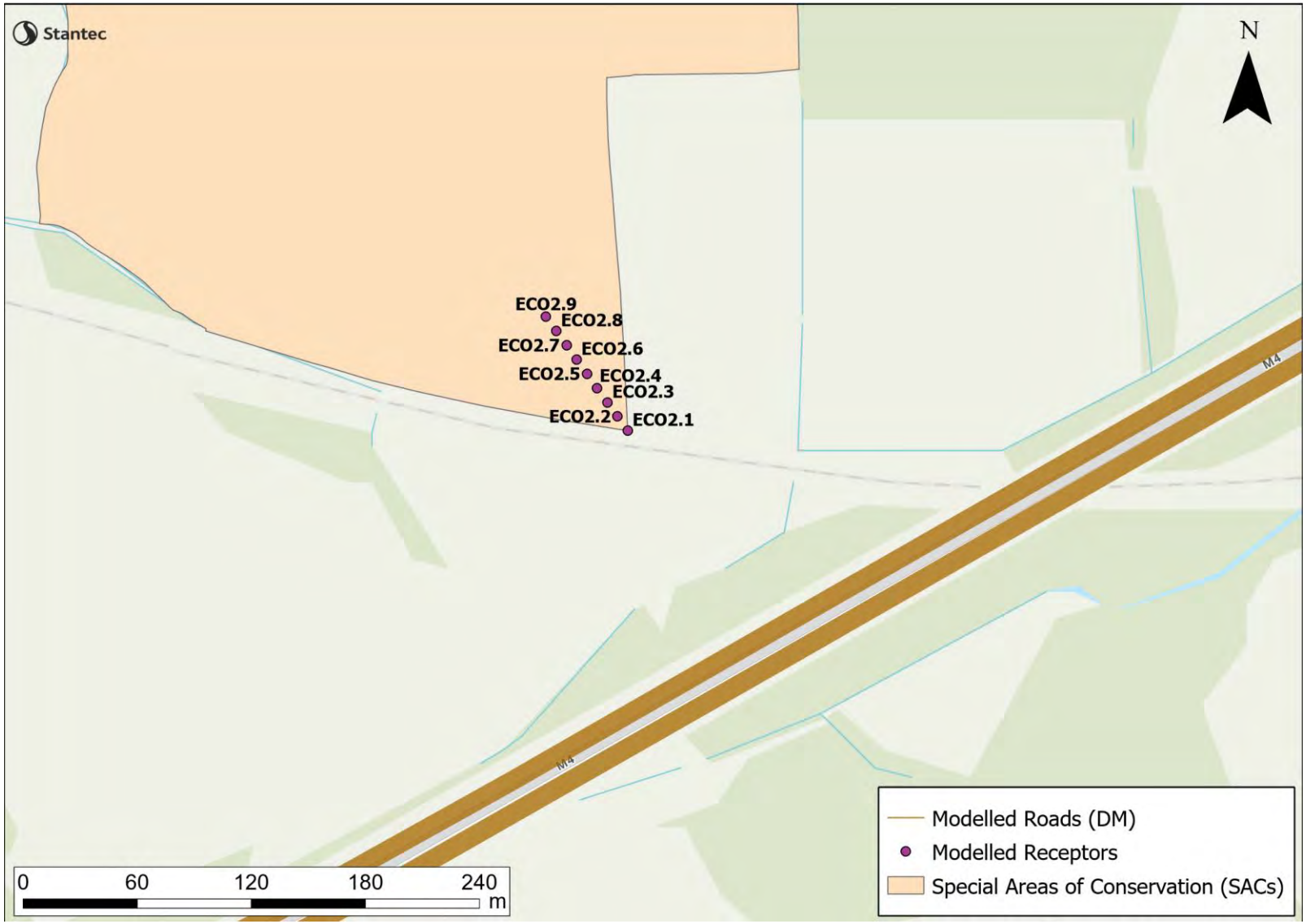
Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
N9a - A4106 Junction (North)	B-C	0.62	22.44	1.6	6.9	C	217	325
	B-A	0.37	61.99	0.6	1.9	F	29	43
	C-AB	0.59	18.02	1.5	5.6	C	237	355
	C-A						627	940
	A-B						78	117
	A-C						702	1053
N9b - A4106 Junction (South)	B-C	0.46	10.13	0.9	2.9	B	257	385
	B-A	0.21	12.37	0.3	1.2	B	64	96
	C-AB	0.46	10.57	0.9	3.6	B	240	360
	C-A						40	60
	A-B						45	67
	A-C						92	138
N10 - Newton Nottage Road/Aldenham Road	B-ACD	0.00	0.00	0.0	~1	A	0	0
	A-BCD	0.10	6.08	0.2	1.0	A	50	74
	A-B						9	14
	A-C						166	249
	D-AB	0.27	12.33	0.4	1.2	B	87	131
	D-BC	0.50	17.49	1.0	3.9	C	176	265
	C-ABD	0.02	4.66	0.0	0.5	A	10	15
	C-D						162	243
	C-A						170	255
N11 - Bridgend Road/Manor Grove	B-C	0.15	12.80	0.2	0.5	B	42	64
	B-A	0.63	26.82	1.7	7.7	D	193	289
	C-AB	0.22	7.12	0.4	1.4	A	108	162
	C-A						183	275
	A-B						250	375
	A-C						314	471

Appendix 7.1 – Air Quality Appendices




Stantec
N
M4
ECO1.1
ECO1.3
ECO1.2
ECO1.6
ECO1.4
ECO1.8
ECO1.7
ECO1.11
ECO1.10
ECO1.13
ECO1.12
ECO1.16
ECO1.14
ECO1.18
ECO1.17
St Mary Magdalen's Church
Heol Las
0
60
120
180
240
m
Modelled Roads (DM)
Modelled Receptors
Special Areas of Conservation (SACs)


Stantec
N
ECO2.9
ECO2.8
ECO2.7
ECO2.6
ECO2.5
ECO2.4
ECO2.3
ECO2.2
ECO2.1
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Modelled Roads (DM)
Modelled Receptors
Special Areas of Conservation (SACs)

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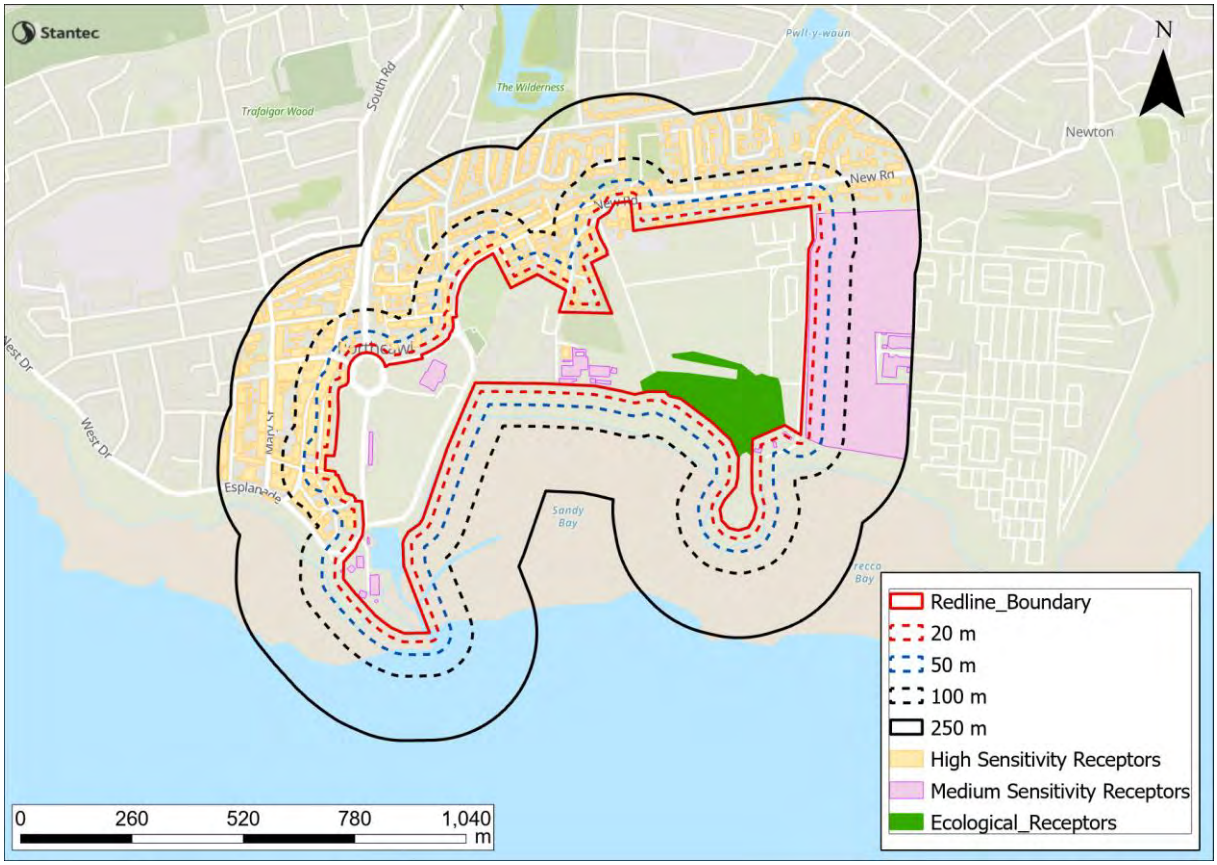
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Magnitude

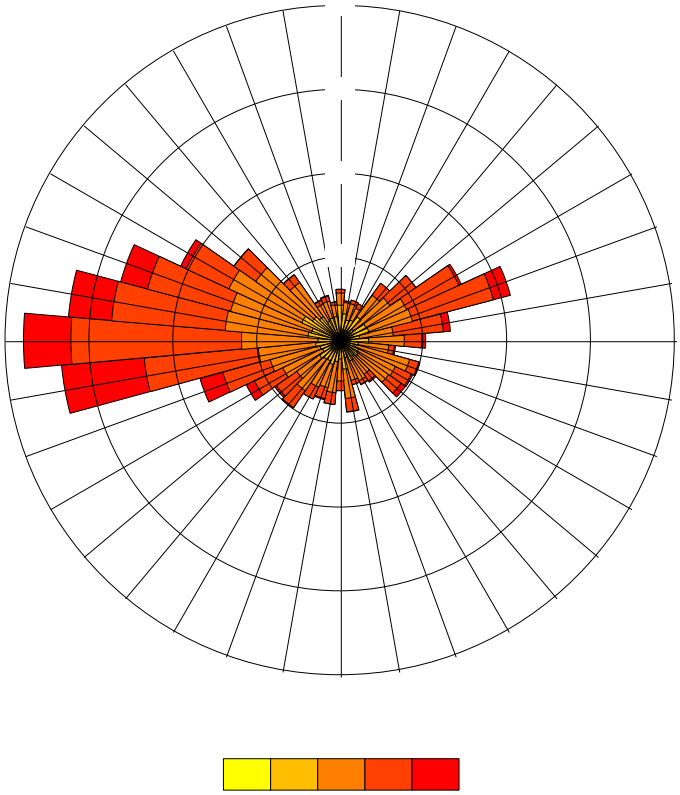
Area Sensitivity

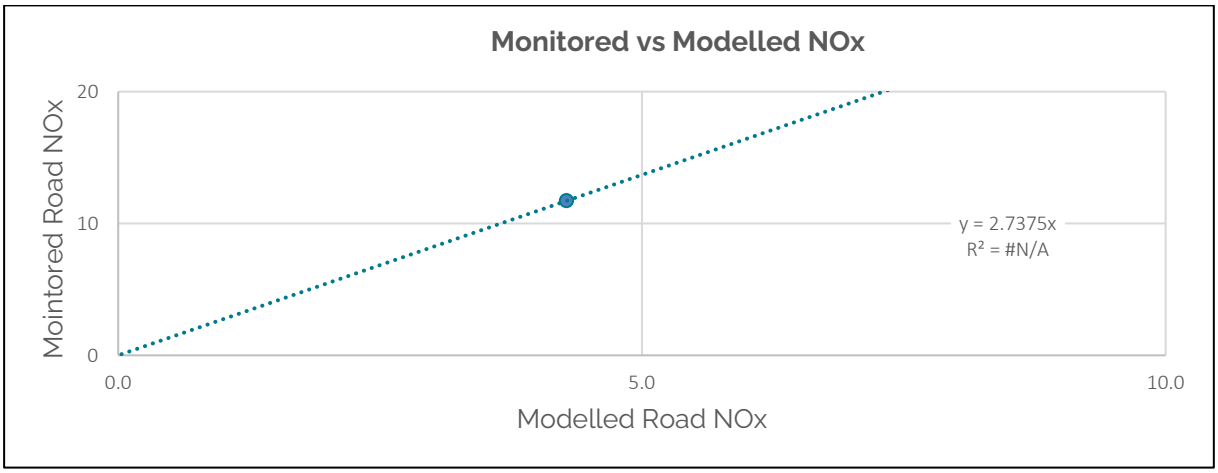


Risk of Impacts

Mitigation

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	• •
	• •




Monitored vs Modelled NOx
Mointored Road NOx
20
10
0
0.0
5.0
10.0
Modelled Road NOx
y = 2.7375x
R² = #N/A

Appendix 8.1 - Technical Glossary, Legislation, Policy and Guidance

Redevelopment of Porthcawl Waterfront
Volume 3, Appendix 8.1

Technical Glossary

Legislation

The Building Regulations 2010 & 2022

BB93: Acoustic Design of Schools – Performance Standards (2015)

The Control of Pollution Act 1974

Environmental Protection Act 1990 (EPA 1990)

The Environment (Air Quality and Soundscapes) (Wales) Act 2024

National Policy

Planning Policy Wales (PPW)

Noise and Soundscape Plan for Wales 2023–2028

Future Wales: The National Plan 2040

Technical Advice Note (TAN) 11: Noise

Local policy –

Bridgend County Borough Local Development Plan 2018–2033

Relevant guidance

British Standard BS5228 Part 1: 2009+A1:2014 – Construction Noise

British Standard BS5228 Part 2: 2009+A1: 2014 – Construction Vibration

"A) The magnitudes of the values presented apply to a measurement position that is representative of the point of entry into the recipient.

B) A transfer function (which relates an external level to an internal level) needs to be applied if only external measurements are available.

C) Single or infrequent occurrences of these levels do not necessarily correspond to the stated effect in every case. The values are provided to give an initial indication of potential effects, and where these values are routinely measured or expected then an assessment in accordance with BS 6472-1 or -2, and/or other available guidance, might be appropriate to determine whether the time varying exposure is likely to give rise to any degree of adverse comment."

NOTE 1 Values referred to are at the base of the building. ***NOTE 2 For unreinforced or light framed structures, at frequencies below 4 Hz, a maximum displacement of 0.6 mm (zero to peak) is not to be exceeded.***

British Standard BS 8233:2014

British Standard 4142:2014+A1:2019

World Health Organisation (WHO) Guidelines on Community Noise

ProPG: Planning & Noise

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-

Acoustics Ventilation and Overheating – Residential Design Guide (AVO Guide)

Calculation of Road Traffic Noise

Design Manual for Roads and Bridges LA111 Noise and Vibration Revision 2

Sports England Artificial Grass Pitch Acoustics – Planning Implications

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Code of Practice on Noise Control at Concerts

Good Practice Guide on the Control of Noise from Pubs and Clubs (2003)

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VDI 3770: Emission Values of Sound Sources – Sports and Leisure Facilities (2012)

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Appendix 8.2 - Baseline Noise Survey

Volume 3, Appendix 8.2

Stantec

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2 Environmental Noise Survey

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[1]Note:

[2]Note:

[3]Note:

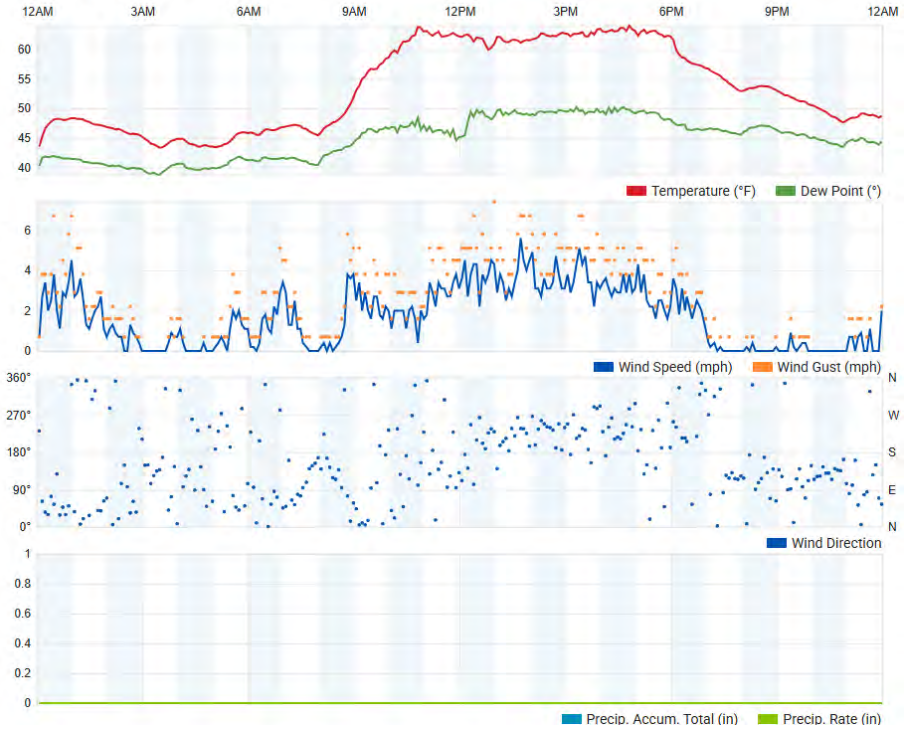
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Appendices

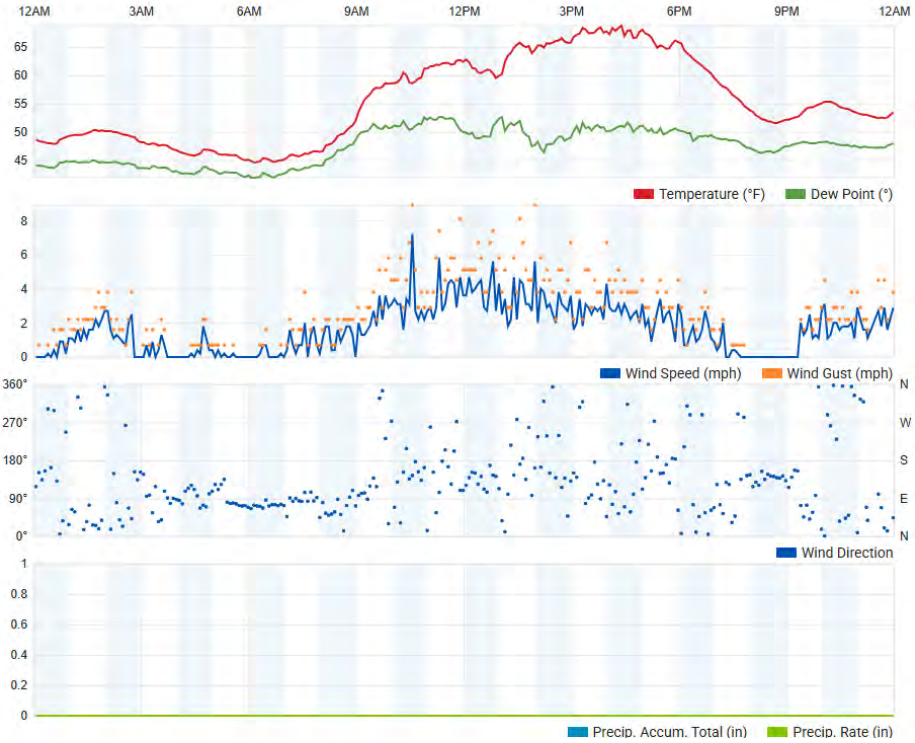
Appendix A Glossary of Acoustic Terminology

Appendix B Weather History Graphs

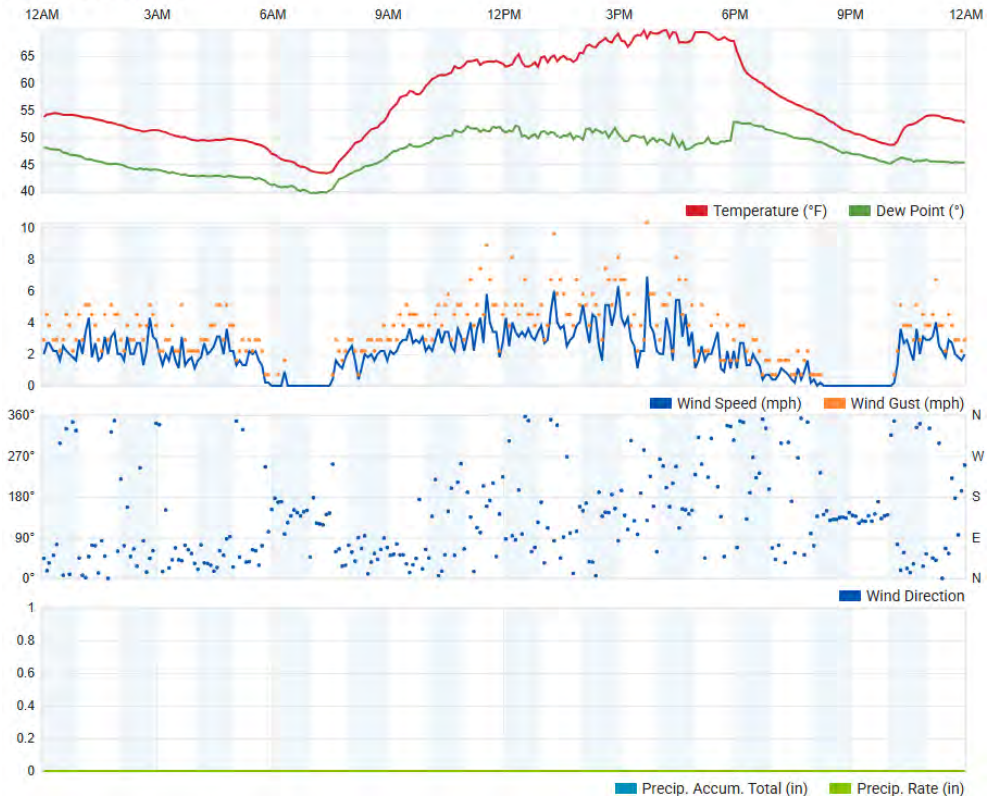
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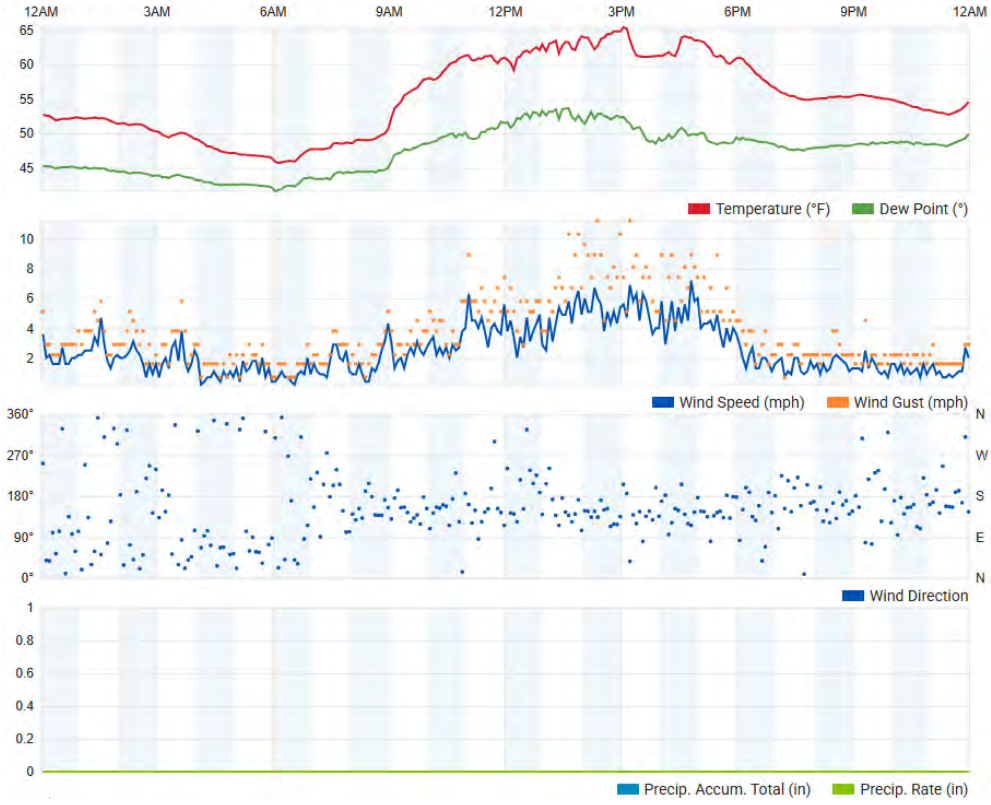
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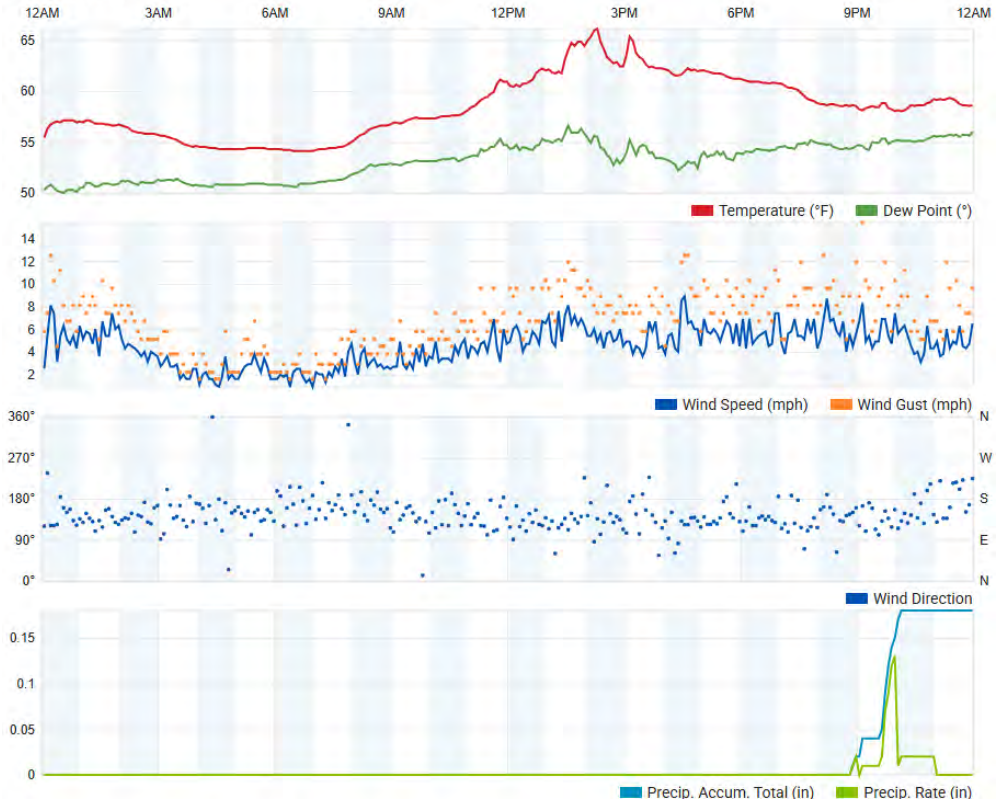
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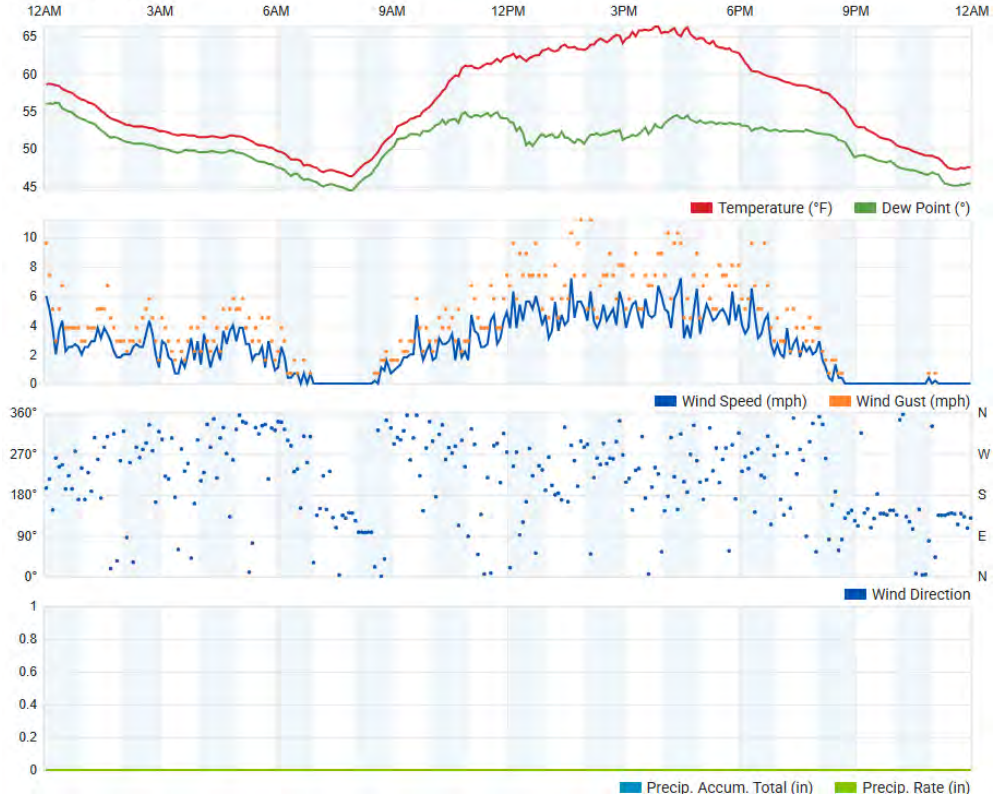
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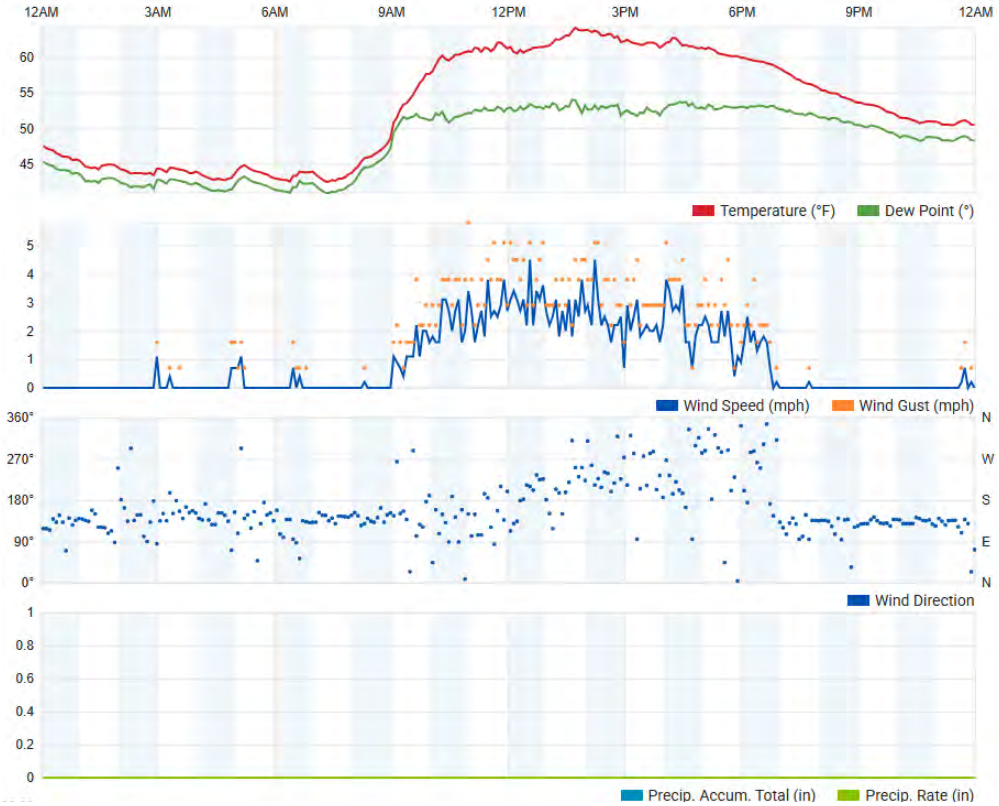
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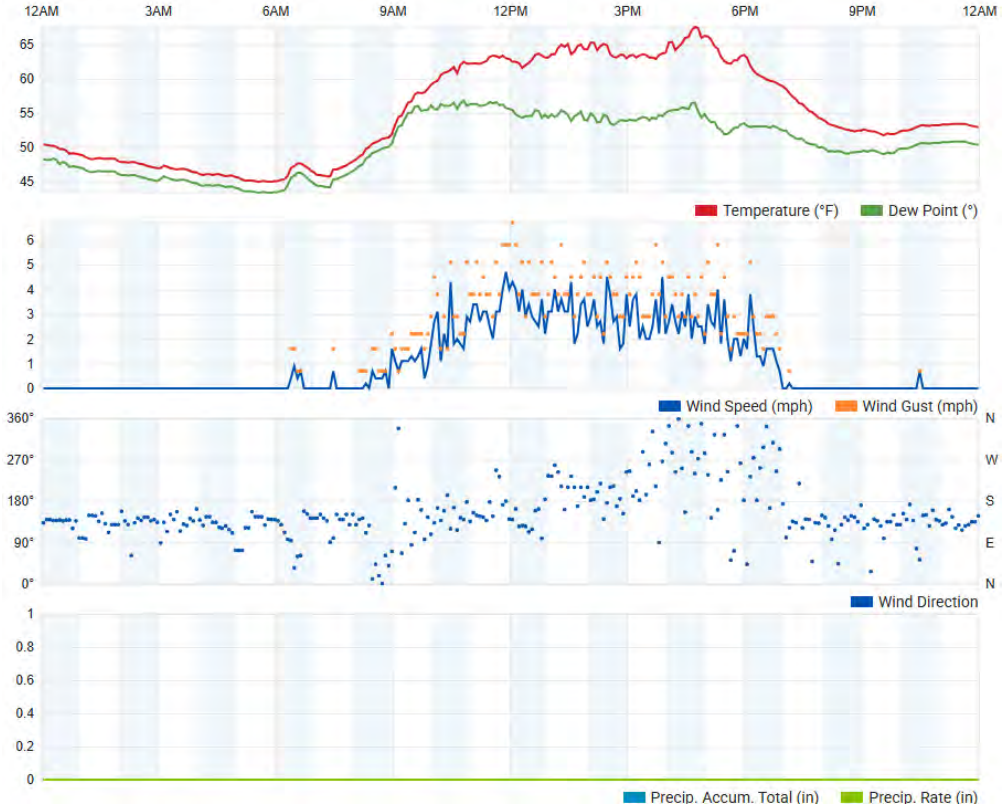
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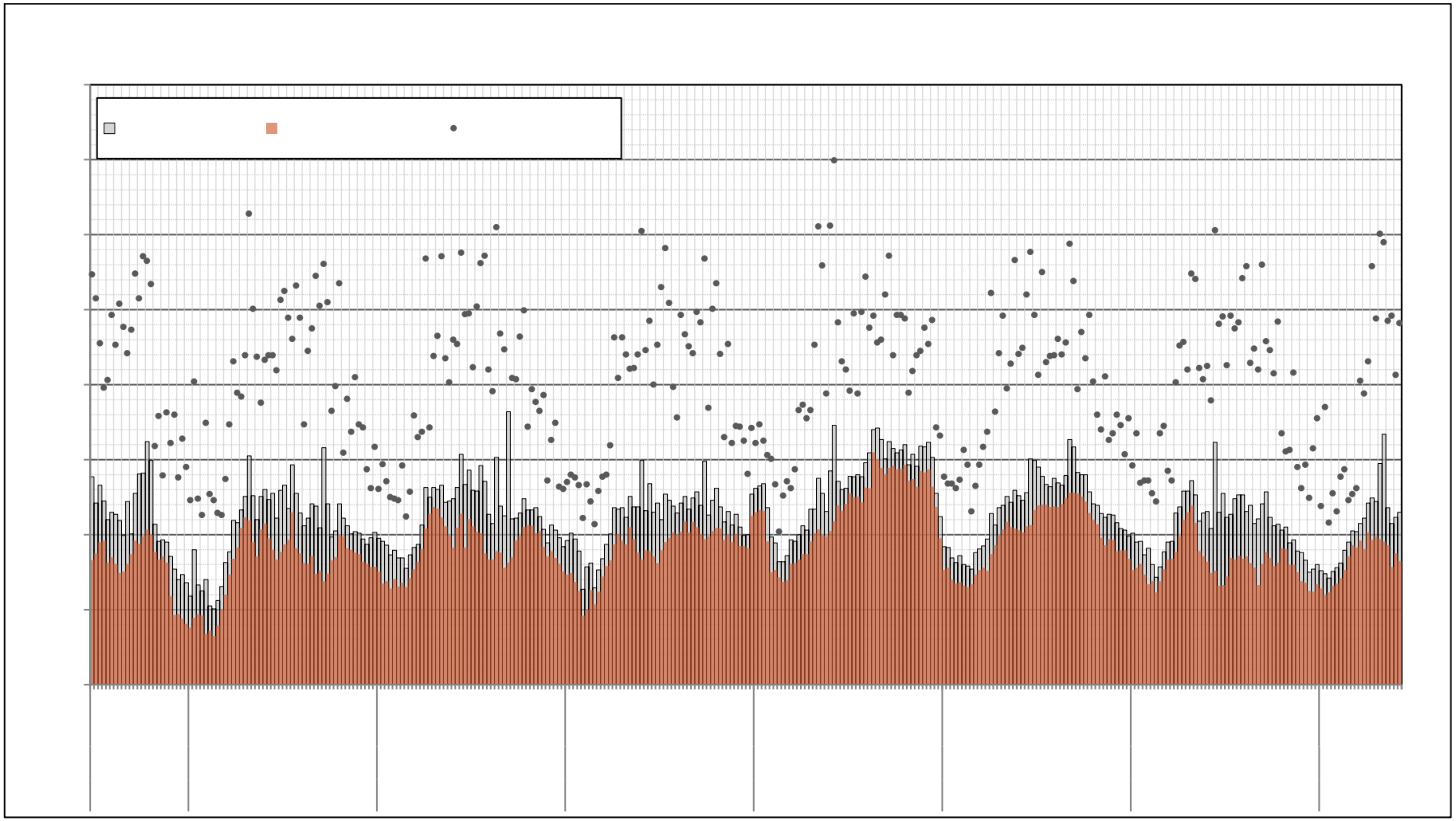
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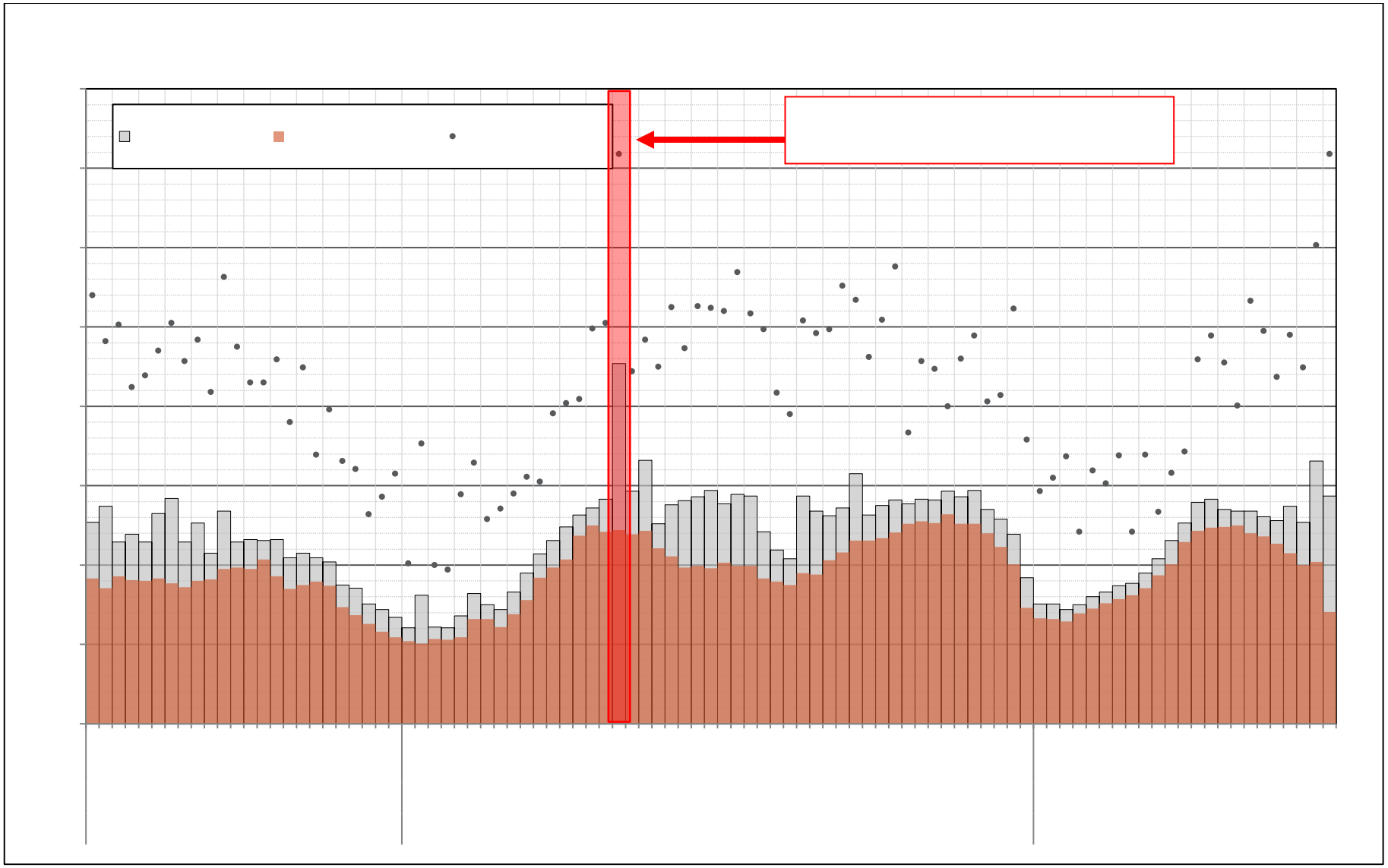


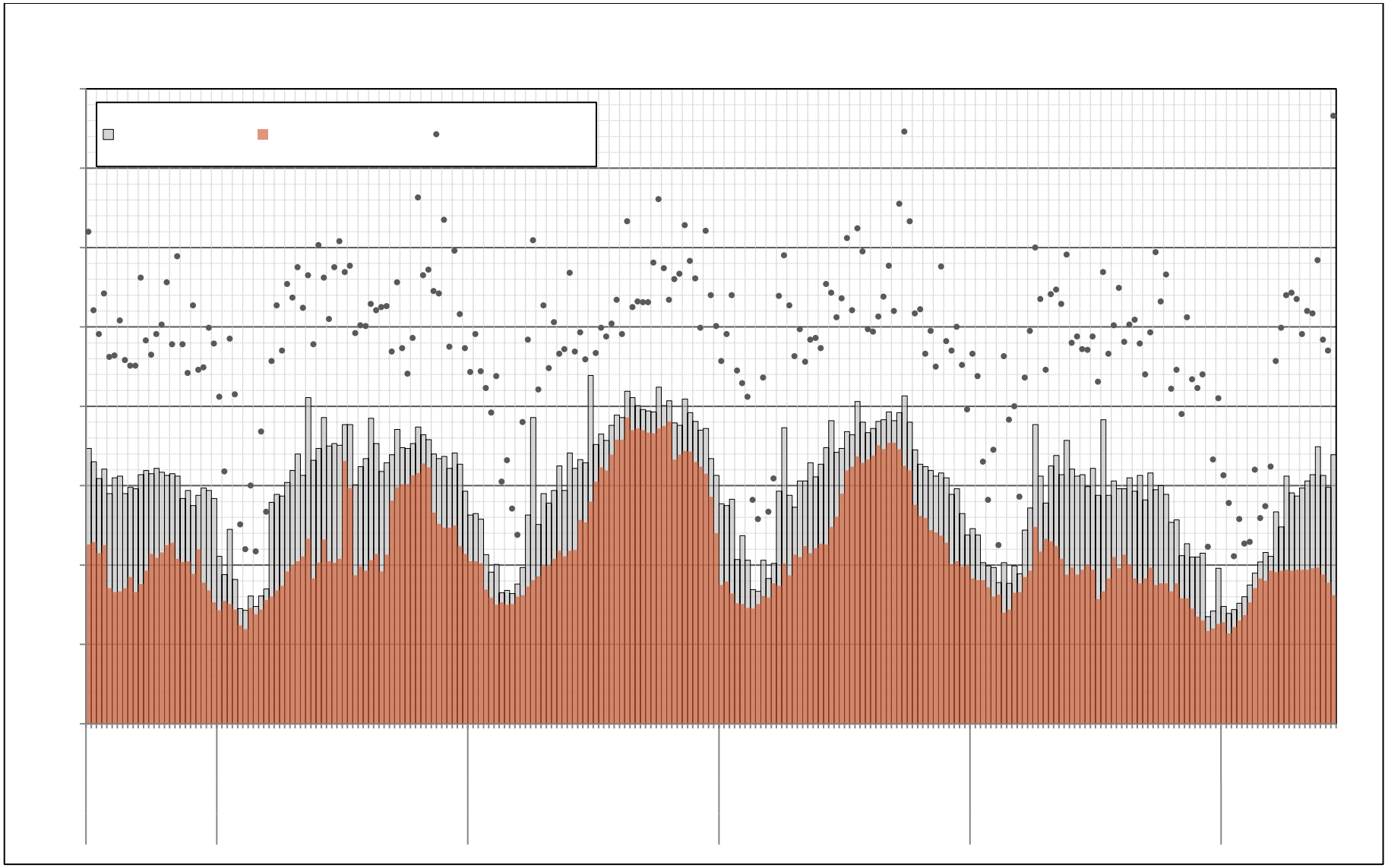
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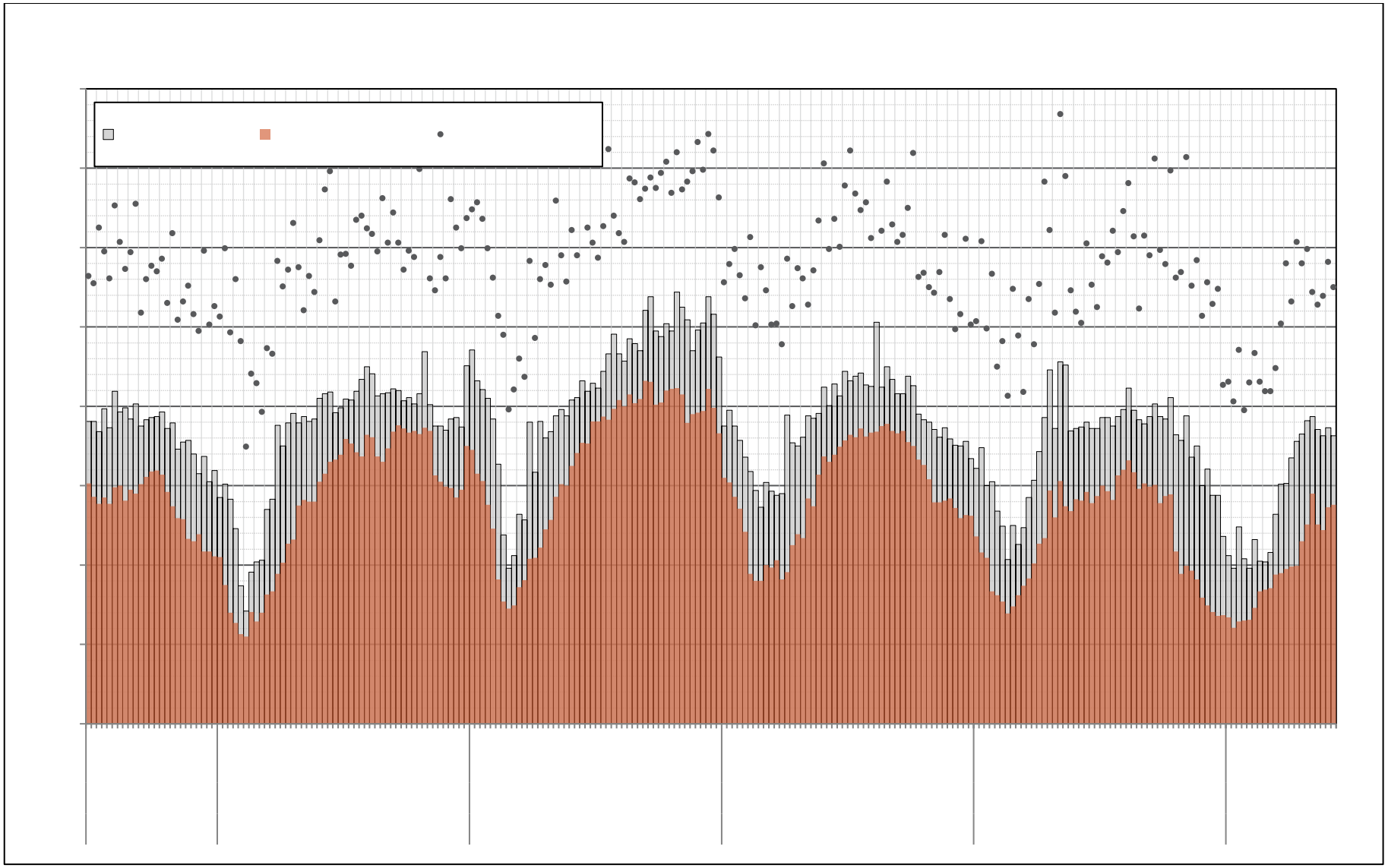


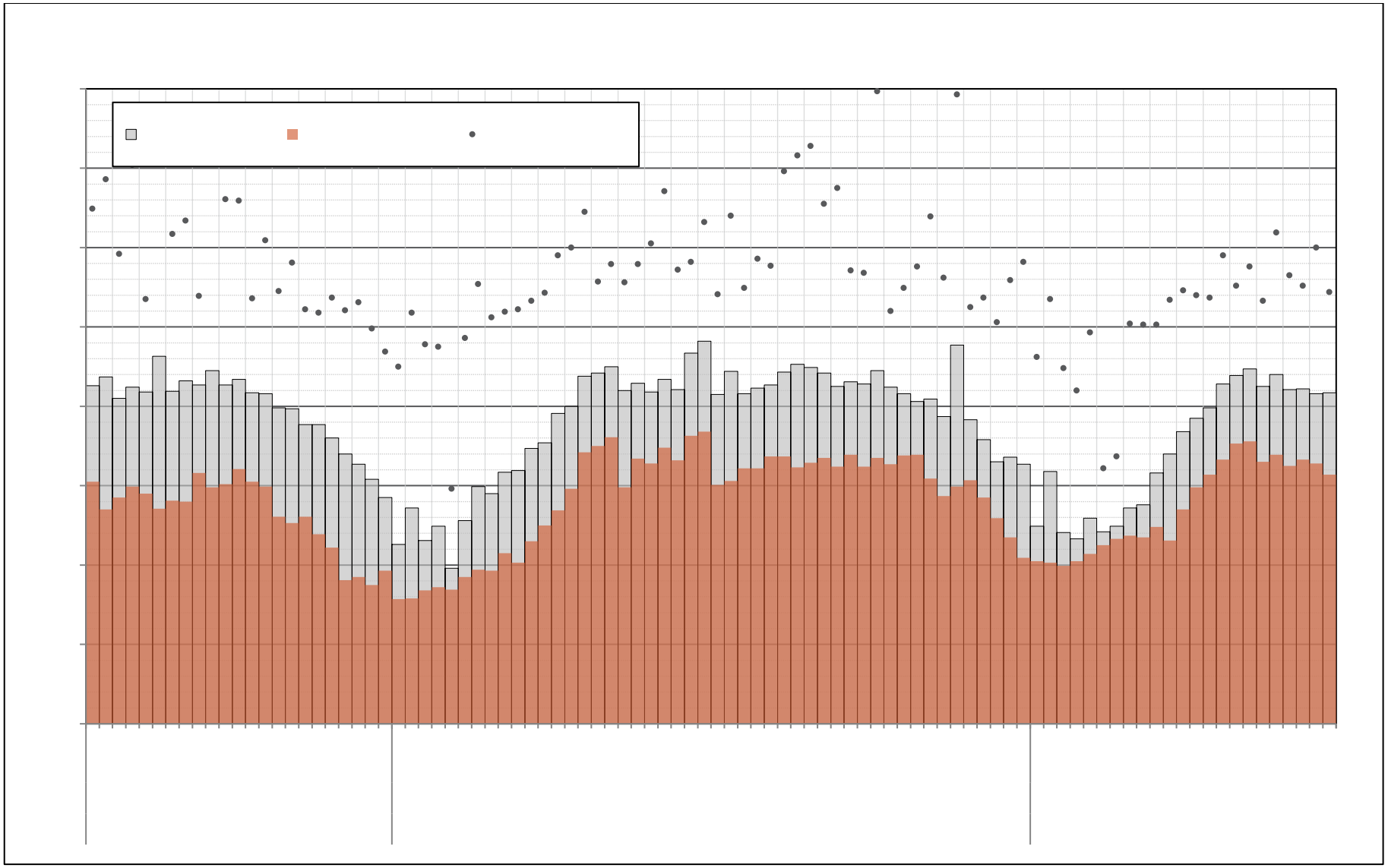
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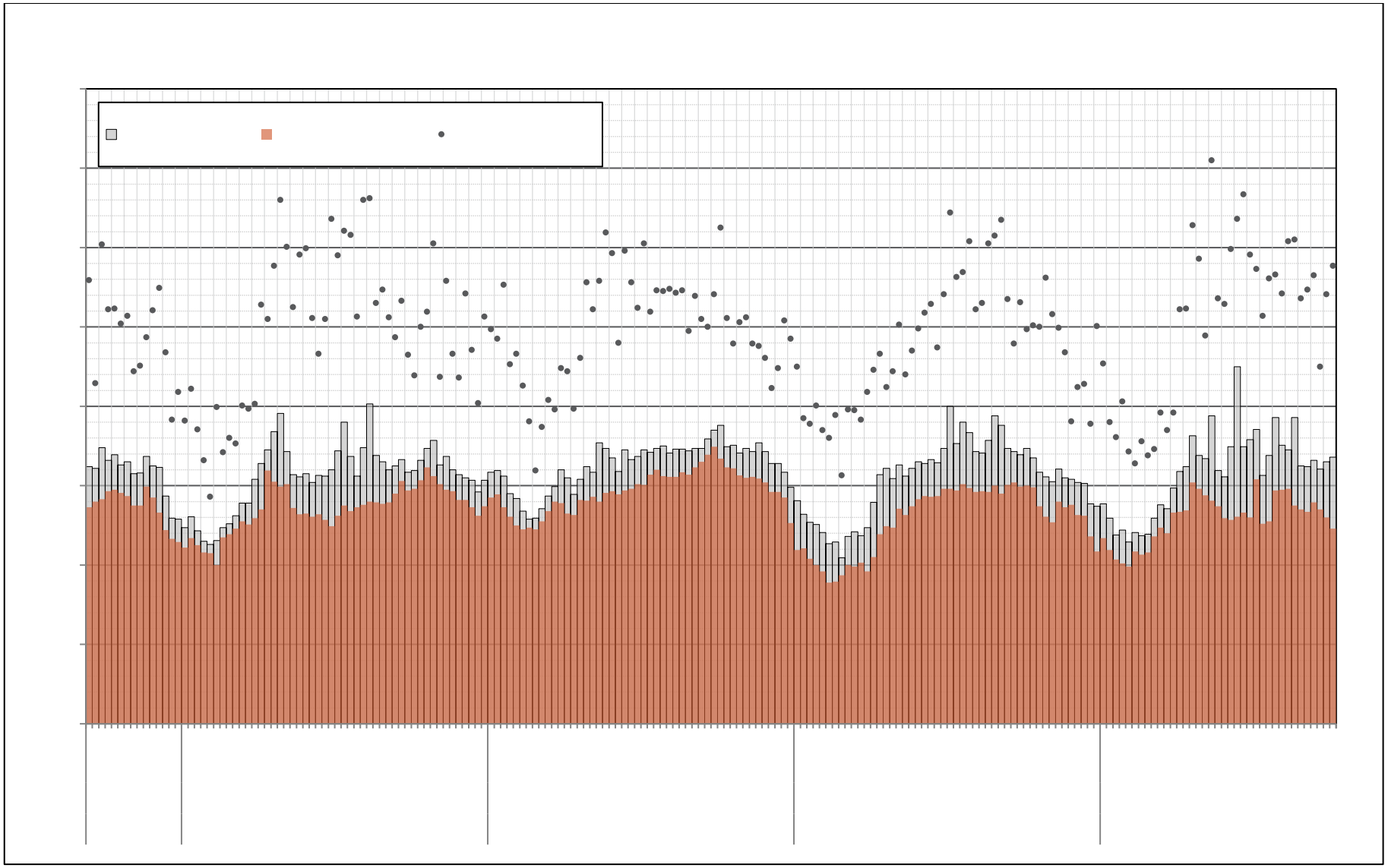




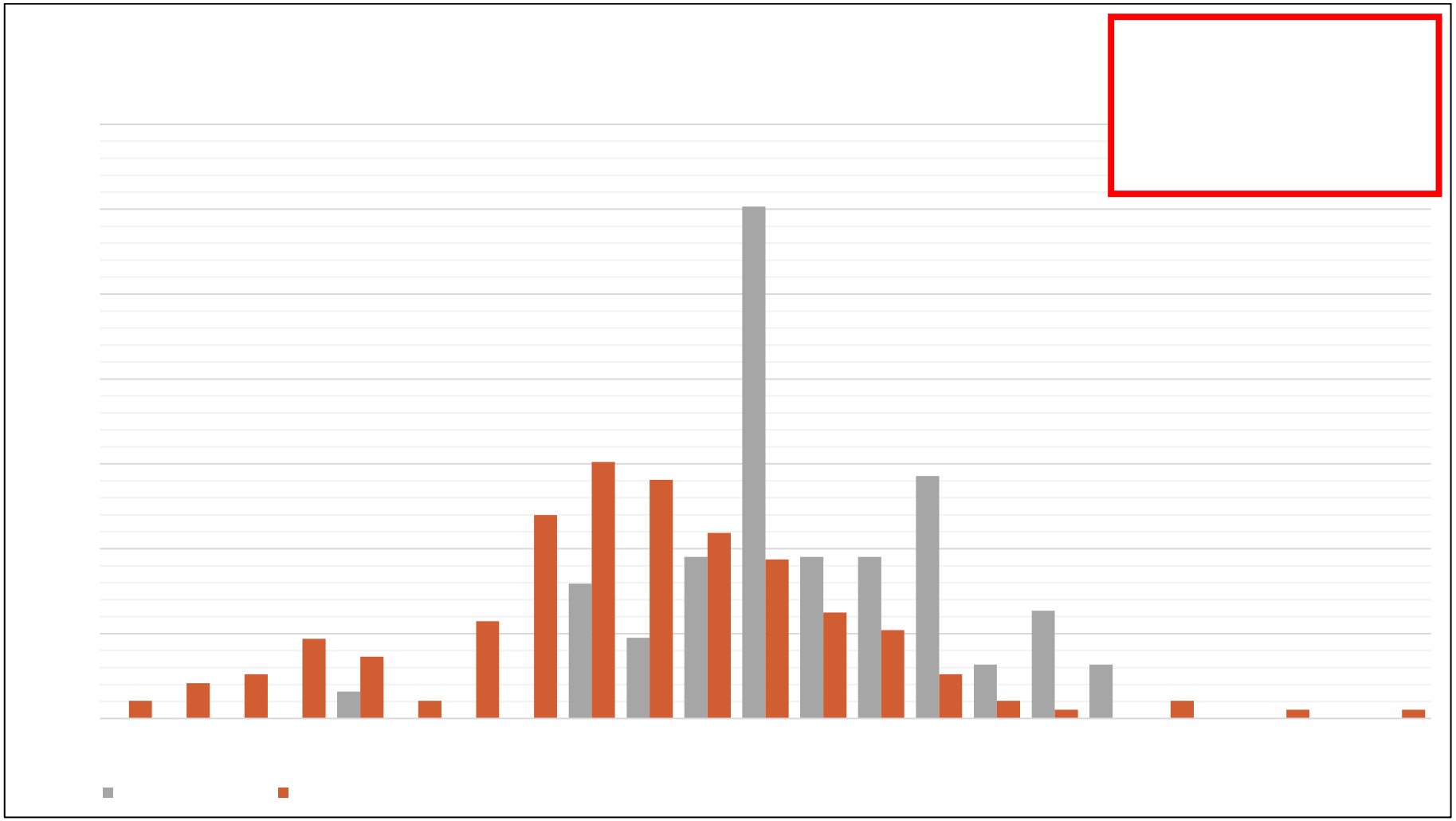


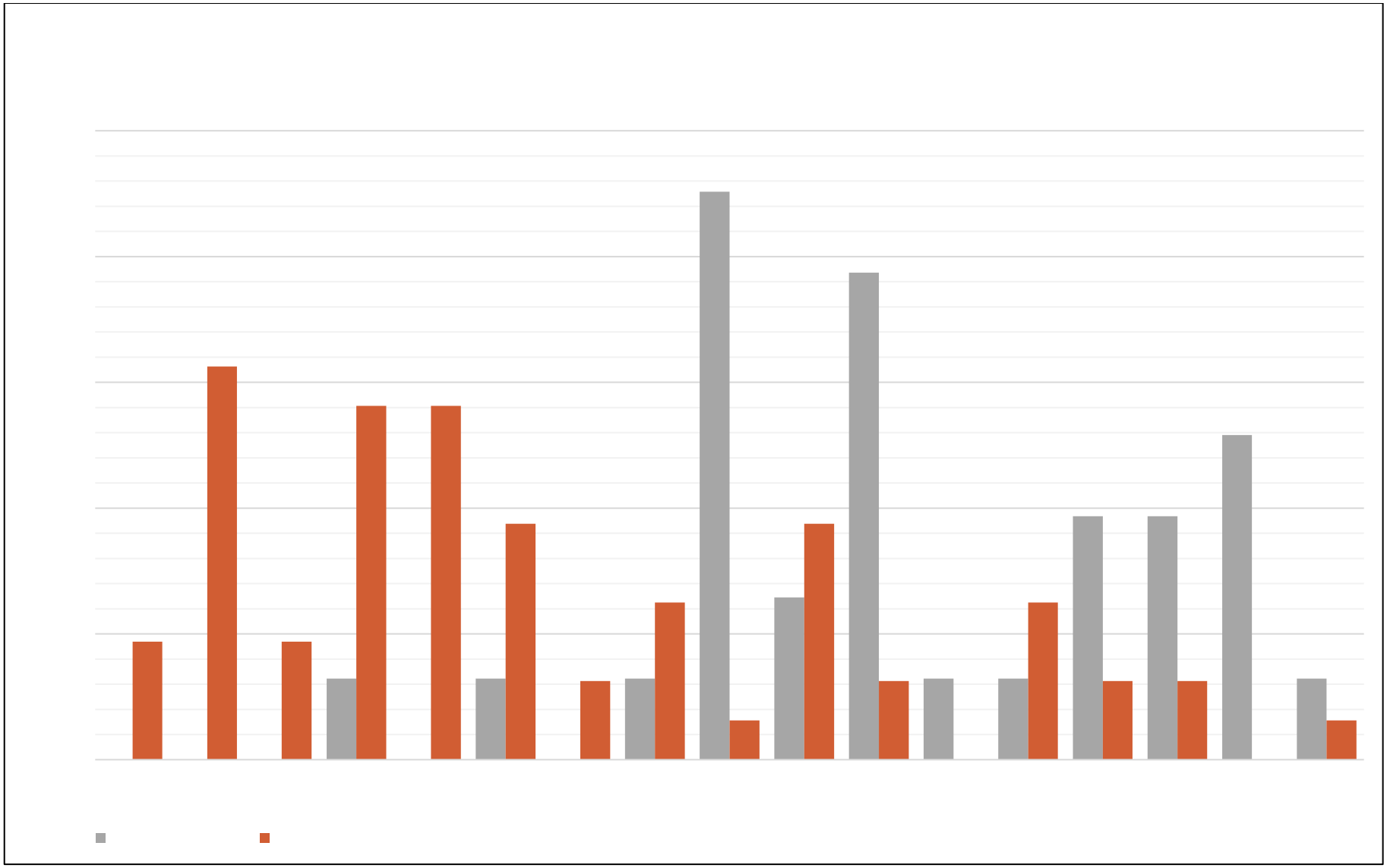


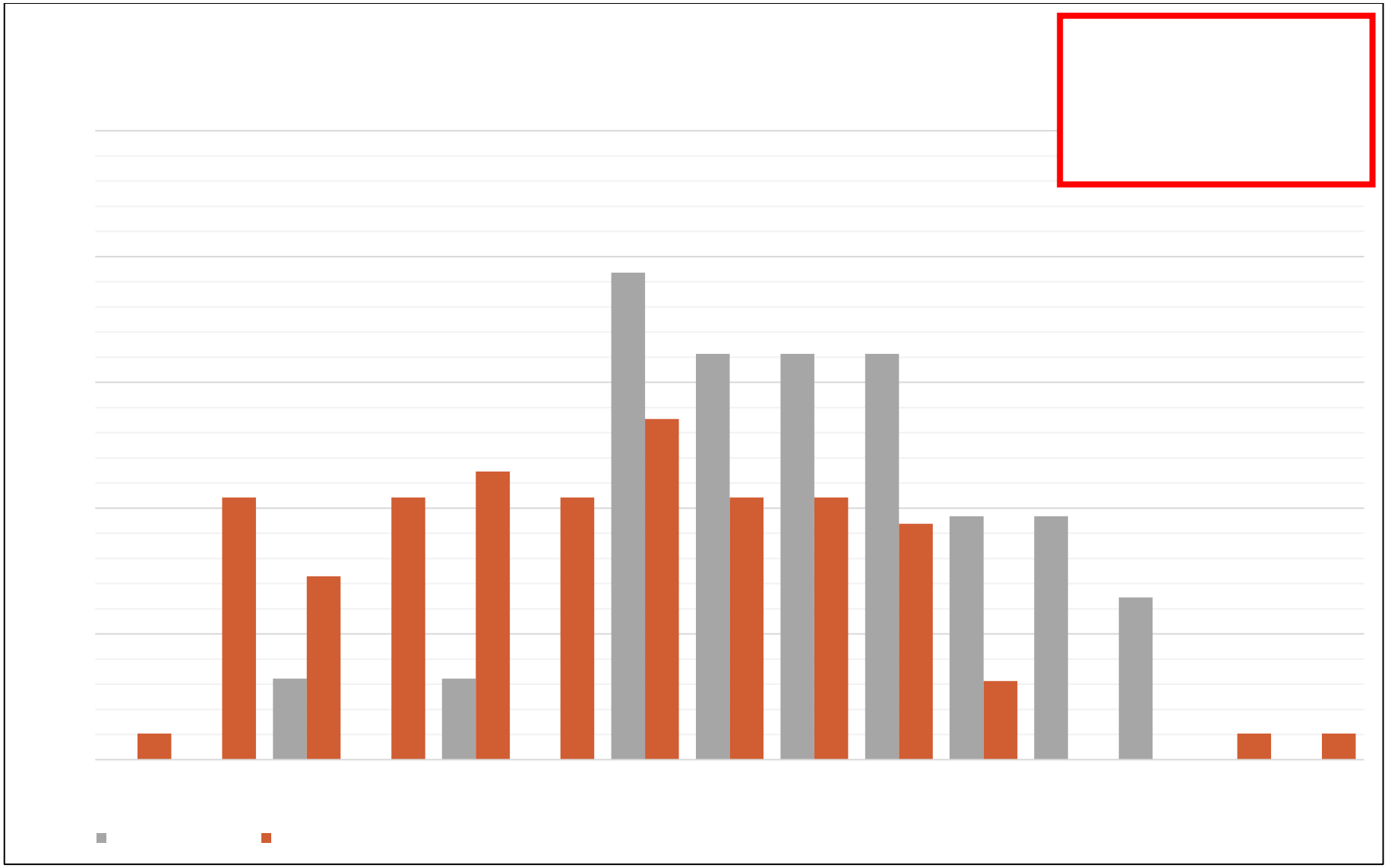


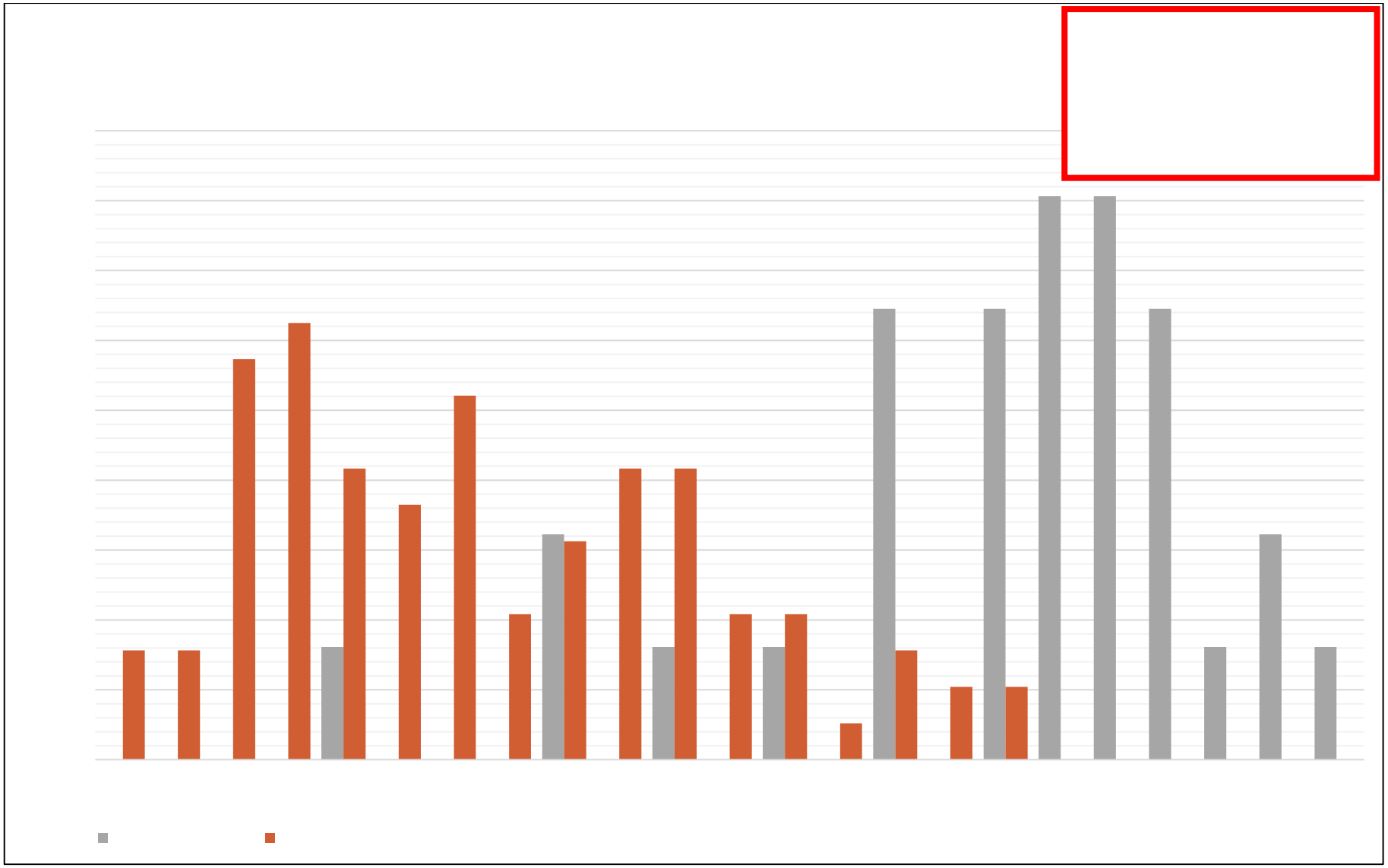


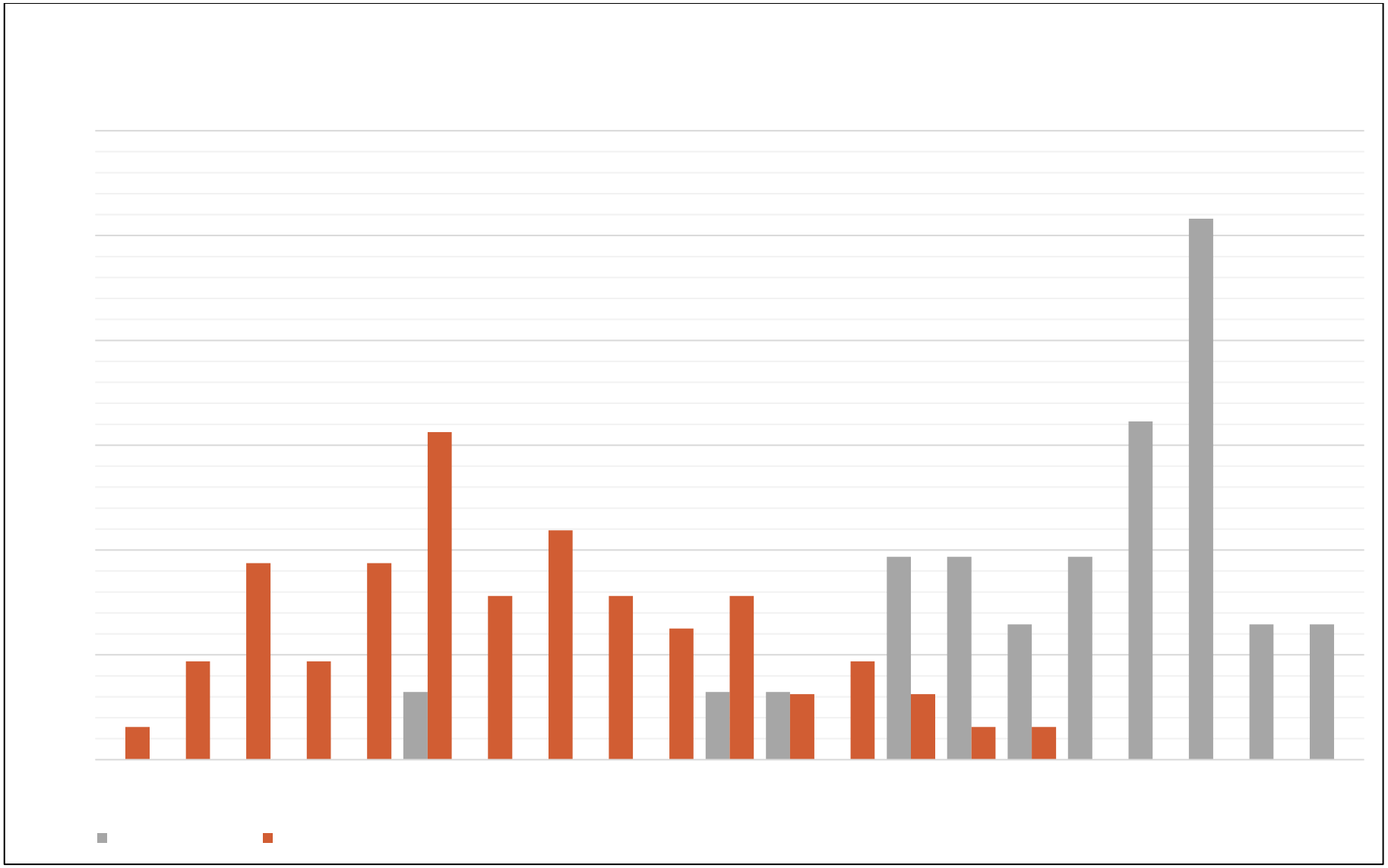
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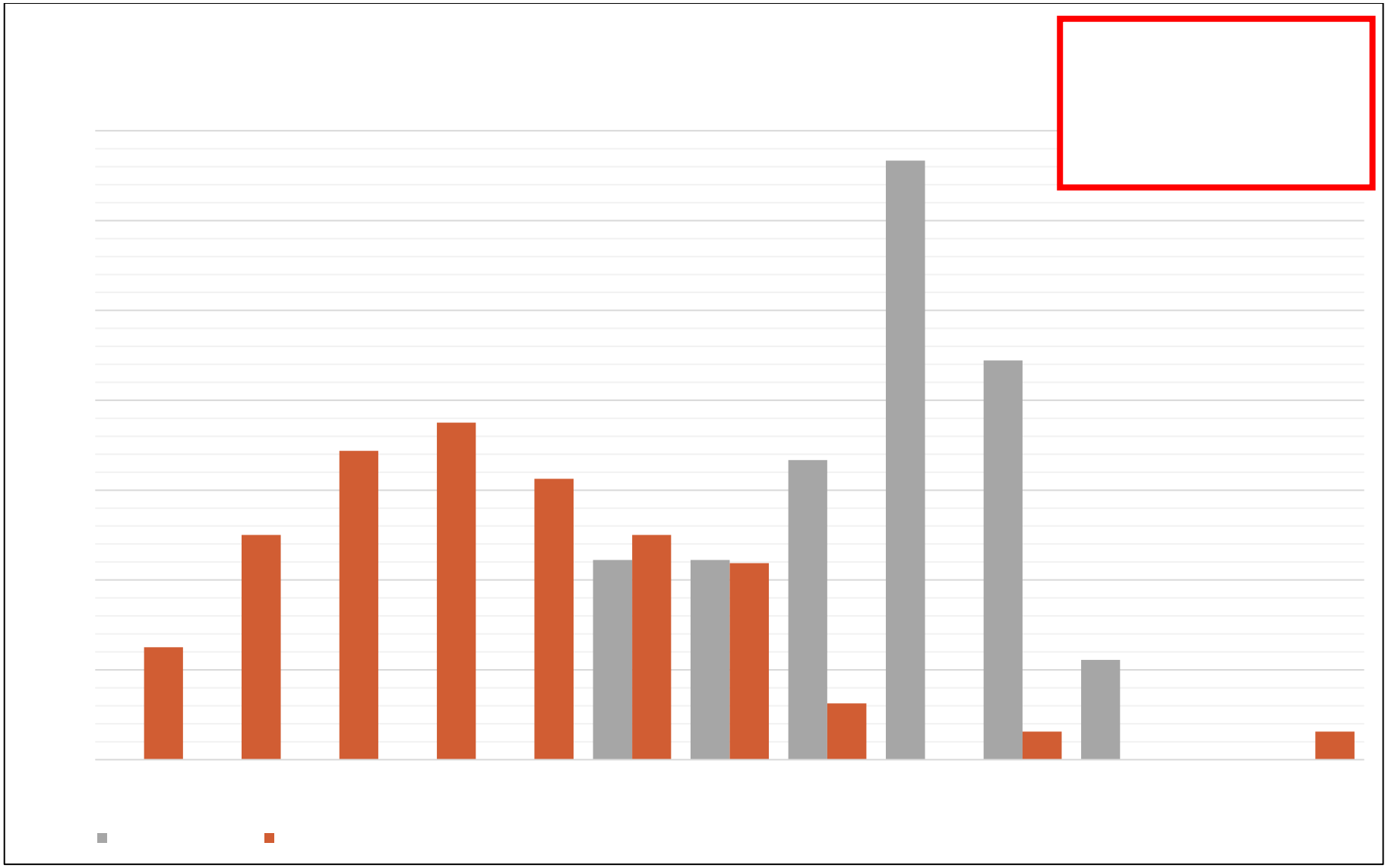












With every community, we redefine what's possible.

Appendix 8.3 - Noise Impact Assessment

Volume 3, Appendix 8.3

Stantec

Document control sheet

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1 Introduction

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2 Identified Noise Sensitive Receptors




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3 Noise Impact Assessment

3.1 Noise Modelling




Daytime $L_{Aeq,16hr}$ dB
< 55.0 NEC A
55.0 <= < 63.0 NEC B
63.0 <= < 72.0 NEC C
72.0 <= NEC D
Scale 1:3500
0 20 40 80 120 160
m


Night Time $L_{Aeq,8hr}$ dB
< 45.0 NEC A
45.0 <= < 57.0 NEC B
57.0 <= < 66.0 NEC C
66.0 <= NEC D
Scale 1:3500
0 20 40 80 120 160
m


Night Time $L_{Aeq,8hr}$ dB
< 45.0 NEC A
45.0 <= < 57.0 NEC B
57.0 <= < 66.0 NEC C
66.0 <= NEC D
Scale 1:3500
0 20 40 80 120 160
m


Sand
Sandy Bay
Daytime $L_{Aeq,16hr}$ dB
< 55.0 NEC A
55.0 <= < 63.0 NEC B
63.0 <= < 72.0 NEC C
72.0 <= NEC D
Scale 1:2000
0 10 20 40 60 80 m


Daytime $L_{Aeq,16hr}$ dB
< 55.0 NEC A
55.0 <= < 63.0 NEC B
63.0 <= < 72.0 NEC C
72.0 <= NEC D
Scale 1:1300
0 5 10 20 30 40 m
19
20
16
17


Sand
Sand
Sandy Bay
Night time $L_{Aeq,8hr}$ dB
< 45.0 NEC A
45.0 <= < 57.0 NEC B
57.0 <= < 66.0 NEC C
66.0 <= NEC D
Scale 1:2000
0 10 20 40 60 80 m


Night time LAeq,8hr dB
< 45.0 NEC A
45.0 <= < 57.0 NEC B
57.0 <= < 66.0 NEC C
66.0 <= NEC D
Scale 1:1300
0 5 10 20 30 40 m
19
20
16
17

3.2 Discussion

3.2.1 External Building Fabric

3.2.2 Overheating

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3.2.3 External Amenity Areas

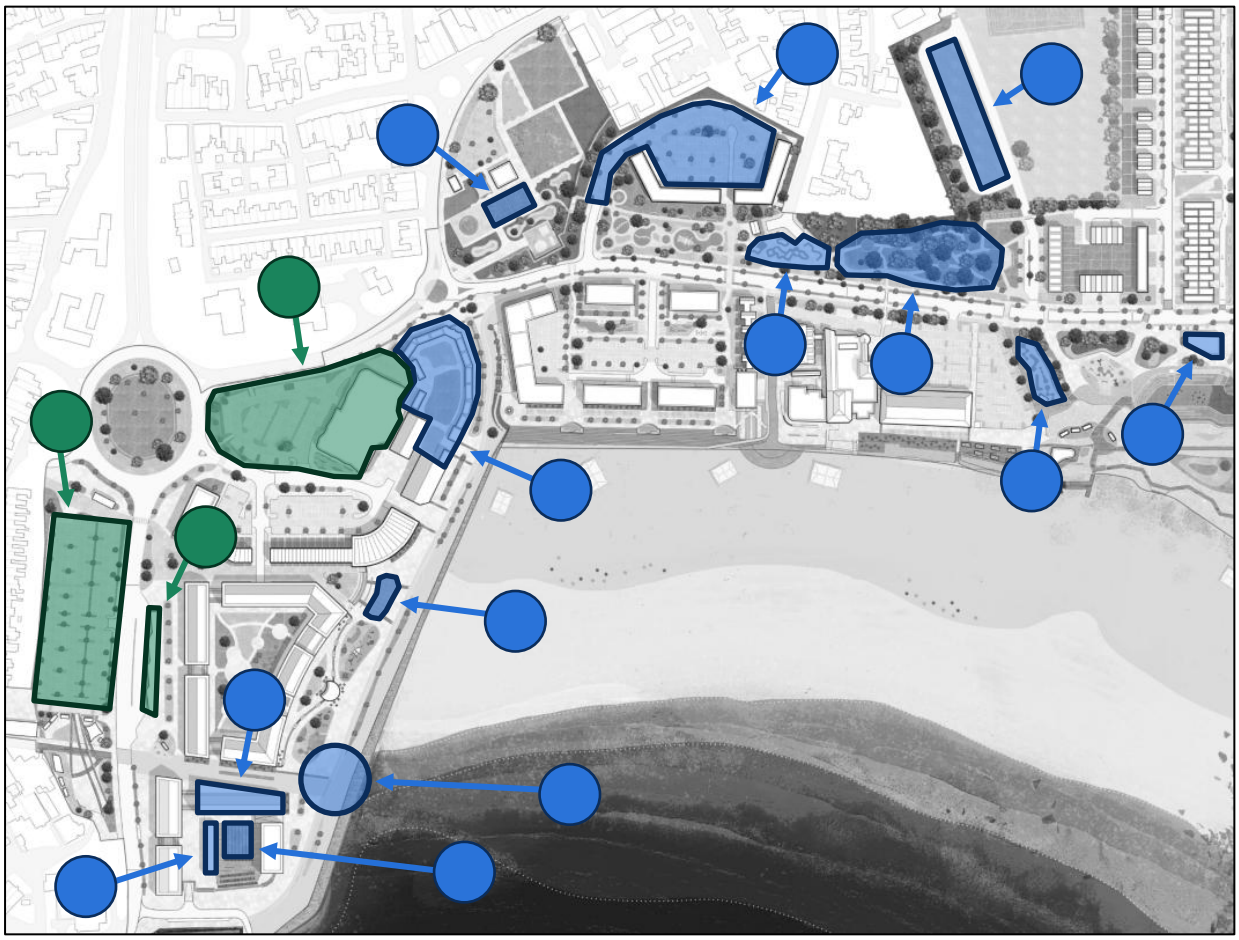
With every community, we redefine what's possible.

Appendix 8.4 - Proposed Layout and Summary of Decisions

Stantec

Redevelopment of Porthcawl Waterfront
Volume 3, Appendix 8.4

Description of the proposed layout and summary of the decisions that led to the final layout proposal



Appendix 8.5 - Noise & Vibration Risks Associated with Co-Location of Uses

Redevelopment of Porthcawl Waterfront
Volume 3, Appendix 8.5

Noise and vibration risks associated with the co-location of noise generating and new noise sensitive uses

Appendix 9.1a:

Statutory Designated Site Citations

Special Areas of Conservation

Kenfig/ Cynffig

Designated Special Area of Conservation (SAC)

Country	Wales
Unitary Authority	East Wales
Centroid*	SS790813
Latitude	51.5183
Longitude	-3.7447
SAC EU Code	UK0012566
Status	Designated Special Area of Conservation (SAC)
Area (ha)	1189.14

* This is the approximate central point of the SAC. In the case of large, linear or composite sites, this may not represent the location where a feature occurs within the SAC.



Location of Kenfig/ Cynffig SAC

General site character

- Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins) (19%)
- Salt marshes, Salt pastures, Salt steppes (1%)
- Coastal sand dunes, Sand beaches, Machair (63%)
- Shingle, Sea cliffs, Islets (4%)
- Inland water bodies (Standing water, Running water) (2.5%)
- Bogs, Marshes, Water fringed vegetation, Fens (0.5%)
- Heath, Scrub, Maquis and Garrigue, Phygrana (7.5%)
- Broad-leaved deciduous woodland (2.5%)

Download the Standard Data Form for this site (PDF <100kb)

Note When undertaking an appropriate assessment of impacts at a site, all features of European importance (both primary and non-primary) need to be considered.

Annex I habitats that are a primary reason for selection of this site

- **2130 "Fixed coastal dunes with herbaceous vegetation (""grey dunes"")" * Priority feature**
  Kenfig is a largely intact dune system in south Wales with extensive areas of **fixed dune** vegetation with red fescue *Festuca rubra* and lady's bedstraw *Galium verum* and semi-fixed dune grassland with marram *Ammophila arenaria* and red fescue. There is also a relatively large area of more acidic vegetation dominated by sand sedge Carex *arenaria*, sheep's-fescue *Festuca ovina* and common bent *Agrostis capillaris*.

- **2170 Dunes with Salix repens ssp. argentea (Salicion arenariae)**
  Kenfig contains one of the largest series of dune slacks in Wales. The dune slacks are species-rich and there are extensive areas of **dunes with *Salix repens* ssp. *argentea***, which represent a mature phase in dune slack development. This site is in the central part of the range of this community on the west coast and is a highly representative example of this habitat type.

- **2190 Humid dune slacks**
  Kenfig in south Wales contains the most important example of **Humid dune slacks** in the UK, owing to the extent of the habitat type and the conservation of its structure and function. These calcareous dune slacks are also amongst the most species-rich in the UK, supporting communities dominated by a variety of mosses and a number of rare plants, notably **1903 Fen orchid *Liparis loeselii***, for which the site is also selected. Some of the dune slacks on the site are still in the early successional stage of development.

- **3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.**

Kenfig Pool is a shallow lake system within the extensive sand dune system of Kenfig, alongside Swansea Bay in south Wales. The water chemistry is indicative of a coastal, alkaline lake with a moderate nutrient status. High alkalinity, conductivity, sodium and chloride values reflect this marine influence. Elevated calcium values are probably derived from marine shell remains in the sandy substrate. Large stands of common reed *Phragmites australis* are found on the pool's seaward side. Grey club-rush *Scirpus lacustris* ssp. *tabernaemontani*, sea club-rush *Scirpus maritimus*, branched bur-reed *Sparganium erectum* and yellow iris *Iris pseudacorus* are also present. A sheltered bay supports a plant association dominated by shining pondweed *Potamogeton lucens* and curled pondweed *P. crispus*. Hairlike pondweed *P. trichoides* is locally dominant in the north end and the south end has abundant rigid hornwort *Ceratophyllum demersum*, Canadian waterweed *Elodea canadensis*, fan-leaved water-crowfoot *Ranunculus circinatus*, spiked water-milfoil *Myriophyllum spicatum* and the charophytes *Chara aspera* var. *aspera* and *Nitella flexilis* var. *flexilis*. Shoreweed *Littorella uniflora* can be found growing in association with *C. aspera* and the aquatic moss *Fontinalis antipyretica* along the sandy shore section. *C. aspera* also dominates the substrate off the grazed landward shoreline, to a depth of approximately 1.5 m.

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

- **1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)**

Annex II species that are a primary reason for selection of this site

- **1395 Petalwort** *Petalophyllum ralfsii*
  Kenfig is one of two sites selected for **petalwort *Petalophyllum ralfsii*** in south Wales and supports a large population of the species, numbering thousands of thalli. The calcareous dune system has many dune slacks that include the early successional, open slack vegetation this species requires.

- **1903 Fen orchid** *Liparis loeselii*
  Kenfig on the south Wales coast holds the largest populations of **fen orchid *Liparis loeselii*** in the UK, comprising about 50% of the UK resource. Management of the site is directed towards the maintenance and enhancement of the populations of fen orchid. The variety that occurs here, as at Whiteford Burrows, is var. *ovata*, which is currently known to occur only in Wales and on the coast of Brittany, as well as in the past at Braunton Burrows, Devon, England.

Annex II species present as a qualifying feature, but not a primary reason for site selection

- Not Applicable

Many designated sites are on private land: the listing of a site in these pages does not imply any right of public access.

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Tel: 01733 562626 Fax: 01733 555948. Contact us: Enquiry form
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CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES

SITE OF SPECIAL SCIENTIFIC INTEREST CITATION

BRIDGEND **MERTHYR MAWR**

Date of Notification: 1950, 1983, 2002

National Grid Reference: SS861768

O.S. Maps: 1:50,000 Sheet number: 170
1:10,000 Sheet number: SS 87 NW

Site Area: 478.5 ha

Description:

Merthyr Mawr is of special interest for its saltmarsh, sand dune habitats and for its associated coastal habitats including calcareous grassland, swamp and intertidal habitats. In addition, the site is also of special interest for the assemblages of higher plants, fungi and invertebrates associated with the sand dunes. The rare weevil *Glocianus pilosellus*, a rare Gasteromycete fungus *Tulostoma melanocyclum* and a rare liverwort *Petalophyllum ralfsii* are also features of interest.

Merthyr Mawr is situated to the southeast of the town of Porthcawl and lies on the northern shore of the estuary of the Ogmore River. It is bounded to the north and east by agricultural land.

The beach is composed of periglacial material most of which is derived from the Pennant Sandstone of the Upper Coal Measures. A Carboniferous Limestone plateau, which is largely obscured by sand, runs east to west on the leeward side of the dunes. There is a discontinuous distribution of clay and silt beneath the dune sand, with shingle and beach cobble occurring in many places.

The hydrology of the site is influenced by two karstic springs which discharge groundwater from underlying Carboniferous Limestone sources. A freshwater water table underlies the whole of the southern or lower dunes, and its annual range is controlled by the seasonal pattern of rainfall. The site ranges from low tide up to about 80 m on the top of the limestone plateau.

The extensive sand dune system of Merthyr Mawr displays a range of dune habitats. These include successional stages from bare sand to stabilised dunes and slacks, and dune woodland and scrub.

In the sandy beach area, there is a typical foreshore community of prickly saltwort *Salsola kali*, babington's orache *Atriplex glabriuscula* and sea sandwort *Honkenya peploides*. Further inland, species such as marram grass *Ammophila arenaria*, sand-couch *Elytrigia juncea* and sea-holly *Eryngium maritimum* form a typical fore-dune community. The succession from these fore-dunes to tall, white dunes of marram grass is evident along the sandy area of the beach. Grassland species colonise these white dunes inland, forming a marram grass/red fescue *Festuca*

rubra semi-fixed dune grassland community. Merthyr Mawr contains extensive areas of semi-fixed and fixed species-rich dune grassland types. Many areas are relatively open, reflecting heavy grazing by rabbits particularly at the southern end of the site; this leaves areas of very short, open swards dominated by lichens, bryophytes, lady's bedstraw *Galium verum*, wild pansy *Viola tricolor* and thyme *Thymus praecox*. Rank, fixed dunes with yorkshire-fog *Holcus lanatus*, false oat-grass *Arrhenatherum elatius*, dewberry *Rubus caesius* and burnet rose *Rosa pimpinellifolia* occur elsewhere.

Dune slack vegetation at Merthyr Mawr is also very species-rich. Creeping willow *Salix repens* is locally common on the slack floors, along with other typical slack species such as marsh pennywort *Hydrocotyle vulgaris*, marsh helleborine *Epipactis palustris*, southern marsh-orchid *Dactylorhiza praetermissa* and early marsh-orchid *D. incarnata*. The rare petalwort *Petalophyllum ralfsii* occurs in the patches of damp, bare sand between the creeping willow.

The hollows of the smaller more inland dunes are often colonized by trees and scrub, completing the successional sequence of sand dune habitats from strandline to woodland. Merthyr Mawr has the largest area of semi-natural woodland of all Welsh sand dune systems, consisting of species such as birches *Betula spp*., willows *Salix spp*., sycamore *Acer pseudoplatanus*, hazel *Corylus avellana*, ash *Fraxinus excelsior* and oak *Quercus robur*.

The saltmarsh at Merthyr Mawr flanks the western bank of the Ogmore River, and consists of three bays separated by sandbars. The strandline flora of these sandbars is diverse, with vegetation including sea sandwort *Honkenya peploides*, hard-grass *Parapholis strigosa*, fern-grasses *Desmazeria maritima* and *D. rigida*, and sea rocket *Cakile maritima*. The transition from lower to upper saltmarsh is well developed in these bays.

The lower saltmarsh is generally a patchwork of vegetation dominated by common saltmarsh-grass *Puccinellia maritima*. Sea-purslane *Atriplex portulacoides* is locally abundant, and the river fringe is dominated by glasswort *Salicornia spp*. and annual sea-blite *Suaeda maritima*. Higher areas include an abundance of sea arrowgrass *Triglochin maritima* and common saltmarsh-grass. Upper saltmarsh is characterised by common saltmarsh-grass, creeping bent *Agrostis stolonifera* and red fescue *Festuca rubra*. The saltmarsh/sand dune interface is characterised by rock sea-lavender *Limonium procerum* and sand-couch *Elytrigia juncea*.

Merthyr Mawr is one of only three Welsh sand dune systems with calcareous grassland. These grasslands are extremely species-rich, and occur on the south-facing slopes of the limestone plateau where the bedrock is often very close to the surface. Species present in this habitat include autumn gentian *Gentianella amarella*, autumn lady's tresses *Spiranthes spiralis*, wild thyme *Thymus praecox* and hairy violet *Viola hirta*. An area of swamp fed by karstic springs is characterised by species indicative of moving groundwater such as yellow flag *Iris pseudacorus*, meadowsweet *Filipendula ulmaria* and wild angelica *Angelica sylvestris*. Birthwort *Aristolochia clematitis* flanks a water channel influenced by one of these springs.

Intertidal habitat at Merthyr Mawr is characterised by a large sandy beach with rocks to the north. The beach, which forms the coastal frontage of the site, is believed to be eroding at the present time.

Merthyr Mawr supports a significant population of petalwort *Petalophyllum ralfsii*, which is rare and generally declining. The UK is now considered to be a stronghold for this species. The site

is also important for its assemblage of nationally scarce species such as variegated horsetail *Equisetum variegatum*, sea spurge *Euphorbia paralias*, hutchinsia *Hornungia petraea*, rock sea-lavender *Limonium procerum*, curved hard-grass *Parapholis incurva*, round-leaved wintergreen *Pyrola rotundifolia*, and dune fescue *Vulpia fasciculata*. Shore horsetail *E. x littorale* and great brome *Anisantha diandra* are two locally rare plants that occur on the site.

The sand dunes of Merthyr Mawr are one of the most important sites in Britain for rare macrofungi. Important species include *Tulostoma melanocyclum*, the agaric *Russula cessans*, a bolete *Suillus fluryi*, the netted rhodotus *Rhodotus palmatus*, morels and helvellas.

Merthyr Mawr is of importance for its invertebrate fauna. The sand dunes represent a stronghold for many restricted invertebrates, including the notable carabid beetle *Nebria complanata*, the stiletto fly *Thereva fulva*, the dune tiger beetle *Cicindela maritima* and many species of bees and wasps such as the cuckoo bee *Coelioxys mandibularis*, the solitary wasp *Psen bicolor* and the mining bee *Colletes marginatus*. The rare weevil *Glocianus pilosellus* is also a feature of this site.

Remarks:

1. The majority of the site lies within the Merthyr Mawr Warren National Nature Reserve (NNR), which was declared in July 2002 and is managed by CCW.

2. Merthyr Mawr SSSI is part of Kenfig/Cynffig Special Area of Conservation, being host to the following habitats listed in Annex I of the EC Habitats Directive (Directive 92/43/EEC on the Conservation of Natural habitats and of Wild Flora and Fauna): 'Fixed dunes with herbaceous vegetation ('grey dunes')', 'Dunes with *Salix repens ssp. argentea* (*salicion arenariae*)' and 'humid dune slacks'. The site is also host to petalwort *Petalophyllum ralfsii*, which is listed in Annex II of the Directive.

3. The Merthyr Mawr Warren Scheduled Ancient Monument covers a large part of the site, and most of the site lies within the Glamorgan Heritage Coast.

4. This site is host to petalwort *Petalophyllum ralfsii* which is protected under Schedule 8 of the Wildlife and Countryside Act (as amended).

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Special Areas of Conservation

Glaswelltiroedd Cefn Cribwr/ Cefn Cribwr Grasslands

Designated Special Area of Conservation (SAC)

Country	Wales
Unitary Authority	East Wales
Centroid*	SS870830
Latitude	51.535
Longitude	-3.6281
SAC EU Code	UK0030113
Status	Designated Special Area of Conservation (SAC)
Area (ha)	57.92

* This is the approximate central point of the SAC. In the case of large, linear or composite sites, this may not represent the location where a feature occurs within the SAC.



Location of Glaswelltiroedd
Cefn Cribwr/ Cefn Cribwr
Grasslands SAC

General site character

- Bogs, Marshes, Water fringed vegetation, Fens (1%)
- Heath, Scrub, Maquis and Garrigue, Phygrana (10%)
- Humid grassland, Mesophile grassland (64%)
- Broad-leaved deciduous woodland (25%)

Download the Standard Data Form for this site (PDF <100kb)

Note When undertaking an appropriate assessment of impacts at a site, all features of European importance (both primary and non-primary) need to be considered.

Annex I habitats that are a primary reason for selection of this site

- **6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)**
  This is one of four sites representing ***Molinia* meadows** in south and central Wales, one of the major UK strongholds for this habitat type. At this site, there are extensive stands of M24 *Molinia – Cirsium dissectum* fen-meadow, including the heathy sub-type with cross-leaved heath *Erica tetralix*, as well as other forms with a stronger representation of grasses, rushes and small sedges. Transitions to stands of more acidic *Molinia* and *Juncus* pasture, dry neutral grassland and wet scrub vegetation are well-represented. Uncommon and declining species associated with the ***Molinia* meadows** at this site include the nationally rare viper's-grass *Scorzonera humilis* and the nationally scarce soft-leaved sedge *Carex montana*.

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

- Not Applicable

Annex II species that are a primary reason for selection of this site

- Not Applicable

Annex II species present as a qualifying feature, but not a primary reason for site selection

- **1065 Marsh fritillary butterfly** *Euphydryas (Eurodryas, Hypodryas) aurinia*

Many designated sites are on private land: the listing of a site in these pages does not imply any right of public access.

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Special Areas of Conservation

Dunraven Bay

Designated Special Area of Conservation (SAC)

Country	Wales
Unitary Authority	East Wales
Centroid*	SS886727
Latitude	51.4422
Longitude	-3.6025
SAC EU Code	UK0030139
Status	Designated Special Area of Conservation (SAC)
Area (ha)	6.45

* This is the approximate central point of the SAC. In the case of large, linear or composite sites, this may not represent the location where a feature occurs within the SAC.



Location of Dunraven Bay SAC

General site character

- Shingle, Sea cliffs, Islets (26.5%)
- Dry grassland, Steppes (18.5%)
- Humid grassland, Mesophile grassland (25%)
- Improved grassland (17.5%)
- Broad-leaved deciduous woodland (12.5%)

Download the Standard Data Form for this site (PDF <100kb)

Note When undertaking an appropriate assessment of impacts at a site, all features of European importance (both primary and non-primary) need to be considered.

Annex I habitats that are a primary reason for selection of this site

- Not Applicable

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

- Not Applicable

Annex II species that are a primary reason for selection of this site

- **1441 Shore dock** *Rumex rupestris*
  The 20 or so plants of **shore dock *Rumex rupestris*** growing here on damp coastal limestone are the only remnant of the species' former Bristol Channel range. The species has disappeared through loss of damp dune-slacks and shingle banks from other sites at Merthyr Mawr, Kenfig, Braunton Burrows and Pennard but is relatively secure on this steep, inaccessible site. The Dunraven Bay population is a significant seed-source for recolonisation of Bristol Channel dunes and beach-heads when future management restores these habitats to favourable condition.

Annex II species present as a qualifying feature, but not a primary reason for site selection

- Not Applicable

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Appendix 9.1b:

Non-Statutory Designated Site Citations

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-12-S	Rhych Point	Rocky shoreline	

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-13-N	Pwll-y-Waun	Lake on the eastern side. Broad-leaved plantation. Improved grassland	

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-6-S	The Wilderness	Amenity grassland on the eastern and western sides. Broad-leaved plantation around the lake. Broad-leaved semi-natural woodland on the islands. Scattered broad-leaved trees. Improved grassland in NW part of site	Wilderness Lake Management Committee/Plan

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-9-S	Newton Point	Rocky shoreline	

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-15-S	Trafalgar Wood	Broad-leaved scattered trees	Some selective felling. General woodland management

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-1-M	Newton Burrows	Open dune and dune grassland. Amenity grassland to the north. Small area of spoil. Scattered scrub. Small areas of broad-leaved semi-natural	Subject to Newton Burrows Proposed Local Nature Reserve Management Plan

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-7-N	Manor Farm Fields	Grazed agricultural fields with hedgerows	

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-2-M	Locks Common	Amenity grassland. Semi-improved calcareous grassland. Continuous bracken. Dense scrub. Sand dune. Dry heath/acidic grass mosaic. Basic inland cliff. Semi-improved neutral grassland. Limestone pavement.	Subject to Locks Common Proposed Local Nature Reserve Management Plan

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-11-N	Nottage Court Wood	Ancient woodland along the middle of site. Unimproved neutral grassland. Improved grassland field in the northern corner of the site	

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-4-S	Black Rocks	Rocky shoreline	

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-8-S	Coedargraig	Broad-leaved woodland	

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-5-S	Graig Wood	Broad-leaved semi-natural woodland	

Bridgend County Borough Council SINC

Reference	Name	Habitat	Management
POR-3-M	Pant-y-Hyl	Broad-leaved semi-natural woodland, Dense/continuous scrub, Continuous bracken, Scattered bracken, Semi-improved neutral grassland	

Appendix 9.2:

Sandy Bay, Porthcawl Ecological Assessment Update & Revision

(David Clements Ecology Ltd, March 2023)

DAVID CLEMENTS ECOLOGY LTD

SANDY BAY, PORTHCAWL, GLAMORGAN

ECOLOGICAL ASSESSMENT
UPDATE & REVISION

March 2023

David Clements Ecology Ltd
Carlton House, 5 Herbert Terrace, Penarth, Glamorgan, CF64 2AH
Tel: 029 20 350120 Email: info@dce.org.uk

	NAME	DATE
REPORT AUTHOR:	David Clements MSc BSc (Hons) CBiol MRSB MCIEEM FRES	31 Oct 2022
CHECKED BY:	Anne Clements BSc (Hons) CBiol MRSB	01 Nov 2022

VERSION/STAGE:		
1.0	Final, as issued	02 Nov 2022
2.0	Agreed amendments following site meeting	03 Mar 2023
3.0	Minor amendments	02 May 2023

SURVEYOR(S):		
Name:	**Role:**	**Date(s)**
L Badham	Ph 1 survey	13 & 29 May 2020
D K Clements	Ph 1 survey	13 May 2020
D K Clements	Update survey	31 Aug 2022

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Photographs of the Site

SUMMARY

- The site comprises an area of maritime coastal habitats containing duneland and modified neutral/maritime grasslands, together with areas of hardstanding, a beachfront promenade, a retail/leisure area and an abandoned 'pleasure garden'. At the south-easternmost extent of the site there is a small vegetated, rocky peninsular outcrop which extends into the sea, known as Rhych Point.
- The site does not contain or lie adjacent to any statutory sites of biodiversity interest, such as SSSIs, NNRs or LNRs etc. The nearest such sites lie about 800m to the east.
- There are numerous non-statutory SINCs in the vicinity. The Rhych Point SINC lies within the study area boundary, and four other SINCs lie within 0.5km.
- The site is proposed for a scheme of regeneration to create a premier seaside resort of regional significance through a comprehensive scheme of refurbishment and upgrading. Infrastructure such as the sea-walls will also be modified to counter the risk of coastal flooding.
- The coastal sand dunes, semi-improved neutral/maritime grassland and areas of intertidal boulders qualify as 'habitats of principal importance for conservation in Wales ('Section 7' or 'Priority' habitats).
- No specially protected, 'Section 7' (ie 'Priority') or nationally rare or scarce plant species are recorded to date, except for native bluebell which is protected in respect of sale and trade only. A number of local and habitat-characteristic species are recorded, however, especially from the dune and maritime grassland areas.
- Specially protected fauna species chiefly comprise nesting birds and common reptiles. At least 26 bird species are probably or possibly nesting, and common lizard is resident. Bats also forage over the site and may roost in some areas, although no roosts have been recorded to date.
- Resident 'Section 7' (ie 'Priority') fauna species include nine of the probably/possibly nesting bird species, plus common lizard. Hedgehog, common toad and possibly also brown hare, badger and/or other common lizards such as slow-worm or adder, may also occur. The site supports at least 50 bird species which are considered to be of conservation importance either in Wales and/or in the wider UK, up to 16 of which may possibly be nesting on the site.

Evaluation

- Rhych Point is an existing SINC, and both this and the adjacent dune system readily meet the published criteria for recognition as a SINC. These areas support a range of local and habitat-characteristic plant species as well as habitat-restricted invertebrates, and may also be used by nesting birds such as skylark and meadow pipit. These areas are therefore assessed as being of District value for biodiversity.
- The least modified areas of neutral maritime grassland behind the dunes also support a range of local and habitat-characteristic plant species. It is likely that these areas could also qualify as being of District value but in the absence of more detailed survey they have been provisionally determined as being of High Local value.
- The remaining areas of grass-dominated neutral grassland, ephemeral/short perennial vegetation, bramble, scrub and ornamental plantings etc are currently considered to be of no greater than Local value for biodiversity. They do, however, also support plant and fauna species of conservation value, including some 'Section 7' listed species.

- The tarmac hardstandings, roads, main trackways and other areas of artificially reinforced substrates are all considered to have Negligible value for wildlife.
- The buildings of the site have not been evaluated for biodiversity importance, although it is noted that some have potential as bat-roosts and that many are likely to be used by nesting birds.
- The assessment of habitats given above differs slightly in detail compared with that provided in 2020 due to the more suitable condition of the grasslands for survey (the grasslands were severely droughted at the time of the previous survey). Some areas previously considered to be of 'Local' value have now been reassessed as being of 'High Local' value due to the availability of better survey data.

Implications of the Development Proposals

- Impacts to features of ecological value arising from the East Promenade works should be fairly minimal, although there is likely to be some temporary disturbance during the works period. It is possible that roosting bats could be present in the existing sea-wall, however, and could potentially be disturbed, displaced, injured or entombed as a result of the works, although there is currently no evidence to suggest that any roosting bats are present in this structure. It is also possible that new street-lighting installations could adversely affect nocturnally active fauna, potentially including foraging bats and small mammals, birds and invertebrates such as moths.
- Works in the Rhych Point area should also be fairly minimal in terms of ecological impact, although any large-scale disruption or modification of the peripheral native outcrops (eg by covering with 'rock armour') could potentially affect littoral and sublittoral communities in this area. Any loss of grassland or littoral habitats from this area as a result of the works would also potentially be damaging.
- Planting works in the dune system could potentially lead to the loss or alteration of existing sand-dune habitats, for example by encouraging the development of fixed ('grey') dunes at the expense of mobile ('yellow') duneland, or by the introduction of potentially invasive species. Mobile dunes are a declining resource in Britain and are an important transitional habitat which supports a wide range of specialised plants and invertebrates. Any loss of duneland or maritime grassland habitats as a result of the works would also potentially be damaging.
- It is also possible that any new artificial lighting in these areas could adversely affect nocturnally-active fauna.
- Provided appropriate and adequate mitigation measures are implemented to avoid or minimise impacts to the identified features of interest and protected species etc, it is considered on current evidence that the development of this site in the manner proposed would not be unacceptably constrained by biodiversity and nature conservation issues.
- Appropriate mitigation measures are recommended.

1.0 INTRODUCTION

Report prepared by:

1.1 David Clements Ecology Ltd (DCE), Penarth, Glamorgan

On behalf of:

1.2 Bridgend County Borough Council (BCBC)

Instructed via:

1.3 -

Site Name

1.4 Sandy Bay, Porthcawl, Glamorgan, South Wales

OS Grid Reference

1.5 Centre of site: SS 824 769

Elevation & Aspect

1.6 The site lies at approximately 5-10m ASL, rising gently to the north.

Location & Extent **See Plan 1**

1.7 The site is approximately 36ha in extent and lies at the southern coastal edge of the town of Porthcawl in South Wales.

Brief Description of Site

1.8 The site comprises an area of maritime coastal habitats containing a large section of duneland and extensive areas of modified neutral/maritime grassland, much of the latter on sand or sandy loam soils. It also includes numerous areas of hardstanding including some tarmac surfaces, a beachfront promenade area, a small retail/amusement area and an abandoned 'pleasure garden', together with associated car-parks and some sections of highway including a small roundabout. At the south-easternmost extent of the site there is a small vegetated, rocky peninsular outcrop which extends into the sea, known as Rhych Point.

Site Context

1.9 The site lies in a semi-rural location at the southern coastal edge of a small township on the South Wales coast of the Bristol Channel. The combined residential settlements of Porthcawl, Nottage and Newton lie adjacent to the west, north and east, with the large static caravan park of Trecco Bay standing immediately adjacent to the east. Sandy Bay comprises a small part of an extensive belt of the coastal maritime habitats which line the southern margin of Wales, and which extend over many kilometres on either side to the west and east.

Designated Wildlife Sites in the Vicinity

See Plan 1 & Appendix 1

Statutory Sites

Data from https://magic.defra.gov.uk/MagicMap.aspx

1.10 The site does not contain or lie adjacent to any statutory sites of biodiversity interest, such as Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) or Local Nature Reserves (LNRs) etc. The nearest such sites appear to be the Merthyr Mawr SSSI and Merthyr Mawr Warren NNR which lie about 800m to the east. These sites also form part of the Kenfig Special Area of Conservation (SAC), the other main section of which lies about 4km away to the north-west. Locks Common Local Nature Reserve (LNR) lies about 1km away to the west.

Non-statutory Sites

Data from South-East Wales Biological Records Centre (SEWBReC)

1.11 There are numerous non-statutory Sites of Importance for Nature Conservation (SINCs) in the vicinity. Rhych Point SINC lies within the study area boundary, whilst the SINCs of Newton Point, The Wilderness, Pwll-y-waun and Trafalgar Wood all lie within 0.5km. Other nearby SINCs include Manor Farm Fields, Coedargraig, Graig Woods, Newton Burrows and Black Rocks. These sites are all indicated on Plan 1.

Site Development Proposals

See Fig 1

1.12 The site is proposed for a scheme of regeneration which aims to create a premier seaside resort of regional significance through the comprehensive refurbishment and upgrading of the waterfront area. The coastal infrastructure will also be modified to counter future coastal flooding threats. The scheme proposes a sustainable distribution and variety of complementary land-uses across the site, including residential, leisure, retail and community provision, all supported by new and improved infrastructure which includes the enhanced coastal defences. It also proposes to retain and improve upon areas of attractive open space within Griffin Park, which lies immediately off-site to the north-west, whilst creating significant new areas of open space along the seafront supplemented with active travel routes that traverse the entire site between the harbour and Trecco Bay. It is understood that the mobile dune system and Rhych Point SINC are to be retained within the proposed scheme and will not be significantly impacted by any new developments.

Purpose of Surveys

1.13 An earlier Extended Phase 1 (ie baseline) survey was carried out in the summer of 2020, the results of which were set out in DCE (2020). The present report sets out the results of a ground-truth and update survey carried out in August of 2022, in order to provide an up-to-date revision of the 2020 report.

Existing Records

Data from South-East Wales Biological Records Centre (SEWBReC)

1.14 In addition to original survey, a data trawl was carried out with the Local Environmental Records Centre (LERC; Aderyn) in order to obtain access to any existing ecological information or records from the site. Aderyn is the main repository for biodiversity and wildlife records in the region, which were provided via SEWBReC. Relevant records are referred to in the descriptive text.

Survey Methods

1.15 The site was originally subject to an Extended Phase 1 survey in May of 2020 in accordance with the recommendations of the Chartered Institute of Ecology and Environmental Management (CIEEM 2013) and based on a custom modification of the Phase 1 Habitat Survey methodology developed by the former Nature Conservancy Council (JNCC 2010). The larger trees and built structures of the site were also subject to preliminary assessment for their potential to support roosting bats. The results of this survey were set out in the report of DCE (2020), with the biodiversity and wildlife conservation value of the site being assessed against the criteria set out in Appendix 2 of the present report.

In August 2022 the site was subsequently subject to a walk-over survey to ground-truth and update the results of the previous survey, and to allow the addition of new records, a revision of the ecological value of the site and reassessment of the development impacts as required. The opportunity was taken to re-characterise some of the habitats at a finer level of detail than had been undertaken previously. Both surveys were carried out in dry, sunny and still weather conditions.

Survey Constraints

1.16 Drought conditions were prevalent throughout May of 2020, resulting in areas of grassland and other vegetation being somewhat desiccated. Many of the inland grassland areas had also been mown short earlier in the season and had not significantly regrown. These factors are likely to have affected the viability of botanical identification in some areas of the site, although at the time this was not considered likely to have significantly affected the resulting assessment.

The 2022 resurvey was also carried out during an extended period of hot and dry conditions but the swards were less managed and plant identification was easier, resulting in better species data for the site. The resulting assessment of ecological value therefore differs slightly from that which was provided in 2020. Some better-quality areas of maritime-influenced grassland near to the dunes in the east of the site are now assessed as being of ‘High Local’ value rather than ‘Local’ value as previously.

2.0 SURVEY RESULTS

A Habitats & Vegetation **See Plans 2-4**

A2.1 Lists of the plant species recorded are given at Appendix 3.

Priority & Notable Habitats **See Appendix 1**

A2.2 The site supports coastal sand dunes, semi-improved neutral/maritime grassland and areas of intertidal boulders which qualify under Section 7 of the Environment (Wales) Act 2016 (EWA) as 'habitats of principal importance for conservation in Wales (also referred to as 'priority habitats').

Protected, Priority & Notable Plant Species **See Appendix 1**

A2.3 No specially protected plant species are recorded from the site, except for native bluebell (*Hyacinthoides non-scripta*) which is protected in respect of sale and trade only. Native bluebell is present at low abundance in the west of the site, situated along a grassy verge adjacent to an area of hardstanding.

No 'priority' plant species are recorded, ie 'species of principal importance for the conservation of biodiversity in Wales', as listed under Section 7 of the Environment (Wales) Act 2016.

No nationally rare or scarce plant species have been recorded from the site to date. A number of local and habitat-characteristic species are recorded, however, including bloody crane's-bill (*Geranium sanguineum*), sea holly (*Eryngium maritimum*), common broomrape (*Orobanche minor*), sea bindweed (*Calystegia soldanella*) and hare's-foot clover (*Trifolium arvense*), amongst others. Local grass species are present on the mobile dune areas in the east of the site, including bulbous meadow-grass (*Poa bulbosa*), squirrel-tail fescue (*Vulpia bromoides*) and compact brome (*Bromus madritensis*).

Invasive Non-native Plant Species **See Appendix 1**

A2.4 A garden cotoneaster (*Cotoneaster* sp) is present in the abandoned 'pleasure garden' area in the centre of the site, which may represent one of the species listed on Schedule 9 of the Wildlife & Countryside Act 1981. Virginia creeper (*Parthenocissus quinquefolia*), another Schedule 9 listed species, is present along the northern boundary in the eastern part of the site. The spread of these latter two species in the open countryside is subject to regulation under the Wildlife & Countryside Act 1981.

Sea buckthorn (*Hippophae rhamnoides*) is present on the dunes in the east of the site. This is a UK-native plant found naturally on the south-eastern coast of England but which is considered non-native in Wales, where it can have negative impacts on dune grassland communities. Its growth can become thick and impenetrable, physically preventing other plants from establishing or persisting. Sea buckthorn also fixes nitrogen, thereby allowing coarse nutrient-loving plants such as nettles and thistles to colonise, excluding many of the more delicate and less competitive plants typical of dune grasslands.

Description of the Habitats & Vegetation **See Plans 2-4**

Dune Habitats

A2.5 The east of the site contains an extensive dune system which supports a characteristic vegetation community which includes species such as marram grass (*Ammophila*

arenaria), bulbous meadow-grass (*Poa bulbosa*), sea barley (*Hordeum marinum*), dune fescue (*Vulpia fasciculata*), squirrel-tail fescue (*Vulpia bromoides*), compact brome (*Bromus madritensis*), common broomrape (*Orobanche minor*), sea spurge (*Euphorbia paralias*), sea bindweed (*Calystegia soldanella*), sea radish (*Raphanus raphanistrum* ssp *maritimus*), common stork's-bill (*Erodium cicutarium*), horseradish (*Armoracia rusticana*), sand sedge (*Carex arenaria*), common bird's-foot trefoil (*Lotus corniculatus*) and sea holly (*Eryngium maritimum*). Much of this habitat comprises mobile (or 'yellow') dune although there are also some developing areas of fixed (or 'grey') dune towards the east and rear of the dune system. Sea buckthorn (*Hippophae rhamnoides*) occurs in a number of well-established stands in the east of the system towards the rear.

It is understood that the habitats of the dune system are managed by BCBC. The dunes are not able to migrate northwards, being constrained by a tarmac trackway at their northern edge. There is some modification of the dune habitats associated with former and extant hardstandings, trackways and lifeguard station buildings etc. Ruderal species, including bramble (*Rubus fruticosus* agg), are also present along the easternmost boundary where the dunes meet old garages, and elsewhere such as alongside rough ground associated with the adjacent caravan park.

Neutral/Maritime Grassland

A2.6 Probably most of the grasslands within the survey area were originally developed on sand derived from former sand dune habitats, with sandy loams becoming more apparent towards the northern inland edge. These grasslands are variably modified, with some areas having previously been in use as static caravan pitches or being managed for amenity or used for car-parking etc. Maritime influences are present in many areas, particularly those immediately north of the dunes, although some areas have become dominated by grasses and are now comparatively species-poor. A few areas of grassland are probably at least partly of seeded origin (eg on the roundabout in the north-west of the site and the roadside verges etc) and in heavily trafficked areas the swards have become skeletal and contain some ephemeral and short-perennial communities. In the east of the site especially, these influences have resulted in a complex mosaic of grassland types which are difficult to plot accurately without recourse to more detailed (ie Phase 2) survey methods. The division into 'moderately rich', 'grass-dominated' and 'skeletal & ephemeral/short-perennial' areas shown on Plans 2-4 is therefore approximate and subject to fine-grained variation.

The largest area of grassland lies immediately north of the dune system in the east of the site (Plan 4). This area contains some elements of dune habitat immediately north of the southernmost tarmac trackway, and the grassland beyond varies between moderately species-rich maritime swards on steeper slopes to species-poor and grass-dominated neutral swards especially towards the northern and north-eastern edges of the site. A large artificial amphitheatre (the 'Sandy Bay Bowl') is present in the centre of the area, and there is evidence of past static caravan pitching visible to the east, as well as some complex remnants of caravan-site access trackways and hardstandings etc.

Areas immediately north of the dunes are particularly species-rich, containing species such as soft brome (*Bromus hordeaceus*), red fescue (*Festuca rubra* agg), dove's-foot crane's-bill (*Geranium molle*), buck's-horn plantain (*Plantago coronopus*), lady's-bedstraw (*Galium verum*), common bird's-foot trefoil, bulbous buttercup, hedgerow crane's-bill (*Geranium pyrenaicum*), bloody crane's-bill (*Geranium sanguineum*), biting stone-crop (*Sedum acre*), hare's-foot clover and common stork's-bill, amongst others.

Towards the northern site boundary the maritime influences are lessened and the swards appear to be subject to higher levels of human disturbance such as trampling and dog-fouling etc. These areas are generally less species-rich, with a much higher percentage of grasses such as common rye-grass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), common bent (*Agrostis capillaris*), creeping bent (*A. stolonifera*) and cock's-foot (*Dactylis glomerata*), as well as broadleaved species more typical of amenity swards such as dandelion (*Taraxacum officinalis* agg), ribwort plantain (*Plantago lanceolata*), creeping buttercup (*Ranunculus repens*), yarrow (*Achillea millefolium*), black medick (*Medicago lupulina*), daisy (*Bellis perennis*) and common clovers (*Trifolium* spp) etc. The less-rich areas include the floor of the amphitheatre, as well as areas west of the main entrance trackway which are variably used for car-parking and as temporary camp-sites. Most of the grasslands north of the dunes appear to be managed by mowing, with the floor of the amphitheatre and the areas furthest north being kept short-mown. There was some evidence of fire-damage in the grasslands in 2022.

South of the dunes, in the south-east of the site, the flat plateau the Rhych Point SINC is dominated by an area of neutral maritime grassland of variable quality, containing species such as ribwort plantain, sand sedge, common bird's-foot trefoil, red clover (*Trifolium pratense*), creeping cinquefoil (*Potentilla reptans*), creeping thistle (*Cirsium arvense)*, buck's-horn plantain, red fescue, cut-leaved crane's-bill and perennial rye-grass. The boundaries of the grassland plateau are encircled by largely bare intertidal rock areas supporting scatters of maritime species such as rock samphire (*Crithmum maritimum*) and sea-beet (*Beta vulgaris* ssp *maritima*).

In the central area of the site lies an abandoned 'pleasure garden' (also known as the 'monster park' - see Plan 3) which also contains an area of neutral/maritime-influenced grassland developed on sandy soils. This has been subject to modification due to its former use as a recreational and amenity area, however, and contains many non-native and ornamental species. The grassland was probably formerly managed by mowing but appeared unmanaged at the time of both the 2020 and 2022 surveys and is thus becoming rank and encroached by shrubs and coarse ruderal species. Species within the grassland include red fescue, bloody crane's-bill, hedgerow crane's-bill, cut-leaved crane's-bill (*Geranium dissectum*), creeping cinquefoil, ribwort plantain, common bird's-foot trefoil, dandelion, common vetch (*Vicia sativa*), wild mignonette (*Reseda lutea*) and red clover, amongst others. A garden cotoneaster (*Cotoneaster* sp), potentially an invasive non-native species, is prolific across this area, and other woody species are also encroaching into the sward.

In the west of the site there lies another large area of grassland (see Plan 2). This area is surrounded on all sides by roads and is mainly used as a car-park. At the time of the 2022 survey a large part of the north of this area was under development and had been almost entirely cleared of vegetation. The sward in the remainder mostly comprises rather species-poor and grass-dominated neutral grassland, which is skeletal in the central areas of greatest use. Towards the western edge, however, where the grassland meets a scrubby bund alongside the roadside verge of the A4106 Portway Road, the sward becomes somewhat richer and contains a higher percentage of maritime species. Species recorded in this area include false oat-grass (*Arrhenatherum elatius*), cock's-foot, red fescue, annual meadow-grass (*Poa annua*), soft brome, creeping buttercup, meadow buttercup (*Ranunculus acris*), bulbous buttercup (*R. bulbosa*), ribwort plantain, buck's-horn plantain, greater plantain (*Plantago major*), curled dock (*Rumex crispus*), hogweed (*Heracleum sphondylium*), red clover, common bird's-foot trefoil, yarrow, common vetch, creeping cinquefoil, silverweed (*Potentilla anserina*), dove's-foot

crane's-bill, black medick, dandelion, white clover (*Trifolium repens*), common chickweed (*Stellaria media*) and daisy.

A small roundabout in the north-west of the survey area also supports an area of neutral grassland, presumably of seeded origin. Species recorded in this area include cock's-foot, annual meadow-grass, soft brome, red fescue, bugle (*Ajuga reptans*), dandelion, daisy, ribwort plantain, common bird's-foot trefoil, common ragwort (*Senecio jacobaea*) and creeping buttercup. Aesthetic flower-beds are present on the roundabout, supporting various ornamental plants, as well as ornamental plantings of trees and shrubs.

Scrub & Shrub Habitats

A2.7 There are two main areas of broadleaved scrub within the survey area. The abandoned 'pleasure garden' in the central area of the site (see Plan 3) contains some dense peripheral areas of scrub and trees, comprising a mixture of native and non-native/ornamental species. The former include common hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), dogwood (*Cornus sanguinea*), elder (*Sambucus nigra*) and birches (*Betula* spp), whilst the latter include conifers, cherry laurel (*Prunus laurocerasus*), spotted laurel (*Aucuba japonica*), buddleia (*Buddleja davidii*) and garden cotoneaster. There are also some dense stands of bramble, and scattered examples of ornamental species such as yucca (*Yucca* spp) and tree-mallows (*Lavatera* sp).

The other main area of scrub lies in the north-east of the survey area, towards the northern boundary (see Plan 4). This occurs on a large linear bund of artificial origin which was presumably created using spoil arising from the excavation of the nearby amphitheatre. The bund supports a dense cover of bramble, together with species such as elder, buddleia, hawthorn, dogwood and common gorse (*Ulex europaeus*). Several immature trees are interspersed throughout the vegetation, including sycamore (*Acer pseudoplatanus*), firs (*Abies* sp), goat willow (*Salix caprea*) and grey willow (*S. cinerea*). To the west of the bund, scrub surrounds a small car-parking area by the northern site boundary, also comprising species such as gorse, bramble, grey willow and buddleia etc.

In the west of the site there is a belt of scrub along a bund at the western edge of the car-parking area (see Plan 2), along the line of a degraded fence alongside the road verge. This comprises species such as grey willow, buddleia, hawthorn and dogwood, with copious ivy (*Hedera helix*) both in the ground-layer and the canopy. Other ground-layer species include nettle (*Urtica dioica*) and hogweed.

Elsewhere there are a numerous small stands of bramble-dominated scrub, often alongside remnant fences and walls etc. These are often intermixed with ruderal species such as ragwort, docks (*Rumex* spp), thistles (*Cirsium* spp), sow-thistles (*Sonchus* spp), hogweed, grasses and, locally, tansy (*Tanecetum vulgare*), as well as other shrubs such as buddleia, hawthorn and gorse etc.

As noted previously, several well-established stands of sea buckthorn are present in the dune area, which also contain occasional shrubs of other species such as gorse, blackthorn and hawthorn.

Ornamental Plantings

A2.8 In addition to the ornamental plantings in the abandoned 'pleasure garden' there are areas of ornamental shrub planting elsewhere in the survey area. These include the roundabout in the west of the site, which supports planted trees of species such as white and grey

poplars (*Populus* spp) and cherry laurel. Native species amongst these stands include willows and elder. There are also linear beds of ornamental shrubs and non-native herbaceous species alongside the A4106 Portway Road where it passes through the western part of the survey area, and also around the edges of a car-park adjacent to the west.

There are some recently installed raised linear concrete beds of ornamental plantings alongside East Promenade Road.

Standard Trees

A2.9 There are numerous standard trees within the survey area, most of which are young or medium-mature specimens. The majority of these are within the 'pleasure garden' in the central area of the site (see Plan 3), comprising a mixture of mainly non-native conifers (pines and firs) together with various native and non-native broadleaves including sycamore, ash (*Fraxinus excelsior*), white poplar, birch and willow species. There is also a scatter of larger trees mainly of ash and sycamore elsewhere within the site, including along the north-eastern site boundary (see Plan 4).

Buildings

A2.10 The main concentration of buildings on the site lies in the central area (see Plan 3). The 'Coney Beach' fairground contains numerous mainly corrugated-metal or asbestos roofed buildings, many of which appear to be storage buildings or warehouses, with some retail and catering premises on the ground-floors. These have a combination of flat and pitched roofs and comprise a complex series of interconnected one- and two-storey buildings. Several of the buildings in the centre of this area have novel multi-faceted metal-clad roofs of various shapes, typical of a beachfront fairground and leisure amusement facility. Some of the buildings are of breeze-block construction, mainly with flat roofs, which appear to be utilised as fairground stalls, whilst others are of brick-built construction. One building in the east of the fairground area appears to be of timber construction. There are also a number of metal storage containers. In the promenade area alongside the beach there is a series of single-storey, mainly open-fronted retail units.

The western part of the site (Plan 2) does not contain any permanent buildings, but there were a number of temporary demountable buildings, mainly of metal construction, present in the construction site-yard at the southern end of this area at the time of survey. The sea-wall alongside East Promenade Road is mostly bare of vegetation but supports scattered mural species including ivy-leaved toadflax (*Cymbalaria muralis*), red valerian (*Centranthus ruber*) and maidenhair spleenwort (*Asplenium trichomanes*).

The eastern area (Plan 4) contains a small flat-roofed, partly two-storey lifeguard station on the dunes. This appears to be partly of demountable (ie 'site-building' type) construction, with metal or concrete-panel walls. There is also a small metal lookout/navigation light structure, now apparently disused, on Rhych Point to the south.

Hardstandings & Bare Ground

A2.11 The survey area contains many areas of hardstanding, including tarmac roads and car-parking areas as well as both tarmac and gravelled footpaths. There are also numerous areas of compacted ballast (eg limestone chippings), especially in the central area, most of which are used for car-parking and/or as caravan sites etc. The main footpath routes through the site have street-light standards along them.

There are largely unmodified exposed native rocky outcrops locally along the coastline to the east and around Rhych Point which support rock-pools and littoral flora and fauna (not investigated in detail). Some concrete rubble has been tipped around Rhych Point locally and there is some evidence of past sea-defence work.

B Fauna

B2.1 Fauna species recorded from the site are listed at Appendix 3.

Protected, Priority & Notable Fauna Species **See Appendix 1**

B2.2 Protected species recorded from the site chiefly comprise nesting birds and common reptiles. At least 26 bird species are probably or possibly nesting in the habitats of the site, and common lizard is resident on the site. Bats, all species of which are fully protected, also forage over the site and may roost in some areas although no roosts have been recorded to date.

Resident 'priority species', ie those listed on Section 7 of the Environment (Wales) Act 2016 as being of 'principal importance for the conservation of biodiversity in Wales', include nine of the probably/possibly nesting bird species, plus common lizard. Hedgehog, common toad and possibly also brown hare, badger and/or other common lizards such as slow-worm or adder, may also occur.

No nationally rare or scarce fauna species are recorded to date, but the site supports at least 50 bird species which are considered to be of conservation importance either in Wales and/or in the wider UK, up to 16 of which may possibly be nesting on the site.

Invasive Non-native Fauna Species **See Appendix 1**

B2.3 Grey squirrel has been recorded from several locations within 2km of the site, and was seen in the abandoned 'pleasure garden' area in 2022.

Description of the Fauna

Bats

B2.4 All species of bat and their roosting sites are protected under the Conservation of Habitats & Species Regulations 2017 (the 'Habitats Regulations' – See Appendix 1). The roosting places used by bats are also protected against unauthorised disturbance or obstruction under the amended Wildlife & Countryside Act 1981. Several bats are listed as priorities for conservation under Section 7 of the Environment (Wales) Act 2016.

Three bat roosts are recorded from within 2km of the site, the nearest of which comprises a Natterer's bat roost approximately 1.1km from the site. Roosts of common pipistrelle and soprano pipistrelle are also both recorded at a location approximately 1.5km away. Other species which have been recorded commuting and foraging within 2km include noctule, brown long-eared bat and an unidentified *Myotis* species.

The Coney Beach fairground area contains several buildings with possible entry-points for bats, although there is no current evidence of such use (see DCE 2020). These buildings were not subject to an internal inspection during either of the recent surveys but it was considered possible that these structures could potentially support roosting bats.

There is at least one tree-mounted bat-box at the edge of Griffin Park, on a tree immediately adjacent to the tennis court area alongside the central area of the site (Plan 3).

Most of the standard trees within the site did not appear suitable for use by roosting bats. A single white poplar tree on the eastern side of the small roundabout in the north-west of the site had a potential roosting feature (PRF) which was assessed as having 2B (ie low) potential for use by roosting bats (Plan 2), however. This was on the eastern elevation approximately 6m up from ground level (see DCE 2020).

It is extremely likely that a range of common bat species forage over and commute through the site. Foraging activity is especially likely in the abandoned 'pleasure ground' area and over the maritime grasslands to the east, probably also including the dunes. It is also likely that pipistrelle species forage around the central fairground/leisure area at night, where there is likely to be a lot of artificial illumination.

Otter

B2.5 Otter is also a 'Habitats Regulations species' afforded legal protection which is similar to that of bats (see above). It is also a 'Section 7' listed species.

There are no otter records from within 2km of the site, and potential otter habitat within the site is limited. There are no watercourses within the site or in the immediate wider landscape, although it is possible that otter may occasionally make adventitious nocturnal visits to the coastal fringe to forage in rock-pools etc or to commute to other locations nearby. Sheltering or nesting by this species is considered unlikely, however, due to the high levels of human disturbance and artificial illumination at night.

Dormouse

B2.6 Dormouse is also a 'Habitats Regulations species' afforded legal protection which is similar to that of bats (see above). It is also a 'Section 7' listed species.

There are no dormouse records within 2km of the site and the habitats within the site are considered likely to be suboptimal or unsuitable for dormouse. The scrub habitats within the site are largely disconnected from other woody habitats in the wider landscape, and there are no suitable areas of woodland in the immediate wider vicinity. Given the high levels of human disturbance, and the presence of artificial illumination at night, it is therefore considered unlikely that dormouse is present on the site.

Badger

B2.7 Badger is fully protected in the UK under the terms of the Protection of Badgers Act 1992, which includes its nesting sites (see Appendix 1). Current interpretation of the Act also infers a degree of protection to areas which are of key significance to foraging badgers.

There is a single record of badger within 2km of the site, situated approximately 1.8km away. No evidence was found to indicate badger presence on site by either of the recent surveys, however, and the site is considered unlikely to support this species as a resident due to the high levels of human disturbance. The site is also relatively exposed, with little wooded habitat suited for the creation of setts, and the sandy soils are perhaps unlikely to be a suitable medium for sett construction. As with otter, however, it is possible that badger may visit the less disturbed parts of the site adventitiously on occasion to forage and commute.

Other 'Section 7' Listed Mammals

B2.8 Brown hare is a local and declining 'Section 7' listed species which is recorded from a location approximately 1.2km away from the site. The high levels of human disturbance are likely to make the site unsuitable for use by brown hare, although this species may visit occasionally from the surrounding area and could perhaps occur in the dune areas where there is greater cover.

Hedgehog, which is of similar status to brown hare, is also recorded from numerous locations near to the site, the nearest being less than 0.5km away. This species may well be present on the site, possibly nesting in areas such as the abandoned 'pleasure garden' or the denser scrub and bramble areas elsewhere.

Other Mammals

B2.9 A range of common and ubiquitous mammals is likely to occur on the site. These are likely to comprise a mixture of resident and visitor species such as fox, grey squirrel, rabbit and mice, voles and shrews etc, and to include resident synanthropic species such as house mouse and brown rat. Evidence of several of these species was seen during the present survey. Stoat, a declining and local species, is recorded from approximately 2km away and could also occur.

Birds

B2.10 Nearly all bird species are protected against killing or injury as individuals, and this protection extends to their nests, eggs and young. A number of especially rare species are subject to enhanced protection and may not be disturbed whilst nesting without authorisation ('Schedule 1 species' - see Appendix 1). Many bird species are listed as being of 'red list' (ie high) or 'amber list' (ie medium) conservation status either in Wales and/or in the wider UK (RSPB 2017; 2021), with several of these also being listed as being of 'principal importance' for conservation in Wales.

There are a large number of bird records from the Sandy Bay/Porthcawl area (SEWBReC data), many of which relate to off-shore, beachfront or strandline areas etc which lie outside of the survey area. The list of 63 species provided at Appendix 3 is reasonably representative, however, being drawn only from those records which appear to apply directly to the site. This list includes many species which are unlikely to be nesting on the site but which otherwise occur as visitor, passage or wintering species.

At least six specially protected birds (ie Schedule 1 species) are recorded from within the survey area, comprising snow bunting, Mediterranean gull, merlin, black redstart, purple sandpiper and common scoter. None of these species is considered likely to be nesting on the site, but presumably occur as passage, wintering or casual visitors.

At least 15 'priority' (ie 'Section 7' listed) species are recorded from the site, nine of which are considered to be possibly or probably nesting. The latter include reed bunting, dunnock, black-headed gull, kestrel, linnet, skylark, house sparrow, starling and song thrush. A skylark was flushed from cover in the grassland north of the dunes and a kestrel was also observed hovering over this area in 2020. The buildings of the Coney Beach fairground area are likely to support roof-nesting birds such as house sparrow, starling and gulls etc.

Nine of the possibly/probably nesting species are either qualifying or contributary species for SINC designation, whilst a further 19 species are similarly qualifying or contributary as passage or wintering species. These include a number of primarily

coastal or maritime species such as curlew, dunlin, dark-bellied Brent goose, greater black-backed gull, lesser black-backed gull, herring gull, kittiwake, knot, oystercatcher, pintail, redshank, common scoter, Arctic tern, Sandwich tern, turnstone and golden, grey and ringed plovers.

In total some 50 of the recorded species are considered to be of conservation concern either in Wales or in the wider UK, 16 of which are either possibly or probably nesting within the survey area. In addition there are records of local species such as rock pipit, raven and stonechat.

Reptiles

B2.11 Four native reptile species occur in South Wales, comprising common lizard, slow-worm, adder and grass snake. These four species are all afforded so-called 'partial protection' under the amended Wildlife & Countryside Act 1981, which prohibits the deliberate killing or injury of individuals. However, there is no direct protection extended to the habitats which support these species. All four common reptiles are listed as 'Section 7' species in Wales.

There are several records of reptiles from within 2km of the site, the nearest being of common lizard from approximately 600m away. In addition, adder is recorded from approximately 1.2km away, while the nearest slow-worm record is approximately 1km away. Common lizard was seen in the eastern part of the site in 2020 and it is likely that both this species and others such as slow-worm and adder are resident within the survey area in habitats such as the neutral/maritime grassland, sand dunes and the abandoned 'pleasure garden' and scrub habitats etc.

Amphibians

B2.12 Five native amphibian species occur in South Wales, comprising common frog, common toad, smooth newt, palmate newt and great crested newt (GCN). The latter species is a nationally rare and declining 'Habitats Regulations' species afforded full protection under UK legislation, which also extends to the habitats which support it. The other four species are not afforded any direct statutory protection, other than with respect to trade. Common toad is listed as a 'Section 7' species in Wales (see Appendix 1).

Records of common amphibians within 2km of the site include common frog approximately 770m away from the site. There are also records of common toad and smooth newt from within 2km. The site does not contain any aquatic habitats which would be suitable for breeding by any species of amphibian, however, the nearest body of standing water being located approximately 220m north of the site. Significant barriers to movement such as housing developments and major roads lie between this waterbody and the site, however, suggesting that commuting from this feature is probably infrequent, although the habitats of the site are potentially suitable for commuting, foraging and hibernation purposes by common amphibians. The site is unlikely to support the rare and specially protected great crested newt.

Invertebrates

B2.13 Upwards of 37,000 species of terrestrial and freshwater invertebrates are recorded in Britain, including around 29,000 insect species, occurring in every available habitat. About 40 invertebrate species are afforded full statutory protection in the UK, and many other species are accorded varying levels of conservation significance (see Appendix 1).

There are a large number of existing invertebrate records for the area around the site, including many moth-trap records. These include numerous rare, scarce and declining species, some of which are considered to be of 'principal importance' for conservation in Wales, and it is likely that at least some of these also occur on the site. There do not appear to be any records of such species to date from the site itself, however.

The present surveys recorded a small range of common and ubiquitous species on the site including small tortoiseshell (*Aglais uriticae*), red admiral (*Vanessa atalanta*), painted lady (*V. cardui*) and green-veined white (*Pieris napi*) butterflies, silver-Y moth (*Autographa gamma*) and common field-grasshopper (*Chorthippus brunneus*). Holly blue butterfly (*Celastrina argiolus*) and great green bush-cricket (*Tettigonia viridissima*), both local species, have been recorded from the survey area in the past. It is very likely that the maritime fringe, dune habitats and better-quality neutral/maritime grasslands within the site support specialist coastal species of moths, solitary bees, beetles and other invertebrates, possibly including some rare and local species.

3.0 ECOLOGICAL ASSESSMENT OF THE SITE

See Plans 5-7

3.1 There is currently no nationally accepted system for the categorising of sites or features of biodiversity significance below the level of national value, criteria for which are set out by the former Nature Conservancy Council (1989, as amended by JNCC 2019 *et seq*). However, guidance for the identification of non-statutory sites of county significance (ie SINCs) is available in this instance (WBP 2008).

For the purposes of this study the habitats and features of the site have therefore been evaluated and graded in accordance with the categories set out in Appendix 2.

The site evaluation is shown at Plans 5-7 and differs slightly in detail from that provided in the 2020 report.

District Value

3.2 Rhych Point is an existing SINC, and both this and the adjacent dune system readily meet the published criteria for recognition as a SINC. These areas support a range of local and habitat-characteristic plant species such as sea aster, sea bindweed, sea holly, compact brome and common broomrape. The dunes are also likely to support a range of habitat-restricted invertebrates and may be used by nesting birds such as skylark and meadow pipit. These areas are therefore assessed as being of District value for biodiversity.

High Local Value

3.3 The least modified areas of neutral/maritime grassland behind the dunes also support a range of local and habitat-characteristic plant species, including bloody crane's-bill and hare's-foot clover. It is likely that these areas could also qualify as being of District value but in the absence of more detailed survey they have been provisionally determined as being of High Local value.

Local Value

3.4 The remaining areas of grass-dominated neutral grassland, ephemeral/short perennial vegetation, bramble, scrub and ornamental plantings etc are currently considered to be of no greater than Local value for biodiversity. It is, however, noted that local and habitat-restricted species are scattered throughout these habitats, and may include some 'Section 7' listed species.

Negligible Value

3.5 The tarmac hardstandings, roads, main trackways and other areas of artificially reinforced substrates are all considered to have Negligible value for wildlife.

Not Evaluated

3.6 The buildings of the site have not been evaluated for biodiversity importance, although it is noted that some have potential as bat-roosts and that many are likely to be used by nesting birds including some which are conservation significance, such as house sparrow, starling and/or gulls. The buildings would require detailed and individual inspections in order to further quantify any biodiversity significance.

4.0 IMPACTS OF DEVELOPMENT

Development Proposals

4.1 Development plans for the site comprise a regeneration scheme to enhance the site's ability to withstand future coastal flooding events, and to increase its amenity and recreational value. Proposed enhancements include works to the Western Breakwater, off-site to the west of the survey area, and to the Eastern Promenade and its sea-wall, which comprises a near-vertical masonry structure along the sea-front immediately adjacent to the beach. In the latter area new reinforcing anchors will be installed to strengthen the existing masonry, lower sections of the sea-wall parapet will be raised and any voids or cracks will be filled. In addition, the existing roadside planters on Eastern Promenade Road are being replaced, new paved surfaces are being laid, and new drainage, lighting and street furniture are to be installed.

It is understood that the dune system and Rhych Point SINC in the east of the site are to be retained. The dunes will be subject to 'dune management' works, however, potentially including planting, whilst Rhych Point will be subject to the clearance of redundant artificial structures, the installation of rock armour revetments around the periphery and the reinstatement of the existing slipways.

It is not known at the time of writing what other subsequent 'regeneration' works may be proposed within the survey area, or whether these will include, for example, the demolition or modification of any of the existing buildings, the removal of scrub or tree habitats etc or the construction of new roads and buildings etc.

Potential Impacts of Development

4.2 Impacts to features of ecological value arising from the East Promenade works should be fairly minimal, although there is likely to be some temporary disturbance during the works period. It is possible that roosting bats could be present in the existing sea-wall, however, and could potentially be disturbed, displaced, injured or entombed as a result of the works, although there is currently no evidence to suggest that any roosting bats are present in this structure. It is also possible that new street-lighting installations could adversely affect nocturnally active fauna, potentially including foraging bats and small mammals, birds and invertebrates such as moths.

Works in the Rhych Point area should also be fairly minimal in terms of ecological impact, although any large-scale disruption or modification of the peripheral native outcrops (eg by covering with 'rock armour') could potentially affect littoral and sublittoral communities in this area. Any loss of grassland or littoral habitats from this area as a result of the works would also potentially be damaging.

Any loss of duneland or maritime grassland habitats from the eastern site area as a result of the works would also potentially be damaging. Planting works in the dune system could potentially lead to the loss or alteration of existing sand-dune habitats, for example by encouraging the development of fixed ('grey') dunes at the expense of mobile ('yellow') duneland, or by the introduction of potentially invasive species. Mobile dunes are a declining resource in Britain and are an important transitional habitat which supports a wide range of specialised plants and invertebrates, with losses due in part to past emphasis on 'dune stabilisation' and 'blow-out' prevention. It is also possible that any new artificial lighting in these areas could adversely affect nocturnally-active fauna.

Significance of Development Impacts

4.3 In the absence of adequate mitigation, any adverse impacts to the dune system or to the habitats of Rhych Point would potentially have significance in the county-borough context. Impacts to the remaining parts of the site would primarily be confined to the local context but could potentially be of greater than local significance if they were to affect the use of the site by passage and wintering birds, or by other fauna species of conservation concern such as foraging bats, brown hare or hedgehog etc.

Mitigation & Compensation Measures

4.4 Adequate advance surveys of any built structures to ensure that no roosting bats or other protected fauna (eg nesting birds, common reptiles etc) are present should minimise the risk of causing adverse impacts to these protected species, and where adverse impacts are predicted, appropriate mitigation measures must be implemented. The incorporation of new features for use by these species in the refurbished structures would be desirable where this is feasible.

Losses of duneland, littoral or maritime grassland habitats should be avoided, with any dune stabilisation or planting works in the former being carefully designed to ensure than at least some areas of mobile dune are retained. The present sea-buckthorn infestation should ideally be eliminated, and any redundant areas of hardstanding within the dunes removed. Any works affecting the 'pleasure garden' area should seek to retain mainly indigenous native tree, shrub and plant species, and eliminate invasive non-native species such as cotoneaster. The balance of open grassland and scrub cover should be restored by the clearance of encroaching scrub from the former, with an appropriate scheme of management to maintain this balance of habitats in the future.

Impacts to protected species, including nesting birds and common reptiles, should also be avoided in these areas through the implementation of appropriate mitigation measures during any works.

Any new system of night-time lighting should be carefully designed to minimise its adverse effect on nocturnally active fauna, including bats, birds and invertebrates such as moths.

An ecological management should ideally be introduced for the whole area, with appropriate resources and funding for implementation in the longer term.

Summary: Acceptability of Development Proposals

4.5 Provided appropriate and adequate mitigation measures are implemented to avoid or minimise impacts to the identified features of interest and protected species etc, it is considered on current evidence that the development of this site in the manner proposed would not be unacceptably constrained by biodiversity and nature conservation issues.

Appropriate mitigation measures are set out in the 'Recommendations' section below.

5.0 RECOMMENDATIONS

Statutory Obligations

5.1 Any development must seek to avoid causing adverse impacts to protected species which occur on the site. These include:

- Nesting birds
- Common reptiles
- Roosting bats (potentially)

Any site clearance or construction works must not cause harm or disturbance to any birds which may be nesting on the site at the time. Any clearance or construction works affecting potential bird-nesting habitats, including built structures, open grasslands, trees, hedges and scrub etc, should therefore avoid the main nesting season which runs approximately from March to August inclusive. Alternatively, any works which must necessarily be conducted during this period must be preceded by a survey to ensure that no nesting birds are present. In the event that nesting birds are discovered or suspected at any point prior to or during the works, all works within a minimum 5m radius of the find-site must be suspended immediately and appropriate expert advice obtained as a matter of urgency.

Where the clearance of potential bird-nesting habitats is projected to occur at some unknown point in the future, above-ground vegetation should ideally be cut down (eg coppiced) to approximately 200mm height over the preceding winter period in order to render it unattractive to nesting birds, and then maintained in this condition by regular re-cutting until the start of site clearance operations.

Roosting bats are not known to occur anywhere on the site but their presence cannot currently be ruled out in the absence of detailed and specialist surveys (see 'Further Surveys' below). In the event that roosting bats are discovered or suspected at any point prior to or during the works, however, all works within a minimum 5m radius must be suspended immediately and appropriate expert advice obtained as a matter of urgency.

In either case of the above, the affected area should be clearly demarcated on the ground (eg by means of striped bunting) and made off-limits to all site personnel until inspected by the appointed expert. Appropriate measures to rectify the situation in accordance with statutory obligations and responsibilities will be determined at the time by the appointed expert, and may include consultations with the statutory agencies and the seeking of licences etc.

Site clearance and construction works must not cause harm to any common reptiles which may be present on the site. A detailed Method Statement (Reptile Mitigation Strategy) should be prepared in consultation with the local planning authority ecologist prior to any site clearance and implemented accordingly. NRW advice on reptile mitigation measures is provided at Appendix 4.

It is not considered likely that the site will require a fence, trap and clear (FTC) operation in order to remove reptiles in the period immediately prior to clearance for development. Adequate site clearance should be achievable by means of advance 'species deterrence' and 'destructive searching' methods alone, with supervision by an appropriately qualified ecologist as required.

It should be noted that site clearance operations for reptiles are seasonally constrained and

cannot be carried out during the hibernation period which extends from November to February inclusive. Work outside of this period considerably reduces the probability of vulnerable torpid and/or immobile hibernating individuals being encountered and potentially harmed.

Other Recommendations

5.2 There should be no loss of habitat from either the Rhych Point SINC, the main mobile duneland area or, as far as possible, from the main areas of unmodified maritime grassland north of the dunes shown as being of 'District' value on Plan 7. These habitats should be retained, with appropriate beneficial management to maintain and enhance them.

The stands of sea buckthorn within the duneland area should be eliminated. A suitably qualified specialist contractor should be engaged to control this species. Invasive non-native species such as Virginia creeper and cotoneaster should also be appropriately controlled and preferably eliminated.

Measures to stabilise or regenerate the duneland area should not seek to eliminate all mobile dune areas but should instead be carefully targeted to key 'blow out' and erosion areas. New stabilisation plantings within the dunes should be avoided if possible, and otherwise should comprise only appropriate native species which are indigenous to the region.

Any losses of neutral maritime grassland habitat shown as being of 'High Local' value on Plan 7 should ideally be compensated for by the creation of compensatory habitats or other equivalent conservation benefits elsewhere in order to satisfy current planning policy requirements.

Redundant hardstandings and other infrastructure in the Rhych Point SINC and the duneland areas should be removed wherever possible.

Careful consideration should be given to the use of lighting within the developed site, as this can adversely affect activity by a variety of fauna, particularly commuting and foraging bats, nesting birds and invertebrates. Any lighting plan will need to be carefully reviewed in liaison with an ecologist, following guidance set out by BCT (2018)[1]. Any new luminaires should provide light in the warm-white spectrum (<2700Kelvin) with peak wavelengths of >550nm, and be positioned, vectored and baffled so as to minimise light-spillage away from the target areas. Light-spillage should not exceed 0.2lux within 5m of any retained habitat adjacent (eg duneland, maritime grassland, scrub areas etc). Existing lighting columns alongside footpaths near to the duneland area and in other sensitive locations should ideally be removed and be replaced with low-level lighting bollards.

Consideration should be given to the installation of bat-boxes and bird-boxes in suitable locations around the site. These should be located on suitable trees and buildings within the site and sited in such a manner that unauthorised persons and predators such as cats cannot access them. Bat-boxes should be at least 4m (preferably 4-5m) and bird-boxes at least 2m (preferably 2-3) above ground-level. The entrances to bat-boxes should not be illuminated at night, nor obscured by overhanging boughs or canopy vegetation etc. Bat and bird boxes should preferably be of 'woodcrete' or similar long-lasting construction rather than timber, since these are much more robust and longer-lived than traditional wooden boxes and require less after-maintenance. Suitable examples are shown at Appendix 5.

[1] https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting

General Provisions

5.3 Contractors should be provided with a 'toolbox talk' at the outset of site clearance and construction works setting out the known and possible habitat and species constraints, and the mitigation measures which are required. The toolbox talk should also set out procedures to be followed in the event that there are unexpected encounters with protected species etc. All contractors carrying out clearance works should be warned of the *possible* presence of bats, nesting birds and common reptiles etc, and of their protected status. It should be clearly understood that in the event of any being found during works, all works should cease in the affected area until appropriate expert advice has been sought.

Any areas of sensitive habitat adjacent to or near construction areas should be securely fenced-off with appropriate temporary fencing (eg 'Heras' fencing) at the start of construction work, to prevent access and accidental damage by site vehicles, equipment and personnel.

All trees, shrubs, woodlands and hedges to be retained should be treated in accordance with BS5837 (2012) *Guidance on the Treatment of Trees in Relation to Design, Demolition & Construction*, with the appropriate designation and fencing of Root Protection Zones (RPZs) etc.

Any new plantings of trees or shrubs should be primarily of native species which are indigenous to the location. Any new grassland areas should seek to reproduce those which would naturally occur in the vicinity and should comprise at least 15-20% of appropriate native broadleaved herbs sown within a matrix of non-competitive, fine-leaved native grass species. All native planting or seed stock should be of Welsh, or at least UK, provenance.

A Wildlife Protection Plan (WPP) should be drawn up for the site clearance and construction stages, setting out detailed measures to ensure that the identified interests, potential interests and statutory obligations etc are appropriately treated. The WPP should include, for example, the agreed vegetation, reptile and non-native species clearance strategies, and identify the individuals who will be responsible for ensuring that the ecological mitigation requirements are met. In this instance the WPP should also set out the measures proposed to create or enhance any off-site habitat areas which may be required as compensation or mitigation for the development of the site.

Responsibility for implementation of the WPP should be assigned to an appropriately qualified and/or experienced member of the development team who would function as an 'Ecological Clerk of Works' (ECOW).

A detailed five-year Biodiversity Management Plan (BMP) should be drawn up to guide the long-term management and maintenance of both the semi-natural habitats and other ecological features of the developed site, and also of any off-site areas of compensation/mitigation habitat. Implementation of the BMP should be funded by the developer. The BMP should be reviewed and reiterated with any necessary revisions at five-yearly intervals.

The services of an appropriately qualified and licensed ecologist should be available on an 'on-call' basis throughout the entire development period in order to deal promptly with any protected species or other ecological matters which may arise during the clearance and construction works.

Further Surveys

5.4 Any trees, buildings or other structures should be adequately assessed for the possible presence of roosting bats, nesting birds or other protected fauna ahead of any significant works. This also applies to any cracks or voids which are to be infilled or blocked-off in the sea-wall, and also to any trees which are to be lopped or felled.

Ideally the duneland area should be surveyed in detail for its invertebrate fauna.

6.0 REFERENCES

Chartered Institute of Ecology & Environmental Assessment (CIEEM 2013) *Guidelines for Preliminary Ecological Appraisal*. CIEEM, Winchester.

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APPENDIX 1: STATUTORY & POLICY FRAMEWORK FOR BIODIVERSITY

The following sets out a brief review of the key legal and key policy elements affecting wildlife species in Wales. It is not intended to be comprehensive and only the most recent and relevant articles are mentioned.

The review sets out our interpretation and understanding of key elements of the legislation and policy insofar as they apply to typical planning and development operations, based on our experience. The interpretations given below are for guidance only, however, and do not constitute legal advice. In all cases the reader is advised to consult the original legal and policy documents for the definitive wordings, and where necessary to obtain qualified legal advice.

The Conservation of Habitats & Species Regulations 2017 ('Habitats Regulations')

The Habitats Regulations were originally enacted to implement the obligations of ***EU Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora & Fauna*** (the 'EU Habitats Directive') into British law, and in so doing created the highest tier of legal protection for wildlife species in UK, the so-called 'European Protected Species' (EPS). These species include, *inter alia*:

- All species of bats
- Hazel dormouse ('dormouse')
- Eurasian Otter ('otter')
- Great crested newt
- Natterjack toad
- Sand lizard
- Smooth snake

The Regulations also cover a small number of very rare plant species such as lady's-slipper orchid.

The requirements of the Habitats Regulations were given continuance following the UK's withdrawal from the EU ('Brexit') in 2019 by the ***Conservation of Habitats & Species (Amendment) (EU Exit) Regulations 2019***, and therefore continue to apply unchanged at the time of writing. EPSs are hereafter referred to as 'Habitats Regulations Species' (HRS) to reflect this change in the legislative framework.

In summary, and *inter alia*, all HRS animal species are protected as individuals against deliberate killing, injury, capture or disturbance, at all stages of their lives, and in addition, the places used for breeding or resting by these species may not be damaged or destroyed. Breeding and resting places are also afforded protection against deliberate disturbance, or the blocking of access, under the amended ***Wildlife & Countryside Act 1981*** (see below). HRS plant species may not be picked (in any part), collected, uprooted or destroyed at any point in their life cycle.

The main exceptions to these provisions are either that the activities were authorised by the relevant statutory body (in this case, Natural Resources Wales – NRW) and, where required, were carried out under a licence ('derogation') obtained in advance. Offences which occur as an incidental result of some other otherwise lawful activity (ie 'accidental' or 'unintentional' offences) are not exempt under the Regulations but may be viewed more leniently where (a) they could not reasonably have been foreseen, (b) the activity causing the offence ceased as soon as the presence of HRS, or their habitats, became apparent, and (c) NRW were informed immediately and appropriate expert advice sought to evaluate and remediate the situation.

Bats

The legal protection covers any place or feature which is used for resting during the day ('day roosts') and also any places which are used for hibernation in winter. Places which are used for short periods of resting at night ('night roosts'), or as customary stations for the handling and processing of food ('feeding perches'), are not usually accorded the same level of importance as day roosts and hibernation sites, although they are in fact still subject to the Regulations and in some cases may be deemed important enough to be accorded full protection.

Dormouse

Protection is usually considered to extend to any habitat, such as woodland, scrub, hedgerows and bramble stands etc, where dormouse occurs and where nests may therefore be present. The continuity of the habitats occupied by dormouse with other areas of similar connecting habitat may also be a matter for statutory consideration under the Regulations.

Otter

Protection is usually considered to extend to any watercourse or waterbody which is used by otter, and which may therefore contain nests or resting places ('holts'). It also extends to any areas of terrestrial habitat away from watercourses and waterbodies where these also contain holts, and the connectivity of such places with the occupied aquatic habitats may also be a matter for statutory consideration under the Regulations.

Great crested newt

Protection is usually considered to extend to any watercourse or waterbody which is occupied by great crested newt (GCN), and which may therefore be used for breeding. It also extends to any terrestrial habitats used by GCN during its non-aquatic phases, especially those places which are used for hibernation in winter or sheltering during adverse weather conditions. Typically the latter will be physically connected to a breeding pond (or ponds) but may lie anything up to

2km away. At minimum, a terrestrial hinterland of 10m width around the edges of a breeding pond will be considered to be protected where this contains habitats which are suitable for terrestrial use by GCN.

Protected Sites

The Habitats Regulations also set out to protect certain rare and valuable habitat types, such as ancient semi-natural woodland, heathland, bogs and species-rich grasslands etc. This is done through the identification and designation of specifically protected sites known as Special Areas of Conservation (SACs). SACs are subject to the highest level of legal protection against damage, destruction, degradation or harmful uses or activities which is available in the UK. All such sites are also designated as Sites of Special Scientific Interest (SSSIs) under the Wildlife & Countryside Act 1981 (see below).

The Wildlife & Countryside Act 1981 (WCA)

This much amended and complex piece of legislation is the means by which protection is afforded at the next tier of species below the HRSs and is the primary source of protection in respect of birds. Species afforded protection under the WCA include, *inter alia*:

- All species of birds
- Water vole
- Red squirrel
- Common reptiles (ie slow-worm, common lizard, grass snake, adder)
- Marsh fritillary butterfly
- Pearl mussel
- Various plants, ferns, mosses, liverworts, lichens & fungi

Birds

In summary, all wild birds are protected against deliberate killing, injury or capture, and this protection extends to their eggs and young. It is also illegal to destroy, damage or remove the nest of any bird either while it is in use or being built. For certain rare species which are listed on Schedule 1 of the Act the protections go even further: it is illegal to disturb any Schedule 1 bird species, either deliberately or unintentionally ('recklessly'), while it is building a nest or actually nesting, or to disturb the dependant young of any such bird. Exceptions to these general principles affect some specific game, food or pest species, but only under certain specified and defined conditions and usually in accordance with a licence issued in advance by NRW.

Actions which cause an adverse impact to birds or their nests which arise as an incidental result of some otherwise lawful activity, such as the trimming or removal of hedges, trees or scrub for example, would not constitute an offence provided that the activity could not have reasonably been avoided. As a general result of the provisions of the WCA therefore, the deliberate destruction, removal or clearance of habitats containing nesting birds would almost invariably constitute an offence because the impacts to birds could reasonably have been foreseen and avoided, for example by carrying out the clearance activities at a time when birds are not nesting.

Except under certain specified conditions, the clearance or removal of nests or nesting habitats is generally not illegal if it is carried out at a time of year when no birds are nesting or if it can otherwise be shown that no nesting birds are present at the time (eg by means of advance survey).

Activities which might adversely affect Schedule 1 birds such as barn owl, kingfisher or birds of prey can be undertaken provided a licence has been obtained in advance from NRW and appropriate mitigation measures are put in place.

Animals Other than Birds

Animals other than birds, such as water vole, red squirrel, marsh fritillary and pearl mussel for example, are listed on Schedule 5 of the Act, and are afforded protection which is generally similar to that of HRSs. The individual animals may not be deliberately killed, injured or captured, in any of their life stages, and it is also illegal to destroy or damage any places which these animals use for shelter or protection, or to disturb an animal using such a place or obstruct access to it, whether deliberately or unintentionally.

As with birds, impacts to Schedule 5 animals which arise as an incidental result of an otherwise lawful activity do not constitute an offence provided those impacts could not have reasonably been foreseen and avoided.

Water Vole & Red Squirrel

In the case of nest-making animals such as water vole and red squirrel, protection will normally be taken to extend to the entirety of any suitable, or potentially suitable, nesting or sheltering habitats which are occupied by a residential population of the species concerned. The connectivity of these habitats with other similar habitats in the wider vicinity may also be a matter for statutory consideration.

Marsh Fritillary Butterfly & Pearl Mussel

For species which do not make nests, protection will normally be taken to extend to the entirety of any habitats which are suitable, or potentially suitable, for breeding or sheltering and which are occupied by a residential population of the species concerned. The connectivity of these habitats with other similar habitats in the wider vicinity may also be a matter for statutory consideration.

Common Reptiles
Slow-worm, common lizard, grass snake and adder are afforded so-called 'partial protection' under the WCA. The animals themselves may not be deliberately killed or injured, but they may be captured and the habitats which support them are not afforded any direct protection in themselves.

As with other Schedule 5 animals, adverse impacts which arise as an incidental result of an otherwise lawful activity do not necessarily constitute an offence provided those impacts could not reasonably have been foreseen and avoided. Under current interpretation this is taken to mean that the destruction or clearance of habitats which are known to support common reptiles, or where such reptiles could reasonably be expected to occur, without the implementation of measures to minimise or avoid causing incidental death or injury to reptiles, would be likely to constitute an offence.

Protected Plants
About 180 species of plants, ferns, mosses, liverworts, lichens and fungi are afforded protection under Schedule 8 the WCA. These may not be intentionally picked (in any part), uprooted or destroyed, unless authorised under licence. As with Schedule 5 animals, adverse impacts which arise as an incidental result of an otherwise lawful activity do not necessarily constitute an offence provided those impacts could not reasonably have been foreseen and avoided.

Protected Sites
The WCA also sets out mechanisms for the protection and conservation of habitats and features of high biodiversity value through the identification and designation of specifically protected sites. These include Sites of Special Scientific Interest (SSSIs), National and Local Nature Reserves (NNRs/LNRs) and National Parks etc. Such sites are subject to wide-ranging legal protection against damage, destruction, degradation, exploitation or other harmful activities or uses.

The Protection of Badgers Act 1992 (PBA)
Badger is protected primarily in relation to animal welfare and cruelty, as a result of illegal persecution. Badgers are protected against intentional killing, injury, 'cruel ill-treatment' or capture in all of their life stages. Their nesting burrows ('setts') may not be destroyed, damaged, dug into or obstructed and it is illegal to disturb a badger while occupying a sett, either deliberately or 'recklessly' (ie unintentionally as a result of failure to take due care). The PBA is also taken to confer a degree of protection to foraging areas which are critical to the support of a badger family-group ('clan') where the loss of this would otherwise result in their starvation. As with other protected species, adverse actions which arise as a result of an otherwise lawful activity do not constitute an offence provided those impacts could not reasonably have been foreseen and avoided. A number of specified exemptions are provided in connection with certain legal farming and fox-hunting activities which may impact badgers.

The protection of setts only applies to those which are in 'current use' and not to those which are abandoned. However, many badger setts are occupied only intermittently throughout the year and therefore 'current use' should not be taken to imply *continuous* use.

Actions to remove badger setts on development sites may be undertaken under a licence issued by NRW and in accordance with agreed mitigation measures, and licences may also be issued to allow the removal or exclusion of badgers from sites. Such operations may not occur during the breeding ('close') season, however, which is usually taken to be between December to June inclusive, due to the risk of trapping lactating females and young below ground.

Environment (Wales) Act 2016 (EWA)
Section 7 of the EWA contains the most recent lists of species and habitats which are considered to be of 'principal importance for the conservation of biodiversity in Wales'. These lists replaced those which were previously given under s.42 of the ***Natural Environment & Rural Communities Act 2006***, which in turn replaced the 'Priority Species' listed under the UK Biodiversity Action Plan of 1995 and its Welsh equivalent. Species listed under s.7 of the EWA include many of those afforded protection under the articles described above, including otter, dormouse, water vole, nesting birds, common reptiles and great crested newt, for example, as well as additional species such as:

- W. European hedgehog ('hedgehog')
- Brown hare
- Harvest mouse
- Polecat
- European eel ('eel')
- Atlantic salmon ('salmon')
- Brown & sea trout
- Garden tiger moth
- Cinnabar moth
- Small heath butterfly
- Hornet robberfly
- Shrill carder bee
- Flat sedge
- Wild chamomile
- Common toad

and many other plant and animal species which are not otherwise specifically afforded statutory protection for wildlife conservation reasons (although they may in some cases be afforded some element of protection for other reasons, such as animal welfare or cruelty).

Section 7 of the EWA also identifies a number of habitat-types which are of 'principal value for conservation in Wales'. These include:

- Lowland mixed deciduous woodland
- Hedgerows
- Lowland meadows
- Upland flushes, fens & swamps

- Purple moor-grass & rush-pastures (in Wales, often referred to as 'rhos pastures')
- Reedbeds
- Blanket bog
- Sand dunes
- Rivers & ponds

Although not protected as such, the EWA requires statutory authorities to take such 'Section 7' species and habitats into account when considering the management and development of sites in Wales, and to take "*all reasonable steps*" to maintain and enhance their populations. The presence of such species and habitats is a 'material consideration' on sites where planning permission is sought for development. ***Planning Policy Wales (2021)*** (PPW, 11th Edition) requires Local Planning Authorities (LPAs) to have regard to the presence of 'Section 7' species and habitats and to avoid adverse impacts as a result of development wherever possible. Developments which are considered essential in the public interest must seek to minimise adverse impacts and incorporate appropriate mitigation/compensation measures where adverse impacts cannot be avoided.

Sites of Importance for Nature Conservation (SINCs)

SINCs comprise so-called 'third-tier' sites which have been identified as having biodiversity conservation value at the sub-national (ie regional, county, county-borough or local) level. They are usually identified by the LPA, often in collaboration with other local conservation bodies such as the county Wildlife Trust, and may appear under range of different names (eg 'Wildlife Site', 'County Wildlife Site' etc). Such sites are not specifically protected in law (ie they are 'non-statutory') but they are recognised as a 'material consideration' on sites where planning permission is sought for development. As with 'Section 7' habitats, PPW (2021) requires LPAs to avoid adverse impacts as a result of development wherever possible, and developments which are considered essential in the public interest must incorporate appropriate mitigation/compensation measures where adverse impacts cannot be avoided.

Invasive Non-native Species

Schedule 9 of the ***Wildlife & Countryside Act (1981)*** sets out lists of plant and fauna species which are subject to statutory regulation in Britain. These currently include plants such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and wall cotoneaster (*Cotoneaster horizontalis*), and animals such as signal crayfish, aquarium terrapin, Asian hornet and copyu. The lists are updated regularly.

The import, sale, transport, cultivation and keeping of these species is generally forbidden except under a specially issued licence, and it is illegal to allow these species to escape or spread into the wild, either deliberately or by accident. This includes any part and all life-stages of the species concerned. Earthworks which might accidentally result in the transfer of Schedule 9 plant material to another location or which encourages it to spread either within or off the site, for example, is forbidden. Any works on a site which might involve contamination by, and potential spread of, any of the listed species must be carried out under an approved method statement designed to prevent them being accidentally dispersed off of or within the site, and which preferably results in their complete elimination wherever this is possible.

APPENDIX 2: DEFINITIONS OF SITE VALUE

International Value

Site carrying an internationally recognised designation such as Ramsar Site, World Heritage Site, Special Protection Area, Special Area of Conservation, Biosphere Reserve or Biogenetic Reserve, or:

Habitats: site supporting nationally significant areas of habitats of defined international community interest.
Species: site supporting nationally significant populations of species of defined international community interest.

National Value

Site meeting published Site of Special Scientific Interest (SSSI) designation criteria (NCC 1989; JNCC 2019 *et seq*), whether so designated or not.

Habitats: site supporting nationally significant areas of habitats of defined national rarity or interest.
Species: site supporting nationally significant populations or communities of UK Red Data Book, Nationally Notable or protected species (other than badger).

County Value

Site identified as a County Wildlife Site (CWS), Site of Importance to Nature Conservation (SINC) or similar at the county level (ie greater than district, borough or city level); meeting published CWS designation criteria (where these exist), but falling short of SSSI designation criteria, whether designated as a CWS or not.

Habitats: site supporting good examples of nationally threatened habitats, or extensive areas of habitats which are rare or unique in the county.
Species: site supporting large or strong populations or communities of nationally rare or protected species (other than badger), or of species which are rare in the county and uncommon nationally.

District Value

Sites failing to meet County Value criteria, but nevertheless supporting habitats, species or communities which appreciably enrich the ecological resource of the county, especially by virtue of their size or extent.

Habitats: sites supporting habitats uncommon in the county, small but unmodified fragments of nationally threatened habitats, or comprising extensive areas or systems of semi-natural habitats.
Species: sites supporting nationally rare species, or strong populations or communities of regionally uncommon species, which would not otherwise be present (ie they are critically dependant on the site characteristics).

Local Value

Habitats which fail to meet District Value criteria, but which appreciably enrich the ecological resource of the locality. This category can be further divided into:

- **High Local Value**: just failing to meet District Value Criteria; supporting species which are notable or uncommon in the county; or species which are uncommon, local or habitat-restricted nationally, and which might not otherwise be present in the area.

- **Local Value**: sites which are of ecological value only in the context of their immediate surroundings. Rare or uncommon species may occur but are not restricted to the site or critically dependent upon it for their survival in the area.

Sites failing to meet any of the above can be considered as being of '**Negligible**' ecological value.

APPENDIX 3: SPECIES RECORDED FROM THE SITE

Plant Species

All species recorded by DCE 2020-2022, unless otherwise indicated:

Species	Common Name	Contributing Species for SINC designation							Comments
Trees & Shrubs		**AM**	**NG**	**AG**	**MG**	**CG**	**W**	**PI**	
Abies sp	Fir								
Acer campestre	Field maple						X		
Acer pseudoplatanus	Sycamore								
Aucuba japonica	Spotted laurel								
Betula sp	Birch								
Budleja davidii	Buddleia								Invasive non-native
Cornus sanguinea	Dogwood								
Cotoneaster sp	Garden cotoneaster								Invasive non-native
Crataegus monogyna	Common hawthorn								
Fraxinus excelsior	Ash								
Hippophae rhamnoides	Sea-buckthorn								Locally invasive
Pinus sp	Pine								
Populus alba	White poplar								
Populus x *cinerascens*	Grey poplar								
Prunus laurocerasus	Cherry-laurel								
Prunus spinosa	Blackthorn								
Rosa spp	Wild roses								
Rubus fruticosus agg	Bramble								
Salix caprea	Goat willow								
Salix cinerea	Grey willow								
Sambucus ebulus	Dwarf elder								CS
Sambucus nigra	Elder								
Ulex europaeus	Gorse								
Herbaceous Plants									
Achillea millefolium	Yarrow								
Agrostis capillaris	Common bent								
Agrostis stolonifera	Creeping bent-grass								
Ajuga reptans	Bugle		X						
Ammophila arenaria	Marram-grass								
Anisantha sterilis	Barren brome								
Anthoxanthum odoratum	Sweet vernal-grass								
Armoracia rusticana	Horse-radish								
Arrhenatherum elatius	False oat-grass								
Asplenium trichomanes	Maidenhair spleenwort								
Aster tripolium	Sea aster								
Bellis perennis	Daisy								
Beta vulgaris ssp *maritima*	Sea beet							X	
Bromus hordeaceus	Soft brome								
Bromus madritensis	Compact brome								
Cakile maritima	Sea rocket								S Moon, 2008
Calystegia soldanella	Sea bindweed								CS
Carex arenaria	Sand sedge							X	
Centaura nigra	Common knapweed		X			X			
Centranthus ruber	Red valerian								
Cerastium fontanum	Common mouse ear								
Cerastium tomentosum	Snow-in-summer								
Cirsium arvense	Creeping thistle								
Cirsium vulgare	Spear thistle								
Crithmum maritimum	Rock samphire								
Cymbalaria muralis	Ivy-leaved toadflax								

Dactylis glomerata	Cock's-foot								
Daucus carota	Wild carrot					X			
Diplotaxis tenuifolia	Perennial sea-rocket								CS B Stewart, 2013
Equisetum arvense	Field horsetail								
Erodium cicutarium	Common stork's-bill								
Eryngium maritimum	Sea-holly								CS
Euphorbia paralias	Sea spurge								CS
Festuca ovina	Sheep's fescue			X		X		X	
Festuca rubra	Red fescue								
Foeniculum vulgare	Fennel								
Galium verum	Lady's-bedstaw		X	X		X			
Geranium dissectum	Cut-leaved cranesbill								
Geranium molle	Dove's-foot cranesbill								
Geranium pyrenaicum	Hedge crane's-bill								
Geranium robertianum	Herb-robert								
Geranium sanguineum	Bloody crane's-bill								QS
Hedera helix	Ivy								
Heracleum sphondylium	Hogweed								
Holcus lanatus	Yorkshire Fog								
Hordeum marimum	Sea barley								QS
Hordeum murinum	Wall barley								
Hyacinthoides non-scripta	Wild bluebell						X		
Hypochoeris radicata	Common cat's ear		X						
Lavatera sp (?*arborea*)	Tree-mallow								?CS
Lolium perenne	Perennial meadow-grass								
Lotus corniculatus	Bird's foot trefoil		X			X		X	
Medicago lupulina	Black medick					X			
Oenothera sp	Evening-primrose								
Orobanche minor	Carrot broomrape							X	CS
Parthenocissus quinquefolia	Virginia creeper								Invasive non-native
Phleum arenarium	Sand cat's-tail								CS
Plantago coronopus	Buck's-horn plantain							X	
Plantago lanceolata	Ribwort plantain								
Plantago major	Greater plantain								
Poa annua	Annual meadow-grass								
Poa bulbosa	Bulbous meadow-grass								QS
Poa trivialis	Rough meadow grass								
Potentilla anserina	Silverweed								
Potentilla reptans	Creeping cinquefoil								
Ranunculus acris	Meadow buttercup								
Ranunculus bulbosa	Bulbous buttercup					X			
Ranunculus flammula	Lesser spearwort				X				
Ranunculus repens	Creeping buttercup								
Raphanus raphanistrum	Sea raddish								
Reseda lutea	Wild mignionette								CS
Rumex acetosa	Sorrel							X	
Rumex crispus	Curled dock								
Rumex obtusifolius	Broad-leaved dock								
Sedum acre	Biting stonecrop								
Senecio jacobaea	Ragwort								
Senecio vulgaris	Groundsel								
Sinapis arvensis	Charlock								
Sonchus asper	Prickly sow-thistle								
Sonchus oleraceus	Smooth sow-thistle								
Stellaria media	Common chickweed								
Tanecetum vulgare	Tansy							X	
Taraxacum officinalis agg	Common dandelion								
Trifolium arvense	Hare's-foot clover								
Trifolium pratense	Red clover		X						

Trifolium repens	White clover								
Tripleurospermum inodorum	Scentless mayweed								
Tripleurospermum maritimum	Sea mayweed								
Urtica dioica	Nettle								
Vulpia bromoides	Squirrel-tail fescue					X		X	
Vulpia fasiculata	Dune fescue								CS
Yucca spp	Garden yuccas								
Contributing Species for SINC designation		**AM**	**NG**	**AG**	**MG**	**CG**	**W**	**PI**	**QS = 3**
Totals recorded on site		***0***	***6***	***2***	***1***	***8***	***2***	***9***	***CS = 9 (?10)***

(**Bold**) = SINC Qualifying species
SINC Indicator Species
AM = arable field margin, NG = neutral grassland, AG = acid grassland, CC = calcareous grassland, MG = marshy grassland, W = woodland, PI = Post-industrial/Disturbed ground.
QS = 'Qualifying Species'
CS = 'Contributary Species'

FAUNA SPECIES RECORDED FROM THE SITE

All records DCE 2020 or 2022, unless otherwise indicated: Records by others are the most recent only

Birds	SOCC Lists		S7	Status on Site	SINC value	Notes
	UK	Wales				
Blackbird				Pr		2020, 2022
Bunting, reed	A	A	X	N	BCS/WCS	A Irving, 2019
Bunting, snow	A	A		N		G Grain, 1987
Chiffchaff				Po		E Squires, 2015
Cormorant		A		N		A Rosney, 2007
Curlew	R	R	X	N	BQS/WCS	S Moon, 2006
Dunlin	R	R		N	WCS	S Rosser, 2011
Dunnock	A		X	Pr		2020, 2022
Eider	A	A		N		N Donaghy, 2003
Goldcrest		A		Po		E Squires, 2015
Goldfinch				Po		2022
Goose, dark-bellied Brent	A		X	N	WCS	S Moon, 2005
Grebe, great crested				N		M Cram, 2017
Greenfinch	R	A		Po		E Squires, 2015
Guillemot	A	A		N		R Davies, 2002
Gull, black-headed	A	R	X	N	BQS	2020, 2022
Gull, Common	A	R		N		D Gilmore, 2012
Gull, glaucous	A			N		S Squires, 2015
Gull, greater black-backed	A	R		N	BQS	M Cram, 2018
Gull, Herring	R	R	X	Po	BCS	BD Gilmore, 2015
Gull, Iceland	A			N		S Squires, 2015
Gull, lesser black-backed	A	A		Po	BCS	M Cram, 2018
Gull, Mediterranean	A			N		M Cram, 2018
Kestrel	A	R	X	Po	BQS/WCS	2020
Kittiwake	R	R		N	BQS	D Gilmore, 2003
Knot	A	R		N	WCS	S Moon, 2005
Linnet	R	R	X	Po	BCS/WCS	2022
Martin, house	R			Po		M Hnatiuk, 2011
Merlin	R	R		N	BQS/WCS	S Squires, 2015
Oystercatcher	A	A		N	BCS/WCS	A Rosney, 2007
Pintail, Northern	A	A		N	BCS/WCS	A Sanders, 2011
Pipit, meadow	A	A		Pr		2022
Pipit, rock				Po		E Squires, 2015
Plover, golden		R	X	N	BQS/WCS	S Moon, 2004
Plover, grey	A	R		N	WCS	D Bolt, 2011
Plover, ringed	R	R	X	N	BQS/WCS	S Rosser, 2011
Raven				N		C Edwards, 2016
Redshank	A	R		N	BQS/WCS	S Moon, 2007
Redstart, black	A	A		N		D Bolt, 2004
Robin				Pr		2022
Sanderling	A	A		N		G Powell, 2017
Sandpiper, common	A	R		N		S Moon, 2005
Sandpiper, purple	R	A		N		D Bolt, 2004
Scoter, common	R	A	X	N	WCS	N Donaghy, 2004
Shearwater, Manx	A			N		S Moon, 2005
Skylark	R	A	X	Pr	BCS/WCS	2020
Sparrow, house	R	A	X	Pr	BCS/WCS	2020, 2022
Sparrowhawk	A			Po		D Bolt, 2004
Starling	R	R	X	Po	BCS/WCS	E Squires, 2015
Stonechat				Po	BCS/WCS	A Irving, 2019
Swallow				Po		S Squires, 2015
Swan, mute				N		S Moon, 2006
Tern, Arctic	A	R		N	WCS	S Moon, 2004

Tern, common	A	A		N		D Bolt, 2015
Tern, Sandwich	A	A		N	WCS	S Moon, 2005
Thrush, song	A	A	X	Pr	BCS/WCS	2020, 2022
Tit, blue				Pr		2020, 2022
Tit, great				Pr		2022
Tit, long-tailed		A		Po		E Squires, 2015
Turnstone	A			N	WCS	M Cram, 2017
Wagtail, pied				N		S Moon, 2005
Wheatear	A			Po		S Moon, 2008
Wren	A			Pr		2020

(**Bold**) = Schedule 1 – Specially protected
Red List = High conservation significance in UK/Wales (RSPB 2021; 2017)
Amber List – Moderate conservation significance in UK/Wales(RSPB 2021; 2017)
S7 = 'Species of Principal Conservation Concern in Wales (EWA 2016)
SINC Indicator Species
Breeding Birds:
BQS = 'Qualifying species'
BCS = 'Contributory species'
Wintering/Passage Birds:
WQS = 'Qualifying species'
WCS = 'Contributary species'

Breeding Status on Site
C = Confirmed breeding
Pr = Probably breeding
Po = Possibly breeding
N = Not breeding/Visitor

Other Fauna	EPS	Sch 5	S7	SINC value	Notes
Mammals					
Brown rat					2022
Rabbit					2020, 2022
Grey squirrel					2022
Reptiles					
Common lizard			X	CS	2020
Invertebrates					
Aglais urticae					Small tortoiseshell, 2022
Celastrina argiolus					Holly blue – G Jones, 2008
Maniola jurtina					Meadow brown – A Sanders, 2011
Pieris brassicae					Large white – A Sanders, 2011
Pieris napi					Green-veined white - 2022
Vanessa atalanta					Red admiral, 2022
Vanessa cardui					Painted lady, 2022
Autographa gamma					Silver-Y, 2022
Chorthippus brunneus					Field grasshopper, 2022
Tettigonia viridissima					Great green bush-cricket – G Jones 2005
Armadillidium vulgare					Woodlouse – A Sanders, 2011
Lithobius forficatus					Centipede – A Sanders, 2011

EPS : 'European Protected Species' – Protected under the Habitats Regulations 2017
Sch 5 : 'Schedule 5 species' – Fully protected under the Wildlife & Countryside Act 1981
(PBA) : Protection of Badgers Act 1992
S7 : Species of principal importance for conservation in Wales – Environment (Wales) Act 2016
SINC Indicator Species
QS : 'Qualifying species'
CS : 'Contributory species'

APPENDIX 4: REPTILE MITIGATION MEASURES – NRW GUIDANCE (CCW Draft Feb 2005)

For any development site which supports reptiles, or which contains habitats with the potential to support reptiles, NRW recommends detailed survey at an early stage. Where suitable survey information is unavailable, however, or where there is insufficient time to carry out the necessary surveys, it should be assumed that any habitats on the site which are suitable for reptiles do indeed support reptiles, and mitigate accordingly.

Legislation
The four most common British reptiles (comprising grass snake, adder, slow-worm and common lizard) are afforded so-called 'partial protection' under the Wildlife and Countryside Act 1981 (as amended). This protects individuals of all species from 'intentional' or 'reckless' killing and injury, but does not confer any direct protection to the habitats which support them.

Where it can reasonably be predicted that reptiles could potentially be killed or injured by activities such as site clearance, earthworks or construction operations etc, to carry out such activities in the absence of appropriate mitigation could legally constitute intentional or reckless killing or injuring, and could result in prosecution.

Where reptiles (other than sand lizard, smooth snake and turtles, all of which are subject to additional restrictions under the law) are present, or potentially present, on a development site, the developer should consider the need for mitigation at an early stage in the development programme. The presence of reptiles on a development site will not necessarily prevent the development from taking place, but it means that 'reasonable' mitigation measures must be put in place to prevent, as far as possible, the killing or injuring of any reptiles.

It is not necessary to obtain a licence to carry out works which affect reptiles, but it is always advisable to seek guidance in any case where a development could potentially cause impacts to reptiles, and to obtain advice regarding what would constitute 'reasonable' mitigation, although it is ultimately up to the developer to decide what is 'reasonable' (and to accept any consequences which may ensue). In most cases, the services of an appropriately qualified and experienced reptile consultant will be required.

The remainder of this document sets out the main elements of a typical reptile clearance strategy. It is recognised, however, that not all of the elements listed below will be necessary or appropriate in all cases, and that individual strategies will vary from site to site.

Reptile Clearance Methodology
If reptiles are confirmed as being present (or are assumed to be present, for example from habitat assessment) then measures should be put in place to avoid or minimise the killing and injuring of reptiles as a result of development operations. Ideally, a 'Reptile Mitigation Strategy' should be drawn up for the site by a suitably qualified person, and agreed in advance with either the NRW or the relevant Local Authority Ecologist.

Wherever possible, reptiles should be accommodated within the site, or on one or more adjacent or nearby site. The translocation of reptiles to a different site which lies at a distance from the development site should only be undertaken as a last resort. Where reptiles cannot be accommodated within the site, a suitable receptor site should be identified in advance and surveyed for suitability. If a reptile population already exists on the receptor site, then advance enhancement works to increase the 'carrying capacity' of the receptor site may be necessary Adequate time should be allowed in the development programme for the safe clearance of reptiles ahead of any potentially harmful works using suitable means, which may vary from site to site.

It should be noted that the clearance of reptiles from a site can only be undertaken when the reptiles are active (ie, during the spring, summer and autumn months) and should never be attempted during the winter hibernation period (which runs approximately from November to March inclusive). This constraint may lead to conflict with other issues – the presence of nesting birds, for example, all species of which are protected against disturbance – which will also need to be taken into account and mitigated for accordingly[2].

Mitigation measures should apply to all areas of the site which will be subject to potentially harmful impacts, including the laying of haul routes, siting of contractors' compounds and the bulk storage of materials and soils etc. It should be remembered that reptiles may be present beneath the soil at depths of up to 250mm or more, as well as in locations such as amongst tree roots or buried rubble and brick waste etc.

[2] Hedgerow translocations or clearance of habitats such as trees, scrub, bramble or reedbed etc can lead to direct conflicts, which may require phased clearance or other mitigation measures to overcome.

Typical Mitigation Procedure

1. Where there are suitable receptor sites adjacent to the development site, mitigation should commence with the removal of tall vegetation from all areas affected by development to make them less attractive to reptiles, and to encourage them to move away voluntarily into adjacent habitats. Vegetation should initially be cut to a height of about 200mm, starting furthest away from the adjacent habitats and working towards them, so as to drive any reptiles which may be present towards the receptor habitats. All cutting must be done by hand (eg by strimmer or brush-cutter), rather than by tractor-drawn mowers, so as to minimise the risk of causing reptile casualties. All arisings should be removed immediately from the site following cutting.

   After a maximum of two days, the vegetation of the site should be cut again in a similar pattern to a height of about 50mm, taking great care to avoid injuring any reptiles which may be present and with all arisings again being removed from the site. The vegetation of the site should then be maintained in this short condition for a minimum of two further days before proceeding to Step 2.

In some rare situations this staged cutting, coupled with the careful removal of any structures which may be used by sheltering reptiles (eg rubble piles, timber piles, drystone walls etc – see Step 3 below) may be sufficient to achieve 'clearance' of the site by rendering it so unsuitable for reptiles that no further measures are required. In these circumstances, the site should then be maintained in this unsuitable condition until the commencement of development works, which should then be preceded by 'destructive searching' (see Step 8 below). These situations are likely to be very unusual, however, and will require careful assessment in advance by an appropriately qualified person.

Where there are no suitable habitats in the surrounding area for reptiles to relocate to (for example if the site is surrounded by roads or hard standings, or is hemmed in by other developments) then this step should be ignored.

2. Reptile-proof fencing should be erected around the perimeter of the affected areas of the site. These should be erected in accordance with published specifications such as that contained in the Highways Agency's *Design Manual for Road & Bridges* (Vol 10(4) (7) HA116/05 *Nature Conservation Advice in Relation to Reptiles and Roads* or the forthcoming *Reptile Mitigation Guidelines* (English Nature). The fencing will normally be required to extend below ground level for a depth of about 250mm, and both the installation and fabrication process may require careful supervision by a suitably qualified reptile handler to ensure that no reptiles are accidentally injured in the process. On large sites it may be useful, and will probably speed up the process, if the site is subdivided into smaller parcels.

   Reptile-proof fences may be either vertical 'no-pass' fences or sloping 'one-way' fences. The former will prevent the movement of reptiles in either direction, whilst the latter can be erected in areas where the site lies immediately adjacent to a suitable receptor sites, and will allow reptiles to leave the development area voluntarily.

3. Within the enclosed parcels, any rubble piles, drystone walls, tree roots, buried rubble and timber piles etc should be dismantled by hand to prevent reptiles from using them to shelter in. All arisings should be removed from the site. As far as possible, these operations should be carried out by hand, with the minimum tracking by any vehicles or machinery across the site. Complex or large structures may need to be carefully dismantled under the supervision of a reptile handler who can halt the works and rescue any reptiles which may be found sheltering in them.

4. Following the clearance of sheltering places, the vegetation of the enclosed parcel should be cut, if it has not already been so. Cutting should initially be to a height of about 200mm, starting at the centre of the parcel and working outwards towards the edges. All cutting must be done by hand (eg by strimmer or brush-cutter), rather than by tractor-drawn mower, so as to minimise the risk of causing reptile casualties. All arisings should be removed immediately from the site following cutting.

   Note that for a linear site, such as a cycle-path or verge, strimming should be undertaken from the path working ahead and outwards at the same time, effectively cutting a 'V'-shape.
5. After cutting, the site should be strewn with 'refugia'. These should comprise a combination of suitable materials such as sheet metal, timber (eg chipboard), roofing felt and carpet tiles. These will be used by reptiles for sheltering beneath, or for basking on, where they can be found and caught more easily. If the vegetation is already shorter than 200mm, refugia may be laid out straight away without cutting the vegetation. Refugia should be spread evenly around the site at a high density (ie about 100 per hectare).

6. Depending on the site, visits should be made to the site by a reptile handler over at least the next two days to check beneath the refugia, collect any reptiles which may be beneath them and remove them to the receptor habitats. In practice, it will usually take at least a week for the refugia to 'bed in', and daily reptile collection visits may need to

take place over a period of several weeks. Reptile collecting visits must be undertaken in suitable weather conditions, ie in dry, still conditions with air temperatures in excess of 10°C.

7. Daily or near-daily reptile collection and removal visits should continue until reptile numbers under the refugia begin to decline noticeably, at which point the vegetation of the site can be cut again, using the same methodology as at Step 4, but this time to a height of 100mm. Daily reptile collection and removal visits should continue for a further minimum of three days, in suitable weather conditions.

8. When reptile numbers are again detected to be declining, a final cut can be made to achieve very short, close-cropped vegetation of about 40-50mm height, again using the same methodology as at Step 4. This staged removal of the vegetation is likely to drive reptiles to make greater and greater use of the refugia, by removing alternative sheltering places and rendering the rest of the site unattractive to reptiles.

Depending on the individual circumstances of the site, it may be advisable to review the spread and location of refugia, and to begin to cluster these towards the edges of the site or in selected locations, although if this is done then the areas where refugia are no longer present must be kept in a highly unattractive state for reptiles. The manipulation of refugia numbers and locations may be used to reduce the amount of time needed for a reptile handler to check for reptiles. On a small site, however, there is probably no point in moving the refugia, and moving refugia may reduce capture efficiency[3]. This is a matter which will require expert assessment.

It is essential that the integrity of the reptile-proof fences is maintained throughout the trapping period. These should be checked on every visit, and any breaks repaired within 24 hours, otherwise reptiles could re-enter the trapping area from outside. An advantage of subdividing the trapping areas into compartments is that any breaks in the perimeter fence which do occur, and which go undetected for any length of time, will only affect the compartment it lies alongside, and not the whole trapping area.

On sites where vandalism is a significant problem, it may be necessary to institute security measures to ensure that the reptile-proof fences remain intact throughout the trapping period. The measures necessary will vary from site to site, but could include the use of 'Heras' fencing and/or the presence of site security personnel in extreme cases.

9. Daily or near-daily reptile collection visits should carry on until 10 successive nil-returns have been achieved, in suitable weather conditions, following the last vegetation cut. Following a final inspection by a suitably qualified person (the final inspection can be done at the same time as the last check of the refugia). At this point, the trapping records should be summarised and sent to the relevant Species Officer at the NRW. Although there is no obligation to do this, it will assist in maintaining a clear position with the statutory body and will encourage a cooperative dialogue. This may be useful in establishing that there has been full and reasonable compliance with the legal requirements in the event of a challenge arising.

   Note that there is no need to have 10 successive nil-returns between the vegetation cuts, but that these cuts should be at least 2 days apart and the numbers should be showing a decline (the exact time taken should be determined by the reptile handler in charge, and will vary from site to site).

10. NRW will then write to the developer to "release" the site to the developer or site engineers. Again, there is no obligation to obtain written consent from the NRW, but it will further demonstrate that there has been best-practice compliance to the satisfaction of the statutory body.

11. The area cleared of reptiles should then ideally be immediately stripped of all vegetation and the topsoil removed, leaving bare subsoil. This final stripping may be done with machinery (ideally using a bucket with tines)[4]. In some cases it may be desirable that the site is 'destructively searched' prior to development, especially if the trapping out has not gone absolutely to plan (eg vandalism problems etc). This means that the topsoil layer to a depth of about 250mm is removed from the site in strips or sections, working sequentially across the site, using a digger with a tined bucket, under the supervision of a reptile handler who is able to check for the presence of any reptiles remaining in the soil. Where such reptiles are found, the reptile handler will stop the works, rescue the animal and release it to the receptor area.

12. The edges of the cleared area should be marked with high-visibility temporary fencing to prevent accidental trafficking of vehicles on the uncleared parts of the site (if any).

[3] Reptiles usually take a while to find refugia (hence the 'bedding in'), and once they do they tend to use them habitually. Moving refugia may simply confuse the animals and be counterproductive.

[4] It is worth noting that there can be a conflict on sites where there is also an archaeological watching brief: archaeologists usually specify a bladed bucket to produce smearing in which archaeological layers can be seen. A tined bucket makes this much more difficult.

13. If there is any delay between the end of the reptile clearance operation and the commencement of development, measures must be taken to prevent the recolonisation of the site by reptiles from adjacent habitats, unless there is no such habitat adjacent to the site. To prevent reptiles re-entering the cleared area, the developer must therefore either:
    a) Keep the area in the cleared condition obtained at Step 9 - bare earth with no vegetation. To keep the area bare, the developer could consider using an approved herbicide. Or:
    b) Retain the reptile-proof fencing until development works are underway in the area concerned. If this option is chosen, the integrity of the reptile-proof fences will need to be checked regularly throughout the intervening period (ie daily or near-daily), and any breaks repaired within 24 hours. If undetected breaks occur for any length of time, the affected area (or compartment) will need to be trapped out again by repeating Steps 5-9 above.

    Maintenance of the site in a cleared and reptile-proof condition is really only critical during the reptiles' active period, since recolonisation is not likely to occur during the winter months. Therefore if a site has been cleared of reptiles in summer prior to development in winter, the reptile-proof fences can be removed (or allowed to deteriorate) once the hibernation period has begun (ie after about the end of October). If the start of development is subsequently delayed beyond the end of the hibernation period, however, (ie after about the end of March) it may be necessary to reinstall the fences, or even re-trap the site.

    The site can be re-opened to reptiles by removing the fencing after all construction works are complete.

Catching Methods

The use of refugia at high densities (100/ha) can be very effective for collecting slow-worms. However, other species are less readily found under refugia, and can be much more difficult to catch. 'Noosing' of common lizards whilst sunning on refugia can be effective, but requires skill and is very time-consuming. Snake catching is also a specialised skill, and carries health and safety implications. However, both snakes and common lizards tend to be more mobile than slow-worms, and are therefore more likely to reslake to the vegetation clearance and remove themselves from the trapping area where one-way fences make this possible.

Keeping Records

For trapping records, we recommend logging the date, time, weather conditions, temperature, minimum night temp (night before), species caught and location caught (a rough map would suffice, eg area A, B or C) and, if possible, the sex and age of the animals, and if gravid. Ideally a report of the trapping operation, in which all of the capture records are summarised and evaluated, should be prepared at the end of the operation and submitted to the NRW and/or the local authority ecologist. There is no obligation to do so, but the keeping of clear and unambiguous records may be essential in establishing that there was full and reasonable compliance with the law in the event of there being any challenge to the methods used.

When to Trap

Ideally clearance should begin as early as 1 April, with the aim of the site being cleared by the end of July. Clearance operations are less desirable later in the summer, since after about June there is the chance that juvenile animals will also be present, which as well as being extremely difficult to see and catch, may also significantly increase the number of animals on the site.

Post-development Monitoring

In addition to the above, we would encourage the developer to put in place a scheme to monitor the effects of the development on the reptiles and to see if the mitigation has been successful. The design of any monitoring exercises should be discussed in advance with the NRW.

APPENDIX 5:

EXAMPLES OF NON-INTEGRATED BIRD BOXES FOR TREES AND BUILDINGS

Suspended Designs



Schwegler 1B
General box



Schwegler 2H open-front
'robin' box



Schwegler 5
'large owl' box



Schwegler 1CGA
'small owl' box



Schwegler 20
'starling' box



Schwegler 28 'kestrel' box



Schwegler 5KL 'nuthatch' box

Surface-mounted Designs



Schwegler 1MR general box



Vivara Pro open-front
'robin' box



Vivara Pro ova open-front
'robin' box



Vivara Pro 'starling' box



Vivara Pro 28/32mm
general box



Vivara Pro 28/32mm
oval general box

EXAMPLES OF SURFACE-MOUNTED BAT BOXES

Tree-mounted boxes



Schwegler 2F General Box



Schwegler 1FD Nursery Box



Schwegler 1FS Nursery Box (Large)



Schwegler 1FW Winter Box
(Very large box)



Schwegler 2FN
Noctule Box



Schwegler 2F DFP
Daubenton's Bat Box



Miramar General Box

Tree or building-mounted boxes



Schwegler 1FF General Box



Schwegler 1FQ Decorative Box



Schwegler 1FFH General Box



Schwegler 1FE



Vivara Woodstone Low Profile Box



NHBS Cavity Box
(Brown Long-Eared Bat Box)



NHBS Crevice Box



Beaumaris wall box

Photographs of the Site, Aug 2022



Coastal dunes, with lifeguard station



Coastal dunes – mobile dunes



Mobile dunes



Dunes becoming fixed



Sea buckthorn scrub



View to Rhych Point from dunes



Rhych Point, from lifeguard station



Rhych Point



Fixed dune & maritime grassland north of dunes



Remnant dune areas, north of main dunes



Remnant dunes and maritime grassland, north of dunes



Maritime grassland around Sandy Bay Bowl



Sandy Bay Bowl



Sandy Bay Bowl



Neutral/Maritime grasslands, becoming less rich to north



Semi-improved neutral/maritime grasslands to north



Neutral/maritime grassland in area north of dunes



Ditto, with scrubby bund



Semi-improved neutral grasslands to north



Ditto, becoming grass-dominated



Grass-dominated & less-rich neutral grassland in NE



Grass-dominated amenity neutral grasslands to north



Grass-dominated amenity neutral grasslands to north



Ditto



NE, inland site boundary with scrub & Virginia creeper



Abandoned ‘pleasure garden’



Abandoned ‘pleasure garden’



Ditto



Abandoned ‘pleasure garden’



Ditto



Abandoned ‘pleasure garden’



View into retail/amusement area, ‘Coney Beach’



'Coney Beach' retail/amusement areas



View into E Promenade/'Salt lake' carpark entrance



Area in car-park under development



Northern road edge, north of car-park



View into car-park from west



Ditto



Bund with slightly richer grassland & scrub to west



Western road verge, ornamental plantings on far side



Roundabout in NW of site



Ditto



A4106 Portway at western edge of site



Construction site-yard in SW of site



Construction site-yard



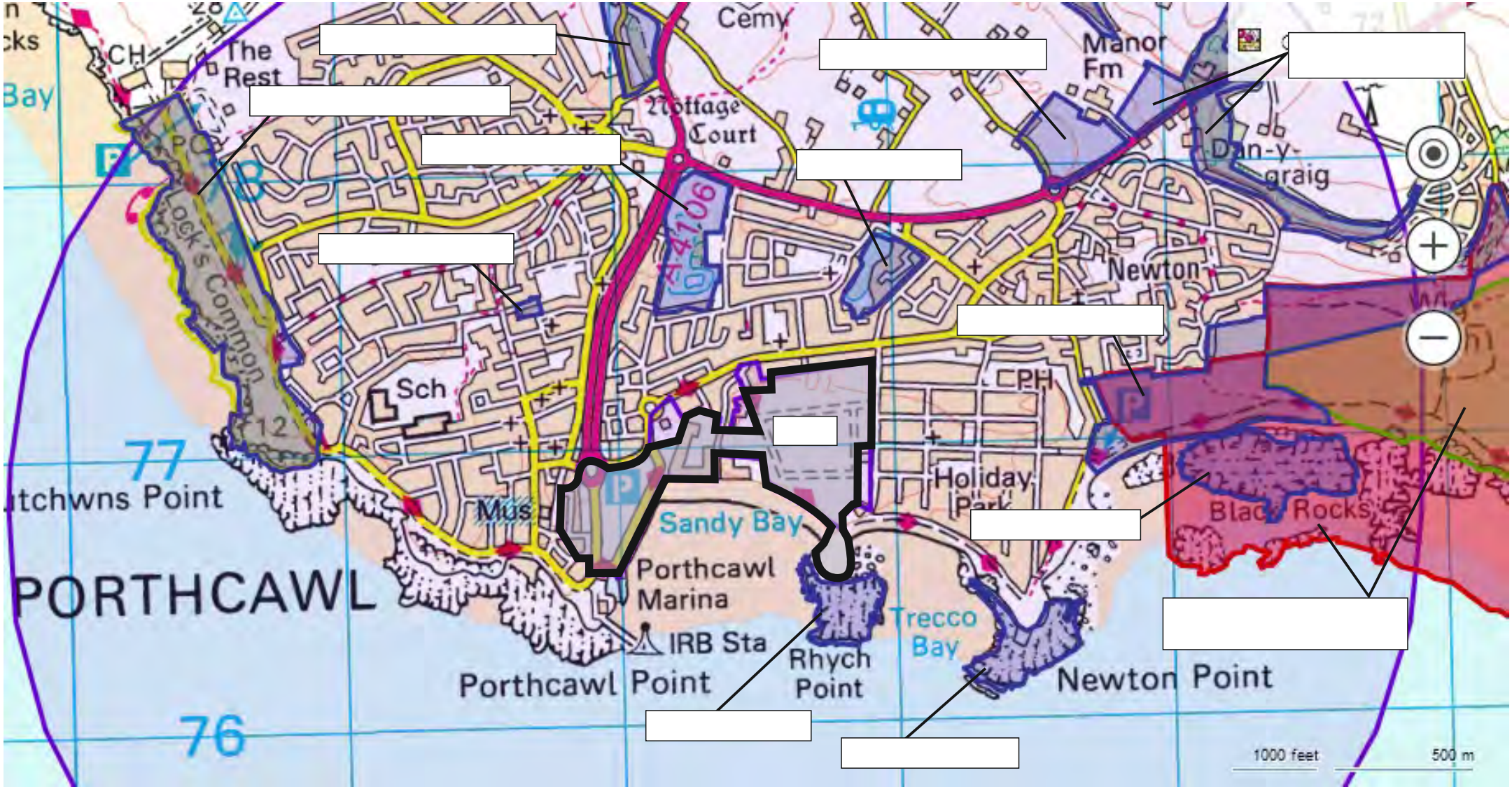
Ditto entrance off East Promenade Road



East Promenade Road, with new planters & surfaces

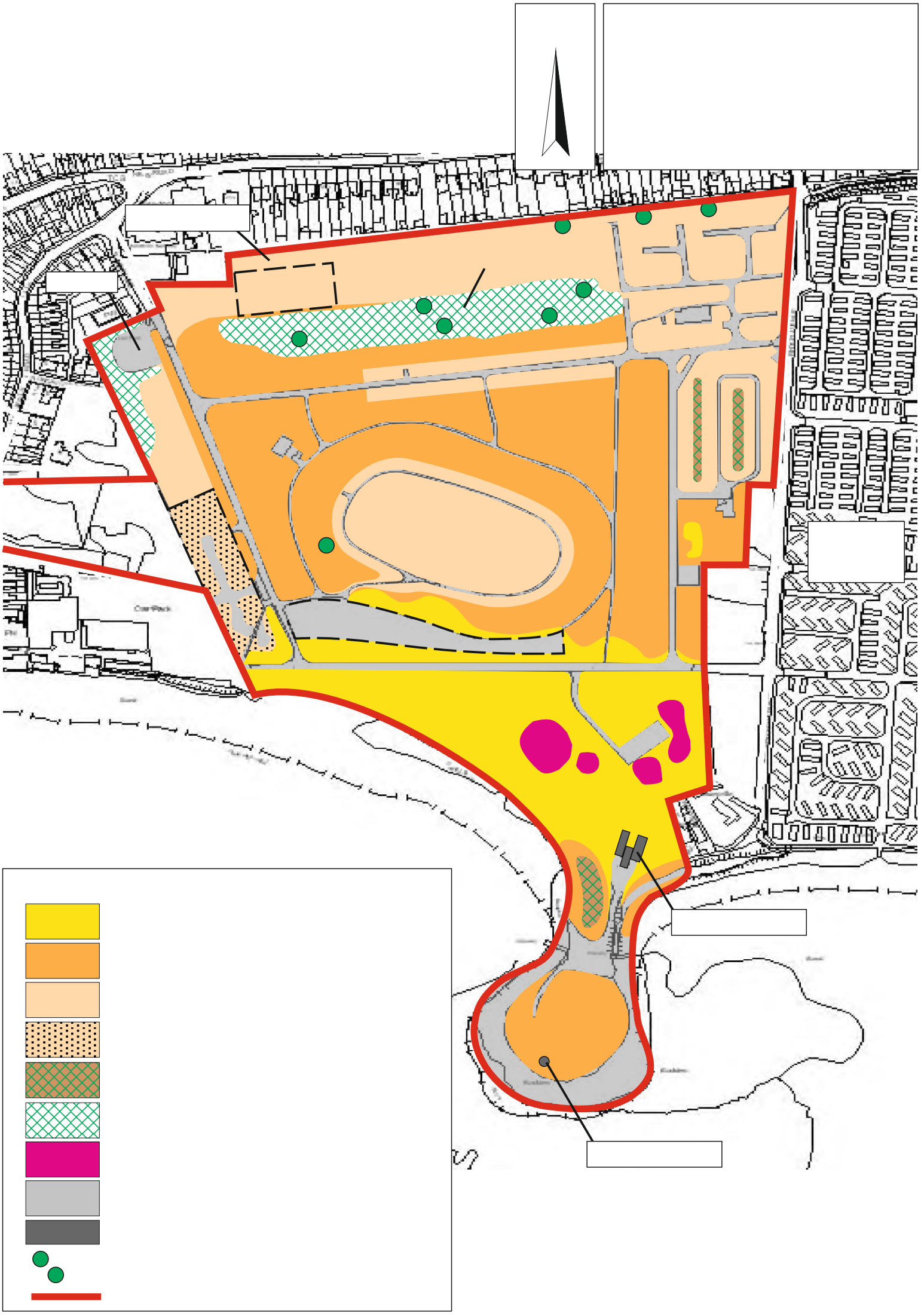


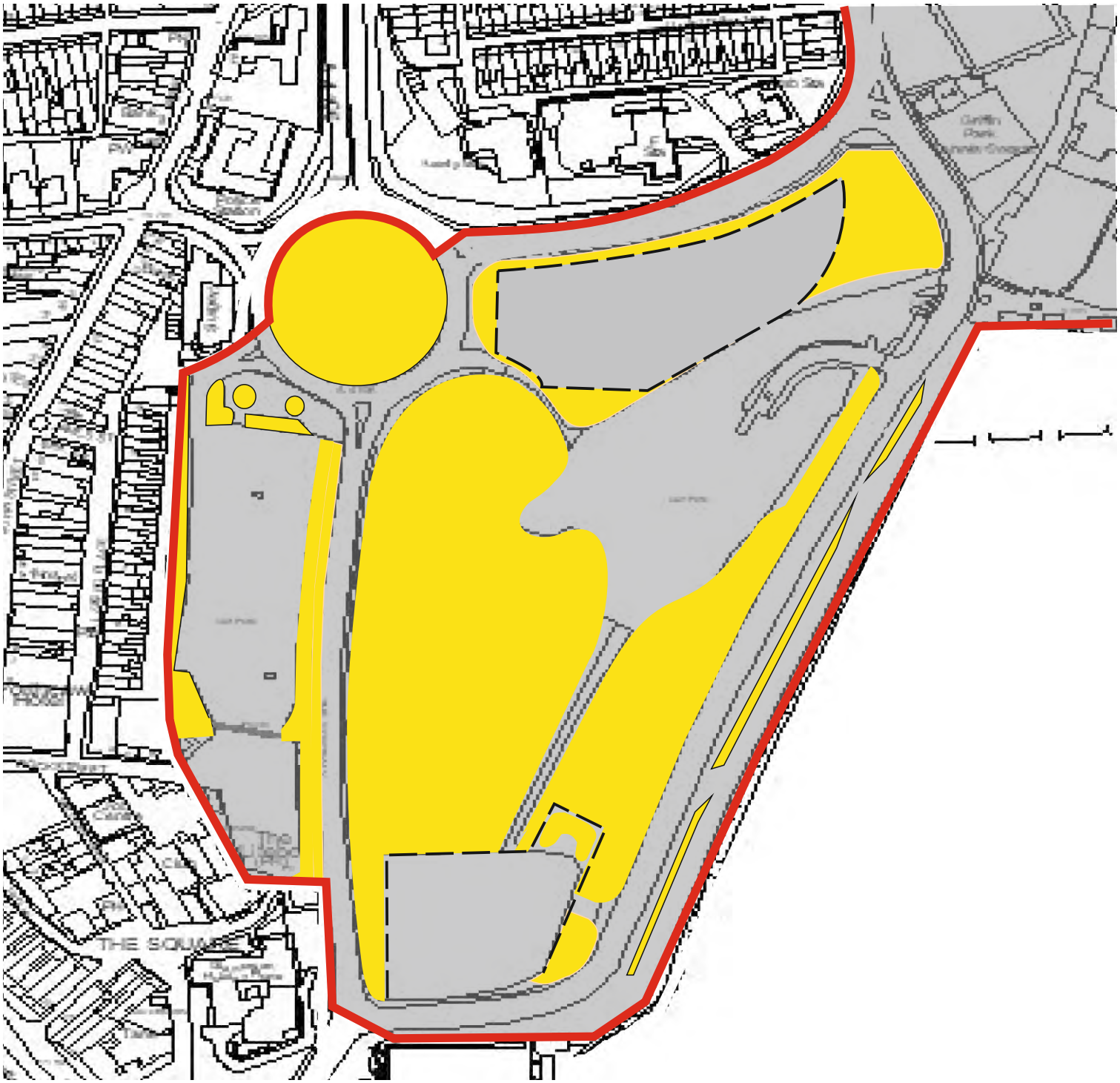
Ditto

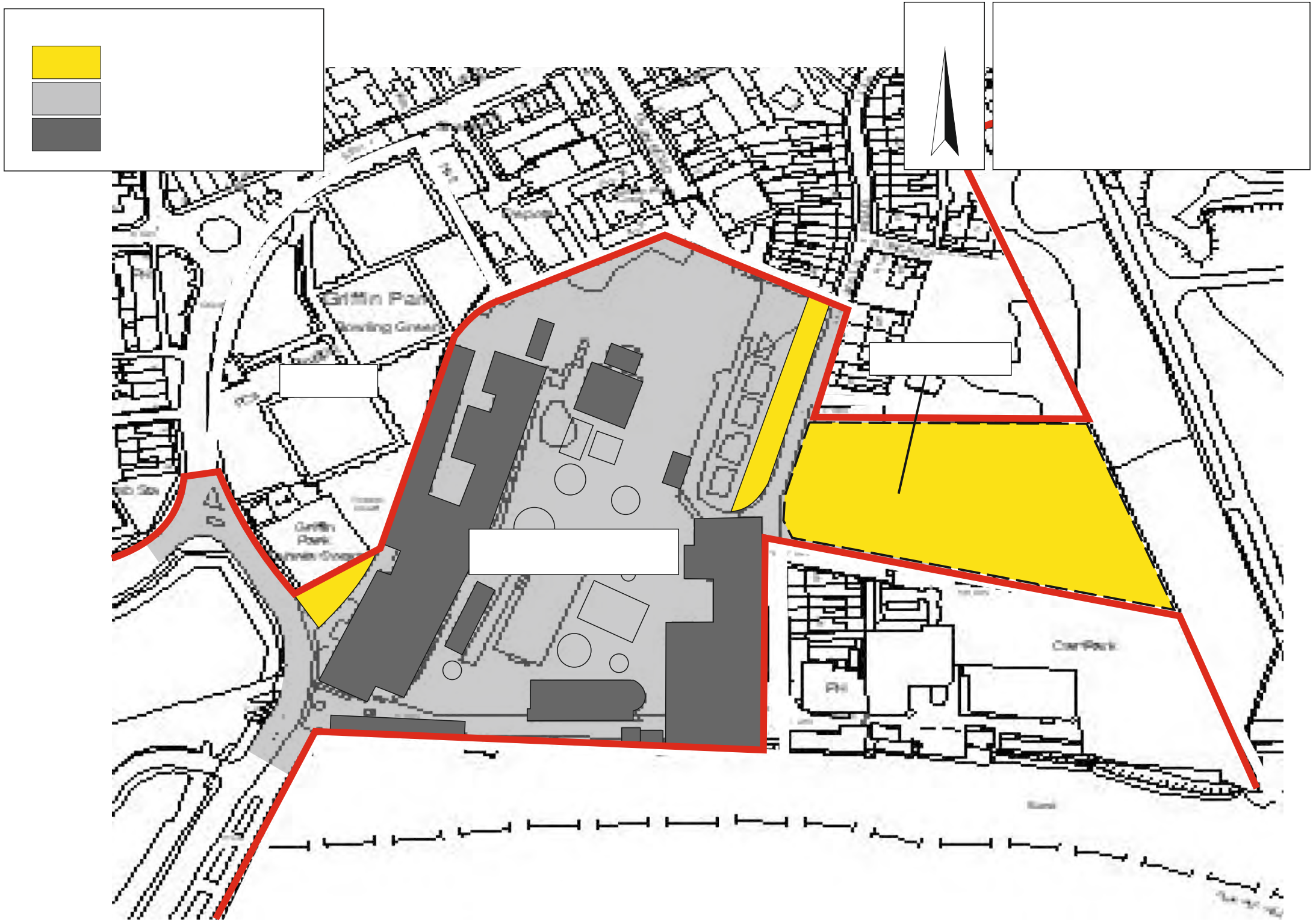

Cemy
The Rest
Manor Fm
Cottage Court
Dan-y-craig
Newton
Sch
PH
Holiday Park
Mus
Sandy Bay
Porthcawl Marina
IRB Sta
Porthcawl Point
Rhych Point
Trecco Bay
Newton Point
Black Rocks
Lock's Common
PORTHCAWL
77
76
1000 feet
500 m

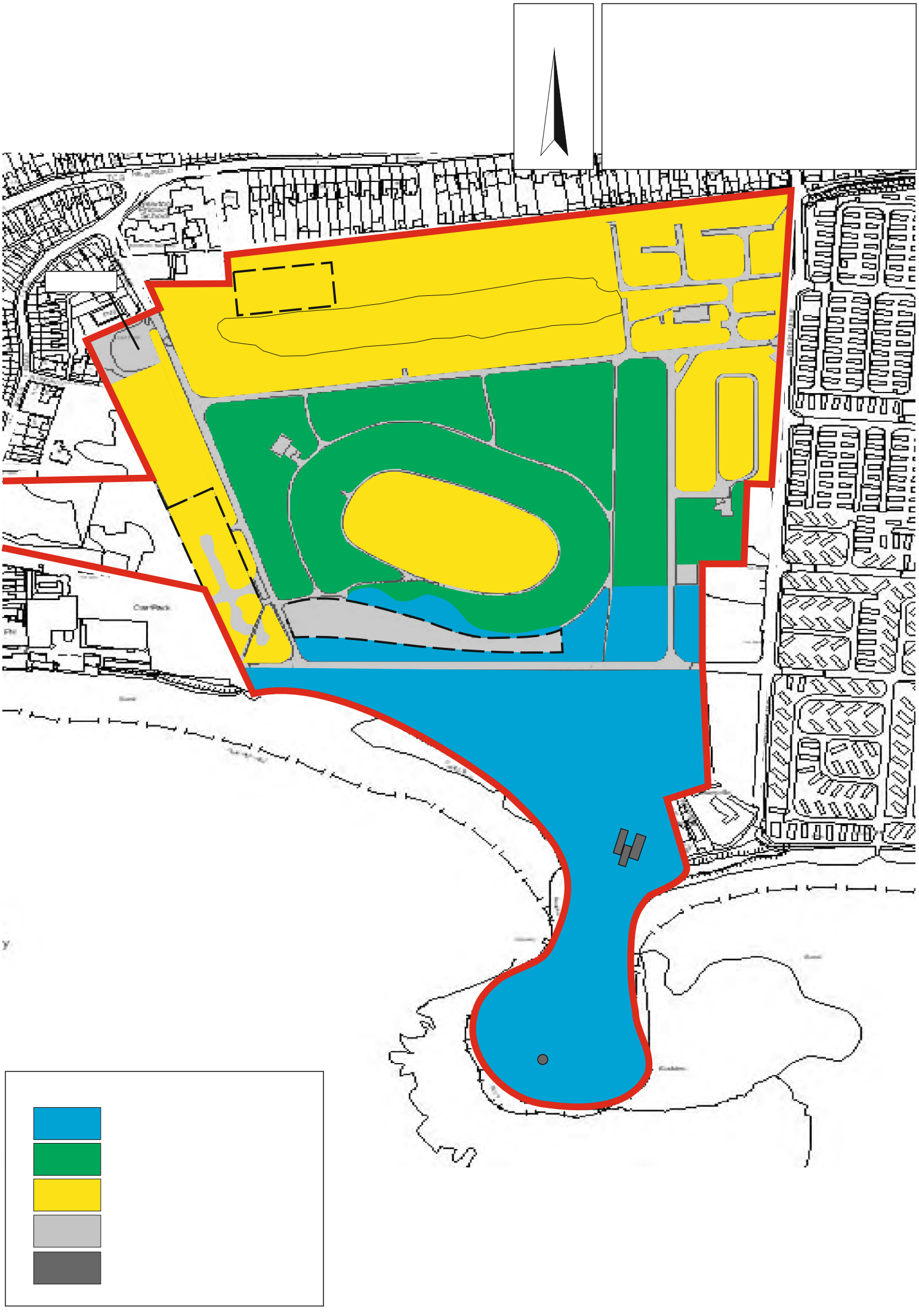

THE SQUARE


Griffin Park
Bowling Green
Griffin Park
Car Park
PH




THE SQUARE


Griffin Park
Griffin Park
PH



Appendix 9.3:

Site Photographs (2024-25)



1. Modified Grassland (Monster Park)



2. Modified Grassland (Sandy Bay Bowl) & Surrounding Other Neutral Grassland



3. Modified Grassland (North of Mound)



4. Modified Grassland (Salt Lake Car Park)



5. Modified Grassland (Griffin Park)



6. Other Neutral Grassland
(Surrounding Sandy Bay Bowl)



7. Other Neutral Grassland
(Rhych Point)



8. Other Woodland; Mixed
(Monster Park)



9. Urban Trees (Griffin Park)



10. Non-native & Ornamental Hedgerow (Griffin Park)



11. Mixed Scrub (Mound)



12. Mixed Scrub (Roundabout)



13. Pond (Monster Park)



14. Mobile Sand Dunes



15. Path Through Northern Edge of Sand Dunes



16. Peripheral Sand Dune Habitat (Southern Side of Sandy Bay Bowl)



17. Area of Sand Dunes with Sea Buckthorn Encroachment



18. Bare Sand (East of Sandy Bay Bowl)



19. Artificial Unvegetated Unsealed Surface (Salt Lake Car Park)



20. Fairground Buildings



21. Example Fairground Building Interior



22. Buccaneer Pub



23. Sandy Bay



24. Rocks off Rhych Point



25. New Sea Defences Frontage 1



26. New Sea Defences Frontage 2



27. New Sea Defences Frontage 3



28. New Sea Defences Frontage 4



29. New Sea Defences Frontage 5



30. New Sea Defences Frontage 6



31. Example Existing Lighting Along Sand Dunes Path

Appendix 9.4:

Remote Bat Survey Details

Remote Bat Survey Details (2025)

Note: greyed out lines in the table below represent nights in which weather conditions are assessed to be sub-optimal for bat survey (taken to be where there is persistent rainfall, excessively low temperatures and/or high winds).

Survey Period	Date	Overnight Temperature Range (˚C)[36]	Overnight Weather Conditions[37]
Apr-25	16/04/2025	5-22	Dry, clear, 9mph wind
Apr-25	17/04/2025	9-13	Light rain, passing clouds 11mph wind
Apr-25	18/04/2025	10-11	Light rain, overcast, 16mph wind
Apr-25	19/04/2025	7-15	Dry, clear, 13mph wind
Apr-25	20/04/2025	10-13	Dry, overcast, fog, 4mph wind
Apr-25	21/04/2025	10-13	Dry, clear, 11mph wind
Apr-25	22/04/2025	15-19	Light rain, overcast, 13mph wind
May-25	13/05/2025	13-25	Dry, clear, 9mph wind
May-25	14/05/2025	11-21	Dry, clear 10mph wind
May-25	15/05/2025	12-17	Dry, overcast, 10mph wind
May-25	16/05/2025	11-17	Dry, clear, 9mph wind
May-25	17/05/2025	9-17	Dry, clear, 9mph wind
May-25	18/05/2025	11-18	Dry, passing clouds, 9mph wind
May-25	19/05/2025	10-17	Dry, clear, 7mph wind
May-25	20/05/2025	20-26	Light rain, 7mph wind
Jun-25	04/06/2025	13-16	Light rain, 12mph wind
Jun-25	05/06/2025	14-15	Dry, passing clouds, 14mph wind

[36] Temperature range recorded from internal sensor on Anabat remote detector.
[37] Data from nearest weather station keeping historic weather records.

Jun-25	06/06/2025	12-16	Light rain, 9mph wind
Jun-25	07/06/2025	11-13	Dry, clear, 12mph wind
Jun-25	08/06/2025	15-16	Dry, passing clouds, 12mph wind
Jun-25	09/06/2025	15-17	Dry, overcast, 16mph wind
Jun-25	10/06/2025	11-17	Dry, clear, 7mph wind
Jun-25	11/06/2025	17-21	Dry, clear, 12mph wind
Jun-25	12/06/2025	16-18	Dry, cloudy, 11mph wind
Jun-25	13/06/2025	14-19	Light rain, 11mph wind
Jun-25	14/06/2025	15-17	Dry, partly cloudy, 12 mph wind
Jun-25	15/06/2025	16-18	Dry, cloudy, 11mph wind
Jun-25	16/06/2025	16-18	Dry, passing clouds, 10mph wind
Jun-25	17/06/2025	16-21	Dry, cloudy, 11mph wind
Jun-25	18/06/2025	24-36	Dry, clear, 8mph wind
Jul-25	08/07/2025	15-24	Dry, clear, 12mph wind
Jul-25	09/07/2025	17-21	Dry, clear, 8mph wind
Jul-25	10/07/2025	17-23	Dry, clear, 9mph wind
Jul-25	11/07/2025	18-25	Dry, clear, 5mph wind
Jul-25	12/07/2025	20-27	Dry, clear, 7mph wind
Jul-25	13/07/2025	20-25	Dry, partly cloudy, 12mph wind
Jul-25	14/07/2025	16-20	Dry, clear, 15mph wind
Jul-25	15/07/2025	17-19	Light rain, 21mph wind
Aug-25	05/08/2025	13-22	Dry, clear, 9mph wind
Aug-25	06/08/2025	17-20	Dry, clear, 8mph wind
Aug-25	07/08/2025	17-19	Dry, partly cloudy, 13mph wind
Aug-25	08/08/2025	18-20	Dry, cloudy, 10mph wind

Aug-25	09/08/2025	19-20	Dry, passing clouds, 11mph wind
Aug-25	10/08/2025	20-22	Dry, clear, 6mph wind
Sep-25	03/09/2025	15-22	Light rain, 14mph wind
Sep-25	04/09/2025	14-19	Dry, clear, 11mph wind
Sep-25	05/09/2025	17-19	Dry, clear, 8mph wind
Sep-25	06/09/2025	20-21	Dry, clear, 16mph wind
Sep-25	07/09/2025	18	Dry, passing clouds, 12mph wind
Sep-25	08/09/2025	15-17	Dry, clear, 9mph wind
Sep-25	09/09/2025	15-19	Light rain, 14mph wind
Sep-25	10/09/2025	15-17	Dry, passing clouds, 16mph wind
Sep-25	11/09/2025	13-16	Light rain, 19mph wind
Sep-25	12/09/2025	13-16	Dry, passing clouds, 14mph wind
Sep-25	13/09/2025	13-18	Dry, passing clouds, 11mph wind
Sep-25	14/09/2025	15-18	Light rain, 27mph wind
Oct-25	08/10/2025	10-21	Dry, clear, 9mph wind
Oct-25	09/10/2025	15-16	Dry, overcast, 6mph wind
Oct-25	10/10/2025	12-16	Dry, overcast, 4mph wind
Oct-25	11/10/2025	11-15	Dry, overcast, 7mph wind
Oct-25	12/10/2025	12-14	Dry, overcast, 12mph wind
Oct-25	13/10/2025	15-17	Dry, overcast, 9mph wind
Oct-25	14/10/2025	13-16	Dry, overcast, 9mph wind
Oct-25	15/10/2025	11-13	Dry, overcast, 8mph wind

Appendix 9.5a:

Reptile Survey Results (spring 2025)

Reptile Survey Results (spring 2025)

Survey period: 41 artificial reptile refugia set out on 8th April 2025. Refugia removed following the final survey.

Key: M = male, F = female, Ad = adult, SA = sub-adult.

Visit Date	Surveyors	Time		Temperature (°C)		Cloud Cover (%)	Slow Worm			Common Lizard		Grass Snake		Notes
		Start	Finish	Start	Finish		M	F	SA	Ad	SA	Ad	SA	
16/04/25	CT	9.14	10.00	5.5	10	80	1	2	0	0	1	0	0	1 common lizard found after the survey.
22/04/25	WF, SF	13:10	14:00	13	13	40	3	2	3	2	0	0	0	Sunny with a very light breeze.
02/05/25	BC	9:40	10:25	14	15	100-20	4	15	3	9	0	0	0	Slight mist at start with occasional hazy sun. Mist rapidly dispersed and by end of survey it was sunny and warm.
13/05/25	RB, GM	16:20	17:00	18	18	75	0	1	9	6	1	0	0	
14/05/25	RB, GM	9:15	9:45	15	15	0	2	0	3	6	1	0	0	1-2 wind warm and breezy.
20/05/25	BC	8:35	9:13	14	16	0	1	8	4	6	0	0	0	
20/05/25	SF	12:00	12:45	16	16	25	3	1	0	1	0	0	0	Excluded from reptile figure as carried out on same day as survey above (used as supplementary data only).
04/06/25	SF	11:25	12:05	14	15	70-80	4	12	0	5	1	0	0	Wet ground, rained mostly, partially sunny, fairly windy. 1 piece of refugia burnt.
18/06/25	CT	9:43	10:38	16	16	15	0	14	0	1	0	0	0	
20/06/25	BC	9:27	10:25	22	24	95	6	19	10	10	0	0	0	Cloudy to start, then hazy sun. Warm.
Maximum Site Counts (adults & sub-adults)							**35**			**10**		**0**		

Appendix 9.5b:

Reptile Survey Results (autumn 2025)

Reptile Survey Results (autumn 2025)

Survey period: 220 artificial reptile refugia set out on 19th August 2025. Refugia removed following the final survey.

Key: M = male, F = female, Ad = adult, Juv = juvenile.

Visit Date	Surveyors	Time		Temperature (°C)		Cloud Cover (%)	Slow Worm			Common Lizard		Grass Snake		Notes
		Start	Finish	Start	Finish		M	F	Juv	Ad	Juv	Ad	Juv	
03/09/25	SF	8:54	14:35	16	18	50-100	4	1	0	16	11	0	0	Intermittent heavy downpours, approx. 40 refugia tins had been removed and needed re-instating.
09/09/25	CT	9:02	11:40	14	17	50-85	0	6	0	26	0	0	0	A few drops of rain in the last moments of the survey. 25 mats missing or moved.
10/09/25	GM	8.30	12.15	15	16	100	0	1	2	20	0	0	0	Raining for the first hour then drops of rain thereafter. 20 mats missing.
15/09/25	CT, SF	13:06	14:36	16	17	60	0	8	4	62	17	0	0	Very windy throughout survey
17/09/25	CT, SF	10:40	12:10	17	17	100	1	1	2	18	0	0	0	Yellow weather warning: rain and strong wind through survey.
19/09/25	CT	8:32	11:30	17	17	95-100	1	0	1	11	3	0	0	Humid and grey, not optimal conditions, wind low (1).
22/09/25 (AM)	SF	8:05	11:23	10	13	10-20	1	5	0	13	4	0	0	Little to no wind.
22/09/25 (PM)	SF	14:24	17:35	15	15	10	4	7	2	19	12	0	0	Little to no wind.
23/09/25	SF	9:00	12:31	11	13	10-20	0	1	2	10	4	0	0	Windy (2/5).
24/09/25	WF	12.30	14:35	15	17	80	2	6	2	15	13	0	0	Wind 2-3bf, overcast with some wind at the start, the sun came out in the second half.
26/09/25	WF	9:46	11:41	11	15	5	0	2	0	7	2	0	0	Wind 1-3bf, Cool breeze with tins warming up at the start, sunny.

Visit Date	Surveyors	Time		Temperature (°C)		Cloud Cover (%)	Slow Worm			Common Lizard		Grass Snake		Notes
		Start	Finish	Start	Finish		M	F	Juv	Ad	Juv	Ad	Juv	
29/09/25	CT	8:49	11:38	9	14	10-40	0	1	0	20	0	0	0	Sunny throughout.
08/10/25	GM,CT,FC	9.00	15.00	14	14	30-60	0	0	0	10	0	0	0	Common lizard skin under an additional mat. Survey undertaken during mat collection.
Maximum Site Counts (adults only)							**11**			**62**		**0**		

Appendix 9.6a:

Great Crested Newt Habitat Suitability Index Results (2025)

Great Crested Newt Habitat Suitability Index Results (2025)

Index	Offsite Pond A	
	Value	Notes
Site Location	0.5	Zone B
Pond Area (m^2)	0.06	Approx $30m^2$
Pond Permanence	0.9	Never Dries
Water Quality	0.67	Moderate
Shade (% Perimeter)	0.2	100% Shade
Impact of Water Fowl	1	Absent
Fish Presence	0.67	Possible (though unlikely)
Ponds Within 1km Radius (and without barriers to movement)	0.1	0 Ponds (minimum value)
Terrestrial Habitat	0.67	Moderate (only good within Monster Park)
Macrophytes (% Cover)	0.3	None
Overall HSI Value (product of 10 values)$^{0.1}$ & Suitability for Great Crested Newts	**0.37**	**Poor**

Appendix 9.6b:

Great Crested Newt eDNA Survey Results (2025)

PRIVATE & CONFIDENTIAL

eDNA Technical Report

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The Old Parlour
Little Baldon Farm

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E: bioscan@bioscanuk.com

Report Reference	R0000781
Report Date	29 Apr 2025
Reported By	hbelcher

Dispatch Order Reference	P0000590						
Site Name	Porthcawl P1						
Site Location	Porthcawl P1						
Barcode	**Received Date**	**Sampled Date**	**Sample Check**	**Degradation Check**	**Inhibition Check**	**Result**	**Positve Replicates**
gcN009354	23/04/2025	22/04/2025	PASS	PASS	PASS	NEGATIVE	0 out of 12

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Cellmark is a registered name of Orchid Cellmark Ltd Registered in England No. 4045527. Registered Office: 16 Blacklands Way, Abingdon, Oxon OX14 1DY

eDNA Technical Report

SUMMARY

The water samples listed in the tables above were submitted to Cellmark for environmental DNA (eDNA) testing for the presence of Great Crested Newt (GCN; *Triturus cristatus*) DNA. The laboratory testing was carried out in compliance with the guidelines described in WC1067: Analytical and methodological development for improved surveillance of The Great Crested Newt (version 1.1)

INTERPRETATION OF THE RESULTS

Barcode	Each kit is given a unique sample barcode. A kit and the six sample tubes contained within it are labelled with the same sample barcode. This allows Cellmark to track where each kit has been sent and to track the samples through the laboratory once they have been returned.
Site Name	The name of the sampling site.
OS Reference	Ordnance Survey grid reference: the location of the pond.
Sample Check	Upon receipt in the laboratory, the 6 sample tubes are scored for sample volume, leakage, damage and for the presence of sediment, algae and other debris within the sample tubes. They are scored as 'PASS' or 'FAIL'. Samples that fail at this stage may not be suitable for further processing.
Degradation Check	A control marker is spiked into the sample tubes during the kit manufacturing process. This marker is analysed for degradation and reported as 'DEGRADED' or 'PASS'.
Inhibition Check	Some substances (inhibitors) can cause the GCN assay to give a negative result despite the presence of GCN DNA. An assay is performed to determine whether inhibitors are present in the eDNA extract. If inhibition is detected, steps are taken to mitigate the effects on the GCN detection assay. The degradation assay is reported as 'INHIBITED' or 'PASS'.
Result	Results are reported as 'POSITIVE', 'NEGATIVE' or 'INCONCLUSIVE'. A positive result indicates that there is evidence that Great Crested Newts are present or have recently been present in the pond. If no GCN DNA is detected, a negative result is reported. The results are deemed inconclusive if we do not detect the presence of GCN DNA and there is an indication that something in the sample is interfering with the analysis (inhibition or degradation).
Positive Replicates	A single eDNA extract is produced for each pond. The extract is then analysed to detect the presence of GCN DNA. A total of 12 replicates of this analysis is performed per eDNA extract. If at least 1 of the replicates is positive for the presence of GCN DNA, the pond is declared positive for the presence of Great Crested Newts.

METHODOLOGY

Upon arrival in the laboratory, the 6 sample tubes are checked for sample volume, leakage and any other damage. The samples are also inspected for macroscopic debris. Based on the outcome of this inspection, the decision is made as to whether the sample is suitable for further processing. Samples that have passed this inspection step are centrifuged. The resulting pellets (containing the eDNA) from each tube are then combined. The eDNA is then isolated (extracted) from the combined pellet.

Inhibitors, more specifically PCR inhibitors, are substances in the eDNA sample which may be co-isolated with the DNA and which interfere with eDNA detection assays. All eDNA extracts are tested for the presence of inhibitors. When a sample has been shown to be inhibited and the results of the GCN detection assay are negative, we cannot be sure whether the sample is truly negative for GCN DNA or that the inhibitors have prevented the GCN assay from working correctly. In this scenario, the result is reported as inconclusive.

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eDNA Technical Report

The ability to detect a control marker that has been spiked into the sample tubes during the kit manufacturing process is also tested. If this marker cannot be detected, it suggests that that DNA in the sample has been degraded. Some possible causes of degradation can be the conditions under which the sample has been stored (eg exposure to high temperatures or UV from excessive sunlight) or contamination with substances that destroy DNA. If the control DNA is not detected but the GCN detection assay is positive for GCN, then the sample is reported as positive for GCN DNA. However, if neither the control DNA nor GCN DNA is detected, the sample is reported as inconclusive because we cannot know whether there was any GCN DNA present in the sample but it was degraded prior to analysis.

The GCN detection assay targets a portion of the GCN mitochondrial DNA. This assay is detailed in WC1067 Analytical and Methodological Development for Improved Surveillance of The Great Crested Newt (version 1.1). This assay specifically detects GCN DNA. If GCN DNA is detected in at least 1 of the 12 replicate GCN detection assays, the sample is reported as positive for the presence of GCN. A technique called quantative PCR (qPCR) is used in the inhibition, degradation and GCN detection assays to detect specific regions of DNA. Positive and negative controls are used in each of the assays and these have to give the expected results in order for the sample to be declared positive or negative for GCN DNA.

Cellmark participates in the FERA proficiency testing scheme and achieved 100% in the 2021 test. Driven by quality, Cellmark has held international ISO quality certification since 1990. Cellmark provides a range of laboratory testing services accredited to ISO 17025 and although delivered to the same exacting quality standards, Cellmark's eDNA service is not yet included on the scope of its ISO 17025 accreditation. Cellmark is certified to ISO 9001, ISO 14001 and to ISO 27001.

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Appendix 9.7:

Invertebrate Survey Report (2025)

INVERTEBRATE SURVEY OF A SITE AT PORTHCAWL



MARK G. TELFER

11TH SEPTEMBER 2025

THIS REPORT WAS PRODUCED FOR BIOSCAN (UK) LTD.

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Dr Mark G. Telfer: I am one of the foremost entomological consultants in Britain, freelancing since 2005 and working throughout Britain and Ireland. I cover all terrestrial, freshwater and coastal habitats, specialising in brownfield sites, coastal sites, woodlands, ancient parklands, orchards and heathlands. I am well-known for the breadth of my taxonomic coverage, as well as for my specialist knowledge of beetles and bugs.



This report should be quoted as:
Telfer, M.G. (2025). *Invertebrate survey of a site at Porthcawl*. Report to Bioscan (UK) Ltd.

Cover photograph: dunes at Porthcawl, looking towards Rhych Point.

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1 Summary

- This report describes a general invertebrate survey of a site at Porthcawl, based on fieldwork carried out on 24th to 25th June 2025.
- Samples were collected from across the range of habitats present, using a wide range of manual sampling techniques.
- 170 species of invertebrate were identified from a very wide range of groups.
- 11 species from the list of 170 are here regarded as accurately-rated 'Key Species' (i.e., with rare, scarce, threatened or near threatened conservation status), comprising 6.47% of the total.
- 2 species from the list of 170 are here regarded as accurately-rated 'Rare Key Species' (i.e., with rare or threatened conservation status), comprising 1.18% of the total.
- Pantheon analysis showed that the open dune and sandy grassland habitats are the most important for invertebrates, supporting a fairly high quality assemblage of 'short sward & bare ground' species, including a high quality subset of 'bare sand & chalk' species.
- The evidence indicates that the Porthcawl survey area is of county importance overall for invertebrate conservation, i.e. of importance for invertebrate conservation within the Bridgend County Borough.
- The key areas of invertebrate habitat are the sand dunes, the adjacent barer and more sparsely-vegetated areas of sandy grassland, and the grassland on Rhych Point. A sketch map is provided.
- Recommendations are made for favourable management and enhancement of retained areas of sand dune and sandy grassland.

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2 Introduction

The author was commissioned to carry out a general invertebrate survey of a site at Porthcawl based on two days of fieldwork over the course of a single visit.

2.1 THE SURVEY AREA

The survey area covers an area of land around Sandy Bay, Porthcawl, in the Bridgend County Borough of Wales. The extent of the survey area is approximately indicated by the red outline in Figure 1. It lies in the grid squares SS8176, SS8276 and SS8277 and in the vice-county of Glamorganshire (VC 41).



Figure 1: The survey area is approximately delimited by the red line. Map data ©2025 Imagery ©2025 Airbus, Bluesky, Infoterra Ltd & COWI A/S, Maxar Technologies.

The survey area encompasses a wide range of habitats. A small area of natural sand dunes lies adjacent to the north-east beach of Sandy Bay (Figure 2; see also cover photograph).

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Figure 2: Dunes at Porthcawl, looking towards Rhych Point.

Due north of the dunes, there is a large area of sandy grassland, with a network of metalled tracks, formerly a caravan site. This area has been landscaped, with the oval of the Sandy Bay Bowl being a prominent feature, as well as a large east-west bund towards the northern end of the site. Within the sandy grassland area, habitats vary from bare, disturbed ground, with early-successional and ruderal vegetation (Figure 3, Figure 4), through areas of continuous grassland sward and into dense mature scrub.

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Figure 3: Bare, sandy ground within the sandy grassland area.



Figure 4: Sparsely-vegetated sandy ground on the south slope of the Sandy Bay Bowl. Dwarf Elder in the foreground.

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Extending southwards from the dunes is an area of artificially made ground on Rhych Point, supporting well-established, moderately herb-rich grassland (Figure 5) and coastline habitats.



Figure 5: Grassland on Rhych Point, with a patch of Pyramidal Orchids.

The eastern sector of the survey area is narrowly connected to the western sector by the Pleasure Gardens, a derelict area of landscaped garden reverting to natural scrub and woodland, with remnant exotic trees and shrubs, and small surviving areas of open, sandy grassland habitat (Figure 6).

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Figure 6: A view of the Pleasure Gardens.

West of the Pleasure Gardens, the survey area supports relatively little greenspace; there is a roundabout, a car park, some road verge and other interstitial spaces within the built environment. Habitats include species-poor amenity grassland (Figure 7), planted shrubberies, and some areas of tall-herb ruderal vegetation.

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Figure 7: A view of the greenspace in the west of the survey area.

2.2 PREVIOUS INVERTEBRATE SURVEY AND RECORDING

David Clements Ecology Ltd conducted an ecological survey of the same survey area in 2020, updating the survey in 2022 (Clements, 2023). Invertebrate survey was not part of the scope of the Clements (2023) survey work, but a small number of common and widespread invertebrates were noted, and the report mentions four butterflies, a moth and a grasshopper. The report notes that: "It is very likely that the maritime fringe, dune habitats and better quality neutral/ maritime grasslands within the site support specialist coastal species of moths, solitary bees, beetles and other invertebrates, possibly including some rare and local species." Coming from an entomologist of David Clements' standing, this is an assessment that carries considerable weight.

2.3 DEVELOPMENT PROPOSALS

It is understood that the proposals are for a regeneration scheme, including for the provision of up to 1,100 new homes and up to 24 hectares of open space for use by the public and future residents.

2.4 AIMS

In view of the varied habitats present within the survey area, and their potential to support invertebrate species or assemblages of conservation importance, an invertebrate survey was required.

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The area of sand dunes and the adjacent areas of more open, sandy grassland to the north were required to be the principal focus of survey effort, with a secondary focus on the wider area of sandy grassland, the habitats on Rhych Point, and the Pleasure Gardens.

The aims of the survey were:

- to assess the potential of the habitats and habitat features present on the site for invertebrates by visual assessment, and
- to make an assessment of the actual quality of the habitats and habitat features by sampling invertebrates.

3 Methods

3.1 FIELDWORK TIMING, WEATHER AND CONSTRAINTS

The single fieldwork visit was carried out over the two days, 24th to 25th June 2025, arriving in the late morning of 24th and departing in the mid-afternoon of 25th.

Invertebrate activity is significantly affected by the weather, which can seriously diminish the effectiveness of some sampling techniques. The morning of 24th June started with light rain, which stopped by about 11:00, though the vegetation remained wet for the rest of the day in dull, overcast conditions, with temperatures of 17 – 18 °C, and 18 – 20 mph winds from the south-west. The morning of 25th June also started with light rain, to about 10:00, drizzling thereafter, and remaining overcast, with temperatures of 17 – 18 °C, and lighter winds (8 - 10 mph) from the west.

Invertebrate survey work was somewhat hampered by the wet conditions. Although direct observation and ground-searching were always practical, and reasonably productive, sweep-netting was only possible in short spells, with the net soon becoming sodden. Fortunately, ground conditions dried up sufficiently for the suction sampler to be deployed from about midday on 25th, which enabled some much more productive sampling to be carried out.

3.2 SAMPLING TECHNIQUES

A range of techniques was used, as appropriate, to sample for invertebrates (Table 1). These sampling techniques are described in further detail by Drake *et al.* (2007).

Throughout the time in the field, direct observation was used to generate records while walking between sampling points, etc., this being a particularly effective way to record butterflies and other conspicuous day-flying insects.

Table 1: Techniques employed on this survey to record invertebrates, and their target groups and target habitats.

Technique	Target groups	Target habitats
Ground-searching, turning over stones, logs, etc. and hand-searching through vegetation and plant litter.	A wide range of ground-living invertebrates, particularly beetles (Coleoptera) and bugs (Heteroptera), ants (Hymenoptera: Formicidae) woodlice (Isopoda) and molluscs.	All open habitats.

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Technique	Target groups	Target habitats
Suction-sampling.	As for ground-searching but particularly effective for finding some of the smaller, well-hidden or well-disguised species living on the ground and in the sward.	All open habitats.
Sweep-netting with a stout canvas net.	Beetles and bugs and many other invertebrates.	All vegetated habitats, paying particular attention to potential food-plants and to nectar and pollen sources.
Spot-netting, with a 'butterfly net'.	A similar fauna to that captured by sweep-netting, but this technique is targeted at flies (Diptera) and bees and wasps (aculeate Hymenoptera) which rapidly escape the canvas sweep-net.	Dunes, grassland and open habitats.
Direct observation.	Bees, wasps, flies, butterflies and moths (Lepidoptera), grasshoppers and crickets (Orthoptera), dragonflies (Odonata), etc.	All habitats, paying particular attention to nectar and pollen sources.

3.3 IDENTIFICATION

Where practical, invertebrates were identified in the field but wherever the slightest doubt existed, one or more specimens were collected, or photographs taken, for more detailed scrutiny. To achieve rigorously accurate identifications, specimens were identified using the surveyor's own library and entomological collection. Selected specimens have been retained in the surveyor's personal collection as vouchers.

3.4 ANALYSIS

3.4.1 Key Species

To assess the importance of a site for invertebrate conservation, the number and percentage of rare or scarce species found may be calculated. Sites of greater importance support higher percentages of rare or scarce species, and this percentage is a useful starting point for assessing the overall importance of a site, in comparison to other sites surveyed using similar techniques.

A standard definition of 'rare or scarce' is essential to allow a fair comparison to be made between sites. For the analyses in this report, species were only included which have been assigned an official rare or scarce conservation status as defined in the box below, and all such species are here called 'Key Species'.

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Conservation status categories of invertebrates

A system of conservation statuses has been in use since the British Red Data Book for insects (Shirt, 1987), amended and supplemented by a series of JNCC Nature Conservation reviews. By this system, the rarest and most threatened British species are given one of the Red Data Book (RDB) statuses. Species which do not qualify as RDB but are nonetheless uncommon are given one of the Nationally Scarce statuses. The status categories and criteria of this first version are defined in Appendix 1.1.

A second version of British conservation statuses published in the Species Status series from Natural England and Natural Resources Wales is now gradually replacing the first version. For butterflies, dragonflies, water beetles and several other groups, the most up-to-date British conservation statuses are based on the International Union for Conservation of Nature (IUCN) Red List categories and criteria (IUCN, 2001). This system places less emphasis on rarity and more on factors which suggest a risk of extinction (such as severe declines in range or population). The status categories and criteria of this second version are defined in Appendix 1.2.

A third version of British conservation statuses operates in parallel with the second and is a very simplified version of the first, having just two categories: Nationally Rare or Nationally Scarce. This version is defined in Appendix 1.3.

Key Species are here defined as Red Data Book and Nationally Scarce species from version 1, Threatened, Near Threatened and Data Deficient species from version 2, and Nationally Rare or Nationally Scarce species from version 3.

The Key Species may be further divided into **Rare Key Species** (here defined as Red Data Book species from version 1, Threatened and Data Deficient species from version 2, and Nationally Rare species from version 3) and **Scarce Key Species** (the remainder).

There are frequent examples of invertebrates which have been given a conservation status and have subsequently been found to be more widespread and abundant. This may arise either as a result of an actual increase in range or population size, or as a result of improved understanding by entomologists of how to find or identify them. Where the official conservation status is regarded as being out of date, this is indicated in the Key Species results (Section 4.3) and is taken into account in the survey area assessment (Section 5).

3.4.2 Pantheon

Pantheon is an analytical tool developed by Natural England and the Centre for Ecology & Hydrology to assist invertebrate nature conservation in England. Users import lists of invertebrates into Pantheon, which can then be used to analyse the species, attaching associated habitats and resources, conservation statuses and other data against them. Pantheon has been available online since April 2018 at: http://www.brc.ac.uk/pantheon/.

Some of the most informative outputs of Pantheon are the calculations of Species Quality Index (SQI). To calculate the SQI for a list of species, all species are first allocated one of five Species Quality Scores (1, 4, 8, 16 or 32), with the common and widespread species scoring 1 and the most endangered species scoring 32 (https://pantheon.brc.ac.uk/content/scoring-systems). SQI is then calculated by summing the Species Quality Scores, dividing the total by the number of species, and multiplying by 100. For example, if a survey recorded 46 species, and the sum of their 46 Species Quality Scores was 106, the average Species Quality Score

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would be 2.30 (= 106/46) and the SQI would be 230, derived by multiplying that average by 100.

SQI values based on small species lists may be strongly biased if the list contains species with high Species Quality Scores. For this reason, Pantheon advises against using any SQI value based on a list of fewer than 15 species. Where 15 or more species of an assemblage have been recorded, the assemblage may be said to be 'well represented', and the SQI value is presented.

3.4.3 Assessing the importance of the survey area

Natural England's pamphlet *Organising surveys to determine site quality for invertebrates: a framework guide for ecologists* (Anon., 2005) advises that 'A survey should classify a site as one of the following:

1 Little/ no importance,

2 Local/ county importance,

3 Regional importance,

4 National importance,

5 European importance'.

4 Results

4.1 Overall results

The survey recorded 170 species of invertebrate in total (Appendix 2).

Invertebrates were identified from a very wide range of groups, including woodlice, spiders, springtails, earwigs, bush-crickets, grasshoppers, psyllids, froghoppers, leafhoppers, planthoppers, bugs, beetles, ants, bees, wasps, flies, moths, butterflies and snails. A more comprehensive and targeted approach was taken to the recording of beetles (Coleoptera, with 71 species recorded), and bugs and hoppers (Hemiptera: Heteroptera and Auchenorrhyncha, 35 species), collectively forming 62% of the total species list.

4.2 Species of Principal Importance

'Species of Principal Importance' or 'SPI' are here defined as species of principal importance for the purpose of conserving biodiversity in Wales, covered under Section 7 of the Environment (Wales) Act 2016, and which need to be taken into consideration by any public body when performing its functions, with a view to conserving biodiversity.

Three SPI were recorded by this survey (Table 2), all three of which are moths in the 'research only' category of SPI. They are all common and widespread, but rapidly declining, moths which were added to the UK Biodiversity Action Plan in the 2007 review, for research action only. They have subsequently been added to the successor lists (Section 41 of the Natural Environment and Rural Communities Act 2006 in England, and Section 7 of the Environment (Wales) Act 2016) and are regarded as retaining their 'research only' status on those lists. Conservation action for these 'research only' species is focused on further research rather than protection of individual sites.

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Table 2: The moth Species of Principal Importance recorded by this survey.

Family	**Species (scientific name)**	**Species (English name)**	**SPI Status**
Lasiocampidae	*Malacosoma neustria*	Lackey	S7 (research only)
Erebidae	*Arctia caja*	Garden Tiger	S7 (research only)
Erebidae	*Tyria jacobaeae*	Cinnabar	S7 (research only)

4.3 KEY SPECIES RESULTS

Amongst the 170 species recorded by this survey, 14 species are here regarded as Key Species (using the criteria defined in Section 3.4.1). These 14 species comprise 8.24% of the total species list of 170, and are listed in Table 3.

Within the 14 Key Species, there were 2 Rare Key Species. These 2 species comprise 1.18% of the total species list of 170.

Species accounts for both of the Rare Key Species are provided in Section 4.5.

As mentioned in Section 3.4.1, there are frequent examples of invertebrate conservation statuses which have become out of date and inaccurate, which could cause substantial bias in Key Species analysis. Table 3 indicates which species should be regarded as having Out Of Date and inaccurate ('OOD') conservation statuses, based on information in Pantheon, supplemented with the author's personal knowledge.

Of the 14 Key Species recorded by this survey, three are here regarded as having out of date and inaccurate statuses. The remaining 11 Key Species should be regarded as having accurate conservation statuses, though some of these are borderline cases where there is evidence of a sustained upward trend in range and/or abundance.

If the Key Species with out of date and inaccurate conservation statuses are taken into account by the analysis, this survey recorded 6.47% Key Species (11 out of 170) and 1.18% Rare Key Species (2 out of 170).

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Table 3: The Key Species recorded by this survey. The two Rare Key Species are listed first, ahead of the Scarce Key Species, and then the species are listed in taxonomic order within each category. Species which are here regarded as having Out Of Date and inaccurate ('OOD') conservation statuses are indicated.

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status	OOD?
Insecta	Coleoptera	Scarabaeidae	*Psammodius asper*	a dung beetle	NT, NR	
Insecta	Lepidoptera	Lasiocampidae	*Malacosoma neustria*	Lackey	VU, S7 (research only)	
Arachnida	Araneae	Lycosidae	*Xerolycosa miniata*	a spider	LC, NS	
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	*Euscelis ohausi*	a leafhopper	Nationally Scarce (Nb)	
Insecta	Hemiptera: Heteroptera	Rhopalidae	*Liorhyssus hyalinus*	a rhopalid bug	LC, NS	
Insecta	Coleoptera	Carabidae	*Harpalus anxius*	a ground beetle	LC, NS	
Insecta	Coleoptera	Mordellidae	*Mordellistena parvula*	a tumbling flower-beetle	LC, NS	
Insecta	Coleoptera	Apionidae	*Catapion pubescens*	a weevil	Nationally Scarce (Nb)	✓
Insecta	Coleoptera	Curculionidae	*Calosirus terminatus*	a weevil	Nationally Scarce (Nb)	
Insecta	Coleoptera	Curculionidae	*Tychius pusillus*	a weevil	Nationally Scarce (Nb)	✓
Insecta	Hymenoptera: Aculeata	Formicidae	*Myrmica schencki*	an ant	Nationally Scarce (Nb)	
Insecta	Diptera	Tephritidae	*Acanthiophilus helianthi*	a picture-winged fly	Nationally Scarce	
Insecta	Diptera	Tachinidae	*Cistogaster globosa*	a parasitic fly	NT (Falk, Pont & Chandler, 2005)	✓
Insecta	Lepidoptera	Erebidae	*Arctia caja*	Garden Tiger	NT, S7 (research only)	

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4.4 PANTHEON RESULTS

The list of 170 species was entered into Pantheon. Two taxa were unmatched in Pantheon's species dictionary, so Pantheon processed a list of 168 species, of which 153 were covered by Pantheon's analysis tools. Pantheon's conservation status information and Species Quality Scores were found to be out of date for several species, which may affect the reliability of its output.

Within the subset of 153 species, a single Broad Biotope was well represented (with 15 or more species): 125 species were regarded as 'open habitats' species, representing 3% of the national assemblage.

Pantheon only assigns 10 of the Key Species to the 'open habitats' Broad Biotope. Three of the remainder are unassigned in Pantheon though they may confidently also be assigned to 'open habitats'. The last species, the Lackey moth (see Section 4.5.2 below) is assigned to the 'arboreal' Broad Biotope in Pantheon but it inhabits open, sunny hedgerows and other shrubby situations, which are in the intersection of the 'arboreal' and 'open habitats' Broad Biotopes. Thus, all 14 of the Key Species may be regarded as belonging to the assemblage of 'open habitats' species.

The Pantheon Species Quality Index for the 'open habitats' Broad Biotope was 128, which is indicative of an assemblage of rather low quality.

The 'open habitats' Broad Biotope may be further subdivided, and Pantheon's analysis of the subsets yields further insight. The 'open habitats' Broad Biotope includes two well-represented subsets:

the 'tall sward & scrub' subset is larger (with 73 species) but of very low quality (SQI = 112). In comparison, the 'short sward & bare ground' subset was formed of only 51 species, but was of fairly high quality (SQI = 151). The 'short sward & bare ground' subset includes a further well-represented subset of 'bare sand & chalk', formed of 16 species and of high quality (SQI = 181).

These results clearly indicate not just that the open dune and sandy grassland habitats are the most important for invertebrates at Porthcawl, but also that the shorter, sparser swards are especially important, and the greatest importance lies in the areas of bare and sparsely-vegetated sand.

4.5 RARE KEY SPECIES ACCOUNTS

Species accounts are provided here for each of the Rare Key Species, describing the ecology and distribution of the species in Britain, and whether the species should be regarded as having out of date and inaccurate conservation statuses. This is followed by details of their occurrence during the current survey. Accounts are presented in the same order as in Table 3.

4.5.1 *Psammodius asper* (Coleoptera: Scarabaeidae), a dung beetle, NT, NR

Although this species belongs to the family of dung beetles, it is not usually associated with dung, feeding instead on detritus within the soil, though it has been recorded in association with a rabbit midden. It is a rare and declining species, recently known from five dune systems (in Lancashire, Pembrokeshire, Glamorganshire, North Devon and North Lincolnshire) and from the coastal sand and shingle of Dungeness, East Kent, as well as a

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smaller scatter of inland sites (Lane and Mann, 2016). It inhabits bare or sparsely-vegetated, sandy places.

On the current survey, one was found by excavating a surface burrow (Figure 8) in the bare, sandy depression within the sandy grassland area, shown in Figure 3.



Figure 8: The line of slightly raised, drier (and thus paler) sand indicates the presence of a burrow; in this case of *Psammodius asper*.

4.5.2 *Malacosoma neustria* (Lepidoptera: Lasiocampidae), Lackey, VU, S41 (research only)

The Lackey is still a common and widespread moth in lowland Britain, more so in southern Britain, but extending into Scotland. The population has been in a steep and ongoing decline (Fox *et al.*, 2019), which has resulted in its Vulnerable (VU) conservation status. The caterpillars feed on a wide range of broad-leaved trees and shrubs, including hawthorns and Blackthorn, and the adult moths may be found in a wide range of habitats which are open and sunny by day while being close to trees and shrubs.

On the current survey, one of the distinctive caterpillars (Figure 9) was seen in the sparsely-vegetated area on the south side of the Sandy Bay Bowl (Figure 4). The Lackey appears still to be a widespread and common species in coastal Glamorgan (https://glamorganmoths.org.uk/moths/1650).

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Figure 9: A caterpillar of the Lackey moth at the Porthcawl site.

4.6 OTHER NOTEWORTHY SPECIES

4.6.1 *Gonatopus albosignatus* (Hymenoptera: Aculeata: Dryinidae), a solitary wasp

Members of the family Dryinidae are small, solitary wasps, often known as 'pincer wasps' due to the female's possession of a conspicuous pincer on her front tarsus, used for grabbing hoppers (Auchenorrhyncha) before laying an egg. Dryinid larvae develop as parasitoids on the host hopper.

Gonatopus albosignatus appears to be a rare species in Britain, albeit this is a poorly-known family, with records from 13 different 10-km squares[1] mapped by the Bees, Wasps and Ants Recording Society (https://bwars.com/wasp/dryinidae/gonatopus-albosignatus), and only three of those from the period since 2005. The known distribution includes Porthcawl, where it was recorded by H.M. Hallett on 3rd July 1927 (Perkins, 1976), and two other 10-km squares on the South Wales coast.

On the current survey, a female was found by ground-searching within the yellow dunes on 24th June.

5 Survey area assessment

This survey area assessment is based on a list of 170 species which is a good total for a survey visit which equated to about a day and a half of fieldwork, though the total would undoubtedly have been higher in more favourable weather conditions (see 'constraints', Section 3.1). It is considered that the survey has generated a good set of data from which to make an accurate assessment of the survey area.

14 Key Species were found, comprising 8.24% of the 170 species found by this survey in total. Compared to other sites which the author has surveyed under comparable circumstances and which are proposed for development (i.e., excluding surveys of nature reserves and other sites in nature conservation management), the figure of 8.24% is high,

[1] i.e., a 10 × 10 km square of the British national grid.

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rather higher than the mean of 5.71% (standard deviation = 3.67, sample size = 102). Taken alone, this statistic suggests that the survey area is likely to be a site of county importance for invertebrate conservation.

Two Rare Key Species were found, comprising 1.18% of the 170 species found by this survey in total. Compared to other sites which the author has surveyed under comparable circumstances and which are proposed for development, the figure of 1.18% is fairly high, higher than the mean of 0.89% (standard deviation = 1.03, sample size = 102). A fairly high percentage of Rare Key Species indicates a site which supports a fairly high proportion of nationally important species, and thus a site which may be important for invertebrate conservation beyond the county scale. However, considering the detailed information about each of the Rare Key Species in their species accounts (Section 4.5), it would be reasonable to conclude that the Porthcawl survey area may play a nationally important part in the conservation of the dung beetle *Psammodius asper*, but is only of local importance for its population of the Lackey moth *Malacosoma neutria*.

The list of Key Species from the survey area includes a typical proportion (3 species out of 14; 21.4%) of those with conservation statuses which have become out of date and inaccurate. Excluding those three species, and conducting the Key Species analysis for just the accurately-rated Key Species, yields a decrease in the percentage of Key Species (11 out of 170; 6.47%) and no change in the percentage of Rare Key Species (2 out of 170; 1.18%). These less biased figures are indicative of a site of county importance for invertebrate conservation, which may be important beyond the county scale.

Pantheon analysis indicated that the survey area supports a high quality assemblage of 'bare sand & chalk' species, amongst a fairly high quality assemblage of 'short sward & bare ground' species.

Drawing all these lines together, the evidence indicates that the survey area is of county importance, i.e. of importance for invertebrate conservation within the Bridgend County Borough. This importance is strongly concentrated in the relatively small area of dunes and in the adjacent areas of sandy grassland.

5.1 KEY HABITATS: DUNES AND THE BARER AND MORE SPARSELY-VEGETATED AREAS OF SANDY GRASSLAND

All of the Key Species recorded by this survey were found within the area shaded magenta in Figure 10. This area encompasses all of the sand dune habitat, characterised by the presence of Marram Grass *Ammophila arenaria*. It extends southwards to include the habitats on Rhych Point which was the only part of the survey area where three of the Key Species were recorded: the leafhopper *Euscelis ohausi*, the picture-winged fly *Acanthiophilus helianthi*, and the Garden Tiger moth *Arctia caja*. It also extends northwards and inland to include the adjacent sandy grassland areas which include a mosaic of bare and sparsely-vegetated ground within the more closed grassland sward, from which the following Key Species were recorded:

- the dung beetle *Psammodius asper*,
- Lackey moth *Malacosoma neustria*,
- the spider *Xerolycosa miniata*,
- the ground beetle *Harpalus anxius*,

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- the tumbling flower-beetle *Mordellistena parvula*,
- the weevil *Catapion pubescens*,
- the weevil *Tychius pusillus*, and
- the ant *Myrmica schencki*.

The bare, sandy depression ringed in Figure 10 and shown in Figure 3 was a particular hotspot of invertebrate quality within the survey area, yielding the Nationally Rare dung beetle *Psammodius asper* as well as other Key Species.

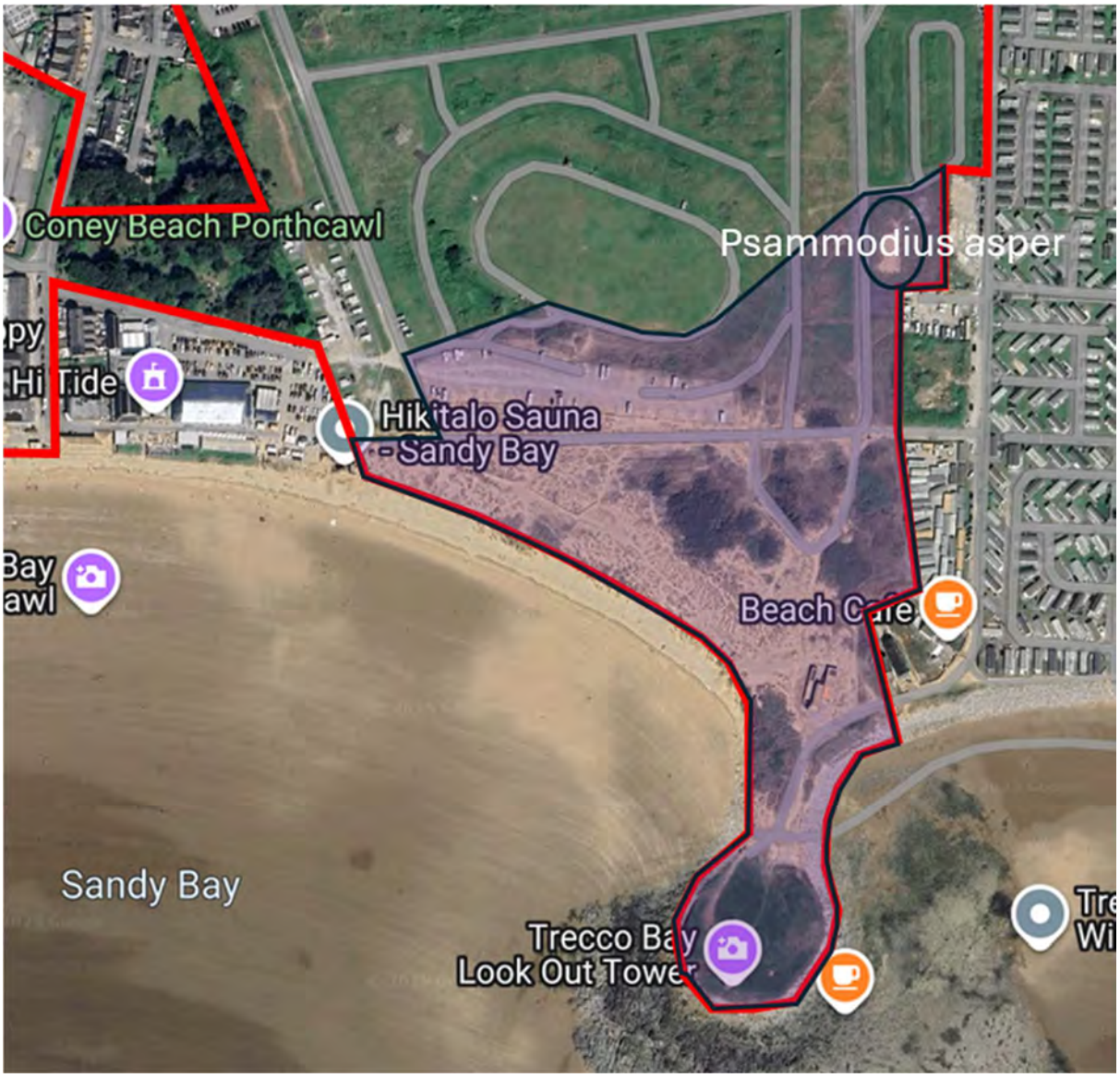


Figure 10: The areas of key habitat are indicated (shaded in magenta) as well as the high quality patch of bare sand (ringed) where the dung beetle *Psammodius asper* was found.
Map data ©2025 Imagery ©2025 Airbus, Bluesky, Infoterra Ltd & COWI A/S, Maxar Technologies.

6 Recommendations

In view of the importance of the Porthcawl survey area for invertebrates at the county scale, it is recommended that the development proposals should aim to minimise impacts on the invertebrate species and assemblages of importance.

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It is recommended that the area of key habitat for invertebrates (shaded magenta in Figure 10) should be retained as far as possible in the development proposals.

There is considerable scope for favourable management and enhancement of the retained habitat:

1. Footfall through dunes can detrimentally erode and break up the vegetation cover but can be managed by providing boardwalks along the most frequently used desire lines, and by using low fences to funnel pedestrians and inhibit access into more undisturbed areas. Low fencing has already been used very effectively within the existing dune area to create some areas which are subject to very low footfall.
2. Sand dunes and sandy grassland are habitats of inherently low nutrient status, where the regular addition of nutrients from dog faeces can have particularly detrimental impacts. The provision of dog waste bins, with appropriate signage (e.g., 'please clean up after your dog to protect the wildlife of the dunes'), and perhaps with patrols and enforcement, is recommended.
3. Sea-buckthorn *Hippophae rhamnoides* is considered to be a native plant of Britain only on the coasts of eastern England, south-eastern Kent and Northumberland (https://plantatlas2020.org/atlas/2cd4p9h.c45). In the dunes at Porthcawl, Sea-buckthorn is non-native and is detrimental to invertebrates by colonising and over-shading native dune vegetation. Sea-buckthorn should be eradicated, mechanically removing as much of the plant and its roots as possible and disposing of the arisings off site by chipping or burning. Follow-up monitoring and action will be required over the ensuing years to remove and treat any seedlings or regrowth.

Areas of greenspace within the proposed development should be created and managed as open grassland habitat, which may enable them to support some of the same invertebrate species and assemblages which currently survive in the dunes and sandy grassland. The planting of any trees, shrubs or hedges within the proposed development should be avoided, as this would create a damper, more shaded habitat, unsuitable to those invertebrates.

Further information and advice on the conservation management of sand dunes may be obtained from the website of the Dynamic Dunescapes project (https://dynamicdunescapes.co.uk/), and from the Sand Dune Managers Handbook (Denning *et al*., 2024; https://dynamicdunescapes.co.uk/wp-content/uploads/2024/09/Sand-Dunes-Managers-Handbook_WEB.pdf).

7 Acknowledgement

I would like to thank Geoff Moxon for arranging this survey.

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Appendix 1: British Conservation Status Categories – Definitions.

1.1 Status Categories and Criteria Version 1 (Shirt, 1987)

These status categories and criteria were introduced for British insects by Shirt (1987) and received some modifications by later authors (e.g., Hyman and Parsons (1992, 1994)). The most recent application of these categories and criteria was for micro-moths by Davis (2012).

Red Data Book category EXTINCT (RDB Extinct)

Definition Species which were formerly native to Britain but have not been recorded since 1900.

Red Data Book category 1, Endangered (RDB1)

Definition Species in danger of extinction and whose survival is unlikely if causal factors continue to operate. Endangered species either (a) occur as only a single population within one 10-km square, or (b) only occur in especially vulnerable habitats, or (c) have been declining rapidly or continuously for twenty years or more to the point where they occur in five or fewer 10-km squares, or (d) may already have become extinct.

Red Data Book category 2, Vulnerable (RDB2)

Definition Species which are likely to move into the Endangered category in the near future if causal factors continue to operate. Vulnerable species are declining throughout their range or occupy vulnerable habitats.

Red Data Book category 3, Rare (RDB3)

Definition Species which occur in small populations and although not currently either Endangered or Vulnerable are at risk. Rare species exist in 15 or fewer 10-km squares, or are more widespread than this but dependent on small areas of especially vulnerable habitat.

Red Data Book category I, Indeterminate (RDBi)

Note: Best written as ‘RDBi’ rather than ‘RDBI’ as the latter is easily confused with ‘RDB1’ (Endangered).

Definition Species considered to be either Endangered, Vulnerable or Rare but with insufficient information to say which.

Red Data Book category K, Insufficiently Known (RDBK)

Definition Species suspected to merit either Endangered, Vulnerable, Rare or Indeterminate status but lacking sufficient information. Species included in this category may have only recently been discovered in Britain, or may be very poorly recorded for a variety of reasons.

Nationally Scarce Category A (Na)

Definition Species which do not fall within Red Data Book categories but which are nonetheless uncommon in Great Britain and thought to occur in 30 or fewer (typically between 16 and 30) 10-km squares of the National Grid, or for less well-recorded groups, in seven or fewer vice-counties.

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Nationally Scarce Category B (Nb)

Definition Species which do not fall within Red Data Book categories but which are nonetheless uncommon in Great Britain and thought to occur in between 31 and 100 10-km squares of the National Grid, or for less well-recorded groups, between eight and twenty vice-counties.

Nationally Scarce (N)

Definition Species which do not fall within Red Data Book categories but which are nonetheless uncommon in Great Britain. This status category has been used where information has not been sufficient to allocate a species to either Na or Nb. These species are thought to occur in between 16 and 100 10-km squares of the National Grid.

Note: the terms 'Nationally Scarce' and 'Nationally Notable' are synonymous. For consistency in this report, the term 'Nationally Scarce' is preferred, even where the original source used 'Nationally Notable'.

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1.2 Status Categories and Criteria Version 2 (IUCN, 2001)

These later status categories and criteria are based on IUCN Red List Categories and Criteria version 3.1 (IUCN, 2001) and have been applied to British butterflies, dragonflies, water beetles and several other invertebrate groups.

Critically Endangered (CR)

A taxon is Critically Endangered when the best available evidence indicates that it is facing an **extremely high** risk of extinction in the wild.

Endangered (EN)

A taxon is Endangered when the best available evidence indicates that it is facing a **very high** risk of extinction in the wild.

Vulnerable (VU)

A taxon is Vulnerable when the best available evidence indicates that it is facing a **high** risk of extinction in the wild.

N.B.: Species belonging to the above three categories may be collectively referred to as **Threatened**.

Data Deficient (DD)

A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate.

The DD category effectively replaces the Indeterminate (RDBi) and Insufficiently Known (RDBK) categories of the earlier version.

Near Threatened (NT)

A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

Least Concern (LC)

A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.

Not Applicable (NA)

A taxon is Not Applicable when it is either regarded as a non-native in Britain or occurs solely as a natural vagrant.

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1.3 Status Categories and Criteria Version 3 (GB Rarity Status)

These status categories and criteria operate in parallel with version 2 and are defined specifically for use in Britain where they provide some continuity with version 1, allowing the continued use of “rare and scarce” species for site assessment purposes.

Nationally Rare (NR)

Native species which have not been recorded from more than 15 British hectads in recent decades and where there is reasonable confidence that exhaustive recording would not find them in more than 15 hectads. This category includes species which are probably extinct.

Nationally Scarce (NS)

Native species which are not regarded as Nationally Rare AND which have not been recorded from more than 100 British hectads in recent decades and where there is reasonable confidence that exhaustive recording would not find them in more than 100 hectads.

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Appendix 2: List of invertebrates recorded at Porthcawl in 2025 by Mark G. Telfer

Key Species and Section 41 species are listed in red text. The table is in taxonomic sequence. Full details of all records generated by the survey are held in a computer database by the author that may be consulted if required to provide further information such as precise localities, grid references, dates, quantity, sex and life-stage.

Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status
Malacostraca	Isopoda	Platyarthridae	*Platyarthrus hoffmannseggii*	Ant Woodlouse	LC
Malacostraca	Isopoda	Armadillidiidae	*Armadillidium vulgare*	Common Pill-woodlouse	LC
Arachnida	Araneae	Theridiidae	*Enoplognatha ovata sens. str.*	a spider	LC
Arachnida	Araneae	Linyphiidae	*Erigone dentipalpis*	a spider	LC
Arachnida	Araneae	Linyphiidae	*Erigone atra*	a spider	LC
Arachnida	Araneae	Araneidae	*Mangora acalypha*	a spider	LC
Arachnida	Araneae	Lycosidae	*Xerolycosa miniata*	a spider	LC, NS
Arachnida	Araneae	Pisauridae	*Pisaura mirabilis*	a spider	LC
Collembola	Symphypleona	Sminthuridae	*Sminthurus viridis*	a springtail	None
Insecta	Dermaptera	Forficulidae	*Forficula auricularia*	Common Earwig	LC
Insecta	Orthoptera	Phaneropteridae	*Leptophyes punctatissima*	Speckled Bush-cricket	LC
Insecta	Orthoptera	Acrididae	*Chorthippus brunneus*	Field Grasshopper	LC
Insecta	Orthoptera	Acrididae	*Chorthippus parallelus*	Meadow Grasshopper	LC
Insecta	Hemiptera: Sternorrhyncha	Psyllidae	*Craspedolepta nervosa*	a psyllid	None
Insecta	Hemiptera: Auchenorrhyncha	Aphrophoridae	*Philaenus spumarius*	a froghopper	None
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	*Megophthalmus scanicus*	a leafhopper	None
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	*Anaceratagallia frisia*	a leafhopper	None
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	*Anoscopus histrionicus*	a leafhopper	None

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Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	*Psammotettix nodosus*	a leafhopper	None
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	*Euscelis incisus*	a leafhopper	None
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	*Euscelis lineolatus*	a leafhopper	None
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	*Euscelis ohausi*	a leafhopper	Nationally Scarce (Nb)
Insecta	Hemiptera: Auchenorrhyncha	Cicadellidae	*Mocydiopsis attenuata*	a leafhopper	None
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	*Kelisia sabulicola*	a planthopper	None
Insecta	Hemiptera: Auchenorrhyncha	Delphacidae	*Muirodelphax aubei*	a planthopper	None
Insecta	Hemiptera: Heteroptera	Tingidae	*Acalypta parvula*	a lacebug	None
Insecta	Hemiptera: Heteroptera	Miridae	*Deraeocoris flavilinea*	a mirid bug	None
Insecta	Hemiptera: Heteroptera	Miridae	*Closterotomus norwegicus*	a mirid bug	None
Insecta	Hemiptera: Heteroptera	Miridae	*Apolygus lucorum*	a mirid bug	None
Insecta	Hemiptera: Heteroptera	Miridae	*Miridius quadrivirgatus*	a mirid bug	None
Insecta	Hemiptera: Heteroptera	Miridae	*Phytocoris varipes*	a mirid bug	None
Insecta	Hemiptera: Heteroptera	Miridae	*Leptopterna ferrugata*	a mirid bug	None
Insecta	Hemiptera: Heteroptera	Miridae	*Notostira elongata*	a mirid bug	None
Insecta	Hemiptera: Heteroptera	Miridae	*Stenodema laevigata*	a mirid bug	None
Insecta	Hemiptera: Heteroptera	Miridae	*Amblytylus nasutus*	a mirid bug	None
Insecta	Hemiptera: Heteroptera	Miridae	*Macrotylus paykulli*	a mirid bug	None
Insecta	Hemiptera: Heteroptera	Miridae	*Plagiognathus chrysanthemi*	a mirid bug	None
Insecta	Hemiptera: Heteroptera	Nabidae	*Nabis ferus*	Field Damsel-bug	None
Insecta	Hemiptera: Heteroptera	Anthocoridae	*Orius majusculus*	a flower bug	None
Insecta	Hemiptera: Heteroptera	Berytidae	*Berytinus signoreti*	a stiltbug	None

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Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status
Insecta	Hemiptera: Heteroptera	Lygaeidae	*Cymus glandicolor*	a ground-bug	None
Insecta	Hemiptera: Heteroptera	Lygaeidae	*Plinthisus brevipennis*	a ground-bug	None
Insecta	Hemiptera: Heteroptera	Lygaeidae	*Trapezonotus arenarius*	a ground-bug	None
Insecta	Hemiptera: Heteroptera	Lygaeidae	*Megalonotus chiragra*	a ground-bug	None
Insecta	Hemiptera: Heteroptera	Coreidae	*Coriomeris denticulatus*	Denticulate Leatherbug	LC
Insecta	Hemiptera: Heteroptera	Rhopalidae	*Liorhyssus hyalinus*	a rhopalid bug	LC, NS
Insecta	Hemiptera: Heteroptera	Rhopalidae	*Chorosoma schillingii*	a rhopalid bug	LC
Insecta	Hemiptera: Heteroptera	Pentatomidae	*Aelia acuminata*	Bishop's Mitre Shieldbug	LC
Insecta	Hemiptera: Heteroptera	Pentatomidae	*Dolycoris baccarum*	Hairy Shieldbug	LC
Insecta	Coleoptera	Carabidae	*Calathus mollis*	a ground beetle	LC
Insecta	Coleoptera	Carabidae	*Amara convexior*	a ground beetle	LC
Insecta	Coleoptera	Carabidae	*Amara tibialis*	a ground beetle	LC
Insecta	Coleoptera	Carabidae	*Harpalus anxius*	a ground beetle	LC, NS
Insecta	Coleoptera	Carabidae	*Syntomus foveatus*	a ground beetle	LC
Insecta	Coleoptera	Leiodidae	*Liocyrtusa vittata*	a beetle	None
Insecta	Coleoptera	Staphylinidae	*Tachyporus nitidulus*	a rove-beetle	LC
Insecta	Coleoptera	Staphylinidae	*Tachyporus pusillus*	a rove-beetle	LC
Insecta	Coleoptera	Staphylinidae	*Amischa analis*	a rove-beetle	None
Insecta	Coleoptera	Staphylinidae	*Mocyta fungi agg.*	a rove-beetle	None
Insecta	Coleoptera	Staphylinidae	*Falagrioma thoracica*	a rove-beetle	None
Insecta	Coleoptera	Staphylinidae	*Stenus binotatus*	a rove-beetle	None
Insecta	Coleoptera	Staphylinidae	*Ocypus brunnipes*	a rove-beetle	LC
Insecta	Coleoptera	Staphylinidae	*Tasgius ater*	a rove-beetle	LC
Insecta	Coleoptera	Scarabaeidae	*Psammodius asper*	a dung beetle	NT, NR
Insecta	Coleoptera	Scarabaeidae	*Anomala dubia*	Dune Chafer	LC
Insecta	Coleoptera	Elateridae	*Adrastus pallens*	a click-beetle	None
Insecta	Coleoptera	Cantharidae	*Rhagonycha fulva*	a soldier-beetle	LC
Insecta	Coleoptera	Dermestidae	*Anthrenus verbasci*	Varied Carpet Beetle	NA

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Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status
Insecta	Coleoptera	Nitidulidae	*Meligethes aeneus*	Common Pollen Beetle	None
Insecta	Coleoptera	Nitidulidae	*Meligethes planiusculus*	a pollen beetle	None
Insecta	Coleoptera	Phalacridae	*Olibrus affinis*	a beetle	LC
Insecta	Coleoptera	Phalacridae	*Stilbus testaceus*	a beetle	LC
Insecta	Coleoptera	Coccinellidae	*Rhyzobius litura*	a ladybird	None
Insecta	Coleoptera	Coccinellidae	*Scymnus frontalis*	a ladybird	None
Insecta	Coleoptera	Coccinellidae	*Psyllobora vigintiduopunctata*	22-spot Ladybird	None
Insecta	Coleoptera	Coccinellidae	*Propylea quattuordecimpunctata*	14-spot Ladybird	None
Insecta	Coleoptera	Coccinellidae	*Coccinella septempunctata*	7-spot Ladybird	None
Insecta	Coleoptera	Coccinellidae	*Coccinella undecimpunctata*	11-spot Ladybird	None
Insecta	Coleoptera	Latridiidae	*Enicmus transversus*	a beetle	None
Insecta	Coleoptera	Latridiidae	*Corticarina minuta*	a beetle	None
Insecta	Coleoptera	Latridiidae	*Corticarina similata*	a beetle	None
Insecta	Coleoptera	Latridiidae	*Cortinicara gibbosa*	a beetle	None
Insecta	Coleoptera	Mordellidae	*Mordellistena parvula*	a tumbling flower-beetle	LC, NS
Insecta	Coleoptera	Tenebrionidae	*Lagria hirta*	a darkling beetle	LC
Insecta	Coleoptera	Tenebrionidae	*Phylan gibbus*	a darkling beetle	LC
Insecta	Coleoptera	Tenebrionidae	*Cteniopus sulphureus*	Sulphur Beetle	LC
Insecta	Coleoptera	Oedemeridae	*Oedemera nobilis*	Swollen-thighed Beetle	LC
Insecta	Coleoptera	Oedemeridae	*Oedemera lurida*	a beetle	LC
Insecta	Coleoptera	Anthicidae	*Notoxus monoceros*	Monoceros Beetle	LC
Insecta	Coleoptera	Scraptiidae	*Anaspis maculata*	a beetle	LC
Insecta	Coleoptera	Scraptiidae	*Anaspis pulicaria*	a beetle	LC
Insecta	Coleoptera	Chrysomelidae	*Longitarsus flavicornis*	a flea-beetle	LC
Insecta	Coleoptera	Chrysomelidae	*Longitarsus melanocephalus*	a flea-beetle	LC
Insecta	Coleoptera	Chrysomelidae	*Neocrepidodera ferruginea*	a flea-beetle	LC
Insecta	Coleoptera	Chrysomelidae	*Neocrepidodera transversa*	a flea-beetle	LC

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Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status
Insecta	Coleoptera	Chrysomelidae	*Sphaeroderma rubidum*	a flea-beetle	LC
Insecta	Coleoptera	Chrysomelidae	*Psylliodes chrysocephala*	a flea-beetle	LC
Insecta	Coleoptera	Chrysomelidae	*Cryptocephalus fulvus*	a leaf-beetle	LC
Insecta	Coleoptera	Apionidae	*Ceratapion gibbirostre*	a weevil	None
Insecta	Coleoptera	Apionidae	*Aspidapion radiolus*	a weevil	None
Insecta	Coleoptera	Apionidae	*Pseudapion rufirostre*	a weevil	None
Insecta	Coleoptera	Apionidae	*Malvapion malvae*	a weevil	None
Insecta	Coleoptera	Apionidae	*Protapion assimile*	a weevil	None
Insecta	Coleoptera	Apionidae	*Protapion nigritarse*	a weevil	None
Insecta	Coleoptera	Apionidae	*Protapion trifolii*	a weevil	None
Insecta	Coleoptera	Apionidae	*Perapion hydrolapathi*	a weevil	None
Insecta	Coleoptera	Apionidae	*Catapion pubescens*	a weevil	Nationally Scarce (Nb)
Insecta	Coleoptera	Apionidae	*Ischnopterapion loti*	a weevil	None
Insecta	Coleoptera	Apionidae	*Oxystoma pomonae*	a weevil	None
Insecta	Coleoptera	Curculionidae	*Otiorhynchus ovatus*	a weevil	None
Insecta	Coleoptera	Curculionidae	*Philopedon plagiatum*	a weevil	None
Insecta	Coleoptera	Curculionidae	*Charagmus griseus*	a weevil	None
Insecta	Coleoptera	Curculionidae	*Hypera plantaginis*	a weevil	None
Insecta	Coleoptera	Curculionidae	*Rhinoncus pericarpius*	a weevil	None
Insecta	Coleoptera	Curculionidae	*Ceutorhynchus obstrictus*	a weevil	None
Insecta	Coleoptera	Curculionidae	*Calosirus terminatus*	a weevil	Nationally Scarce (Nb)
Insecta	Coleoptera	Curculionidae	*Trichosirocalus troglodytes*	a weevil	None
Insecta	Coleoptera	Curculionidae	*Tychius pusillus*	a weevil	Nationally Scarce (Nb)
Insecta	Coleoptera	Curculionidae	*Mecinus pascuorum*	a weevil	None
Insecta	Coleoptera	Curculionidae	*Mecinus pyraster*	a weevil	None
Insecta	Hymenoptera: Parasitica	Cynipidae	*Phanacis hypochoeridis*	a gall wasp	None
Insecta	Hymenoptera: Aculeata	Bethylidae	*Bethylus fuscicornis*	a solitary wasp	None
Insecta	Hymenoptera: Aculeata	Dryinidae	*Gonatopus albosignatus*	a solitary wasp	None

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Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status
Insecta	Hymenoptera: Aculeata	Formicidae	*Lasius flavus*	an ant	None
Insecta	Hymenoptera: Aculeata	Formicidae	*Lasius niger sens. str.*	an ant	None
Insecta	Hymenoptera: Aculeata	Formicidae	*Myrmica schencki*	an ant	Nationally Scarce (Nb)
Insecta	Hymenoptera: Aculeata	Colletidae	*Colletes fodiens*	Hairy-saddled Colletes	None
Insecta	Hymenoptera: Aculeata	Apidae	*Bombus lapidarius*	Large Red-tailed Bumblebee	None
Insecta	Hymenoptera: Aculeata	Apidae	*Bombus pascuorum*	Common Carder-bee	None
Insecta	Hymenoptera: Aculeata	Apidae	*Bombus terrestris*	Buff-tailed Bumblebee	None
Insecta	Hymenoptera: Aculeata	Apidae	*Apis mellifera*	Honey Bee	None
Insecta	Hymenoptera: Aculeata	Apidae	*Epeolus cruciger*	Red-thighed Epeolus	None
Insecta	Diptera	Stratiomyidae	*Pachygaster atra*	Dark-winged Black	LC
Insecta	Diptera	Stratiomyidae	*Chloromyia formosa*	Broad Centurion	LC
Insecta	Diptera	Therevidae	*Thereva nobilitata*	Common Stiletto	LC
Insecta	Diptera	Asilidae	*Dysmachus trigonus*	Fan-bristled Robberfly	LC
Insecta	Diptera	Dolichopodidae	*Poecilobothrus nobilitatus*	a long-headed fly	LC (Drake, 2018)
Insecta	Diptera	Syrphidae	*Episyrphus balteatus*	a hoverfly	LC
Insecta	Diptera	Syrphidae	*Sphaerophoria scripta*	a hoverfly	LC
Insecta	Diptera	Conopidae	*Physocephala rufipes*	a thick-headed fly	None
Insecta	Diptera	Tephritidae	*Acanthiophilus helianthi*	a picture-winged fly	Nationally Scarce
Insecta	Diptera	Tephritidae	*Tephritis matricariae*	a picture-winged fly	None
Insecta	Diptera	Tephritidae	*Tephritis vespertina*	a picture-winged fly	None
Insecta	Diptera	Sciomyzidae	*Pherbellia cinerella*	a snail-killing fly	None
Insecta	Diptera	Sciomyzidae	*Dichetophora obliterata*	a snail-killing fly	None
Insecta	Diptera	Chloropidae	*Meromyza pratorum*	a frit fly	None (Falk, Ismay & Chandler, 2016)
Insecta	Diptera	Tachinidae	*Cistogaster globosa*	a parasitic fly	NT (Falk, Pont & Chandler, 2005)
Insecta	Lepidoptera	Gelechiidae	*Bryotropha similis*	Obscure Moss-moth	None
Insecta	Lepidoptera	Tortricidae	*Celypha lacunana*	Common Marble	None

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Class	Order	Family	Species (scientific name)	Species (English name)	Conservation Status
Insecta	Lepidoptera	Crambidae	*Chrysoteuchia culmella*	Garden Grass-veneer	None
Insecta	Lepidoptera	Crambidae	*Pyrausta despicata*	Straw-barred Pearl	None
Insecta	Lepidoptera	Crambidae	*Udea prunalis*	Dusky Pear	None
Insecta	Lepidoptera	Pyralidae	*Homoeosoma sinuella*	Twin-barred Knot-horn	None
Insecta	Lepidoptera	Pterophoridae	*Marasmarcha lunaedactyla*	Crescent Plume	None
Insecta	Lepidoptera	Hesperiidae	*Thymelicus sylvestris/lineola*	Small/Essex Skipper	None
Insecta	Lepidoptera	Pieridae	*Pieris brassicae*	Large White	LC
Insecta	Lepidoptera	Pieridae	*Pieris rapae*	Small White	LC
Insecta	Lepidoptera	Nymphalidae	*Maniola jurtina*	Meadow Brown	LC
Insecta	Lepidoptera	Lasiocampidae	*Malacosoma neustria*	Lackey	VU, S7 (research only)
Insecta	Lepidoptera	Geometridae	*Eupithecia centaureata*	Lime-speck Pug	LC
Insecta	Lepidoptera	Erebidae	*Arctia caja*	Garden Tiger	NT, S7 (research only)
Insecta	Lepidoptera	Erebidae	*Tyria jacobaeae*	Cinnabar	LC, S7 (research only)
Gastropoda	Pulmonata	Cochlicellidae	*Cochlicella acuta*	Pointed Snail	LC
Gastropoda	Pulmonata	Helicidae	*Cornu aspersum*	Garden Snail	LC
Gastropoda	Pulmonata	Helicidae	*Theba pisana*	White Snail	NA
Gastropoda	Pulmonata	Hygromiidae	*Candidula intersecta*	Wrinkled Snail	LC
Gastropoda	Pulmonata	Hygromiidae	*Cernuella virgata*	Striped Snail	LC
Gastropoda	Pulmonata	Oxychilidae	*Aegopinella nitidula*	Smooth Glass-snail	LC
Gastropoda	Pulmonata	Punctidae	*Paralaoma servilis*	a snail	NA
Gastropoda	Pulmonata	Valloniidae	*Vallonia excentrica*	Eccentric Grass-snail	LC

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Appendix 9.8:

UK Habitat Classification (UKHab)

Habitat Condition Assessments (2025)

UK Hab Habitat Condition Assessments (2025)

Habitat condition assessments[38] are made with reference to the Statutory Biodiversity Metric Technical Annex 1 (Condition Assessment Sheets). While is it recognised that the Statutory Biodiversity Metric is not directly applicable within Wales, this is included as supplementary information.

Modified Grassland

Condition Assessment Criteria		Criterion passed? (Y/N)	Notes (such as justification)
A	There are 6-8 vascular plant species per m^2 present, including at least 2 forbs. **Note - this criterion is essential for achieving Moderate or Good condition.**	Y (all grasslands except Griffin Park greens) N (Griffin Park greens)	
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	Y (grassland within Monster Park) N (grasslands shown on Habitat Plan as Modified Good condition, except within Monster Park; grasslands shown on Habitat Plan as Modified Moderate condition; Griffin Park greens)	
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble *Rubus fruticosus* agg. may be present).	Y	

[38] Habitat condition assessments are made with reference to the Biodiversity Metric 4.0 Technical Annex 1 (Condition Assessment Sheets). While is it is recognised that the Biodiversity Metric 4.0 is not directly applicable within Wales, this is included as supplementary information.

Condition Assessment Criteria		Criterion passed? (Y/N)	Notes (such as justification)
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y (all grasslands other than those listed as N below) N (grasslands associated with small caravan park immediately NW of sand dunes, and Salt Lake Central car park; Griffin Park greens)	
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).	Y (Griffin Park greens) N (all grasslands other than Griffin Park greens)	Generally uniform grassland cover, with no bare ground (public access guided by footpaths)
F	Cover of bracken *Pteridium aquilinum* is less than 20%.	Y	
G	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA).	Y (grasslands shown on Habitat Plan as Modified Good condition, except within Monster Park; grasslands shown on Habitat Plan as Modified Moderate condition; Griffin Park greens) N (grassland within Monster Park)	

Condition Assessment Criteria		Criterion passed? (Y/N)	Notes (such as justification)
		6 (grasslands shown on Habitat Plan as Modified Good condition, including grassland within Monster Park) **5 (grasslands shown on Habitat Plan as Modified Moderate condition, except those associated with caravan park and Salt Lake Central car park)** **4 (grasslands associated with caravan park and Salt Lake Central car park; Griffin Park greens)**	

Condition Assessment Result (out of 7 criteria)	Condition Assessment Score	Score Achieved
Passes 6 or 7 criteria including passing essential criterion A	Good (3)	Y (grasslands shown on Habitat Plan as Modified Good condition, including grassland within Monster Park)
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)	Y (grasslands shown on Habitat Plan as Modified Moderate condition, including grasslands associated with caravan park and Salt Lake Central car park)
Passes 3 or fewer criteria; OR Passes 4-6 criteria (excluding criterion A)	Poor (1)	Y (Griffin Park greens)

Other Neutral Grassland

Condition Assessment Criteria		Criterion passed? (Y/N)	Notes (such as justification)
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type. **Note – this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.**	Y	
B	Sward height is varied (at least 20% of the sward is less than 7cm and at least 20% is more than 7cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Y	Varies by current management regime, but typically short and long areas of sward present
C	Cover of bare ground is between 1% and 5%, including localised areas, for example rabbit warrens.	N	Generally uniform grassland cover, with no bare ground (public access guided by footpaths)
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.	Y	
E	Combined cover of species indicative of sub-optimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species (as listed on Schedule 9 of WCA) are present, this criterion is automatically failed.	Y	
F	There are 10 or more vascular plant species per m^2 present, including forbs that are characteristic of the habitat type.	N	Moderately rich neutral/maritime grassland, but assessed to fall short of this criterion
		4	

Condition Assessment Result (non-acid grasslands) (out of 6 criteria)	Condition Assessment Score	Score Achieved
Passes 5 or 6 criteria, including essential criterion A and additional criterion F	Good (3)	-

Passes 3 – 5 criteria, including essential criterion A	Moderate (2)	Y
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F	Poor (1)	-

Other Woodland, Mixed

Condition Assessment Criteria		Condition Assessment Score
A	Age distribution of trees	G (3 age classes): - M (2 age classes): Y P (1 age class): -
B	Wild, domestic and feral herbivore damage	G (no browsing damage): Y M (browsing damage <40%): - P (browsing damage >40%): -
C	Invasive plant species	G (no invasive species): - M (invasives <10%): Y (cotoneaster) P (invasives >10%, or rhododendron / cherry laurel present): -
D	Number of native tree species	G (5+ natives tree/shrub species): Y M (3-4 native tree/shrub species): - P (2 or fewer native tree/shrub species): -
E	Cover of native tree and shrub species	G (>80% native): - M (50-80% native): - P (<50% native): Y
F	Open space within woodland	G (10-20% temporary open space; or 0-20% temp open space for woodlands <10ha): Y M (20-40% temporary open space): - P (<10% or >40% temporary open space; exception for woodlands <10ha): -
G	Woodland regeneration	G (3 of seedlings or coppice regrowth/saplings/young trees present): Y M (1-2 of above classes present): - P (no above classes present): -
H	Tree health	G (<10% mortality, no pests/diseases/crown dieback): Y M (11-25% mortality and/or crown dieback or low risk pest/disease): - P (>25% mortality or high risk pest/disease): -
I	Vegetation and ground flora	G (NVC ground flora plant community strongly characterised by ancient woodland indicator species): - M (NVC ground flora plant community, no AWI): - P (no recognisable NVC ground flora plant community): Y
J	Woodland vertical structure	G (3+ storeys): - M (2 storeys): - P (1 storey): Y

Condition Assessment Criteria		Condition Assessment Score
K	Veteran trees	G (2+ veteran trees/hectare): - M (1 veteran tree/hectare): - P (no veteran trees): Y
L	Amount of deadwood	G (50% parcels have deadwood): - M (25-50% parcels have deadwood): - P (<25% parcels have deadwood): Y
M	Woodland disturbance	G (no nutrient enrichment/damaged ground): Y M (<1 hectare nutrient enrichment, <20% damaged ground): - P (>1 hectare nutrient enrichment, >20% damaged ground): -
	3 points per G category 2 points per M category 1 point per P category	**27**

Condition Assessment Result	Condition Assessment Score	Score Achieved
Total score >32	Good (3)	-
Total score 26 – 32	Moderate (2)	Y
Total score <26	Poor (1)	-

Individual Trees

Condition Assessment Criteria		Criterion passed? (Y/N)	Notes (such as justification)
A	The tree is a native species (or at least 70% within the block are native species).	Y	
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5m wide (individual trees automatically pass this criterion).	Y	
C	The tree is mature (or more than 50% within the block are mature).	Y (except saplings planted in Aldi carpark) N (saplings planted in Aldi carpark)	
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Y	
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of	Y (except saplings planted in Aldi	

	deadwood, cavities, ivy or loose bark.	carpark) N (saplings planted in Aldi carpark)	
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y (except saplings planted in Aldi carpark) N (saplings planted in Aldi carpark)	
		6 (trees except saplings planted in Aldi carpark) **3 (saplings planted in Aldi carpark)**	

Condition Assessment Result (out of 6 criteria)	Condition Assessment Score	Score Achieved
Passes 5 or 6 criteria	Good (3)	Y (trees except saplings planted in Aldi carpark)
Passes 3 or 4 criteria	Moderate (2)	Y (saplings planted in Aldi carpark)
Passes 2 or fewer criteria	Poor (1)	-

Hedgerows

Condition assessment N/A for non-native and ornamental hedgerow.

Mixed Scrub

Condition Assessment Criteria		Criterion passed? (Y/N)	Notes (such as justification)
A	The parcel represents a good example of its habitat type – the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range). -At least 80% of scrub is native. -There are at least three native woody species. -No single species comprises more than 75% of the cover (except hazel, juniper, sea buckthorn or box).	Y	
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	Y	
C	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.	Y	
D	The scrub has a well-developed edge with scattered scrub and tall grassland or forbs present between the scrub and adjacent habitat.	Y	
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	N	
		4	

Condition Assessment Result (out of 5 criteria)	Condition Assessment Score	Score Achieved
Passes 5 criteria	Good (3)	-
Passes 3 or 4 criteria	Moderate (2)	Y
Passes 2 or fewer criteria	Poor (1)	-

Condition assessment is N/A for bramble scrub and introduced shrub.

Pond (Non-Priority)

Condition Assessment Criteria		Criterion passed? (Y/N)	Notes (such as justification)
A	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if grazed by livestock.	N	
B	There is a semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10m from the pond edge for its entire perimeter.	Y	
C	Less than 10% of the water surface is covered with duckweed *Lemna* spp. or filamentous algae.	N	
D	The pond is not artificially connected to other waterbodies, such as agricultural ditches or artificial pipework.	Y	
E	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams, pumps or pipework.	Y	
F	There is an absence of listed non-native plant and animal species.	Y	
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Y	
	Woodland ponds	**5**	

Condition Assessment Result (for woodland ponds, out of 7 criteria)	Condition Assessment Score	Score Achieved
Passes 7 criteria	Good (3)	-
Passes 5 or 6 criteria	Moderate (2)	Y
Passes 4 or fewer criteria	Poor (1)	-

Coastal Sand Dunes

Condition Assessment Criteria		Criterion passed? (Y/N)	Notes (such as justification)
A	The parcel represents a good example of its specific habitat type, with characteristic indicator species present in the typical successional stages, transitions and/or mosaics, at sufficient cover and frequency to be a good example.	Y	
B	Vegetation structure (sward height variation, zonation) is varied and not uniform.	Y	
C	Naturally open ground or bare surfaces are present as part of a sequence of colonisation and succession.	Y	
D	Coastal processes needed to support the habitat are functional and are not modified by hard engineering or other forms of negative intervention.	Y	Largely the case, though the back of the dunes meet urban areas.
E	The landform reflects the interaction of coastal processes and geology, and there is a varied topography present supporting the relevant range of habitat types.	Y	
F	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA). Combined cover of species indicative of suboptimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.	N	Several large stands of sea buckthorn take up more than 5% of the total dune area.
G	Any scrub (including bramble) present accounts for less than 10% of the area within the habitat or bare substrate matrix. Blocks of scrub or woodland which might be desirable in their own right should be classified and mapped separately.	N	Extensive areas of sea buckthorn scrub.
H	Water quality and quantity (for example, seasonal fluctuations in dune slacks or seepages on cliff slopes) is sufficient to support the range of water-dependent parts of the habitat.	Y	
		6	

Condition Assessment Result (out of 3 criteria)	Condition Assessment Score	Score Achieved
Passes 7 or 8 criteria including essential criterion A	Good (3)	-

Condition Assessment Result (out of 3 criteria)	Condition Assessment Score	Score Achieved
Passes 5 or 6 criteria OR Passes 7 criteria excluding essential criterion A	Moderate (2)	Y
Passes 4 or fewer criteria	Poor (1)	-

Condition assessment is N/A for Other Sea Buckthorn scrub (though they are considered as part of the wider dunes as part of the assessment above).

Low Energy Littoral Rock

Condition Assessment Category	Condition Assessment Score	Notes (such as justification)
Coastal Processes	1	Artificial structures present that are impeding the natural movement of sediments or water, affecting more than 25% of the habitat.
Presence and Abundance of Invasive Non-Native Species	3	Not more than one invasive non-native species is 'Occasional' on the SACFOR scale or is occupying more than 1% of the habitat. No high-risk species indicative of suboptimal conditions present.
Water Quality	3	No visual evidence of pollution. There are no nuisance algal growths that are likely to be attributable to nutrient enrichment.
Non-Natural Structures and Direct Human Impacts	1	Evidence of impacts from direct human activities occupies >10% of the habitat area. (At entrance to harbour mouth.)
Litter (when examining a beach strandline, mean high water line or intertidal rocky shore)	3	Following the Marine Conservation Society (MCS) beach litter survey method, the number of items of litter does not exceed 0.0036 /m /min /person, equivalent to up to 20 items per person per 100m per hour.
Total Score	**11**	**'Moderate' condition**



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Appendix 10.1 – Drainage Statement

Drainage Statement

Porthcawl Waterfront Regeneration

Written by –

Stantec Hydrock Ltd

Intended for –

Welsh Government and Bridgend County Borough Council

Date:

10 November 2025

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1 Introduction

Stantec Hydrock Ltd have been commissioned by Welsh Government and Bridgend County Borough Council to undertake a preliminary civil engineering strategy design for the proposed drainage and civil engineering external works across the site of the future Porthcawl Waterfront Regeneration project.

This report provides information regarding previous consultations with relevant governing bodies to date, as well as outlining plans regarding future discussions to obtain necessary statutory approvals and consents. This report also outlines the standard Sustainable Drainage (SAB) procedure and details the national standards that all new surface water networks must adhere to in Wales as of January 2019.

Various constraints are detailed to provide context regarding any proposed diversions of existing drainage assets and design choices with regards to the new drainage systems and external levels.

The proposed foul and surface water drainage infrastructure within the entire redevelopment site has been outlined both in this report and in visual engineering drawings that are provided as appendices to this report.

2 Purpose of Report

The purpose of this report is to present the proposed, necessary and viable foul and surface water drainage strategy, for the eventual purposes of securing outline planning permission.

This report seeks to make clear the drainage requirements of the regeneration development, standards and consents that are required to be met, outline the existing arrangements from a foul and surface water drainage point of view and present a viable strategic solution for draining the proposed development area.

Prior discussions with relevant bodies such as BCBC Sustainable Drainage body (SAB) & Dŵr Cymru Welsh Water (DCWW) as well as individuals from the general local community are summarised to make clear any comments and concerns, as well as explain the next developmental stages that are to take place in the near future for the planning application.

Existing infrastructure and numerous engineering constraints are highlighted within the report and associated drawings in order to make clear any obstacles that the future development is to overcome as a minimum to be delivered successfully.

Key proposed infrastructure such as the proposed spine road running east/west through the development, drain/sewer diversions and new pumping stations are essential to unlocking the site and its various plots for future developers and therefore strategic phasing has also been considered.

This report is intended to supplement the civil engineering deliverables that accompany the PAC submission and the flood consequences assessment reporting by Stantec, which is a separate report to this drainage statement.

3 Summary

To accommodate the future regeneration works across the Porthcawl Waterfront site, a range of civil engineering, highway and drainage enabling and infrastructure works will be required to be completed. These will be carried out in multiple phases, at appropriate times that suit the overall development construction programme and future engagements with potential developers.

The existing site and engineering constraints relating to: existing levels, structures, drainage, flooding, highways and ground conditions have been investigated and considered during the formation of the engineering strategies to resolve them. Post-planning, these strategies will be further designed in detail, along with securing all linked consents, approvals and licences, ahead of construction.

Ground conditions vary across the site due to the different historic uses and activities on each plot, which presents challenges regarding building foundations, potential contaminated land and unsuitable earthworks materials. This has been considered and target solutions presented for each constraint due to the extent of significant earthworks required across the development masterplan area.

Prior consultations with DCWW (Dŵr Cymru Welsh Water) and BCBC (Bridgend County Borough Council) have taken place on several occasions to discuss the foul and surface water design strategies. A reliable on-site foul drainage strategy is proposed, that does not adversely affect the existing drainage network. An ongoing process has been agreed with DCWW on further studies to investigate and determine and design a suitable connection to the sewerage network that will not pose a risk to the local area, which may require off-site infrastructure upgrades. This process will extend beyond the planning application programme. A site-wide sustainable drainage system is proposed that will form the basis of a future phased consent from the SuDS Approving Body that will meet legislation requirements and limit flood risk.

Strategies for key new highway infrastructure and amendments to the existing highway are presented, to enable appropriate safe access to the new development areas and the new public realm and commercial areas.

Flood modelling and a flood consequences assessments have been completed to determine the effects of various sources of flood risk, including coastal on the proposed development and the necessary infrastructure required to mitigate this and protect the development from flood risk. This results in a scenario where the proposed development will be at a low risk of flooding.

4 Development Overview

The existing development site comprises primarily of brownfield land, which includes existing uses such as: Griffin Park, Coney Beach Pleasure Park, Monster Park, Hillsboro Car Park, Salt Lake Car Park and Sandy Bay open space.

The regeneration development proposal aims to transform the area into a mixed-use development featuring residential, commercial, and leisure spaces. The masterplan includes up to 980 new homes, approximately 20ha of open space (including a series of new significant public open spaces (POS) with different offers. In addition, 2.2ha is to be allocated for educational facilities, up to 130,000 square feet of commercial and leisure floorspace including retail uses, a hotel, lido and gym/ wellbeing centre.

The development will provide significant enhancements to the Porthcawl Harbour environment whilst ensuring risk of flooding is reduced as far as practically possible through the construction of new coastal defence works and new designated surface water drainage infrastructure.

Refer to Appendix J for the sitewide masterplan layout.

4.1 Phased development

Due to the size, commercial delivery and mixed-use nature of the proposed development, phased construction and delivery of the various facilities will be required. Initial development of key aspects of the site, such as the central spine road and associated linked infrastructure works, will be carried out first in order to provide access to other plots that are to be taken on by future developers thereafter.

Refer to Appendix K for landscape architect phasing plan.

4.2 Phased infrastructure

To ensure that aspects of the redevelopment can be constructed efficiently, it will be essential that certain key points of infrastructure across the site are addressed in a specific phased sequence ahead of further plot development. This is for infrastructure both directly serving the new development and also those independent but affected by it.

This includes the diversion and upsizing alterations of existing sewers, drains, utilities services, and highway assets, as well as the delivery of infrastructure serving the new development such as foul and surface water drainage, central spine road and flood defence revetment fronting Coney Beach.

Further infrastructure serving individual development plots can be addressed as and when each plot is developed in the future.

A phased infrastructure plan is to be included within the planning application.

5 Consultation Overview

5.1 BCBC & SAB

The developer and appointed engineering design consultants have engaged with the local authority's Sustainable Drainage Approval Body (SAB) team previously and have held meetings on two separate occasions to discuss the development, existing drainage systems, constraints and the proposed sustainable surface water design strategy that will serve the redevelopment.

Upon initial consultation, no immediate concerns or comments were provided by BCBC SAB and the scheme was met with general positivity however providing the requirements of the sustainable drainage legislation were met within the strategy. Other points raised are covered elsewhere in this report.

More detailed information will be provided in future SAB pre-app submissions will be required before further formal comment and decisions can be provided.

5.2 Dŵr Cymru Welsh Water

Important issues regarding the existing foul drainage network within the vicinity of the site have been raised and discussed with DCWW and it has been made clear by DCWW that the local sewer network is at full capacity and is currently prone to flooding and overflows, making it unsuitable for the proposed development to rely on fully or partially.

Therefore, to protect the existing infrastructure and provide a suitable and reliable network to serve the new development, an independent foul drainage system with no connections to nearby existing sewers is to be provided.

A single, safe discharge point into the wider sewer network is being identified in close conjunction with Dŵr Cymru Welsh Water through investigation, modelling & design

No development will be completed without a confirmed safe connection point and the completion of required upgrades, including treatment capacity.

Surface water will be managed separately via sustainable drainage, with no impact on the foul drainage system whatsoever.

Summary of discussions with Dŵr Cymru to date and anticipated milestones to achieve in due course:

Phase 1 – Initial Consultations and High Level Optioneering by DCWW

- DCWW Convened Teams meeting – Client and Operations kick off meeting to talk through requirements, limitations and concerns
- Sewerage digital hydraulic model availability and information gathering
- The undertaking of additional limited Modelling
- Site visit to review existing infrastructure and constraints
- Production of high-level solution options for the final sewer connection “off-site”
- Production of phase 2 works cost estimate and programme for completion

Summary of ongoing work to be completed by DCWW, which is expected to extend beyond the planning stage, but is not expected to create a route to objection that would prevent the outline planning process from moving forward.

Phase 2 – Detailed Feasibility and Optioneering

- Considerations for outline proposals
- Hydraulic Assessments
- Hydraulic Modelling if required
- Reporting as required
- Production of phase 3 works cost estimate and programme of deliverables aligned to the above

Phase 3 – Outline and Detail Design

- Developer team meeting to agree on proposals to take forward
- Production of phase 4 works cost estimate and programme of deliverables aligned to the above, to include any Ground Investigation works required for option agreed

Phase 4 – Construction – Construction of Designed Works to Enable Development Usage

During the pre-planning stage, it was agreed in principle that DCWW would not seek to uphold an objection to the development on sewerage capacity grounds, as there is an agreed process and plan in place to undertake the necessary investigation, design and construction of the major off-site foul drainage infrastructure to support the development, before new development requires an active foul connection. The same applies to the presence and proposed diversion of existing DCWW drainage within the development boundary.

5.3 Local Community

It is understood that the local community has concerns over the operation, capacity and maintenance of the existing public foul and surface water sewer drainage, flooding and pollution.

There is a general concern that the proposed re-development proposals may cause further flooding and sewer overflow issues.

This sensitive and important point has been taken onboard in the formation of the drainage strategy for the proposed development and a solution to the matter has been included in this report.

No reliance on the existing piped foul and combined sewer network around the immediate vicinity of the development area is being considered. The former fun fair site will be disconnected from the existing foul/combined sewerage infrastructure.

A network of new and independent foul sewers and pumping stations are proposed to serve the proposed development. There are no proposals for the development to connect to existing local sewers around the development area boundary; this is to avoid contributing to any existing operational and flooding issues within those sewers.

A suitable single point of discharge to the wider downstream sewerage infrastructure is being proposed by the development team and Dŵr Cymru Welsh Water, through a collaborative process that includes: investigation, hydraulic modelling and a detailed design process ahead of eventual construction. This is to ensure that a proven, safe and effective point of sewer connection is determined, that does not pose a risk to local sewer flooding in any part of the town and surroundings.

No development that requires a new foul drainage connection will be completed before a proven suitable and safe point of connection to a major point on the downstream sewer network is determined, including the proportional completion of identified essential reinforcement and upgrade works. This also includes consideration of the receiving wastewater treatment works capacity.

No surface water runoff (rainwater) will connect to the development's new foul drainage system. Any existing surface water currently reaching the foul/combined drainage system from within the development area will cease and be drained by a new sustainable drainage system that does not influence the foul drainage system at all.

Responsibility for the monitoring, operation, maintenance and improvement of the existing drainage networks that serve the existing developments is and will remain the responsibility of Dŵr Cymru Welsh Water and Bridgend Council, under their statutory responsibilities and associated legislation.

6 SAB Overview

6.1 Compliance with Standards

As the site is over 100m^2 and is considered to be a new development, the proposed surface water drainage will be subject to SAB (Sustainable Drainage Systems Approval Body) approval by the corresponding local authority (BCBC) and will therefore be designed in accordance with the statutory national standards for sustainable drainage systems outlined in Schedule 3 of the Flood & Water Management Act 2010.

The statutory standards set out basic principles that SuDS should meet, these include:

- Managing water on or as close to the surface and as close to the source of the runoff as possible;
- Treat rainfall as a valuable resource;
- Ensure pollution is prevented at source, rather than relying on the drainage system to treat or intercept it;
- Manage rainfall to help protect people from increased flood risk, and the environment from morphological and associated ecological damage resulting from changes in flow rates, patterns and sediment movement caused by the development;
- Take account of likely future pressures on flood risk, the environment and water resources such as climate change and urban creep;
- Use the SuDS Management Train, using drainage components in series across a site to achieve a robust surface water management system (rather than using a single “end of pipe” feature, such as a pond, to serve the whole development);
- Maximise the delivery of benefits for amenity and biodiversity;
- Seek to make the best use of available land through multifunctional usage of public spaces and the public realm;
- Perform safely, reliably and effectively over the design life of the development taking into account the need for reasonable levels of maintenance;
- Avoid the need for pumping where possible.
- Be affordable, taking into account both construction and long-term maintenance costs and the additional environmental and social benefits afforded by the system.

The statutory standards contain six technical standards that the SuDS system needs to conform with to be deemed acceptable by the SAB, these standards are:

- Standard S1 - Surface water runoff destination;
- Standard S2 - Surface water runoff hydraulic control;
- Standard S3 - Water quality;
- Standard S4 - Amenity;
- Standard S5 - Biodiversity;
- Standard S6 – Design of drainage for Construction, Operation and Maintenance and Structural Integrity

6.1.1 S1 – Surface Water Runoff Destination

This standard addresses the use of surface water by the development and where it should be discharged. The aim is to ensure that runoff is treated as a resource and managed in a way that minimises negative impact of the development on flood risk, the morphology and water quality of receiving waters and the associated ecology.

There are five priority levels for the destination of rainfall runoff, these are:

- Priority Level 1: Surface water runoff is collected for use;
- Priority Level 2: Surface water runoff is infiltrated to ground;
- Priority Level 3: Surface water runoff is discharged to a surface water body;
- Priority Level 4: Surface water runoff is discharged to a surface water sewer, highway drain, or another drainage system;
- Priority Level 5: Surface water runoff is discharged to a combined sewer.

6.1.2 S2 – Surface Water Runoff Hydraulic Control

This standard requires surface water to be managed to prevent as far as possible any discharge from the development for rainfall events of less than 5mm and that the surface water runoff rate and volume for up to a 1 in 100-year return period should be managed to protect people, properties and the receiving water body. Consideration is also required to the risk associated with runoff from events greater than 1 in 100-year return period with mitigating proposals developed for the scheme.

Interception will be maximised on site with the use of swales, bioretention areas, permeable paving and infiltration basins.

Based on the above information there is no need to consider discharging into a new or existing surface water system as the redevelopment seeks to use a combination of infiltration to ground and free discharge to the tidal harbour as discharge destinations.

6.1.3 S3 – Water Quality

Standard S3 addresses the drainage design requirements to minimise the potential pollution risk posed by the surface water runoff to the receiving water body.

The SuDS system will provide pollution prevention by means of a treatment train. The suitability of the pollution mitigation will be assessed via the simple index approach as referenced in the SuDS manual Ciria C753.

The simple index approach will show that all surface water will receive a sufficient amount of pollution mitigation.

6.1.4 S4 – Amenity

Standard S4 addresses the design of SuDS components to ensure that, where possible, they enhance the provision of high quality, attractive public space which can help provide health and wellbeing benefits.

The features in the form of bioretention areas, tree pits and swales have been provided, based on their natural form that mimics natural landscapes. These SuDS features will be planted according to the landscape architect's regime, likely with wildflower grasses and native shrub planting to the surrounding areas to create an attractive environment for building users / visitors, residents and members of the wider public. Seating areas will be provided in order to contribute to the health and wellbeing of pedestrians / residents and wider amenity benefits include improvements in air quality and carbon sequestration around the development through the planting of trees and shrubs in and around the SuDS features.

6.1.5 S5 – Biodiversity

Standard S5 addresses the design of SuDS to ensure, where possible, they create ecologically rich green corridors in developments and enrich biodiversity value by linking networks of habitats and ecosystems together.

The SuDS scheme biodiversity strategy should revolve around the creation of significant and varied habitat to increase the overall biodiversity of the site and ecological value. The inclusion of plant species that will enhance the general eco system and simultaneously act as a water filtration system to clean pollutants and contaminants should be used where possible.

The plant species selected should be both locally contextual and appropriate for the varied habitat zones including primary characteristics that shall ensure:

- Good soil binding and filtration species
- Minimised erosion
- Improved filtration via dense root and stem species
- Tolerance to seasonal variations including droughts and inundations
- Good level of suspended solids retention
- Pollutant tolerant
- Emergent and pioneering species for natural ecological colonisation
- The creation of diverse, self-sustaining and resilient ecosystems for high species biodiversity
- Support for local and regional habitat strategies

6.1.6 S6 – Design of Drainage for Construction and Maintenance

Standard S6 deals with designing robust surface water drainage systems so they can be easily and safely constructed, maintained and operated, taking account of the need to minimise negative impacts on the environment and natural resources.

The SuDS system will be designed to ensure that all elements can be constructed easily, safely, cost-effectively, in a timely manner and with the aim of minimising the use of scarce resources and energy.

The SuDS system will be designed to ensure the structural integrity of all elements and to ensure that operation and maintenance can be undertaken easily, safely, cost-effectively, in a timely manner.

All drainage will adhere to Sewers for Adoption 7th Edition, Ciria 753, Building Regulations etc where appropriate.

In accordance with CDM 2015 the design of the SuDS will take account of the health and safety risks and seek to minimise these were reasonably practicable. A SuDS risk assessment will form part of any future Pre-SAB applications.

An operation and maintenance schedule and plan will also need to be produced and submitted as part of any future Pre-SAB applications. This will enable owners, occupiers/operators etc. to easily understand the role that the SuDS system provides, expected observations during rainfall and operation and ongoing maintenance requirements of the system.

The SuDS design will ensure materials and components have a suitable design life and instances where rehabilitation of components will be required during the design of the development will be highlighted in the maintained schedule.

An information and communications plan will be produced as a part of any future full SAB applications. These plans can be displayed in various areas across the development site to inform and educate site users of the provisions and functions of the various SuDS features in place.

6.2 SAB Application Process

Following the submission of the planning application, a pre-SAB application for the new spine road and associated infrastructure will be submitted to BCBC SAB & Highways with the goal of incorporating any comments into the final design in readiness to submit a full SAB application thereafter.

Within the pre-SAB application submission, various key pieces of information will need to be produced such that a sufficient level of detail is provided to inform the SAB team of the design's ability to effectively mitigate flood risk (up to 100yr + 40% climate change event), provide interception of the first 5mm rainfall, improve water quality by offering a suitable level of pollution removal through the use of SuDS, contribute to amenity and biodiversity in the immediate area, discharge to a suitable location (e.g. infiltration to ground / discharge to existing surface water body / sewer network) and also be designed such that the construction and ongoing future maintenance can be carried out in a safe manner that reduces risk as far as practically possible.

Following submission of the pre-SAB application, the SAB team will typically issue a formal response within the statutory 8-12week period. Following which, any comments are to be addressed by the Designer, relevant amendments made to the pack of information (if required) and any additional information produced that is required for the full SAB submission.

Once the above tasks have been completed, the pack of information can be submitted to BCBC for full SAB approval, following which the SAB team will review in detail and provide further comment (if necessary) and technical approval in due course.

6.3 Phased Applications & Approvals

Due to the phased delivery of various key pieces of infrastructure across the site in order to make development plots accessible, there will be a need to obtain relevant approvals accordingly. Engagement with BCBC SAB and Highways departments will be necessary to obtain SAB approval for specific areas of the development as and when necessary as well as S278 & S38 approvals for alterations to existing, and the adoption of any new, highway assets and S104 approvals with DCWW for the adoption of new foul drainage assets.

SAB & Highway approvals for the new spine road (including the new roundabout off Eastern Promenade, adjacent to Griffin Park and the Aldi supermarket, as well as the new turning head on Mackworth Road) will be sought following submission of the planning application. As the spine road is a key piece of infrastructure that unlocks other development plots across the site, it is vital that detailed design and all relevant approvals for this piece of infrastructure are obtained in a timely manner to ensure construction can begin, and be completed, according to programme.

Relevant approvals for new assets within the remaining plots will take place as and when future developers become involved although key off-plot infrastructure to support them (such as diversion of existing surface water sewers and construction of new wider sewer network and infrastructure) will be required at an early stage.

Refer to Appendix K for The Urbanists Phasing Plan.

7 Flood Risk Overview

7.1.1 Stantec FCA

The Stantec FCA concludes that the proposed development is considered to be at low risk of flooding from all sources providing that all finished floor levels (FFL) are a minimum of 600mm above the design flood level. The assessment confirms that the site is suitable it the current proposed location and will be adequately flood resistant and will not place additional persons at risk of flooding. The flood risk elsewhere outside of the site area will not increase as a result of the proposed redevelopment works and confirms that measures will be put in place to ensure surface water is appropriately managed.

Refer to Appendix L for Stantec Flood Consequence Assessment.

7.1.2 Arup Flood Modelling

Flood modelling has been undertaken by Arup to assess flood risk from tidal / coastal overtopping along Sandy Bay and Eastern Promenade in both the existing and proposed future scenarios. Modelling output of the existing arrangement indicates that two main flood routes (Eastern Promenade and Mackworth Rd) are presented from wave overtopping via the Sandy Bay frontage.

Through the implementation of the proposed regeneration works, the model results indicate a reduction in maximum flood depths and extents North of Sandy Bay as a result of the reduced overtopping of the Sandy Bay frontage. Currently, basement flooding to one of the new buildings is presented, which can be overcome through further refinement of the proposed levels at the higher level of the basement access ramp. Additionally, flooding is also presented at the Buccaneers public house at the Southern end of Mackworth Road which could potentially be mitigated by raising the existing FFL of the building.

7.1.3 Tide-lock scenario at Harbour

The new outfall into the existing harbour is currently considered to be at level high enough to not be subjected to a tide-lock scenario, where the water level in the harbour may influence the water level in the upstream incoming surface water sewer. This will be confirmed with BCBC SAB following the PAC submission. The separate surface water drainage network serving the redevelopment has been kept as shallow as reasonably practical in order to avoid the tide-lock scenario however if it is found that the new outfall would be affected by tide-lock, additional upstream attenuation within the Salt Lake plots will be required in order to store surface water during a worst-case storm event for the duration of the tide-lock period. This point is to be confirmed, and design altered to suit (if required) in readiness for the planning submission.

8 Existing Infrastructure

8.1 Constraints

Various physical constraints exist across the site in the form of existing buried services, drainage assets (rising mains, drains and sewers) as well as existing external infrastructure (such as adopted highway assets, boundary tie-ins and access to existing structures to be retained) as well as ground conditions and design infiltration rates governing the minimum size of the drainage basins serving the proposed Sandy Bay residential development.

A full comprehensive existing constraints plan is to be included within the planning application.

8.2 Proposed Diversions

Several foul and surface water drainage/sewer diversions are required across multiple plots in order to accommodate the proposed development. As recommended in the Redstart Drainage Strategy 2020 (for BCBC), diverted drainage is to be laid with increased diameter pipework in order to increase capacity.

Refer to Appendix A for proposed drainage plan.

9 Development Infrastructure

A large extent of civil engineering infrastructure in the form of earthworks, retaining wall, highway works, external works and drainage will need to be implemented to accommodate the proposed development and ensure it operates in an effective and safe way across the site throughout the project lifecycle.

9.1 External Works

A key initial piece of new infrastructure that will be provided early in the construction programme is the alteration of the existing highway junction near Griffin Park to be reconstructed as a roundabout to provide access to the new spine road which rises up to the current fairground level. This piece of work demands a large extent of new infrastructure such as land clearance, earthworks, engineering fill and retaining walls, which is reflected in Appendix E – Engineering Levels Plan.

During the construction of that phase of the development, the large existing retaining wall to the north of the Coney Beach plot will require reconstruction due to its current condition and suitability to support loads for the future residential and parking development.

To suit the output of the Arup flooding modelling exercise, minimum promenade levels fronting the Coney Beach plot have been considered a crucial constraint that has been incorporated into the design to ensure the new development is sufficiently defended from coastal impact. This plot also ties into the proposed spine road level in order to provide necessary access by vehicles and pedestrians.

The Salt Lake plot comprises of a mix of residential and commercial space, with the hotel and outdoor pool complex situated to the south of the plot. A large extent of public realm space will surround the plots which will comprise of both hard and soft landscape as well as SuDS features throughout.

A new designated surface water sewer that serves the new development and remains independent of any existing networks will drain south along the eastern boundary and discharge to the harbour via a new outfall. The independence of this new sewer will relieve the two other main drainage lines and enable the true capacity and operation of the new system to be proved.

Alterations in the Monster Park area, including the new spine road works, require Mackworth Rd to be split from its current arrangement and therefore the remaining highway infrastructure to the north of the future public open space (POS) will require a turning head and retaining structures due to the immediate level changes between the highway and the POS. Access to the southern end of Mackworth Rd will be provided off of the new spine road.

Sandy Bay residential development will make good use of the viable surface water infiltration within the area, and therefore adequate space for infiltration basins has been provided, the size and volume of which are based on high-level hydraulic modelling. A large earthworks exercise to infill the existing ‘Sandy Bay Bowl’ will be required and although the current strategy seeks to utilise material from the existing bund to the north of the site to reduce imported fill, there is a requirement for significant additional quality fill materials to infill the bowl to the current top level, plus additional filling required to achieve the proposed development plot levels.

9.2 Drainage Strategy

9.3 Surface Water

The surface water network serving the new redevelopment *must* adhere to Schedule 3 of the Flood and Water Management Act 2010 and will be subject to detailed review through the SAB application process. While the detailed landscape design of the various residential and commercial plots will be determined in the future following engagement with potential developers, an initial indicative surface water drainage scheme has been provided to information the PAC. This demonstrates the overall intentions for the development's new surface water system and considers the strategic placement of SuDS in various forms and the areas to be dedicated to SuDS to make all parties, including potential developers, aware of these expectations.

The current surface water strategy seeks to provide an effective system across the development that adheres to relevant national guidance such that SAB approval may be granted in the future.

9.4 Spine Road

Surface water runoff from the new spine road and associated pedestrian footway and cycleways will discharge to the roadside swales which will provide conveyance routes for the runoff whilst also providing interception, water quality improvement and flow restriction prior to discharging into the existing highway drainage network. Infiltration and discharging to a surface water body (such as river or lake) are not viable in this case and therefore the design seeks to satisfy Priority Level 4 for Standard S1 (runoff destination) by discharging to a surface water sewer / highway drain. The roadside swales will be sized in order to provide sufficient interception of the first minimum 5mm rainfall and will provide amenity and biodiversity enhancements to the development, thus satisfying Standards S5 & S6.

The SuDS features and entire surface water drainage network as a whole will be designed such that construction and future operation and maintenance can be carried out as easily and as safely as practically possible thus satisfying Standard S2.

9.5 Coney Beach

The private access road and associated car park serving the Coney Beach plot will rely heavily on extensive SuDS provision to the located at strategic locations across the plot. Roof drainage for the residential blocks will discharge to nearby bioretention areas and the features will be of a suitable size to offer sufficient interception to the corresponding catchment area and will need to be lined with fully lapped and welded impermeable membranes to mitigate the migration of existing contaminants within the soil beneath. The soft SuDS features will also contribute to amenity and biodiversity across the plot, thus satisfying Standards S5 & S6. Permeable block paving will also be used to treat and attenuated surface water runoff from parking bays and car park access road.

Treated surface water leaving the plot will discharge to the new surface water drainage network and discharge to the downstream carrier drain within the eastern edge of the Salt Lake plot which will discharge to the existing harbour to the south via a new outfall at an unrestricted rate due to this being treated as a direct discharge to the sea. Due to infiltration not being practical on such a contaminated site, the next highest priority regarding discharge destination will be to a surface water body thus the current design seeks to satisfy Priority Level 3 for Standard S1 (runoff destination).

The SuDS features and entire surface water drainage network as a whole will be designed such that construction and future operation and maintenance can be carried out as easily and as safely as practically possible thus satisfying Standard S2.

9.6 Salt Lake

The vast expanse of external public realm space will rely heavily on extensive SuDS provision to the located at strategic locations across the plot. Roof drainage for the residential and commercial blocks will discharge to nearby bioretention areas and the features will be of a suitable size to offer sufficient interception to the corresponding catchment area and will need to be lined with fully lapped and welded impermeable membranes to mitigate the migration of existing contaminants within the soil beneath. Permeable block paving will also be used to treat and attenuated surface water runoff from parking bays and car park access roads. The soft SuDS features will also provide important amenity and biodiversity enhancements across the plot

Treated surface water leaving the plot will discharge to the new main surface water carrier drain within the eastern edge of the Salt Lake plot which will discharge to the existing harbour to the south via a new outfall at an unrestricted rate due to this being treated as a direct discharge to the sea. Due to infiltration not being practical on such a contaminated site, the next highest priority regarding discharge destination will be to a surface water body thus the current design seeks to satisfy Priority Level 3 for Standard S1 (runoff destination).

The SuDS features and entire surface water drainage network as a whole will be designed such that construction and future operation and maintenance can be carried out as easily and as safely as practically possible thus satisfying Standard S2.

9.7 Sandy Bay

The Sandy Bay residential development will utilise permeable block paving and bioretention areas to intercept and improve the water quality of surface water runoff prior to discharging to the large infiltration basins. The development also seeks to utilise conveyance swales to drain highway and footpath runoff at surface level and discharge to the infiltration basins whilst providing additional interception, water quality improvements and flow restriction along the way. These soft SuDS features will also provide important amenity and biodiversity enhancements across the plot, thus satisfying Standards S5 & S6.

Due to rainwater harvesting currently being discounted as a viable means of surface water discharge, the next highest priority regarding discharge destination will infiltration to ground thus the current design seeks to satisfy Priority Level 2 for Standard S1 (runoff destination).

The SuDS features and entire surface water drainage network as a whole will be designed such that construction and future operation and maintenance can be carried out as easily and as safely as practically possible thus satisfying Standard S2.

9.7.1 Foul Water

The proposed independent foul water drainage strategy requires the use of a gravity sewer network as well as pumping stations and rising main infrastructure in order to convey foul flows to a suitable location offsite, subject to ongoing discussions, modelling, design with DCWW.

The Coney Beach and Salt Lake plots will gravitate to the new pumping station indicate to the southern boundary of Griffin Park which will convey flows to the pumping station to the eastern boundary of the Sandy Bay plot via a new foul water rising main. The Sandy Bay residential development itself will have its own separate foul sewer network that gravitates to the new pumping station at the eastern boundary of the plot. Foul flows will converge at this point and will communicate with the existing foul drainage network leading to the Ogmore WwTW at a suitable location to be determined by DCWW through the process agreed with them to investigate and design a solution that does not pose any risk to the town's existing drainage infrastructure.

It is important to reiterate that following final completion of the regeneration works, no additional foul flows arising from the new development will communicate with the local foul sewer network in the immediate vicinity of the development site.

Separate foul sewer networks solely serving the new development will be provided and are to only communicate with the existing wider foul water network at a point deemed suitable by DCWW and following any required upgrade works to further protect the local foul water network from flooding due to a shortfall of capacity.

It is known and understood that parts of the existing local sewerage infrastructure are at capacity and can experience flooding and sewer overflows. It is also understood that this is a sensitive local issue within the community and is therefore a critical point of consideration in preparing the foul drainage infrastructure strategy for the proposed development.

As a result, no reliance on the existing piped foul/combined sewer network around the immediate vicinity of the development area is considered. The former fair site will be disconnected from the existing foul/combined sewerage infrastructure and a designated network of new and independent foul sewers and pumping stations are proposed to serve the proposed development, which is presented indicatively in the accompanying information. There are no proposals to discharge additional foul flows from the new development to any existing local sewers around the development area boundary; this is to avoid contributing to existing operational and flooding issues within those sewers.

A suitable single point of discharge to the wider existing sewer network is being considered by the development team and Dŵr Cymru Welsh Water, through a collaborative process that includes investigation, hydraulic modelling and a design process ahead of eventual construction. This is to ensure that a proven, safe and effective point of discharge is determined, that does not pose any risk to local sewer flooding in any part of the town and surroundings.

The collaborative process with Dŵr Cymru Welsh Water is ongoing and will extend beyond PAC and outline planning submission dates due to the scale of the works and parties involved. The general principles of the proposed new independent foul sewer network serving the proposed development is accepted by DCWW and the focus must be on determining or creating a safe point of discharge within the wider sewer network.

No development that requires a foul drainage connection will be completed before a proven suitable and safe point of connection to a major point on the downstream sewer network is determined,

including the proportional completion any identified essential reinforcement and upgrade works. This also includes consideration of the receiving wastewater treatment works capacity.

The monitoring, operation, maintenance and improvement of the existing sewerage infrastructure that lies outside the development area remains the responsibility of Dŵr Cymru Welsh Water.

No surface water runoff (rainwater) will connect to the development's new foul drainage system. Any existing surface water currently reaching the foul/combined drainage system from within the development area will cease and be drained by a new sustainable drainage system that does not influence the foul drainage system at all.

10 Post Planning Objectives

Following the PAC submission, Stantec will engage with BCBC further in order to further discuss relevant topics such as the surface water drainage design parameters and constraints and to discuss the process for future approvals and consents, such as phased S278, S38 and SAB approvals that will need to be obtained prior to construction.

Furthermore, regular engagements with DCWW will be carried out, as previously mentioned, with the goal of determining a suitable single sewer connection point for the new foul system serving the new development and the scope of any required network upgrade works. Separate conversations will also be held regarding phased S104 (sewer adoption) and S106 (sewer connection) approvals as and when appropriate through the life of the development.

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Appendix M – Topographical Survey

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Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

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Appendix 10.2 – Flood Consequence Assessment

Flood Consequences Assessment

Porthcawl Waterfront Regeneration

Date:

12 November 2025

Prepared for:

Bridgend County Borough Council

Prepared by:

Stantec Hydrock Ltd

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1 Introduction

Stantec Hydrock Ltd have been commissioned by The Urbanists to undertake a Flood Consequences Assessment (FCA), for the proposed Porthcawl Waterfront Regeneration Project.

This report is an assessment of flood risk to the development, from on and off-site sources, and to off-site receptors arising from development at the site.

This report has been completed in accordance with Technical Advice Note 15: Development and Flood Risk (TAN15)[1] through:

- Assessing whether the proposed development is likely to be affected by flooding;
- Assessing whether the proposed development is appropriate in the suggested locations; and
- Detailing measures necessary to mitigate any flood risk identified; to ensure that the proposed development and occupants would be safe, and that flood risk would not be increased as a result of development.

[1] Technical Advice Note 15: Development, flooding and coastal erosion

2 Existing Site Conditions

2.1 Site Location

The site covers an area of 43.6 hectares (ha) and is located in Porthcawl, Wales. The site is bound:

- To the east by Trecco Bay Caravan Park;
- To the south by Sandy Bay;
- To the west by The Portway; and
- To the north by Griffin Park, Coney Beach Pleasure Park and the Sandy Bay Bowl open space area.

The site address and Ordnance Survey Grid Reference is provided in **Table 1** with the site location shown in **Figure 1**.

Table 1. Site Referencing Information

Site Referencing Information	
Site Address	Porthcawl Waterfront, Wales, CF36 5BT
Grid Reference	SS 82519 76950 282519, 176950



Figure 1: Site Location

2.2 Topography

Topographic levels to meters Above Ordnance Datum (m AOD) have been derived from a 1 m resolution Natural Resources Wales (NRW) composite Light Detecting and Ranging (LiDAR) Digital Terrain Model (DTM). A LiDAR plan is shown in **Figure 2**.

The DTM in **Figure 2** shows the site to range in elevation from 5.5m AOD to 18m AOD. This does not include the sections of the site that are not land based, such as Porthcawl Marina. The lowest elevation can be found in Griffin Park adjacent to the northern boundary. The highest elevation can be found in the green space to the north of Sandy Bay Campsite. A topographical survey was undertaken by Landmark Surveys Wales in September 2020 and has been provided in **Appendix A**.

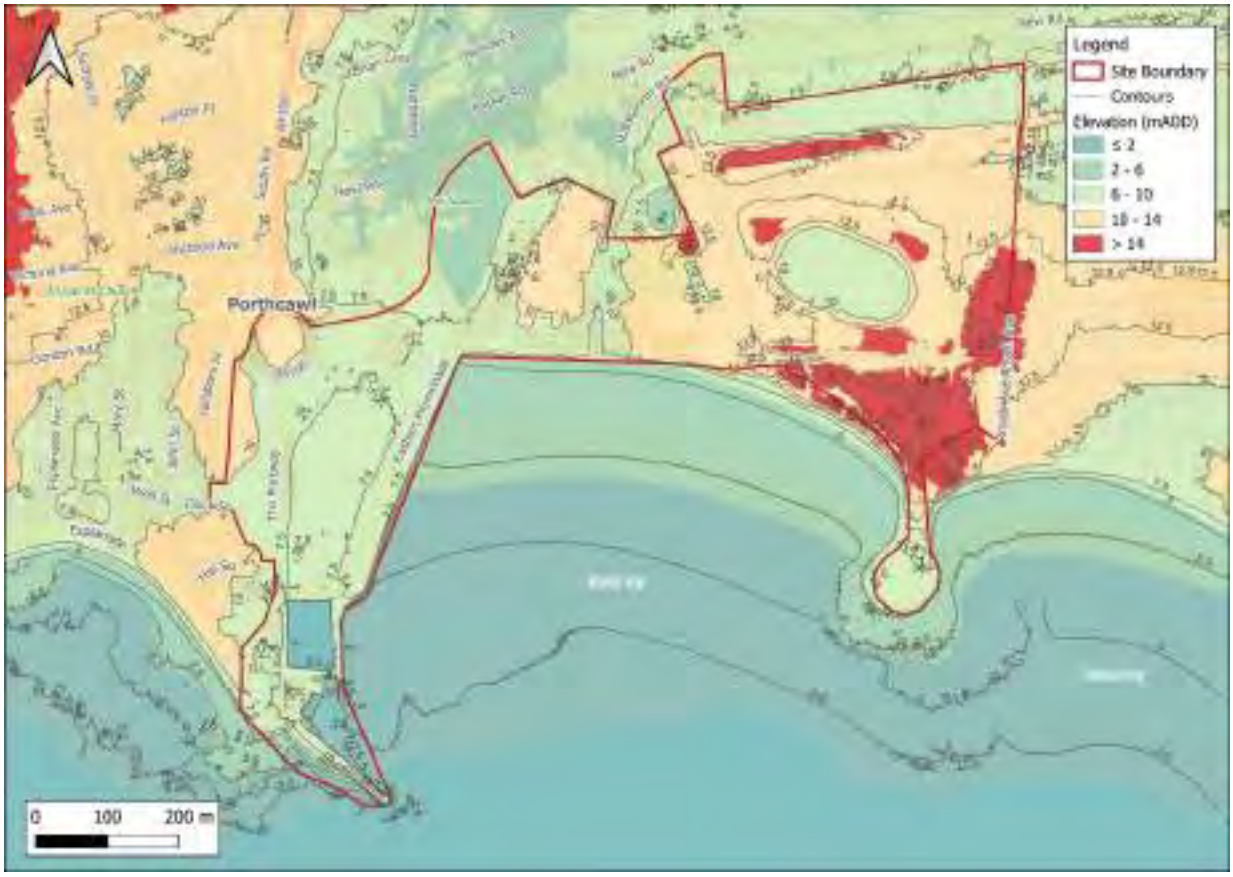


Figure 2: LiDAR Plan

2.3 Hydrology

The site lies immediately north of Sandy Bay within the tidal Bristol Channel, which is an inlet of the Atlantic Ocean. The Porthcawl Marina also lies within the site boundary.

The nearest Main River under Natural Resources Wales (NRW) jurisdiction is the River Ogmore, located approximately 2.80km east of the site as shown in **Figure 3**. The site lies within the Ogmore Operational Catchment in the Tawe to Cadoxton Management Catchment Water Framework Directive (WFD) Operational Catchments Cycle 2.

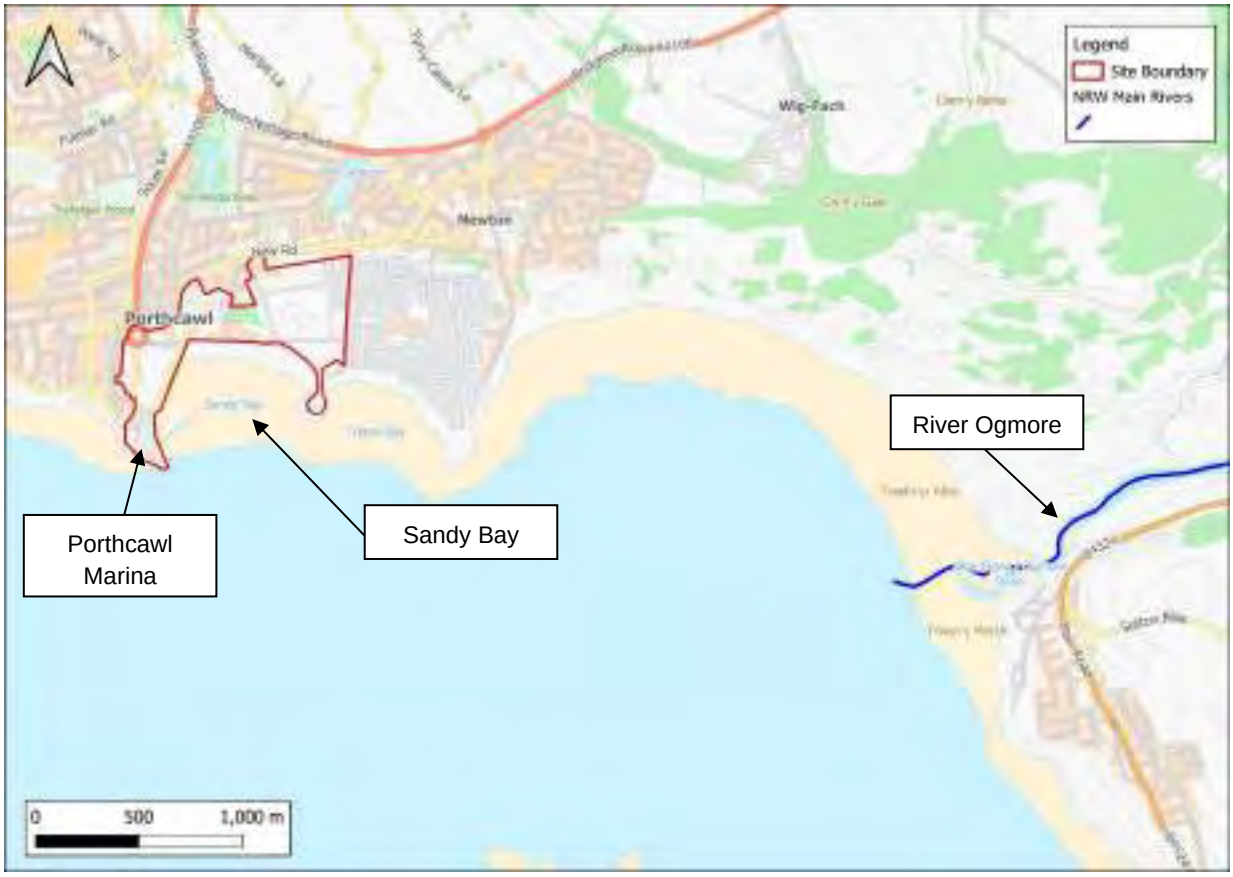


Figure 3: Watercourses Map

2.4 Geology and Hydrogeology

According to British Geological Survey (BGS)[2] geology mapping (accessed October 2025) the site is underlain by bedrock geology comprised of Oxwich Head Limestone Formation in the southwest of the site and Mercia Mudstone Group (marginal Facies) Conglomerate in the northeast of the site. The BGS mapping indicates that there are Superficial Deposits of Marine Beach Deposits, Sand and Blown Sand, present throughout the site.

BGS GeoIndex Onshore[3] data confirms that the site is located within an area designated as a Principal Aquifer for bedrock geology and Secondary A for superficial deposits. Principal Aquifers are defined by rock types that provide significant quantities of water and can support water supply and baseflow to rivers, lakes and wetlands on a strategic scale. They typically have a high permeability, meaning they usually provide a high level of water storage. Secondary A Aquifers also comprise permeable layers that can support local water supplies and may form an important source of base flow to rivers.

[2] BGS Geology Viewer (BETA)
[3] BGS GeoIndex Onshore

The site is not located within a Source Protection Zone (SPZ).

Soilscapes[4] mapping shows the site to be located within 'Freely draining slightly acid but base-rich soils' in the west of the site, with the remainder of the site being 'Sand dune soils'.

BGS historic borehole records[5] show that there are nine historic boreholes located within the site boundary ranging from 4.2 – 10.0m in depth. Groundwater was encountered in four of the boreholes, at depths between 4.00 – 6.50m below ground level (m bgl) (BGS Reference: SS87NW13, SS87NW11, SS87NW10 and SS87NW14). The boreholes in which groundwater was found to be present were situated in the west of the site, between The Portway and Eastern Promenade, in proximity to the existing Aldi (located at CF36 5TS).

A Ground Investigation Report was produced by Quantum Geotech in July 2020 (report number Q0281/FR) (**Appendix B**). As part of the ground investigations, nine trial pits were conducted in June 2020, ranging between 3.0m and 3.4m bgl in depth, in which no ground water was encountered. These trial pits were situated in proximity to the Sandy Bay bowl and did not extend into the western parts of the proposed development site. The locations of the trial pits can be found in **Appendix B**.

[4] LandIS - Land Information System - Soilscapes soil types viewer
[5] BGS Borehole Records

3 Proposed Development

The site is currently brownfield land with a mix of existing uses, including Griffin Park, Coney Beach Pleasure Park, Monster Park, Hillsboro Car Park, and Salt Lake. The development proposal includes:

- Up to 980 homes;
- Approximately 20 ha of open space including a series of new significant public open spaces with different offers;
- 2.2 ha of land for educational use;
- Approximately 130,000 square feet of commercial and leisure floorspace including retail uses, a Hotel, Lido and Gym / Wellbeing Centre;
- Enhancement of Porthcawl Harbour environment;
- New coastal defence works;
- A flexible meanwhile leisure use space (approximately 23,500 square feet);
- Approximately 6,500 square feet of flexible community / civic space;
- Provision of up to 6 0 public parking spaces within the site area;
- New spine road access from the Eastern Promenade to Sandy Bay; and
- Enhancement of the Griffin Park and proposed new facilities including MUGA.

The proposed site layout is presented in **Appendix C**.

The site vulnerability classification according to Figure 4 of TAN15 is ‘Highly vulnerable development’. According to paragraph 8.3 of TAN15, the proposals are classed as ‘Redevelopment’.

4 Planning Policy

4.1 National Planning Policy

Planning applications are required to adhere to details set forth by the following:

- Planning Policy Wales (PPW) (2021);
- TAN15: Development, flooding and coastal erosion (2025); and
- FCAs: Climate Change Allowances:

NRW defines the fluvial flood zones as follows:

- **Flood Zone 1 (Low Risk)** comprises land assessed as having a ≤0.1% chance of flooding from rivers in any given year (equivalent to the ≥1 in 1,000-year return period flood event), including an allowance for climate change.
- **Flood Zone 2 (Medium Risk)** comprises land assessed as having a 0.1-1% chance of flooding from rivers in any given year (equivalent to the 1 in 1,000 - 1 in 100-year return period flood event), including an allowance for climate change.
- **Flood Zone 3 (High Risk)** comprises land assessed as having a ≥1% chance of flooding from rivers in any given year (equivalent to the ≤1 in 100-year return period flood event), including an allowance for climate change.
- **TAN 15 Defended Zones** comprise areas where flood risk management infrastructure provides a minimum standard of protection against flooding from rivers of 1 in 100-year return period flood event with an allowance for climate change and a freeboard.

4.1.1 TAN15 (2025)

TAN15 provides ‘technical guidance which supplements the policies set out in PPW and Future Wales in relation to flooding and coastal erosion’ by providing a framework within which ‘flood risk arising from rivers, the sea and surface water, and the risk of coastal erosion can be assessed’.

According to Figure 4 of TAN15, the overall proposed development constitutes a ‘Highly Vulnerable’ development vulnerability classification under ‘All residential premises (including hotels, Gypsy and Traveller sites, caravan parks and camping sites)’.

Figure 5 of TAN15 (**Table 2** below) summarises frequency thresholds for different types of development to ensure new development remains flood free during the 1% river flood (i.e. a flood with a 1 in 100 chance of occurring in any year) and the 0.5% flood from the sea (i.e. a flood with a 1 in 200 chance of occurring in any year), plus an allowance for climate change over the lifetime of development.

TAN15 states that these thresholds may be applied with more flexibility in regard to redevelopment, changes of use, conversions and extensions, where the ability to substantially redesign a development is limited.

Table 2. Flood events in which development must be flood-free

Vulnerability Categories		Flood Event Type	
		Rivers	**Sea**
Highly Vulnerable Development	Emergency Services	0.1% + CC	0.1% + CC
	All other types	1% + CC	0.5% + CC
Less Vulnerable Development		1% + CC	0.5% + CC
Water compatible development that may be occupied by people		1% + CC	0.5% + CC

Figure 6 of TAN15 (**Table 3** below) summarises tolerable conditions in an extreme flood event for different types of new development when assessed against the 0.1% extreme flood event, including an allowance for climate change.

Table 3. Tolerable conditions in an extreme flood event

Types of New Development	Maximum Depth of Flooding (mm)	Maximum Velocity of Flood Waters (m/s)
Highly Vulnerable Development	600	0.15
Less Vulnerable Development	600	0.30
Infrastructure associated with highly vulnerable development	600	0.30
Water Compatible Development	600	0.30

4.2 Bridgend County Borough Local Development Plan 2018 – 2033[6]

The Bridgend County Borough Local Development Plan (LDP) was adopted in March 2024. The Planning and Compulsory Purchase Act 2004 requires BCBC to set out its objectives in a LDP for the development and use of land over the plan period, and its policies to implement them.

As shown in the LDP, the proposed development site falls within the Porthcawl Regeneration Growth Area (PLA1). The delivery of new flood defences and redesignation of Porthcawl as a Defended Zone will provide a coincidental opportunity to enable the Porthcawl Waterfront site to provide residential-led growth. The provision of new residential units, including affordable dwellings, will enable the delivery of other vital regeneration requirements.

[6] Bridgend County Borough Local Development Plan 2018 - 2033

The new flood defences being delivered as part of the Flood Defences Scheme, are expected to provide a high standard of protection, significantly reducing the risk of flooding in areas within Flood Zone 3 and respective areas in Flood Zone 2.

4.3 South East Wales Level 1 Strategic Flood Consequence Assessment[7] (2022)

The South East Wales Stage 1 Strategic Flood Consequence Assessment (SFCA) identifies areas at risk of flooding from all sources, including the likely impact of climate change. The study identifies areas at potential high risk from flooding as well as providing details of historical flood events and any details of flood risk management structures or procedures present. The SFCA provides an overview of the planning context in the country and represents available data on flood risk across South East Wales from each of the sources of flooding outlined within TAN15.

The SFCA notes that the site lies within the boundary of the Lavernock Point to St Ann's Head Shoreline Management Plan (SMP). The SFCA advises that the main driver for the relevant policy unit *"is to reduce the risk of coastal erosion and flooding to the developed area of Porthcawl, through a policy of hold the line by maintaining and upgrading defences at Trecco Bay, Sandy Bay, Town Beach and Marine Drive, subject to the future availability of public funding for coastal erosion and flood risk management and private funding for proposed future development at Trecco Bay and Sandy Bay"*.

4.4 Bridgend County Borough Council Strategic Flood Consequence Assessment[8] (2020)

The Bridgend County Borough Council (BCBC) SFCA was published in 2020. The SFCA creates a strategic framework for the consideration of flood risk when making planning decisions, using the most current available information. In the SFCA, Porthcawl is highlighted as a key settlement and regeneration area. Porthcawl is also identified as a location at risk of tidal flooding with two historic events discussed. These events occurred during May 2008, along the Esplanade (80m to the west of the site) and West Drive (600m to the west of the site).

During the production of the SFCA, BCBC have completed detailed tidal modelling of Sandy Bay to understand the future potential for tidal flooding. The SFCA reports that the results of this modelling show that climate change will significantly increase flood risk at Salt Lake car park, which is located within the site boundary, and will increase the flood risk to a broad area of Porthcawl.

The SFCA states that the majority of Porthcawl is likely to have medium or low depths of groundwater (between 0.5m bgl and 5m bgl). Larger areas of groundwater water bodies are predominantly present outside of urban areas. The SFCA confirms that there have been historic incidences of sewer flooding in Porthcawl, but none that have occurred within the site boundary.

[7] South East Wales – Stage 1 SFCA (2022)
[8] Bridgend County Borough Council SFCA (2020)

The SFCA does not report any historical surface water flooding incidents or flooding from artificial sources in proximity to the site. The SFCA advises that the Porthcawl area is generally not susceptible to surface water flooding. It highlights a small area at the southern extent of Salt Lake car park at risk of surface water flooding. This location falls with the proposed development site boundary, however, the SFCA states that this small area is likely due to the topography of the site and it is anticipated that surface water on this site should be easily managed through the use of SuDS techniques.

In response to the tidal model results, BCBC have developed plans for a Flood Defences Scheme divided into two phases, both of which fall within the site boundary. Phase 1 (Eastern Promenade), which is now complete[9], included repair and maintenance to the 182m long Western Breakwater. Phase 2 (Coney Beach), which has not been finalised as of November 2025, will consist of flood and coastal erosion measures along the beach frontage. The SFCA advises that with implementation of the Porthcawl Flood Defences Scheme, it is likely that the Porthcawl Regeneration site can be developed in full compliance with the requirements of TAN15.

4.5 Bridgend County Borough Council Strategic Flood Consequence Assessment Site Screening Update (2022)[10]

This Site Screening Update has been prepared as an addendum to the Bridgend County Borough Council SFCA released in October 2020 (**Section 4.4**). The update was required due to amendments to TAN15. In this Site Screening Update, allocated sites are screened using Red Amber Green (RAG) for various criteria related to flood risk and TAN15. The Porthcawl Regeneration Site receives a RAG assessment rating of 'Amber', which means that a potential significant portion of the site is located in a Flood Zone. This may constrain or limit development of the site. Careful consideration of the justification test and acceptability criteria will be required. It is important to note that the justification test is no longer a requirement of TAN15, following the March 2025 update. The Site Screening Update advises that the proposed flood defence scheme, of which Phase 1 has been completed, should protect the Porthcawl Regeneration Site to a minimum of 0.5% AEP standard of protection, including climate change for 100 years. The Site Screening Update concludes that the Porthcawl Regeneration Site allocation is expected to be safe to develop, subject to a detailed FCA and careful flood resilient design.

4.6 Bridgend Local Flood Risk Management Plan[11] (2016)

The Bridgend Local Flood Risk Management Plan (LFRMP) was published in August 2016 and has been created to highlight hazardous areas and areas at risk of flooding from surface water, rivers, tides, groundwater and reservoirs. It includes the identification of 'Local Flood Risk Investigation Areas' (LFRIA).

[9] Porthcawl's new promenade and flood defence work officially opened
[10] Bridgend County Borough Council SFCA: Site Screening Update (2022)
[11] Bridgend LFRMP (2016)

LFRIA 06 is approximately 184 ha and is situated in the south eastern corner of the Bridgend Boundary to the south of Porthcawl. A small section of LFRIA 06 overlaps with the proposed development site boundary, including Hillsboro Place car park, Griffin Park and Newton Primary School. Within these locations, the LFRMP identifies that two residential properties and one commercial property are predicted to flood for the 1 in 30-year event, using a 200mm threshold.

The LFRMP also indicates that there are surface water flow routes along Poplar Road and Northways, which result in high surface water ponding at the roundabout intersecting New Road and Eastern Promenade. However, historic flooding data does not show any incidents of flooding for the Porthcawl area.

4.7 Climate Change Considerations

Under TAN15 and local planning policy, it must be demonstrated that any proposed development at the site will be safe over its intended lifetime. This could include measures to ensure the development is flood resistant / resilient and that safe access and egress is provided for the following flood events, also known as 'design flood events'.

- 1 in 100-year (1% AEP) fluvial flood event accounting for the future impacts of climate change;
- 1 in 200-year (0.5% AEP) tidal / coastal flood event accounting for the future impacts of climate change;
- 1 in 100-year (1% AEP) pluvial (surface water) event accounting for the future impacts of climate change; and
- 1 in 30-year (3.3% AEP) pluvial (surface water) event accounting for the future impacts of climate change.

Table 4, **Table 5** and **Table 6** provide the latest climate change uplifts for fluvial, surface water flooding, and coastal flooding as per the NRW Climate Change Allowances and FCA guidance[12].

[12] Flood Consequence Assessments: Climate Change (gov.wales)

Table 4. Peak River Flow Allowances for the River Basin Districts across Wales

West Wales	Total potential change anticipated by the 2020s	Total potential change anticipated by the 2050s	Total potential change anticipated by the 2080s
Upper end estimate	25%	40%	75%
Change factor / central estimate	10%	25%	30%
Lower end estimate	5%	10%	15%

Table 5. Change to extreme rainfall intensity (compared to a 1961-1990 baseline)

All of Wales	Total potential change anticipated by the 2020s (2015 – 2039)	Total potential change anticipated by the 2050s (2040 – 2060)	Total potential change anticipated by the 2080s (2070 – 2115)
Upper estimate	10%	20%	40%
Central estimate	5%	10%	20%

Table 6. Estimated mean sea level rise (in metres) for Bridgend County Borough by 2100 and 2120. Allowances are based on RCP8.5 70th and 95th percentiles[13].

Allowance (Percentile)	Mean sea level rise (metres) by 2100 (UKCP18 baseline 1981-2000)	Mean sea level rise (metres) by 2120 (UKCP18 baseline 1981-2000)
70th (Higher Central)	0.84	1.00
90th (Upper End)	1.11	1.32

4.8 Future Wales: The National Plan 2040[14]

Future Wales: The National Plan 2040 is a national development framework, directing development in Wales to 2040. It is a development plan with a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, decarbonisation and climate-resilience. Future Wales sets a direction for where investment in infrastructure and development is required. It outlines the challenge of delivering these improvements to the public, private and third sectors.

[13] NRW Flood Consequences Assessments: Climate change allowances (2021)
[14] Upgrade to Future Wales – The National Plan 2040

5 Existing Site Flood Risk

TAN15 requires flood risk from the following sources to be assessed:

- Tidal and fluvial sources (sea and river flooding);
- Surface water sources (flooding resulting from overland flows);
- Groundwater sources;
- Sewer flooding; and
- Artificial sources, canals, reservoirs etc.

Each of these sources are addressed within this section of the report.

5.1 Tidal and Coastal Flood Risk

Due to the site's location, the primary source of flooding relates to coastal and tidal sources from the estuary. A review of NRW's Flood Map for Planning (Seas), shows parts of the site to be located in Flood Zone 2 and Flood Zone 3 (**Figure 4**). Additionally, as shown in **Figure 5**, the west of the site is located within a TAN15 Defended Zone, which highlights areas that are protected by formal flood defences owned and maintained by a Risk Management Authority.



Figure 4: NRW's Flood Map for Planning (Seas)



Figure 5: TAN15 Defended Zones

As part of the Flood Map for Planning, NRW have a Flood Defence Location dataset (**Figure 6**). The southern boundary of the site meets Sandy Bay, a southwest facing coastal embayment. Within the site boundary, there are various flood defences which are described below.

In the west of the development site, is an 182m Western Breakwater that significantly influences coastal risk within Sandy Bay. There is also a 400m long stretch of Eastern Promenade which consists of a masonry sea wall and parapet that is set back between 5 – 10m from the wall. According to the Flood Inundation Modelling Report produced by Ove Arup and Partners Ltd (Arup) in 2017, Eastern Promenade is elevated approximately 5m above the beach level, depending on the sand level (**Appendix D**). According to this same report, it is understood that the standard of protection for existing defences is up to the 1 in 200-year event.

The central section of Sandy Bay adjacent to Coney Beach Pleasure Park contains various private sea walls, revetments and steep stepped access points. However, the Coney Beach Pleasure Park flood defences are not indicated in the NRW dataset in **Figure 6**. The ground level in the south of the fairground is approximately 3.5m above the adjacent beach level.

The eastern end of Sandy Bay is bound by sand dunes and Rhych Point, both of which are indicated on **Figure 6**. The elevation of the sand dunes is approximately 4m above the beach level and Rhych Point, which extends approximately 180m south of the dunes, has an elevation of 8m.

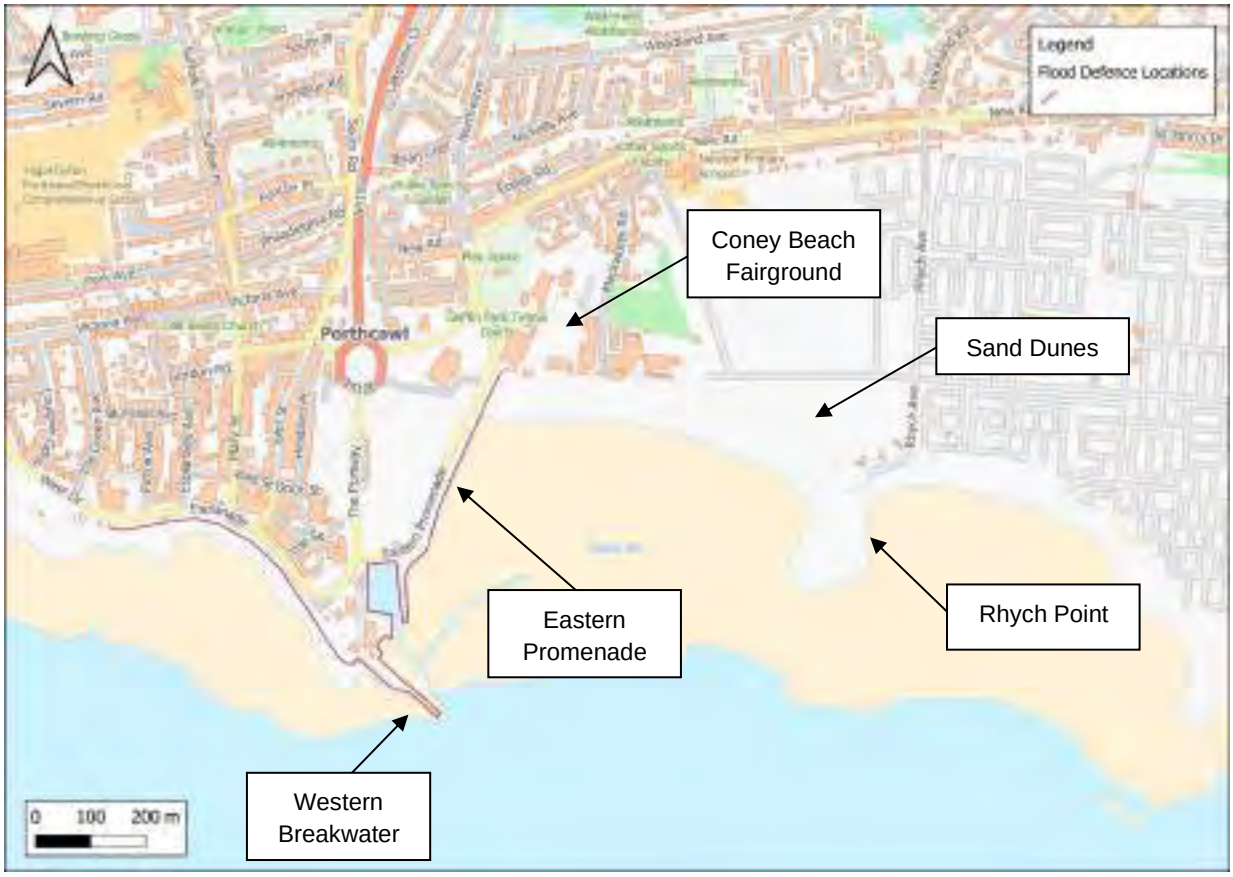


Figure 6: NRW's Flood Defences dataset

According to the NRW Recorded Flood Extents, the site lies outside of the extents of previous tidal flood events. The closest recorded events occurred during May 2008, along the Esplanade (80m to the west of the site) and West Drive (600m to the west of the site) (**Figure 7**).



Figure 7: NRW's Recorded Flood Extents

5.1.1 Breach Scenario

As per NRW Guidance Note 43[15], the likelihood of a breach of defences that provide any degree of protection to a development site must always be assessed and can be influenced by defence type, location, condition, ownership and predicted loading. If it is considered that the failure of a defence is so unlikely it does not need to be assessed, then this must be supported by appropriate evidence.

The Flood Inundation Modelling Report produced by Arup in 2017 formed part of the Sandy Bay and Eastern Promenade Project Appraisal (**Appendix D**). The aim of this report was to assess the flood risk from tidal / coastal overtopping along Sandy Bay and Eastern Promenade. Model simulations were run for 2018 (present day) and 2118 (future scenario). The scenarios modelled include breaches at Mackworth Road, four separate sections of the Eastern Promenade parapet wall, and a 'Do Nothing' scenario in which all defences (Western Breakwater, Eastern Promenade, and Mackworth Road) are assumed to fail. Although the baseline model, which underpins the breach modelling is now considered to be out of date, the results can still provide valuable insight.

[15] NRW Guidance Note 43: Modelling blockage and breach scenarios

The modelled breach at Mackworth Road showed no significant increase in flood extent or flood depth compared to a scenario without breach. The modelled breaches along the Eastern Promenade showed only a slight increase in flood extent and depth in 2018 but a significant increase for 2118. Model results for the 'Do Nothing' option showed flooding to the junction between A4108 and A4106.

As outlined in **Section 4.4**, the Western Breakwater has recently been repaired and upgraded. Along the Eastern Promenade, if overtopping of the sea wall did occur, the secondary parapet would work to contain the water. Due to the nature of the proposed development, changes are proposed to existing ground levels. The Salt Lake area is proposed to be raised approximately 1.5m above existing ground levels, increasing its level of protection.

The development proposal incorporates several flood resilience and improved coastal protection measures in the Coney Beach area. These include a terraced revetment structure along the existing shoreline west of Mackworth Road, localised ground raising in the same area, a flood defence ramp at Mackworth Road, and rock armour erosion protection to the east of Mackworth Road. To the east of the site, the sand dunes will be retained and enhanced.

5.2 Updated Sandy Bay Modelling

As part of the evidence base for the Porthcawl Waterfront Regeneration project, Arup updated the baseline modelling for Sandy Bay and conducted post development modelling in October 2025 (report reference 309314-ARP-XX-XX-RP-MO-001) (**Appendix E**). The modelling incorporated sea level rise allowances for 'Higher Central' (70th percentile) and 'Upper End' (95th percentile), with simulations run for the years 2026 (present day) and 2126 (future scenarios). According to the NRW guidance on Climate Change Allowances for Flood Consequence Assessments[16], updated September 2021, development proposals should be assessed against the relevant regional 70th percentile to inform design levels as a minimum. An assessment should also be made against the 95th percentile to inform mitigation measures, access and egress routes and emergency evacuation plans (refer to **Section 7.2**).

5.2.1 Baseline Results

Figure 8 shows the maximum flood depth results for the design event (1 in 200-year with climate change) with the higher central allowance (70th percentile). The model results show flooding predicted in four main areas of the site. These are Salt Lake, Porthcawl Marina, Griffin Park and Mackworth Road.

The model results for the 1 in 200-year 2126 storm event show that water overspills from the northeast corner of Porthcawl Marina and travels northward across Eastern Promenade into Salt Lake. There is flooding predicted along the Eastern Promenade walkway, with maximum flood depths of approximately 20cm. For the low-lying areas north of Porthcawl Marina, the maximum flood depths are approximately 60cm. The flooding also extends further north of Sandy Bay following two main flow paths. One of these flow paths follows the Eastern Promenade and New Road with flooding extending as far as Nicholls Avenue for the 0.5% AEP event. The second key flow path follows the route of Mackworth Road. The

[16] Flood Consequences Assessments: Climate change allowances

maximum flood depths along the Eastern Promenade and New Road flow path are of approximately 45cm whereas the maximum flood depths along Mackworth Road are of approximately 80cm in the 1 in 200-year 2126 storm event. Within Griffin Park, flood levels remain below 53cm, with the deepest levels of flooding predicted within the tennis courts and bowling greens due to topographical lows.



Figure 8: Baseline maximum flood depth 1 in 200-year event with higher central allowance for 2126

Figure 9 displays the baseline model results for the extreme event (1 in 1000-year with climate change), with the higher central allowance (70th percentile). In this event, the maximum flood depths along the Eastern Promenade walkway increase to approximately 70cm. For the low-lying areas north of Porthcawl Marina, the maximum flood depths are approximately 190cm. The flow path along Eastern Promenade and New Road extends further north, reaching Woodland Avenue and The Wilderness (approximately 500m to the north of the site). The maximum flood depth along this flow path, increases to 50cm. During the 1 in 1000-year 2126 storm event, maximum flood depths along Mackworth Road reach approximately 90 cm. For this event, flooding is shown to extend eastward beyond Mackworth Road, reaching Hi Tide. Within Griffin Park, flood depths increase to around 59 cm.



Figure 9: Baseline maximum flood depth 1 in 1000-year event with higher central allowance for 2126

The results in **Figure 10** indicate that the maximum flood velocity in the extreme event remains below 0.75m/s throughout most of the site. The exceptions to this are the Porthcawl Marina, Coney Beach Pleasure Park frontage, Eastern Promenade adjacent to Griffin Park and Mackworth Road.



Figure 10: Baseline maximum flood velocity 1 in 1000-year event with higher central allowance for 2126

Considering the above, the existing site is considered to be at a 'medium to high' risk of flooding from tidal sources. **Section 6** discusses flood mitigation, resistance and resilience. **Section 7** presents the post-development results.

5.3 Fluvial Flood Risk

According to NRW Flood Map for Planning (Rivers) (**Figure 11**), the site is located within Flood Zone 1 (Low Probability) with the closest areas of Flood Zone 2 and Flood Zone 3 located approximately 2.8km to the northwest of the site, associated with an unnamed watercourse. There are also areas of Flood Zone 2 and Flood Zone 3 located 4km to the east of the site, associated with the Ogmore River.

According to the NRW Recorded Flood Extents, the site lies outside of the extents of previous fluvial flood events. Additionally, there is no evidence in the SFCA to suggest that the site is at risk of fluvial flooding.



Figure 11: NRW's Flood Map for Planning (Rivers)

Therefore, the site is considered to be at a 'low' risk of flooding from fluvial sources.

5.4 Surface Water Flood Risk

Surface water (pluvial) flooding is caused by rainfall levels exceeding the natural infiltration properties of the surrounding soils. Flooding can also occur owing to the absence of a natural method of drainage such as watercourses or ditches, or where soil infiltration rates are low. Flooding often results in ponding of water at low points or when surface water flow routes are blocked by an obstruction.

The NRW Flood Map for Planning, shows that most of site is located within Flood Zone 1 in relation to Surface Water and Small Watercourses (**Figure 12**). However, as shown in **Figure 12,** there are small areas of Flood Zone 3 located in Hillsboro Place Car Park, Salt Lake car park, along The Portway and on Dock Street. Additionally, there are small, isolated areas of Flood Zone 2 in Griffin Park and the Sandy Bay bowl green space (**Figure 12**). The NRW Flood Map for Planning (Surface Water and Small Watercourses) dataset is inclusive of the effects of climate change.

The areas of Flood Zone 2 and Flood Zone 3 (Surface Water and Small Watercourses) are a result of topographical lows. Notably, there are no overland flow routes entering the site from surrounding land that would present a risk of flooding to the site.

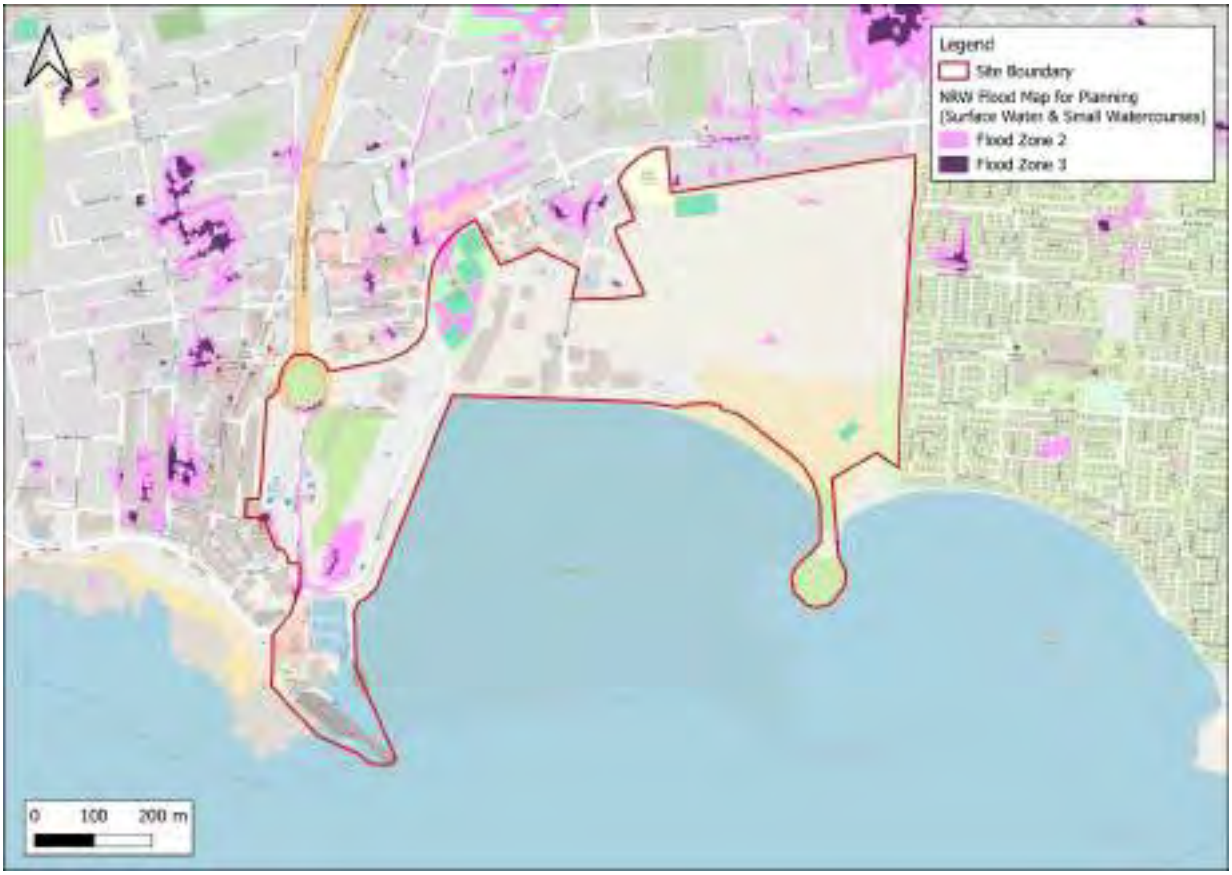


Figure 12: NRW's Long Term Flood Risk Map (Surface Water and Small Watercourses)

A Drainage Statement Report has been developed to ensure that the development does not exacerbate surface water flood risk on and off-site (document reference 32485-STN-XX-XX-RP-C-1001 P01) (**Appendix G**). SuDS are a form of flood resistance, and a variety of measures are proposed throughout the site. Surface water discharge from the Sandy Bay parcel are anticipated to be dealt with by swales, infiltration basins and conventional pipework. The proposed Sustainable Drainage Systems (SuDS) will be designed in accordance with the Welsh Statutory SuDS Standards and approved by the local authorities acting in its SuDS Approving Body (SAB) role.

As such, given the low risk identified by the NRW mapping, the site is concluded to be at 'low' risk of surface water flooding.

5.5 Groundwater Flooding

Groundwater flooding is caused by the emergence of water originating from sub-surface permeable strata. A groundwater flood event results from a sufficient rise in groundwater level where the water table intersects the ground surface and inundates low lying land. Periods of prolonged rainfall may also be a cause of groundwater flooding, with aquifers and soils becoming saturated.

As the site is within an area designated by BGS as a Principal Aquifer for bedrock geology and Secondary A for superficial deposits, there is potential for the ground below the site to have high permeability and a high level of water storage. The site is not located within a Source Protection Zone (SPZ).

Given the extensive area covered by the development site, it is likely that groundwater conditions will vary spatially across different parts of the site. This variability may be influenced by factors such as localised geology, historical land use, and topography.

BGS historic borehole records[17] show that there are nine historic boreholes located within the site boundary ranging from 4.2m to 10.0m in depth. Groundwater was encountered in four of the boreholes, at depths between 4.00m and 6.50m bgl (BGS Reference: SS87NW13, SS87NW11, SS87NW10 and SS87NW14). The boreholes in which groundwater was found to be present are situated between The Portway and Eastern Promenade, in proximity to the current Aldi site (located at CF36 5TS).

In the eastern part of the site, the ground investigation undertaken by Quantum Geotech in June 2020 consisting of nine trial pits to a depth of 3.4m bgl did not encounter any groundwater in the Sandy Bay Bowl area (**Appendix B**).

Further ground investigations were undertaken in February 2021 by Groundtech Consulting as part of the Aldi development that falls within the western part of the site boundary (planning reference P/21/835/FUL)[18]. In these investigations, groundwater was encountered in BH2, BH3, BH4 and WS01 between depths of 4.5m and 7.5m bgl.

Considering the above, the site is considered to be at 'low' risk of groundwater flooding.

5.6 Sewer Flooding

Flooding can occur owing to the failure of existing foul or surface water drainage infrastructure. If flows within the drainage system exceed the designed capacity or foreign matter causes blockages, overflow to the surface can occur, leading to flooding.

Dwr Cymru Welsh Water (DCWW) is identified as the entity responsible for sewer infrastructure across the study area. According to a November 2020 Drainage Strategy Report produced by Redstart, there are several public foul sewers under DCWW ownership, most notably within the Hillsboro Place Car Park, adjacent to the pavilion in Griffin Park, through Mackworth Road and along the western and northern perimeter of the Sandy Bay Caravan Park. Additionally, there is a 400mm diameter public foul rising main that crosses the Salt Lake Car Park. The rising main originates from the Irongate Sewerage Pumping Station located off West Drive. A 225m diameter public surface water sewer travels in a southerly direction through Mackworth Road and eventually discharges into a 600mm drain under BCBC ownership.

In addition, various drainage assets within the site boundary are under BCBC ownership including highway drainage (primarily along The Portway), a 1100mm diameter drain conveying flows from The Wilderness Lakes 600m to the north of the site which eventually discharges to the harbour, and the 600mm drain that crosses Salt Lake Car Park where it receives a connection from the public surface water sewer system.

[17] BGS Borehole Records
[18] BCBC Planning Register P/21/835/FUL

There are large areas within the site boundary that are currently being served by private drainage systems, including the Sandy Bay Caravan Park and Coney Beach Amusement Park. It is assumed that the majority of the private network in these locations will be abandoned and replaced with new systems serving the development site. The above-mentioned assets are indicated on the Existing Drainage and Sewerage Plan (drawing number GC3432-RED-73-XX-SK-D-0002-P01), which has been provided in **Appendix F**.

Conversations with DCWW and BCBC as the LLFA have been on-going regarding existing assets and appropriate drainage strategies for the regeneration site. A Drainage Statement Report (document reference 32485-STN-XX-XX-RP-C-1001 P01) has been provided in **Appendix G**. Diversions of existing sewers / drains will be required to accommodate the flood defence revetment and western plots within Lake. It is anticipated that surface water flows from the Salt Lake parcel will be permitted to discharge freely either into the harbour (via a new drainage system) or into the wilderness culvert (which currently discharges into the harbour). Surface water flows from the Coney Beach parcel will discharge into the harbour to the south of Salt Lake via a new drainage system.

Therefore, the site is considered to be at a 'low' risk of sewer flooding.

5.7 Artificial Sources

Failures and overtopping of reservoirs and navigable water bodies, and failure of water mains, constitute the primary means of flooding from artificial sources.

NRW Flood Risk from Reservoirs mapping shows the site to lie outside of the extents of potential reservoir flooding. NRW also state that reservoir flooding is extremely unlikely to happen. All large reservoirs must be inspected and supervised by reservoir panel engineers. As the enforcement authority for the Reservoirs Act 1975 in England and Wales, the NRW ensure that reservoirs are inspected regularly, and essential safety work is carried out.

Additionally, there is no indication within the SFCA that the site is at an enhanced risk of flooding from artificial sources. Considering the probability of catastrophic reservoir failure is considered to be extremely low, the risk of artificial flooding to the site is considered to be low.

5.8 Confirmation of Design Flood Event and Design Flood Level

The dominant flood risk mechanism to the site is from tidal and coastal sources. As outlined in **Section 4.1**, under TAN15 and local planning policy, it must be demonstrated that any proposed development at the site will be safe over its intended lifetime for the design flood event. The appropriate design flood event for this site is the 1 in 200-year (0.5% AEP) tidal / coastal event accounting for the future impacts of climate change (higher central allowance).

The model results have shown flooding predicted in four main areas of the site. These are Salt Lake, Porthcawl Marina, Griffin Park and Mackworth Road. Of these locations, only Salt Lake and the western side of Mackworth Road are proposed for new commercial and residential buildings. Therefore, the design flood level for each relevant location is as follows:

- Salt Lake 7.50m AOD

- West of Mackworth Road 9.71m AOD (on seafront)
- West of Mackworth Road 9.42m AOD (set back from seafront)
- East of Mackworth Road 8.53m AOD

5.9 Existing Flood Risk Summary

Each flood risk source and its associated risk level is provided in **Table 7**. It has also been specified which specific sources require mitigation measures, which will be discussed in **Section 6**.

Table 7. Existing Site Risk Summary

Flood Risk Source	Existing Site Risk Level	Mitigation Required
Tidal	High	Yes – See **Section 6**
Fluvial	Low	No
Surface Water	Low	No
Groundwater	Low	No
Sewers	Low	No
Artificial Sources	Low	No

6 Flood Mitigation, Resistance and Resilience

The following flood risk resistance and resilience measures have been recommended in response to the risks outlined in **Section 5**. While the level of flood protection provided to the site by the existing flood defence network is expected to be maintained or upgraded, residual risk associated with defence overtopping, breach or storm events that exceed the standard of protection remains. The following mitigation measures are recommended to reduce the residual risk, and to ensure that the proposed development will be safe for its lifetime, without increasing flood risk elsewhere.

6.1 Site Layout and Sequential Approach

Importantly, as outlined in **Section 4.2 to Section 4.5**, Porthcawl Regeneration Area is a key strategic are for redevelopment and the site has been allocated in the LDP and screened in the SFCA. The LDP was prepared with constraints, including flood risk, in mind. As the proposal is for redevelopment of an existing site, not new development of a greenfield site, there is opportunity for environmental (including flood risk) improvements beyond the existing baseline.

The proposed site layout has been developed in accordance with the sequential approach to flood risk management. The southwestern corner of the site surrounding Salt Lake and Porthcawl Marina, has been identified as higher flood risk. As per the proposed site plan in **Appendix C**, this area is designated for a mix of leisure uses, community space and a hotel, with basement carparking beneath. All of which are 'Less Vulnerable' as per Figure 4 of TAN 15, with the exception of the hotel. Residential use ('More Vulnerable' as per TAN15) is proposed for the upper levels. Griffin Park is also to remain as leisure use, with tennis courts, a bowling green and a MUGA. All of which are considered 'Less Vulnerable'.

Mackworth Road is allocated for a mixture of residential and commercial uses. On the eastern side of Mackworth Road, the Buccaneer Building (commercial use) and residential properties are to remain as is. On the western side of Mackworth Road, a residential block is proposed with under croft parking beneath. To the north of this block, split level townhouses are proposed with a finished floor level of 10.50m AOD.

In summary, the site layout demonstrates a clear application of the sequential approach, ensuring that 'More Vulnerable' uses are directed to areas of lower flood risk and that appropriate mitigation measures are incorporated throughout the development.

6.2 Finished Floor Levels

It is recommended that finished floor levels (FFLs) are set 600mm at minimum above the estimated flood levels. **Appendix H** displays the Proposed Engineering Levels for the site. This confirms that the proposed FFLs for buildings in the Salt Lake area are between 8.50m AOD and 8.80m AOD, which is above the recommended 8.10m AOD.

Although Griffin Park is identified as an area of higher flood risk, it is designated for leisure use (combination of sports pitches and play areas) and therefore does not require FFLs. **Appendix H** shows a building located south of the sports pavilion with an FFL of 5.60m AOD; however, this structure is a pumping station with a below-ground tank.

On the western side of Mackworth Road, **Appendix H** confirms that the proposed FFL for the split-level townhouses is 10.50m AOD, above the recommended level of 10.02m AOD. These townhouses include a lower ground floor; however, this level is not proposed for sleeping accommodation. The recommended FFL for the residential block on the seafront is 10.31m AOD. This block is proposed for under croft parking, with sleeping accommodation on upper levels.

On the eastern side of Mackworth Road, the Buccaneer Building, Hi-Tide and residential properties are to be retained as is, with existing floor levels. However, the flooding predicted in the post development scenario at the Buccaneer Building could potentially be mitigated by raising the FFLs in the future, dependant on future development aspirations. The existing residential properties on the east of Mackworth Road are located to the north of the Buccaneer Building, set back from the coast. These properties are already elevated well above the road level, offering inherent flood protection.

6.3 Flood Resistance and Resilience

The development proposal includes multiple upgrades to existing infrastructure that improve the flood resilience of the site. For example, a new stepped sea wall revetment is proposed along the existing Coney Beach Pleasure Park frontage, to a level of 10.35m AOD.

To ensure the development is appropriately resilient to coastal and tidal flooding, it is recommended that flood resilient construction techniques are incorporated into the buildings, in addition to raising FFLs 600mm above the predicted flood level. The CIRIA Code of Practice for Property Flood Resilience (C790F)[19] provides guidance on measures that reduce the risks to people and property enabling households and businesses to reduce flood damage, speed up recovery and reoccupation. The following standards are recommended to be followed:

- The installation and retrofit of resistance measures - British Standard 851188-1:2019+A1:2021[20];
- Speeding the recovery of buildings after a flood - British Standard 85500:2015[21]; and
- Dealing with and preventing water from the surrounding ground entering below ground structures such as basements - British Standard 8102:2022[22].

6.4 Flood Warning

This spatial Flood Warning Areas dataset are geographical areas where NRW expect flooding to occur and where NRW provide a Flood Warning Service. Flood Warning Areas generally contain properties that are expected to flood from rivers or the sea. The site does not fall within a NRW Flood Warning Area[23]. However, the site is adjacent to the 'Swansea Bay and the Gower peninsula coast between

[19] CIRIA Code of Practice for Property Flood Resilience
[20] Flood resistance products - Building products. Specification
[21] Flood resistant and resilient construction. Guide to improving the flood performance of buildings
[22] Protection of below ground structures against water ingress. Code of practice
[23] Data Map Wales – Flood Warning Areas

Llangennith and Llantwit Major' Flood Alert area[24]. Flood Alert Areas are geographical areas where it is possible for flooding to occur from rivers or the sea.

Tidal flooding is easier to predict than other forms because the primary cause, the gravitational pull of the moon and sun, is well understood. In contrast, other types of flooding, such as fluvial or surface water flooding, are triggered by more complex weather patterns that are harder to forecast and can occur more rapidly. As a result, the NRW Flood Warning Service is expected to provide adequate advance notice to allow site occupants to evacuate safely or seek refuge before flooding occurs. Safe access and egress are covered in **Section 7.2.**

[24] Data Map Wales – Flood Alert Areas

7 Post-Development Scenario

7.1.1 Raw Post Development Results

Figure 13 shows the model results for the post development scenario in the 1 in 200-year with higher central allowance flood event. **Figure 14** shows the post-development scenario model results for the 1 in 1000-year with higher central allowance flood event. For figures showing a comparison of baseline and post development flood depths and extents for a range of storm events, refer to **Appendix E**.

When compared to the baseline model results, the maximum flood extents and depths are significantly reduced in the post development scenario, due to reduced overtopping at Sandy Bay. As per TAN15, the development must remain free from flooding for the 1 in 200-year event plus climate change, which is the 'design event'. The Arup modelling investigation has concluded the proposed new buildings will not be flooded, except for the basement level of one of the new buildings located in Salt Lake, immediately north of the Porthcawl Marina (**Appendix E**). The proposed use of this basement level is a car park. The model results show that flood water enters this building from the 6m-wide car park entrance which is at ground level and floods the basement to a maximum depth of 0.25m for the 1 in 200-year event with climate change (**Figure 13**), and 3.01m for the 1 in 1000-year flood event (**Figure 14**). The existing minimum road level on Eastern Promenade is 7.3m AOD and the maximum level of flood water on the road in the baseline event is 7.5m AOD (for the 1 in 200-year with higher central allowance). To mitigate the flooding at this location, it is proposed to raise the minimum external levels surrounding the basement entrance to 7.9m AOD from approximately 7.3m AOD. This increase of 600mm is considered sufficient to prevent water ingress in the 1 in 200-year 2126 storm event **and** to minimise water ingress in the 1 in 1000-year 2126 storm event. For the 1 in 1000-year 2126 storm (the extreme event), this change would theoretically reduce the depth of flooding within the basement carpark to below the 600mm tolerable threshold (at approximately 300mm). This theoretical approach uses the hydrograph of flows entering the basement car park from Eastern Promenade, as well as the stage time series on Eastern Promenade, to identify a suitable spot level for the car park entrance. This increase in ground level is represented in the Engineering Levels Plan (**Appendix H**). However, it has not been represented in the hydraulic model at this stage, which uses 7.3m AOD, as this change was made following the completion of the modelling and is one of the key recommendations made off the back of the hydraulic modelling completed by Arup.

Additionally, the proposed scheme results in increased flooding to the Buccaneer building (within the site boundary), east of Mackworth Road. This occurs to a maximum depth of 0.53m for the 1 in 200-year flood event (**Figure 13**) and 0.64m for the 1 in 1000-year flood event (**Figure 14**). As outlined in **Appendix E,** the new flooding to the Buccaneer building can be attributed to changes in the ground profile at the Sandy Bay frontage and southern end of Mackworth Road. In the post-development scenario, the Sandy Bay frontage and southern end of Mackworth Road are raised to a level higher than the existing floor level of the Buccaneer building (which is to remain as existing). As a result, flows from overtopping, although smaller than in the baseline, can travel down the landward slope to reach the Buccaneer building. However, it should be noted that the model does not include subsurface drainage which should mitigate this.



Figure 13: Post development maximum flood depth 1 in 200-year with higher central allowance for 2126

TAN15 Extreme Event "Tolerable" Conditions

As per TAN15, in the extreme event, flooding must remain below 600mm, and maximum flood velocity should remain below 0.15m/s in the extreme event (1 in 1000-year). The results in **Figure 14** indicate that the 600mm depth threshold is exceeded in the low-lying areas surrounding Porthcawl Marina, in Salt Lake and on Mackworth Road. Flood depths in Salt Lake and Mackworth have been addressed above and will be mitigated via ground raising and drainage, which are not represented in the model results. The section of the site, surrounding Porthcawl Marina, south of Eastern Promenade is to remain as existing.



Figure 14: Post development maximum flood depth 1 in 1000-year with higher central allowance for 2126

Figure 15 shows that, in the post-development scenario, maximum flood velocities during the extreme 1 in 1000-year event remain below the tolerable threshold of 0.15 m/s across most of the site. Exceptions include the Porthcawl Marina (including part of Eastern Promenade) and the southern end of Mackworth Road. Locations where the threshold is exceeded are primarily limited to roads rather than residential or commercial properties. This shows an improvement compared to the baseline presented in **Figure 10**, where maximum flood velocity remains below 0.75m/s throughout most of the site.

If tolerable condition thresholds were applied to redevelopment proposals without flexibility, key areas could be excluded from regeneration. Additionally, as discussed in **Section 4.2**, the site is allocated for regeneration in the LDP, highlighting its strategic importance.



Figure 15: Post development maximum flood velocity 1 in 1000-year with higher central allowance for 2126

7.1.2 Comparison Between Baseline and Post Development

Figure 16 and **Figure 17** present a comparison between the 1 in 200-year event with higher central allowance for 2126 between the baseline and post-development scenarios. Notably, **Figure 16** demonstrates that the development proposal shows benefit to flood extents beyond the site boundary. A reduction in flood extents can be seen on Northways, New Road, Poplar Road and Nicholls Avenue, north of the site boundary.



Figure 16: Comparison between the 1 in 200-year event with higher central allowance for 2126 baseline and post development scenario flood extents



Figure 17: Comparison between the 1 in 200-year event with higher central allowance for 2126 baseline and post development scenario flood depths

7.2 Access and Egress

For the assessment of access and egress, the 95th percentile (upper end allowance) has been used (see **Figure 18** and **Figure 19** below). Flood depths below 30cm are generally considered safe for vehicles. There are four key access / egress locations to the site. These are considered to be:

- A4106 in the west of the site
- Eastern Promenade in the west of the site
- Mackworth Road in the centre of the site
- Ryhch Avenue on the eastern site boundary

In the 1 in 200-year event with the upper end allowance for the post-development scenario (**Figure 18**), the A4106 and Rhych Avenue remain flood free, providing safe access / egress to the west and east of the site. The north of Eastern Promenade is predicted to flood to a maximum depth of 8cm. The north of Mackworth Road is predicted to remain flood free. The south of Mackworth Road is shown to flood to a maximum depth of 150cm.



Figure 18: Post development maximum flood depth 1 in 200-year event with upper end allowance for 2126

For the 1 in 1000-year with climate change event (extreme event) (**Figure 19**), the A4106 and Rhych Avenue remain flood free, providing safe access / egress to the west and east of the site. The north of Eastern Promenade is predicted to flood to a maximum depth of 13cm. The south of Mackworth Road is predicted to flood to a maximum of 160cm and the north of Mackworth Road remains flood free. In the southwestern corner of the site, Eastern Promenade is shown to flood to a maximum depth of 118cm.



Figure 19: Post development maximum flood depth 1 in 1000-year event with upper end allowance for 2126

Based on the results in **Figure 18** and **Figure 19**, emergency services should be able to access most of the site during a flood event, using flood-free routes and roads with minimal flood depths. Given the nature of the proposed development, the majority of buildings within the site will incorporate upper floors that can serve as safe refuge areas during a flood event. Furthermore, the site is located adjacent to the 'Swansea Bay and the Gower Peninsula Coast between Llangennith and Llantwit Major' Flood Alert area[25], which benefits from established flood forecasting and warning systems. As tidal flooding is generally more predictable than other sources such as surface water or flash flooding, occupants are likely to receive timely alerts regarding elevated tidal levels. Provided that residents and site users are

[25] Data Map Wales – Flood Alert Areas

registered to receive Flood Alerts, there should be adequate time to either evacuate via designated safe access and egress routes or relocate to upper levels within buildings, thereby reducing risk to life.

8 Conclusions

Stantec Hydrock Ltd have been commissioned by The Urbanists to undertake a Flood Consequences Assessment (FCA), for the proposed development at the Porthcawl Waterfront.

The flood risk to the site has been summarised in **Table 8.**

Table 8. Final Flood Risk Summary

Flood Risk Source	Mitigation Proposed	Final Risk Level
Tidal	Raising FFLs 600mm above the design flood level. Raising car park entrance in salt lake to 7.9mAOD.	Low
Fluvial	N/A	Low
Surface Water	N/A	Low
Groundwater	N/A	Low
Sewers	N/A	Low
Artificial Sources	N/A	Low

This report therefore demonstrates that, in respect to flood risk, the proposed development:

- Is suitable in the proposed location;
- Will be adequately flood resistant and resilient;
- Will not place additional persons at risk of flooding;
- Will not increase flood risk elsewhere as a result of the proposed development through the loss of floodplain storage or impedance of flood flows; and
- Will put in place measures to ensure surface water is appropriately managed.

This report concludes that in flood risk context; the proposals are safe and appropriate and do not increase flood risk.

Appendix 11.1 – Outline Construction Methodology Technical Note

ARUP

Technical Note

Project title	Porthcawl Waterfront Masterplanning
Job number	30931400
File reference	309314-ARP-XX-XX-TN-CIV-001
cc	
Prepared by	Arup
Date	29 October 2025 Revision: P01 Status: Draft for comment
Subject	Outline Construction Methodology to support Coastal Processes Chapter of Environmental Statement

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1. Introduction

Ove Arup & Partners (Arup) have been commissioned by Bridgend County Borough Council (BCBC) to provide services to support the emerging Porthcawl masterplan. This builds on Arup's previous coastal flood risk modelling undertaken in 2017 to support the Welsh Government Business Case and in 2019 to support detailed design of the Western Breakwater and Eastern Promenade.

To maximise the long-term benefits for residents and visitors, Bridgend County Borough Council and Welsh Government have formed a landowner's agreement to see the Waterfront progress as one, harmonious development. The masterplan[1] proposals provide a high-level plan for how the Waterfront could be developed with quality mixed-use redevelopment, enhancing the seafront amenity and thereby reinforcing the recreation value and tourism attraction of the area.

The final development at the Waterfront will be built out in stages and involve different developers. There would be a design code, agreed by the Council as part of the planning process and this would set the standards that future developers delivering any part of the Masterplan in the future must comply with. This would ensure that the Local Planning Authority and the Welsh Government secure development of the highest quality and greatest benefit for residents. As the Masterplan progresses the design will be subject to further design and engineering input and will be shaped by further survey and technical studies.

1.1 Purpose

The purpose of this technical note is to provide details of the anticipated outline construction methodology of the Proposed Development of coastal defences being delivered as part of the masterplan including environmental mitigations.

[1] https://porthcawlwaterfront.co.uk/ (accessed 23/10/2025)

The construction methodology will be used to inform the Coastal Processes Chapter of the draft Environmental Statement which is being submitted for Pre-Application Consultation (PAC).

It should be noted that the Proposed Development coastal defences are at a concept design stage (i.e. RIBA Stage 2), and the Environmental Statement (including Coastal Processes Chapter) will be updated following PAC feedback and detailed design.

2. Description of Proposals

2.1 Existing frontage

Currently the section of frontage in Sandy Bay, Porthcawl known as Coney Beach (fronting Coney Beach Pleasure Park) has a mixture of existing privately owned defence structures including revetments, rock armour, vertical walls and walls of kiosks and businesses (Figure 1). The existing defences are generally in poor condition and do not manage coastal flood and erosion risk for the lifetime of development.



Figure 1: Photo of existing Coney Beach frontage looking west

2.2 Concept design

The concept design is shown in sketches SK-001 and SK-003 shown in Appendix A. Note that in the current concept design the east end of the proposals shown in SK-001 have been updated to that shown in SK-003, to add another section of revetment east of Mackworth Road (where there is an existing slipway).

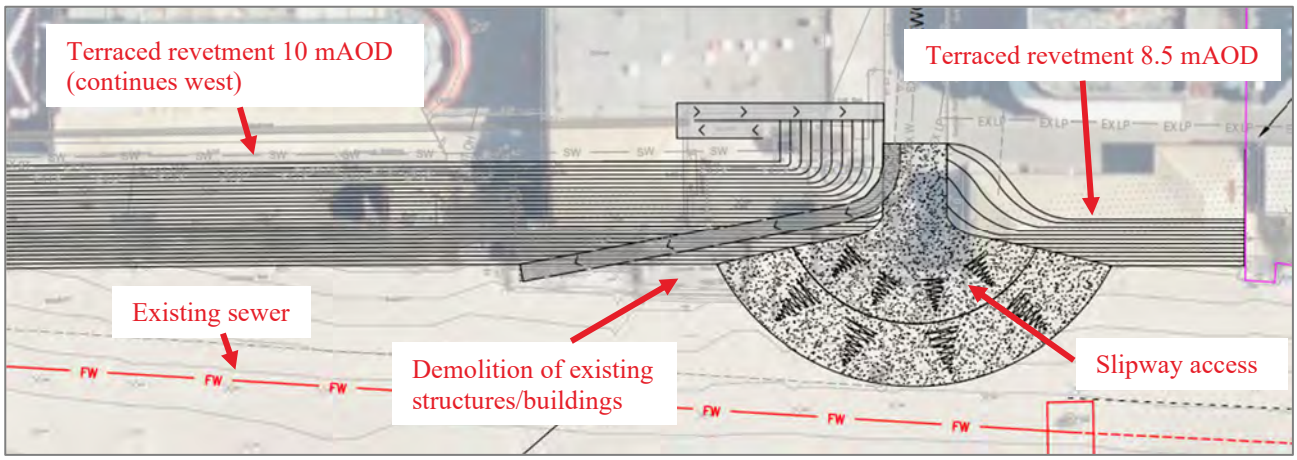


Figure 2: Extract of SK-003 with key features annotated

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The Proposed Development coastal defences are a concrete terraced revetment extending approximately 220m from the Eastern Promenade to east of Mackworth Road. The revetment will be constructed to a crest level of 10 mAOD (higher than the existing promenade). At the crest of the revetment there will be a new promenade and the Masterplan development behind will tie into this raised level. Access to the beach will be enhanced by integration of steps and ramps into the revetment, in comparison to the existing limited access points.

The Proposed Development coastal defences and promenade will enable the masterplan to comply with *Technical Advice Note (TAN) 15: development, flooding and coastal erosion*[2] for new development by managing the risk of coastal flooding up to an 1 in 200 annual chance return period event in 2126.

At and east of Mackworth Road, due to the requirement to tie-in to levels of existing development outside the Masterplan boundary, some raising will take place but to a lower crest level of 8.5mAOD. The Proposed Development will not manage coastal flood risk in compliance with TAN15 in this localised area. Additional site mitigation measures would be necessary should development be proposed in this area.

At Mackworth road the existing slipway will be replaced with a new slipway continuing to provide pedestrian and vehicle access to the beach. The new slipway with ‘fan out’ onto the beach to improve access.

The Proposed Development coastal defence design aims to minimise impact on coastal processes. These proposed works are the second phase of coastal defence work in Sandy Bay. In Phase 1 works, delivered alongside Western Breakwater and Eastern Promenade works, were undertaken to Rhych Point to reinforce the clay overburden of the neck and continue the currently stable

[2] https://www.gov.wales/technical-advice-note-tan-15-development-flooding-and-coastal-erosion (accessed 23/10/2025)

equilibrium of sediment transfer within Sandy Bay and there were enhancements to the Relict dunes with low-level fencing to encourage build-up of new dunes.

The form of structure is chosen to minimise the risk of localised scour or erosion. Structures do not generally encroach into the beach further than the existing defences and the proposed revetment slope of 1:2 is generally similar to the existing defences.

The new revetment structure will generally fit within the above ground footprint of the existing structure. As the existing seawall/revetment structure alignment varies, in some locations minor seaward encroachment of up to 2m in localised areas may be necessary where the existing defence alignment is setback from the general alignment. Note that above ground footprint is referenced since the seaward extent of the below beach level foundations/toe of the existing defences are currently unknown.

The new slipway extent on the beach will be similar to the existing slipway, encroaching up to 3m forward above beach level of the existing slipway. It will also 'fan out' to provide better access which will increase the slipway encroachment onto the beach in comparison to the existing slipway. The Proposed Development is constrained seaward to avoid disturbance or impact on the existing Welsh Water sewer rising main located buried across the foreshore.

Sheet piling is proposed at the toe of the terraced concrete revetment. The terraced slope of the revetment will extend down into the sand, below typical beach levels, to reduce the risk of drawdown of the beach through wave reflection off the vertical sheet piling. The sheet piling will be designed to manage the risk of scour which could lead to undercutting and structural failure of the revetment.

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Further scour protection i.e. rock armour, at the current conceptual design stage is not thought to be required based on the performance of existing structures and a previous coastal processes study[3]. The previous coastal processes study was undertaken during detailed design of the Western Breakwater and Eastern Promenade which noted that beach draw-down is expected to be limited in the longer term with the Western Breakwater in place.

Whilst no negative impact in terms of coastal processes is anticipated to the existing private defence structures to the east. There is an opportunity under discussion (not included in current concept design) to provide enhanced resilience to the private Hi-Tide defences to the east of the proposed works.

There is no start date to the works currently, as this and duration of works depends on the phasing and delivery of the wider masterplan.

3. Construction Methodology

Below is a preliminary outline construction methodology that will be subject to revision through design and engagement with stakeholders during consenting. Following appointment, a Contractor will develop detailed construction method statements and risk assessments.

[3] Porthcawl Conceptual Understanding - Porthcawl PAR, ABPmer, 2017



Figure 3: Example of stepped coastal revetment during construction in Rhyl, Wales[4]

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A summary of the likely main activities to construct the revetment is set out below.

- Creation of temporary access to the beach for construction plant utilising the existing access from Mackworth Road. This may involve demolition of the existing parapet walls at the end of the road to widen access and other traffic management measures.
- Excavation/demolition of the existing defence structures and buildings along the coastal frontage.
- Installation of sheet piles at the toe of the new revetment. Plant operating from the beach at low tide on the dry. It is expected that every low tide will provide a working window.
- Construction of a steel reinforced concrete capping beam, poured in-situ, on the sheet piles
- Building up the promenade level and sloped profile of the revetment, installation of revetment underlayers including fill, filter layer for drainage and concrete blinding.
- Delivery by road and installation of pre-cast concrete stepped units, using excavator/crane working from the crest of the promenade. Construction to start from the lower levels.
- In-situ concrete works to construct a beam to tie the crest of the revetment into the promenade and at any changes of direction between units.
- Finishing features of the promenade – surfacing, drainage, landscaping, lighting, street furniture etc.

Construction works are expected to be undertaken in sections and sequencing will minimise the risk of exposing part-complete works to damage from tides and wave action and increasing the flood/erosion risk to the land behind.

[4] https://www.denbighshire.gov.uk/en/documents/community-and-living/coastal-defence/central-rhyl/newsletters/newsletter-issue-april-may-2024.pdf

The construction of the replacement slipway is expected to involve excavation/demolition of the existing structure, sheet piling at the toe of the structure, reprofiling with fill material and in-situ concrete using the sheet piles as permanent formwork. The concrete will be poured in sections to accommodate tidal working.

Further notes on construction methodology:

- No delivery of materials by sea or working at sea is anticipated.
- Beach to be reinstated to a similar level along the new defences as prior to commencement of the works.
- Works will be tide dependent. The toe of the revetment (where sheet piles meet the concrete revetment below existing beach level) is at 4.0 mAOD and MHWS is 4.6 mAOD. The MHWS level is approximately at the level of where the existing defences meet the beach at the west end of the site, further east the beach levels gradually rise so the MHWS level is below where the existing defence meet the beach.
- Due to tidal environment, the site compound will not be on the beach. All materials and plant to be removed from the beach at the end of each tidal shift.
- Given the public amenity use of the beach there could be a requirement for seasonal working to avoid disruption of visitor experience and impacts to local businesses.
- Installation of sheet piles, excavation/demolition of existing structures, capping beam reinforcement installation and concrete pour is likely to be undertaken by tracked excavators from the beach.
- No geoenvironmental testing of the existing structures or beach material has been undertaken so far to determine if there are any contaminants present. This is expected to be undertaken to inform the detailed design stage.
- Sheet piling to be installed using a vibratory hammer attached to a tracked excavator. Some impact driving or pre-augering may be required depending on the ground conditions and presence of obstructions.
- Fill and blinding works to be undertaken in small sections to minimise the risk of fill being washed out between tidal shifts. Precast unit placement to be carried out shortly after, to limit the exposure of the underlayers to the tides and wave action.
- At the western end of the revetment, detailed design will consider the-tie in detail with the heritage feature of the Eastern Promenade seawall (listed building consent is highly likely to dictate the construction method, seawall considered to be a ‘curtilage structure’ to the listed structures around the harbour basin and breakwater).
- At the eastern end of the revetment, a wall will be installed perpendicular to the shoreline to prevent outflanking and to tie-into the existing structures. This is likely to be sheet piled with a poured in-situ concrete cap.

3.1 Environmental mitigation

A Construction Environmental Management Plan will be developed for the construction phase. The following environmental mitigations will be considered:

- No works to be carried out below the tide level to minimise suspension of sediments in the water column.

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- Regular visual monitoring during construction to determine any visible changes to the marine environment.
- General protocols to reduce impact on water quality, i.e. wheel wash requirements, fuel spillage procedure, waste management plan, requirements for materials storage.
- Standard best practice measures to be applied to all elements of the work, i.e. Guidance for Pollution Prevention.
- Limiting plant and equipment movements to the top section of the beach. Full time traffic management and beach control procedures.
- Where there is excavation of beach material, excavation arisings to remain on the beach and be placed nearby the excavation.
- Removal of all plant and materials from the beach at the end of each tidal shift.
- Work in small sections and in sequence to minimise the extent of partially complete works exposed to tide and wave action risk and to mitigate flood and erosion risk.
- The beach is considered to be of suitable material to operate tracked plant on, if any soft ground is encountered 'bog mats' may be required to provide access.
- Throughout the scheme construction, any significant variations in beach level caused by plant movements are to be managed and reinstated to maintain safe access.

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During the detailed design stage, opportunities for environmental enhancement will be considered. Based on current tidal levels, the proposed revetment will meet the beach at or above MHWS. In the future, with sea level rise, the revetment structure will be lower in the tidal cycle and there will be more opportunity for environmental enhancement impacts. Potential enhancements could include surface texturing or adding features to create more favourable coastal habitat and mitigate against coastal squeeze. There is also an opportunity to expand previous enhancement of the Relict dunes (Section 2.2), with a wider benefit of reducing windblown sand nuisance on the proposed development.

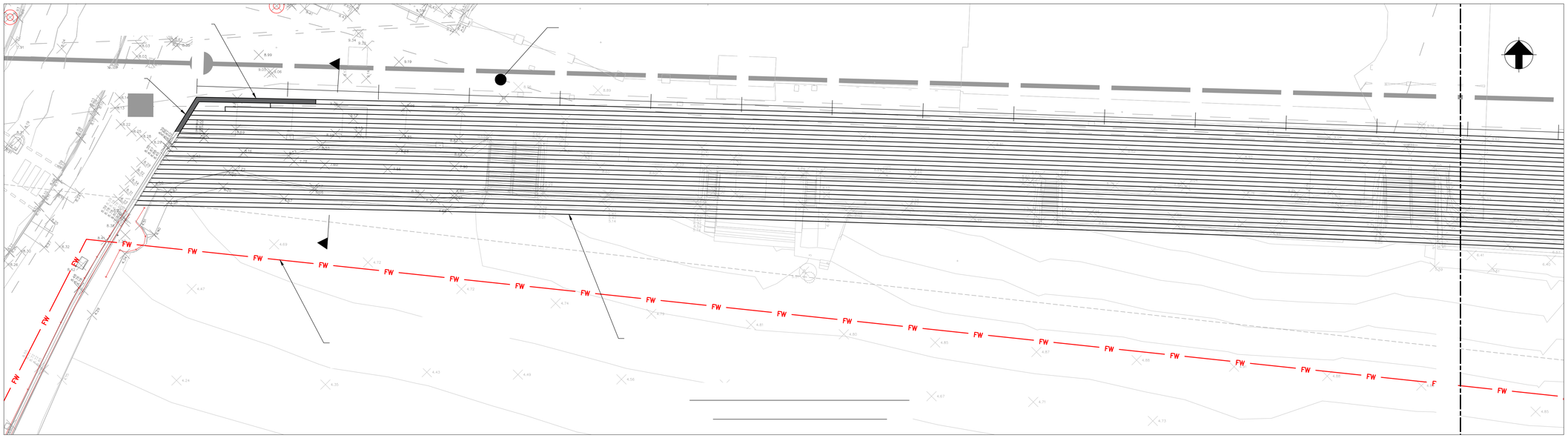
4. Operation

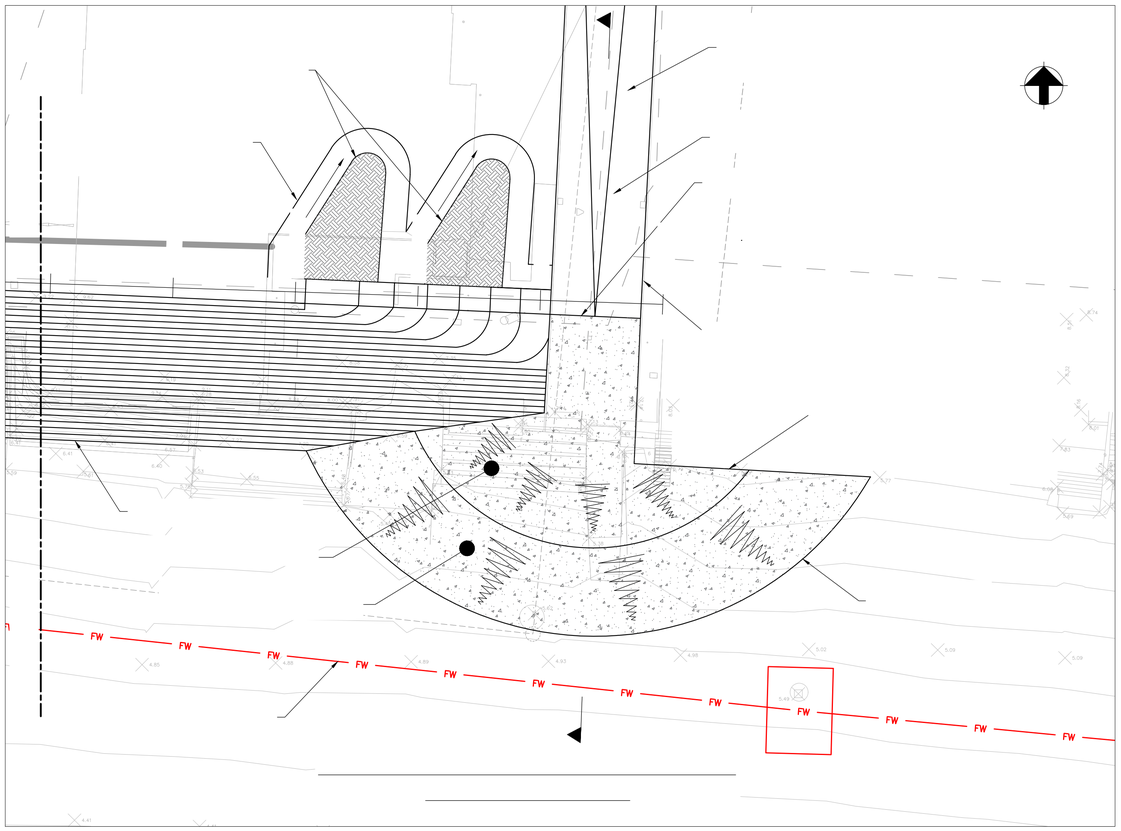
Operation is likely to involve regular beach monitoring (e.g. Welsh Coastal Monitoring Programme) and inspection of structures along the frontage to identify if any remedial actions are required.

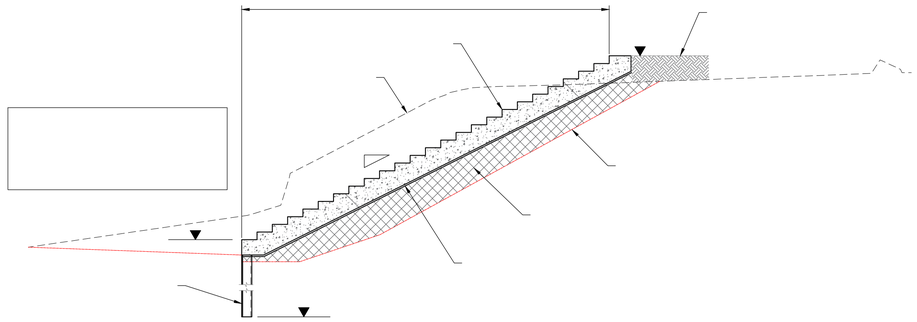
This is consistent with the maintenance regime for the previous coastal defence works in the area. With the existing Sandy Bay Maintenance strategy, for the Eastern Promenade wall visual inspection and monitoring of the beach levels and exposure of the toe of the wall has been recommended at regular intervals. There is also an existing Dune Monitoring and Management Plan for the relict dunes which recommends sediment monitoring.

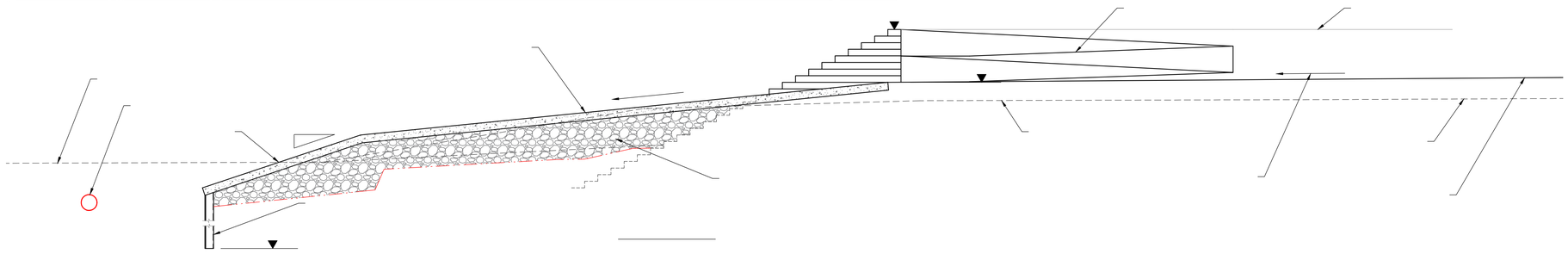
Appendix A – Concept design sketches

DRAFT









ARUP

FW

ARUP

Appendix 12.1 - Phase 1 Ground Conditions Desk Study

Phase 1 Ground Conditions Desk Study

Stantec

Document control sheet

Table of Contents





Executive Summary

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1.2 Project background and Objectives

1.3 Available information

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1.4 Regulatory context and guidance



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1.5 Uncertainties and limitations

1.5.1 General comments

2 Desk study and field reconnaissance

2.1 Site referencing





2.2 Site Description and field reconnaissance survey









2.3 Data sources

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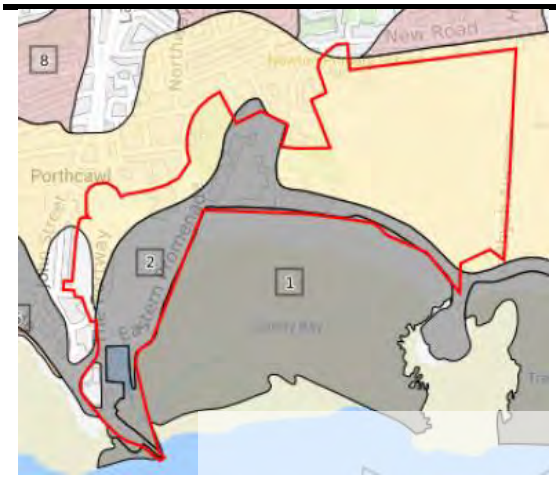
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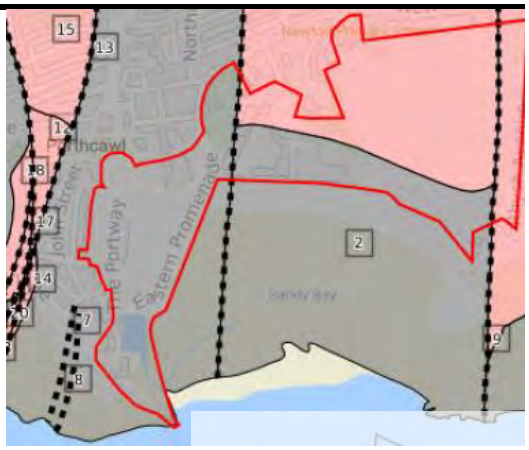
2.4 Site history

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2.5 Published Geology





2.6 Hydrogeology



2.7 Hydrology

2.8 Waste management

2.9 Regulatory information

2.10 Radon

2.11 Unexploded ordnance

3 Summary of previous reports

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ESP Desk Study and Detailed Investigation for Proposed Residential Development, Salt Lake Car Park, Porthcawl (Ref: ESP.7044d.3123_A.Rev 1.Final Report)

Encountered Geology and Hydrogeology

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Geo-Environmental Summary / Risks

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Geotechnical Summary / Risks

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ESP. Desk Study and Detailed Investigation for Proposed Leisure / Commercial Development, Hillsbro Car Park, Porthcawl (Ref: ESP7044d.02.3124_B.Rev1.FinalReport) - Site B (Sept, 2020);

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Earth Science Partnership. Desk Study and Exploratory Investigation for Proposed Residential Development, Former Dunraven Flats, Porthcawl (Ref: ESP7703d.3481.FinalReport) and Supplementary Site Investigation for Proposed Residential Development, Former Dunraven Flats, Porthcawl (Ref: ESP7703d.02.3567.FinalReport)

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Geo-Environmental Summary / Risks

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Geotechnical Summary / Risks

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ESP. Desk Study and Detailed Investigation for Proposed Food Store, Salt Lake Car Park, Porthcawl (Ref: ESP7044d.02.3112_C_Rev1.FinalReport)

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Earth Science Partnership. Desk Study and Exploratory Investigation for Proposed Leisure Development, South of Salt Lake Car Park, Porthcawl (Ref: ESP7702d.3500.FinalReport)

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Geo-Environmental Summary / Risks

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Geotechnical Summary / Risks

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Quantum Geotech. Porthcawl Drainage Scheme, GROUND INVESTIGATION FACTUAL REPORT (Ref: Q0281/FR) (July 2020);

Encountered Geology and Hydrogeology

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Geo-Environmental Summary / Risks

Geotechnical Summary / Risks

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Jubb Consulting Engineers Ltd. Porthcawl Placemaking, Phase 1 Desk Study Report (Ref: 21176-DTS-01) (August 2021); and

Arup. Porthcawl Sandy Bay Coastal Risk Management, Coney Beach Coastal Defence Revetment Basis of Design (Ref: 264874) (November 2022).

4 Preliminary Ground Model

5 Ground hazards

5.1 Natural ground instability

5.2 Preliminary geotechnical hazard identification

5.3 Potential development elements affected

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6 Initial Conceptual Site Model and Preliminary Risk Assessment

6.1 Introduction

6.2 Potential contaminants

6.2.1 Potential on-site sources of contamination

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6.2.2 Potential off-site sources of contamination

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6.3 Potential receptors

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6.4 Potential pathways

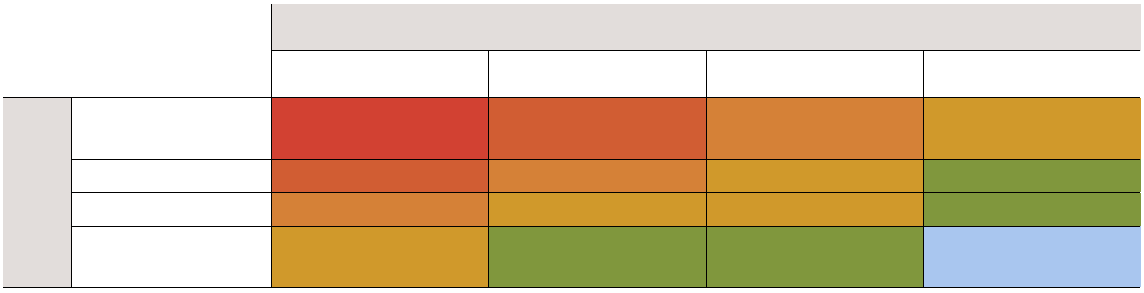
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6.5 Potential implications of climate change



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6.6 Summary of potential contaminant linkages



7 Conclusions and recommendations

7.1 Geotechnical conclusions

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7.2 Geoenvironmental conclusions

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7.3 Recommendations

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8 References





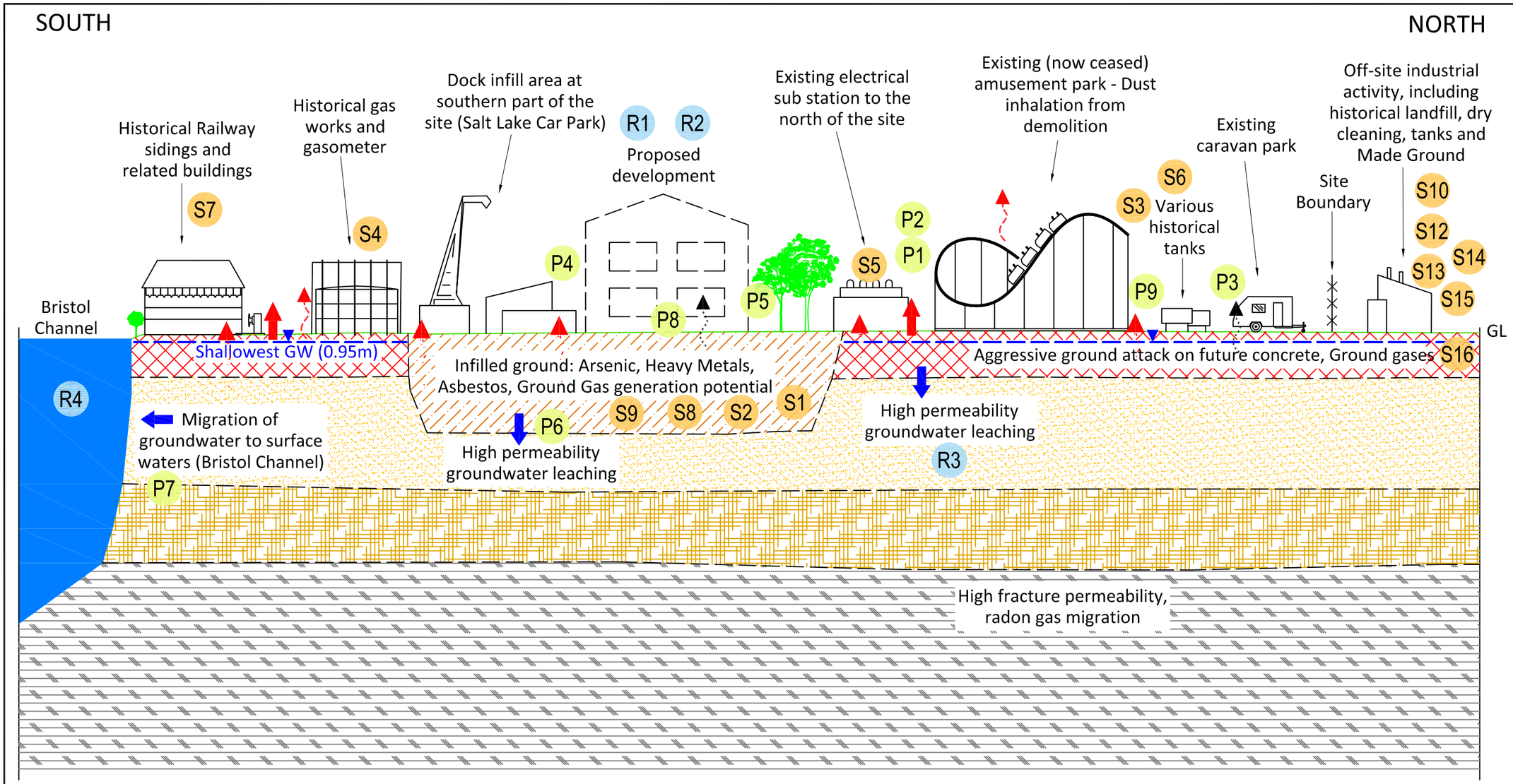
Appendices

Appendix A Drawings



Drainage Strategy Hole Plan
Overall Proposed Site
Food Store Site
Site A
Site B
Former Dunraven Flats
Salt Lake Leisure

Hydrock now Stantec



KEY

- Made Ground (General)
- Made Ground (Dock Infill)
- Blown Sand Deposits
- Marine Beach Deposits
- Oxwich Head Limestone

NOTES

LEGEND

- Groundwater table
- Direct Contact
- Asbestos Fibres
- Dust Migration
- Leaching to Groundwater
- Vapour/ground gases

Source

Thick areas of Made Ground, associated with current and historical industrial activities, specifically the infilled shipbuilding yard and sawmill, possibly including elevated concentrations of metals, metalloids, asbestos fibres, asbestos containing metals (ACM), polycyclic aromatic hydrocarbons (PAH) and petroleum hydrocarbons (S1)
Asbestos fibres and ACM within existing buildings / demolition of former structures (S2)
Hydrocarbon fuels, lubricants, and solvents from the operation of the former and existing garages and bus station on site (S3)
Coal tar is not confirmed to be on site, however the presence of an old gas works and gasometer on site indicates the potential presence of coal tar and bituminous bound pavement (S4)
PCBs and oils related to the existing electricity sub-station on site (S5)
Unspecified leakages linked to the numerous historical tanks, likely used as storage for fuels, chemicals or waste. (S6)
Hydrocarbon and heavy metal residues related to historical railway sidings and related buildings. (S7)
Organic materials in the Made Ground materials producing ground gases (carbon dioxide and methane). (S8)
Naturally occurring elevated concentrations of metal (arsenic and vanadium) within soils. (S9)
Wastewater contamination related to the pumping station to the west of the site boundary. (S10)
Radon (S11)
An inert historical landfall is present 36m north of the site, used for industrial, commercial and household waste purposes. (S12)
Nearby industry uses e.g. dry cleaning (89m W) and second-hand vehicle sales (87m NE) can pose the risk of solvent release or hydrocarbon spills respectively. (S13)
Eleven reported pollution incidents in the surrounding 500m in various directions, including diesel spills and both soil and atmospheric pollutants, however the cause is unspecified. (S14)
Leaks from tanks to the northeast and northwest between 1m and 441m of the site (likely to represent above ground fuel tanks containing petroleum hydrocarbons). (S15)
Made Ground, associated with the current and historical use of the surrounding site (specifically gas, railway and shipbuilding works), possibly including elevated concentrations of metals, metalloids, asbestos fibres, ACM, PAHs and petroleum hydrocarbons. (S16)

Pathway

Ingestion and dermal contact with soils (P1)
Ingestion, inhalation and dermal contact with soil-derived dust. (P2)
Ingestion of soil attached to homegrown produce (fruit/vegetables) and ingestion of homegrown produce. (P3)
Inhalation of fibres. (P4)
Inhalation of vapours. (P5)
Leaching through the unsaturated zone to the groundwater in the Principal and Secondary A aquifers. (P6)
Migration of contaminants within groundwater to the surface waters e.g. the Bristol Channel. (P7)
Direct contact with building materials. (P8)
Root uptake by plants/vegetation (P9)

Receptor

People (neighbours, site end users) (R1)
Development end use (buildings, utilities and landscaping) (R2)
Groundwater (Principal and Secondary A aquifers present with high groundwater vulnerability noted) (R3)
Surface water (Bristol Channel) (R4)

REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P01	FIRST ISSUE					
	SD	20/10/25	LE	20/10/25	EJ	20/10/25

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Hawthorn Park, Holdenby Road
Spratton,
Northampton, United Kingdom
NN6 8LD
Phone: +44 1604 842 888
Email: RL.NTHHP@stantec.com
or visit www.stantec.com

CLIENT
Bridgend County Borough Council

PROJECT
Porthcawl, Harbourside

TITLE
Conceptual Site Model

STANTEC PROJECT NUMBER	SCALE @ A3
333801755	Not to scale

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NUMBER	REVISION
333701677-STN-SGT-SW-DR-GE-1001	P01

Appendix B Field reconnaissance photographs


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BIG PRIZE GAMES






































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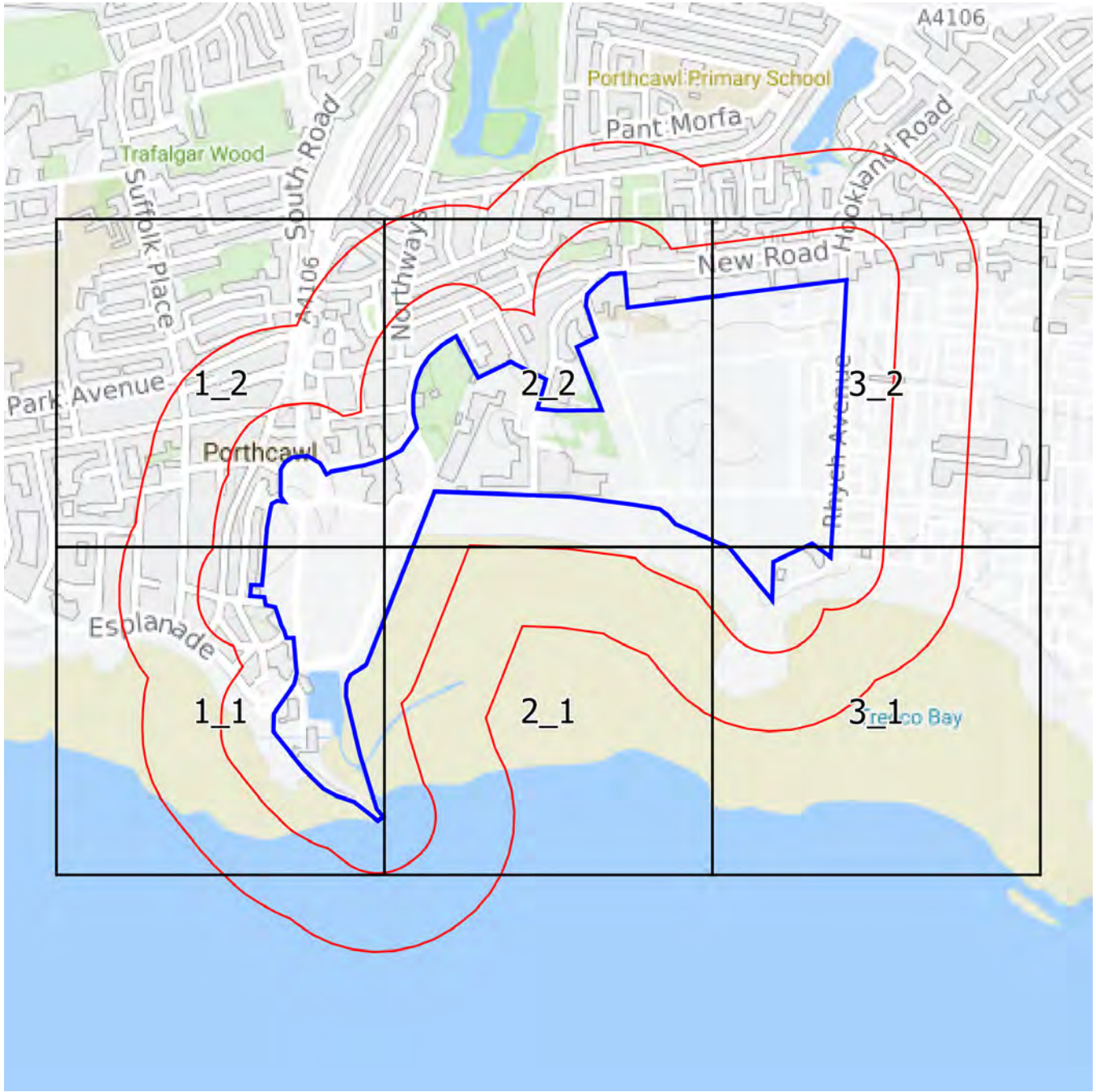





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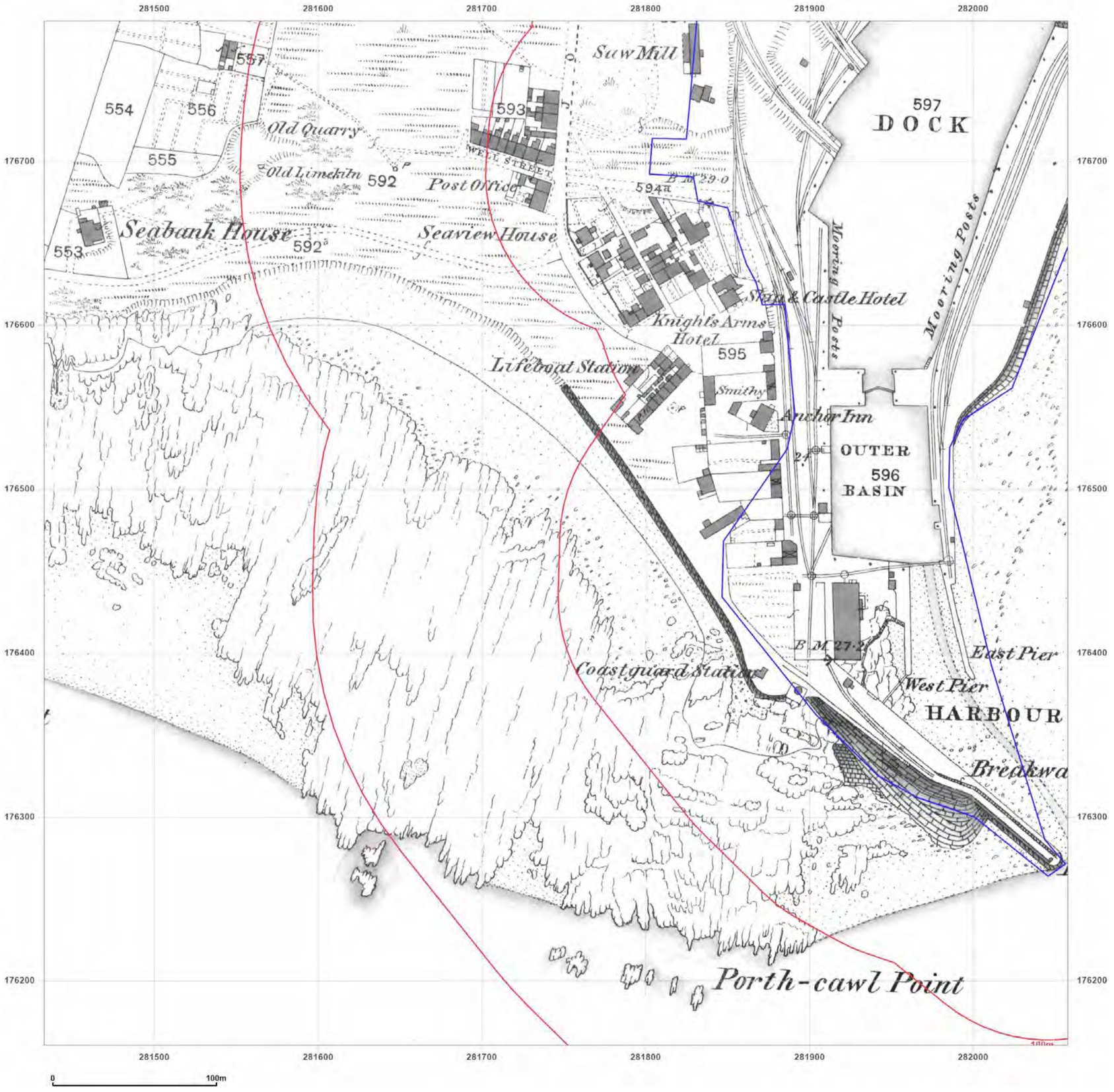

BOUNCE

Appendix C Historical mapping



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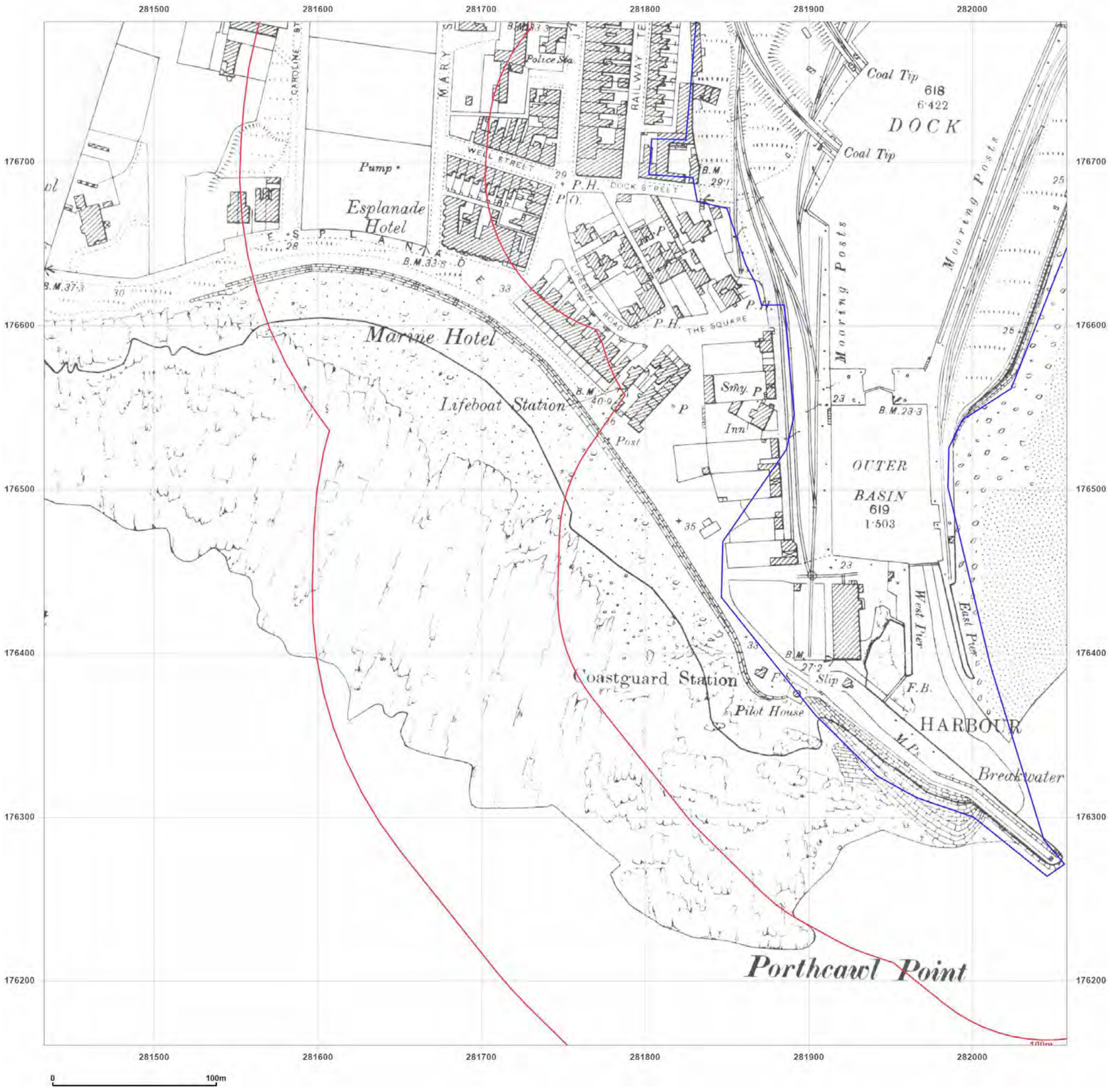
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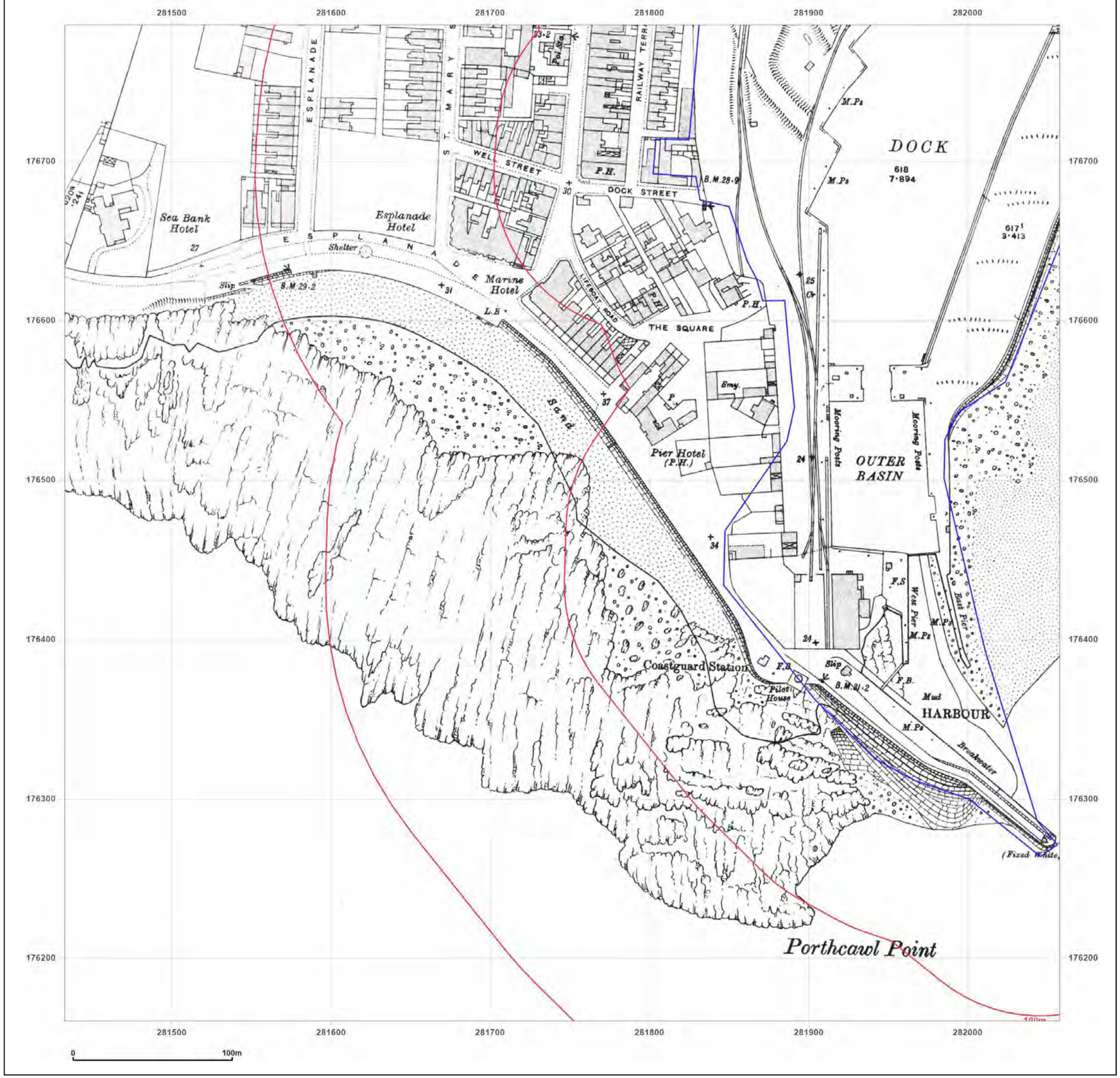
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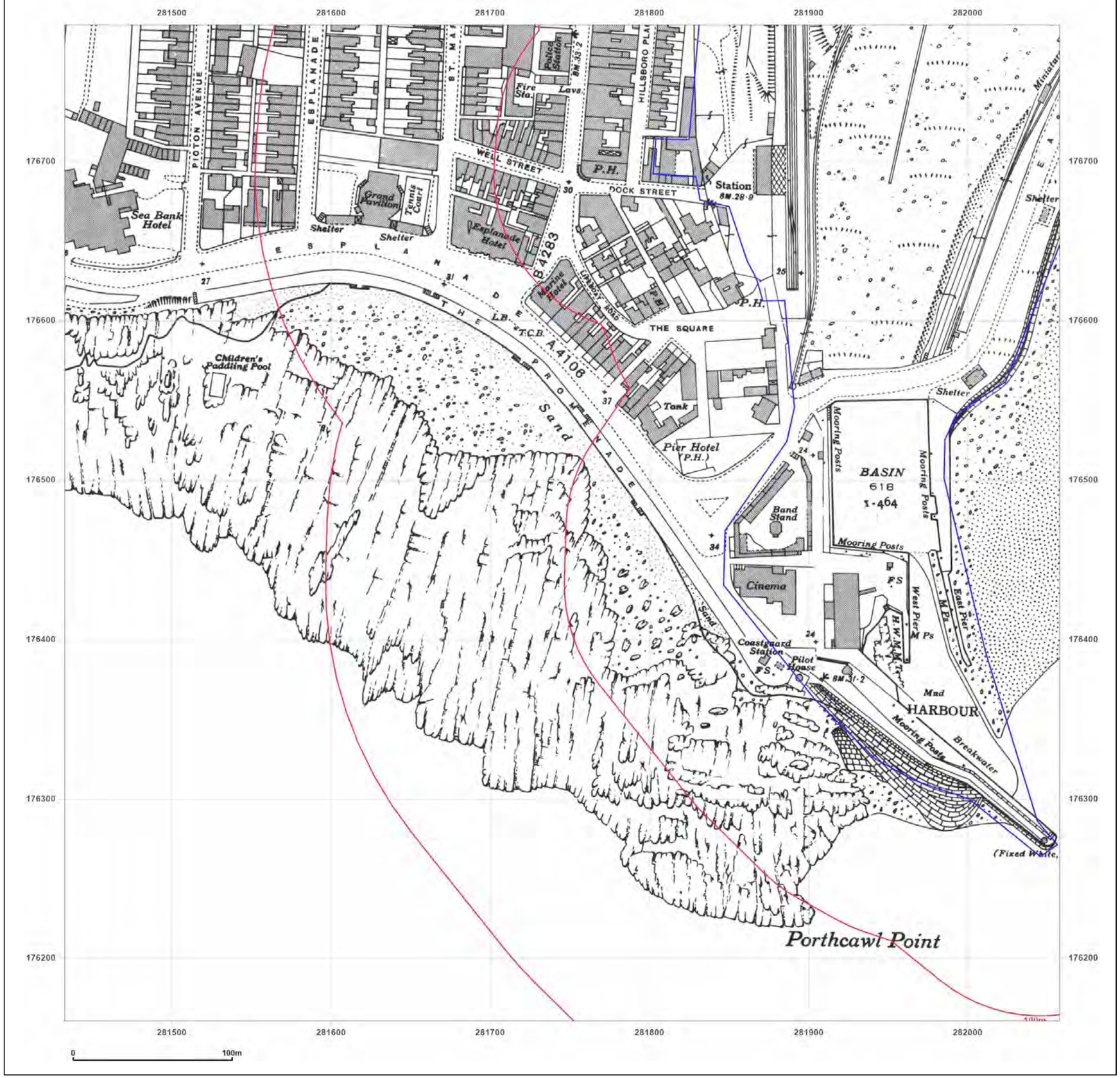
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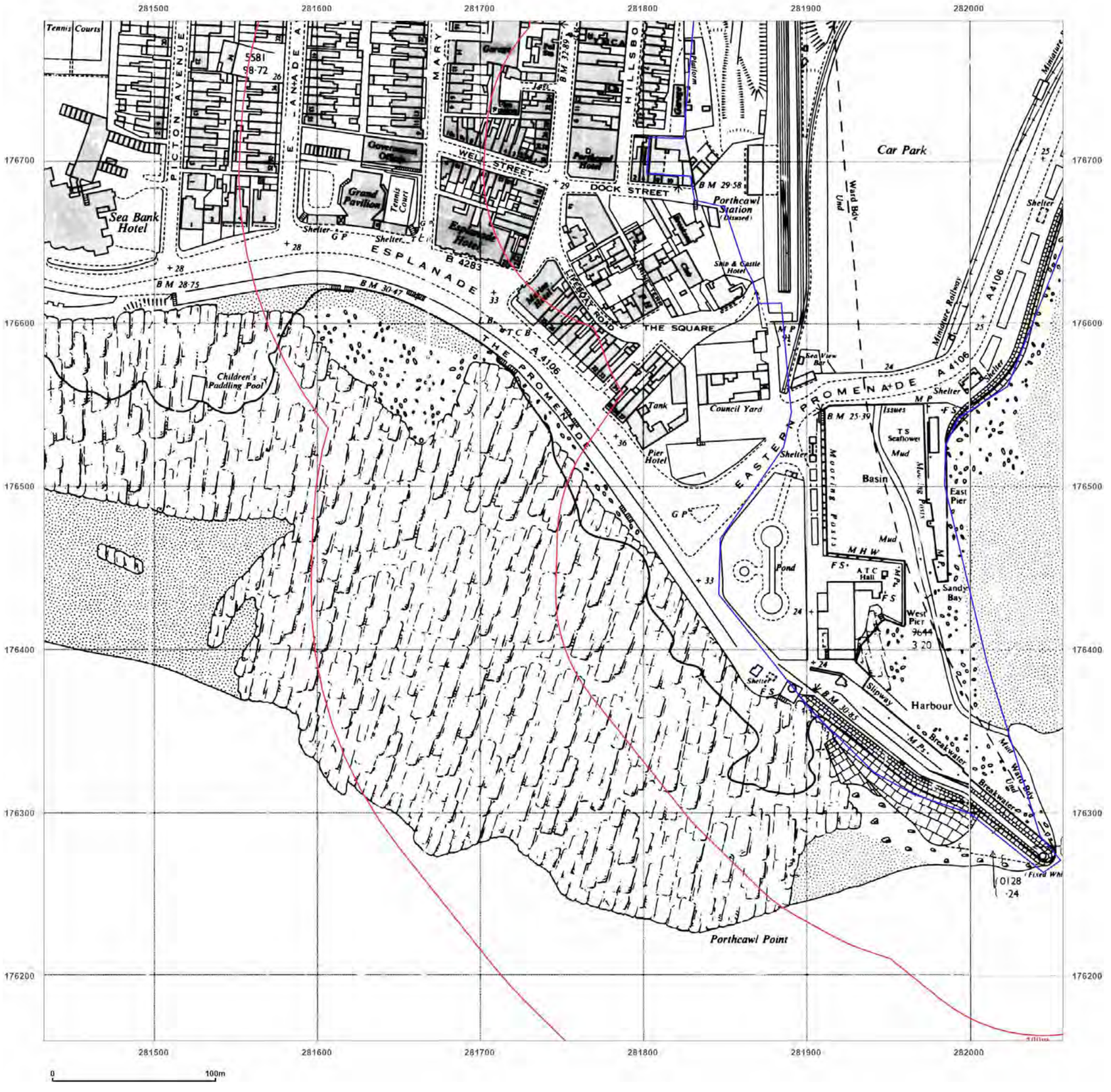
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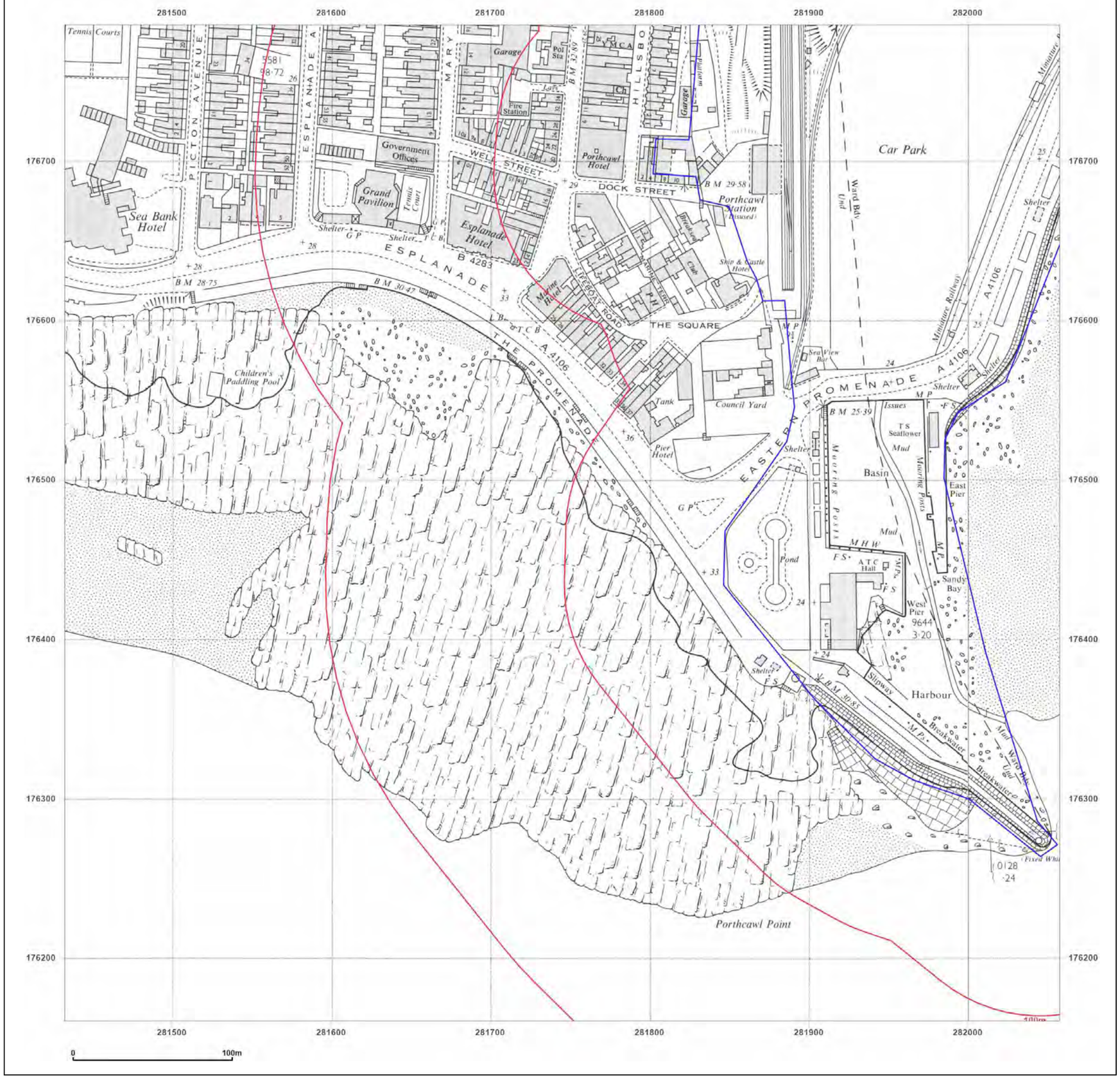
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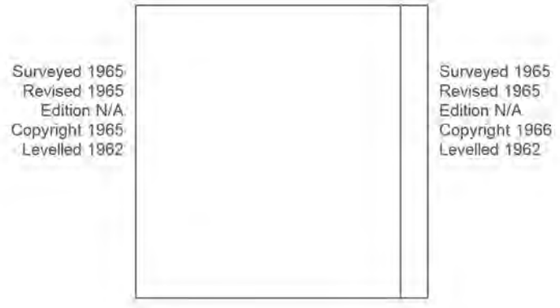
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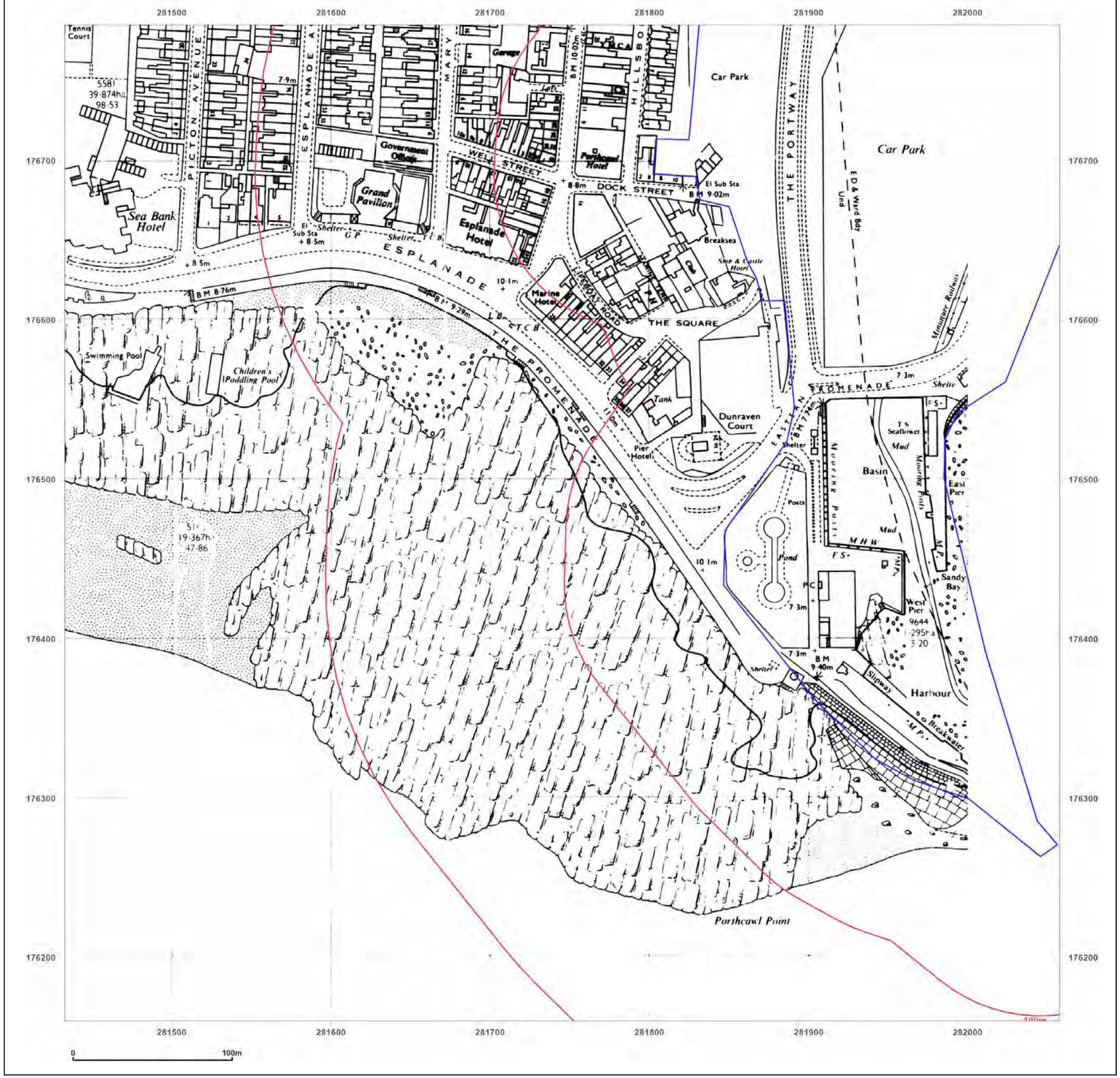
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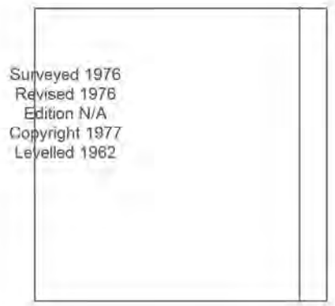
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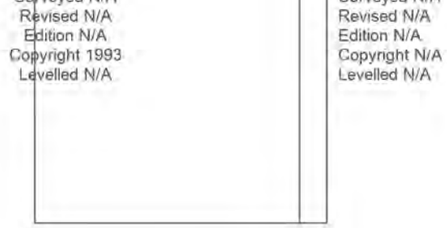
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Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
Levelled N/A

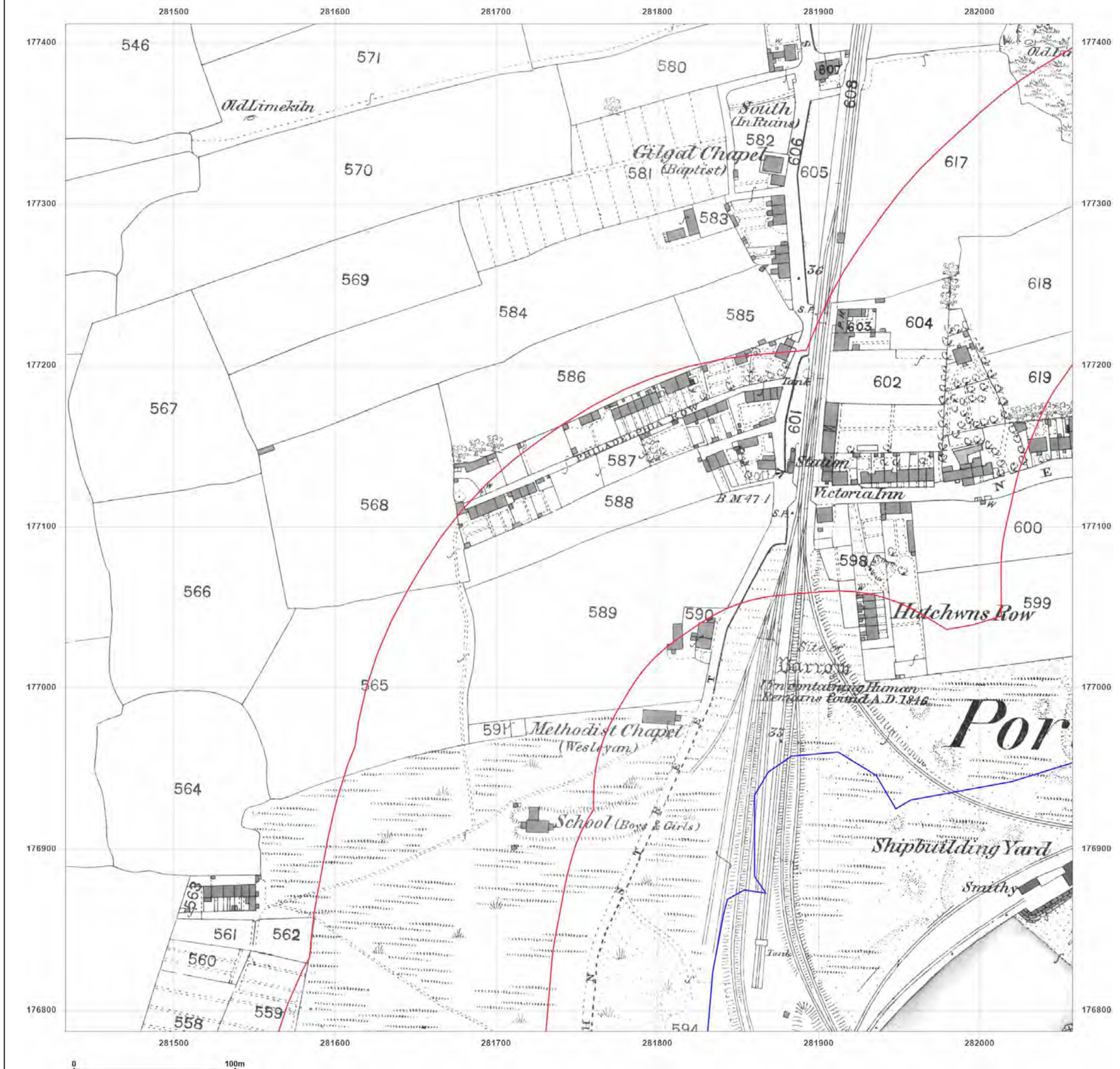
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: County Series
Map date: **1880**
Scale: 1:2,500
Printed at: 1:2,500

N
W E
S

Surveyed 1880
Revised 1880
Edition N/A
Copyright N/A
Levelled N/A

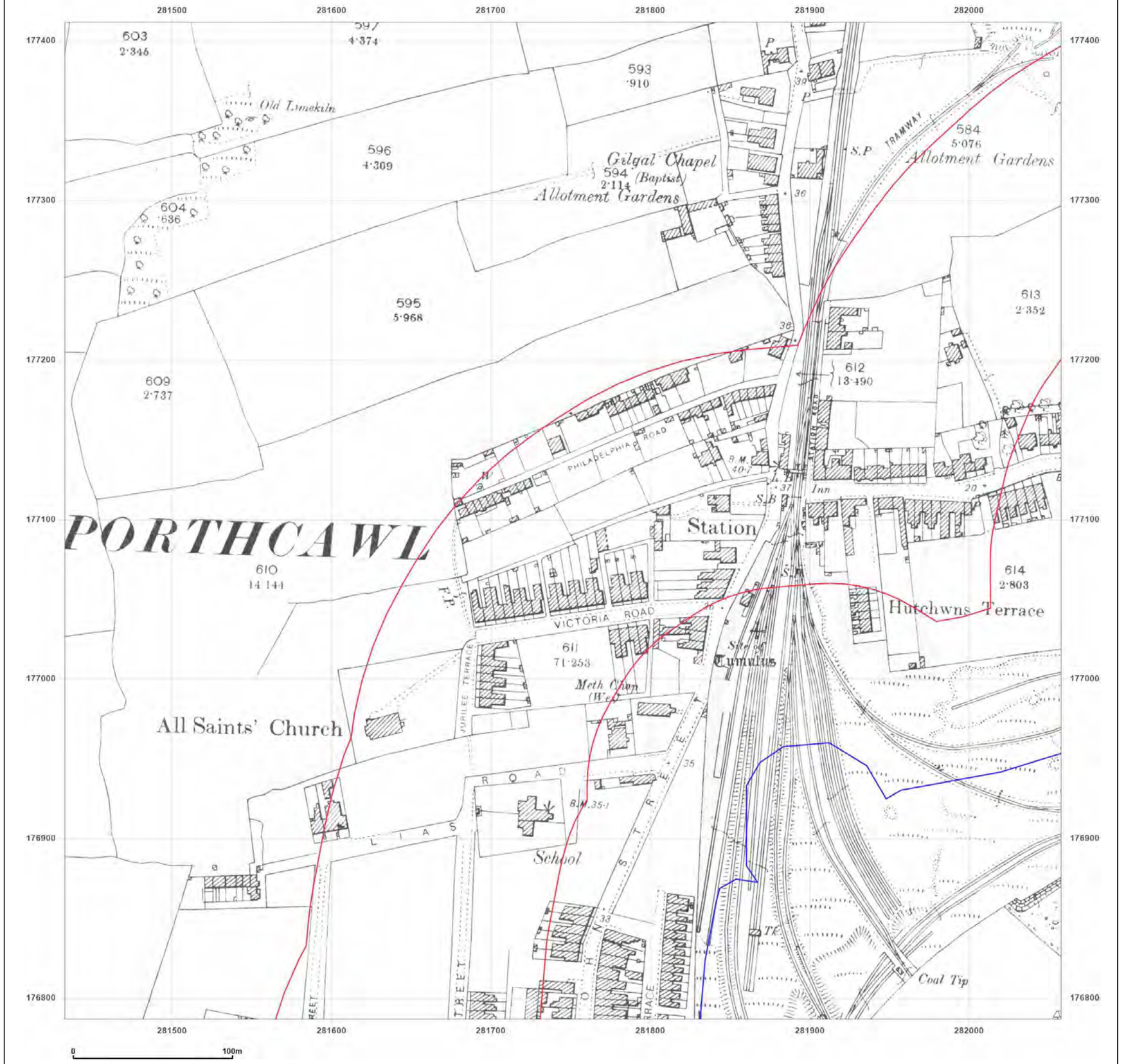
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: County Series

Map date: **1899**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

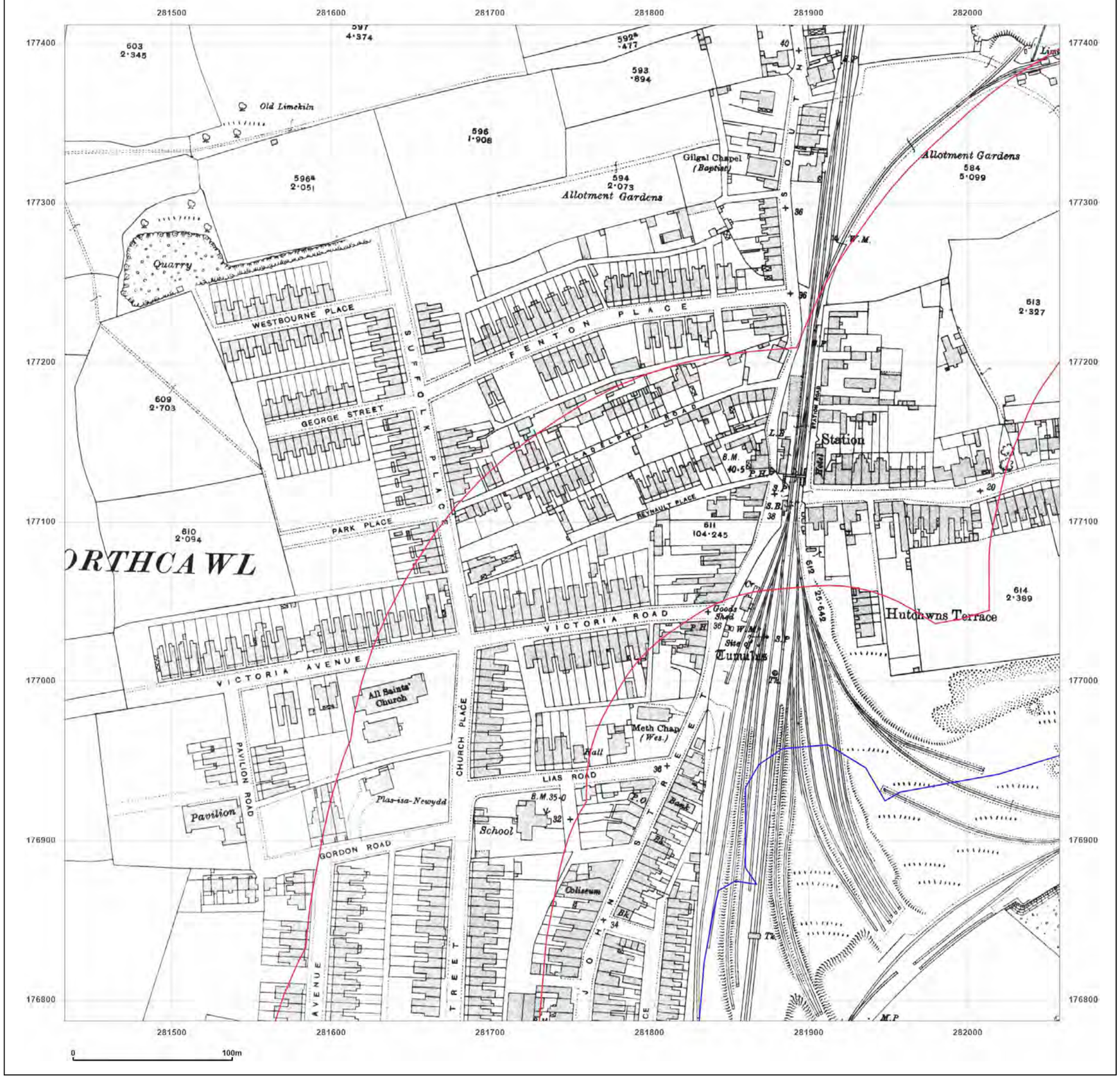
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: County Series

Map date: **1919**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1919
Revised 1919
Edition N/A
Copyright N/A
Levelled N/A

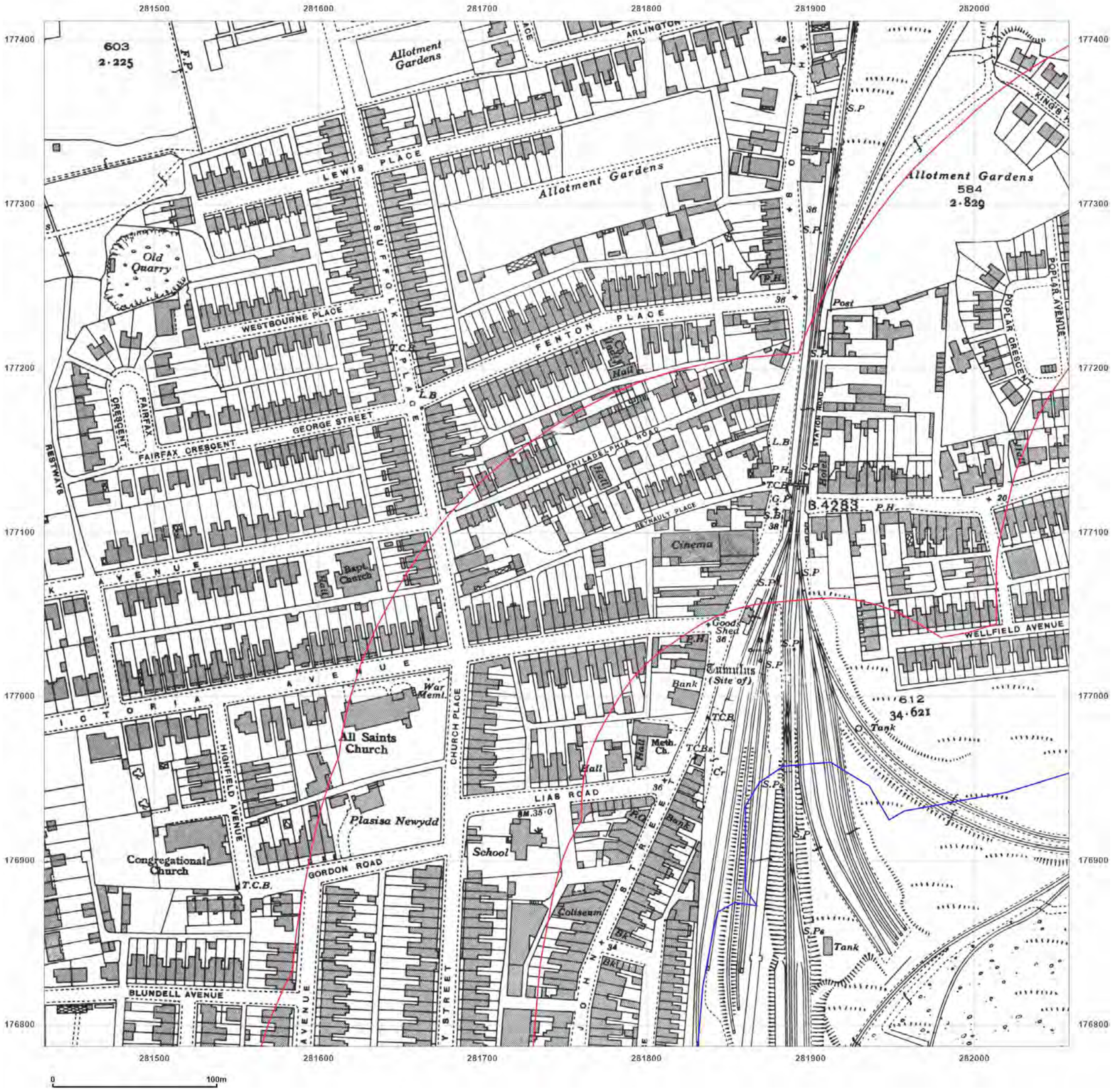
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: County Series

Map date: **1943**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1943
Revised 1943
Edition N/A
Copyright N/A
Levelled N/A

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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: National Grid

Map date: **1962-1966**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled 1962

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1962

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: National Grid

Map date: **1965-1966**

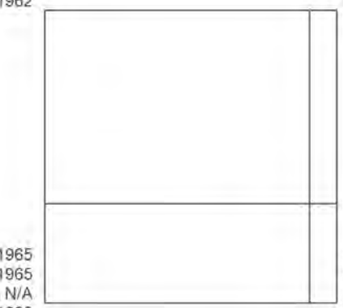
Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1962

Surveyed 1966
Revised 1966
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1965
Revised 1965
Edition N/A
Copyright 1965
Levelled 1962

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1962

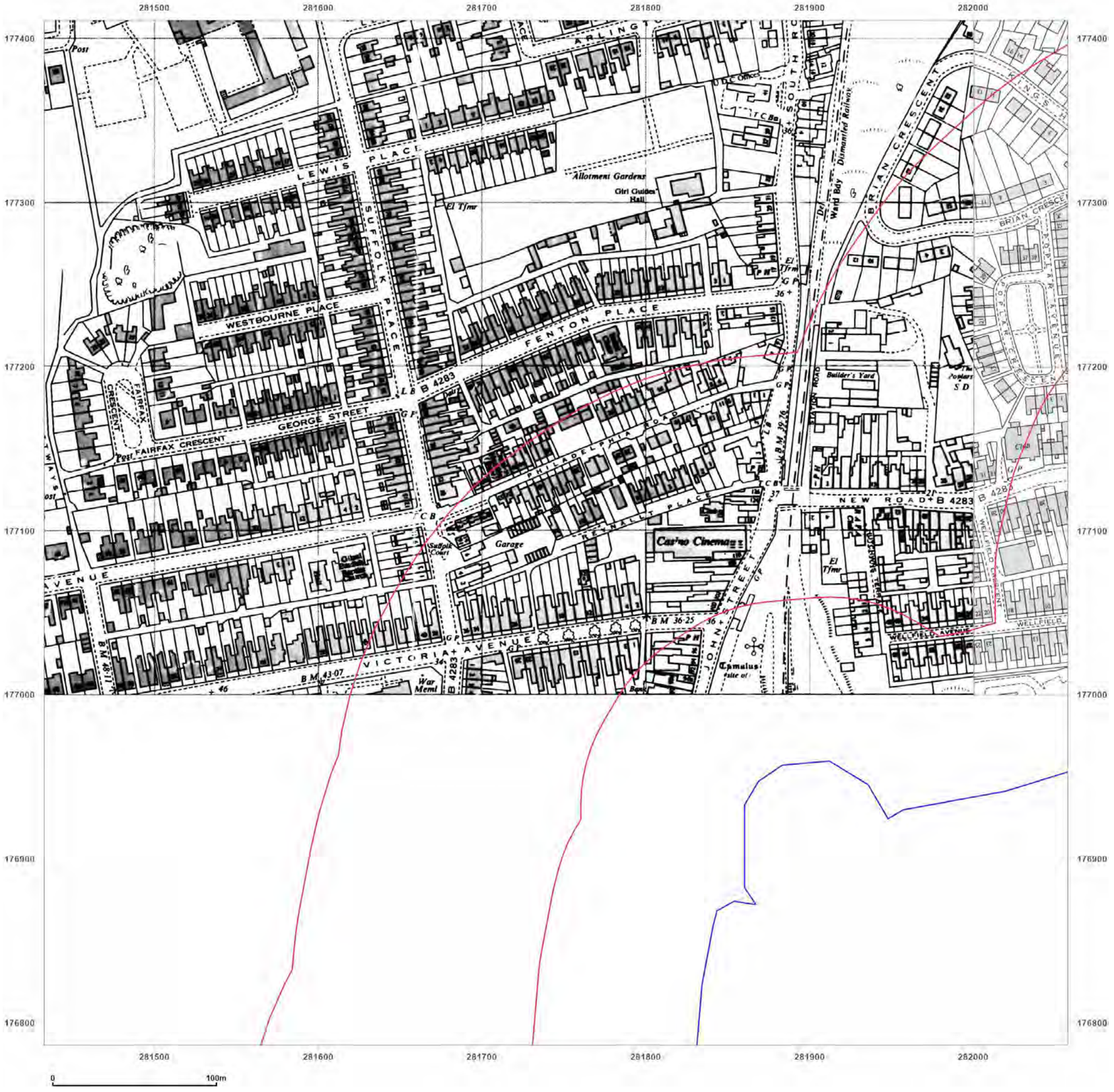
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: National Grid

Map date: **1966-1969**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1962



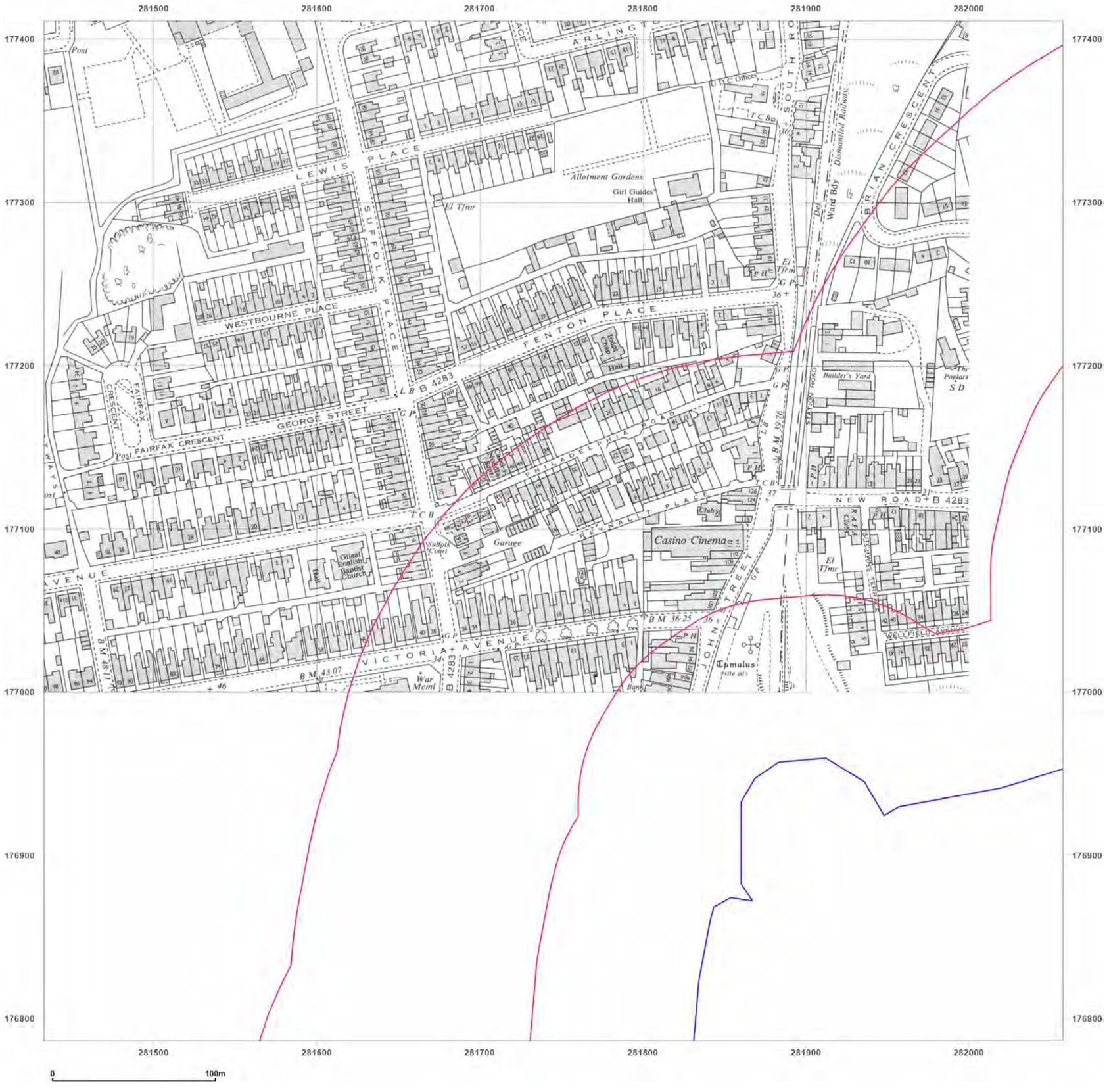
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: National Grid

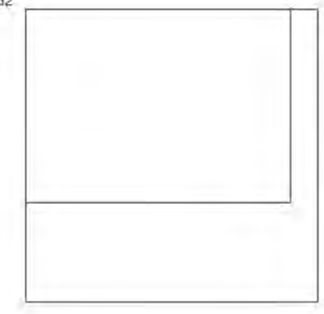
Map date: **1969**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1968
Revised 1968
Edition N/A
Copyright 1969
Levelled 1962



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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: National Grid

Map date: **1977-1978**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1976
Revised 1976
Edition N/A
Copyright 1978
Levelled 1962



Surveyed 1976
Revised 1976
Edition N/A
Copyright 1977
Levelled 1962

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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: National Grid

Map date: **1977-1978**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: National Grid

Map date: **1987-1991**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1987
Levelled 1962

Surveyed 1962
Revised 1988
Edition N/A
Copyright 1988
Levelled 1962

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

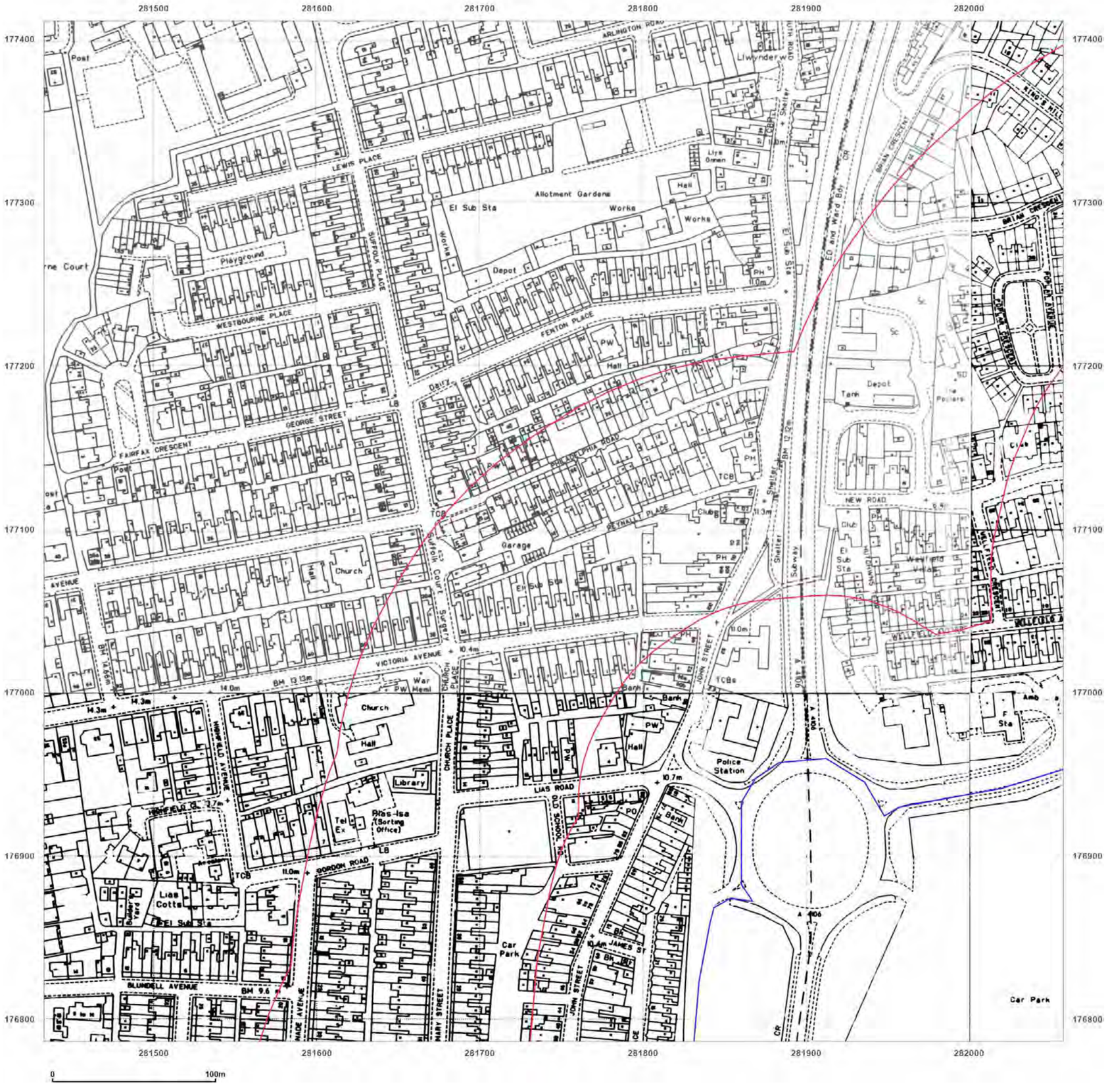
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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: National Grid

Map date: **1992-1993**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1993
Revised 1993
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

Map Name: National Grid

Map date: **1992-1995**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1965
Revised 1990
Edition N/A
Copyright 1992
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
Levelled N/A

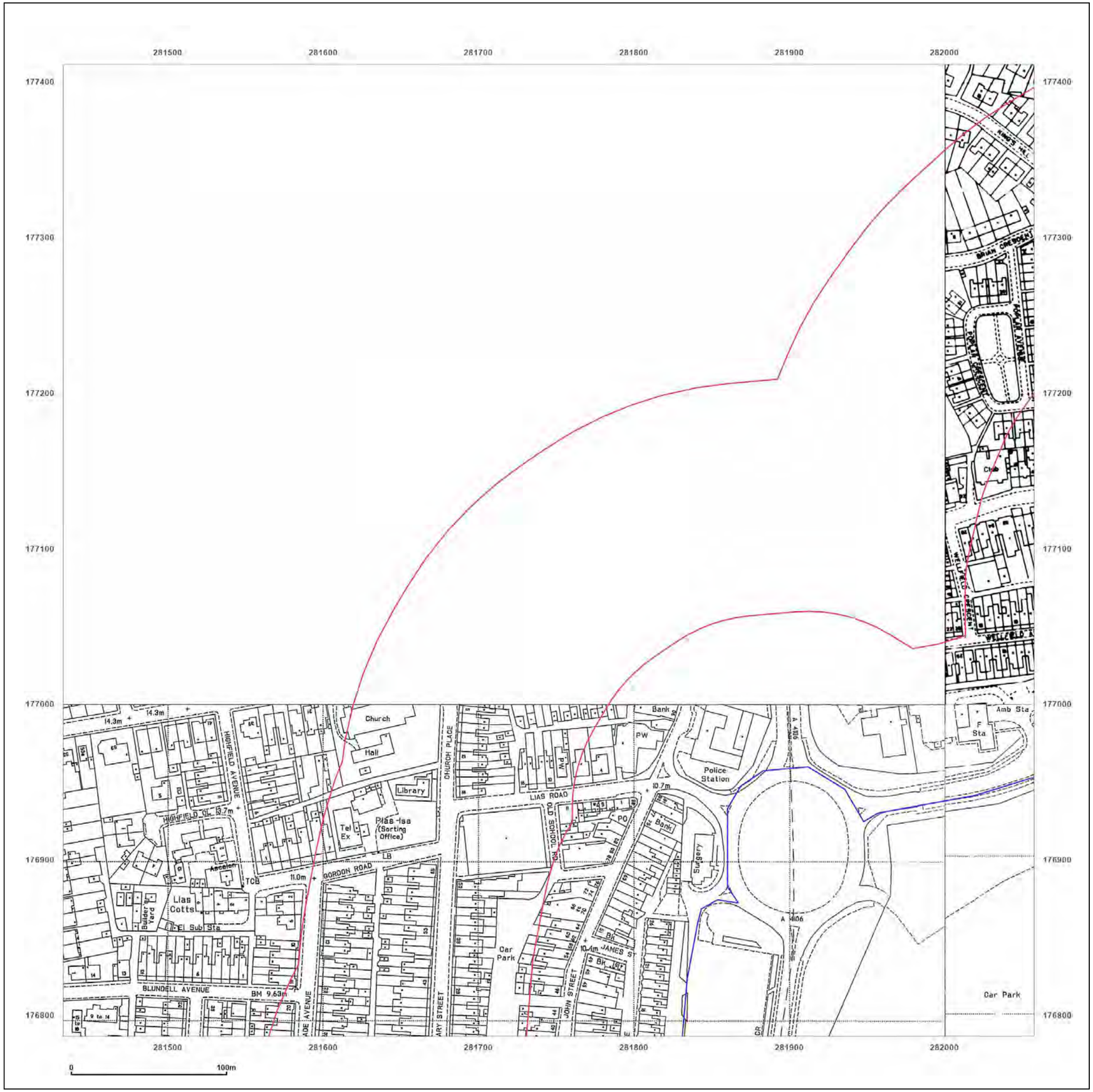
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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_1_2
Grid Ref: 281745, 177099

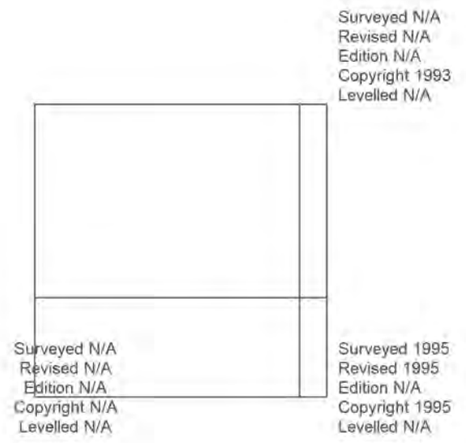
Map Name: National Grid

Map date: **1993-1995**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S



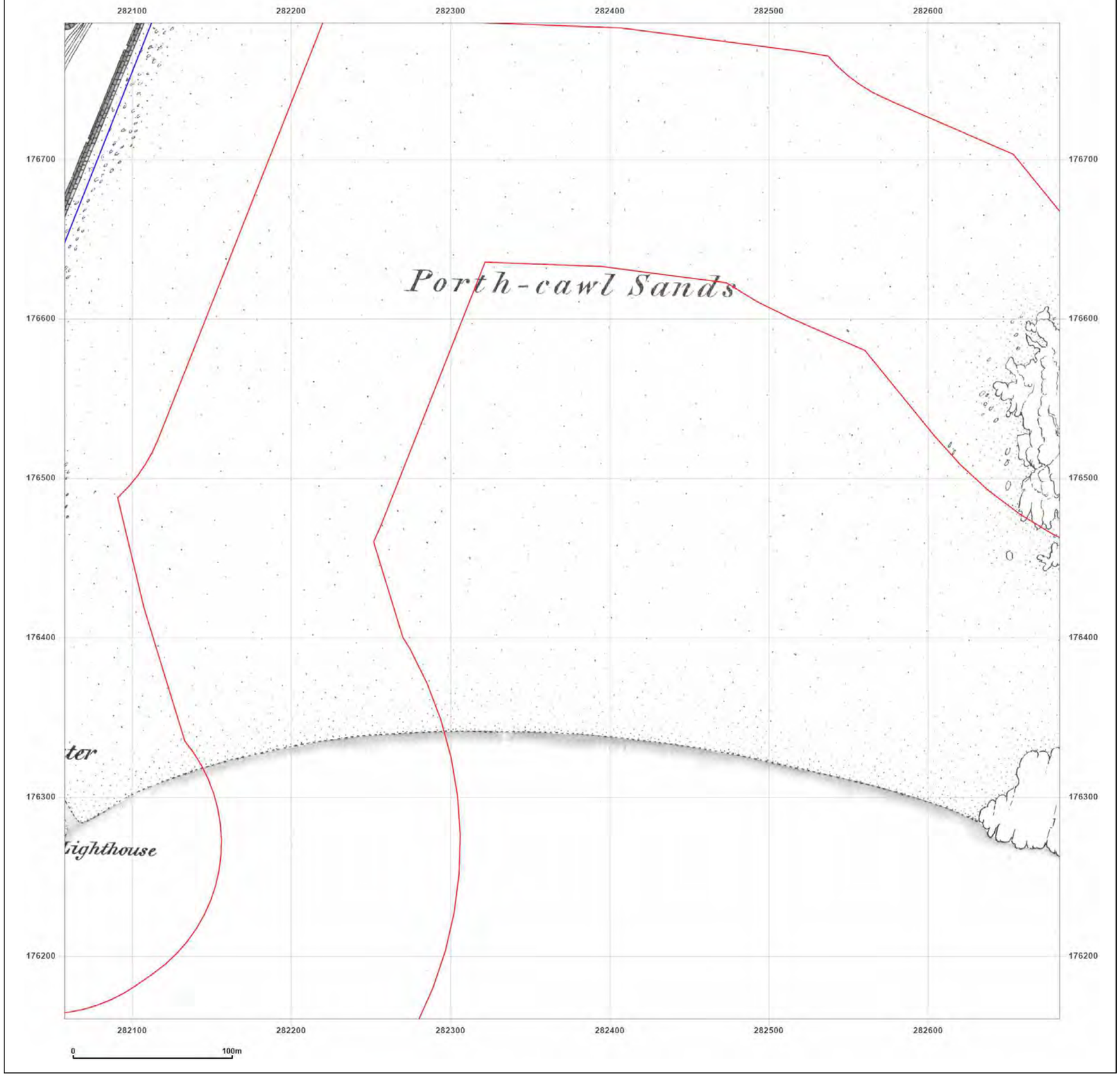
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_1
Grid Ref: 282370, 176473

Map Name: County Series

Map date: **1880**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1880
Revised 1880
Edition N/A
Copyright N/A
Levelled N/A



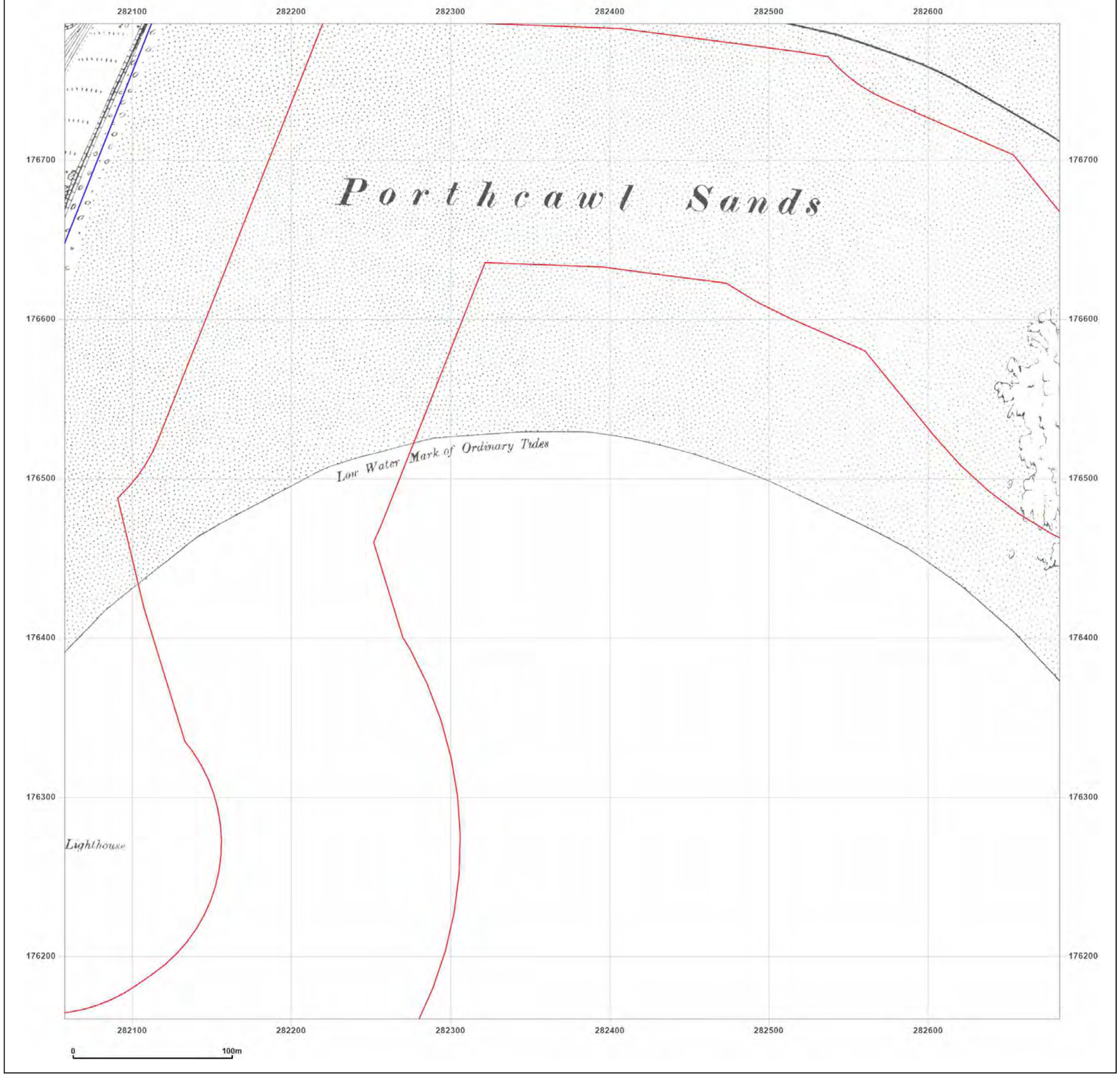
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_1
Grid Ref: 282370, 176473

Map Name: County Series

Map date: **1899**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

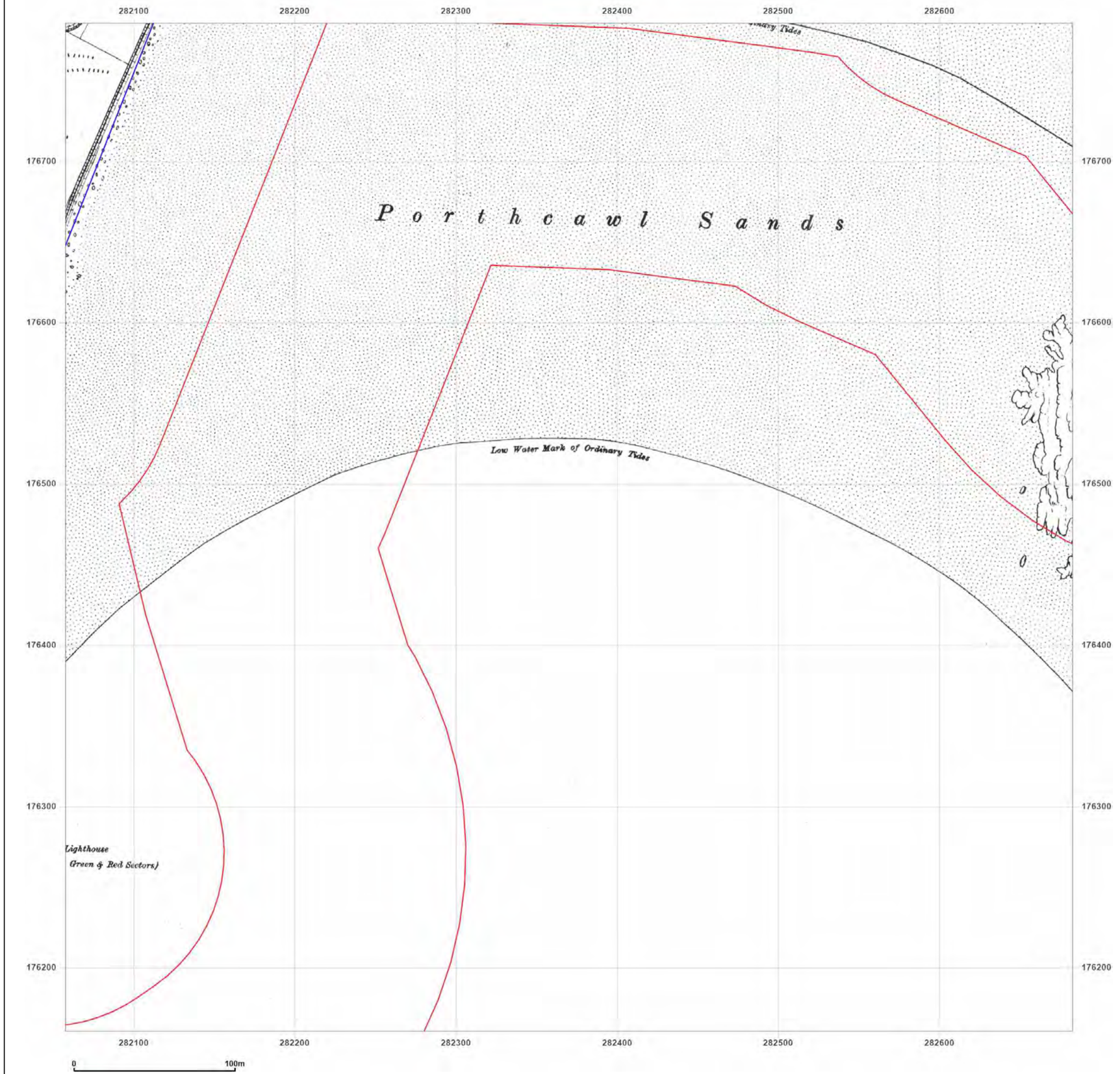
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_1
Grid Ref: 282370, 176473

Map Name: County Series

Map date: **1919**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1919
Revised 1919
Edition N/A
Copyright N/A
Levelled N/A

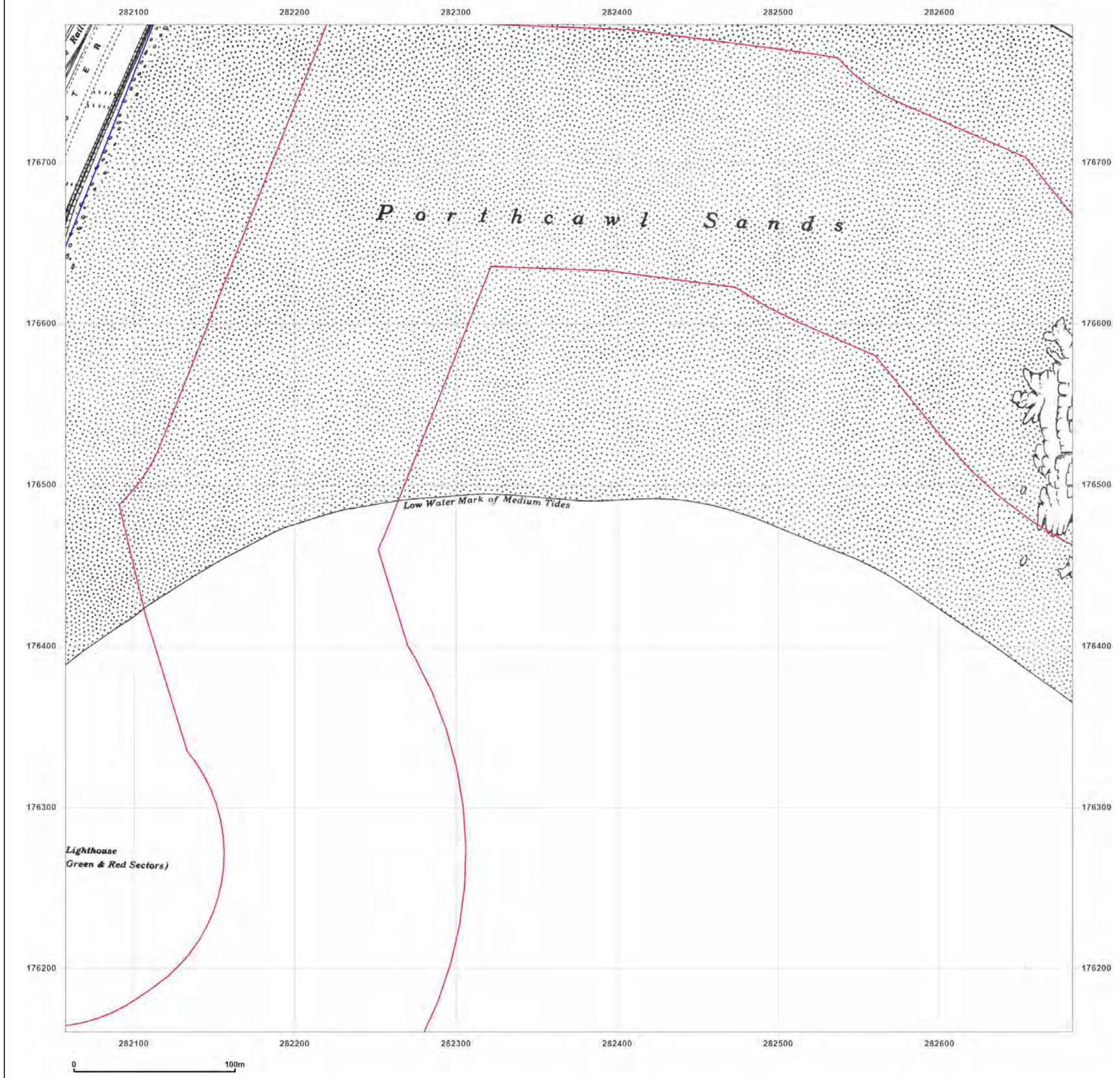
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_1
Grid Ref: 282370, 176473

Map Name: County Series

Map date: **1943**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1943
Revised 1943
Edition N/A
Copyright N/A
Levelled N/A

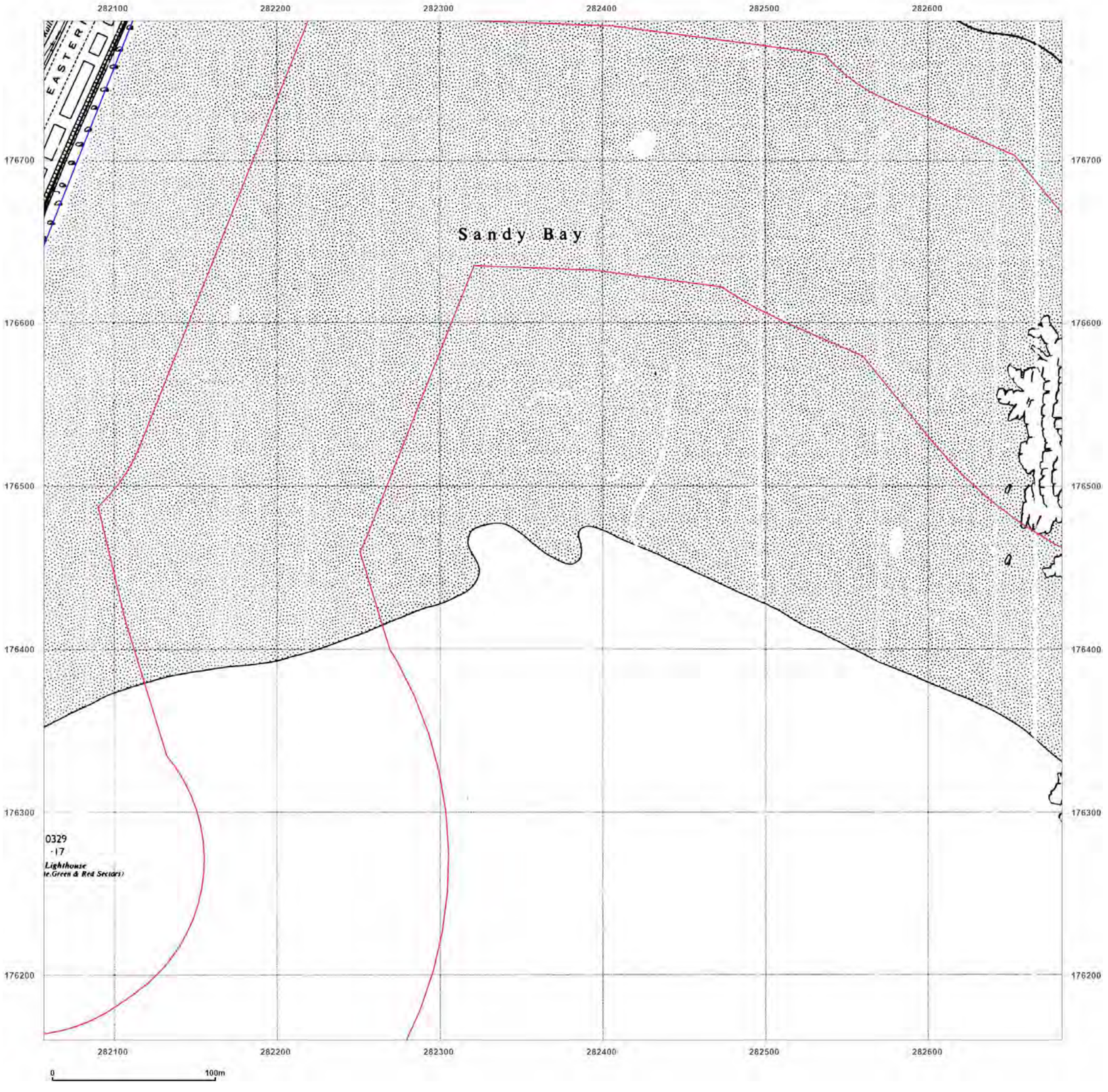
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_1
Grid Ref: 282370, 176473

Map Name: National Grid

Map date: **1966**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

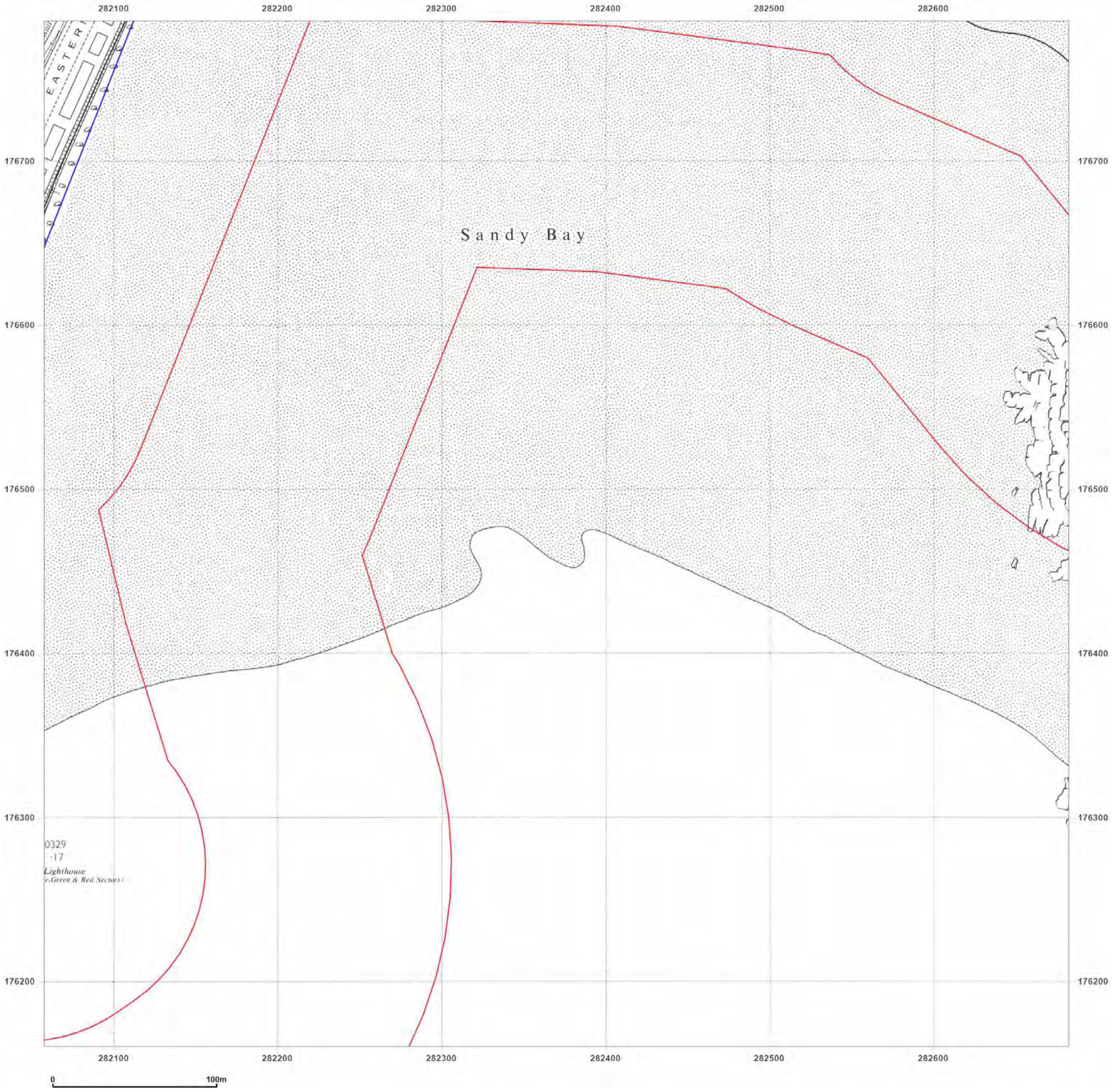
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_1
Grid Ref: 282370, 176473

Map Name: National Grid

Map date: **1966**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1962

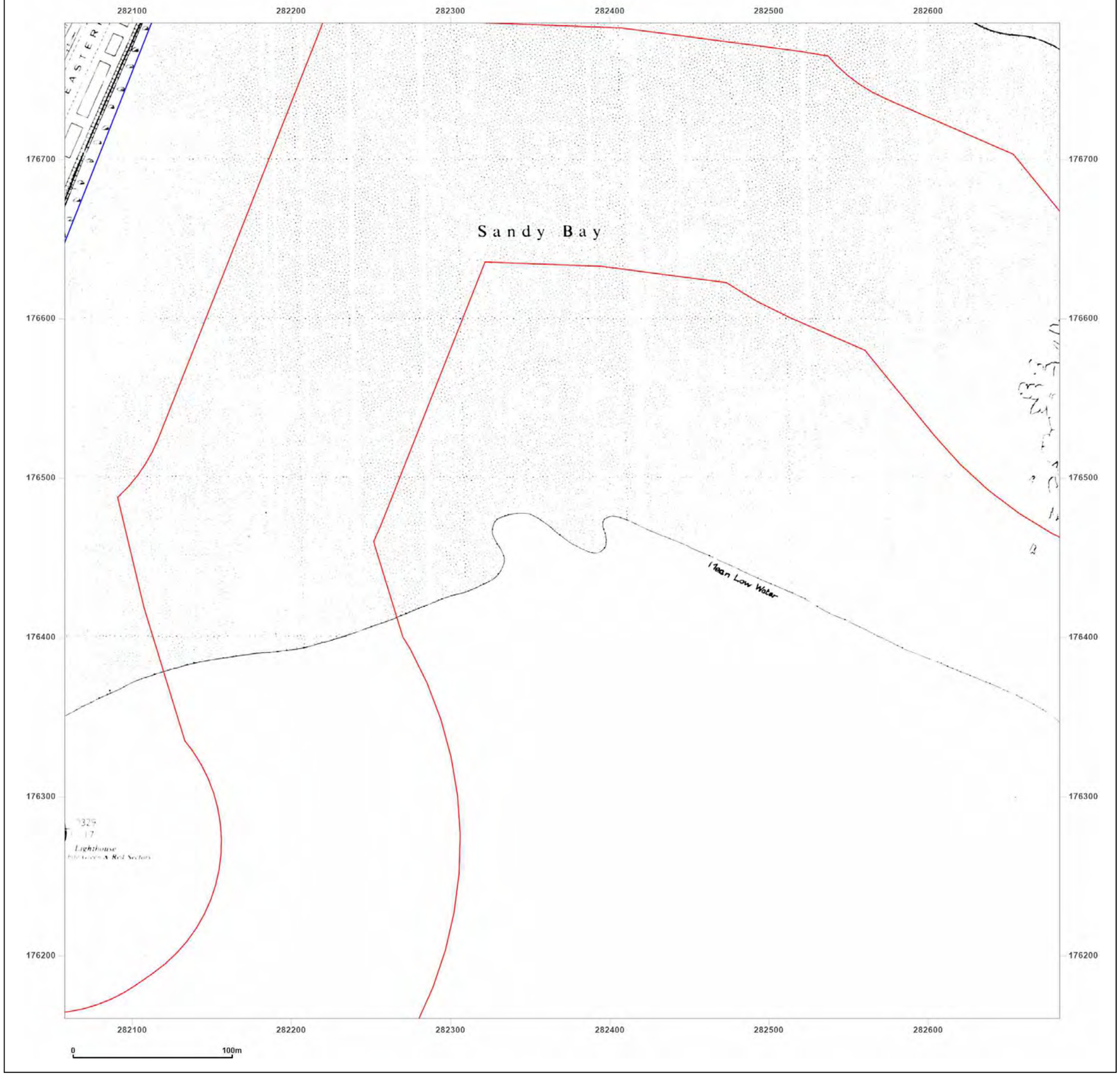
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_1
Grid Ref: 282370, 176473

Map Name: National Grid

Map date: **1991**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

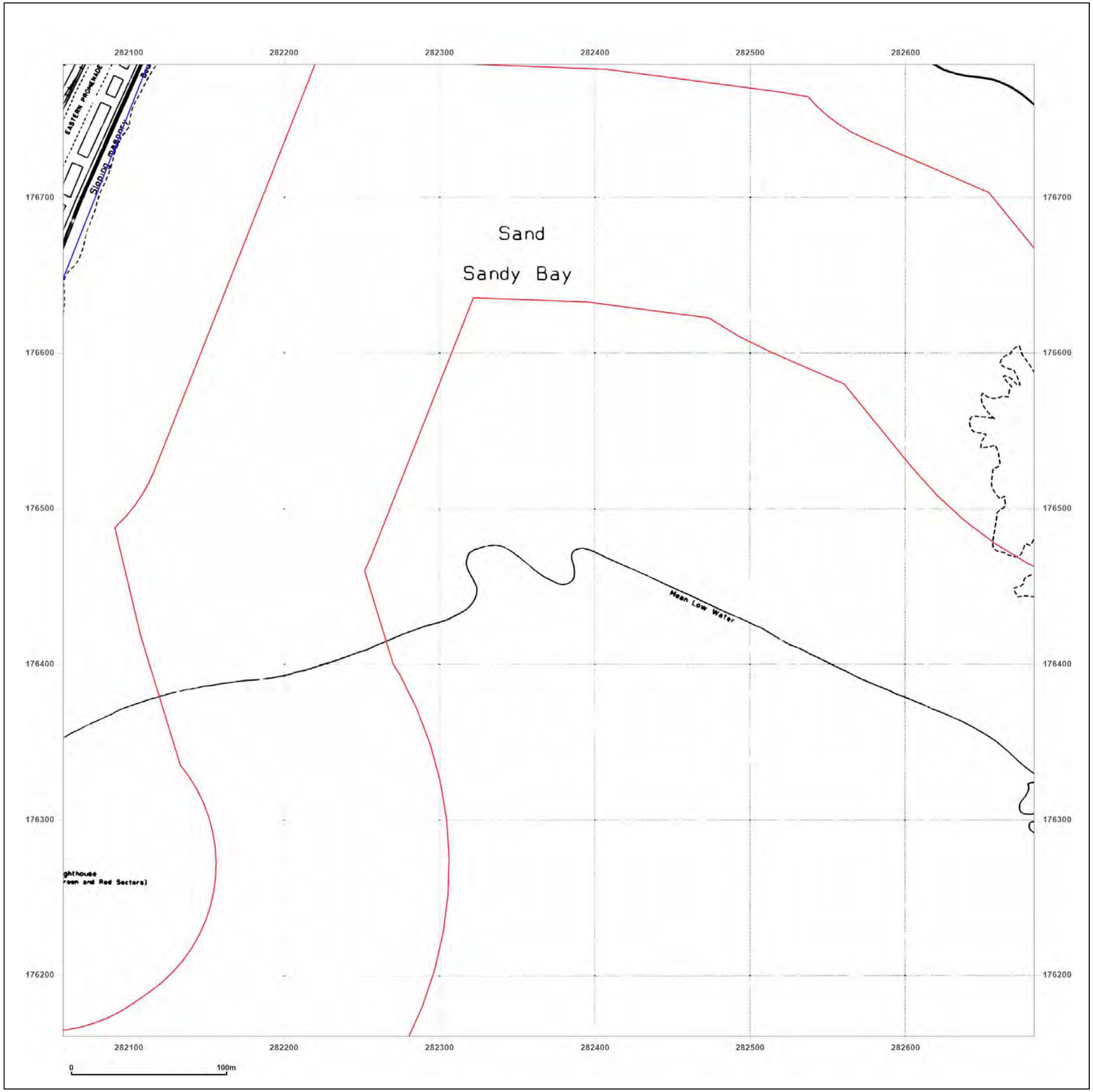
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_1
Grid Ref: 282370, 176473

Map Name: National Grid

Map date: **1993**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

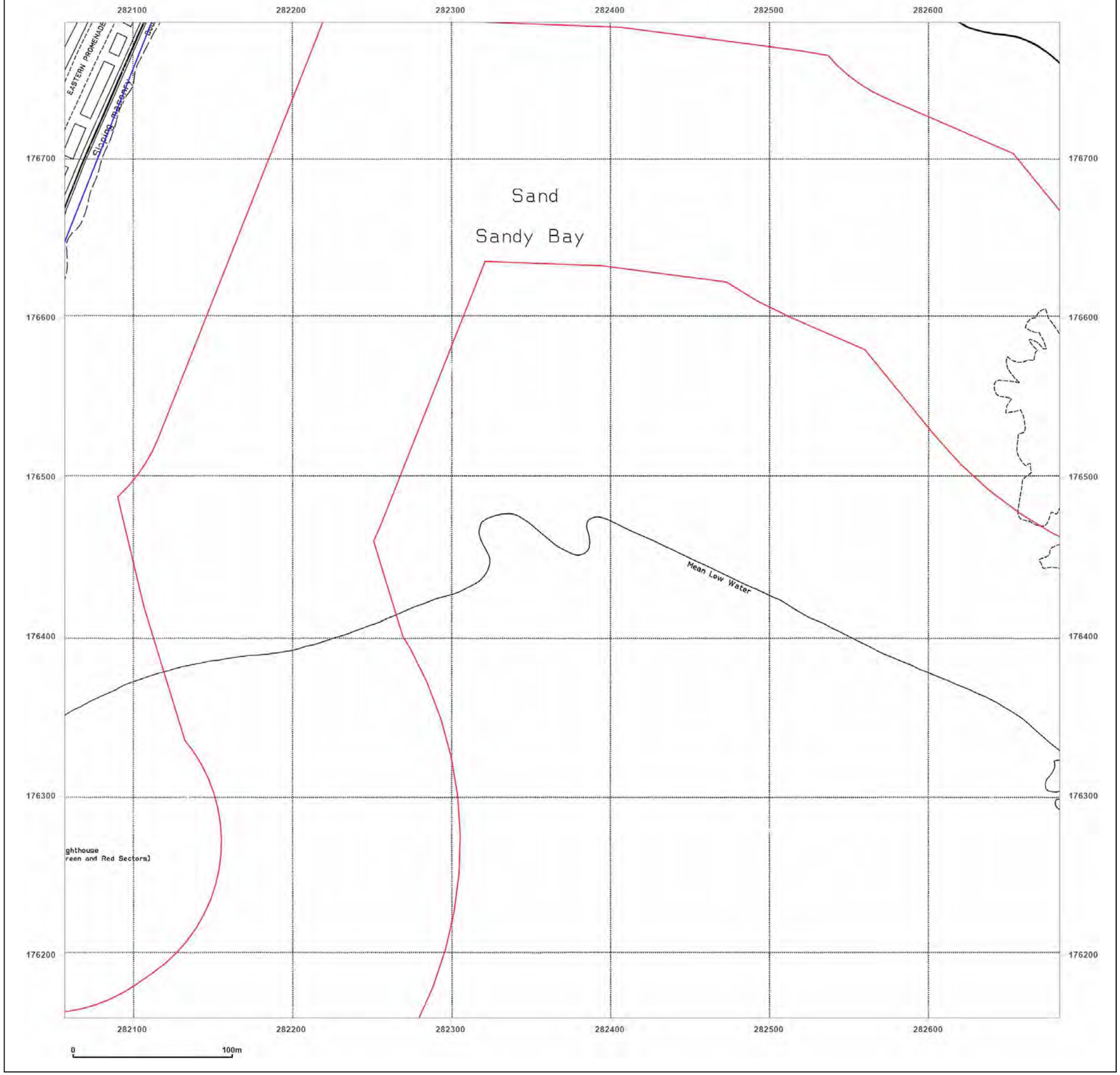
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_1
Grid Ref: 282370, 176473

Map Name: National Grid

Map date: **1995**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1995
Revised 1995
Edition N/A
Copyright 1995
Levelled N/A

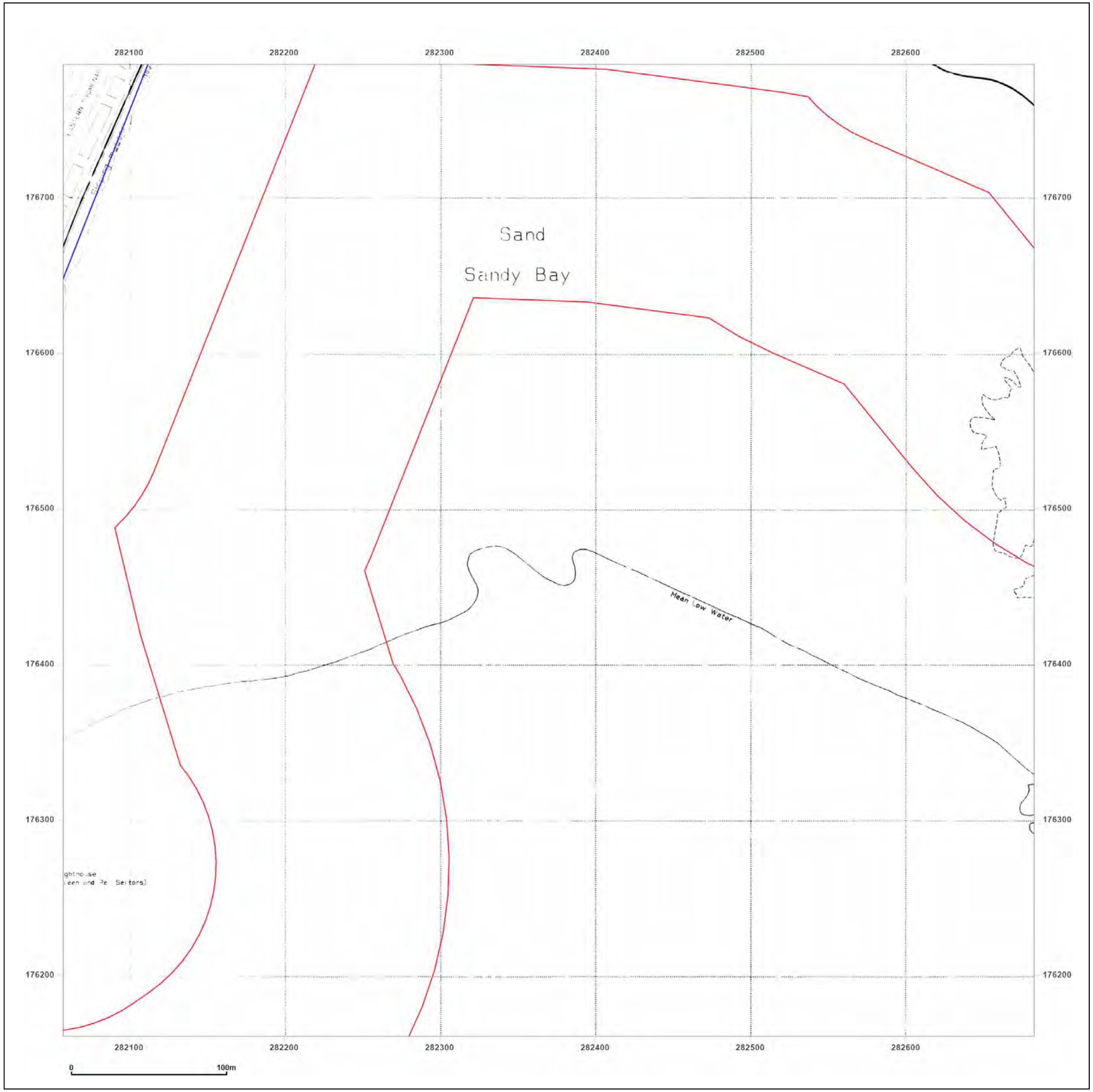
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_1
Grid Ref: 282370, 176473

Map Name: National Grid

Map date: **1995**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
Levelled N/A

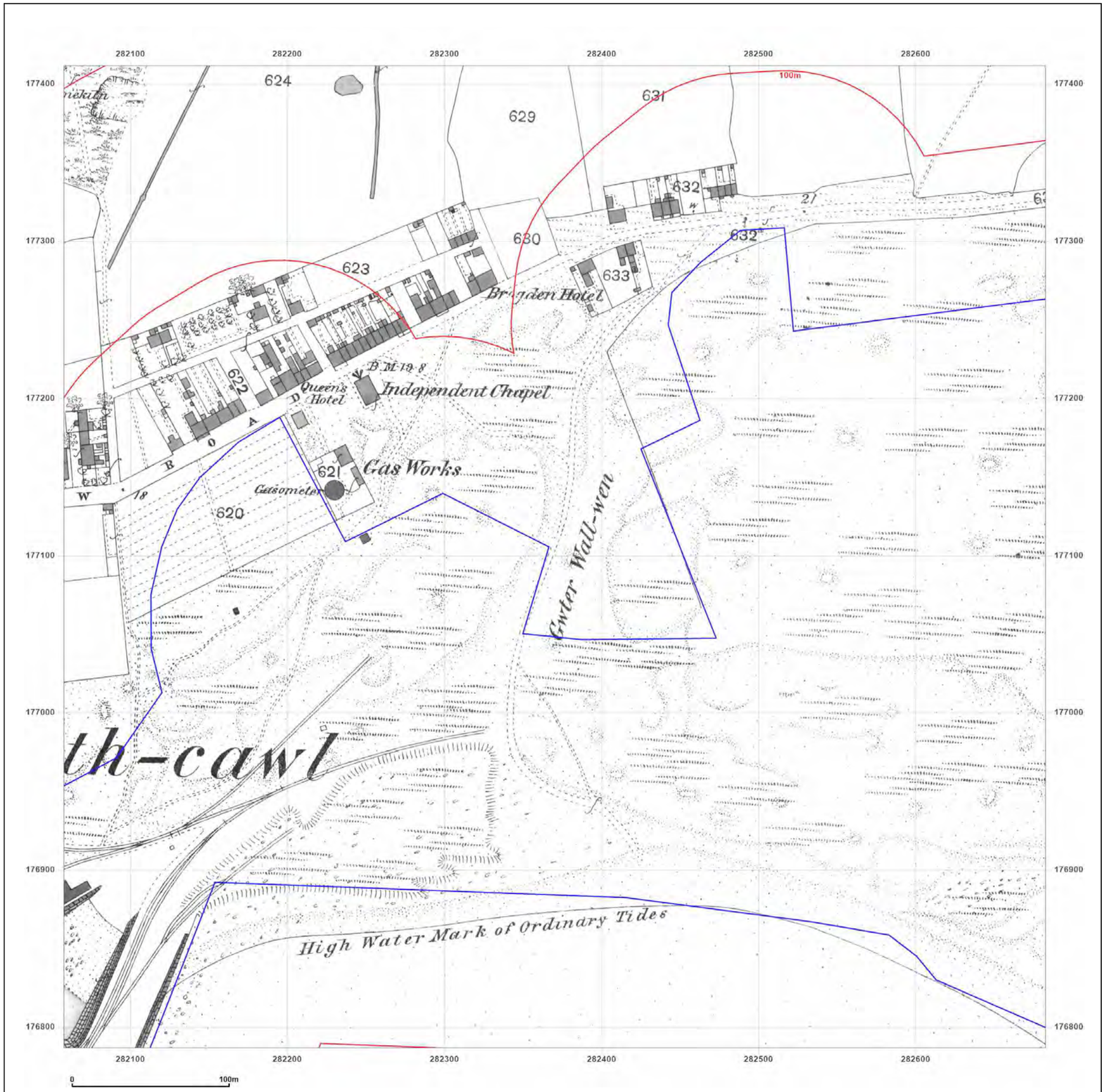
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: County Series

Map date: **1880**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1880
Revised 1880
Edition N/A
Copyright N/A
Levelled N/A

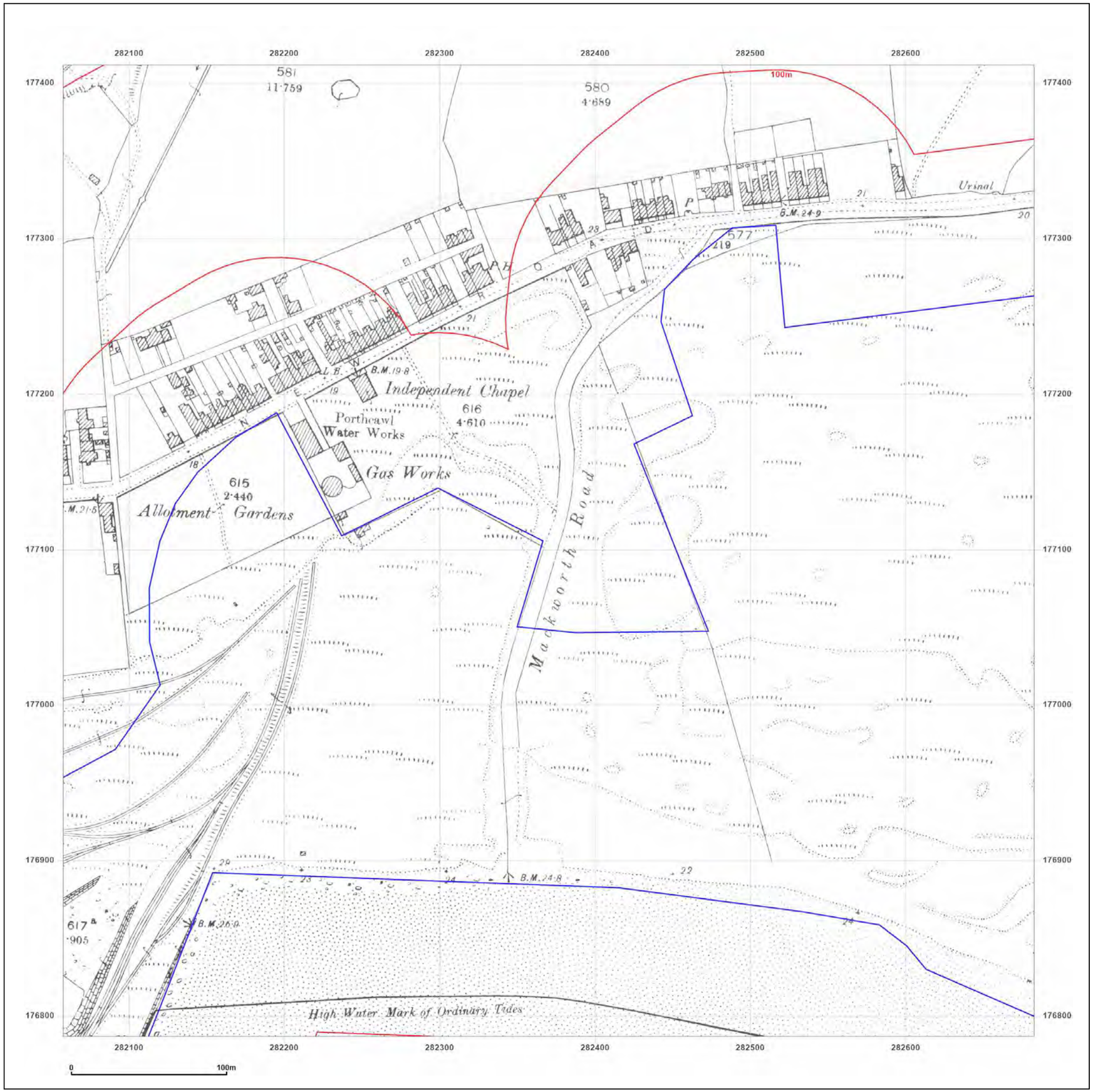
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: County Series

Map date: **1899**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: County Series

Map date: **1919**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1919
Revised 1919
Edition N/A
Copyright N/A
Levelled N/A

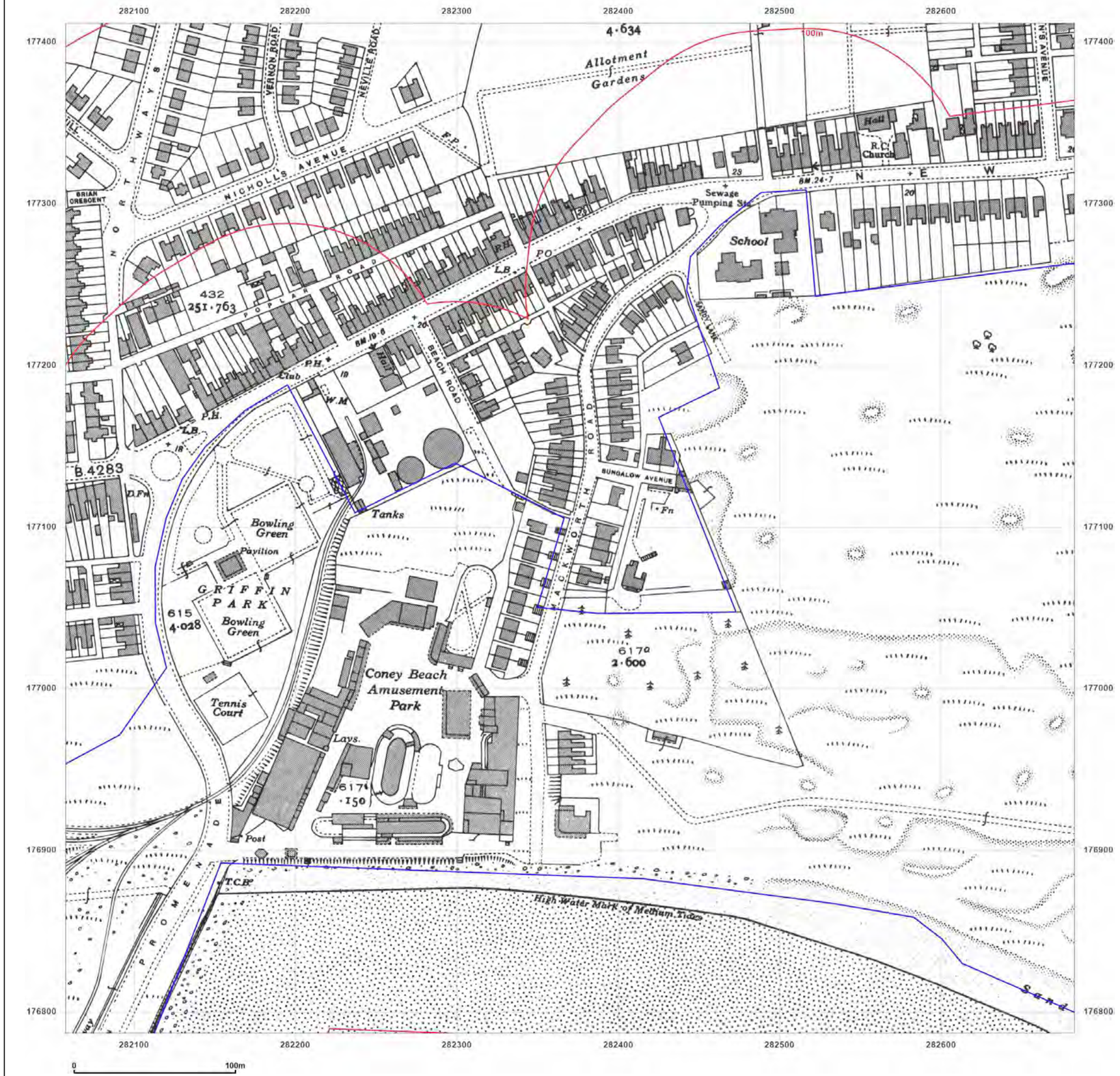
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: County Series

Map date: **1943**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1943
Revised 1943
Edition N/A
Copyright N/A
Levelled N/A

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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: National Grid

Map date: **1966**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1962

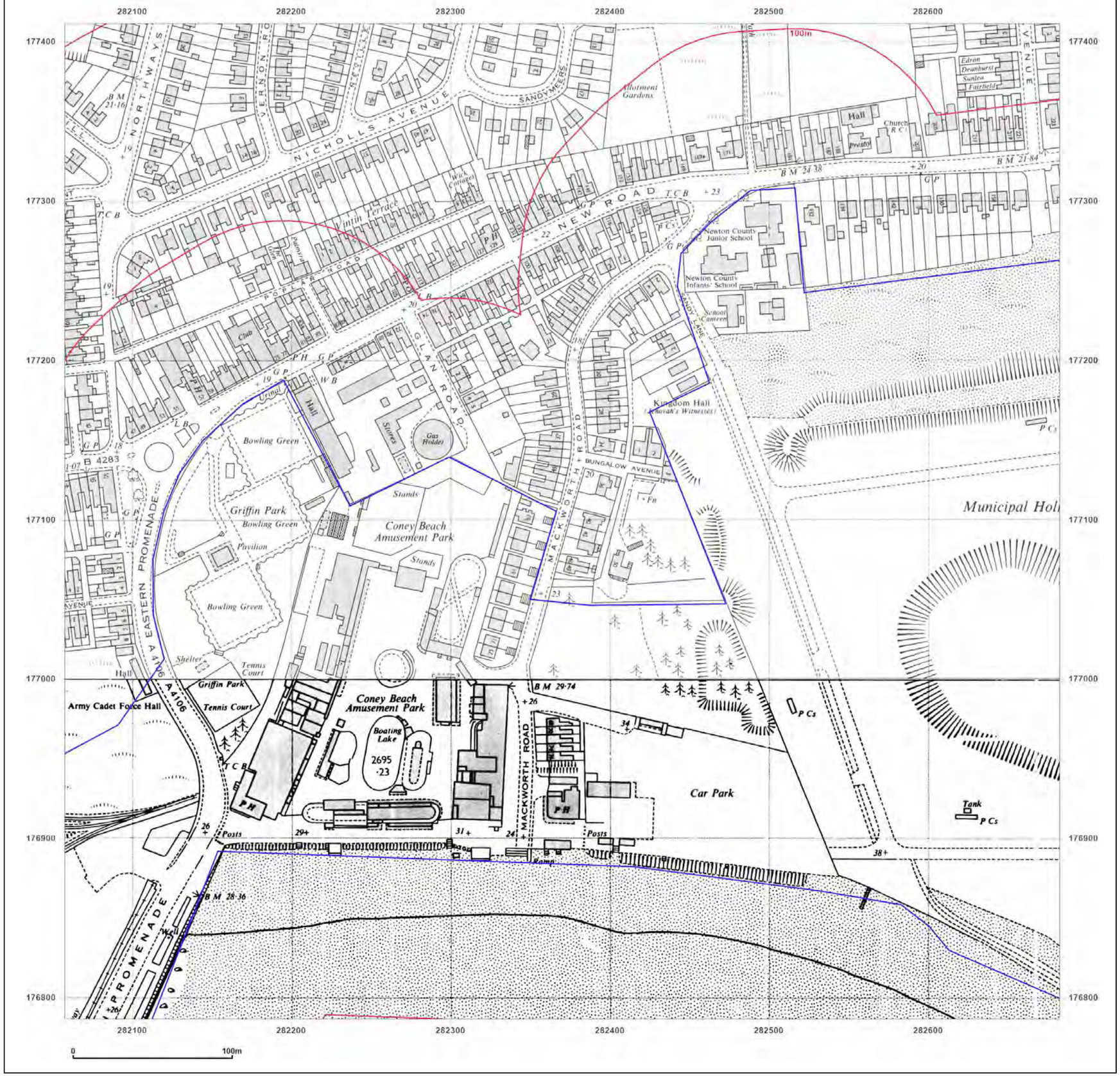
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: National Grid

Map date: **1966**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1962

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

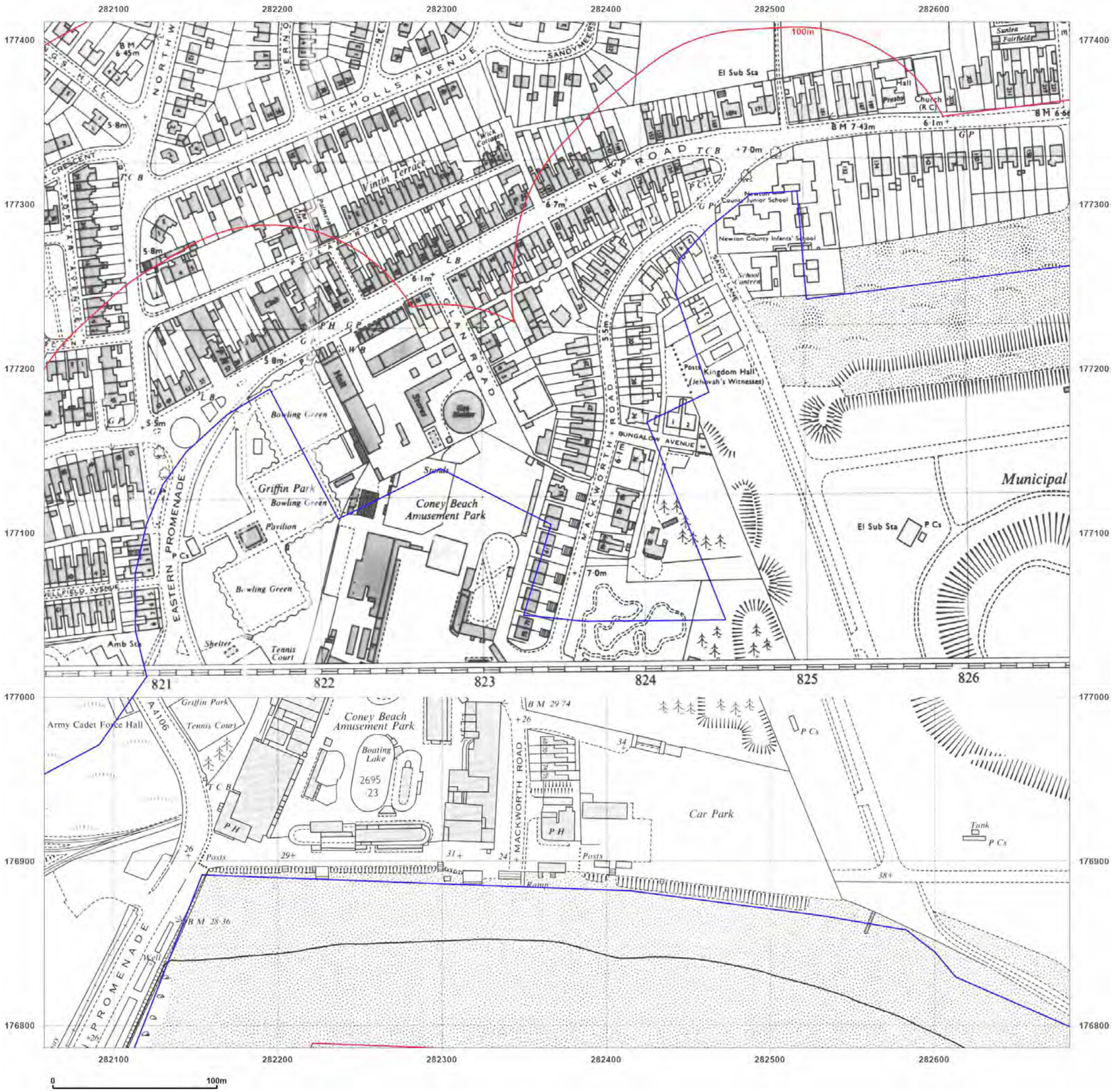
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: National Grid

Map date: **1966**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1966
Revised 1966
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1962

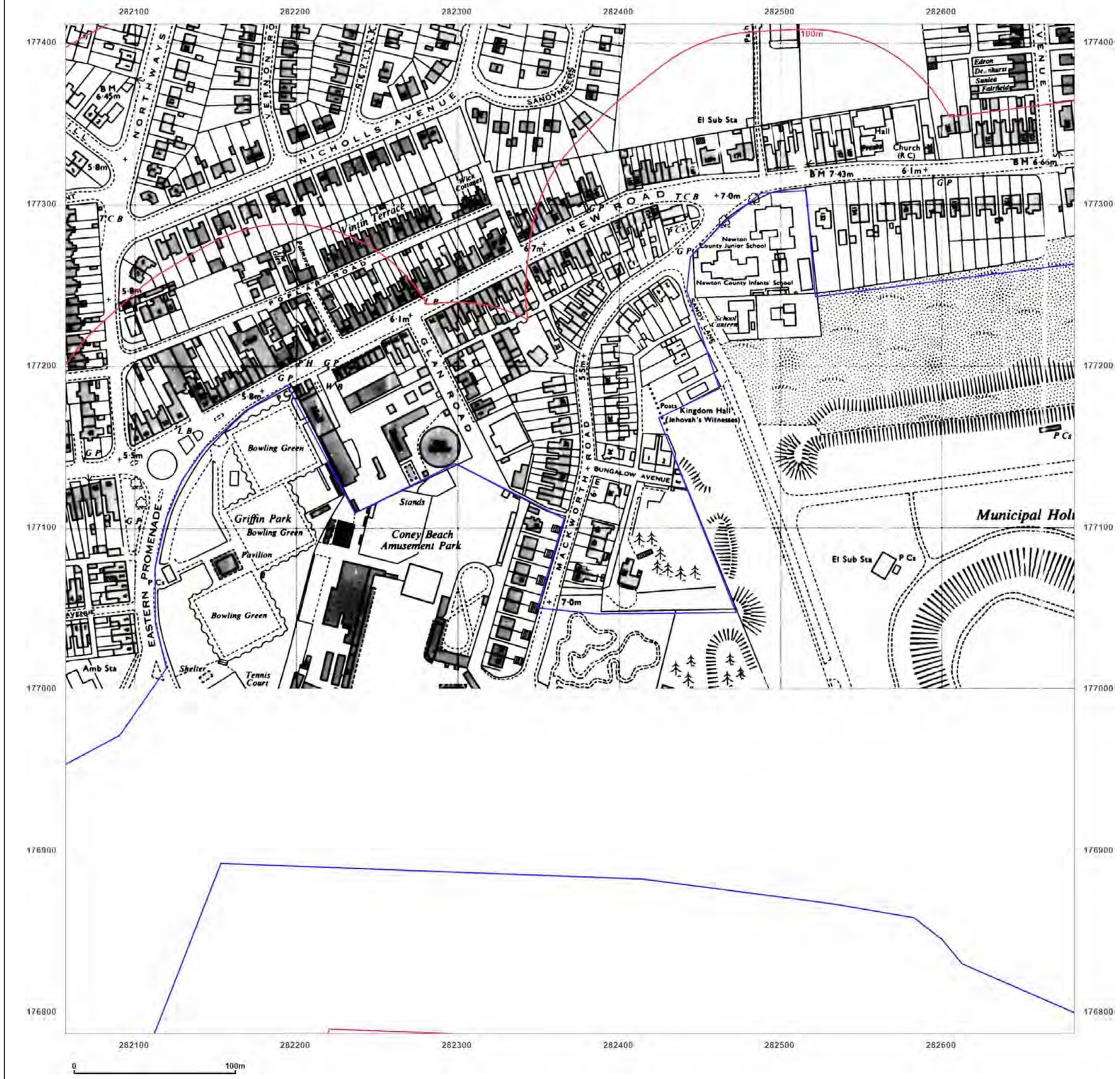
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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: National Grid

Map date: **1977**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

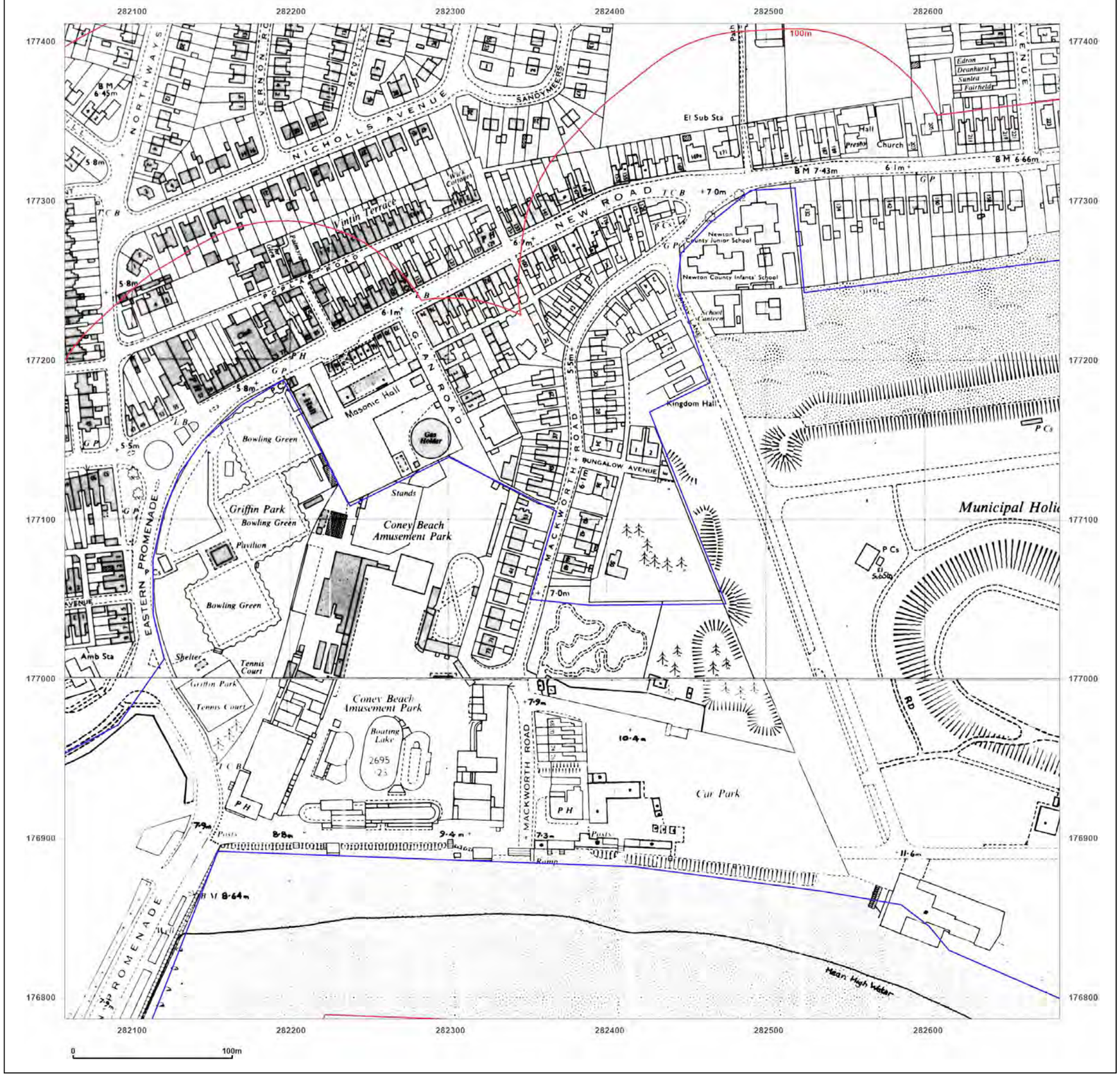
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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: National Grid

Map date: **1988-1991**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1962
Revised 1988
Edition N/A
Copyright 1988
Levelled 1962

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: National Grid

Map date: **1992-1993**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: National Grid

Map date: **1992-1995**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1965
Revised 1990
Edition N/A
Copyright 1992
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
Levelled N/A

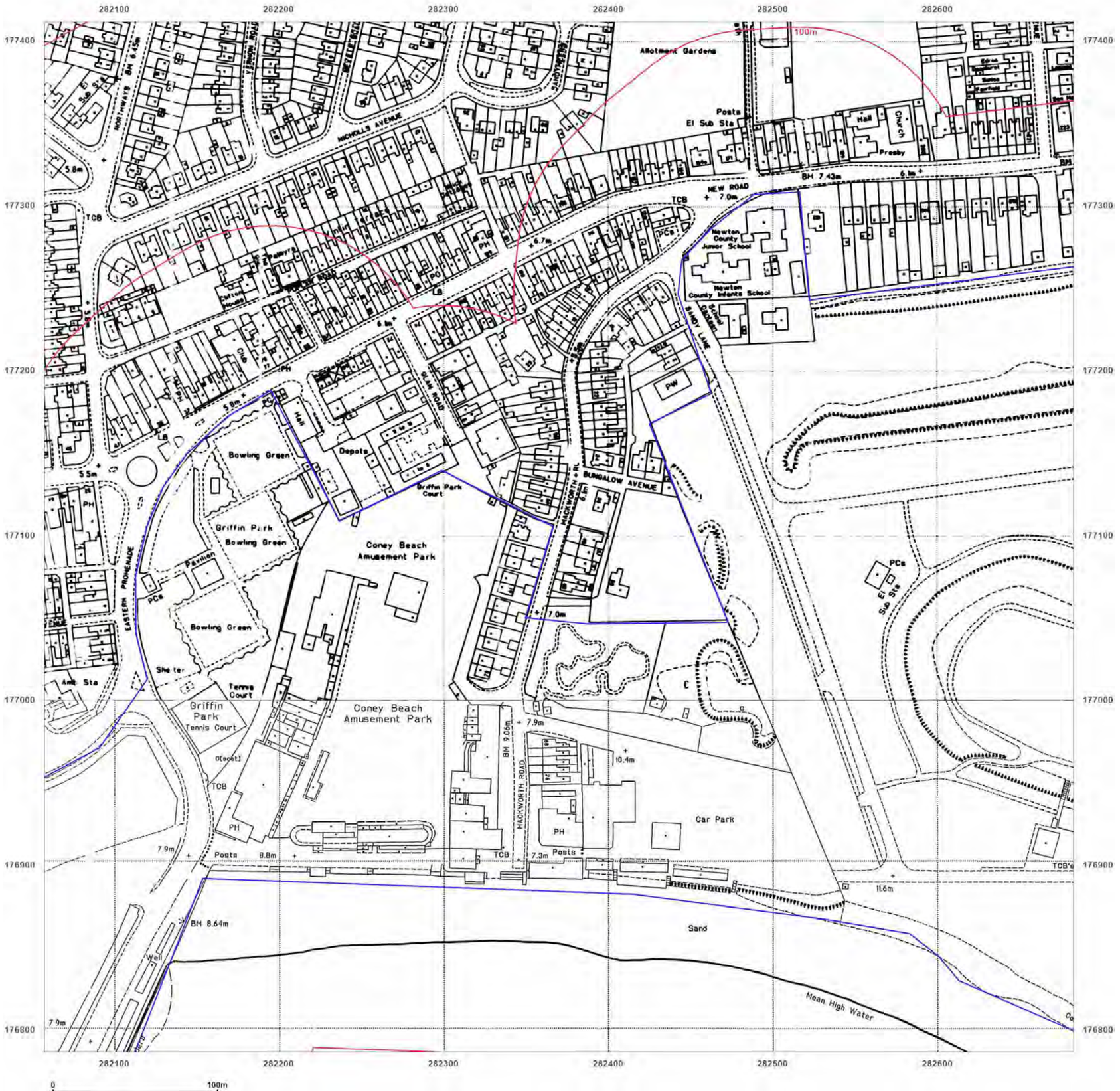
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: National Grid

Map date: **1993-1995**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed 1995
Revised 1995
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Copyright 1995
Levelled N/A

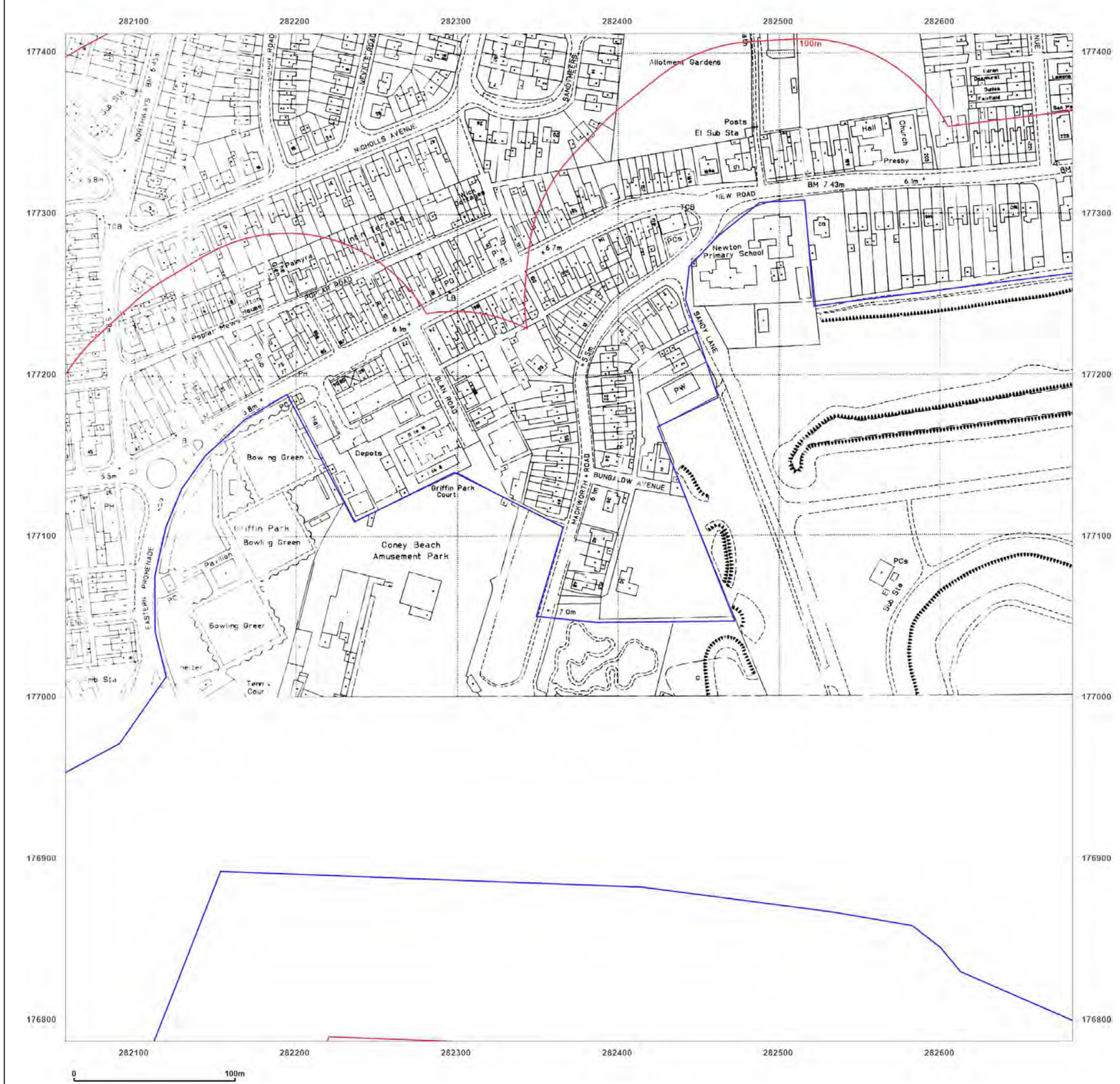
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Groundsure INSIGHTS

Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: National Grid

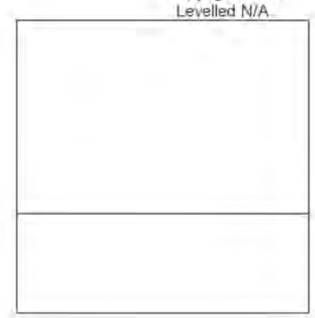
Map date: **1995**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
Levelled N/A



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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_2_2
Grid Ref: 282370, 177099

Map Name: National Grid

Map date: **1995**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



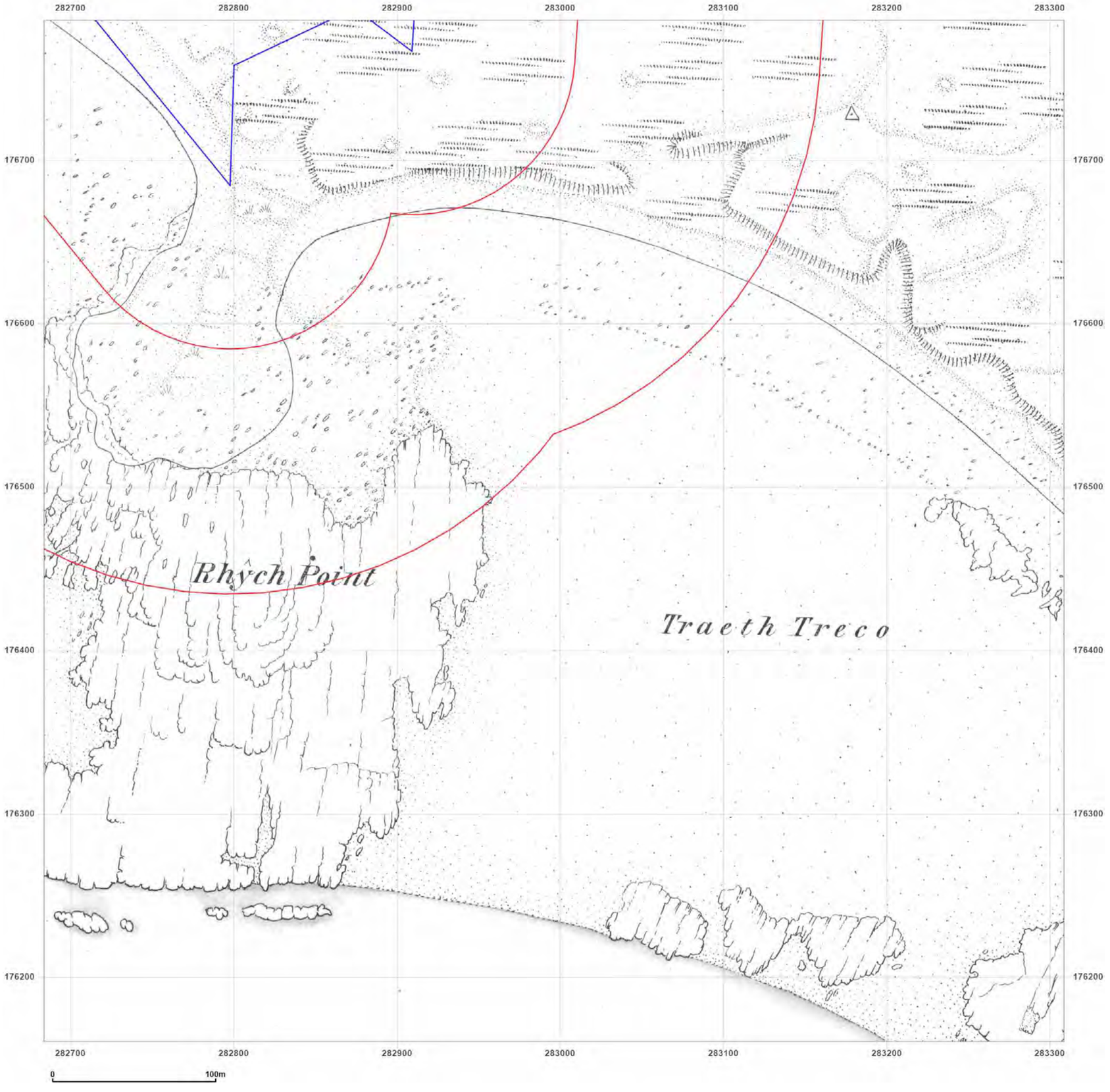
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_1
Grid Ref: 282996, 176473

Map Name: County Series

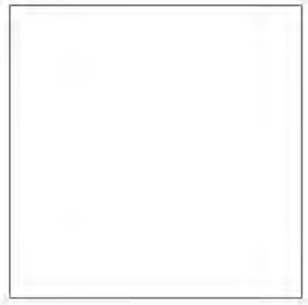
Map date: **1880**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1880
Revised 1880
Edition N/A
Copyright N/A
Levelled N/A



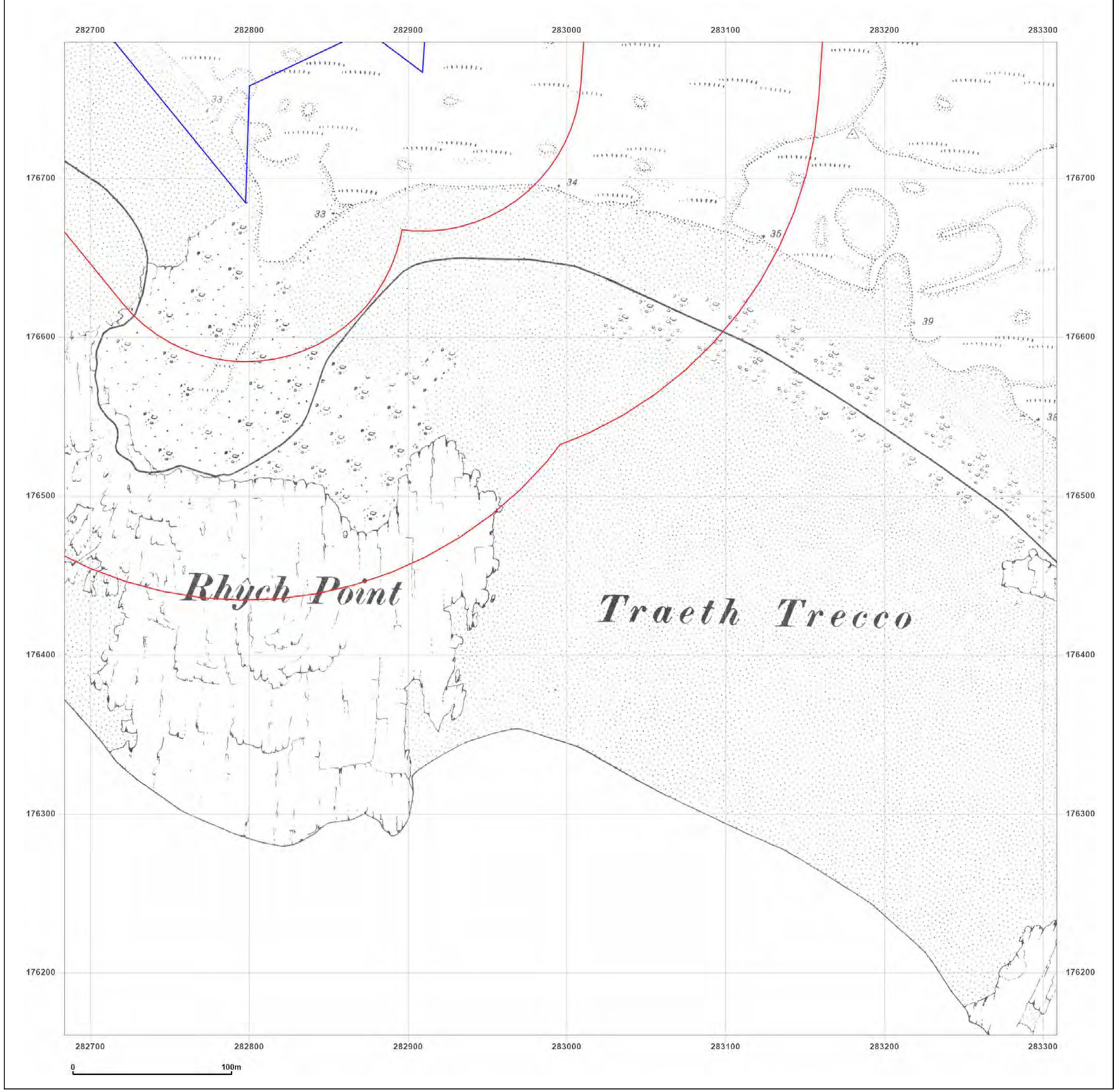
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_1
Grid Ref: 282996, 176473

Map Name: County Series

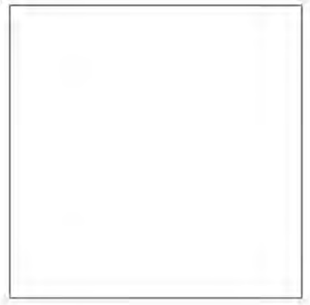
Map date: **1899**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A



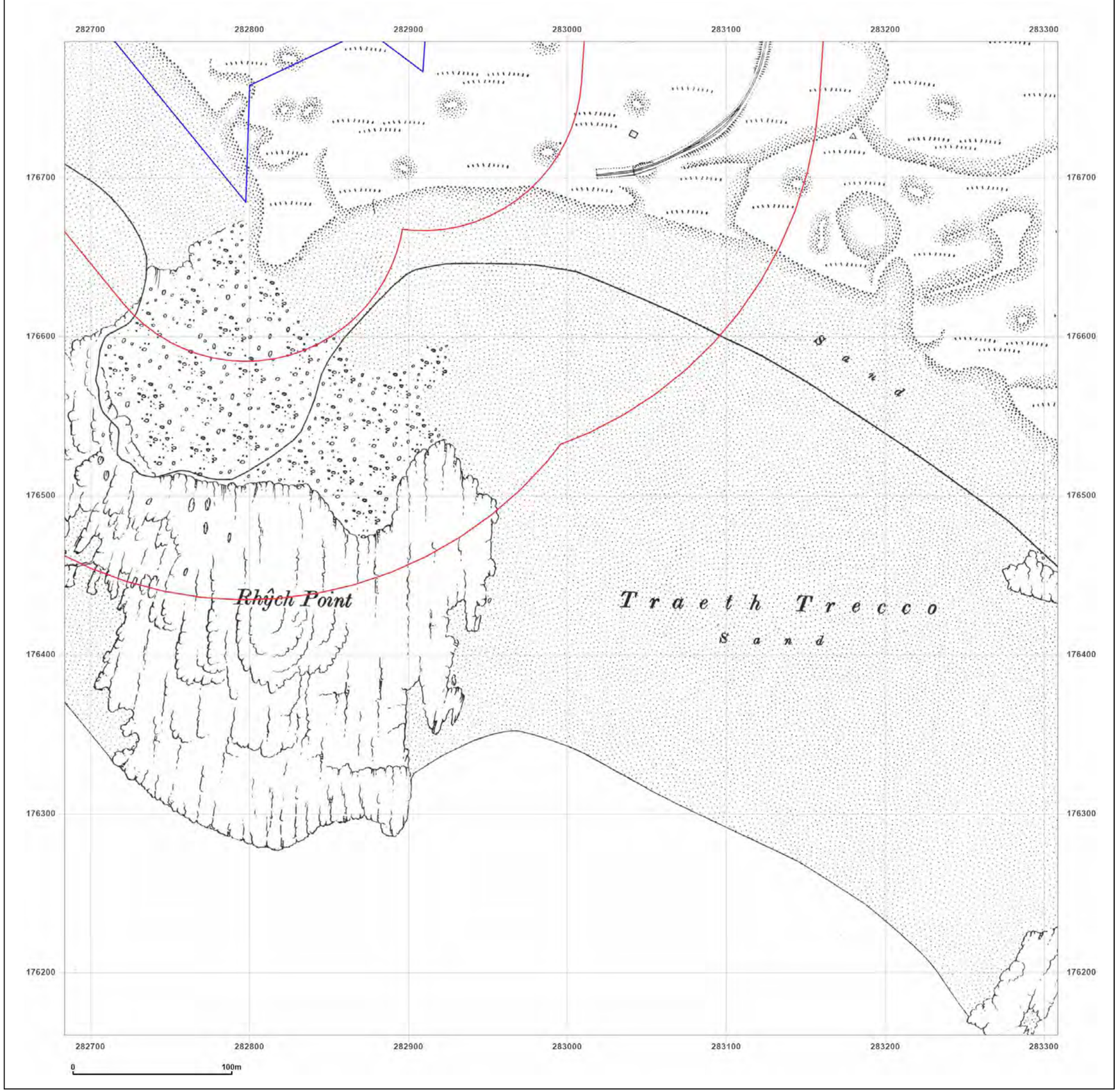
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_1
Grid Ref: 282996, 176473

Map Name: County Series

Map date: **1919**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1919
Revised 1919
Edition N/A
Copyright N/A
Levelled N/A

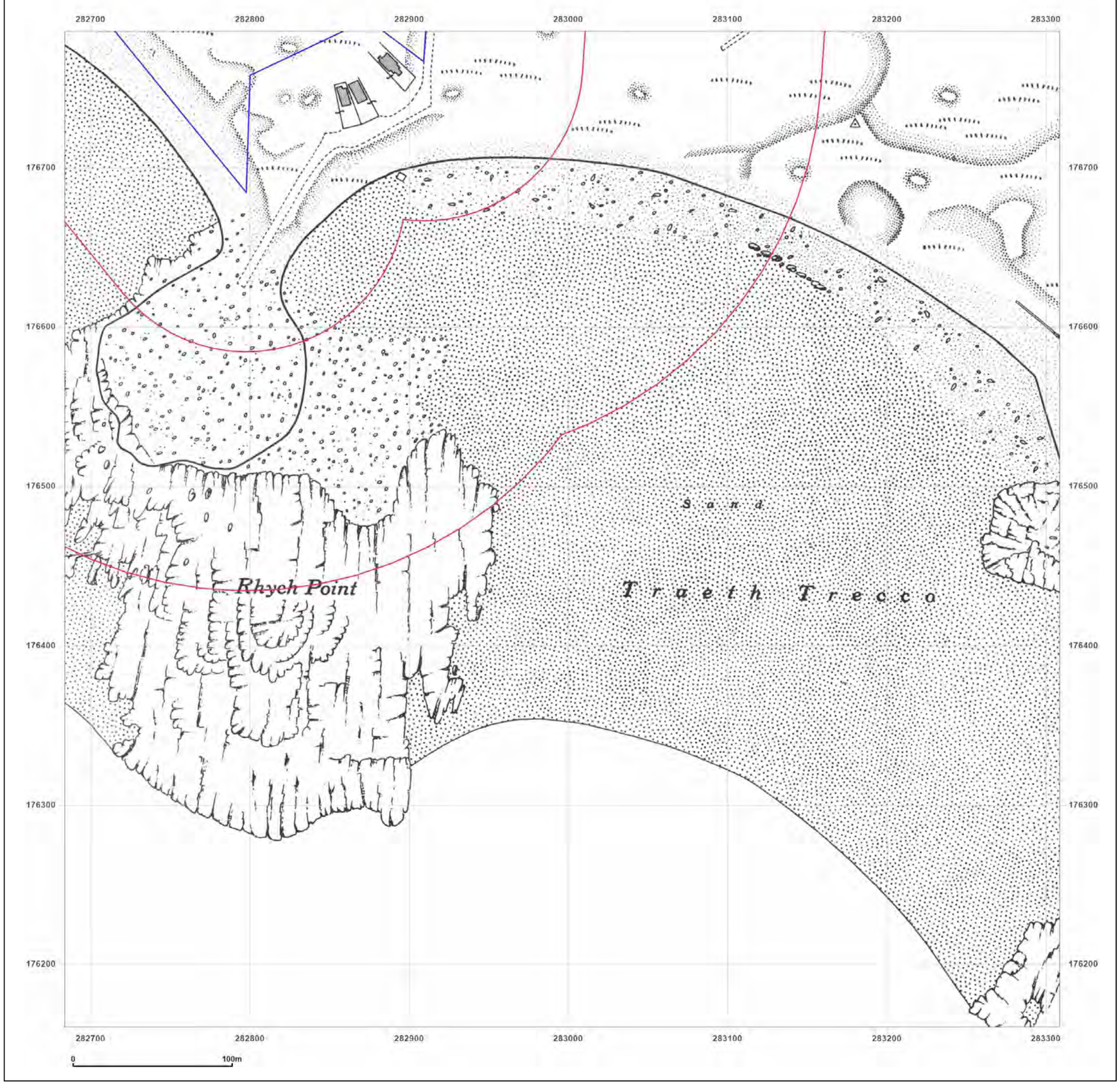
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_1
Grid Ref: 282996, 176473

Map Name: County Series

Map date: **1943**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1943
Revised 1943
Edition N/A
Copyright N/A
Levelled N/A

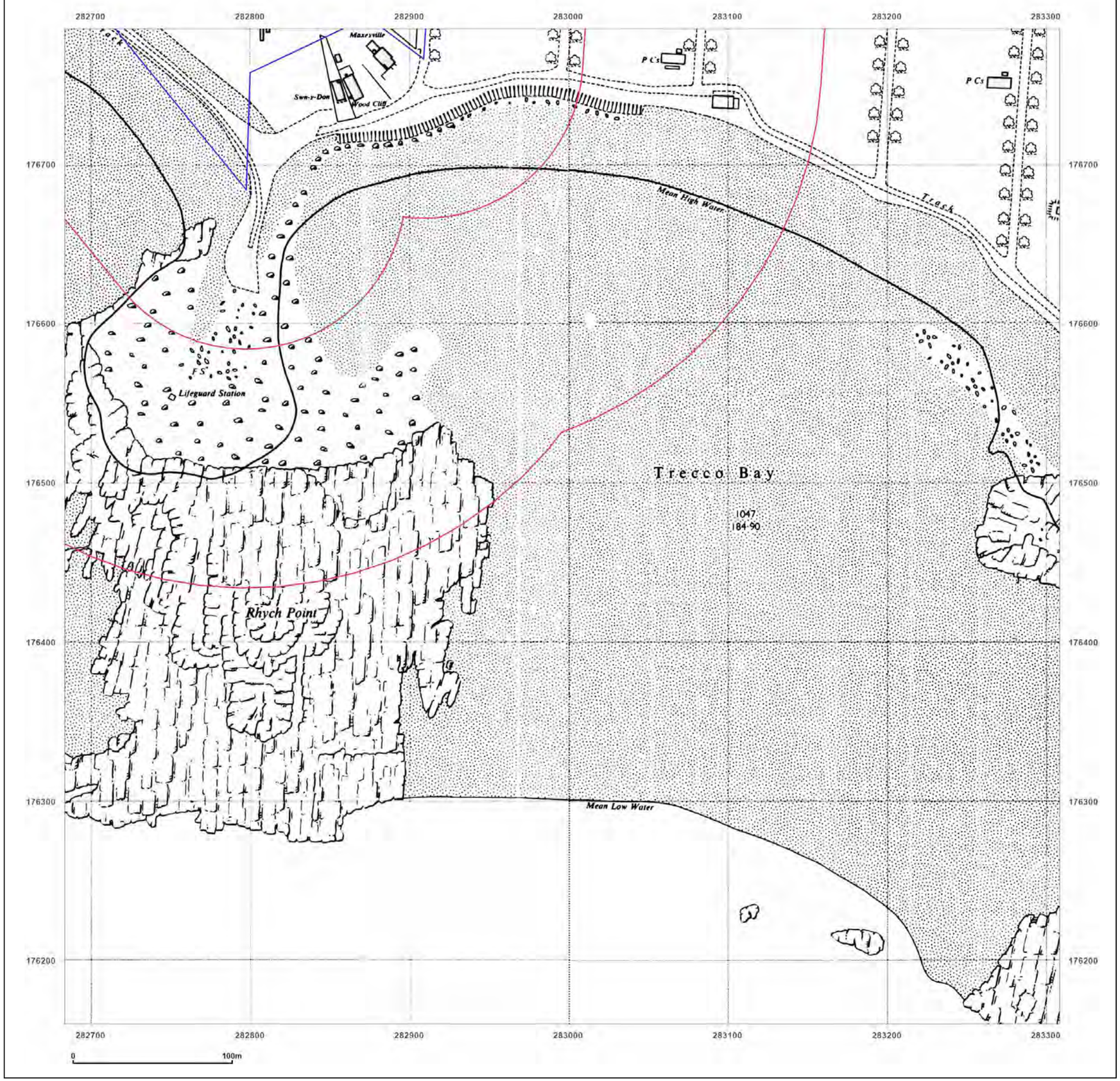
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_1
Grid Ref: 282996, 176473

Map Name: National Grid

Map date: **1966**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

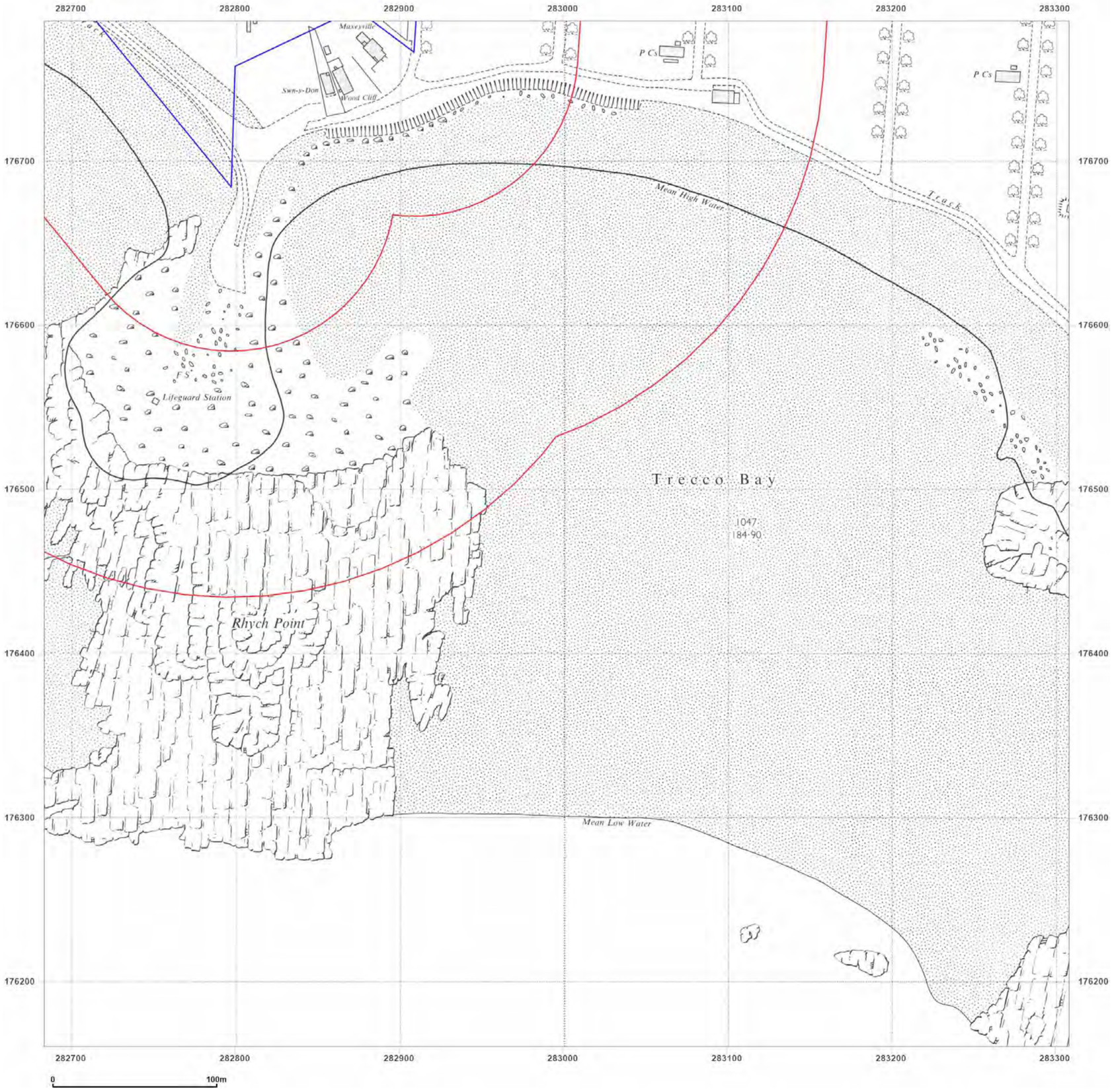
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Production date: 28 July 2025

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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_1
Grid Ref: 282996, 176473

Map Name: National Grid

Map date: **1966**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1962

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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_1
Grid Ref: 282996, 176473

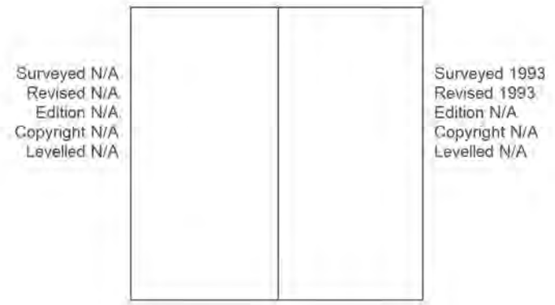
Map Name: National Grid

Map date: **1991-1993**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S



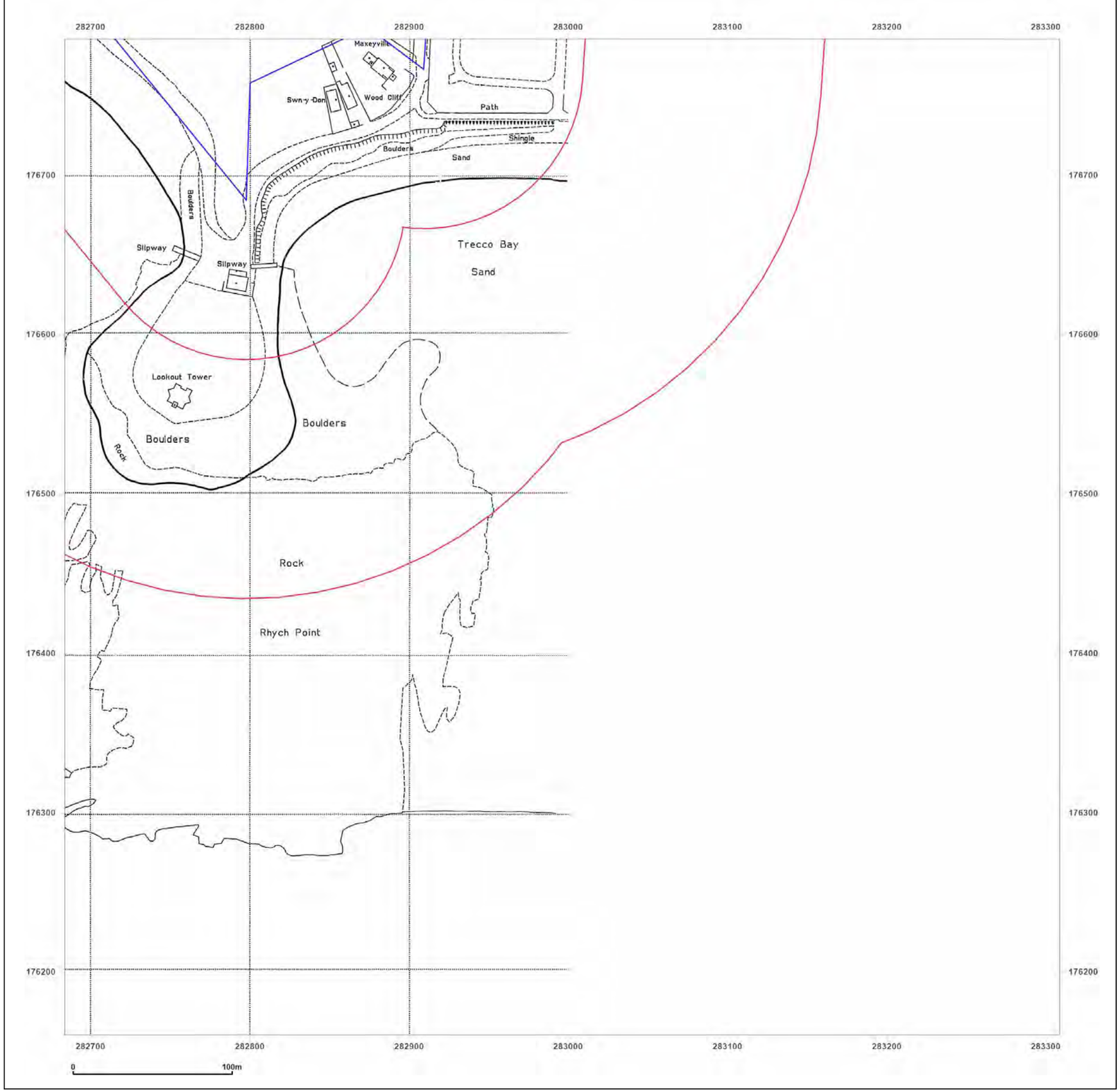
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_1
Grid Ref: 282996, 176473

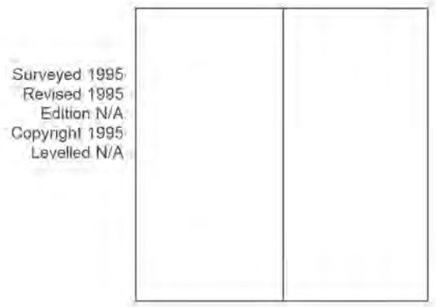
Map Name: National Grid

Map date: **1995**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S



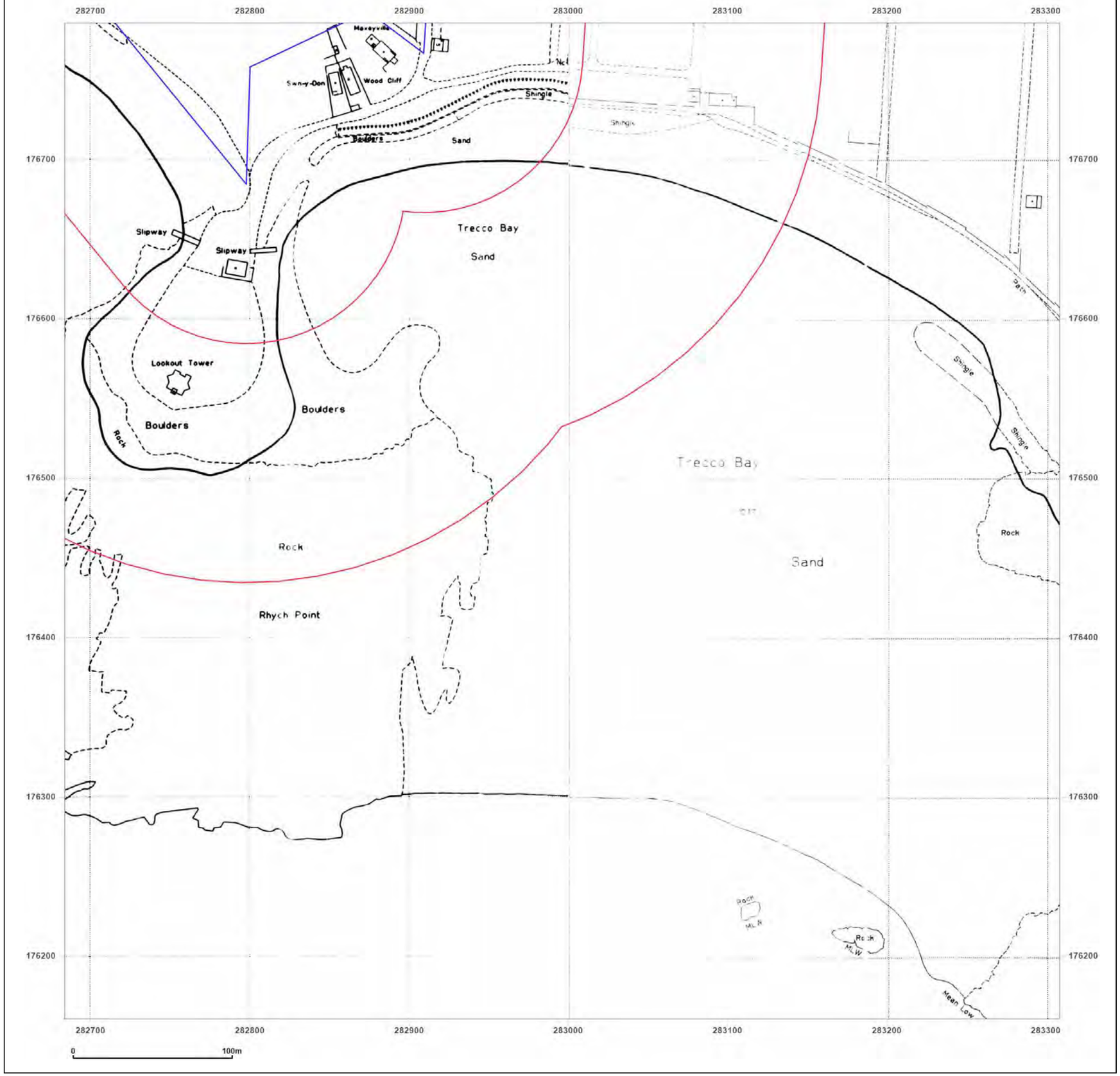
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_1
Grid Ref: 282996, 176473

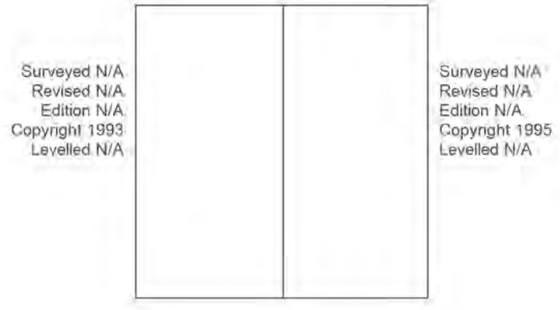
Map Name: National Grid

Map date: **1993-1995**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S



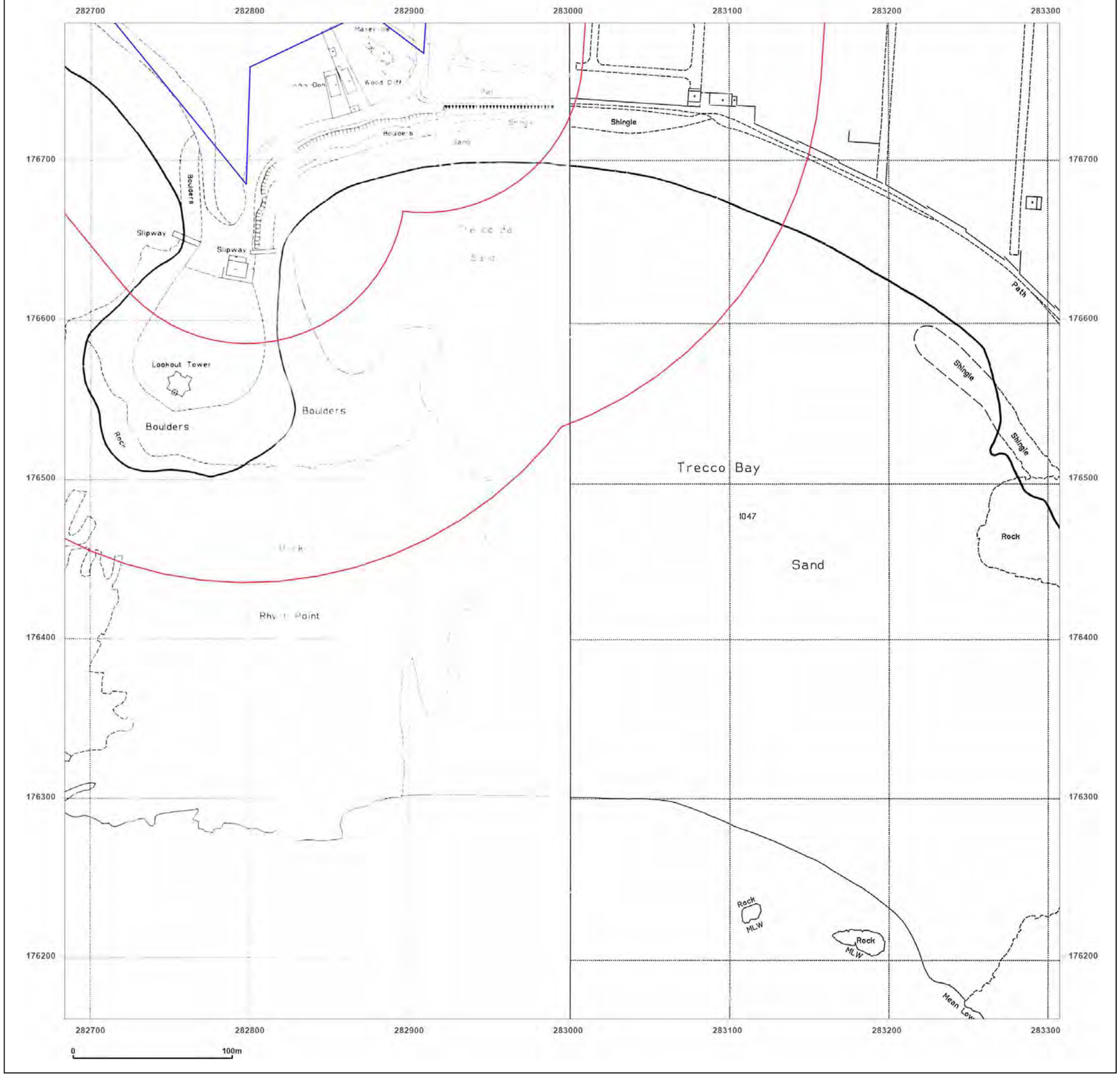
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_1
Grid Ref: 282996, 176473

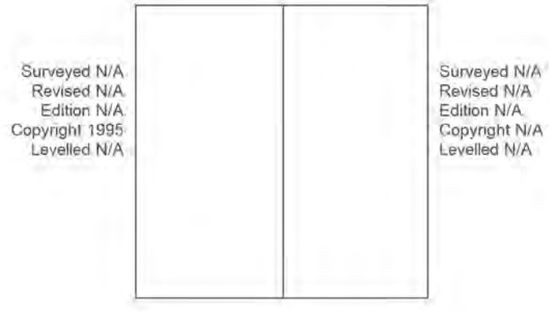
Map Name: National Grid

Map date: **1995**

Scale: 1:2,500

Printed at: 1:2,500

N
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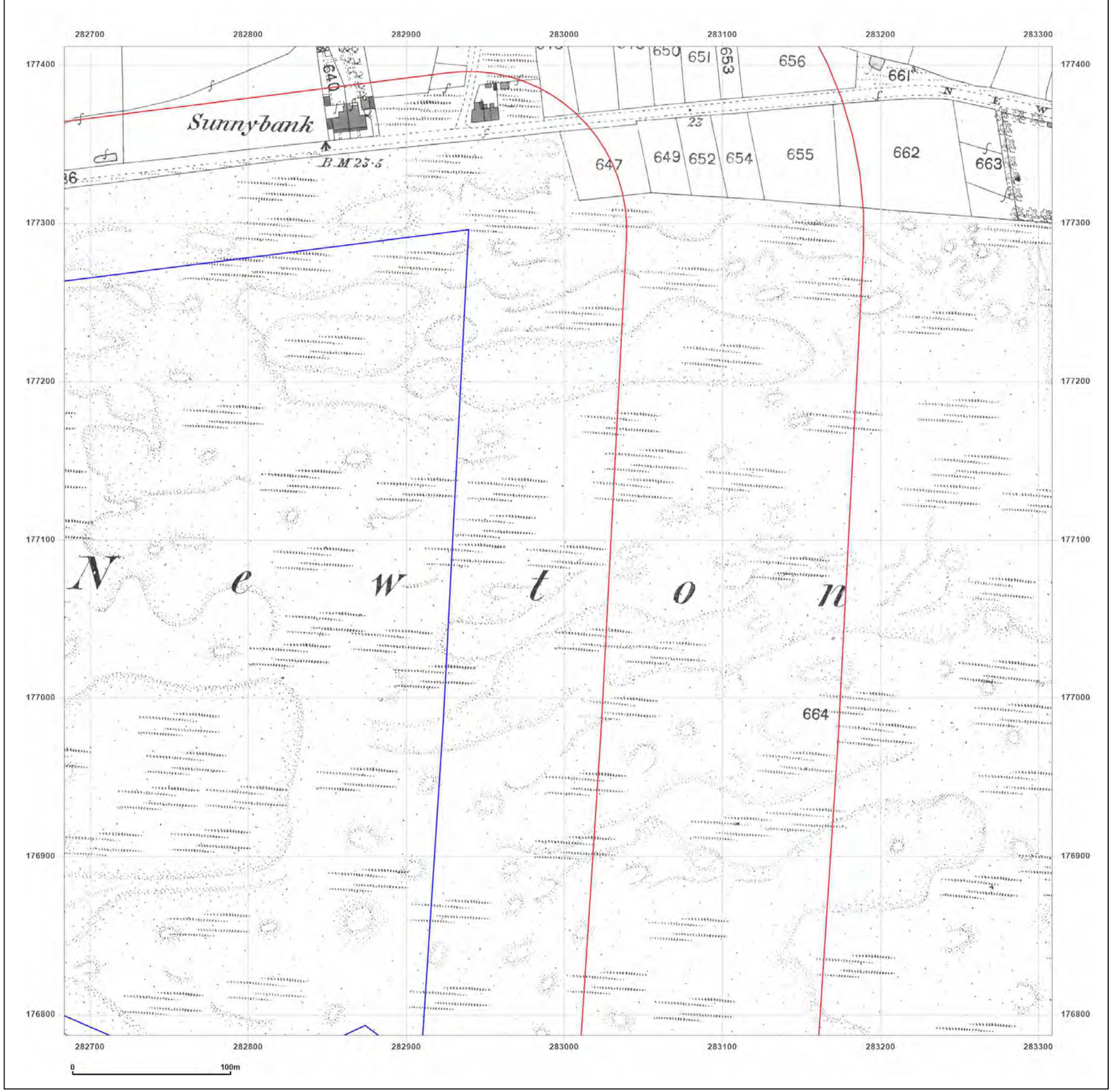
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: County Series

Map date: **1880**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1880
Revised 1880
Edition N/A
Copyright N/A
Levelled N/A

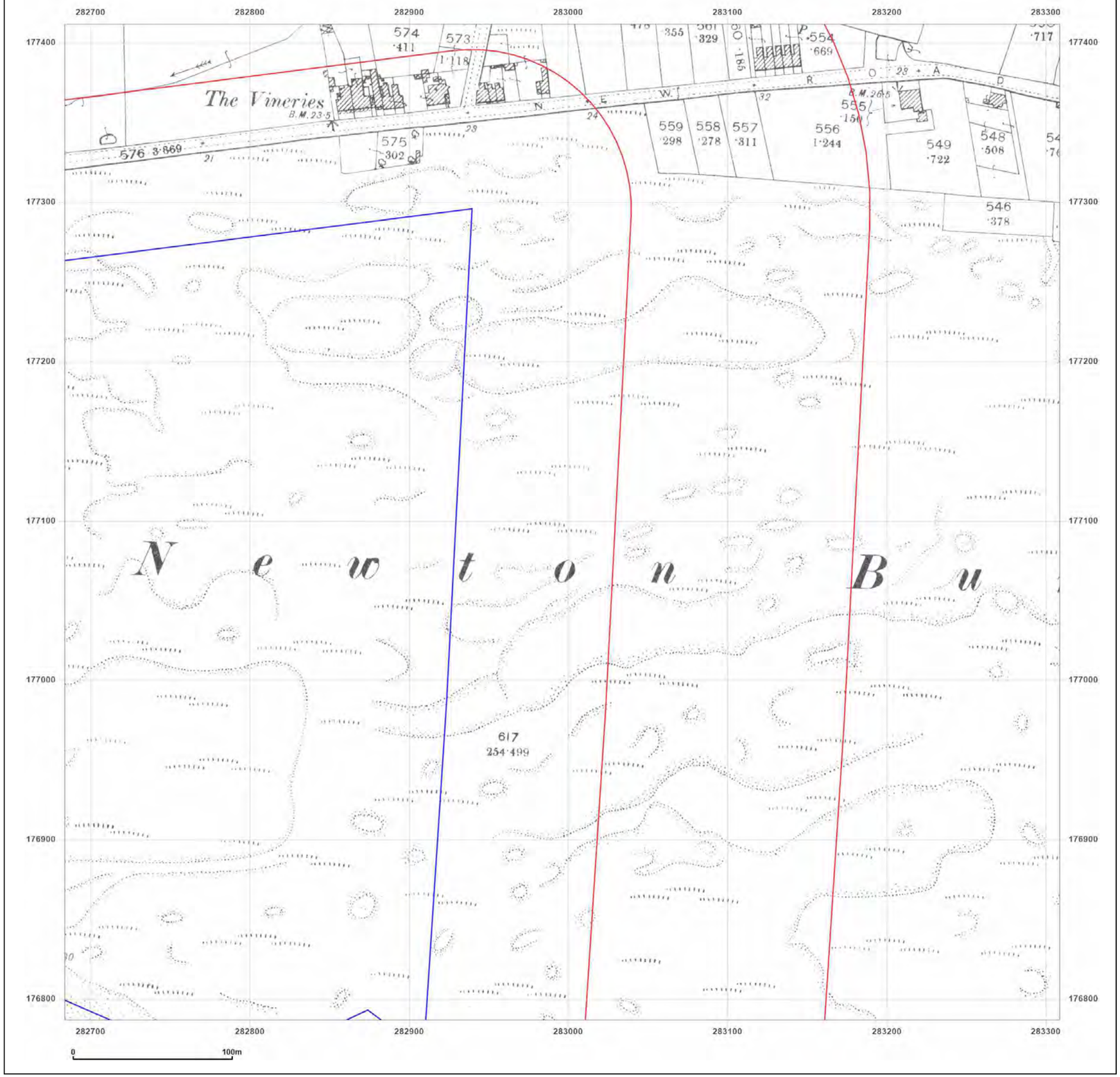
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: County Series

Map date: **1899**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

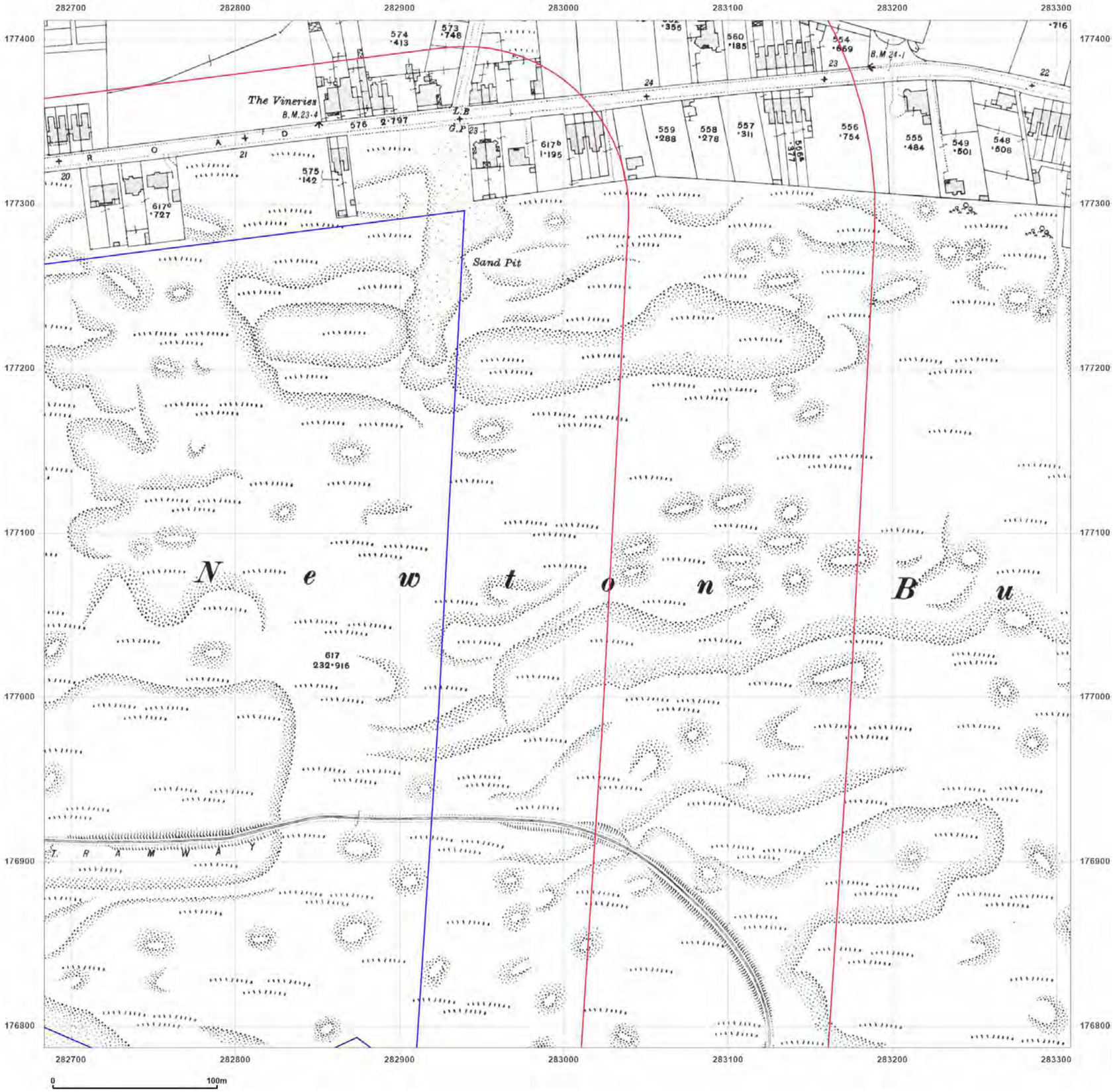
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: County Series

Map date: **1919**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1919
Revised 1919
Edition N/A
Copyright N/A
Levelled N/A

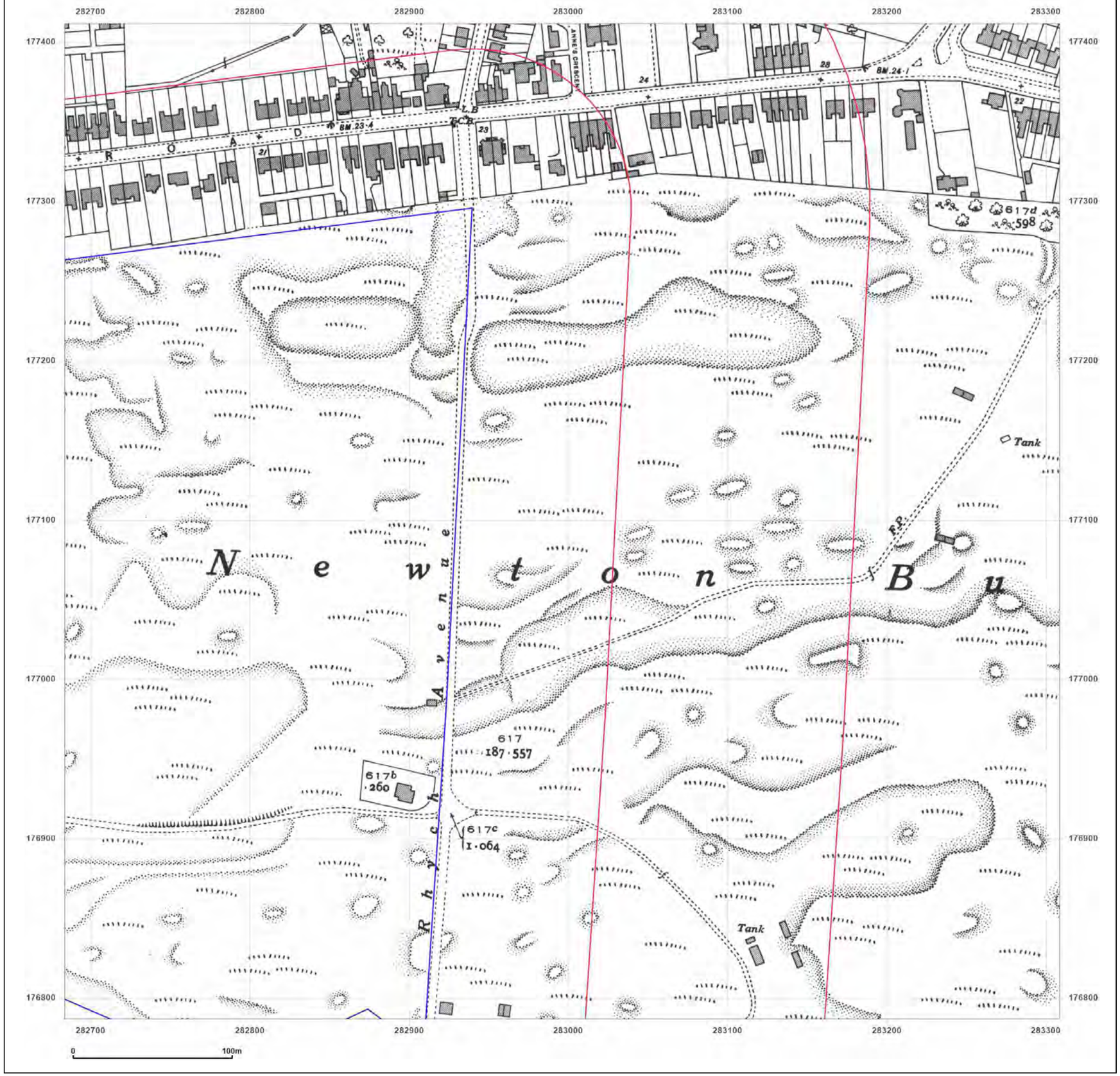
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: County Series

Map date: **1943**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1943
Revised 1943
Edition N/A
Copyright N/A
Levelled N/A

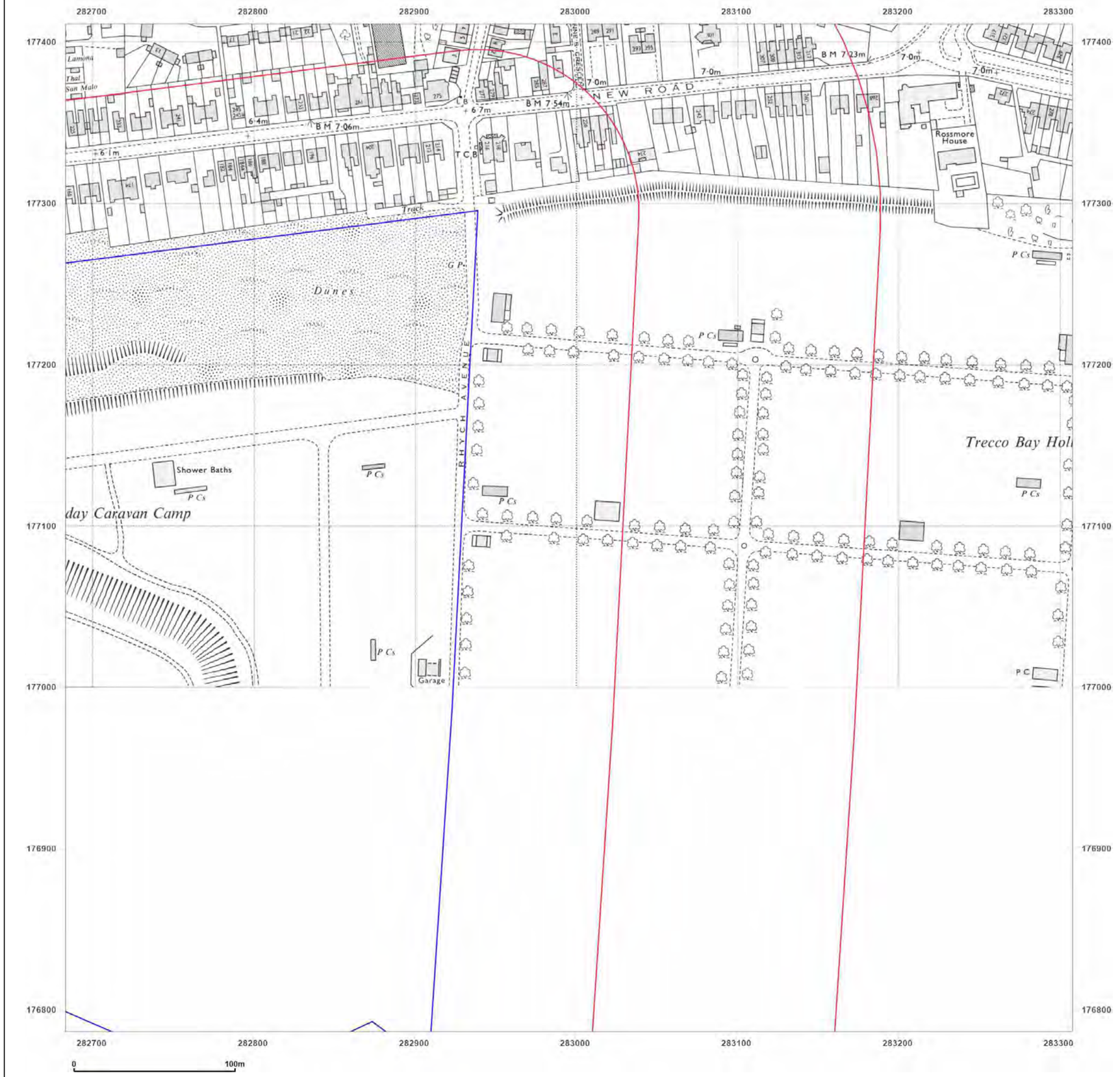
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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: National Grid

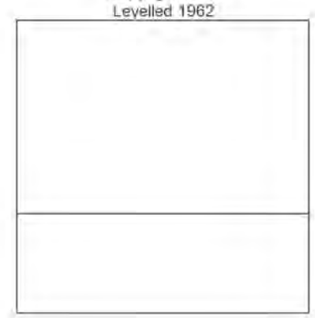
Map date: **1966**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1962



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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: National Grid

Map date: **1966**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1966 Revised 1966 Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: National Grid

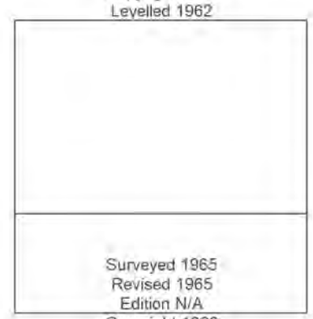
Map date: **1966**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1962



Surveyed 1965
Revised 1965
Edition N/A
Copyright 1966
Levelled 1962

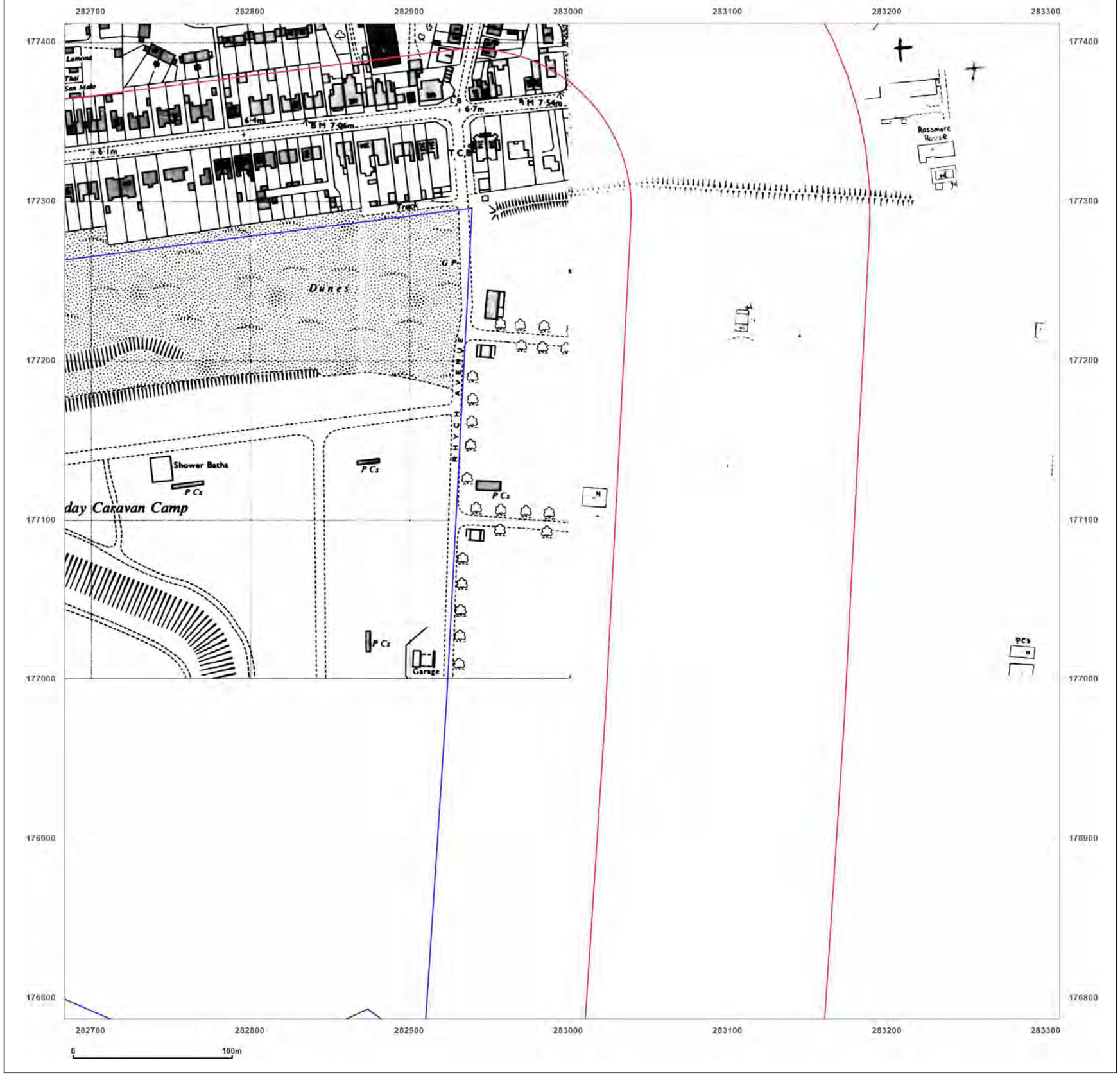
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: National Grid

Map date: **1976-1977**

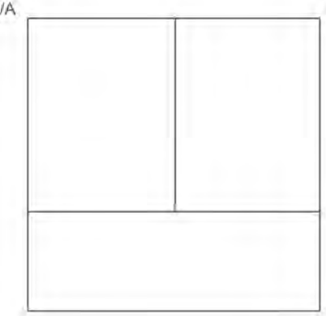
Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



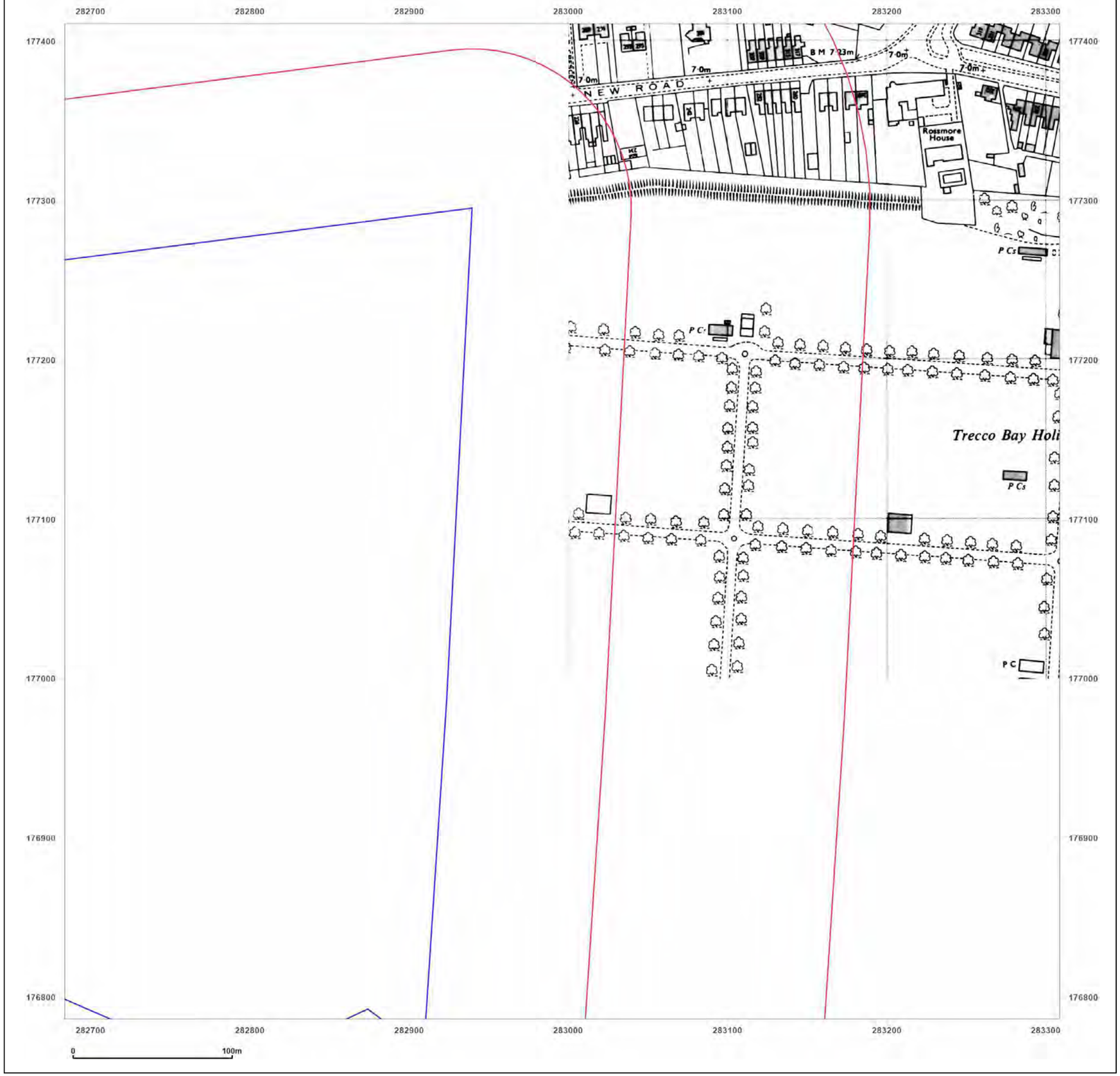
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

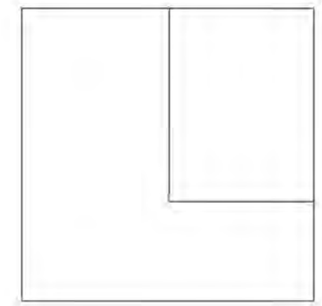
Map Name: National Grid

Map date: **1977**

Scale: 1:2,500

Printed at: 1:2,500

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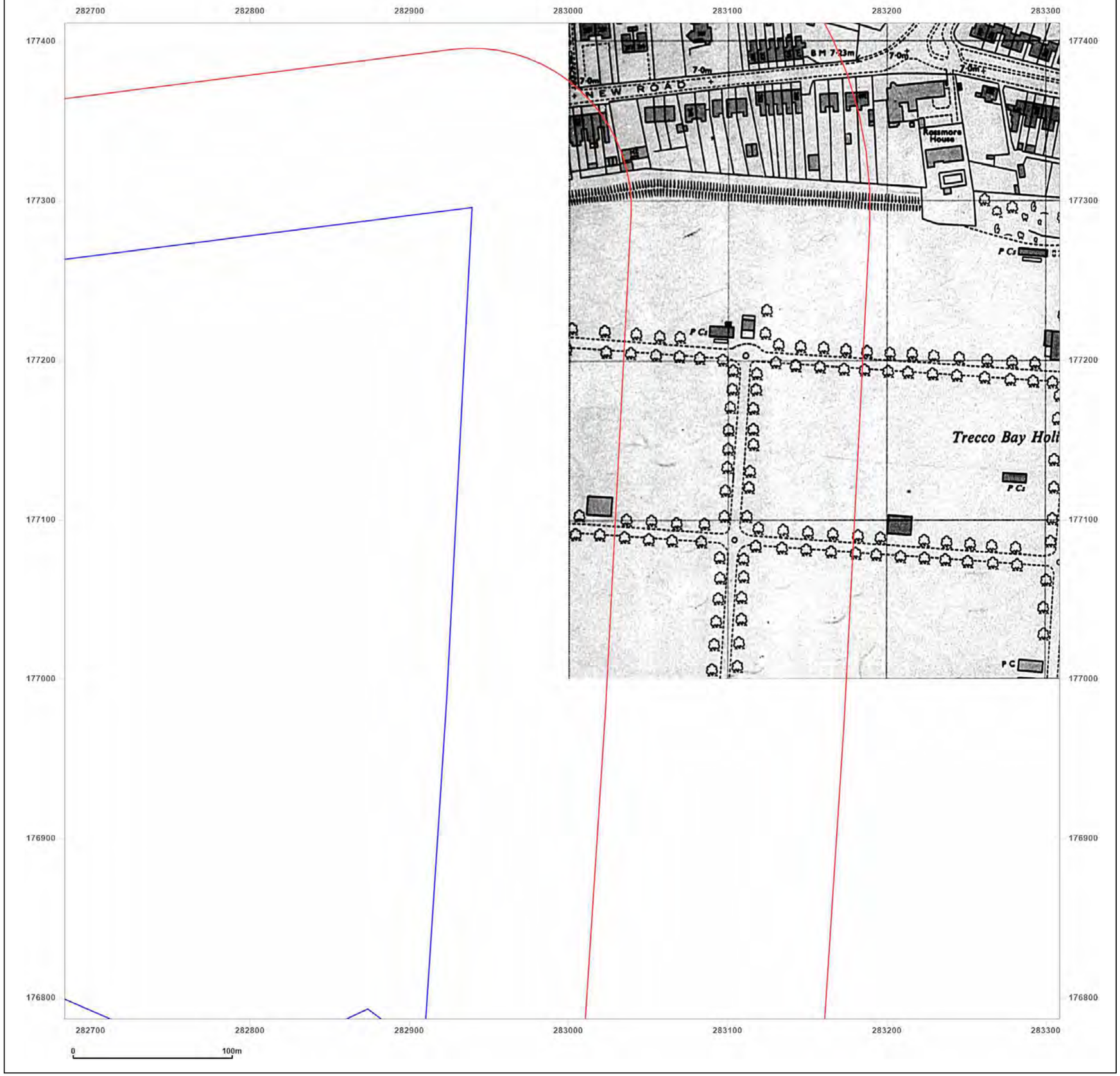
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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

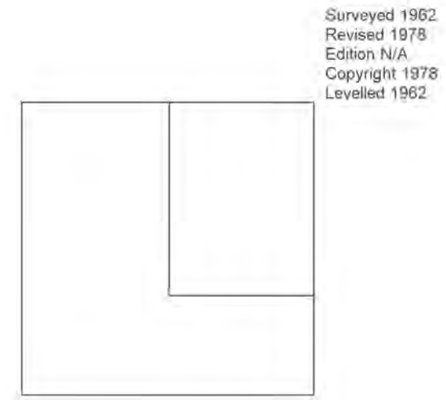
Map Name: National Grid

Map date: **1978**

Scale: 1:2,500

Printed at: 1:2,500

N
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S



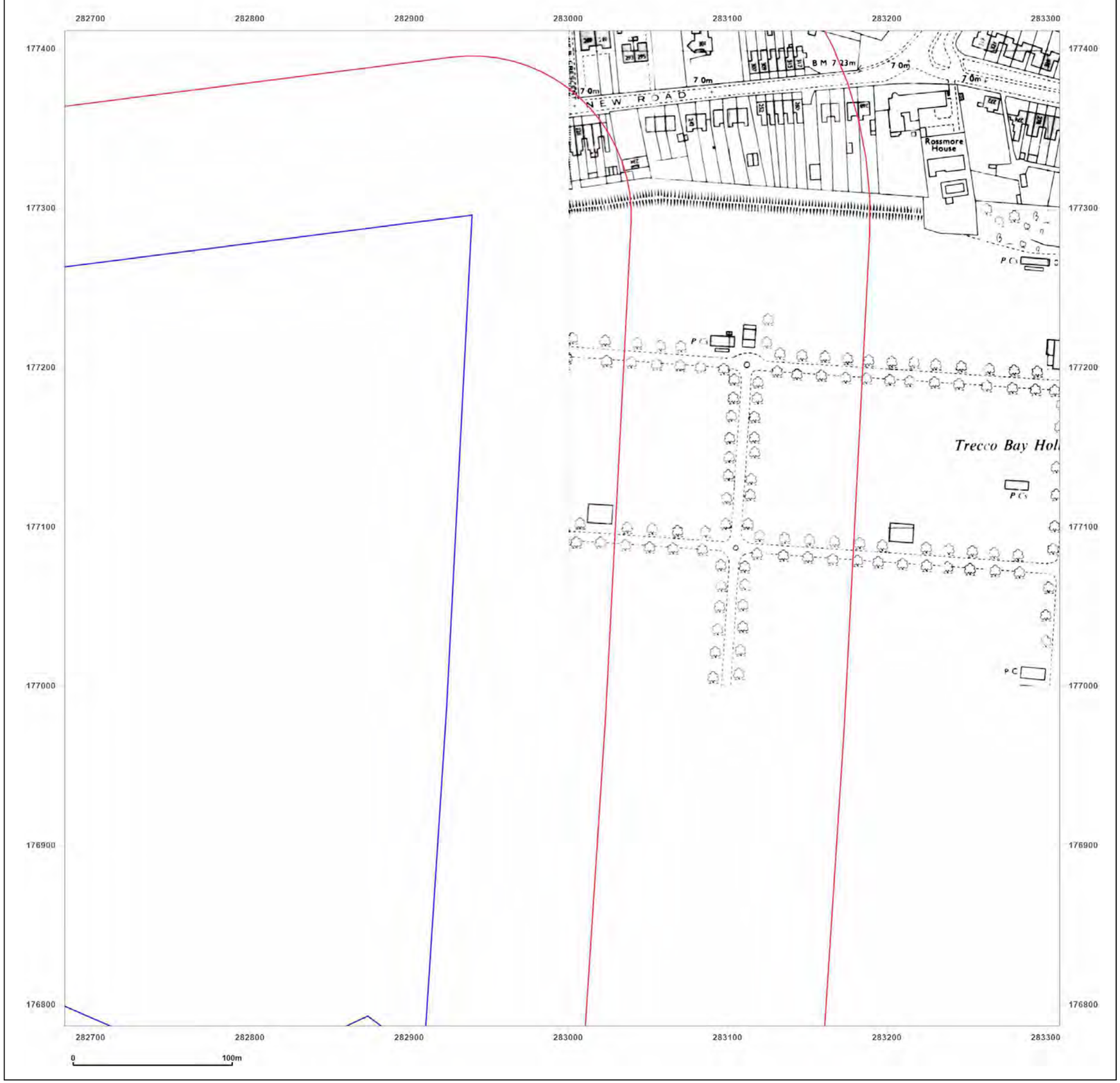
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: National Grid

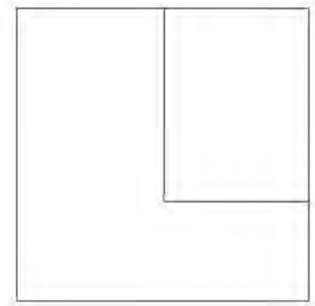
Map date: **1979**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A



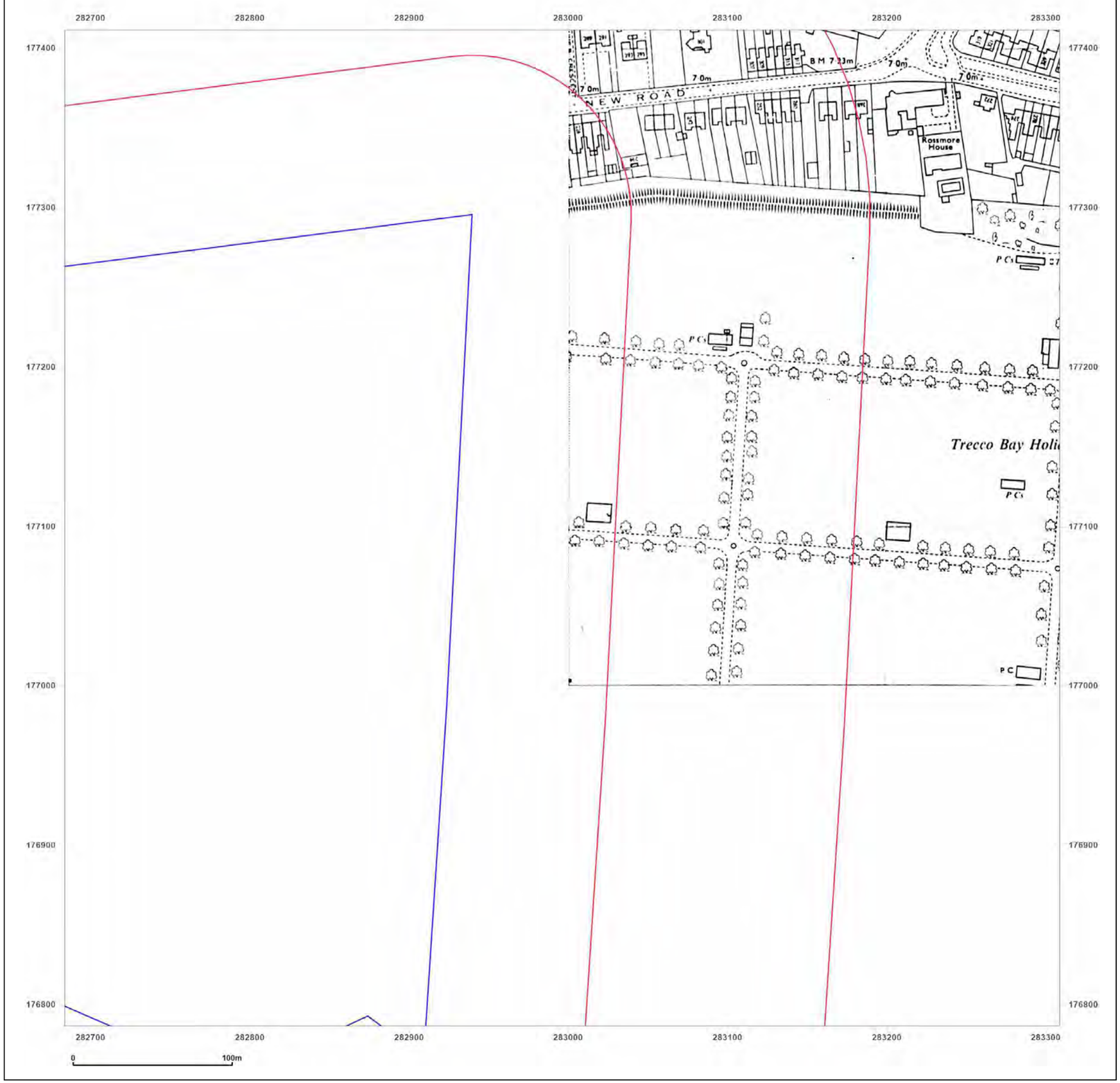
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: National Grid

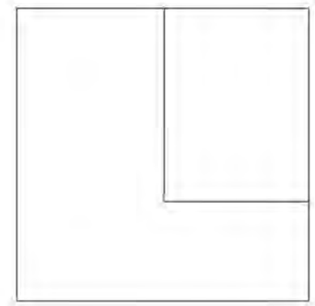
Map date: **1984**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1962
Revised 1984
Edition N/A
Copyright 1984
Levelled 1962



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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: National Grid

Map date: **1983-1988**

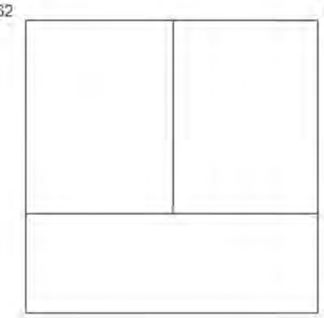
Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1962
Revised 1988
Edition N/A
Copyright 1988
Levelled 1962

Surveyed 1962
Revised 1983
Edition N/A
Copyright 1983
Levelled 1962



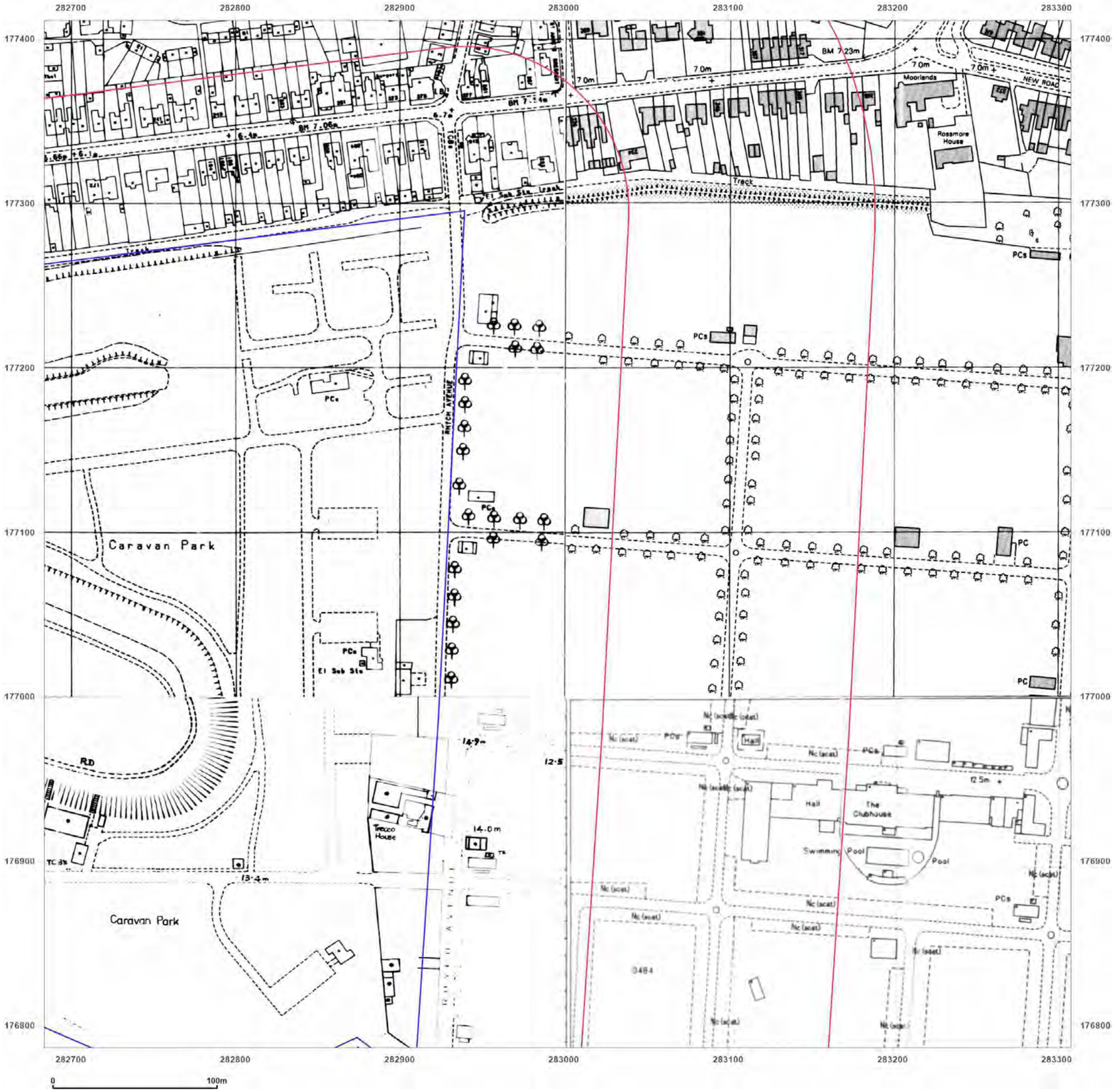
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: National Grid
Map date: **1991-1993**
Scale: 1:2,500
Printed at: 1:2,500

N
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Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
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Levelled N/A

Surveyed 1993
Revised 1993
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

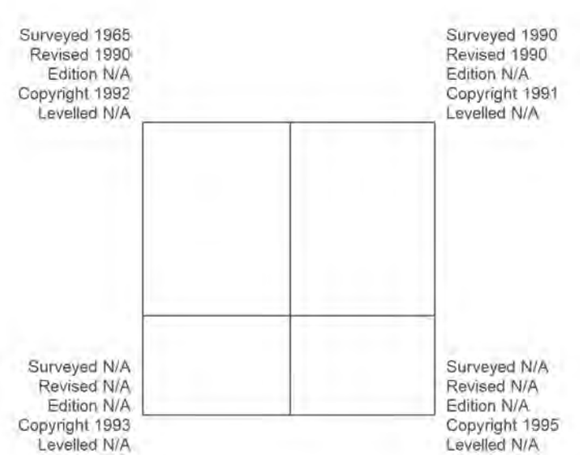
Map Name: National Grid

Map date: **1991-1995**

Scale: 1:2,500

Printed at: 1:2,500

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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: National Grid

Map date: **1993-1995**

Scale: 1:2,500

Printed at: 1:2,500

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Revised N/A
Edition N/A
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Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
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Site Details:

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Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: National Grid

Map date: **1995**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J_LS_3_2
Grid Ref: 282996, 177099

Map Name: National Grid

Map date: **1995**

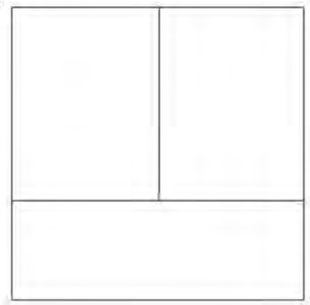
Scale: 1:2,500

Printed at: 1:2,500

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Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1995
Revised 1995
Edition 1995
Copyright 1995
Levelled N/A



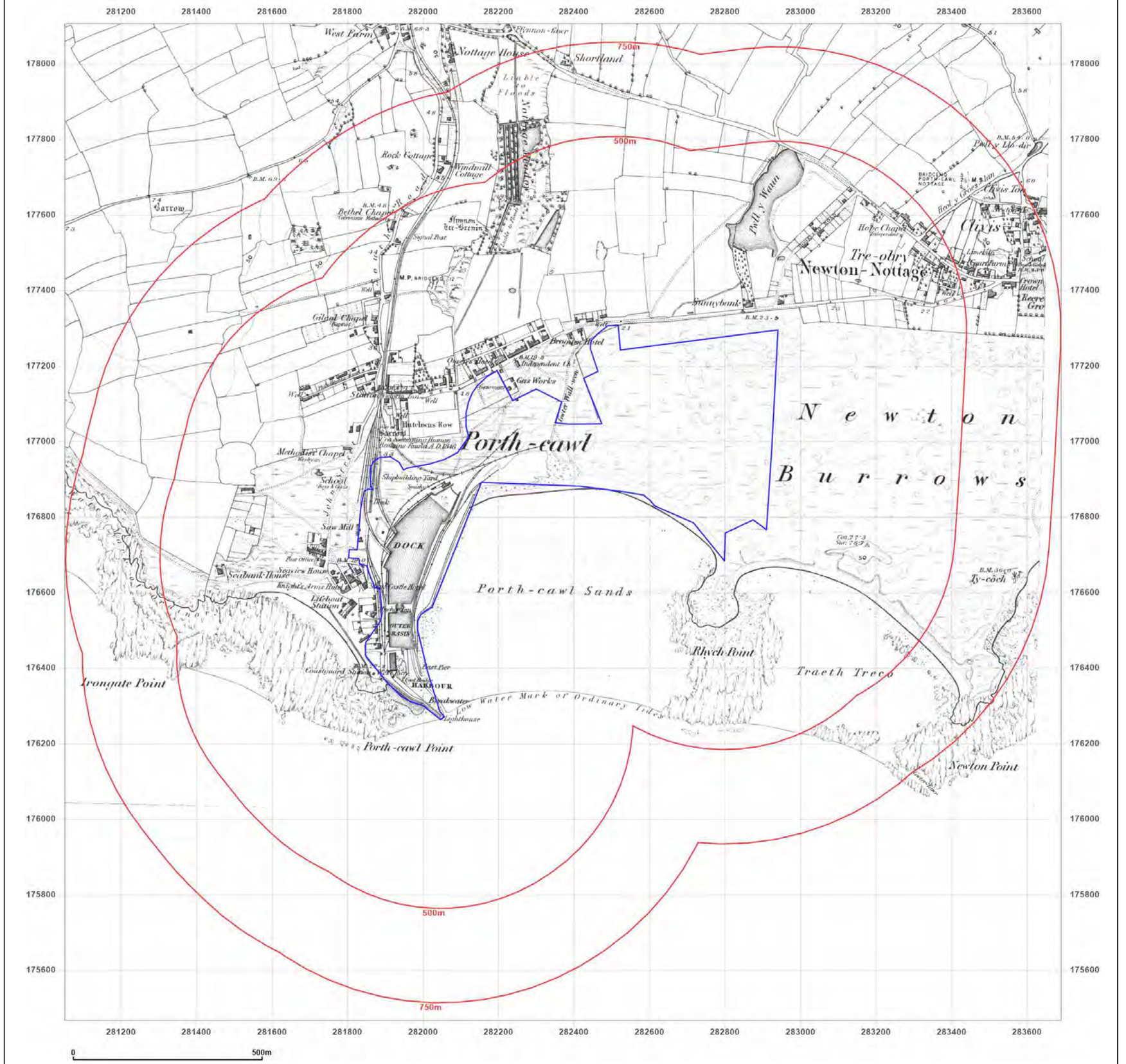
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J
Grid Ref: 282370, 176786

Map Name: County Series

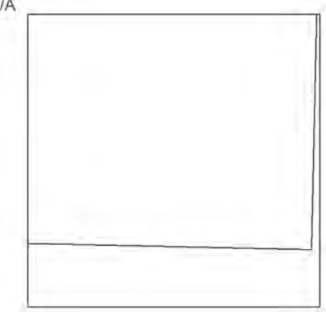
Map date: **1884**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1876
Revised 1876
Edition 1884
Copyright N/A
Levelled N/A



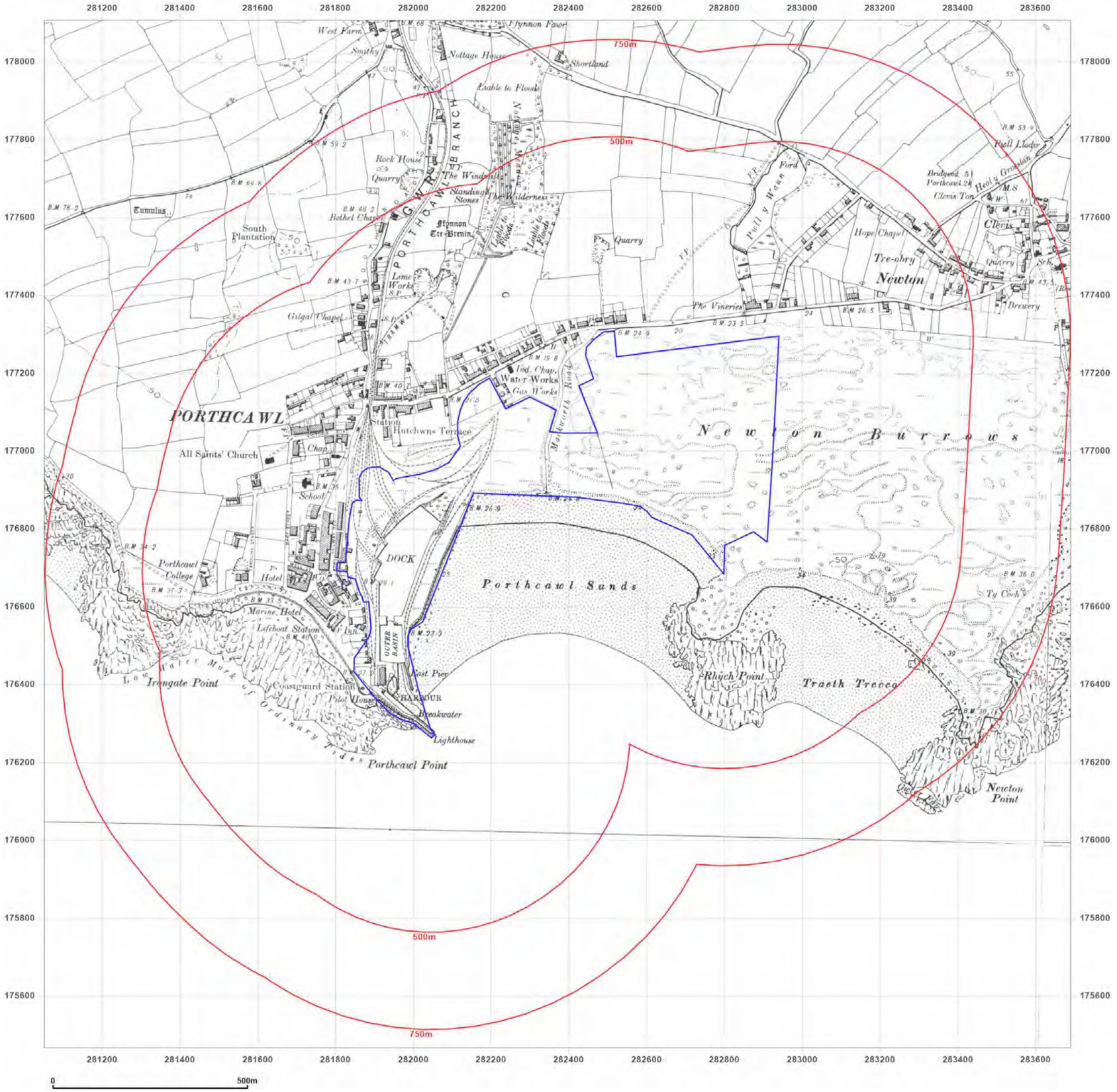
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J
Grid Ref: 282370, 176786

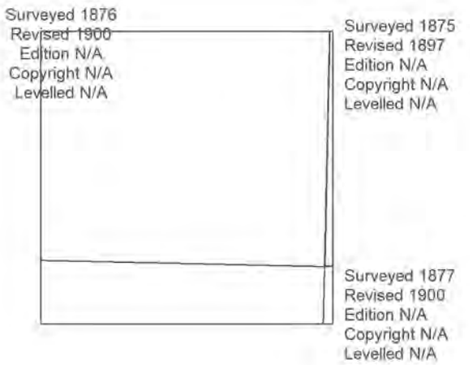
Map Name: County Series

Map date: **1897-1900**

Scale: 1:10,560

Printed at: 1:10,560

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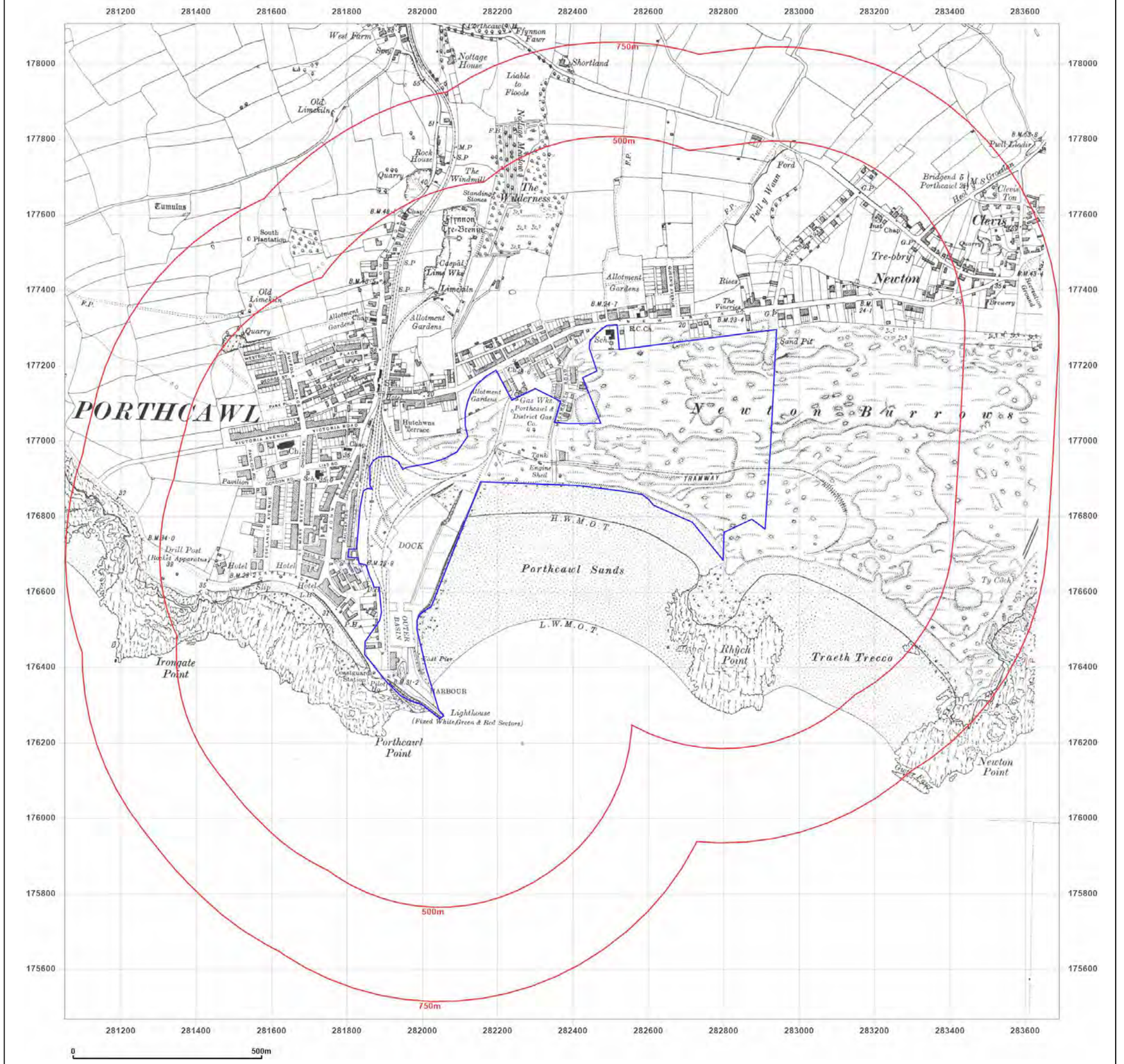
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J
Grid Ref: 282370, 176786

Map Name: County Series

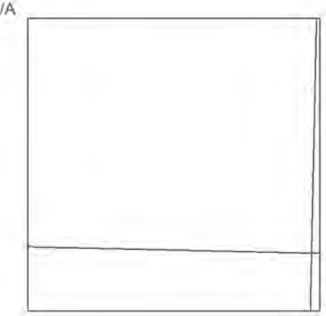
Map date: **1914**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1875
Revised 1914
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1876
Revised 1914
Edition N/A
Copyright N/A
Levelled N/A

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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J
Grid Ref: 282370, 176786

Map Name: County Series

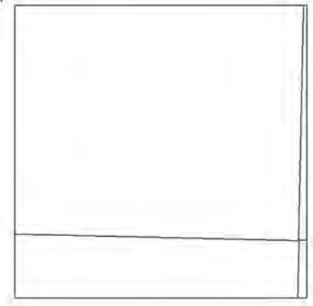
Map date: **1947-1948**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1875
Revised 1947
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1876
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A

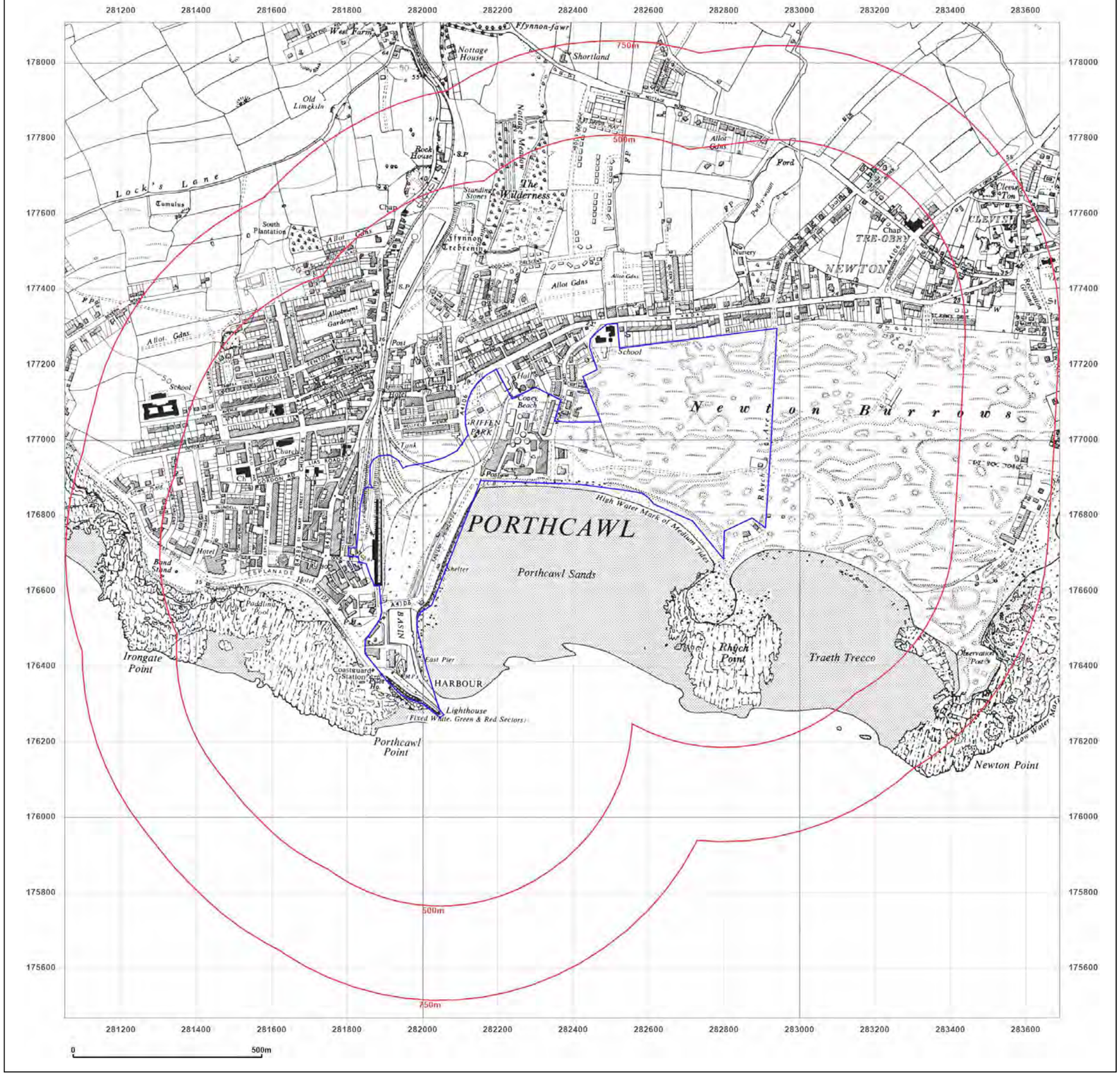
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J
Grid Ref: 282370, 176786

Map Name: Provisional

Map date: **1948**

Scale: 1:10,560

Printed at: 1:10,560

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~~Surveyed 1948~~
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A

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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J
Grid Ref: 282370, 176786

Map Name: Provisional

Map date: **1969**

Scale: 1:10,560

Printed at: 1:10,560

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~~Surveyed 1969~~
Revised 1969
Edition N/A
Copyright N/A
Levelled N/A

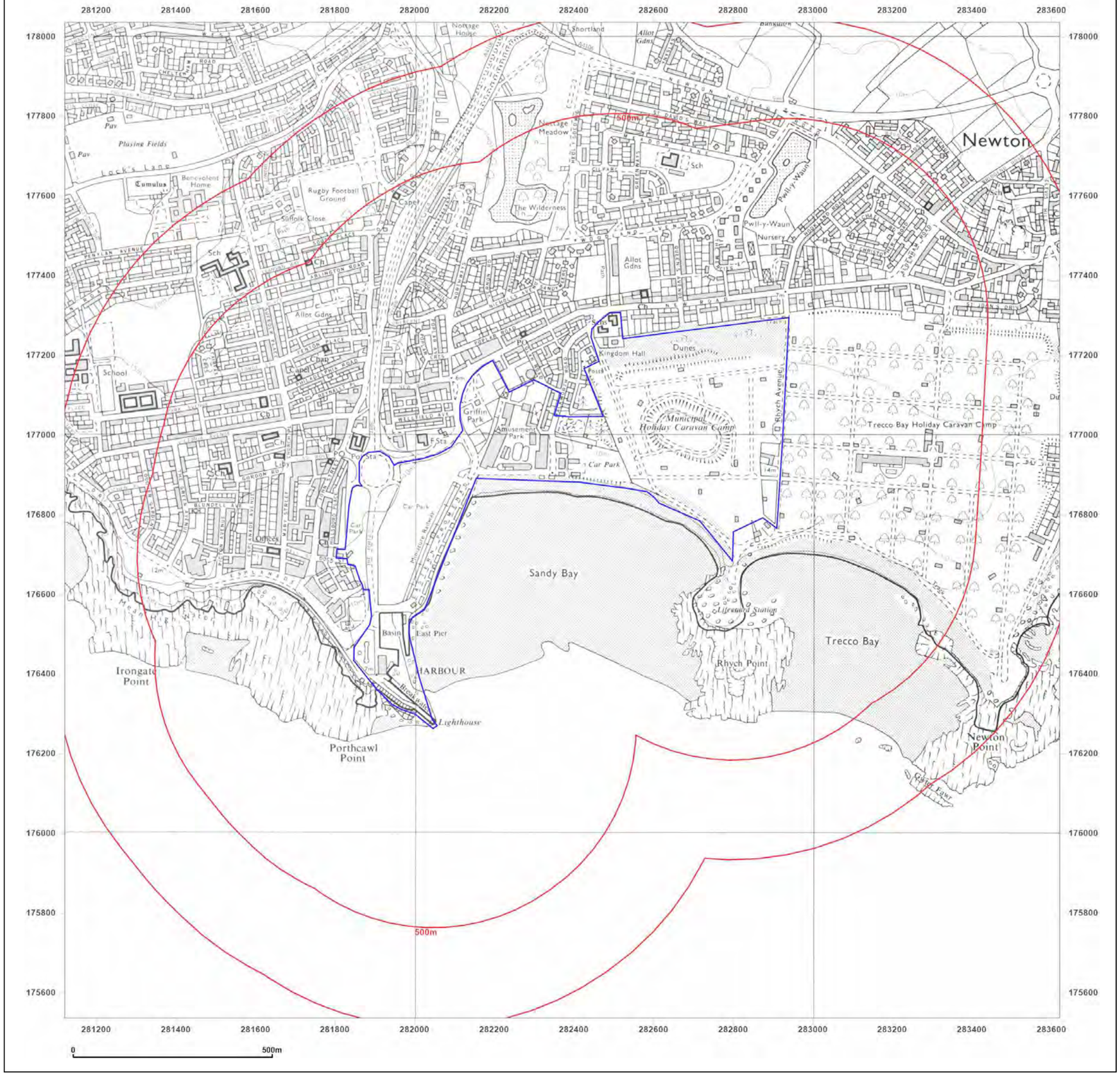
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J
Grid Ref: 282370, 176786

Map Name: National Grid

Map date: **1980**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1976
Revised 1980
Edition N/A
Copyright 1980
Levelled 1978

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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J
Grid Ref: 282370, 176786

Map Name: National Grid

Map date: **1991**

Scale: 1:10,000

Printed at: 1:10,000

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W E
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Surveyed 1981
Revised 1991
Edition N/A
Copyright N/A
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Groundsure INSIGHTS

Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J
Grid Ref: 282370, 176786

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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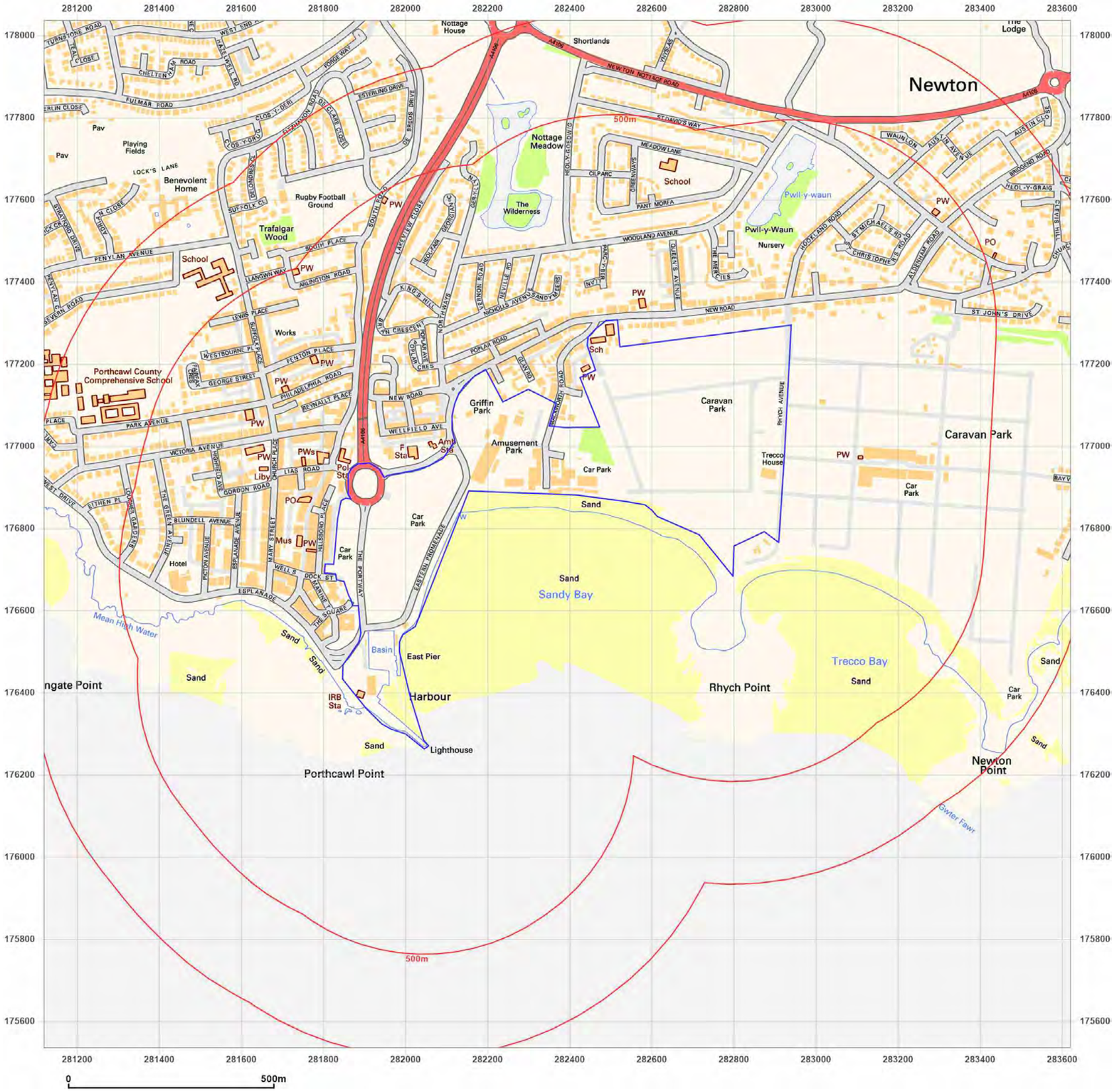
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Site Details:

333701677

Client Ref: 333701677
Report Ref: HYD-295-3LC-YD2-W3J
Grid Ref: 282370, 176786

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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281200
281400
281600
281800
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282200
282400
282600
282800
283000
283200
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177400
177200
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176800
176600
176400
176200
176000
175800
175600
PORTHCAWL
Trafalgar Wood
The Wilderness
Pwll-y-waun
Sandy Bay
Trecco Bay
Education Facility
Fire Station
Bus Station
Library
Museum
Medical Care
PW
PO
500m
0
500m
NEWTON NOTTAGE ROAD
ST DAVID'S WAY
A4106
MEADOW LANE
PANT MORFA
WOODLAND AVENUE
NEW ROAD
ST JOHN'S DRIVE
POPLAR ROAD
NICHOLLS AVENUE
BRIAN CRESCENT
WELLFIELD AVENUE
VICTORIA AVENUE
PARK AVENUE
ESPLANADE
EASTERN PROMENADE
THE PORTHWAY
SUFFOLK CL
SEVERN ROAD
PENYLAN AVENUE
ARLINGTON ROAD
LEWIS PLACE
FULMAR ROAD
CHELTENHAM ROAD
FORGE WAY
ESTERLING DR
AUSTIN AVENUE
BRIDGEND ROAD
GREYFRIARS CT
HOOKLAND ROAD
ALDERMAN ROAD
QUEEN'S AVENUE
THE MERCIES
NEVILLE ROAD
VERNON ROAD
KINGS HILL
GEORGE STREET
PHILADELPHIA ROAD
REYNALT PLACE
GORDON ROAD
BLUNDELL AVENUE
THE GREEN AVENUE
MARY STREET
WELL STREET
DOCK STREET
THE SQUARE
MARINE TERRACE
LEEBOARD ROAD
EASTERN PROMENADE
ROAD
ROAD
ROAD

Appendix D Desk study research information

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

333701677

Order Details

Date: 28/07/2025

Your ref: 333701677

Our Ref: HYD-1I6-VXT-89Z-R47

Site Details

Location: 282403 176928

Area: 42.54 ha

Authority: Pen-y-bont ar Ogwr - Bridgend County Borough Council ↗



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Summary of findings p. 2 >

Aerial image p. 9 >

OS MasterMap site plan N/A: >10ha

Insight User Guide ↗

Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Certified B Corporation

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
14 >	1.1 >	Historical industrial land uses >	53	17	30	13	-
19 >	1.2 >	Historical tanks >	12	10	10	5	-
20 >	1.3 >	Historical energy features >	9	7	12	23	-
22	1.4	Historical petrol stations	0	0	0	0	-
23 >	1.5 >	Historical garages >	3	0	6	7	-
24	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
25 >	2.1 >	Historical industrial land uses >	60	20	32	14	-
30 >	2.2 >	Historical tanks >	16	15	13	11	-
32 >	2.3 >	Historical energy features >	13	14	18	44	-
36	2.4	Historical petrol stations	0	0	0	0	-
36 >	2.5 >	Historical garages >	4	0	8	12	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
38	3.1	Active or recent landfill	0	0	0	0	-
38	3.2	Historical landfill (BGS records)	0	0	0	0	-
39	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
39 >	3.4 >	Historical landfill (EA/NRW records) >	0	1	0	0	-
39	3.5	Historical waste sites	0	0	0	0	-
39	3.6	Licensed waste sites	0	0	0	0	-
40 >	3.7 >	Waste exemptions >	1	0	3	1	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
41 >	4.1 >	Recent industrial land uses >	11	10	27	-	-
44 >	4.2 >	National Geographic Database (NGD) - Current or recent tanks >	0	1	1	-	-
45 >	4.3 >	Current or recent petrol stations >	0	0	0	2	-
45	4.4	Electricity cables	0	0	0	0	-
45	4.5	Gas pipelines	0	0	0	0	-

45	4.6	Sites determined as Contaminated Land	0	0	0	0	-
46	4.7	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
46	4.8	Regulated explosive sites	0	0	0	0	-
46	4.9	Hazardous substance storage/usage	0	0	0	0	-
46	4.10	Historical licensed industrial activities (IPC)	0	0	0	0	-
46	4.11	Licensed industrial activities (Part A(1))	0	0	0	0	-
47 >	4.12 >	Licensed pollutant release (Part A(2)/B) >	0	0	1	1	-
47	4.13	Radioactive Substance Authorisations	0	0	0	0	-
47 >	4.14 >	Licensed Discharges to controlled waters >	1	0	0	2	-
48	4.15	Pollutant release to surface waters (Red List)	0	0	0	0	-
48	4.16	Pollutant release to public sewer	0	0	0	0	-
48	4.17	List 1 Dangerous Substances	0	0	0	0	-
49 >	4.18 >	List 2 Dangerous Substances >	0	0	0	1	-
49 >	4.19 >	Pollution Incidents (EA/NRW) >	4	0	5	2	-
50	4.20	Pollution inventory substances	0	0	0	0	-
51	4.21	Pollution inventory waste transfers	0	0	0	0	-
51	4.22	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
52 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
54 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
56 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
58 >	5.4 >	Groundwater vulnerability- soluble rock risk >	Identified (within 0m)				
59	5.5	Groundwater vulnerability- local information	None (within 0m)				
60 >	5.6 >	Groundwater abstractions >	0	0	0	0	4
61	5.7	Surface water abstractions	0	0	0	0	0
62 >	5.8 >	Potable abstractions >	0	0	0	0	2
62	5.9	Source Protection Zones	0	0	0	0	-
62	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m

63	6.1	Water Network (OS MasterMap)	0	0	0	-	-
63 >	6.2 >	Surface water features >	0	0	2	-	-
64 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
64 >	6.4 >	WFD Surface water bodies >	1	0	0	-	-
65 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
66 >	7.1 >	Risk of flooding from rivers and the sea >	High (within 50m)				
67 >	7.2 >	Historical Flood Events >	0	0	1	-	-
67	7.3	Flood Defences	0	0	0	-	-
67	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
68	7.5	Flood Storage Areas	0	0	0	-	-
69 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
70 >	7.7 >	Flood Zone 3 >	Identified (within 50m)				
Page	Section	Surface water flooding >					
71 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
73 >	9.1 >	Groundwater flooding >	Moderate (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
74 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	1
75	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
75 >	10.3 >	Special Areas of Conservation (SAC) >	0	0	0	0	1
76	10.4	Special Protection Areas (SPA)	0	0	0	0	0
76 >	10.5 >	National Nature Reserves (NNR) >	0	0	0	0	1
76 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	1
76 >	10.7 >	Designated Ancient Woodland >	0	0	0	2	12
77	10.8	Biosphere Reserves	0	0	0	0	0
78	10.9	Forest Parks	0	0	0	0	0
78	10.10	Marine Conservation Zones	0	0	0	0	0
78	10.11	Green Belt	0	0	0	0	0

78	10.12	Proposed Ramsar sites	0	0	0	0	0
78	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
79	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
79	10.15	Nitrate Sensitive Areas	0	0	0	0	0
79	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
80	10.17	SSSI Impact Risk Zones	0	-	-	-	-
80	10.18	SSSI Units	0	0	0	0	0
Page	Section	**Visual and cultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
81	11.1	World Heritage Sites	0	0	0	-	-
82	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
82	11.3	National Parks	0	0	0	-	-
82 >	**11.4 >**	**Listed Buildings >**	6	1	4	-	-
83 >	**11.5 >**	**Conservation Areas >**	1	0	0	-	-
84	11.6	Scheduled Ancient Monuments	0	0	0	-	-
84	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	**Agricultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
85 >	**12.1 >**	**Agricultural Land Classification >**	Grade 2 (within 250m)				
86 >	**12.2 >**	**Open Access Land >**	0	0	1	-	-
86	12.3	Tree Felling Licences	0	0	0	-	-
86	12.4	Environmental Stewardship Schemes	0	0	0	-	-
87	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
88	13.1	Priority Habitat Inventory	0	0	0	-	-
88	13.2	Habitat Networks	0	0	0	-	-
88	13.3	Open Mosaic Habitat	0	0	0	-	-
88	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	**Geology 1:10,000 scale >**	On site	0-50m	50-250m	250-500m	500-2000m
89 >	**14.1 >**	**10k Availability >**	Identified (within 500m)				
90 >	**14.2 >**	**Artificial and made ground (10k) >**	1	0	1	1	-

91 >	14.3 >	Superficial geology (10k) >	3	3	2	6	-
92	14.4	Landslip (10k)	0	0	0	0	-
93 >	14.5 >	Bedrock geology (10k) >	4	0	7	0	-
94 >	14.6 >	Bedrock faults and other linear features (10k) >	2	2	9	1	-
Page	Section	**Geology 1:50,000 scale >**	On site	0-50m	50-250m	250-500m	500-2000m
96 >	15.1 >	50k Availability >	Identified (within 500m)				
97 >	15.2 >	Artificial and made ground (50k) >	3	0	0	0	-
98 >	15.3 >	Artificial ground permeability (50k) >	1	0	-	-	-
99 >	15.4 >	Superficial geology (50k) >	2	2	3	0	-
100 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
100	15.6	Landslip (50k)	0	0	0	0	-
100	15.7	Landslip permeability (50k)	None (within 50m)				
101 >	15.8 >	Bedrock geology (50k) >	4	0	6	0	-
102 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
102 >	15.10 >	Bedrock faults and other linear features (50k) >	2	0	2	1	-
Page	Section	**Boreholes >**	On site	0-50m	50-250m	250-500m	500-2000m
104 >	16.1 >	BGS Boreholes >	11	2	6	-	-
Page	Section	**Natural ground subsidence >**					
106 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
107 >	17.2 >	Running sands >	High (within 50m)				
109 >	17.3 >	Compressible deposits >	Moderate (within 50m)				
111 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
113 >	17.5 >	Landslides >	Very low (within 50m)				
115 >	17.6 >	Ground dissolution of soluble rocks >	Moderate (within 50m)				
Page	Section	**Mining and ground workings >**	On site	0-50m	50-250m	250-500m	500-2000m
117 >	18.1 >	BritPits >	0	0	1	1	-
118 >	18.2 >	Surface ground workings >	22	1	12	-	-
120	18.3	Underground workings	0	0	0	0	0
120	18.4	Underground mining extents	0	0	0	0	-

120 >	18.5 >	Historical Mineral Planning Areas >	2	0	0	2	-
120 >	18.6 >	Non-coal mining >	2	0	1	1	2
121	18.7	JPB mining areas	None (within 0m)				
122	18.8	The Coal Authority non-coal mining	0	0	0	0	-
122	18.9	Researched mining	0	0	0	0	-
122	18.10	Mining record office plans	0	0	0	0	-
122	18.11	BGS mine plans	0	0	0	0	-
123	18.12	Coal mining	None (within 0m)				
123	18.13	Brine areas	None (within 0m)				
123	18.14	Gypsum areas	None (within 0m)				
123	18.15	Tin mining	None (within 0m)				
123	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
124	19.1	Natural cavities	0	0	0	0	-
124	19.2	Mining cavities	0	0	0	0	0
124	19.3	Reported recent incidents	0	0	0	0	-
124	19.4	Historical incidents	0	0	0	0	-
Page	Section	Radon >					
126 >	20.1 >	Radon >	Between 10% and 30% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
128 >	21.1 >	BGS Estimated Background Soil Chemistry >	31	7	-	-	-
130	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
130	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
131	22.1	Underground railways (London)	0	0	0	-	-
131	22.2	Underground railways (Non-London)	0	0	0	-	-
132	22.3	Railway tunnels	0	0	0	-	-
132 >	22.4 >	Historical railway and tunnel features >	15	1	6	-	-
133	22.5	Royal Mail tunnels	0	0	0	-	-

133 >	22.6 >	Historical railways >	2	0	0	-	-
133	22.7	Railways	0	0	0	-	-
134	22.8	Crossrail 2	0	0	0	0	-
134	22.9	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 15/06/2022

Site Area: 42.54ha

Recent site history - 2019 aerial photograph



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Capture Date: 18/09/2019

Site Area: 42.54ha

Recent site history - 2013 aerial photograph



Capture Date: 14/07/2013

Site Area: 42.54ha

Recent site history - 2009 aerial photograph



Capture Date: 17/09/2009

Site Area: 42.54ha

Recent site history - 2000 aerial photograph



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Capture Date: 21/07/2000

Site Area: 42.54ha

1 Past land use



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Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

1.1 Historical industrial land uses

Records within 500m	113

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
1	**On site**	**Sand Pits**	**1948**	**336408**

ID	Location	Land use	Dates present	Group ID
2	On site	Unspecified Heap	1980	339994
3	On site	Sand Pit	1914	341452
4	On site	Unspecified Pit	1991	343285
5	On site	Unspecified Ground Workings	1948	346559
6	On site	Dock	1884	373885
A	On site	Cuttings	1969	333132
A	On site	Unspecified Tank	1884	339142
A	On site	Unspecified Ground Workings	1900	346558
A	On site	Railway Building	1900	348641
A	On site	Unspecified Pit	1948	350233
A	On site	Railway Sidings	1947 - 1948	355454
A	On site	Railway Sidings	1914	364966
A	On site	Unspecified Pit	1914 - 1947	374770
A	On site	Dock	1900 - 1914	382324
A	On site	Railway Sidings	1900	385725
A	On site	Railway Sidings	1884	389445
B	On site	Ship Building Yard	1884	334511
B	On site	Smithy	1884	345017
C	On site	Tramway Sidings	1914	335636
C	On site	Unspecified Tanks	1948	336682
C	On site	Unspecified Tank	1947	339136
C	On site	Unspecified Tank	1947	339137
C	On site	Unspecified Tank	1947	339138
C	On site	Unspecified Tank	1947	339139
C	On site	Unspecified Heap	1884	340448
C	On site	Unspecified Tank	1947 - 1948	350412
C	On site	Unspecified Commercial/Industrial	1948	389100
C	On site	Unspecified Commercial/Industrial	1947 - 1948	390570

ID	Location	Land use	Dates present	Group ID
D	**On site**	**Unspecified Tank**	**1914**	**339140**
D	**On site**	**Gas Works**	**1884**	**357534**
D	**On site**	**Gas Works**	**1914**	**362292**
D	**On site**	**Railway Sidings**	**1947**	**368901**
D	**On site**	**Unspecified Tank**	**1947**	**373438**
D	**On site**	**Unspecified Tank**	**1914 - 1947**	**380088**
D	**On site**	**Gasometer**	**1884**	**387833**
E	**On site**	**Unspecified Tank**	**1914**	**339141**
E	**On site**	**Engine Shed**	**1914**	**342007**
F	**On site**	**Unspecified Ground Workings**	**1900**	**346557**
F	**On site**	**Railway Building**	**1900**	**348640**
F	**On site**	**Unspecified Pit**	**1884**	**355747**
F	**On site**	**Railway Station**	**1947 - 1948**	**367560**
F	**On site**	**Unspecified Pit**	**1914**	**381261**
G	**On site**	**Sawmill**	**1884**	**347592**
H	**On site**	**Mineral Railway Sidings**	**1980**	**353600**
H	**On site**	**Railway Building**	**1991**	**362468**
H	**On site**	**Railway Building**	**1947**	**374089**
H	**On site**	**Railway Building**	**1980**	**377070**
H	**On site**	**Mineral Railway Sidings**	**1991**	**382447**
I	**On site**	**Unspecified Tank**	**1991**	**363619**
I	**On site**	**Unspecified Tank**	**1980**	**373968**
J	**On site**	**Unspecified Pit**	**1969 - 1980**	**364220**
J	**On site**	**Unspecified Pit**	**1991**	**374990**
D	2m NW	Unspecified Tanks	1948	336681
D	2m NE	Gas Works	1900	363687
D	3m NE	Gasometer	1900	361110
D	3m NW	Unspecified Tank	1969 - 1980	352361

ID	Location	Land use	Dates present	Group ID
D	3m NE	Water Works	1900	349224
K	4m SW	Coastguard Station	1884	353458
K	4m SW	Coastguard Station	1914 - 1947	374843
K	5m SW	Coastguard Station	1900	369932
N	6m NW	Police Station	1980	367189
N	6m NW	Police Station	1991	372380
K	8m SW	Coastguard Station	1948	350527
10	15m NW	Unspecified Pit	1884	344060
O	21m NE	Unspecified Tank	1948	365721
O	23m NE	Unspecified Tank	1947	374753
P	27m N	Fire Station	1980	351904
P	27m N	Fire Station	1991	382368
N	30m NW	Railway Building	1948	348642
11	62m N	Vineries	1914	333695
12	68m NW	Unspecified Heap	1884	340447
R	74m NW	Police Station	1969	347544
R	82m W	Fire Station	1969	336155
S	86m SW	Lifeboat Station	1884	347904
N	89m N	Railway Building	1947	358397
N	90m N	Railway Building	1948	353312
T	93m N	Nursery	1980	355270
T	93m N	Nursery	1991	372849
U	94m N	Nursery	1947	365800
U	96m N	Nursery	1969	352277
U	96m N	Nursery	1991	365988
U	96m N	Nursery	1980	383340
U	96m N	Nursery	1948	388990
N	98m N	Railway Building	1900	359143

ID	Location	Land use	Dates present	Group ID
14	133m S	Unspecified Station	1969 - 1980	367131
15	141m NW	Lifeboat Station	1900	347905
W	169m N	Railway Station	1914	366500
W	174m N	Railway Station	1884	367350
16	174m N	Unspecified Quarry	1900	330203
W	180m N	Railway Station	1900	387178
Y	193m NW	Lime Works	1900 - 1914	365884
Z	212m NW	Unspecified Quarry	1884	360082
AA	215m W	Unspecified Pit	1884	344061
Z	221m NW	Railway Sidings	1914	357297
Z	226m NW	Unspecified Quarry	1900	351351
AA	228m W	Unspecified Ground Workings	1900	346555
Z	241m NW	Tramway Sidings	1900	335635
AC	245m NW	Railway Sidings	1947 - 1948	379802
AD	246m NW	Railway Sidings	1884	383125
Z	254m NW	Lime Kiln	1914	341363
AD	255m NW	Railway Sidings	1914	384177
Z	279m NW	Unspecified Ground Workings	1948	346553
Y	315m N	Unspecified Quarry	1900	331018
18	337m NW	Railway Sidings	1948	363869
21	390m SE	Railway Sidings	1948	334362
22	392m E	Unspecified Heap	1991	339992
AC	405m NW	Unspecified Tank	1969	339129
AJ	406m NW	Unspecified Quarry	1914	331015
27	450m NW	Old Lime Kiln	1914	342386
28	457m NW	Nursery	1969	341754
AJ	461m NW	Unspecified Ground Workings	1948	346554
29	499m NW	Unspecified Quarry	1914	351542

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	37

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
7	**On site**	**Unspecified Tank**	**1966**	**39515**
A	**On site**	**Unspecified Tank**	**1943 - 1965**	**44189**
A	**On site**	**Unspecified Tank**	**1880 - 1919**	**44381**
D	**On site**	**Unspecified Tank**	**1943**	**39558**
D	**On site**	**Unspecified Tank**	**1943**	**39559**
D	**On site**	**Gasometer**	**1919**	**40610**
D	**On site**	**Gasometer**	**1919**	**40611**
D	**On site**	**Tanks**	**1943**	**40962**
D	**On site**	**Gas Works**	**1919**	**41705**
E	**On site**	**Unspecified Tank**	**1919**	**39609**
K	**On site**	**Unspecified Tank**	**1965 - 1977**	**41560**
K	**On site**	**Unspecified Tank**	**1880**	**45133**
D	1m NW	Gas Holder	1966	44349
D	2m NW	Gas Holder	1966	42405
D	2m NE	Gas Works	1880 - 1899	43946
D	2m NW	Gas Holder	1988	44807
K	2m SW	Unspecified Tank	1995	43765
D	3m NE	Gasometer	1880 - 1899	46185
9	15m E	Unspecified Tank	1995	45195
O	23m NE	Unspecified Tank	1965	46251
O	25m NE	Unspecified Tank	1943	44327

ID	Location	Land use	Dates present	Group ID
N	46m N	Unspecified Tank	1919	39557
S	77m NW	Unspecified Tank	1943 - 1977	45907
S	80m NW	Unspecified Tank	1995	44077
13	128m E	Unspecified Tank	1966	39516
17	197m E	Unspecified Tank	1943	39560
W	205m W	Unspecified Tank	1978	44367
W	206m W	Unspecified Tank	1962	41891
W	206m W	Unspecified Tank	1987	43968
W	206m W	Unspecified Tank	1996	41716
W	206m W	Unspecified Tank	1993	44482
W	233m N	Unspecified Tank	1880	39556
19	339m E	Unspecified Tank	1943	39479
20	365m E	Unspecified Tank	1966 - 1984	44730
AC	402m NW	Unspecified Tank	1966 - 1969	43999
25	429m NW	Unspecified Tank	1880 - 1899	44397
26	441m E	Unspecified Tank	1966	39517

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**51**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
D	**On site**	**Gasometer**	**1919**	**21352**
D	**On site**	**Gasometer**	**1919**	**21353**

ID	Location	Land use	Dates present	Group ID
D	**On site**	**Gas Works**	**1919**	**24772**
G	**On site**	**Electricity Substation**	**1977**	**22090**
G	**On site**	**Electricity Substation**	**1995**	**25459**
L	**On site**	**Electricity Substation**	**1966**	**21766**
L	**On site**	**Electricity Substation**	**1988 - 1992**	**22175**
L	**On site**	**Electricity Substation**	**1995**	**25015**
M	**On site**	**Electricity Substation**	**1992 - 1995**	**24081**
D	1m NW	Gas Holder	1966 - 1988	23716
D	2m NW	Gas Holder	1966	25411
D	2m NE	Gas Works	1880 - 1899	21880
D	3m NE	Gasometer	1880 - 1899	23584
8	10m NE	Electricity Substation	1995	20486
Q	42m N	Electricity Substation	1966	24302
Q	42m N	Electricity Substation	1966 - 1995	23984
V	108m N	Electricity Substation	1993 - 1996	25274
V	108m N	Electricity Transformer	1969	21199
V	108m N	Electricity Substation	1978	24795
V	110m N	Electricity Substation	1987	22437
V	110m N	Electricity Substation	1962	25022
X	189m NW	Electricity Substation	1978 - 1996	24513
X	191m NW	Electricity Substation	1962	25309
Z	206m NW	Electricity Substation	1992 - 1995	23997
AA	209m W	Electricity Substation	1977	20575
AB	214m NE	Electricity Substation	1992	21901
AB	215m NE	Electricity Substation	1995	25061
AA	230m W	Electricity Substation	1995	23309
AE	254m NE	Electricity Substation	1995	24537
AF	264m NW	Electricity Transformer	1969	21198

ID	Location	Land use	Dates present	Group ID
AF	264m NW	Electricity Substation	1978 - 1996	24091
AF	265m NW	Electricity Substation	1962	24454
AE	267m NE	Electricity Substation	1991	20485
AG	329m NW	Electricity Substation	1995	23695
AG	329m NW	Electricity Substation	1995	24394
AG	332m W	Electricity Substation	1977	23205
AH	368m N	Electricity Substation	1992 - 1995	22915
AH	368m N	Electricity Transformer	1966 - 1988	24322
AH	373m N	Electricity Transformer	1966	23383
AI	399m NW	Electricity Transformer	1969	21197
AI	399m NW	Electricity Substation	1978 - 1996	23214
AI	400m NW	Electricity Substation	1962	22230
23	409m W	Electricity Substation	1977 - 1995	24325
24	417m E	Electricity Substation	1966 - 1995	24158
AL	452m NW	Electricity Substation	1978 - 1996	24045
AL	454m NW	Electricity Substation	1962	22478
AN	477m NW	Electricity Transformer	1969	21195
AN	477m NW	Electricity Substation	1978	22996
AN	479m NW	Electricity Substation	1993 - 1996	22913
AN	483m NW	Electricity Substation	1987	21875
AN	483m NW	Electricity Substation	1962	25362

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	**0**

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	**16**

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
G	**On site**	**Garage**	**1965**	**7321**
M	**On site**	**Garage**	**1966 - 1988**	**8566**
M	**On site**	**Garage**	**1966**	**8663**
R	92m NW	Garage	1965 - 1977	8124
X	187m NW	Garage	1966	7580
X	187m NW	Garage	1969 - 1978	7745
X	187m NW	Garage	1993	8123
X	188m NW	Garage	1987	8250
X	188m NW	Garage	1962	8724
AK	437m NE	Garage	1966	7972
AK	443m NE	Garage	1978 - 1984	8664
AM	461m NW	Garage	1966 - 1978	8836
AM	462m NW	Garage	1962	8170
AM	462m NW	Garage	1987	8430
AM	464m NW	Garage	1993	7612
AM	464m NW	Garage	1996	7830

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

2.1 Historical industrial land uses

Records within 500m	126

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 25 >**

ID	Location	Land Use	Date	Group ID
1	**On site**	**Sand Pit**	**1914**	**341452**
2	**On site**	**Sand Pits**	**1948**	**336408**
3	**On site**	**Unspecified Pit**	**1991**	**343285**

ID	Location	Land Use	Date	Group ID
4	On site	Unspecified Ground Workings	1948	346559
5	On site	Unspecified Heap	1980	339994
A	On site	Unspecified Ground Workings	1900	346557
A	On site	Railway Building	1900	348640
A	On site	Railway Station	1947	367560
A	On site	Unspecified Pit	1914	381261
A	On site	Unspecified Pit	1884	355747
A	On site	Railway Station	1948	367560
B	On site	Unspecified Ground Workings	1900	346558
B	On site	Unspecified Pit	1947	374770
B	On site	Railway Sidings	1900	385725
B	On site	Railway Building	1900	348641
B	On site	Railway Sidings	1947	355454
B	On site	Dock	1914	382324
B	On site	Ship Building Yard	1884	334511
B	On site	Cuttings	1969	333132
B	On site	Unspecified Pit	1914	374770
B	On site	Railway Sidings	1914	364966
B	On site	Smithy	1884	345017
B	On site	Railway Sidings	1884	389445
B	On site	Unspecified Tank	1884	339142
B	On site	Railway Sidings	1948	355454
B	On site	Unspecified Pit	1948	350233
C	On site	Dock	1900	382324
C	On site	Dock	1884	373885
D	On site	Unspecified Tank	1947	339136
D	On site	Unspecified Tank	1947	339137
D	On site	Unspecified Tank	1947	339138

ID	Location	Land Use	Date	Group ID
D	On site	Unspecified Tank	1947	339139
D	On site	Unspecified Tank	1947	350412
D	On site	Unspecified Commercial/Industrial	1947	390570
D	On site	Tramway Sidings	1914	335636
D	On site	Unspecified Heap	1884	340448
D	On site	Unspecified Commercial/Industrial	1948	389100
D	On site	Unspecified Tank	1948	350412
D	On site	Unspecified Tanks	1948	336682
E	On site	Unspecified Tank	1947	373438
E	On site	Railway Sidings	1947	368901
E	On site	Gas Works	1914	362292
E	On site	Unspecified Tank	1914	339140
E	On site	Unspecified Tank	1914	380088
E	On site	Gasometer	1884	387833
E	On site	Gas Works	1884	357534
E	On site	Unspecified Commercial/Industrial	1948	390570
F	On site	Railway Building	1947	374089
F	On site	Railway Building	1991	362468
F	On site	Mineral Railway Sidings	1991	382447
F	On site	Mineral Railway Sidings	1980	353600
F	On site	Railway Building	1980	377070
G	On site	Unspecified Pit	1991	374990
G	On site	Unspecified Pit	1969	364220
G	On site	Unspecified Pit	1980	364220
H	On site	Unspecified Tank	1991	363619
H	On site	Unspecified Tank	1980	373968
I	On site	Unspecified Tank	1914	339141
I	On site	Engine Shed	1914	342007

ID	Location	Land Use	Date	Group ID
J	**On site**	**Sawmill**	**1884**	**347592**
E	2m NW	Unspecified Tanks	1948	336681
E	2m NW	Unspecified Tank	1947	380088
E	2m NE	Gas Works	1900	363687
E	3m NE	Gasometer	1900	361110
E	3m NW	Unspecified Tank	1969	352361
E	3m NW	Unspecified Tank	1980	352361
E	3m NE	Water Works	1900	349224
K	4m SW	Coastguard Station	1947	374843
K	4m SW	Coastguard Station	1914	374843
K	4m SW	Coastguard Station	1884	353458
K	5m SW	Coastguard Station	1900	369932
N	6m NW	Police Station	1991	372380
N	6m NW	Police Station	1980	367189
K	8m SW	Coastguard Station	1948	350527
8	15m NW	Unspecified Pit	1884	344060
P	21m NE	Unspecified Tank	1948	365721
P	23m NE	Unspecified Tank	1947	374753
Q	27m N	Fire Station	1991	382368
Q	27m N	Fire Station	1980	351904
N	30m NW	Railway Building	1948	348642
9	62m N	Vineries	1914	333695
10	68m NW	Unspecified Heap	1884	340447
S	74m NW	Police Station	1969	347544
S	82m W	Fire Station	1969	336155
T	86m SW	Lifeboat Station	1884	347904
N	89m N	Railway Building	1947	358397
N	90m N	Railway Building	1948	353312

ID	Location	Land Use	Date	Group ID
U	93m N	Nursery	1991	372849
U	93m N	Nursery	1980	355270
V	94m N	Nursery	1947	365800
V	96m N	Nursery	1991	365988
V	96m N	Nursery	1969	352277
V	96m N	Nursery	1948	388990
V	96m N	Nursery	1980	383340
N	98m N	Railway Building	1900	359143
X	133m S	Unspecified Station	1969	367131
X	133m S	Unspecified Station	1980	367131
12	141m NW	Lifeboat Station	1900	347905
Y	169m N	Railway Station	1914	366500
Y	174m N	Railway Station	1884	367350
13	174m N	Unspecified Quarry	1900	330203
Y	180m N	Railway Station	1900	387178
AA	193m NW	Lime Works	1914	365884
AB	212m NW	Unspecified Quarry	1884	360082
AB	213m NW	Lime Works	1900	365884
AC	215m W	Unspecified Pit	1884	344061
AB	221m NW	Railway Sidings	1914	357297
AB	226m NW	Unspecified Quarry	1900	351351
AC	228m W	Unspecified Ground Workings	1900	346555
AB	241m NW	Tramway Sidings	1900	335635
AE	245m NW	Railway Sidings	1947	379802
AF	246m NW	Railway Sidings	1884	383125
AB	254m NW	Lime Kiln	1914	341363
AF	255m NW	Railway Sidings	1914	384177
AB	279m NW	Unspecified Ground Workings	1948	346553

ID	Location	Land Use	Date	Group ID
AA	315m N	Unspecified Quarry	1900	331018
15	337m NW	Railway Sidings	1948	363869
17	354m NW	Railway Sidings	1948	379802
18	390m SE	Railway Sidings	1948	334362
19	392m E	Unspecified Heap	1991	339992
AE	405m NW	Unspecified Tank	1969	339129
AM	406m NW	Unspecified Quarry	1914	331015
21	450m NW	Old Lime Kiln	1914	342386
22	457m NW	Nursery	1969	341754
AM	461m NW	Unspecified Ground Workings	1948	346554
23	499m NW	Unspecified Quarry	1914	351542

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**55**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 25 >**

ID	Location	Land Use	Date	Group ID
6	**On site**	**Unspecified Tank**	**1966**	**39515**
B	**On site**	**Unspecified Tank**	**1899**	**44381**
B	**On site**	**Unspecified Tank**	**1880**	**44381**
B	**On site**	**Unspecified Tank**	**1919**	**44381**
B	**On site**	**Unspecified Tank**	**1943**	**44189**
B	**On site**	**Unspecified Tank**	**1965**	**44189**
E	**On site**	**Gas Works**	**1919**	**41705**
E	**On site**	**Gasometer**	**1919**	**40610**
E	**On site**	**Gasometer**	**1919**	**40611**

ID	Location	Land Use	Date	Group ID
E	**On site**	**Tanks**	**1943**	**40962**
E	**On site**	**Unspecified Tank**	**1943**	**39558**
E	**On site**	**Unspecified Tank**	**1943**	**39559**
I	**On site**	**Unspecified Tank**	**1919**	**39609**
K	**On site**	**Unspecified Tank**	**1880**	**45133**
K	**On site**	**Unspecified Tank**	**1977**	**41560**
K	**On site**	**Unspecified Tank**	**1965**	**41560**
E	1m NW	Gas Holder	1966	44349
E	2m NW	Gas Holder	1966	42405
E	2m NW	Gas Holder	1966	42405
E	2m NE	Gas Works	1899	43946
E	2m NE	Gas Works	1880	43946
E	2m NW	Gas Holder	1988	44807
K	2m SW	Unspecified Tank	1995	43765
K	2m SW	Unspecified Tank	1995	43765
E	3m NE	Gasometer	1899	46185
E	3m NE	Gasometer	1880	46185
O	15m E	Unspecified Tank	1995	45195
O	15m E	Unspecified Tank	1995	45195
P	23m NE	Unspecified Tank	1965	46251
P	25m NE	Unspecified Tank	1943	44327
N	46m N	Unspecified Tank	1919	39557
T	77m NW	Unspecified Tank	1943	45907
T	80m NW	Unspecified Tank	1977	45907
T	80m NW	Unspecified Tank	1965	45907
T	80m NW	Unspecified Tank	1995	44077
T	80m NW	Unspecified Tank	1995	44077
11	128m E	Unspecified Tank	1966	39516

ID	Location	Land Use	Date	Group ID
14	197m E	Unspecified Tank	1943	39560
Y	205m W	Unspecified Tank	1978	44367
Y	206m W	Unspecified Tank	1962	41891
Y	206m W	Unspecified Tank	1987	43968
Y	206m W	Unspecified Tank	1996	41716
Y	206m W	Unspecified Tank	1993	44482
Y	233m N	Unspecified Tank	1880	39556
16	339m E	Unspecified Tank	1943	39479
AJ	365m E	Unspecified Tank	1978	44730
AJ	365m E	Unspecified Tank	1983	44730
AJ	365m E	Unspecified Tank	1984	44730
AJ	367m E	Unspecified Tank	1966	44730
AJ	367m E	Unspecified Tank	1966	44730
AE	402m NW	Unspecified Tank	1969	43999
AE	402m NW	Unspecified Tank	1966	43999
AP	429m NW	Unspecified Tank	1880	44397
AP	429m NW	Unspecified Tank	1899	44397
20	441m E	Unspecified Tank	1966	39517

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**89**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 25 >**

ID	Location	Land Use	Date	Group ID
E	**On site**	**Gas Works**	**1919**	**24772**
E	**On site**	**Gasometer**	**1919**	**21352**

ID	Location	Land Use	Date	Group ID
E	**On site**	**Gasometer**	**1919**	**21353**
J	**On site**	**Electricity Substation**	**1977**	**22090**
J	**On site**	**Electricity Substation**	**1995**	**25459**
J	**On site**	**Electricity Substation**	**1995**	**25459**
L	**On site**	**Electricity Substation**	**1966**	**21766**
L	**On site**	**Electricity Substation**	**1988**	**22175**
L	**On site**	**Electricity Substation**	**1992**	**22175**
L	**On site**	**Electricity Substation**	**1995**	**25015**
L	**On site**	**Electricity Substation**	**1966**	**21766**
M	**On site**	**Electricity Substation**	**1992**	**24081**
M	**On site**	**Electricity Substation**	**1995**	**24081**
E	1m NW	Gas Holder	1966	23716
E	2m NW	Gas Holder	1966	25411
E	2m NW	Gas Holder	1966	25411
E	2m NE	Gas Works	1899	21880
E	2m NE	Gas Works	1880	21880
E	2m NW	Gas Holder	1988	23716
E	3m NE	Gasometer	1899	23584
E	3m NE	Gasometer	1880	23584
7	10m NE	Electricity Substation	1995	20486
R	42m N	Electricity Substation	1966	24302
R	42m N	Electricity Substation	1988	23984
R	42m N	Electricity Substation	1992	23984
R	43m N	Electricity Substation	1995	23984
R	43m N	Electricity Substation	1966	23984
W	108m N	Electricity Substation	1996	25274
W	108m N	Electricity Substation	1993	25274
W	108m N	Electricity Substation	1978	24795

ID	Location	Land Use	Date	Group ID
W	108m N	Electricity Transformer	1969	21199
W	110m N	Electricity Substation	1962	25022
W	110m N	Electricity Substation	1987	22437
Z	189m NW	Electricity Substation	1978	24513
Z	189m NW	Electricity Substation	1996	24513
Z	189m NW	Electricity Substation	1993	24513
Z	191m NW	Electricity Substation	1962	25309
Z	191m NW	Electricity Substation	1987	24513
AB	206m NW	Electricity Substation	1992	23997
AB	209m NW	Electricity Substation	1995	23997
AC	209m W	Electricity Substation	1977	20575
AD	214m NE	Electricity Substation	1992	21901
AD	215m NE	Electricity Substation	1995	25061
AC	230m W	Electricity Substation	1995	23309
AC	230m W	Electricity Substation	1995	23309
AG	254m NE	Electricity Substation	1995	24537
AG	254m NE	Electricity Substation	1995	24537
AH	264m NW	Electricity Substation	1978	24091
AH	264m NW	Electricity Transformer	1969	21198
AH	265m NW	Electricity Substation	1962	24454
AH	265m NW	Electricity Substation	1987	24091
AH	265m NW	Electricity Substation	1996	24091
AH	265m NW	Electricity Substation	1993	24091
AG	267m NE	Electricity Substation	1991	20485
AI	329m NW	Electricity Substation	1995	23695
AI	329m NW	Electricity Substation	1995	24394
AI	332m W	Electricity Substation	1977	23205
AK	368m N	Electricity Transformer	1988	24322

ID	Location	Land Use	Date	Group ID
AK	368m N	Electricity Substation	1992	22915
AK	369m N	Electricity Transformer	1966	24322
AK	373m N	Electricity Substation	1995	22915
AK	373m N	Electricity Transformer	1966	23383
AL	399m NW	Electricity Substation	1978	23214
AL	399m NW	Electricity Transformer	1969	21197
AL	400m NW	Electricity Substation	1962	22230
AL	400m NW	Electricity Substation	1987	23214
AL	400m NW	Electricity Substation	1996	23214
AL	400m NW	Electricity Substation	1993	23214
AN	409m W	Electricity Substation	1977	24325
AN	409m W	Electricity Substation	1995	24325
AN	409m W	Electricity Substation	1995	24325
AO	417m E	Electricity Substation	1991	24158
AO	418m E	Electricity Substation	1978	24158
AO	418m E	Electricity Substation	1983	24158
AO	418m E	Electricity Substation	1984	24158
AO	418m E	Electricity Substation	1995	24158
AO	418m E	Electricity Substation	1995	24158
AO	419m E	Electricity Substation	1966	24158
AR	452m NW	Electricity Substation	1996	24045
AR	452m NW	Electricity Substation	1993	24045
AR	452m NW	Electricity Substation	1978	24045
AR	454m NW	Electricity Substation	1962	22478
AR	454m NW	Electricity Substation	1987	24045
AT	477m NW	Electricity Substation	1978	22996
AT	477m NW	Electricity Transformer	1969	21195
AT	479m NW	Electricity Substation	1996	22913

ID	Location	Land Use	Date	Group ID
AT	479m NW	Electricity Substation	1993	22913
AT	483m NW	Electricity Substation	1962	25362
AT	483m NW	Electricity Substation	1987	21875

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	**0**

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	**24**

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 25 >**

ID	Location	Land Use	Date	Group ID
J	**On site**	**Garage**	**1965**	**7321**
M	**On site**	**Garage**	**1988**	**8566**
M	**On site**	**Garage**	**1966**	**8663**
M	**On site**	**Garage**	**1966**	**8566**
S	92m NW	Garage	1965	8124
S	92m NW	Garage	1977	8124
Z	187m NW	Garage	1966	7580
Z	187m NW	Garage	1978	7745
Z	187m NW	Garage	1969	7745
Z	187m NW	Garage	1993	8123

ID	Location	Land Use	Date	Group ID
Z	188m NW	Garage	1987	8250
Z	188m NW	Garage	1962	8724
AQ	437m NE	Garage	1966	7972
AQ	437m NE	Garage	1966	7972
AQ	443m NE	Garage	1978	8664
AQ	443m NE	Garage	1983	8664
AQ	443m NE	Garage	1984	8664
AS	461m NW	Garage	1966	8836
AS	461m NW	Garage	1978	8836
AS	461m NW	Garage	1969	8836
AS	462m NW	Garage	1987	8430
AS	462m NW	Garage	1962	8170
AS	464m NW	Garage	1996	7830
AS	464m NW	Garage	1993	7612

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



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Site Outline

Search buffers in metres (m)

Historical landfill (EA/NRW)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m	0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m	1

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

Features are displayed on the Waste and landfill map on **page 38 >**

ID	Location	Details		
2	36m N	Site Address: Sandy Bay, Porthcaw Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: Inert, Industrial, Commercial, Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded 31/12/1960 Last Recorded: 31/12/1974

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m	0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m	0

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	5

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 38 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	**On site**	**Knights Brown Construction, Eastern Promenade, Porthcawl, Bridgend, Cf36 3by**	**NRW-WME068933**	**Using waste exemption**	**Not on a farm**	**Use of waste in construction**
3	71m SW	Shepherds The Vets, Shepherds The Vets, 1 Lifeboat Road, Porthcawl, Bridgend, Cf36 3bs	NRW-WME107702	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
4	89m W	Pearn's Pharmacies Ltd, 88 John Street, Porthcawl, Pen-Y-Bont Ar Ogwr, Cf36 3bd	NRW-WME040088	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
5	105m W	104 New Road, Porthcawl, Pen-Y-Bont Ar Ogwr, Cf36 5de	NRW-WME001768	Treating waste exemption	Waste exemption - non-agricultural	Sorting and de-naturing of controlled drugs for disposal
6	427m N	Porthcawl Medical Practice. Peter Evans, 3 Clos Y Mametz, Porthcawl, Pen-Y-Bont Ar Ogwr, Cf36 5dj	NRW-WME059755	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

This data is sourced from the Environment Agency and Natural Resources Wales.

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

NGD current or recent tanks

Current or recent petrol stations

Licensed pollutant release (Part A(2)/B)

Licensed Discharges to controlled waters

List 2 Dangerous Substances

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	48

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 41 >**

ID	Location	Company	Address	Activity	Category
1	On site	Coney Surf	Buccaneer Complex, Mackworth Road, Porthcawl, Mid Glamorgan, CF36 5BT	Vehicle Hire and Rental	Hire Services
2	On site	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities
3	On site	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
4	**On site**	**Bus Station**	**Mid Glamorgan, CF36**	**Bus and Coach Stations, Depots and Companies**	**Public Transport, Stations and Infrastructure**
A	**On site**	**Porthcawl Marina Office**	**The Harbour, Porthcawl, Mid Glamorgan, CF36 3BY**	**Moorings and Unloading Facilities**	**Water**
A	**On site**	**Electricity Sub Station**	**Mid Glamorgan, CF36**	**Electrical Features**	**Infrastructure and Facilities**
A	**On site**	**Mooring Posts**	**Mid Glamorgan, CF36**	**Moorings and Unloading Facilities**	**Water**
A	**On site**	**Marina**	**Mid Glamorgan, CF36**	**Moorings and Unloading Facilities**	**Water**
A	**On site**	**Pumping Station**	**Mid Glamorgan, CF36**	**Water Pumping Stations**	**Industrial Features**
B	**On site**	**Slipway**	**Mid Glamorgan, CF36**	**Moorings and Unloading Facilities**	**Water**
B	**On site**	**Slipway**	**Mid Glamorgan, CF36**	**Moorings and Unloading Facilities**	**Water**
8	9m N	Mast	Mid Glamorgan, CF36	Telecommunications Features	Infrastructure and Facilities
9	10m NE	P E Thomas Precision Ltd	P Thomas Thermal Works, Glan Road, Porthcawl, Mid Glamorgan, CF36 5DF	Precision Engineers	Engineering Services
10	14m E	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities
11	36m NE	Past & Present	85a, New Road, Porthcawl, Mid Glamorgan, CF36 5DH	Clearance and Salvage Dealers	Recycling Services
12	36m NW	Porthcawl Furnishing	51, New Road, Porthcawl, Mid Glamorgan, CF36 5DH	Furniture	Consumer Products
C	41m NW	Porthcawl Ambulance Station	Mid Glamorgan, CF36	Ambulance and Medical Transportation Services	Health Support Services
13	41m S	Slipway	Mid Glamorgan, CF36	Moorings and Unloading Facilities	Water
14	44m N	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities
15	45m NW	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
D	45m NW	Fone Xcellence	13, John Street, Porthcawl, Mid Glamorgan, CF36 3AP	Electrical Equipment Repair and Servicing	Repair and Servicing
16	50m W	Specsavers Hearcare	59, John Street, Porthcawl, Mid Glamorgan, CF36 3AY	Disability and Mobility Equipment	Consumer Products
C	50m N	Porthcawl Fire Station	Rear Wellfield Drive, Porthcawl, Mid Glamorgan, CF36 5TS	Fire Brigade Stations	Central and Local Government
E	54m NW	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities
17	65m SW	Slipway	Mid Glamorgan, CF36	Moorings and Unloading Facilities	Water
D	65m W	The Optic Shop	Ground Floor 20, John Street, Porthcawl, Mid Glamorgan, CF36 3BA	Photographic and Optical Equipment	Household, Office, Leisure and Garden
18	76m W	Print Centre Porthcawl	3, Lias Road, Porthcawl, Mid Glamorgan, CF36 3AH	Published Goods	Industrial Products
19	87m NE	Porthcawl Motor Company	Porthcawl Motor Company 283-287, New Road, Porthcawl, Mid Glamorgan, CF36 5BE	Secondhand Vehicles	Motoring
F	116m W	Bush Healthcare	9-10, Well Street, Porthcawl, Mid Glamorgan, CF36 3BE	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
21	119m N	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities
F	122m W	Bush Healthcare	10a, Well Street, Porthcawl, Mid Glamorgan, CF36 3BE	Disability and Mobility Equipment	Consumer Products
22	124m E	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities
23	134m NW	Harris Printers	16-18, Mary Street, Porthcawl, Mid Glamorgan, CF36 3YA	Published Goods	Industrial Products
24	135m E	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities
25	145m W	Station Hill Garage	Old Station Road, Porthcawl, Mid Glamorgan, CF36 5DL	Vehicle Repair, Testing and Servicing	Repair and Servicing
26	157m E	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities
27	163m NW	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
28	167m N	The Fireplace Centre	126, John Street, Porthcawl, Mid Glamorgan, CF36 3DT	Fireplaces and Mantelpieces	Consumer Products
G	171m N	B & B Hardware & Plumbing Supplies Ltd	7, New Road, Porthcawl, Mid Glamorgan, CF36 5DL	General Construction Supplies	Industrial Products
G	171m N	Ross Computing Ltd	7a, New Road, Porthcawl, Mid Glamorgan, CF36 5DL	Electrical Equipment Repair and Servicing	Repair and Servicing
30	188m NW	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities
31	214m NE	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities
32	219m NW	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities
33	220m W	Electricity Sub Station	Mid Glamorgan, CF36	Electrical Features	Infrastructure and Facilities
I	231m NW	Metal Wall Signs	21, Esplanade Avenue, Porthcawl, Mid Glamorgan, CF36 3YS	Signs	Industrial Products
J	236m N	Pumping Station	Mid Glamorgan, CF36	Water Pumping Stations	Industrial Features
J	241m N	Sewage Pumping Station	Mid Glamorgan, CF36	Waste Storage, Processing and Disposal	Infrastructure and Facilities
34	242m NW	Gas Valve Compound	Mid Glamorgan, CF36	Gas Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 National Geographic Database (NGD) - Current or recent tanks

Records within 250m **2**

Current or recent tanks identified from the Ordnance Survey NGD.

Features are displayed on the Current industrial land use map on **page 41 >**

ID	Location	Tank description	Activity	Date first identified
7	1m SW	Roofed Storage Tank	Commercial Activity: Distribution Or Storage	10/03/2016

ID	Location	Tank description	Activity	Date first identified
E	82m NW	Roofed Storage Tank	Commercial Activity: Distribution Or Storage	20/06/2014

This data is sourced from Ordnance Survey.

4.3 Current or recent petrol stations

Records within 500m	2

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 41 >**

ID	Location	Company	Address	LPG	Status
35	300m E	OBSOLETE	Trecco Bay Service Station, Trecco Bay, Porthcawl, Bridgend, Bridgend, CF33 4LF	Not Applicable	Obsolete
L	432m NE	OIL4WALES	Bridgend Road, Newton, Porthcawl, Bridgend, CF36 5RL	No	Open

This data is sourced from Experian.

4.4 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.5 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.6 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.7 Control of Major Accident Hazards (COMAH)

Records within 500m	0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.8 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.9 Hazardous substance storage/usage

Records within 500m	0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.10 Historical licensed industrial activities (IPC)

Records within 500m	0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed industrial activities (Part A(1))

Records within 500m	0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.12 Licensed pollutant release (Part A(2)/B)

Records within 500m	2

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 41 >**

ID	Location	Address	Details	
20	89m W	Soapy's Drive In Drycleaners, The Old Banana Stores, Wellfield Crescent, Off New Road, Porthcawl, CF36 5DN	Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
L	450m NE	Globe Garage, Bridgend Road, Porthcawl, Bridgend, CF36 5RL	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.13 Radioactive Substance Authorisations

Records within 500m	0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Licensed Discharges to controlled waters

Records within 500m	3

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 41 >**

ID	Location	Address	Details	
A	**On site**	**SWOEPROMENADEPCAWL ,PCAWL**	**Effluent Type: UNSPECIFIED** **Permit Number: BW3200501** **Permit Version: 1** **Receiving Water: DOCK**	**Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV** **Issue date: 20/10/1989** **Effective Date: 20/10/1989** **Revocation Date: 28/03/2002**

ID	Location	Address	Details	
M	490m W	CSOandEOatIrongatePSPorthcawl,Opposite4WestDrive,Porthcawl,CF363LT	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: BP0064401 Permit Version: 4 Receiving Water: Bristol Channel at Irongate Point	Status: Effective Issue date: 09/08/2022 Effective Date: 09/08/2022 Revocation Date: -
M	490m W	CSOandEOatIrongatePSPorthcawl,Opposite4WestDrive,Porthcawl,CF363LT	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: BP0064401 Permit Version: 4 Receiving Water: Bristol Channel at Irongate Point	Status: Effective Issue date: 09/08/2022 Effective Date: 09/08/2022 Revocation Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to surface waters (Red List)

Records within 500m	0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 1 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 List 2 Dangerous Substances

Records within 500m	1

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

Features are displayed on the Current industrial land use map on **page 41 >**

ID	Location	Name	Status	Receiving Water	Authorised Substances
36	303m N	Attwood & Sawyer Porthcawl, Margam	Not Active	Swansea Bay	Copper, Lead, Zinc

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution Incidents (EA/NRW)

Records within 500m	11

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 41 >**

ID	Location	Details	
5	**On site**	**Incident Date: 05/04/2001** **Incident Identification: 1667** **Pollutant: Inert Materials and Wastes** **Pollutant Description: Construction and Demolition Materials and Wastes**	**Water Impact: Category 4 (No Impact)** **Land Impact: Category 3 (Minor)** **Air Impact: Category 4 (No Impact)**
6	**On site**	**Incident Date: 20/06/2003** **Incident Identification: 167541** **Pollutant: Atmospheric Pollutants and Effects** **Pollutant Description: Effects on Humans**	**Water Impact: Category 4 (No Impact)** **Land Impact: Category 3 (Minor)** **Air Impact: Category 3 (Minor)**
A	**On site**	**Incident Date: 16/06/2002** **Incident Identification: 85196** **Pollutant: Oils and Fuel** **Pollutant Description: Diesel**	**Water Impact: Category 3 (Minor)** **Land Impact: Category 4 (No Impact)** **Air Impact: Category 4 (No Impact)**
A	**On site**	**Incident Date: 30/07/2014** **Incident Identification: 1262587** **Pollutant: Specific Waste Materials** **Pollutant Description: Contaminated Soil**	**Water Impact: -** **Land Impact: Category 4 (No Impact)** **Air Impact: Category 3 (Minor)**
H	172m SW	Incident Date: 10/06/2016 Incident Identification: 1603186 Pollutant: General Biodegradable Materials and Waste Pollutant Description: Algae	Water Impact: Category 3 (Minor) Land Impact: No Details Air Impact: No Details

ID	Location	Details	
H	172m SW	Incident Date: 10/06/2016 Incident Identification: 1603186 Pollutant: - Pollutant Description: -	Water Impact: Category 3 (Minor) Land Impact: No Details Air Impact: No Details
29	183m S	Incident Date: 30/04/2014 Incident Identification: 1231598 Pollutant: Inert Materials and Wastes Pollutant Description: Other Inert Material or Waste	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
I	224m NW	Incident Date: 18/11/2016 Incident Identification: 1606920 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: No Details Air Impact: Category 4 (No Impact)
I	224m NW	Incident Date: 18/11/2016 Incident Identification: 1606920 Pollutant: - Pollutant Description: -	Water Impact: Category 4 (No Impact) Land Impact: No Details Air Impact: Category 4 (No Impact)
K	326m NW	Incident Date: 29/05/2001 Incident Identification: 6963 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
K	326m NW	Incident Date: 29/05/2001 Incident Identification: 6963 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.20 Pollution inventory substances

Records within 500m	**0**

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory waste transfers

Records within 500m	0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

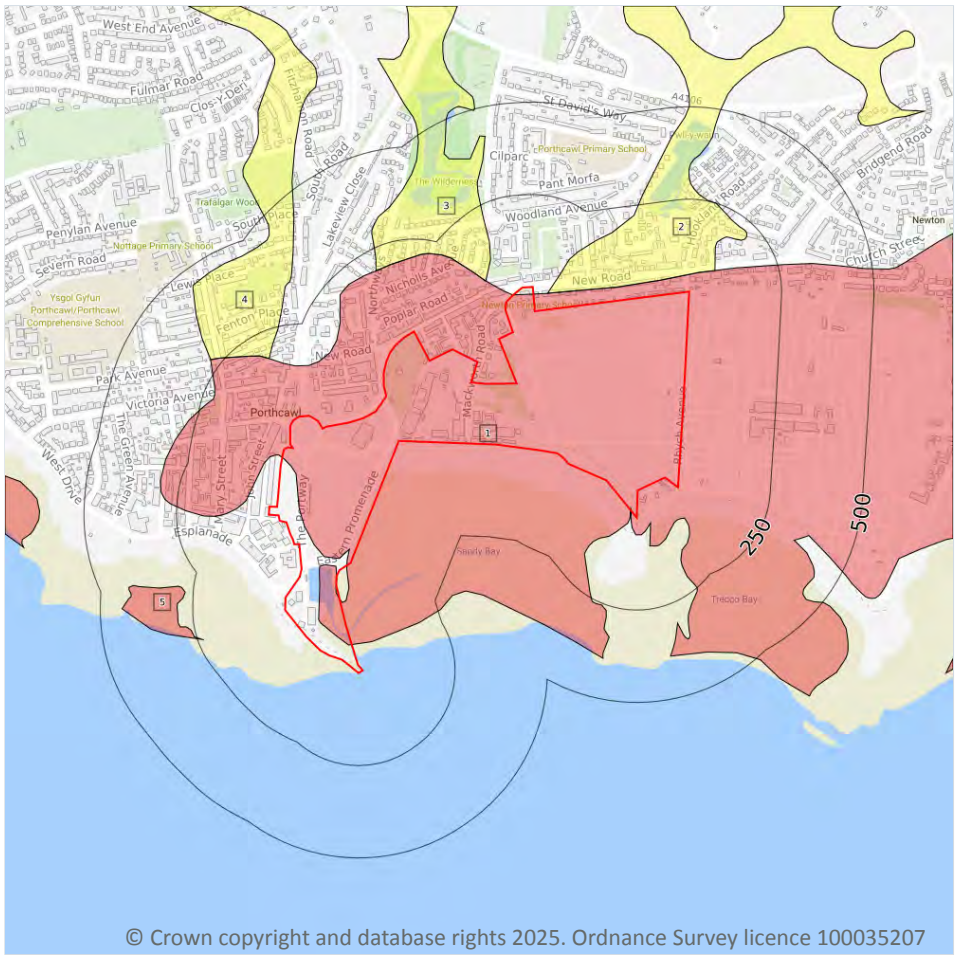
4.22 Pollution inventory radioactive waste

Records within 500m	0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



5.1 Superficial aquifer

Records within 500m	5

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 52 >**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	37m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	80m NW	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	177m NW	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
5	238m W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Bedrock aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

5.2 Bedrock aquifer

Records within 500m	2

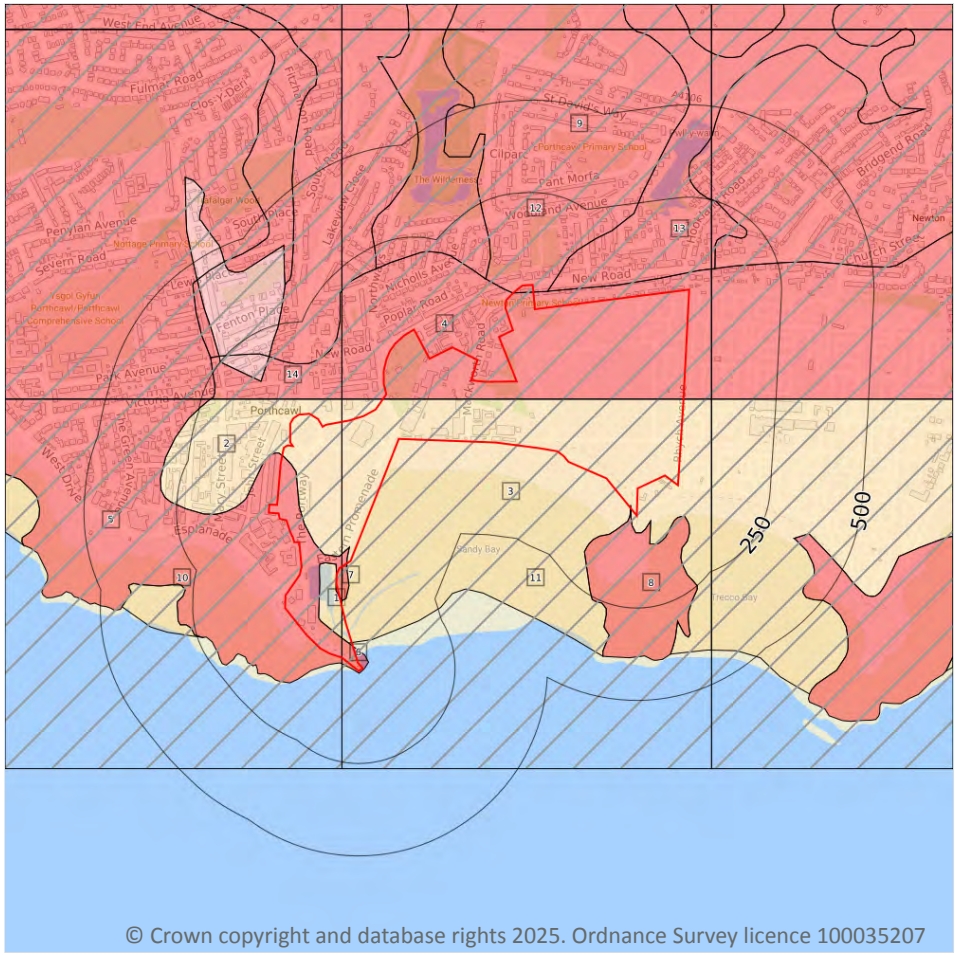
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 54 >**

ID	Location	Designation	Description
1	**On site**	**Principal**	**Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers**
2	133m NW	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Groundwater vulnerability



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Site Outline

Search buffers in metres (m)

Superficial vulnerability
- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability
- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information
- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	11

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 56 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
4	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
5	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
6	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
7	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
8	**On site**	**Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures**
9	**On site**	**Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: Intermediate Infiltration value: >70% Dilution value: >550mm/year**	**Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data**	**Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures**
13	37m N	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures
14	40m N	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	**3**

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
10	**Very significant soluble rocks are likely to be present with a moderate possibility of localised natural subsidence or dissolution-related degradation of bedrock, especially in adverse conditions such as concentrated surface or subsurface water flow.**	**2.0%**

ID	Maximum soluble risk category	Percentage of grid square covered by maximum risk
11	**Very significant soluble rocks are likely to be present with a moderate possibility of localised natural subsidence or dissolution-related degradation of bedrock, especially in adverse conditions such as concentrated surface or subsurface water flow.**	**2.0%**
12	**Significant soluble rocks are likely to be present. Low possibility of localised subsidence or dissolution-related degradation of bedrock occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow.**	**57.99999999999999%**

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	**0**

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



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5.6 Groundwater abstractions

Records within 2000m	4

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 60 >**

ID	Location	Details	
-	853m N	Status: Historical Licence No: 21/58/33/0004 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE Data Type: Point Name: Blundell Easting: 282230 Northing: 178120	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 05/07/1991 Version End Date: -
-	894m N	Status: Historical Licence No: 21/58/33/0008 Details: Water Bottling Direct Source: EAW Groundwater Point: BOREHOLE AT THE WHITE WHEAT Data Type: Point Name: Porthcawl Water Company Limited Easting: 283070 Northing: 178180	Annual Volume (m^3): 18250 Max Daily Volume (m^3): 50 Original Application No: - Original Start Date: 01/07/2003 Expiry Date: - Issue No: 2 Version Start Date: 01/04/2008 Version End Date: -
-	894m N	Status: Historical Licence No: 21/58/33/0008 Details: Water Bottling - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 283070 Northing: 178180	Annual Volume (m^3): 18250 Max Daily Volume (m^3): - Original Application No: - Original Start Date: Apr 1 2008 12:00AM Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
-	1328m N	Status: Historical Licence No: 21/58/33/0006 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: BOREHOLE AT TY TALBOT Data Type: Point Name: Joseph Easting: 282020 Northing: 178550	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 25/06/1986 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m	**0**

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m	2

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 60 >**

ID	Location	Details	
-	894m N	Status: Historical Licence No: 21/58/33/0008 Details: Water Bottling Direct Source: EAW Groundwater Point: BOREHOLE AT THE WHITE WHEAT Data Type: Point Name: Porthcawl Water Company Limited Easting: 283070 Northing: 178180	Annual Volume (m^3): 18250 Max Daily Volume (m^3): 50 Original Application No: - Original Start Date: 01/07/2003 Expiry Date: - Issue No: 2 Version Start Date: 01/04/2008 Version End Date: -
-	894m N	Status: Historical Licence No: 21/58/33/0008 Details: Water Bottling - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 283070 Northing: 178180	Annual Volume (m^3): 18250 Max Daily Volume (m^3): - Original Application No: - Original Start Date: Apr 1 2008 12:00AM Expiry Date: - Issue No: - Version Start Date: - Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m	0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	0

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	2

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 63 >**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 63 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**Coastal catchment**	**Not part of a river WB catchment**	**240**	**Ogmore**	**Tawe to Cadoxton**

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified	1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site.

Features are displayed on the Hydrology map on **page 63 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
1	**On site**	**Coastal**	**Bristol Channel Outer North**	**GB611008590001**	**Moderate**	**Good**	**Good**	**2016**

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site	1

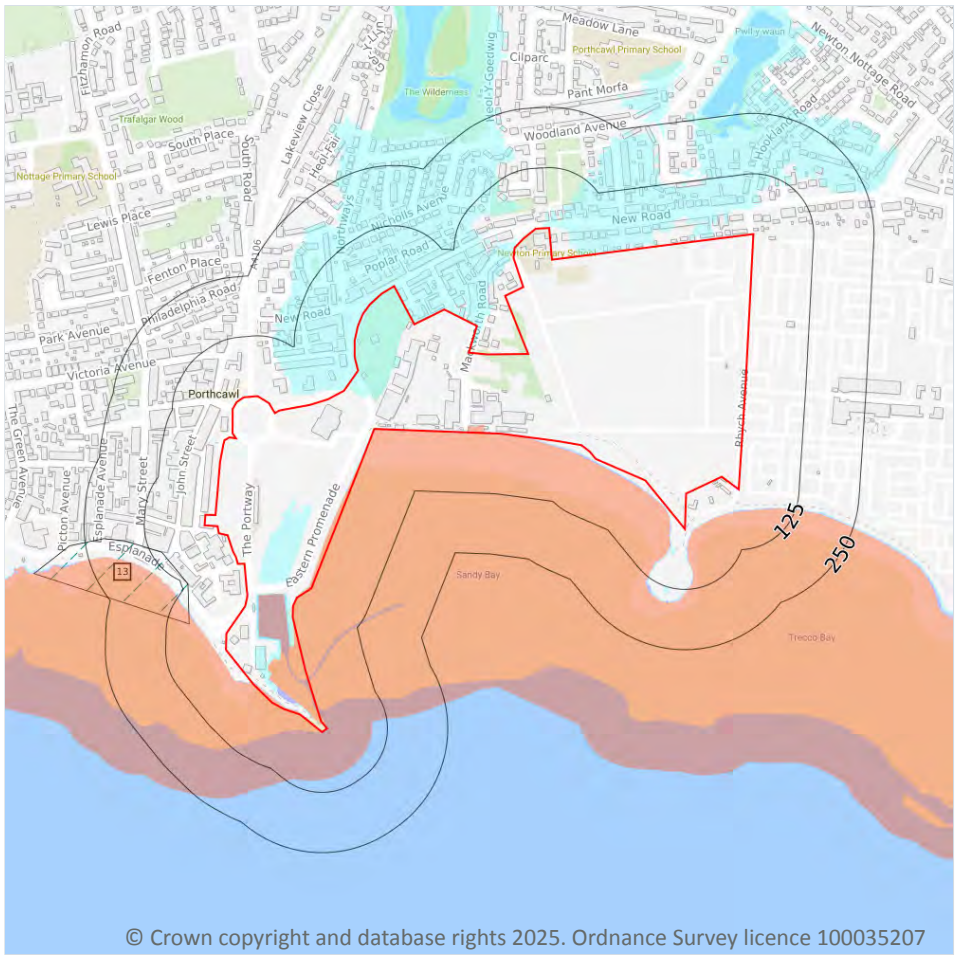
Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on **page 63 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Swansea Southern Carboniferous Limestone**	**GB41001G201300**	**Poor**	**Poor**	**Good**	**2017**

This data is sourced from the Environment Agency and Natural Resources Wales.

7 River and coastal flooding



Site Outline

Search buffers in metres (m)

River and coastal flooding:

- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m	377

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on **page 66 >**

Distance	Flood risk category
On site	**High**
0 - 50m	High

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m	**1**

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

Features are displayed on the River and coastal flooding map on **page 66 >**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
13	80m W	Tideqa	2008-05-02 2008-05-02	Sea	Other	Tidal Coastal

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m	**0**

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m	**0**

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

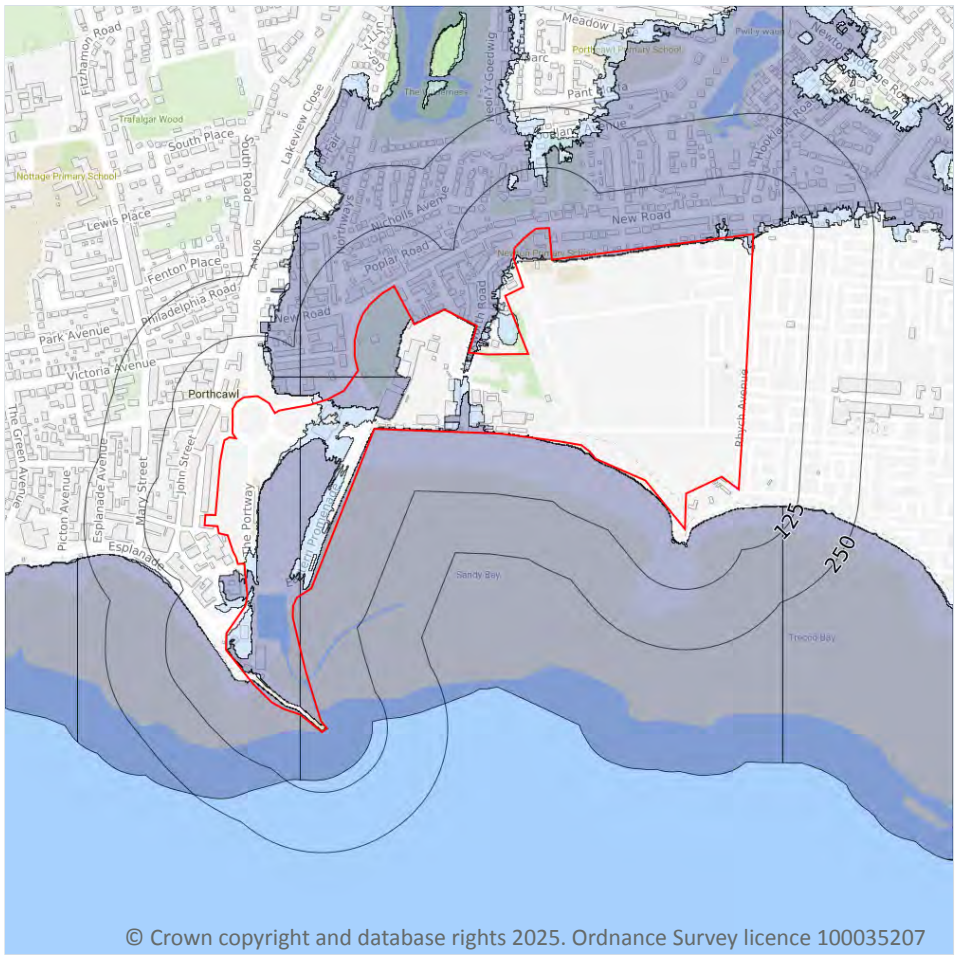
7.5 Flood Storage Areas

Records within 250m	0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.

River and coastal flooding - Flood Zones



7.6 Flood Zone 2

Records within 50m	1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

Features are displayed on the River and coastal flooding map on **page 66 >**

Location	Type
On site	**Zone 2 - (Fluvial /Tidal Models)**

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m	1

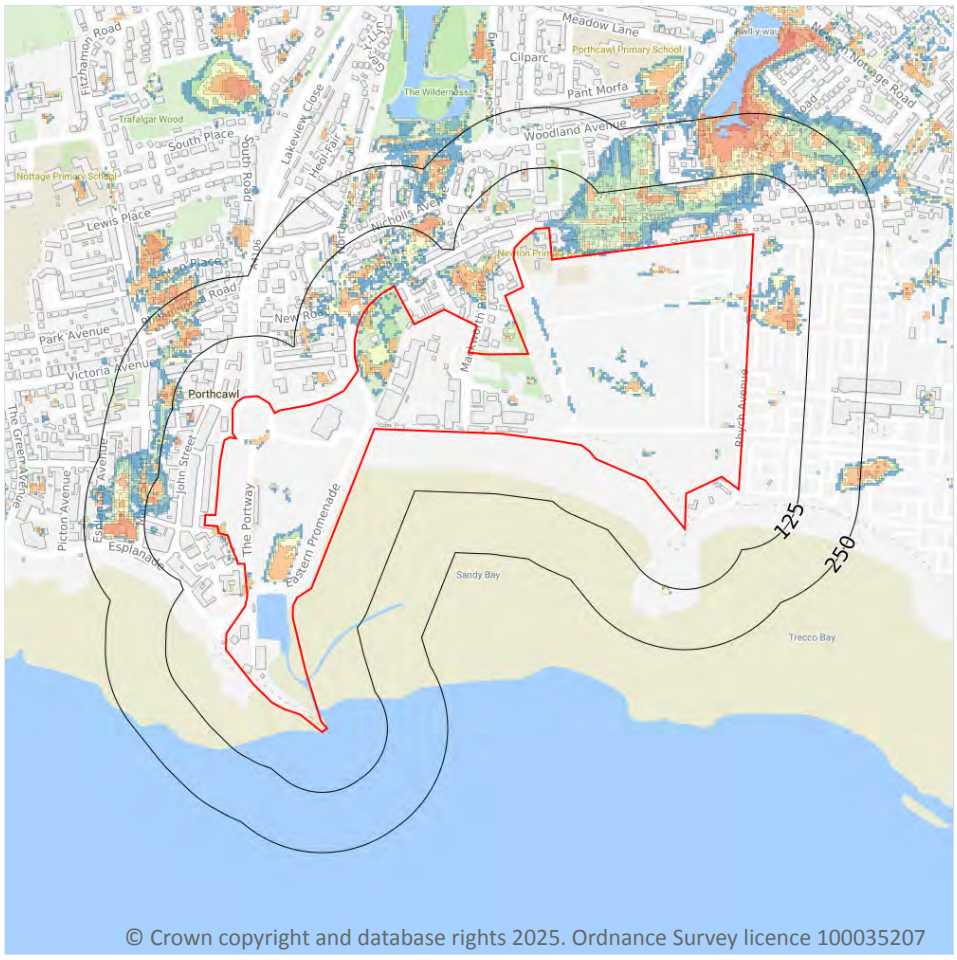
Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on **page 66 >**

Location	Type
On site	**Zone 3 - (Fluvial /Tidal Models)**

This data is sourced from the Environment Agency and Natural Resources Wales.

8 Surface water flooding



Site Outline

Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 71 >**

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site	**Moderate**
Highest risk within 50m	**Moderate**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 73 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

- Sites of Special Scientific Interest (SSSI)
- Special Areas of Conservation (SAC)
- National Nature Reserves (NNR)
- Local Nature Reserves (LNR)
- Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	1

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on **page 74 >**

ID	Location	Name	Data source
B	793m E	Merthyr Mawr	Natural Resources Wales

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	1

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

Features are displayed on the Environmental designations map on **page 74 >**

ID	Location	Name	Features of interest	Habitat description	Data source
B	793m E	Kenfig / Cynffig	Intertidal mudflats and sandflats; Cord-grass swards; Atlantic salt meadows; Shifting dunes; Shifting dunes with marram; Dune grassland; Coastal dune heathland; Dunes with sea-buckthorn; Dunes with creeping willow; Humid dune slacks; Calcium-rich nutrient-poor lakes, lochs and pools; Dry grasslands and scrublands on chalk or limestone; Alder woodland on floodplains; Great crested newt; Lesser horseshoe bat; Petalwort; Fen orchid	Broad-leaved deciduous woodland; Coastal sand dunes, Sand beaches, Machair; Inland water bodies (Standing water, Running water); Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Salt marshes, Salt pastures, Salt steppes; Shingle, Sea cliffs, Islets; Heath, Scrub, Maquis and Garrigue, Phygrana; Bogs, Marshes, Water fringed vegetation, Fens	Natural Resources Wales

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m	0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m	1

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

Features are displayed on the Environmental designations map on **page 74 >**

ID	Location	Name	Data source
-	1416m E	Merthyr Mawr Warren	Natural Rescources Wales

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m	1

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

Features are displayed on the Environmental designations map on **page 74 >**

ID	Location	Name	Data source
2	936m W	Lock's Common	Natural Resources Wales

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m	14

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the

woodland have to be old.

Features are displayed on the Environmental designations map on **page 74 >**

ID	Location	Name	Woodland Type
A	371m N	Unknown	Ancient Semi Natural Woodland
A	389m NW	Unknown	Ancient Semi Natural Woodland
1	539m NW	Unknown	Restored Ancient Woodland Site
C	1156m N	Unknown	Ancient Semi Natural Woodland
C	1284m N	Unknown	Ancient Semi Natural Woodland
D	1355m NE	Unknown	Ancient Semi Natural Woodland
E	1374m NE	Unknown	Ancient Semi Natural Woodland
E	1382m NE	Unknown	Ancient Semi Natural Woodland
4	1436m NE	Unknown	Restored Ancient Woodland Site
5	1445m NE	Unknown	Ancient Semi Natural Woodland
6	1456m NE	Unknown	Restored Ancient Woodland Site
E	1467m NE	Unknown	Restored Ancient Woodland Site
-	1500m E	Unknown	Ancient Semi Natural Woodland
-	1935m N	Unknown	Ancient Semi Natural Woodland

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m	**0**

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m	0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m	0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m	0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m	0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site	0

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

This data is sourced from Natural England.

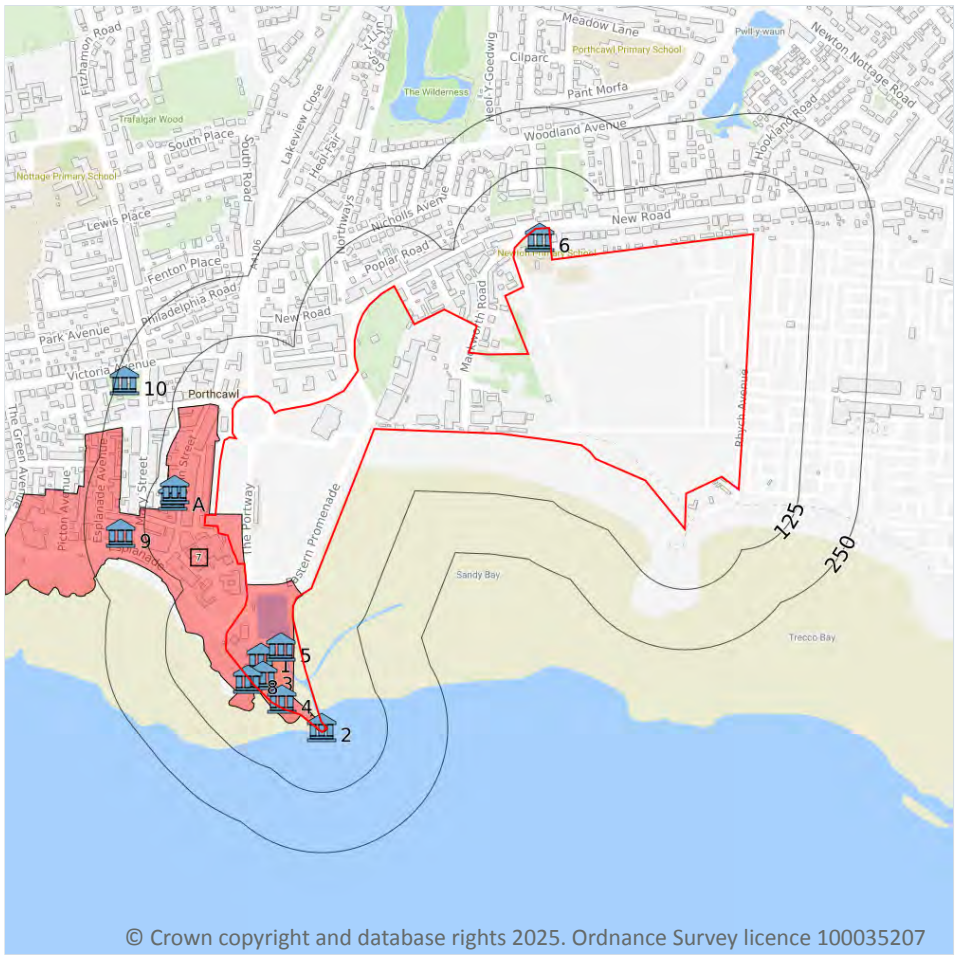
10.18 SSSI Units

Records within 2000m	0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations



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Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m	0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m	11

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on **page 81 >**

ID	Location	Name	Grade	Reference Number	Listed date
1	**On site**	**Jennings Warehouse, Situated On The West Quay Of The Harbour Just North Of The Breakwater And S Of The Surviving Harbour Basin.**	**II**	**11369**	**15/08/1991**
2	**On site**	**Lighthouse On Breakwater Porthcawl Harbour, Prominently Sited On The Curved Outer End Of The Main Breakwater At Entrance To Porthcawl Harbour.**	**II**	**11370**	**15/08/1991**

ID	Location	Name	Grade	Reference Number	Listed date
3	**On site**	**The Old Customs House, At The W End Of The Breakwater Near The Corner Of The Harbour And Between Jennings Warehouse And The Sea Wall.**	**II**	**19358**	**17/02/1998**
4	**On site**	**The Breakwater, The Outer Arm Of Porthcawl Harbour Adjoining The E End Of The Esplanade.**	**II**	**19362**	**17/02/1998**
5	**On site**	**Walls Of The Outer Basin And West Pier/Quay, On The Landward Side Of The Breakwater, To The E Of Porthcawl Town.**	**II**	**19363**	**17/02/1998**
6	**On site**	**Newton Primary School (2 Blocks), Situated E Of Porthcawl Centre And Harbour, W Of Newton Village, On The Main Road Linking The Two, By Junction Of The Sea Road To Sandy Bay.**	**II**	**19371**	**17/02/1998**
8	3m SW	The Look-Out Tower, At The Extreme E End Of The Promenade Adjacent To The Breakwater On The Very Edge Of The Sea Wall.	II	19359	17/02/1998
A	77m NW	Public Conveniences, In The Centre Of The Main Shopping Street.	II	11355	22/02/1989
A	82m NW	The Old Police Station, In The Town Centre On The Main Shopping Street.	II	11354	22/02/1989
9	175m W	Grand Pavilion, On The Seafront A Little W Of The Town Centre.	II	19364	17/02/1998
10	232m W	Church Of All Saints, Centrally Within The Town Of Porthcawl, Just Nw Of The Main Shopping Thoroughfare Of St John's Street And On A Corner Site Amidst The Seaside Housing Development Of The Late C19 And Early C20. Surrounded By A Churchyard Not Used For Burial.	II	11372	27/02/1992

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m	**1**

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

Features are displayed on the Visual and cultural designations map on **page 81 >**

ID	Location	Name	District	Date of designation
7	**On site**	**Porthcawl**	**Bridgend**	**31/08/1973**

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m	**0**

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m	**0**

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Timber felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	8

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 85 >**

ID	Location	Classification	Description
2	**On site**	**Grade 3b**	**Moderate quality agricultural land**
3	**On site**	**Grade 2**	**Good quality agricultural land**
5	**On site**	**Grade 3b**	**Moderate quality agricultural land**

ID	Location	Classification	Description
6	**On site**	**Grade 3b**	**Moderate quality agricultural land**
7	**On site**	**Grade 2**	**Good quality agricultural land**
9	**On site**	**Grade 2**	**Good quality agricultural land**
10	**On site**	**Grade 2**	**Good quality agricultural land**
12	212m NW	Grade 2	Good quality agricultural land

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m	**1**

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

Features are displayed on the Agricultural designations map on **page 85 >**

ID	Location	Name	Classification	Other relevant legislation
13	249m N	-	Open Access Other Statutory Access Land	-

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m	**0**

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	**0**

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



14.1 10k Availability

Records within 500m **1**

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 89 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**SS87NW**

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Artificial and made ground



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14.2 Artificial and made ground (10k)

Records within 500m	3

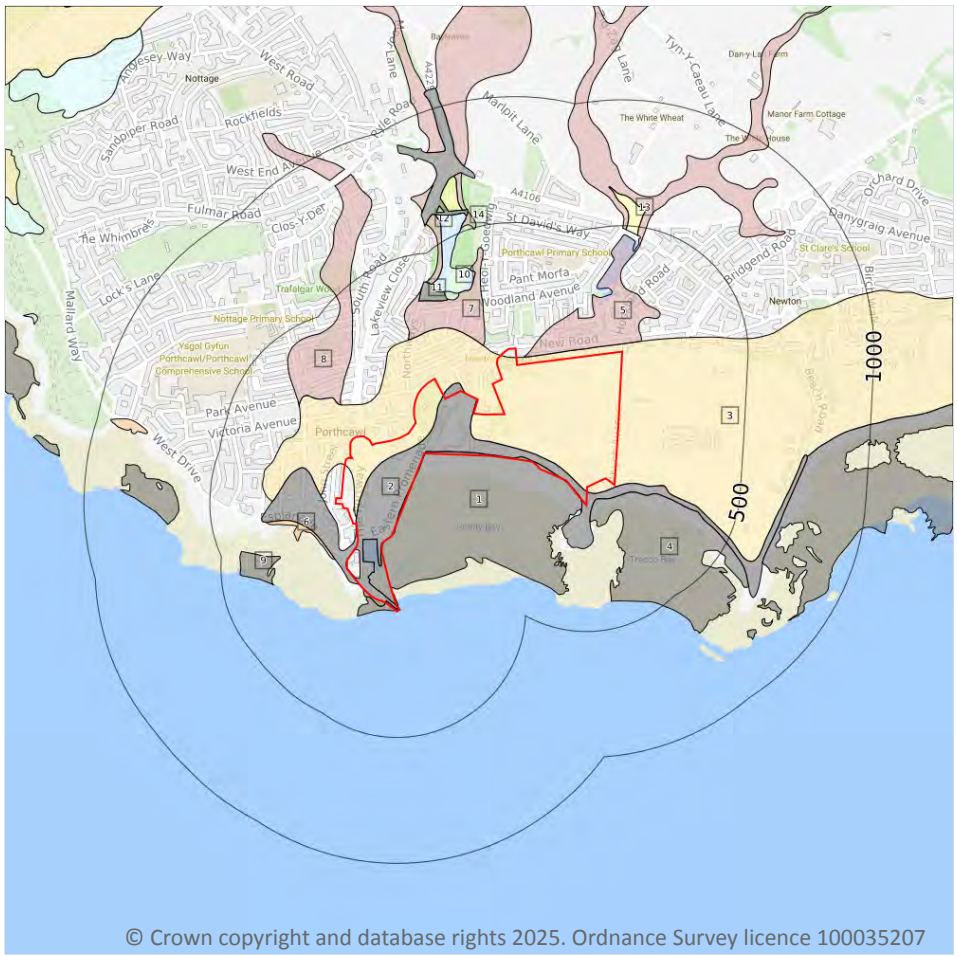
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 90 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MGR-ARTDP**	**Made Ground (Undivided)**	**Artificial Deposit**
2	150m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	306m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



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Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m	14

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 91 >**

ID	Location	LEX Code	Description	Rock description
1	On site	BCHD-S	Beach Deposits - Sand	Sand
2	On site	SUPD-UKNOWN	Superficial Deposits - Unknown/unclassified Entry	Unknown/unclassified Entry
3	On site	BSA-S	Blown Sand - Sand	Sand

ID	Location	LEX Code	Description	Rock description
4	23m E	BCHD-S	Beach Deposits - Sand	Sand
5	27m N	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
6	50m W	STOB-V	Storm Beach Deposits - Gravel	Gravel
7	77m NW	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
8	141m NW	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
9	265m W	BCHD-S	Beach Deposits - Sand	Sand
10	281m NW	SUPNM-UKNOWN	Superficial Theme Not Mapped [for Digital Map Use Only] - Unknown/unclassified Entry	Unknown/unclassified Entry
11	306m NW	SUPD-UKNOWN	Superficial Deposits - Unknown/unclassified Entry	Unknown/unclassified Entry
12	375m N	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
13	466m N	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
14	494m N	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel

This data is sourced from the British Geological Survey.

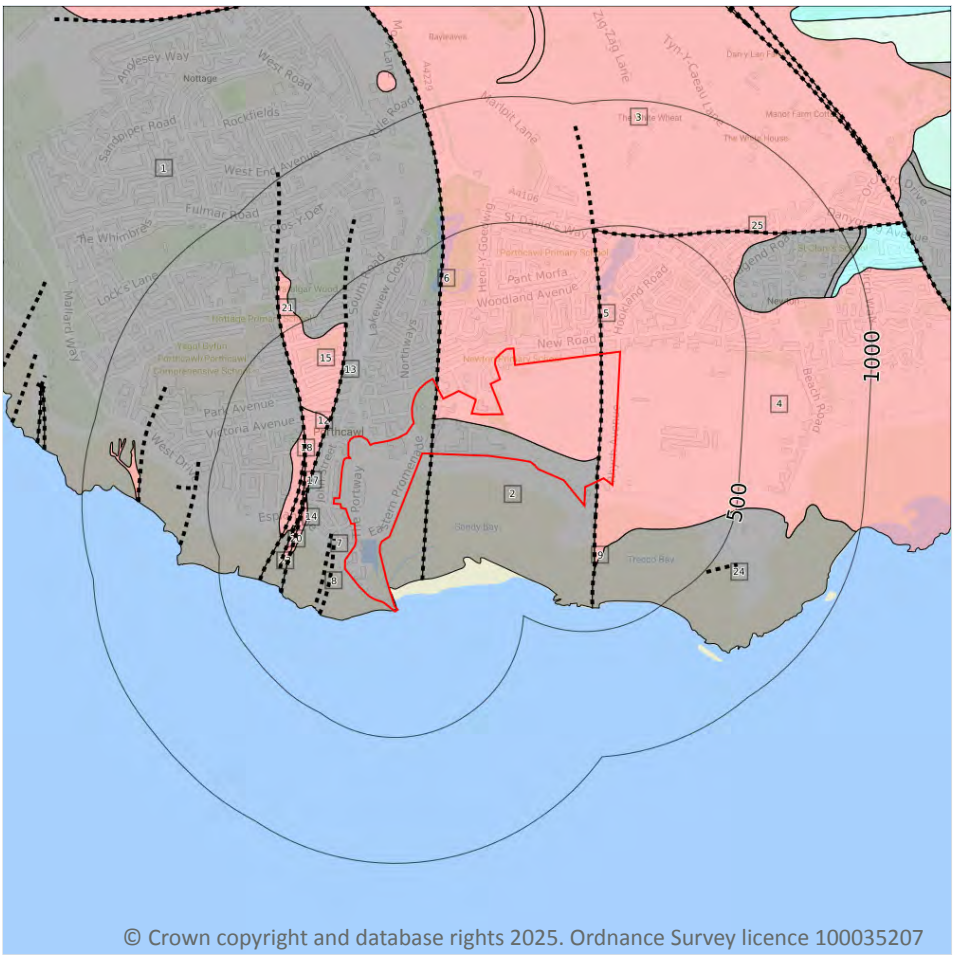
14.4 Landslip (10k)

Records within 500m	**0**

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m	11

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 93 >**

ID	Location	LEX Code	Description	Rock age
1	On site	OHL-LSMD	Oxwich Head Limestone Formation - Interbedded Limestone And Mudstone	Brigantian Age - Asbian Age
2	On site	OHL-LSMD	Oxwich Head Limestone Formation - Interbedded Limestone And Mudstone	Brigantian Age - Asbian Age

ID	Location	LEX Code	Description	Rock age
3	**On site**	**MMMF-CONG**	**Mercia Mudstone Group (marginal Facies) - Conglomerate**	**Triassic Period**
4	**On site**	**MMMF-CONG**	**Mercia Mudstone Group (marginal Facies) - Conglomerate**	**Triassic Period**
12	103m NW	MMMF-CONG	Mercia Mudstone Group (marginal Facies) - Conglomerate	Triassic Period
14	106m W	MMMF-CONG	Mercia Mudstone Group (marginal Facies) - Conglomerate	Triassic Period
15	110m NW	MMG-MDST	Mercia Mudstone Group - Mudstone	Rhaetian Age - Early Triassic Epoch
16	124m W	MMMF-CONG	Mercia Mudstone Group (marginal Facies) - Conglomerate	Triassic Period
18	145m W	MMMF-CONG	Mercia Mudstone Group (marginal Facies) - Conglomerate	Triassic Period
23	178m SW	OHL-LSMD	Oxwich Head Limestone Formation - Interbedded Limestone And Mudstone	Brigantian Age - Asbian Age
24	184m SE	OHL-LSMD	Oxwich Head Limestone Formation - Interbedded Limestone And Mudstone	Brigantian Age - Asbian Age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m **14**

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 93 >**

ID	Location	Category	Description
5	**On site**	**FAULT**	**Normal fault, inferred; crossmarks on downthrow side**
6	**On site**	**FAULT**	**Normal fault, inferred; crossmarks on downthrow side**
7	50m W	FAULT	Normal fault, inferred; crossmarks on downthrow side
8	50m W	FAULT	Normal fault, observed; crossmark on downthrow side
9	57m SE	FAULT	Normal fault, observed; crossmark on downthrow side
10	73m W	FAULT	Normal fault, observed; crossmark on downthrow side

ID	Location	Category	Description
11	75m NW	FAULT	Normal fault, inferred; crossmarks on downthrow side
13	103m NW	FAULT	Normal fault, inferred; crossmarks on downthrow side
17	124m W	FAULT	Normal fault, inferred; crossmarks on downthrow side
19	145m W	FAULT	Normal fault, inferred; crossmarks on downthrow side
20	156m SW	FAULT	Normal fault, observed; crossmark on downthrow side
21	157m W	FAULT	Normal fault, inferred; crossmarks on downthrow side
22	177m SW	FAULT	Normal fault, observed; crossmark on downthrow side
25	464m N	FAULT	Normal fault, inferred; crossmarks on downthrow side

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



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Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 96 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW261_262_sker_point_and_bridgend_v4**

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Artificial and made ground



15.2 Artificial and made ground (50k)

Records within 500m	3

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 97 >**

ID	Location	LEX Code	Description	Rock description
1	On site	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
2	On site	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
3	On site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

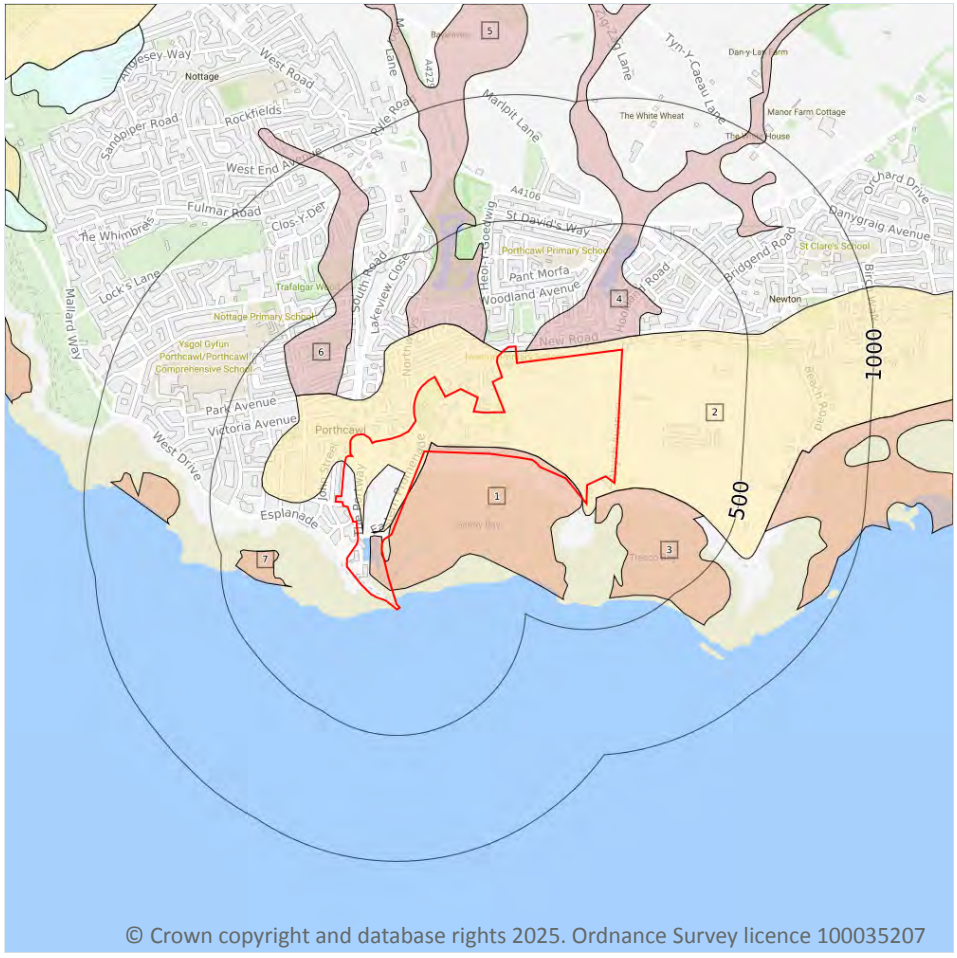
Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**Very High**	**Low**

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



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Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m **7**

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 99 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MBD-S**	**MARINE BEACH DEPOSITS**	**SAND**
2	**On site**	**BSA-S**	**BLOWN SAND**	**SAND**
3	32m S	MBD-S	MARINE BEACH DEPOSITS	SAND

ID	Location	LEX Code	Description	Rock description
4	37m N	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
5	80m NW	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
6	177m NW	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
7	238m W	MBD-S	MARINE BEACH DEPOSITS	SAND

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	**3**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**High**	**High**
32m S	Intergranular	High	High
37m N	Mixed	High	Very Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	**0**

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

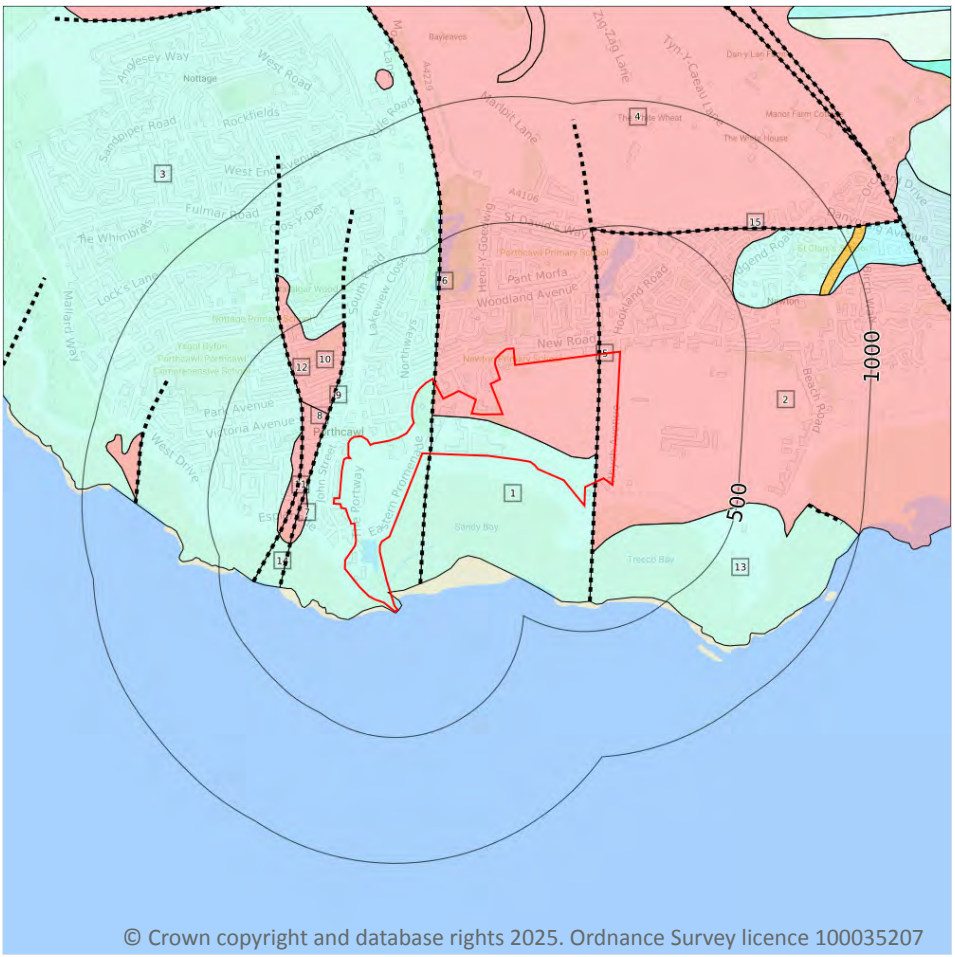
15.7 Landslip permeability (50k)

Records within 50m	**0**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m	10

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 101 >**

ID	Location	LEX Code	Description	Rock age
1	On site	OHL-LMST	OXWICH HEAD LIMESTONE FORMATION - LIMESTONE	VISEAN
2	On site	MMMF-CONG	MERCIA MUDSTONE GROUP (MARGINAL FACIES) - CONGLOMERATE	-
3	On site	OHL-LMST	OXWICH HEAD LIMESTONE FORMATION - LIMESTONE	VISEAN

ID	Location	LEX Code	Description	Rock age
4	**On site**	**MMMF-CONG**	**MERCIA MUDSTONE GROUP (MARGINAL FACIES) - CONGLOMERATE**	**-**
7	104m W	MMMF-CONG	MERCIA MUDSTONE GROUP (MARGINAL FACIES) - CONGLOMERATE	-
8	110m W	MMMF-CONG	MERCIA MUDSTONE GROUP (MARGINAL FACIES) - CONGLOMERATE	-
10	133m NW	MMG-MDST	MERCIA MUDSTONE GROUP - MUDSTONE	-
11	152m W	MMMF-CONG	MERCIA MUDSTONE GROUP (MARGINAL FACIES) - CONGLOMERATE	-
13	161m SE	OHL-LMST	OXWICH HEAD LIMESTONE FORMATION - LIMESTONE	VISEAN
14	227m W	OHL-LMST	OXWICH HEAD LIMESTONE FORMATION - LIMESTONE	VISEAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	**2**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Very High**	**Very High**
On site	**Fracture**	**Very High**	**High**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	**5**

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 101 >**

ID	Location	Category	Description
5	**On site**	**FAULT**	**Fault, inferred, displacement unknown**

ID	Location	Category	Description
6	**On site**	**FAULT**	**Fault, inferred, displacement unknown**
9	110m W	FAULT	Fault, inferred, displacement unknown
12	152m W	FAULT	Fault, inferred, displacement unknown
15	471m N	FAULT	Fault, inferred, displacement unknown

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m	19

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

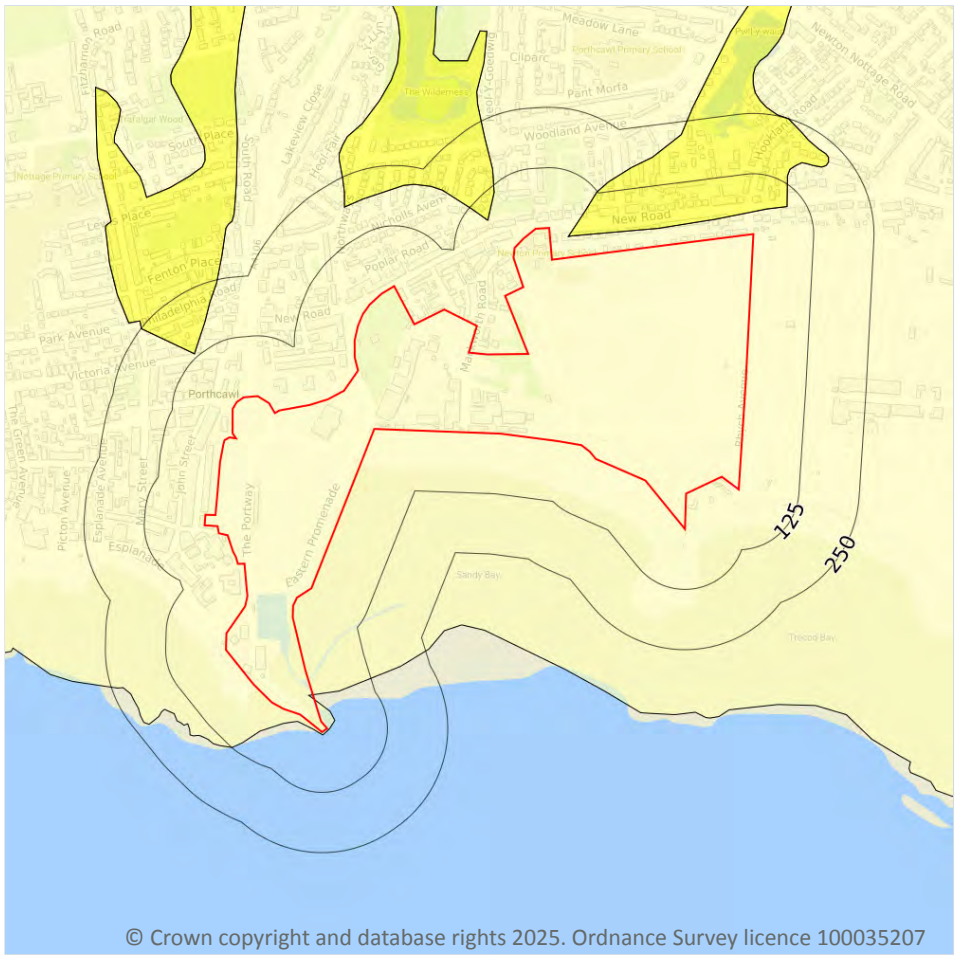
Features are displayed on the Boreholes map on **page 104 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	282600 177000	BRIDGEND SANDY BAY, TRECCO CARAVAN SITE. 1-8	4.5	N	372541 ↗
2	On site	281990 176880	SWIMMING POOL PORTHCAWL 1	10.0	N	372545 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
3	**On site**	**282100 176920**	**SWIMMING POOL PORTHCAWL 3**	**10.0**	**N**	**372547**
4	**On site**	**282090 176950**	**SWIMMING POOL PORTHCAWL 4**	**10.0**	**N**	**372548**
5	**On site**	**281980 176910**	**SWIMMING POOL PORTHCAWL 6**	**10.0**	**N**	**372550**
6	**On site**	**281900 176870**	**PORTHCAWL APPROACH ROAD. NO.1**	**6.55**	**N**	**372553**
A	**On site**	**282030 176900**	**SWIMMING POOL PORTHCAWL 2**	**10.0**	**N**	**372546**
A	**On site**	**282020 176920**	**SWIMMING POOL PORTHCAWL 5**	**10.0**	**N**	**372549**
A	**On site**	**282030 176930**	**GROVE GOLF COURSE, PORTHCAWL**	**15.24**	**N**	**372573**
B	**On site**	**282880 177070**	**PORTHCAWL APPROACH ROAD. NO.2**	**6.88**	**N**	**372554**
B	**On site**	**282900 177080**	**PORTHCAWL APPROACH ROAD. NO.3**	**4.19**	**N**	**372555**
A	5m N	282030 176950	PORTHCAWL APPROACH ROAD. NO.4	4.14	N	372556
7	19m NW	281860 176520	PORTHCAWL. TRIAL PITS	-1.0	N	372560
8	163m W	281640 176710	PORTHCAWL CENTRAL BUILDINGS B1	5.5	N	372570
C	192m W	281610 176680	GRAND PAVILLIAN, PORTHCAWL. NO.1	3.0	N	372542
C	192m W	281610 176680	GRAND PAVILLIAN, PORTHCAWL. NO.2	3.0	N	372543
C	192m W	281610 176680	GRAND PAVILLIAN, PORTHCAWL. NO.3	3.0	N	372544
9	193m W	281610 176710	PORTHCAWL CENTRAL BUILDINGS B2	7.5	N	372571
10	250m NW	281930 177280	THOMAS & EVANS, PORTHCAWL	-	Y	N/A

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.1 Shrink swell clays

Records within 50m	2

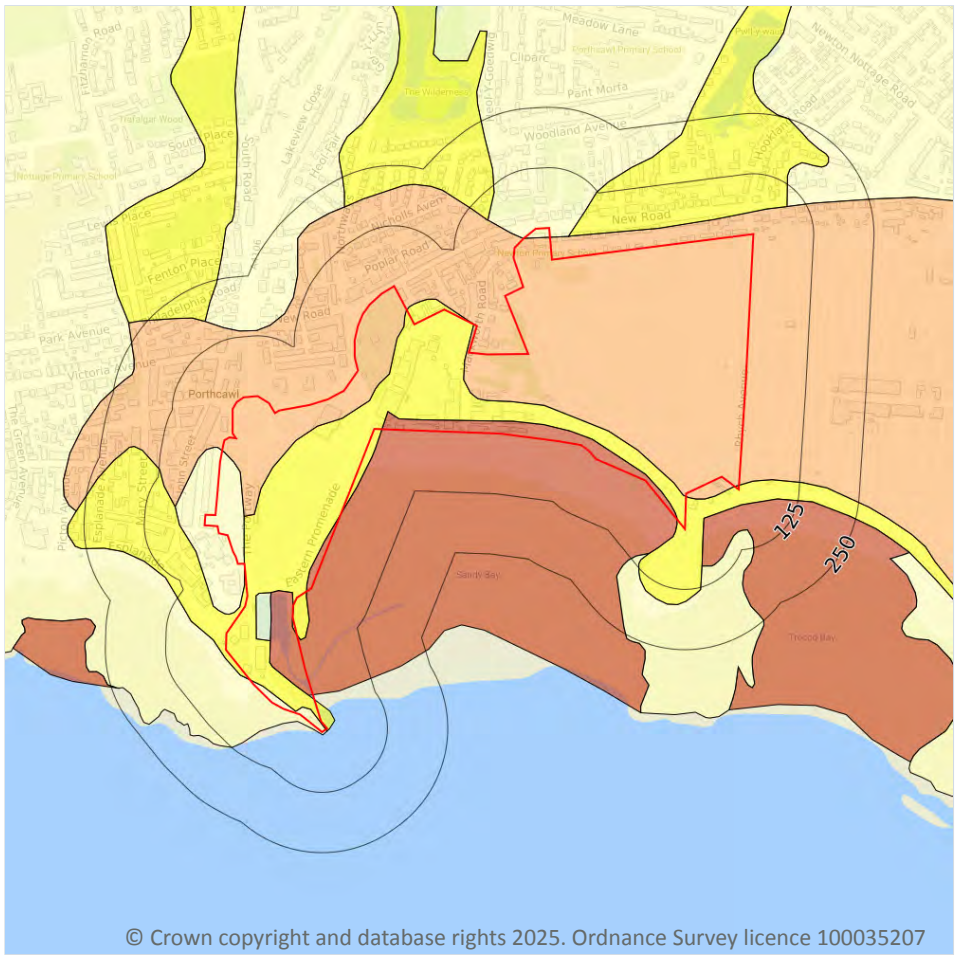
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 106 >**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
37m N	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	6

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 107 >**

Location	Hazard rating	Details
On site	**Negligible**	**Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.**

Location	Hazard rating	Details
On site	**Very low**	**Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.**
On site	**Low**	**Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.**
On site	**High**	**Running sand conditions are almost certainly present. Constraints will apply to land uses involving excavation or the addition or removal of water.**
32m S	High	Running sand conditions are almost certainly present. Constraints will apply to land uses involving excavation or the addition or removal of water.
37m N	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.3 Compressible deposits

Records within 50m	3

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

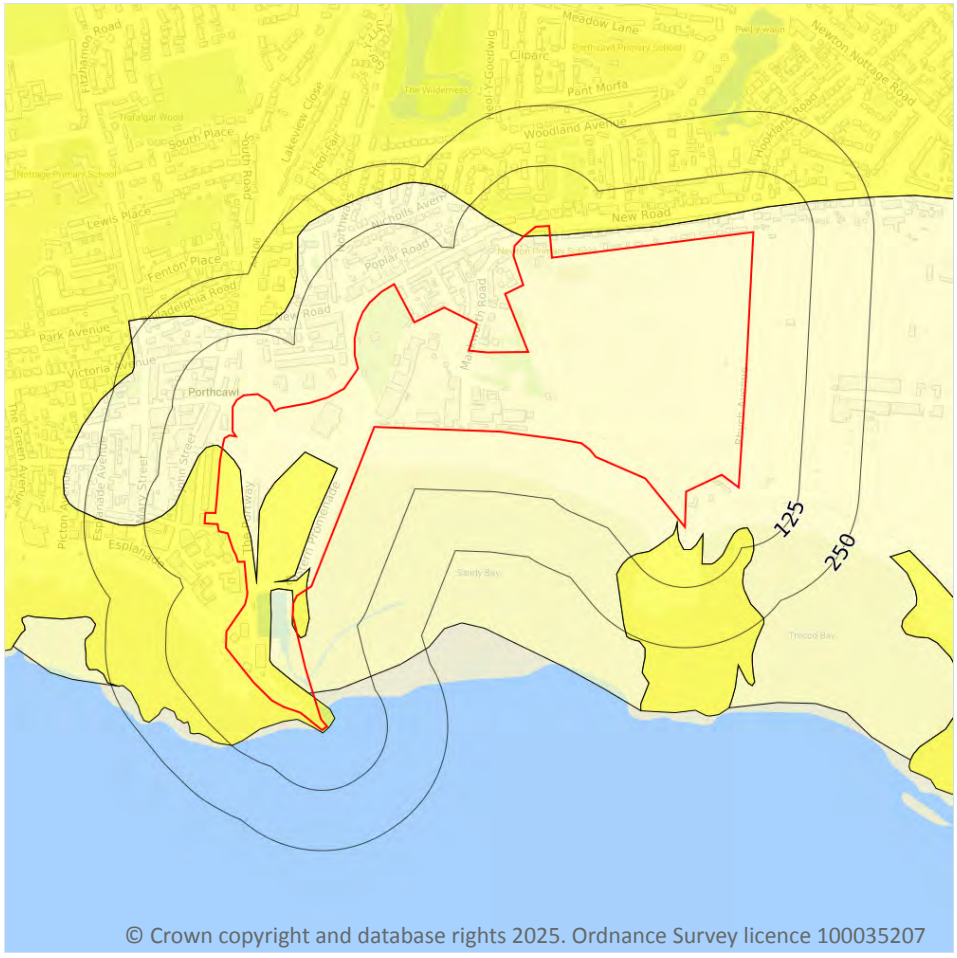
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 109 >**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**
On site	**Very low**	**Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.**

Location	Hazard rating	Details
On site	**Moderate**	**Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m	3

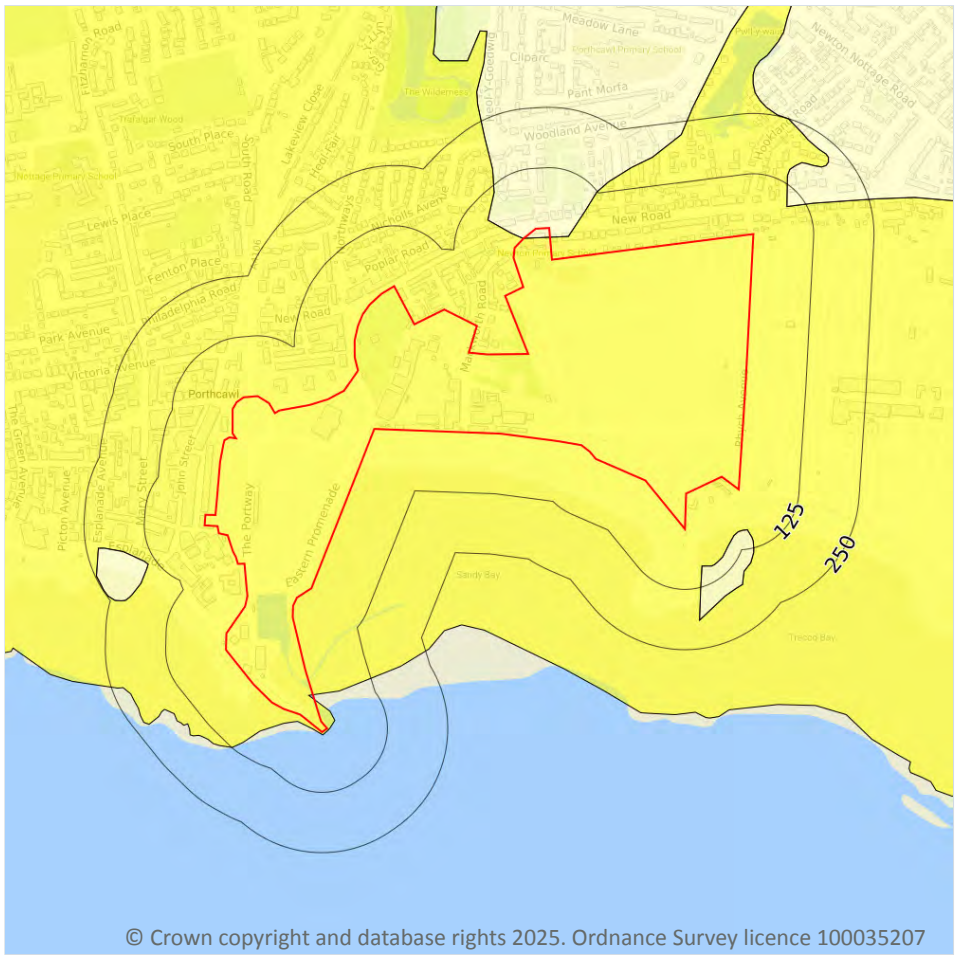
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 111 >**

Location	Hazard rating	Details
On site	**Negligible**	**Deposits with potential to collapse when loaded and saturated are believed not to be present.**
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**
7m SW	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	2

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

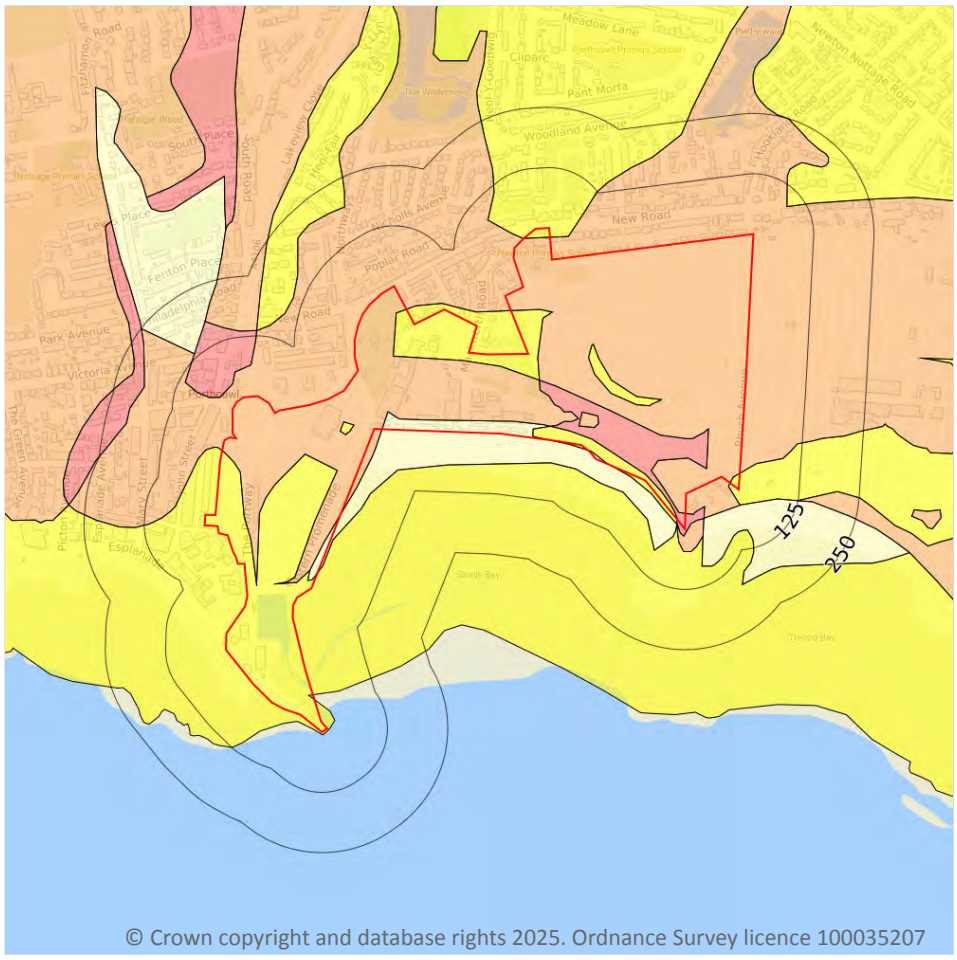
Features are displayed on the Natural ground subsidence - Landslides map on **page 113 >**

Location	Hazard rating	Details
On site	**Negligible**	**Slope instability problems are not thought to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**

Location	Hazard rating	Details
On site	**Very low**	**Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m	7

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

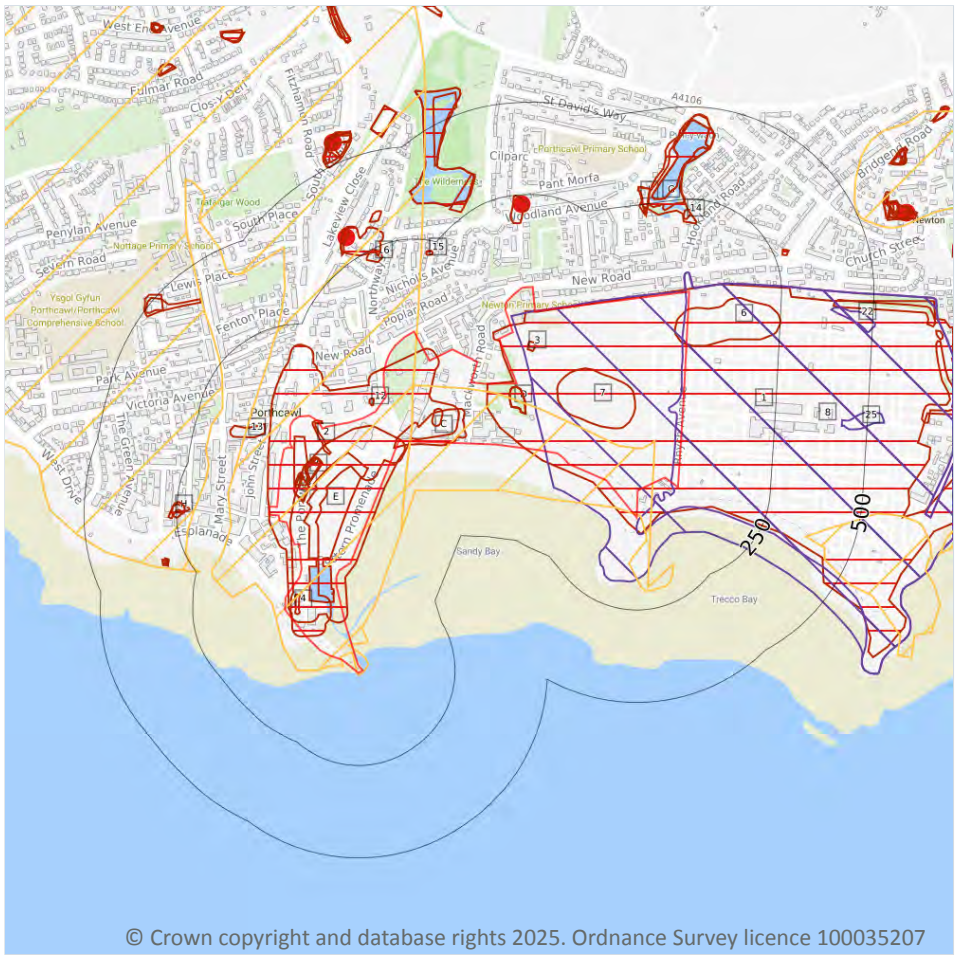
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 115 >**

Location	Hazard rating	Details
On site	**Negligible**	**Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.**

Location	Hazard rating	Details
On site	**Very low**	**Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.**
On site	**Low**	**Soluble rocks are present within the ground. Some dissolution features may be present. Potential for difficult ground conditions are at a level where they may be considered, localised subsidence need not be considered except in exceptional circumstances.**
On site	**Moderate**	**Soluble rocks are present within the ground. Many dissolution features may be present. Potential for difficult ground conditions are at a level where they should be considered. Potential for subsidence is at a level where it may need to be considered.**
5m SE	Low	Soluble rocks are present within the ground. Some dissolution features may be present. Potential for difficult ground conditions are at a level where they may be considered, localised subsidence need not be considered except in exceptional circumstances.
32m NW	Moderate	Soluble rocks are present within the ground. Many dissolution features may be present. Potential for difficult ground conditions are at a level where they should be considered. Potential for subsidence is at a level where it may need to be considered.
32m S	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

This data is sourced from the British Geological Survey.

18 Mining and ground workings



18.1 BritPits

Records within 500m	2

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

Features are displayed on the Mining and ground workings map on **page 117 >**

ID	Location	Details	Description
F	225m N	Name: The Vineries Address: Nottage, BRIDGEND, Mid Glamorgan Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.
J	313m NW	Name: Porthcawl Lime Works Address: Porthcawl, BRIDGEND, Mid Glamorgan Commodity: Limestone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	**35**

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on **page 117 >**

ID	Location	Land Use	Year of mapping	Mapping scale
1	**On site**	**Sand Pits**	**1948**	**1:10560**
2	**On site**	**Unspecified Ground Workings**	**1948**	**1:10560**
3	**On site**	**Unspecified Heap**	**1980**	**1:10000**
4	**On site**	**Pond**	**1969**	**1:10560**
5	**On site**	**Dock**	**1914**	**1:10560**
6	**On site**	**Sand Pit**	**1914**	**1:10560**
7	**On site**	**Unspecified Pit**	**1991**	**1:10000**
A	**On site**	**Unspecified Pit**	**1914**	**1:10560**

ID	Location	Land Use	Year of mapping	Mapping scale
A	**On site**	**Unspecified Pit**	**1948**	**1:10560**
A	**On site**	**Unspecified Ground Workings**	**1900**	**1:10560**
A	**On site**	**Unspecified Pit**	**1947**	**1:10560**
A	**On site**	**Cuttings**	**1969**	**1:10560**
B	**On site**	**Unspecified Pit**	**1914**	**1:10560**
B	**On site**	**Unspecified Pit**	**1884**	**1:10560**
B	**On site**	**Unspecified Ground Workings**	**1900**	**1:10560**
C	**On site**	**Unspecified Heap**	**1884**	**1:10560**
C	**On site**	**Pond**	**1969**	**1:10560**
D	**On site**	**Unspecified Pit**	**1980**	**1:10000**
D	**On site**	**Unspecified Pit**	**1991**	**1:10000**
D	**On site**	**Unspecified Pit**	**1969**	**1:10560**
E	**On site**	**Dock**	**1900**	**1:10560**
E	**On site**	**Dock**	**1884**	**1:10560**
12	15m NW	Unspecified Pit	1884	1:10560
13	68m NW	Unspecified Heap	1884	1:10560
F	174m N	Unspecified Quarry	1900	1:10560
G	185m N	Ponds	1884	1:10560
14	197m N	Pond	1900	1:10560
15	211m N	Pond	1900	1:10560
16	212m NW	Unspecified Quarry	1884	1:10560
H	215m W	Unspecified Pit	1884	1:10560
I	222m N	Pond	1947	1:10560
I	222m N	Pond	1914	1:10560
J	226m NW	Unspecified Quarry	1900	1:10560
G	227m N	Pond	1969	1:10560
H	228m W	Unspecified Ground Workings	1900	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m	0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	4

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

Features are displayed on the Mining and ground workings map on **page 117 >**

ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
8	**On site**	**Newton**	**Not available**	**Not available**	**Not available**	**Not available**
9	**On site**	**Newton point**	**Not available**	**Not available**	**Not available**	**Not available**
22	387m E	Newton	Not available	Not available	Not available	Not available
25	431m E	Newton	Not available	Not available	Not available	Not available

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	6

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites

and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining and ground workings map on **page 117 >**

ID	Location	Name	Commodity	Class	Likelihood
10	**On site**	**Not available**	**Vein Mineral**	**B**	**Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.**
11	**On site**	**Not available**	**Vein Mineral**	**B**	**Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.**
17	243m W	Not available	Vein Mineral	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
21	372m E	Not available	Vein Mineral	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
26	502m NE	Not available	Vein Mineral	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
30	730m E	Not available	Vein Mineral	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m	0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

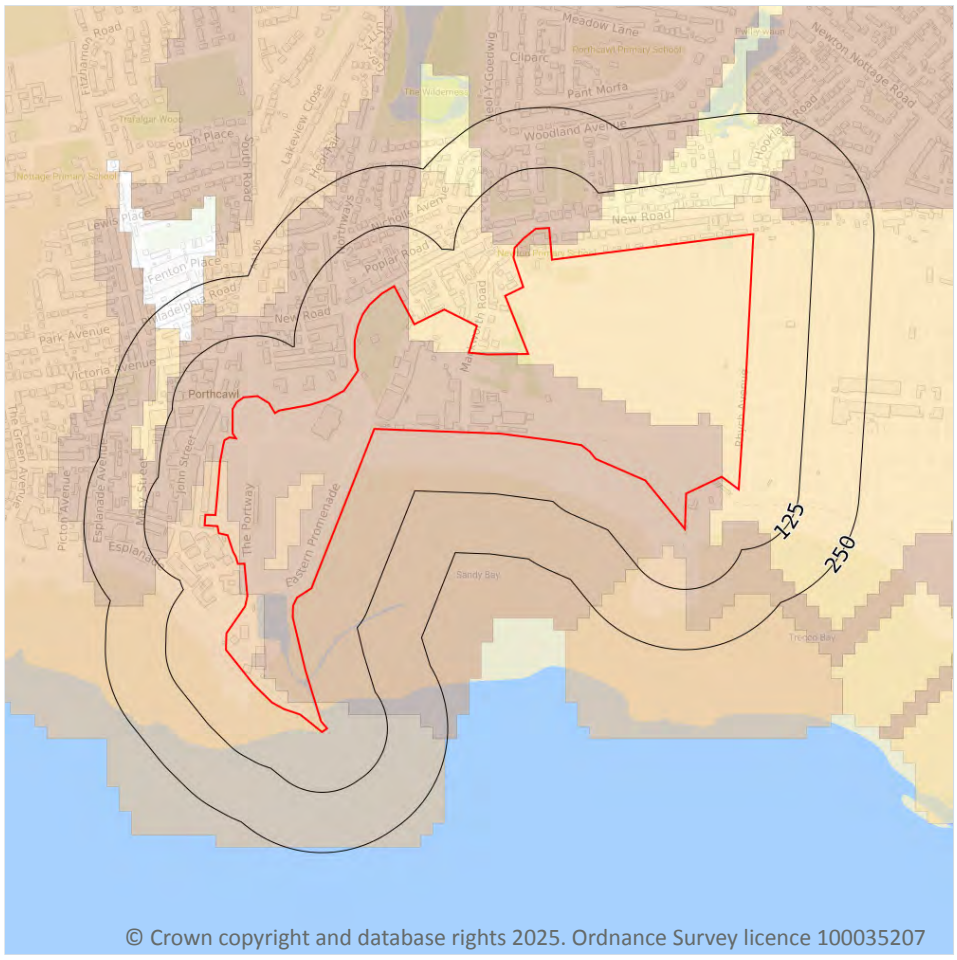
Records within 500m	0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.

This data is sourced from Groundsure.

20 Radon



Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

20.1 Radon

Records on site	3

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on **page 126 >**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 5% and 10%**	**Basic**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 3% and 5%**	**Basic**
On site	**Between 10% and 30%**	**Full**

This data is sourced from the British Geological Survey and UK Health Security Agency.

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m	38

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km^2. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km^2; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**50 - 100 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**50 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**50 - 100 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**50 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**50 - 100 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**50 - 100 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
4m E	15 - 25 mg/kg	No data	100 - 200 mg/kg	50 - 100 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
18m SW	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
32m S	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
37m N	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
40m N	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
40m N	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
40m N	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m	**0**

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m	**0**

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects



Site Outline

Search buffers in metres (m)

- Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

22.1 Underground railways (London)

Records within 250m	0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	22

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on **page 131 >**

Location	Land Use	Year of mapping	Mapping scale
On site	**Railway Sidings**	**1948**	**10560**
On site	**Railway Sidings**	**1884**	**10560**
On site	**Railway Sidings**	**1914**	**10560**
On site	**Tramway Sidings**	**1914**	**10560**
On site	**Railway Sidings**	**1947**	**10560**
On site	**Railway Sidings**	**1900**	**10560**
On site	**Mineral Railway Sidings**	**1980**	**10000**
On site	**Mineral Railway Sidings**	**1991**	**10000**
On site	**Railway Sidings**	**1943**	**2500**
On site	**Railway Sidings**	**1919**	**2500**
On site	**Railway Sidings**	**1880**	**2500**
On site	**Railway Sidings**	**1899**	**2500**
On site	**Tramway Sidings**	**1919**	**2500**
On site	**Railway Sidings**	**1965**	**2500**
On site	**Railway Sidings**	**1966**	**2500**
40m N	Railway Sidings	1966	2500
221m NW	Railway Sidings	1914	10560

Location	Land Use	Year of mapping	Mapping scale
235m NW	Railway Sidings	1919	2500
241m NW	Tramway Sidings	1900	10560
244m NW	Tramway Sidings	1899	2500
245m NW	Railway Sidings	1947	10560
246m NW	Railway Sidings	1884	10560

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	2

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

Features are displayed on the Railway infrastructure and projects map on **page 131 >**

Location	Description
On site	**Historical OSM**
On site	**Razed**

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 2

Records within 500m	0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.9 HS2

Records within 500m	0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference ↗.

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UNEXPLODED BOMB RISK MAP

SITE LOCATION

Location: CF36 5TS,
Map Centre: 282093,177026



This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- **High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- **Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- **Low:** Areas indicated as having 15 bombs per 1000acre or less.

Miltary | **Industry** | **UXO find** | **Other**
Transport | **Docks** | **Luftwaffe targets**
Utilities | **Bombing decoy** | **Airfields**

How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density.
Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then additional detailed research is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our pre-desk study assessments (PDSA) by emailing a site boundary and location to pdsa@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 **email:** uxo@zetica.com **web:** www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the accompanying notes on our website.

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgement. The copyright remains with Zetica Ltd.

Appendix E Climate change considerations for CSM



With every community, we redefine what's possible.

Appendix 12.2 - Due Diligence Review

Technical design note

Project name	Porthcawl Harbourside		
Design note title	Multi-Disciplinary Due Diligence Review		
Document reference	32485-HYD-XX-XX-RP-X-0100		
Author	Richard Baker, George Hadler, Lizzie Clark, Kurt Gilmore, Tom Quaife-Jones		
Revision	P02		
Date	10 September 2024	Approved	✓

1. Introduction

This Technical Note has been produced to provide a high-level review of the previous technical work which has been produced in support of the proposed master planning development at Porthcawl Harbourside, Bridgend County Borough Council (BCBC). This Technical Note considers the following disciplines:

- Civil Engineering;
- MEP;
- Transport;
- Geo-Environmental; and,
- Acoustics

The proposed regeneration site is located within Porthcawl, on the south coast between Cardiff and Swansea. The site is within 5 miles of M4 Junction 37 and is connected to it by the A4229. It lies between the Harbour and Trecco Bay, approximately 380 metres miles east of Porthcawl town centre.

The site covers an area of approximately 38ha and is currently used mainly as car parks, a former caravan park, recreation space and a fun fair. The regeneration site is proposed in two phases: Phase 1 Salt Lake and Phase 2 Sandy Bay. The land uses proposed within each Phase will comprise:

- Phase 1: A food store, residential units, leisure land uses (such as a hotel) and supporting commercial uses. A 'Bus Terminus' is proposed adjacent to the food store with would connect the regeneration site with Porthcawl town centre and the wider hinterland.
- Phase 2: Public open space, residential units and commercial.

Porthcawl Waterfront is allocated as a key development site in the Bridgend Replacement Local Development Plan (LDP) 2018 to 2033 (2033 Plan).

2. Civil Engineering

2.1 Existing Drainage

The document "*Porthcawl Waterside Regeneration Area - Infrastructure Plan July 2023*" produced by ASL for BCBC has been reviewed as part of this masterplan re-cap exercise. In terms of drainage, this report presents the general findings and advice contained within the 2020 Redstart drainage strategy, ref. "*Porthcawl Waterfront Regeneration Area : LDP Drainage Strategy Report 5/11/20*", which is where most of the technical detail lies. Both documents are still relevant and applicable to this day, particularly the existing significant drainage infrastructure pipework that passes through several of the parcels of land under review.

Even with the Harbour, Eastern Promenade and Aldi store completed since that report was produced, much of the existing large diameter DCWW sewerage, BCBC drains and private drains remain in place, so their presence and easement constraints must be considered and reflected in an updated constraints plan, parameters plan and the masterplan layout itself.

Some larger sewer diversions that are proposed within the drainage strategy are technically possible, to limit the impact on the layout design, but may be cost prohibitive. Further consideration of this

A good start for this is the considering of the Redstart existing drainage drawing ref GC3432-REE-73-XX-SK-D-0002.

A detailed exercise is required to confirm the current status of the main existing drainage infrastructure, which will confirm which items have to be retained in place with corresponding easements applied, or can be removed, diverted or built over, to enable a more detailed masterplan to be assembled. An enhanced mapping, survey and drawing exercise is required to form a fixed and reliable and constraints plan that will be reflected within the updated masterplan layouts. Survey work will need to be undertaken, but limited to a reasonable level without causing excessive disruption, reinstatement implications or overall cost.

2.2 Proposed Surface Water Drainage and SuDS Strategy

The Porthcawl Waterside Regeneration Area - Infrastructure Plan July 2023 and the 2020 Redstart drainage strategy are already reasonably detailed and includes some allowance for the SuDS legislation and sets out target strategies for each land parcel; including ones that have since been completed (Harbour, Eastern Promenade and Aldi). The general principles are that surface water discharges are either to Harbour, sea, large diameter existing surface water drainage, or in the case of Sandy Bay east, is mainly via infiltration into the ground via large open SuDs infiltration features.

Water Quantity (water storage, attenuation and the associated land-take of those features) is not considered a major constraint for the majority of the masterplan area, as much of it will be an unrestricted discharge to the harbour or sea. A SuDs management train, through the use of soft SuDs features, in conjunction with permeable paving and possibly green roof space will be required to comply with the other mandatory SuDs standards. 100% roof and paved areas without useful landscape/SuDs zones directly alongside to drain into will struggle to receive SAB approval at a later stage, mainly due to water quality and possible interception criteria shortfalls. Good space, consistent and distributed SuDS space allowances will need to be made within the masterplan layout, in conjunction with the hard and soft landscape strategy

Where infiltration drainage is expected to be the primary means of water disposal, this is less of an issue within the body of the development plots, but more reliance on shared infiltration basins, which need to be considered and planned-in early on. Considering their larger land-take and specific location placement to suit upstream drainage, these features need to be sized and positioned (in general terms) at an early stage. A *"SuDS Zoning Assessment and Plan"* is required to as part of the SuDS constraints plan, to be considered within the masterplan.

In terms of masterplanning consideration, for most of the masterplan area, a typical allowance for open landscape strips adjacent to the drained areas (including roads) is recommended to enable future compliance. The main impact on the masterplan, in terms of land-take, is where larger infiltration basins will need to be included (Sandy Bay East), which is also indicated loosely in the Redstart drainage strategy, but their positions are flexible and function more reliably if kept as single larger bodies rather than split into many smaller units. This is different to the normal rain garden approach, where there are many and spread through the layout is

generally better, but here, the use of infiltration means that some of the SuDs criteria are complied with by default, due to infiltration drainage usage.

2.3 Proposed Foul Water Drainage Strategy

The document "Porthcawl Waterside Regeneration Area - Infrastructure Plan July 2023" produced by ASL for BCBC has been reviewed as part of this masterplan re-cap exercise. In terms of drainage, this report presents the general findings and advice contained within the 2020 Redstart drainage strategy, ref. "Porthcawl Waterfront Regeneration Area : LDP Drainage Strategy Report 5/11/20", which is where most of the technical detail lies. Both documents are still relevant and applicable to this day, particularly the general limitations in foul water sewerage capacity and the significant existing drainage infrastructure pipework that passes through several of the parcels of land under review.

The general principles and proposals of the 2020 Redstart drainage strategy on the foul drainage aspects remain largely relevant. In terms of high-level masterplanning, aside from existing drainage constraints, the infrastructure requirements for new foul drainage do not cause a major impact to the masterplan layout, as the vast majority of the new infrastructure will be below ground. There will need to be some review of key new sewer routes, which will need to have easements allowed for within the masterplan layout; but those can be directed towards roads and open spaces, as long as the proposed ground levels are compatible. Some catchments across the masterplan area will require a pumping station; a relatively small space for which should ideally be considered in the masterplan at the appropriate stage to avoid adverse visual impact.

This masterplan due diligence exercise and technical note is intended to highlight the major factors that need to be investigated, refined and defined on the masterplan layouts during the next stages of work.

The previous drainage strategy included the confirmation by DCWW that overall capacity does not exist within their wider sewerage network and that hydraulic modelling is required to determine capacity within the wider network before planning applications were made. This is the single most fundamental point that remains valid and must be undertaken during the next stage to identify what the potential full sewerage infrastructure strategy and associated costs are likely to be.

2.4 Levels constraints

The document "Porthcawl Waterside Regeneration Area - Infrastructure Plan July 2023" produced by ASL for BCBC has been reviewed, which contains assessments of levels constraints and suggested high level strategies to overcome existing levels constraints within some of the affected masterplan development parcels.

A key aspect to consider during the next stage of masterplanning work is plot and parcel levels, particularly against the requirements for highway and pedestrian access and tie-ins to existing properties and fixed land boundaries. To date, previous studies undertaken that exercise to a limited degree, to prove certain adjacencies, boundaries in general terms, but further work is needed to properly identify the true developable land extent and to overcome some of the more major level differences across various plots. One key example is the Griffin Park level against that of the Coney Beach amusement area plateau level, where a 4m road rise needs to be gained across Griffin Park, which is relatively narrow, which will then cause levels transition constraints well into the Coney Beach (Sandy Bay West) Plot. There is also a levels constraint posed by Mackworth Road and existing properties, particularly at the Buccaneer end.

The Salt Lake plots are set lower than the surrounding road and promenade, which can be resolved and even open up an opportunity for useful development proposals (parking etc.), providing flood risk protection is robust.

An improved development levels review exercise is required along the strategic road routes, boundaries and considering the flood defence work.

2.5 Flood risk and erosion protection

The following main documents that have been reviewed as part of this due diligence exercise are:

- Arup report "*Porthcawl Sandy Bay Coastal Risk Management : Coney Beach Coastal Defence Revetment Basis of Design, 23 November 2022*"
- "*Porthcawl Waterside Regeneration Area - Infrastructure Plan July 2023*" produced by ASL for BCBC

This predominantly applies to the Sandy Bay frontage, the extent of structure, placement, levels and form has been well described by Arup in their study.

Following a recent presentation meeting with Arup as part of this due diligence exercise, they described the general proposals, fixed principles and some aspects that could potentially be varied, but would risk trigger re-work in that study.

The feasibility of building out some pockets of the level promenade over the stepped revetment to increase developable width and design flexibility through that zone was discussed and was one of the examples where some re-work to consider its impact and performance is likely to be required. The cost impact of this work at the next stage, compared to the gain in public realm space quality may be worth considering as worthwhile piece of work.

Further support can be given on this topic once masterplan and public realm proposals for the beach frontage development are more advanced. There will be a need to determine whether the previous study will need to be updated to suit an alteration to the proposals, if they affect hydraulic performance or cause durability risks.

3. MEP

3.1 Utility Capacities Commentary

3.1.1 Domestic Water - Dwr Cymru Welsh Water

Dwr Cymru Welsh Water (DCWW) own the mains water network for the site. The utility maps discussed later in this section of the report present connection opportunities for the varying areas of the Porthcawl Waterfront Regeneration. The Regeneration Infrastructure Plan 2023 has approximate water loadings for the different areas as follows:

- Salt Lake South - 24000l daily demand;
- Salt Lake Central - 86400l daily demand;
- Salt Lake North - 21240l daily demand;
- Sandy Bay West - 111600l daily demand;
- Sandy Bay East - 219960l daily demand;
- Griffin Park - 7000l daily demand;

Please note it is recommended the above demand values should be reviewed and revised prior to any utility company engagement to ensure the most up-to-date figures are reflected.

As the Infrastructure Report suggests, it is recommended a Hydraulic Modelling Assessment (HMA) is carried out by DCWW. The HMA is a desktop study carried out by DCWW by measuring flows on site and assessing with the predicted additional loads provided similar to above. This study shall inform any network constraints, risks and potential upgrades required. There is a fee associated with the HMA, however it can be carried out prior to planning being granted and is therefore definitely recommended for large scale developments such as Porthcawl Waterfront Regeneration.

3.1.2 Power - National Grid

National Grid Electricity Distribution (NGED) own the electrical power network for the site. The utility maps discussed later in this section of the report show buried utility owned cable routes throughout the site and sub-stations which should be considered for relocation / diversion.

The Regeneration Infrastructure Plan 2023 has approximate power loadings for the different areas as follows:

- Salt Lake South - 250kW
- Salt Lake Central - 1800kW
- Salt Lake North - 445kW
- Hillsboro Car Park - 15kW
- Sandy Bay West - 2330kW
- Sandy Bay East - 4580kW
- Electrical Vehicle Charging - 9650kW
- Griffin Park - 150kW

Please note it is recommended the above demand values are indicative for this report only and should be reviewed and revised prior to any utility company engagement to ensure the most up-to-date figures are reflected.

For large scale developments utilising all electric heating (due to the industry trend to avoid natural gas) and electric vehicle charging, available electrical power carries high risk and potential costs. It is highly recommended therefore an NGED 'Network Study' is carried out. This is a desktop study which assesses the proposed additional loads against the existing infrastructure in the area. This can inform of any potential reinforcement works required in the network to accommodate the additional loads.

The Network Study does come at a fee, and will only be valid at the point NGED carries out the study, meaning it will have to be revised when the project comes to site and the power supplies are due to be installed. Nevertheless, the Network Study is still recommended at this stage to understand any power associated risks to the project.

One of the largest contributors to electrical infrastructure load is electrical vehicle (EV) charging. The 2023 Infrastructure Report suggests approximately 10% of all spaces to have EV charging functionality. Whilst this is a standard figure for EV charging allocation, this should be reviewed with the wider team prior to engagements with NGED due to the high impact it has on the electrical loads and to ensure an accurate use of the proposed site is assessed in the Network Study.

Liaisons with NGED will also inform of any potential on-site generation export limitations. It is likely all proposed buildings within the Porthcawl Waterfront Regeneration will have an allocation of photovoltaics (PV) panels for compliance with Welsh Building Regulations Part L, so any network export caps and associated risks should be understood early.

3.1.3 Natural Gas - Wales & West Utilities

Wales & West Utilities (WWU) own the natural gas network for the site. The utility maps discussed later in this section of the report show buried utility owned gas pipework throughout the site which should be considered for relocation / diversion.

Overall from a capacities perspective, it is not envisioned for new gas connections to be provided for the development. This is due to the recent revision of Welsh Building Regulations Part L, which heavily penalises developments proposing natural gas powered heating systems. Instead, all heating and hot water generation is expected to be via clean all electric sources, such as air source heat pump or similar.

3.2 Utility Map Overview: Hillsboro and Salt Lake

3.2.1 Natural Gas - Wales & West Utilities

According to Wales & West Utilities infrastructure maps, there is minimal buried utility owned natural gas services within the Hillsboro and Salt Lake proposed footprint. There could still however be privately owned gas pipework distributing beneath the site (not shown on the utility map), which would need further survey works to verify.

There is a low pressure gas mains which distributes buried in the road along the Eastern Promenade. This should be considered if any works are proposed to this road as part of the project scope of works.

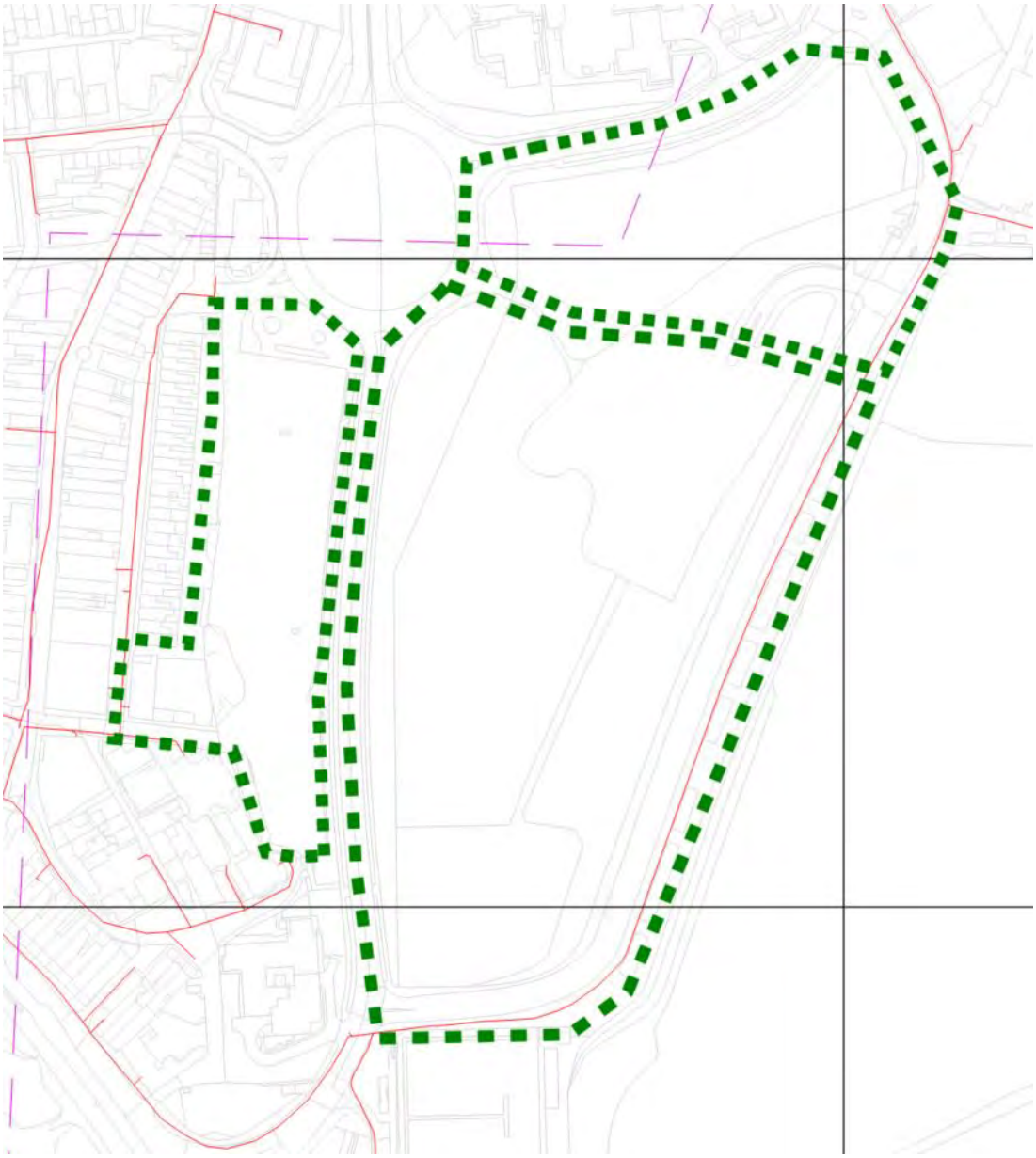


Figure 3.1: WWU Asset Map of Hillsboro and Salt Lake Areas (Green denotes project demise boundary. Red denotes Medium Pressure Gas Mains)

3.2.2 Electrical Power - National Grid

There are several buried electrical services owned by National Grid below the Hillsboro and Salt Lake footprints. Most notably, there appears to be two electrical substations (highlighted on the plan below). One is positioned to the south of the Hillsboro plot and the other to the boundary of Salt Lake North. Depending on the proposed works, these substations would need to be either protected or otherwise relocated in co-ordination with National Grid.

From the utility map, it can be seen LV services enter the Salt Lake boundary. These cannot be traced further within the project boundaries from the utility maps, therefore a buried services scan is required to fully understand buried services routes.

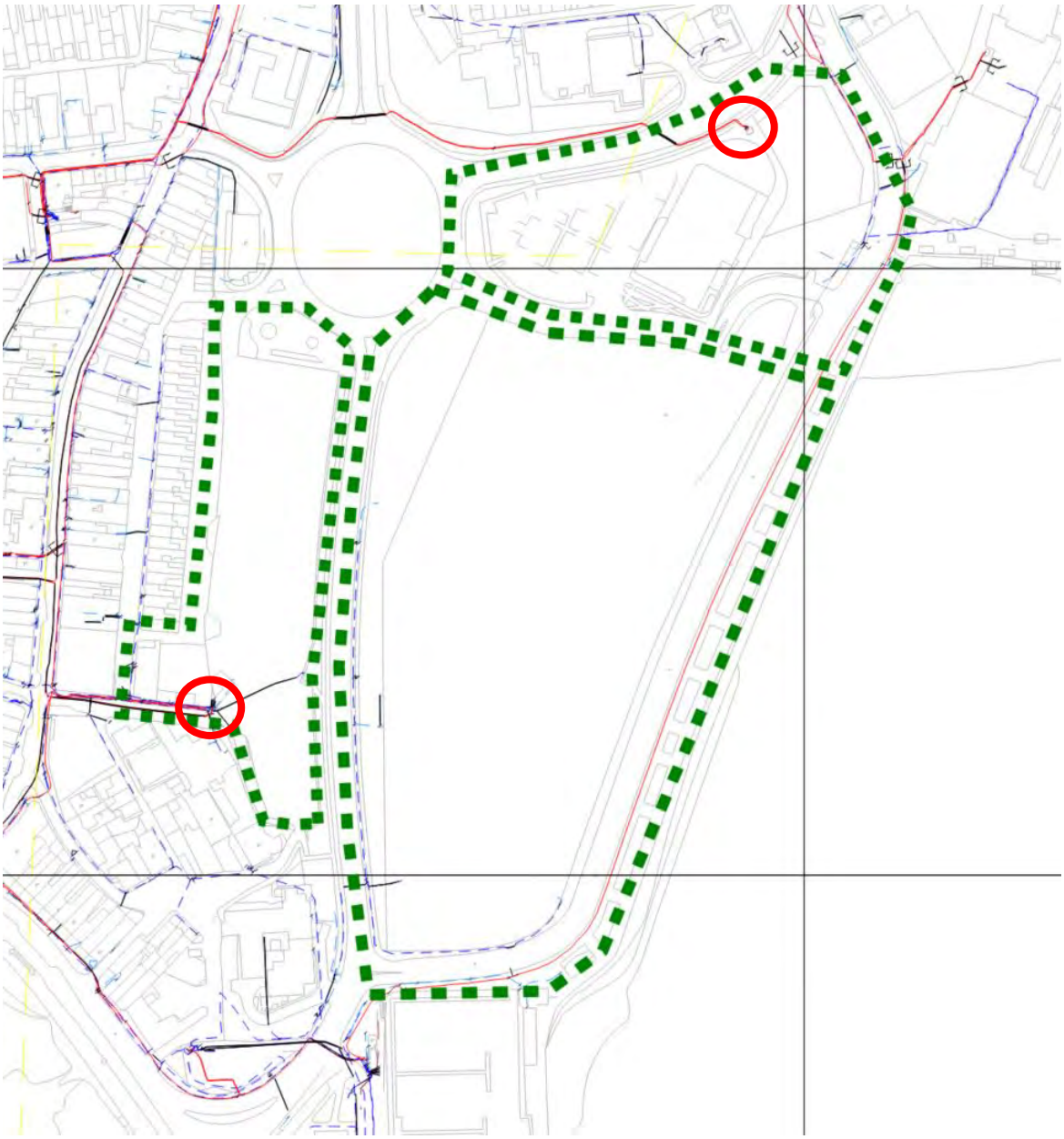


Figure 3.2: National Grid Asset Map of Hillsboro and Salt Lake Areas (Green denotes project demise boundary. Red denotes 11kV HV Mains. Blue Denotes LV Mains and Red Circles Highlight Electrical Sub-stations)

3.2.3 Domestic Water - Dwr Cymru Welsh Water

There is local mains water utility infrastructure in the vicinity of the Hillsboro and Salt Lake demise. Notably there is a 10" cold water main distributing along The Portway and a 6" main distributing along the north of the Eastern Promenade. Several fire hydrants also appear to be served by these supplies.

Utility maps from DCWW only show pipework up to site boundaries, therefore any existing buried pipework within the proposed project demises will need buried services surveys to fully understand.

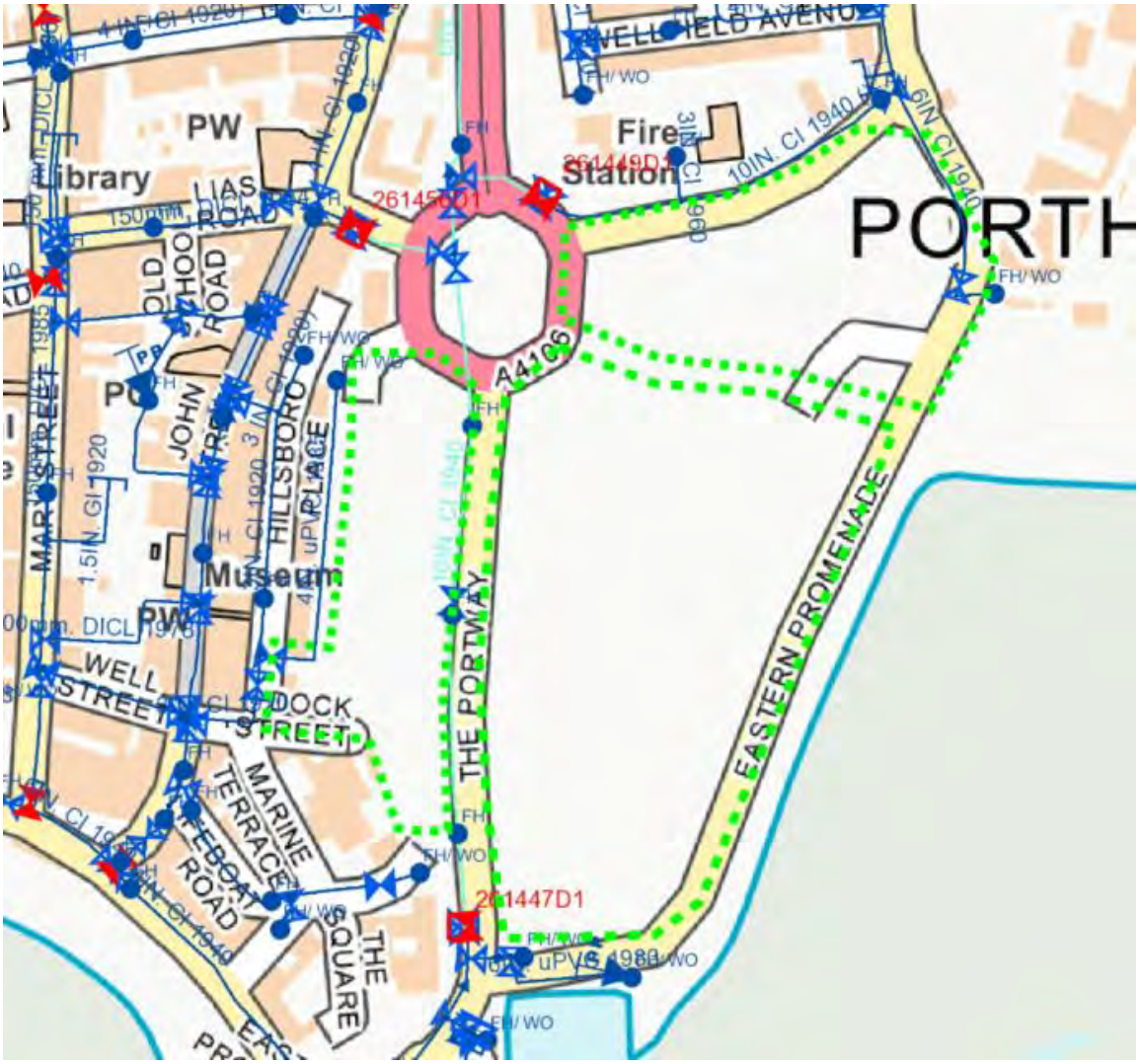


Figure 3.3: DCWW Asset Map of Hillsboro and Salt Lake Areas (Green denotes project demise boundary. Blue denotes buried MCWS supply)

3.3 Utility Map Overview: Sandy Bay West

3.3.1 Natural Gas - Wales & West Utilities

According to Wales & West Utilities infrastructure maps, there is minimal buried utility owned natural gas services within the Sandy Bay West footprint. There is a utility owned low pressure gas mains distributing along the south of the site on the boundary to the beach.

It is expected however for there to be privately owned gas pipework distributing beneath the site (not shown on the utility map), in particular to serve the Griffin Park Community Centre and buildings within the Coney Beach Amusement Park. Buried services within these areas would need further survey works to verify.



Figure 3.4: WWU Asset Map of Sandy Bay West (Green denotes project demise boundary. Red denotes Medium Pressure Gas Mains)

3.3.2 *Electrical Power - National Grid*

There are several buried electrical services owned by National Grid below the Sandy Bay West footprint. Most notably, there appears to be an electrical substation (highlighted on the plan below) near the southern side of the site footprint. From a review of the potential proposals for Sandy Bay West, it is envisioned this sub-station would need to be stripped out in co-ordination with National Grid.

The utility maps provided by National Grid do not shown private distributing services within the project boundary, however it is predicted for a several buried electrical services to exist within Griffin Park and Coney Beach Amusement Park. A buried services scan is required to fully understand buried services routes within these areas.

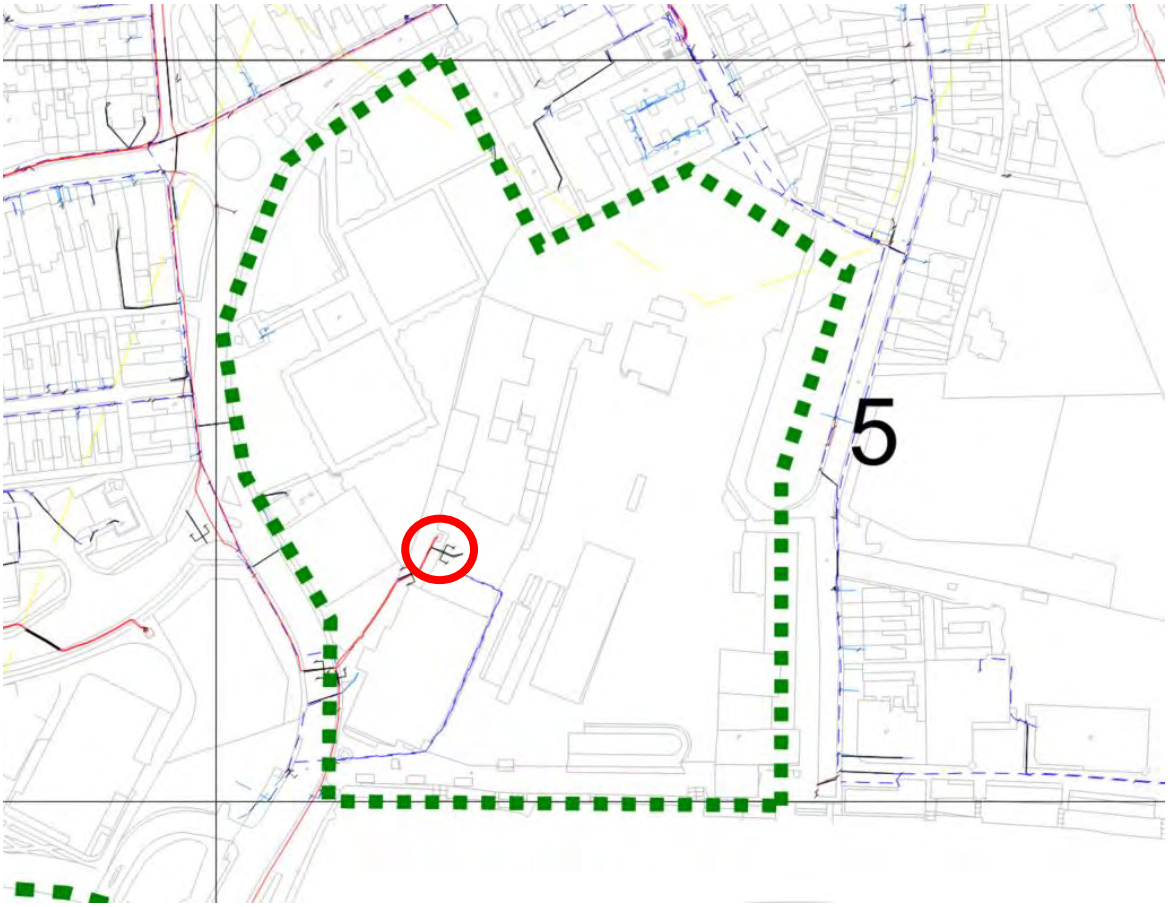


Figure 3.5: National Grid Asset Map of Sandy Bay West (Green denotes project demise boundary. Red denotes 11kV HV Mains. Blue Denotes LV Mains and Red Circles Highlight Electrical Sub-stations)

3.3.3 *Domestic Water - Dwr Cymru Welsh Water*

There is local mains water utility infrastructure in the vicinity of the Sandy Bay West demise. Notably there is a 6" cold water main distributing along just outside the western and northern perimeters of the site, along the Eastern Promenade and New Road respectively. A 3" cold water mains also distributes along the eastern boundary of the site along Mackworth Road. Several fire hydrants are served by the cold water mains described above.

Utility maps from DCWW only show pipework up to site boundaries, therefore any existing buried pipework within the proposed project demises will need buried services surveys to fully understand.

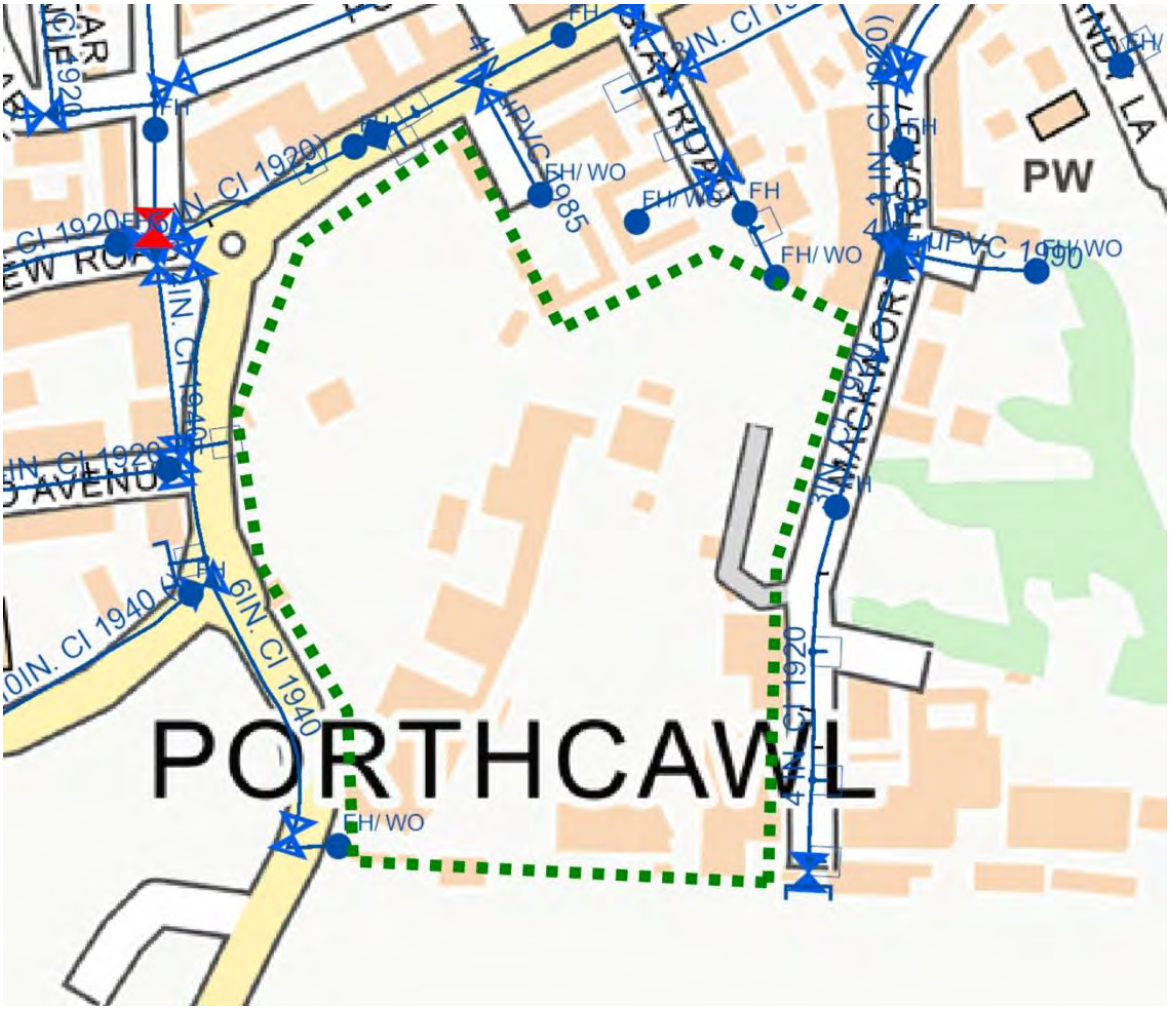


Figure 3 6: DCWW Asset Map of Sandy Bay West (Green denotes project demise boundary. Blue denotes buried MCWS supply)

3.4 Utility Map Overview: Sandy Bay East

3.4.1 Natural Gas - Wales & West Utilities

According to Wales & West Utilities infrastructure maps, there is minimal buried utility owned natural gas services within the Sandy Bay East footprint. There could still however be privately owned gas pipework distributing beneath the site (not shown on the utility map).



Figure 3.7: WWU Asset Map of Sandy Bay East (Green denotes project demise boundary. Red denotes Medium Pressure Gas Mains)

3.4.2 *Electrical Power - National Grid*

There are several buried electrical services owned by National Grid below the Sandy Bay East footprint. Most notably, there appears to be some form of electrical substation (highlighted on the plan below) to the east of the site near Rhych Avenue. From a review of the potential proposals for Sandy Bay East, it is envisioned this sub-station would need to be stripped out or relocated in co-ordination with National Grid.

There is 11kV high voltage infrastructure distributing through the site, including along Sandy Lane and along the south perimeter of the demise. There is also several instances of buried low voltage infrastructure distributing through the site. A buried services scan is required to fully understand buried services routes within these areas.

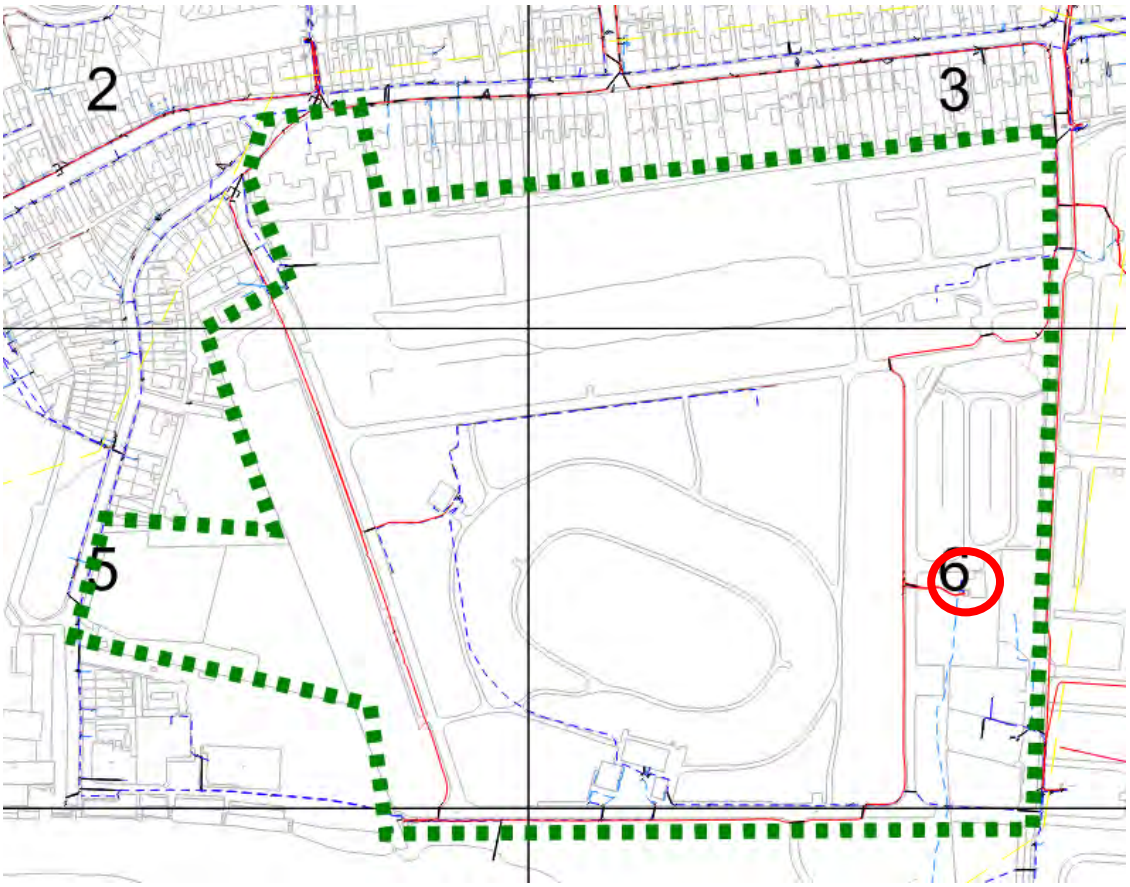


Figure 3.8: National Grid Asset Map of Sandy Bay East (Green denotes project demise boundary. Red denotes 11kV HV Mains. Blue Denotes LV Mains and Red Circles Highlight Electrical Sub-stations)

3.4.3 *Domestic Water - Dwr Cymru Welsh Water*

There is local mains water utility infrastructure distributing around the perimeter of the Sandy Bay East. Notably there are buried cold water mains distributing along the east perimeter of the site along Rhych Avenue and along the south perimeter of the site, the sizes of which cannot be determined. Several fire hydrants are served by these distributing mains.

Utility maps from DCWW only show pipework up to site boundaries, therefore any existing private buried pipework within the proposed project demises will need buried services surveys to fully understand.



Figure 3.9: DCWW Asset Map of Sandy Bay East (Green denotes project demise boundary. Blue denotes buried MCWS supply)

4. Transport

This section of the Technical Note reviews the transport support submitted as part of the current masterplan proposals. The following transport support has been reviewed:

- Transport and Access Strategy: Halcrow Group Limited (July 2007):
- Porthcawl Waterfront Visitor Parking Strategy: Halcrow Group (2007);
- Porthcawl Development Review - Comparison of 2007 and 2020 Development Proposals: Jacobs (08 June 2020); and,
- Porthcawl Placemaking Strategy: Bridgend County Borough Council (May 2022)
- Porthcawl Waterside Regeneration Area: Infrastructure Plan (July 2023)

4.1 Transport and Access Strategy: Halcrow Group Limited (July 2007):

In 2007 Halcrow were commissioned by BCBC to prepare planning guidance comprising of a revised development framework, land use guidance and design codes for Sandy Bay and the former harbour environment of Porthcawl. This area is identified in the Unitary Development Plan and we consequently allocated as a strategic site in the new local plan.

The TA produced sets out the likely trip generation of the waterfront regeneration area, describes the proposed Parking Strategy, Public Transport Strategy and the Walking and Cycling Strategy.

Development proposals

The TA produced by Halcrow in 2007 used survey data that was carried out in 2006. The TA assumed the following mix of development use:

- Superstore: 50,000 sqft;
- Retail: 20,000 sqft;
- Residential: 800/1200/1600 residential unit scenarios;
- Marina: 400 berth
- Library, restaurant, temporary events centre, school: Not known

To assess the trip generation of each component an analysis of data using a combination of the existing SPG figures and the TRICS 2006(b) database was undertaken.

Traffic data

The TA states that traffic count data was provided by BCBC for the following junctions:

- The Portway / Eastern Promenade priority junction
- A4229 / A4106 roundabout
- Eastern Promenade / Link Road to Portway R'bout
- Northways / Eastern Avenue
- New Road / Bridgend Road
- A4106 / Tyn-Y-Caeau Lane Roundabout
- A48 / A4106 Roundabout
- A4229 / Heol-Y-Splot
- B4283 / A4229 Roundabout
- A4229 / M4 Junction 36 Roundabout

Junction capacity analysis

To assess the impact of the proposed development on the surrounding highway network, junction modelling was undertaken using Arcady, Picady and LINSIG traffic engineering programs.

It was agreed with BCBC that the following junctions would be assessed:

- Eastern Promenade P1;
- Portway Roundabout P2;
- A4106 Roundabout P3;
- Griffin Park Junction P4;
- New Road Roundabout P5;
- New Road Junction P6;
- Newton Nottage Road Roundabout P7.

The TA states that the highway network in Porthcawl does not generally experience congestion and traffic is free flowing. There are however, a limited number of times during the year when flow into the town result in congestion, typically on Bank Holidays and weekends during the summer months.

It is important to note that Halcrow were not required to identify measures to accommodate the peak demand which only occurs on a few days each year. The assessment focussed on mitigating the impact of the regeneration proposals on a typical day of the year, to reflect the way Porthcawl operates for the majority of time.

The junctions were assessed for their existing operational performance which showed that all the junctions currently operate with ample reserve capacity.

It was agreed that the initial assessment of future year operation should consider the impact of the scenario including 1600 residential units. If the junctions did not operated effectively the number of houses included could be reduced sequentially until such time as they were to operate within capacity.

The junction capacity analysis included alternations to the following junctions which were to be included within the regeneration proposals:

- Section of The Portway, south of Lias Road, to be extinguished as a through route;
- All traffic will be diverted to the Eastern Promenade, which will become the primary access to the Esplanade and Rest Bay;
- The existing roundabout (P1) will be reduced from 6 arms to 4 arms and considerably reduced in size; and,
- A new junction proposed on Eastern Promenade near Griffin Park to access the eastern development area.

The results show that the junctions will operate within capacity in 2018 with the proposed development in place, which included the 1600 residential unit scenario.

It is noted, however, that there is a lack of junction capacity analysis carried out at the New Road-Mackworth Road roundabout junction, or the proposed new junction onto New Road (shown in the masterplan sketch).

VISSIM Micro-Simulation Model

VISSIM model was undertaken to demonstrate the effects of the development traffic with the proposed removal of the southern section of Portway and the construction of new roundabouts (N1 & N3).

This showed that the proposed development would operate efficiently with the current anticipated level of development in Porthcawl. This scheme will not cause significant capacity issues on any part of the network.

However, the proposal to operate both those junctions under traffic signal control would result in significant capacity problems and a large increase in delay for vehicles on the network. As a consequence, it is not recommended that this scheme is adopted.

Car parking

An indepth analysis has been carried out on the extent, availability and existing parking demand within Porthcawl. The assessment undertaken in this study provides a robust analysis of the quantum of seasonal peak parking that needs to be provided outside the Porthcawl Waterfront area. It shows that options are available to provide that parking to meet the needs of the town. A number of options were suggested to reduce the impact and requirement for parking associated with the proposed development including the provision of a 10 minute shuttle bus and Controlled Parking Zones (CPZs).

It is considered that this information is reviewed as part of the newly emergency development proposals, and the most relevant information utilised as and when this is required.

Public Transport Strategy

The Halcrow report recognises that integrated and effective public transport network is an important element in the strategy for the regeneration of Porthcawl.

The provision of a choice of convenient travel modes will help to reduce reliance on the private car, improve accessibility to essential services and provide long-term sustainability.

The development site proposes a bus gate at its eastern end, and the TA highlights this still requires careful consideration to ensure only authorised vehicles are let through whilst not being an impediment to pedestrian and cycle movements.

Furthermore, the bus route access onto New Road is not presently public highway, and securing the right of access may prove to be an obstacle. Though the space is available to provide the intended access gate and right of way, absence of this land would render the concept of the bus route through the site unviable, leaving only the option of a self-contained shuttle service. However, the onsite layout would need to be designed to

ensure a shuttle bus can access the majority of the development, in order for the commercial attractiveness to be viable.

The Halcrow report states that the concept of the through route is a good idea, however the large number of contrary aspects may make this either unattractive to a bus operator, impossible to serve, or not really worth serving. Hydrock agree that further consideration is given in design standards to ensure that the site can successfully be integrated with public transport provision.

Cycling and walking strategy

Cycling and walking are essential in creating an integrated and sustainable transport system. The Cycling and Walking strategy set out in the TA produced by Halcrow aims to ensure that the development of the regeneration area takes sufficient account of walking and cycling requirements in its phasing and development, especially in providing linkages to the town centre of Porthcawl and the wider cycle network.

The Cycling and Walking Strategy for the development site is structured under five integrated themes:

- increase the role of walking and cycling - reducing the attractiveness of travel by private car, layout of road space, creating of traffic free routes which will placed along strong desire lines. Ensuring the development enhances the connections in Porthcawl and strengthens the linkage between the seafront, regeneration area and the town centre will in turn increase the safety and convenience of more sustainable method;
- develop routes through the site - maximising linkages and connections for walking and cycling (both north-south and east-west) developing the opportunity for enhanced coastal and town cycling routes. It is considered the main routes will include:
  - to and from the town centre;
  - around the proposed marina; and
  - along the Eastern Promenade.
- contribute to the development of town and regional routes;
- provide supporting infrastructure - including crossing points, signage, cycle parking; and,
- courage integration with public transport.

Provision for walkers and cyclists should be considered at the earliest opportunity. Good design of high quality links will ensure that travel by bicycle and on foot for leisure and shopping trips will be a positive and convenient choice.

4.2 Porthcawl Development Review: Jacobs (2020)

In 2020 Jacobs produced a Porthcawl Development Review report which provides a comparison of 2007 and 2020 development proposals. The purpose of this report is to outline the transport impacts of the 2033 proposals to determine whether the development is likely to be comparable in scale to those allocated in the 2021 Plan.

The proposed regeneration masterplan as set out in the 2020 produced by Jacobs in shown in Figure 4.1 below.

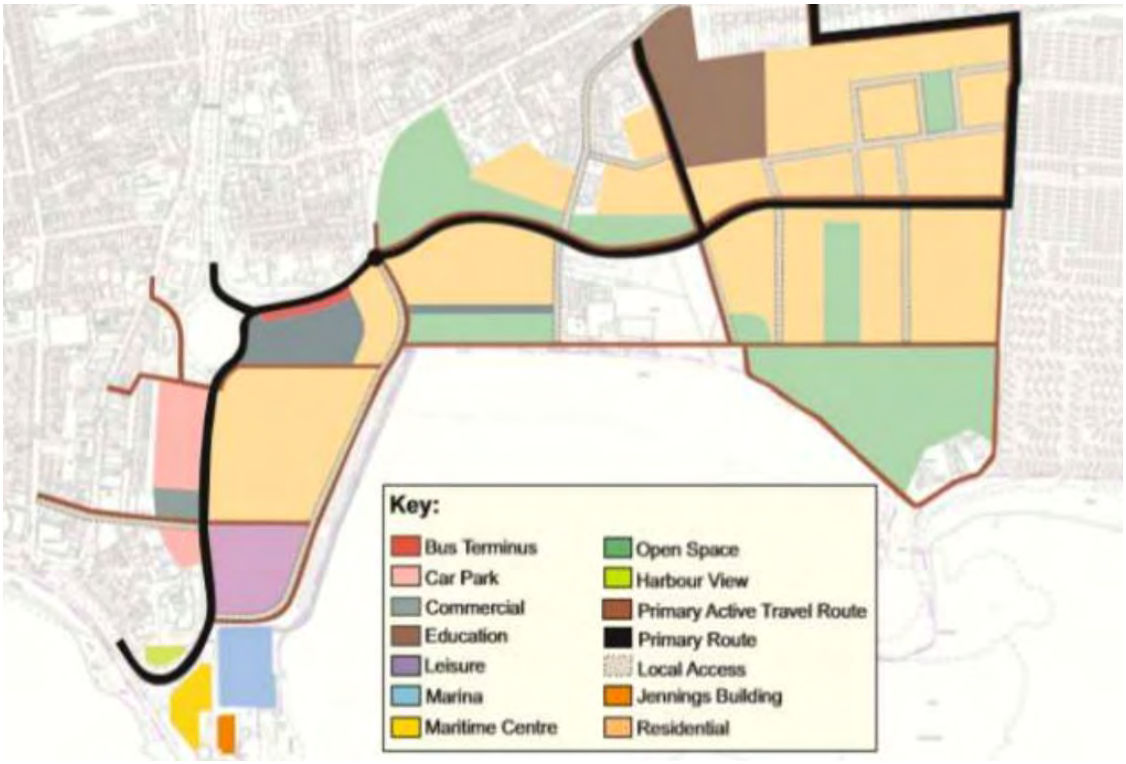


Figure 4.1:: Proposed regeneration masterplan

Development proposals

The development proposals compare the new land uses with the land uses in the previous TA submitted by Halcrow in 2007.

The development proposals as set out in the 2020 technical review includes:

- Superstore: 2,322 sqft;
- Retail: Not known;
- Residential: 1,033 units (worst case scenario test: 1,500 units);
- Commercial: 1.5 ha;
- Leisure: 1.13 ha;
- Marina, library, restaurant, temporary events centre, school: Not known

Although only 1,033 residential units are currently proposed as part of the latest design, in order to undertake a robust assessment 1,500 residential units have been assumed to be included in the latest proposals in order to understand if the road network has the ability to accommodate this level of development.

Trip generation: "do nothing" scenario

The likely trip generation has been initially calculated using the "do nothing" scenario, in which the 2007 proposals are compared against the future scenario (2018) included in the previous TA, using TEMPRO growth factors and 2019 traffic counts undertaken. This identifies any significant changes to the transport network since the production of the previous TA. As agreed in the 2007 report, a low growth rate was applied and is appropriate as the Porthcawl Waterfront Regeneration proposals are predicted to represent the vast majority of the likely future development in the area.

A summary of the trip generation analysis carried shows that:

- the traffic growth applied in the 2007 study over-estimated the increase in traffic flows to 2019, particularly during the AM peak;
- the predicted growth in background traffic has, in most instances, not occurred;
- the busier strategic carriageways, such as A4106 Newton Nottage Road, A4106 dual carriageway and The Esplanade displayed significantly higher traffic flows in the 2018 'Do Nothing' scenario in comparison to the recent 2019 ATC surveys.

In contrast to the estimated trip generation of 2007 proposals, the estimated trip generation for the 2020 scheme does not show a significant difference in overall trip generation between the two peak hours.

Furthermore, it was considered that the analysis carried out might be over estimating the number of development trips reaching the existing highway network. For example, insufficient information is available to provide robust estimates of:

- trip internalisation, those trips which will remain within the development itself. These trips would not exit the development and thus would not reach the existing transport network;
- linked trips, those which have multiple destinations and have thus been counted twice in the analysis. This reduction can range from 10% to 30% dependant on the final development mix;
- the precise land use associated with the commercial elements which will likely be reduced due to a variety of land uses on site rather than office space alone;
- considers 'privately owned dwellings' only and offer no reductions for the inclusion of affordable homes or flats; and,
- the analysis considers that 1,500 dwellings will be provided by the development far above the 1,033 currently expected.

Trip generation: "do something" scenario

To estimate the 'Do Something' traffic flows, vehicle trips have been distributed according to different assumptions and via different routes. The previous report also took in consideration the following impacts on the road network:

- Shopping trips reverting from out of town stores back to Porthcawl; and
- Future amendments to the Portway Roundabout (in which it was proposed the roundabout be changed from a 6-arm to 4-arm arrangement).

Trip generation: 2033 "do something" scenario

In this scenario the 2033 traffic flows were counted by applying the TEMPRo growth factor to the 2019 ATC surveys.

A comparison of the 2018 and 2033 'Do Something' traffic flows was carried out which showed that the predicted volume of traffic was higher in the 2018 scenario compared to the 2033 scenario. This is a result of different trip distribution assumption and an overestimated factor rate in 2007 to calculate the 2018 traffic.

It should be noted, however, that the transport review undertaken by Jacobs does not undertake any additional junction capacity analysis and only reviews the likely trip generation based on a 2033 proposal. The technical review states that 'this is a somewhat basic analysis and is not meant to replace the capacity assessments that should be undertaken to inform the design of junctions or mitigation required by the 2033 proposals.'.

Parking surveys

Similarly to the 2007 transport support, this technical review provides a lot of detail regarding parking numbers and location of parking provision and strategy

To summarised, the 2007 proposals noted that there was a shortfall in visitor parking when accounting for peak visitor demand during the summer period and that this would likely occur on 10 separate days per year. The study offered a number of solutions for this shortfall which could be implemented to accommodate this peak. It concluded that "a visitor parking facility based on a combination of the Newton Nottage North East, South West and Heol-y-Goedwig sites should be investigated further".

The 2020 proposals have potential to offer more visitor parking within the development on the assumption that all public parking within the development is communal and can be used by all. However, due to a lack of sufficient base data, and established development proposals, the current transport support has been unable to estimate the peak demand of the 2033 scenario relative to that of 2018.

Jacobs suggested that a Parking SPG is developed specifically for the Porthcawl Regeneration development which would enable:

- A refresh the requirements of SPG17 to ensure that residential parking is offered at a sustainable rate and reflects car ownership in Porthcawl;
- Solidification of proposals to ensure that public parking associated with the various elements of the development is communal and available for use by all visitors; and,
- Investigation of the need, and if required, investigation of opportunities to provide parking for the limited peak periods which occur during the tourist season.

4.3 Porthcawl Placemaking Strategy: May 2022 (BCBC)

The Porthcawl Placemaking Strategy was produced by Bridgend CBC in 2022 and provides indicative layouts which demonstrate the potential capacity of the wider development site, but does not represent fixed designs nor any form of illustrative masterplan.

The main connectivity strategies include:

- Provide a multi storey car park on Hillsboro to cater for both tourist and resident needs;
- Remove vehicles from Eastern Promenade with the exception of restricted servicing;
- Create a high quality facility for arrival by bus, linked to cycle hire and community facilities;
- Incorporate EV charging opportunities throughout all areas of the development;
- Reduce the number of car spaces provided within the development areas below current standards to promote more active and greener travel;
- Enhance Active Travel routes and prioritise the pedestrian and cyclist throughout the whole development;
- Create stronger pedestrian and cycle linkages between the town centre and the coast, particularly through the extension of Dock Street as an Active Travel route;
- Ensure the whole development is permeable to pedestrians and cyclists and easy to navigate;
- Open up the Sandy Bay development areas through a new access road for both vehicles and Active Travel and prevent vehicular access to the new development areas from Mackworth Road, Sandy Lane and Rhych Avenue;
- Divert vehicular access to High Tide off Mackworth Road and Sandy Lane onto the new access road.

The indicative layout of the main connectivity strategy is shown in Figure 4.2 below.

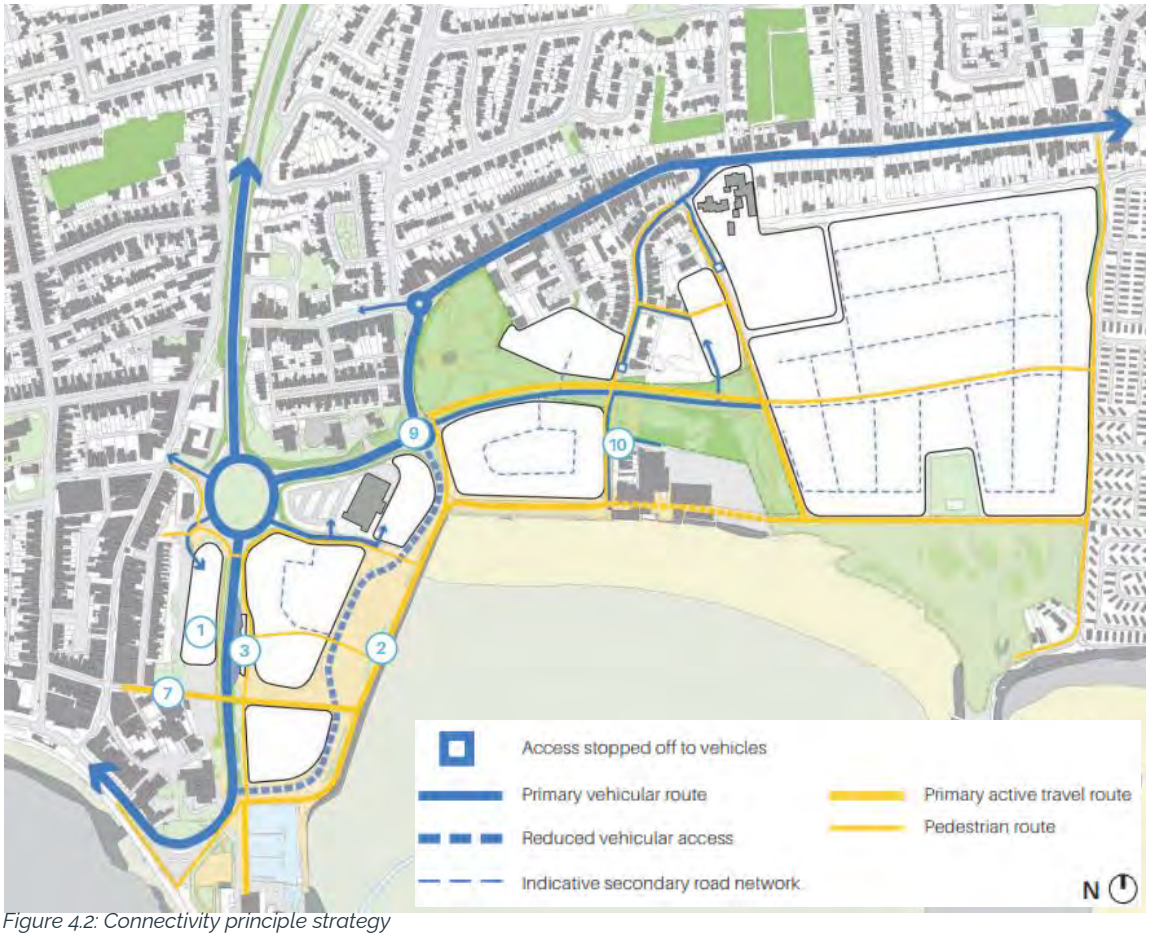


Figure 4.2: Connectivity principle strategy

Sandy Bay Spine Road Options

The Placemaking Strategy includes a new vehicular and Active Travel link into Sandy Bay East through Sandy Bay West (Coney Beach) to prevent the existing roads from New Road taking new traffic. Options for the Sandy Bay Spine Road have been presented, however, no detailed engineering study has been carried out at this stage, as shown in Figure 4.3 below.

There has been no detailed engineering study at this stage and the study was limited to line and level proposals to meet good highways and active travel practice whilst providing access to future development areas. Further design and visualisation studies are recommended to explore how the new spine road rises through the corner of Griffin Park toward the existing retaining wall along Coney Beach.

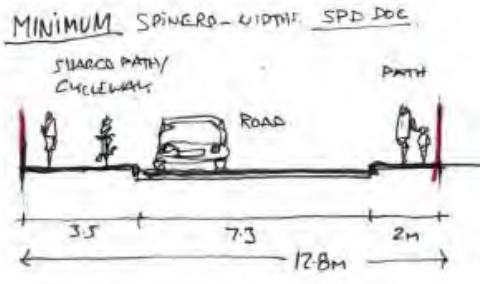


Figure 4.3: Proposed spine road access junction

A significant challenge arises from the existing change in level between Griffin Park and Coney Beach, approximately 4m. A high-level study has been undertaken to consider potential options for the future line and level of this new access road.

The spine road is shown having a generous width overall of some 18.8m comprising a 7.3m wide vehicular carriageway, a 2m pavement and a 3.5m shared path and cycle way, separated from vehicles by a 3m landscaped verge and another 3m verge.

Various options for levels were considered, however, this requires steeper access roads into the development plots at Sandy Bay West, taking more space and the appearance of the 'cut' may be difficult to resolve. There has been no detailed engineering study at this stage and the study was limited to line and level proposals to access to future development areas.

The Porthcawl Placemaking Strategy produced in 2022 states that further design and visualisation studies are recommended to explore how the new spine road rises through the corner of Griffin Park toward the existing retaining wall along Coney Beach

4.4 Porthcawl Waterside Regeneration Area Infrastructure Plan: July 2023 (BCBC)

This Infrastructure Plan further defines the modifications required to the existing infrastructure and new infrastructure required, building on the principles of development outlined within the Porthcawl Placemaking Strategy 2022.

Vehicle access and road system

This report sets out nine key components of vehicular access infrastructure required to deliver the Porthcawl Waterside development. Table 4.1 of this report provides a useful design principles which have been used to shape the master planning proposals. A schedule is provided which sets out the high-level principles of the access and improvements to the existing highway, however, it is important to note that the report reinforces that further briefing, consultation, design and statutory/legal approvals is required prior to commencement of these design principles.

Coney beach access road

A high-level concept design has been established to show how the vertical and horizontal alignment of the road may be developed. A 1 in 3 banking from the road rising up to meet the levels of the Coney Beach development plots has been indicated, however, this is subject to further design work on the development plots and also further detailed survey work on the existing trees within the former Monster Park.

An illustration of the proposed access road as set out in the Porthcawl Waterside Regeneration Area Infrastructure Plan is shown in Figure 4.4 below.

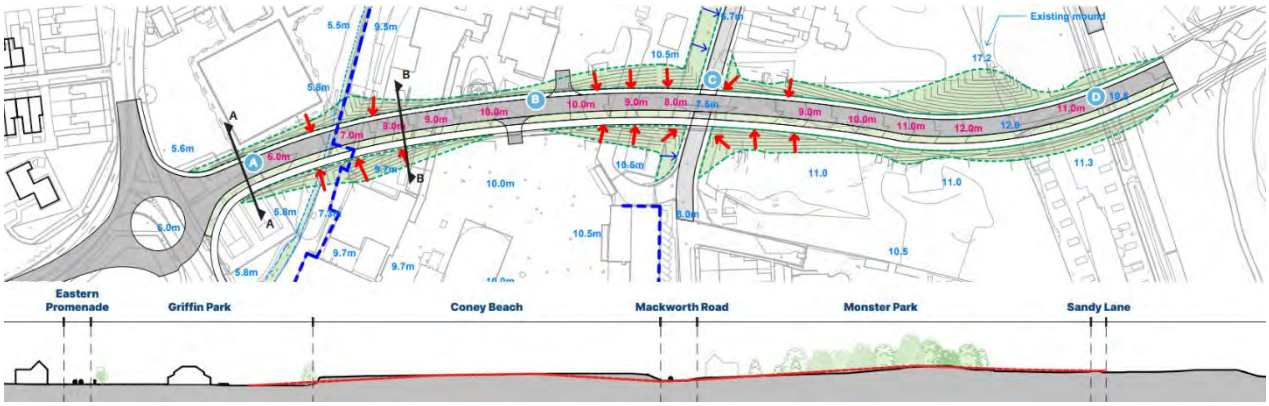


Figure 4.4: A high level concept design of the Coney Beach access road

Rhych Avenue

The Porthcawl Waterside Regeneration Area Infrastructure Plan sets out a diagram to show the principles for improvements to Rhych Avenue, which highlights that there is no connection from Rhych Avenue into the Sandy Bay development.

Active travel, paths and cycleway

A diagram setting out the principles of new Active Travel infrastructure associated with Salt Lake has been provided, primarily focusing on the integration of Active Travel within the new linear park and improved sea wall defences.

The active travel connections also considered the extension of Dock Street across Portway to the new Metro Station and beyond to link to the new linear park and Eastern Promenade.

It is noted from the Coney Beach Active Travel and Pedestrian Routes graphic provided that there is a significant level difference between of approximately 4m between the lower and upper Griffin Park which would impact on the engineering works required to achieved the proposed access road through Coney Beach and Monster Park. This is shown in Figure 4.5 below.

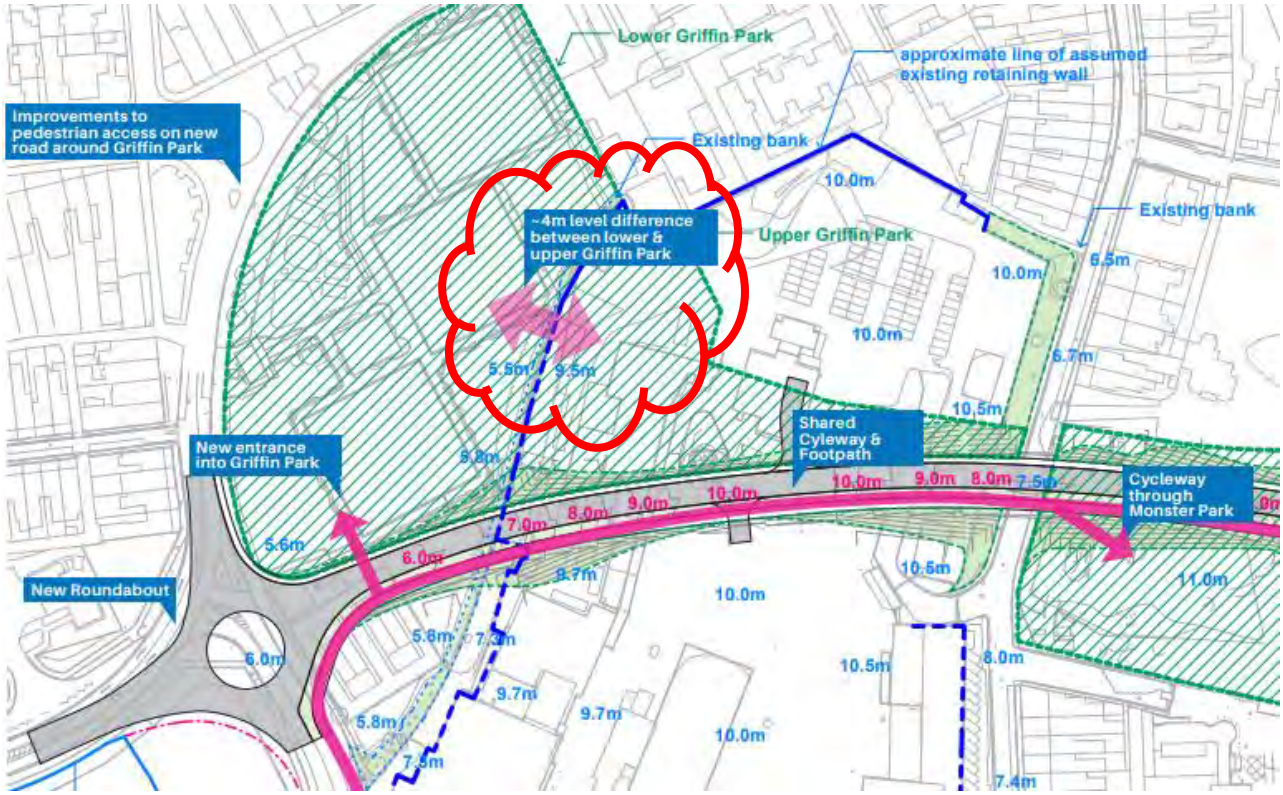


Figure 4.5: Active Travel and pedestrian routes level difference

As set out throughout this report, all components of the design recommendations require further briefing, consultation, design and statutory/legal approvals, and there has been no detailed analysis or engineering work provided to calculate how the level difference through Griffin Park and be accommodated within the design layout of the road.

Conclusions

To conclude, this section of the report provides a summary of the transport support carried out as part of the Porthcawl regeneration area to date.

To summarise, these reports:

- Recognise the importance of integrating sustainable travel, walking and cycling within the proposed development with the main desire lines to the west and the south.
- Highlights that a controlled bus route could be implemented through the scheme and exit onto the New Road, or a shuttle bus is provided to service the scheme. Both of which have their own challenges.
- The trip generation carried out assess a worst case scenario of up to 1,600 dwellings, with commercial and retail facilities also included.
- Set out a comparison of the 2008 and 2033 trip rate, highlighting that the 2019 surveyed trip rates were lower than the predicted 2018 trip rates undertaken in 2007.
- The junction capacity analysis carried out in 2007 states that all the junctions included within the analysis operate within capacity for the future year scenarios, including development, The further analysis of the

trip generation in 2020 highlights that the junction capacity analysis carried out in 2007 provided a robust analysis, and in reality, the growth factors applied are higher than the 2019 surveyed flows.

- The review produced by Jacobs in 2020 does not update any junction capacity analysis. This report states that the analysis undertaken dose not replace the capacity assessments that should be undertaken to inform the design of junctions or mitigation required by the 2033 proposals.
- Assessment has been carried out to reduce the size of the existing A4106/The Portway roundabout from six-arms to four-arms. Junction capacity analysis shows that following these modifications, the roundabout would operate efficiently based on the anticipated level of development in Porthcawl.
- A considerable volume of parking surveys has been undertaken, which can be utilised once firmer details on the development proposals have been established.
- The access options seem to have been established based on the land available during the initial consultation period, however, there is a has been no detailed engineering study of the proposed spine road junction undertaken at this stage.

In regards to the additional transport support which is now required, it is considered that the following information would aid the next stages of the master planning process:

- Establish the most appropriate access route including undertaking a detailed design of the proposed access road through Coney Beach and Monster Park.
- Explore options to reduce the impact of the existing A4106/The Portway roundabout junction, in order to improve connectivity and access to Porthcawl via sustainable modes of travel and create a gateway feature into the town centre.
- Establish the key desire lines for pedestrians and cyclists for both residents of the proposed development and for recreational purposed to maximise the place making potential and public realm improvements.
- Highlight potential connections for public transport provision.
- Undertake junction capacity analysis and undertake traffic surveys to support the planning stages.
- Understand the required parking provision for the masterplan development, taking into account the reduction of existing parking along the Eastern Prom.
- Advise on a proposed layout of the residential development, maximising opportunities for sustainable travel and integration of the wider master planning proposals.

5. GEO

This section of the Technical Note reviews previous Phase 1 and Phase 2 Geo-Environmental Reports that all within the boundary of the proposed regeneration area (section 5.1). Hydrock have assumed the Client holds reliance on all documentation provided in our review.

Section 5.2 provides a gap analysis to identify uncertainties and limitations within the previous reports Section 5.3 follows with a review of the outstanding risks to master planning stage of the development.

The following reports have been reviewed and are discussed below:

- Earth Science Partnership. Desk Study and Detailed Investigation for Proposed Residential Development, Salt Lake Car Park, Porthcawl (Ref: ESP.7044d.3123_A.Rev 1.Final Report) - Site A (Sept, 2020);
- Earth Science Partnership. Desk Study and Detailed Investigation for Proposed Leisure / Commercial Development, Hillsbro Car Park, Porthcawl (Ref: ESP7044d.02.3124_B.Rev1.FinalReport) - Site B (Sept, 2020);
- Earth Science Partnership. Desk Study and Exploratory Investigation for Proposed Residential Development, Former Dunraven Flats, Porthcawl (Ref: ESP7703d.3481.FinalReport) (March, 2021);
- Earth Science Partnership. Supplementary Site Investigation for Proposed Residential Development, Former Dunraven Flats, Porthcawl (Ref: ESP7703d.02.3567.FinalReport) (August, 2021);
- Earth Science Partnership. Ground Gas Addendum for Proposed Residential Development, Former Dunraven Flats, Porthcawl (Ref: SP7703d.02.3729_GGA) (June, 2022);
- Earth Science Partnership. Desk Study and Exploratory Investigation for Proposed Leisure Development, South of Salt Lake Car Park, Porthcawl (Ref: ESP7702d.3500.FinalReport) (March, 2021);
- Earth Science Partnership. Desk Study and Detailed Investigation for Proposed Food Store, Salt Lake Car Park, Porthcawl (Ref: ESP7044d.02.3112_C_Rev1.FinalReport,) (August 2020);
- Quantum Geotech. Porthcawl Drainage Scheme, GROUND INVESTIGATION FACTUAL REPORT (Ref: Q0281/FR) (July 2020);
- Jubb Consulting Engineers Ltd. Porthcawl Placemaking, Phase 1 Desk Study Report (Ref: 21176-DTS-01) (August 2021); and
- Arup. Porthcawl Sandy Bay Coastal Risk Management, Coney Beach Coastal Defence Revetment Basis of Design (Ref: 264874) (November 2022).

5.1 Review of Existing Site Investigation Data

5.1.1 ESP Desk Study and Detailed Investigation for Proposed Residential Development, Salt Lake Car Park, Porthcawl (Ref: ESP.7044d.3123_A.Rev 1.Final Report)

Earth Science Partnership produced a Phase 1 and Phase 2 report covering the area of Salt Lake Car Park in September 2020. The report assesses the site in the context of a proposed residential development, and includes an intrusive ground investigation and subsequent GQRA, remediation options appraisal and Geotechnical comments.

The ground investigation scope references three phases of works across 2018 and 2019 and comprised the following exploratory positions:

- 43 no trial pits excavated to a maximum depth of 3.9mbgl targeting the historic dock area, which had been infilled with Made Ground;
- 5no cable percussion boreholes excavated to a maximum depth of 14.mbgl, including installation of monitoring wells;
- 2no rotary cored boreholes excavated to a maximum depth of 21mbgl, including installation of monitoring wells;

- 14no TRL DCP ;test positions to achieve an approximation of CBR for proposed roadways associated with the residential development.
- 12no rounds of ground gas monitoring have been undertaken at the site.

Encountered Geology and Hydrogeology

- **Made Ground (Dock Infill)** was encountered in the south of the site to a maximum depth of 11.25m, comprising black and dark grey, occasionally brownish black, very sandy angular gravel and cobbles. The gravel and cobbles largely comprised whole and crushed bricks, concrete and slag with occasional metal, timber and glass;
- **Made Ground (General)** was encountered outside of the infilled dock area to a maximum depth of 1.4m and comprised mainly dark brown, occasionally light brown, with patches of black, sandy to very sandy, silty sandstone gravel. The Made Ground also contained a number of man-made objects such as glass and brick and occasional, probable fine-medium gravel sized slag fragments. An area of deeper Made Ground comprising potential colliery spoil / re-worked natural materials associated with the former coal tip and railway land was identified in the west of the site at BH08.
- **Blown Sand Deposits** were encountered beneath the Made Ground generally from depths of between 0.2 and 1.4m below surface level, to a maximum depth of 10.5m and generally comprised sand and gravels.
- The **Oxwich Head Limestone bedrock** was encountered from depths of between 6.7m and 13.3m, and was proven to a maximum depth of 21m bgl. The Oxwich Head Limestone outcropped at deeper levels in the areas of deeper Made Ground.
- **Groundwater** bodies were encountered, within the Made Ground of the infilled dock area, as well as within the Blown Sand Deposits and Oxwich Head Limestone. It is anticipated that groundwater bodies at the site are in hydraulic continuity due to the granular nature of the deposits. Based on the observed hydraulic gradient, it is also considered that groundwater beneath the site is in hydraulic continuity with the waters of Sandy Bay.

Geo-Environmental Summary / Risks

Testing of samples collected during the ground investigation identified several contaminants of concern at the site, and the risks to receptors classified as moderate or above are summarised below:

- Elevated levels of arsenic and heavy metals, as well as asbestos fibres were encountered within the soils of the Made Ground (Dock Infill). The presence of these contaminants poses an unacceptable risk to potential end site users and would need further consideration and potential remedial actions during any future development at the site;
- Leachate testing has identified marginally elevated levels of metals and PAH's within the infilled dock materials and general Made Ground. Groundwater testing has also identified elevated levels of metals and PAHs within the area of the infilled dock, as well as marginal elevations of metals and PAH's recorded within samples recovered from the Blown Sand strata. It is not considered that there is a separate, perched, water body within the infilled dock. Based on the findings of the groundwater monitoring across the site,
- ESP consider that the groundwater within and outside of the infilled dock is in hydraulic continuity with the main groundwater body identified within the Blown Sands (a Secondary A Aquifer) and Oxwich Head Limestone (a Principal Aquifer) and suggest consultation with NRW and possible further assessment.
- Ground gas monitoring undertaken at the site indicates CS2 conditions.

Geotechnical Summary / Risks

- Due to the depth of Made Ground at the site and the variability within this strata, ESG considers piled foundations to be the most viable solution at the site, with the Oxwich Head Limestone being the suitable founding strata.

- ESG consider the unconsolidated / uncompacted soils of the Made Ground within the infilled dock are potentially susceptible to collapse compression during inundation, if groundwater levels were to increase.
- Where groundwater ingress is present within the Blown Sand deposits, the potential for running sands is considered high. The design of all excavations or bored foundation solutions (drainage, foundations etc) should consider this hazard.
- Within the infilled dock and former smithy area, a high proportion of the recovered gravels and cobbles were noted to be slag. Some forms of slags are volumetrically stable but, depending on their chemistry, some can be extremely unstable when hydrated, which can lead to significant heave at the surface and damage to buildings and hard surfaces.

5.1.2 *Earth Science Partnership. Desk Study and Detailed Investigation for Proposed Leisure / Commercial Development, Hillsbro Car Park, Porthcawl (Ref: ESP7044d.02.3124_B.Rev1.FinalReport)*

Earth Science Partnership produced a Phase 1 and Phase 2 report covering the area of Hillsbro Car Park in September 2020. The report assesses the site in the context of a proposed leisure / commercial development, and includes an intrusive ground investigation and subsequent GQRA, remediation options appraisal and Geotechnical comments.

The ground investigation scope references works undertaken across 2018 and 2019 and comprised the following exploratory positions:

- 4 no windowless sample boreholes were excavated to a maximum depth of 5.45mbgl;
- 3no cable percussion boreholes excavated to a maximum depth of 5.0mbgl, including installation of monitoring wells;
- 1no rotary cored boreholes excavated to a maximum depth of 12.9mbgl, including installation of monitoring wells;
- 12no rounds of ground gas monitoring have been undertaken at the site.

Encountered Geology and Hydrogeology

- **Made Ground (General)** was encountered to a maximum depth of 4.6m and comprising largely sandy gravels and occasional gravelly sands, with man-made materials such as brick and crushed stone with occasional slag and clinker. Timber and metal were also noted, with ashy soils also noted within cable percussion boreholes.
- **Blown Sand Deposits** were encountered beneath the Made Ground generally from depths of between 0.95 and 2.8m below surface level, to a maximum depth of 5.45m and generally comprised sand and gravels. The Blown Sand Deposits were absent in the south of the site.
- The **Oxwich Head Limestone bedrock** was encountered underlying either the Blown Sand Deposits (in the north) or directly underlying the Made Ground in the south of the site, from depths of between 1.2m and 5.45m, and was proven to a maximum depth of 12.9m bgl.
- **A Groundwater** body was encountered, within the Oxwich Head Limestone during groundwater monitoring at the site. Based on the observed hydraulic gradient, it is also considered that groundwater beneath the site is in hydraulic continuity with the waters of Sandy Bay.

Geo-Environmental Summary / Risks

Testing of samples collected during the ground investigation identified several contaminants of concern at the site, and the risks to receptors that require further consideration are summarised below:

- Laboratory chemical testing of the Made Ground soils from across the site has identified generally low levels of soil contaminants with regards to the GAC's for a commercial end use. Trace asbestos (chrysotile) has been identified in one location at the site. The risk from soil contamination at the site was deemed to be low for a commercial end use.
- Leachate testing has identified elevated levels of leachable PAH compounds from three samples tested from the Made Ground across the site. Groundwater testing from BH09 (ESP, 2018) identified marginally

elevated levels of leachable metal compounds against the EQS from two samples tested from the groundwater within the Oxwich Head Limestone bedrock strata.

- ESP consider that the proposed development (a hotel and leisure facilities (commercial)), will result in the majority of the site surface being occupied by hardstanding and therefore further leaching from the shallow soils will be reduced, reducing the risk to controlled waters. This risk assessment will need to be reviewed to confirm if it is applicable to future development proposals following the masterplanning exercise.
- Ground gas monitoring undertaken at the site indicated CS1 conditions, however ESP recommended the site be upgraded to CS2 due to the extent of the Made Ground and historical land uses on and off-site.

Geotechnical Summary / Risks

- Due to the depth of Made Ground at the site and the variability within this stratum, ESG considers piled foundations to be the most viable solution at the site, with the Oxwich Head Limestone being the suitable founding strata.
- ESG consider the unconsolidated / uncompacted soils of the Made Ground are potentially susceptible to collapse compression during inundation, if groundwater levels were to increase.
- Where groundwater ingress is present within the Blown Sand deposits, the potential for running sands is considered high. The design of all excavations or bored foundation solutions (drainage, foundations etc) should consider this hazard.
- The general Made Ground was noted to contain minor constituents of slag gravels across the site, however the overall content is not considered to be of significant risk. If any areas of high quantities of slag gravels are identified during the works, they should be removed and replaced with clean inert fill.

5.1.3 Earth Science Partnership. Desk Study and Exploratory Investigation for Proposed Residential Development, Former Dunraven Flats, Porthcawl (Ref: ESP7703d.3481.FinalReport) and Supplementary Site Investigation for Proposed Residential Development, Former Dunraven Flats, Porthcawl (Ref: ESP7703d.02.3567.FinalReport)

Earth Science Partnership caried out two phases site investigation, as well as an additional ground gas risk assessment addendum (Ref: SP7703d.02.3729_GGA) report covering the area of the Former Dunraven flats between 2020 and 2022. These reports assess the site in the context of a proposed residential development, and includes intrusive ground investigations and subsequent GQRA, addendum ground gas risk assessment remediation options appraisal and Geotechnical comments.

The ground investigation scope references three phases of works across 2018 and 2019 and comprised the following exploratory positions:

- 4no windowless sample boreholes were excavated to a maximum depth of 3.5mbgl;
- 3no hand pits excavated to a maximum depth of 1.2mbgl;
- 3no rotary cored boreholes excavated to a maximum depth of 15mbgl, including installation of monitoring wells;
- 10no rounds of ground gas monitoring have been undertaken at the site.

Encountered Geology and Hydrogeology

- **Made Ground (General)** was encountered to a maximum depth of 1.1m and comprising dark grey and brown sandy gravel and gravelly limestone cobbles with concrete and brick. Concrete obstructions were noted in WS03, HP201 and BH203 between depths of 0.4 and 0.7m. A possible brick wall obstruction was recorded in HP203 at 0.4m depth. Possible ballast was recorded between 0.5 and 0.7m depth in WS03 which refused at 0.7m on a concrete obstruction. WS03 is located in the area of the former railway line in the north of the site
- **Marine Beach Deposits** were encountered beneath the Made Ground to a maximum depth of 3.2m and generally reddish brown slightly gravelly clayey sand with low cobble content and as a reddish brown gravelly sandy clay/silt. The Blown Sand Deposits were absent in WS03.

- The **Oxwich Head Limestone** bedrock was encountered underlying either the Blown Sand Deposits (in the north) or directly underlying the Made Ground in the south of the site, from depths of between 1.4m and 3.2m, and was proven to a maximum depth of 15.0m bgl.
- **A Groundwater** body was encountered, within the Oxwich Head Limestone during groundwater monitoring at the site. Based on the observed hydraulic gradient, it is also considered that groundwater beneath the site is in hydraulic continuity with the waters of Sandy Bay.

Geo-Environmental Summary / Risks

Testing of samples collected during the ground investigation identified several contaminants of concern at the site, and the risks to receptors that require further consideration are summarised below:

- Laboratory chemical testing of the soils from across the site was not undertaken and is identified as a data gap by ESP. Asbestos screening of samples from the Made Ground indicated one sample (out of 11) with positive detection for Chrysotile (0.24%w/w).
- Leachate testing and / or groundwater testing was not undertaken at the site and is identified as a data gap that requires further consideration by ESP.
- ESP consider that the risk to controlled waters from the development of the site to be low, however they concede that further testing and assessment may be required following discussions with regulators.
- Ground gas monitoring undertaken at the site indicated CS1 conditions, however ESP recommended reassessment of the site following confirmation of development proposals.

Geotechnical Summary / Risks

- ESG considers trench fill foundations to be a viable solution at the site, with the Oxwich Head Limestone outcropping at shallow depths.
- ESG identified the Oxwich Head Limestone as being susceptible to limestone solution features, and recommends foundation inspections are undertaken for shallow foundation constructions. No evidence of large solution features was identified during site works, however small voids were encountered in BH201.
- ESG consider piled foundations to be a viable alternative to shallow foundations, with the Oxwich Head Limestone acting as the founding stratrum..

5.1.4 *Earth Science Partnership. Desk Study and Detailed Investigation for Proposed Food Store, Salt Lake Car Park, Porthcawl (Ref: ESP7044d.02.3112_C_Rev1.FinalReport)*

Earth Science Partnership produced a Phase 1 and Phase 2 report covering the area of a proposed food store in Salt Lake Car Park in August 2020. The report assesses the site in the context of a food store development, and includes an intrusive ground investigation and subsequent GQRA, remediation options appraisal and Geotechnical comments.

The ground investigation scope references two phases of works across 2018 and 2019 and comprised the following exploratory positions:

- 30 no trial pits excavated to a maximum depth of 3.8mbgl;
- 4no cable percussion boreholes excavated to a maximum depth of 11.75mbgl, including installation of monitoring wells;
- 1no rotary cored boreholes excavated to a maximum depth of 18.1mbgl, including installation of monitoring wells;
- 4no TRL DCP test positions to achieve an approximation of CBR for proposed roadways associated with the residential development.
- 12no rounds of ground gas monitoring have been undertaken at the site.

Encountered Geology and Hydrogeology

- **Made Ground (Dock Infill)** was encountered only in the southeast corner of the site to a maximum depth of 6.5m, comprising black and dark grey, occasionally brownish black, very sandy angular gravel and cobbles. The gravel and cobbles largely comprised whole and crushed bricks, concrete and slag with occasional metal, timber and glass;
- **Made Ground (General)** was encountered outside of the infilled dock area to a maximum depth of 1.7m and comprised mainly dark brown, occasionally light brown, with patches of black, sandy to very sandy, silty sandstone gravel. The Made Ground also contained a number of man-made objects such as glass and brick and occasional, probable fine-medium gravel sized slag fragments.
- **Blown Sand Deposits** were encountered beneath the Made Ground generally from depths of between 0.15 and 1.7m below surface level, to a maximum depth of 10.5m and generally comprised sand and gravels.
- The **Oxwich Head Limestone bedrock** was encountered from depths of between 6.95m and 10.5m, and was proven to a maximum depth of 18.1m bgl. The Oxwich Head Limestone outcropped at deeper levels in the areas of deeper Made Ground.
- **Groundwater** bodies were encountered, within the Made Ground of the infilled dock area, as well as within the Blown Sand Deposits. It is anticipated that a deeper groundwater body is present within the Oxwich Head Limestone. It is anticipated that groundwater bodies at the site are in hydraulic continuity due to the granular nature of the deposits. Based on the observed hydraulic gradient, it is also considered that groundwater beneath the site is in hydraulic continuity with the waters of Sandy Bay.

Geo-Environmental Summary / Risks

Testing of samples collected during the ground investigation identified several contaminants of concern at the site, and the risks to receptors classified as moderate or above are summarised below:

- The ESP GQRA argues that the proposed development (a food store) does not constitute a commercial property, and therefore soil screening values for a commercial end use are not used to assess the site. Suitable for Use Levels (S4UL's) are used to screen soil samples at the site instead, with samples recorded exceeding the S4ULs within the soils of the Made Ground (Dock Infill). Reassessment of these samples will likely be required in the context of future developments;
- Asbestos was identified in samples of general Made Ground and dock infill materials at the site.
- Leachate testing has identified elevated levels of PAH's within the infilled dock materials and general Made Ground. Groundwater testing has also identified elevated levels of PAHs within the area of the infilled dock. Exceedances of chromium and zinc and PAHs were recorded within samples recovered from the Blown Sand strata. It is not considered that there is a separate, perched, water body within the infilled dock. Based on the findings of the groundwater monitoring across the site,
- ESP consider that the groundwater within and outside of the infilled dock is in hydraulic continuity with the main groundwater body identified within the Blown Sands (a Secondary A Aquifer) and Oxwich Head Limestone (a Principal Aquifer) and suggest consultation with NRW and possible further assessment.
- Ground gas monitoring undertaken at the site indicates CS2 conditions.

Geotechnical Summary / Risks

- Due to the depth of Made Ground at the site and the variability within this strata, ESG considers piled foundations to be the most viable solution at the site, with the Oxwich Head Limestone being the suitable founding strata.
- If the development is to be located outside of the area of infilled dock / general Made Ground, ESP raises the prospect of using ground improvement measures within the Blown Sand Deposits.
- ESG consider the unconsolidated / uncompacted soils of the Made Ground within the infilled dock are potentially susceptible to collapse compression during inundation, if groundwater levels were to increase.

- Where groundwater ingress is present within the Blown Sand deposits, the potential for running sands is considered high. The design of all excavations or bored foundation solutions (drainage, foundations etc) should consider this hazard.
- The site lies in an area susceptible to limestone solution features, however no evidence of solution features has been identified at the site. The ESP report raises the need for further consideration o solution features at design phase.
- Within the infilled dock and former smithy area, a high proportion of the recovered gravels and cobbles were noted to be slag. Some forms of slags are volumetrically stable but, depending on their chemistry, some can be extremely unstable when hydrated, which can lead to significant heave at the surface and damage to buildings and hard surfaces.

5.1.5 *Earth Science Partnership. Desk Study and Exploratory Investigation for Proposed Leisure Development, South of Salt Lake Car Park, Porthcawl (Ref: ESP7702d.3500.FinalReport)*

Earth Science Partnership produced a Phase 1 and Phase 2 report covering the area of a proposed food store in Salt Lake Car Park in March 2021. The report assesses the site in the context of a proposed leisure development, and includes an intrusive ground investigation and subsequent GQRA, remediation options appraisal and Geotechnical comments.

The ground investigation scope references works undertaken in January 2021 and comprised the following exploratory positions:

- 8 no trial pits excavated to a maximum depth of 3.8mbgl;

Encountered Geology and Hydrogeology

- **Made Ground (Dock Infill)** was encountered in all trial pits to a maximum depth of 3.8m as a loose to medium dense black very ashy sandy gravel with frequent fragments of coal, brick, slag, and clinker. Occasional glass bottles, pockets of yellowish brown clay, ceramic fragments and entire bricks were also found in this stratum across the site;
- **Made Ground (car park surfacing and subbase)** was encountered to a maximum depth of 0.3m as a medium dense to loose, grey slightly silty sandy limestone gravel surface (approximately 0.1m thickness), overlying a medium dense reddish brown slightly silty limestone gravel with high angular limestone cobble content.
- Slight seepage of **Groundwater** was encountered, within the Made Ground of the infilled dock area at 3.8m. Based on adjacent investigation, ESP considers that a groundwater body is present within the infilled dock Made Ground, with a deeper groundwater body within the Oxwich Head Limestone.

Geo-Environmental Summary / Risks

Testing of samples collected during the ground investigation identified several contaminants of concern at the site, and the risks to receptors classified as moderate or above are summarised below:

- The ESP GQRA argues that the proposed development (leisure) constitutes a commercial property, and therefore soil screening values for a commercial end use are have been used to assess the site. No exceedances of the chosen GAC have been noted from the 6 samples of Made Ground tested. Reassessment of these samples will likely be required in the context of future developments;
- Asbestos was identified in two samples of dock infill materials at the site.
- Leachate testing has identified elevated levels of metals and PAH's within the infilled dock materials. Groundwater monitoring was not undertaken across the site.
- ESP consider that the groundwater within and outside of the infilled dock is in hydraulic continuity with the main groundwater body within the Oxwich Head Limestone (a Principal Aquifer) and suggest consultation with NRW and possible further assessment.
- Ground gas monitoring was not undertaken at the site.

Geotechnical Summary / Risks

- Due to the depth of Made Ground at the site and the variability within this strata, ESG considers piled foundations to be the most viable solution at the site, with the Oxwich Head Limestone being the suitable founding strata.
- ESG consider the unconsolidated / uncompacted soils of the Made Ground within the infilled dock are potentially susceptible to collapse compression during inundation, if groundwater levels were to increase.
- Where groundwater ingress is present within the Blown Sand deposits, the potential for running sands is considered high. The design of all excavations or bored foundation solutions (drainage, foundations etc) should consider this hazard.
- The site lies in an area susceptible to limestone solution features, however no evidence of solution features has been identified at the site. The ESP report raises the need for further consideration o solution features at design phase.
- Within the infilled dock, a proportion of the recovered gravels and cobbles were noted to be slag. Some forms of slags are volumetrically stable but, depending on their chemistry, some can be extremely unstable when hydrated, which can lead to significant heave at the surface and damage to buildings and hard surfaces.

5.1.6 Quantum Geotech. Porthcawl Drainage Scheme, GROUND INVESTIGATION FACTUAL REPORT (Ref: Q0281/FR)

Quantum Geotechnical produced a Phase 2 report in July 2020 covering the eastern site area on, and surrounding the Sandy Bay Bowl. The purpose of the investigation was to determine the existing ground and groundwater conditions to advise on a proposed new drainage scheme in this area.

The ground investigation scope references work undertaken in June 2020 and comprised the following exploratory positions:

- 9 no trial pits excavated to a maximum depth of 3.4mbgl;
- Infiltration rate testing in 5 trial pits; and
- TRL DCP testing adjacent to the 9 trial pits.

Encountered Geology and Hydrogeology

- **Made Ground (General)** was encountered to a maximum depth of 1.2m in four locations, comprising re-worked natural material with occasional brick, concrete and metal. The Made Ground largely comprised reworked Blown Sand Deposits, and were granular in nature.
- **Blown Sand Deposits** were encountered either from surface or directly beneath the Made Ground across the site, to a maximum depth of 3.4m and generally comprised sand and gravels.
- No **Groundwater** was encountered during the investigation.

Environmental Testing Summary

Samples collected during the ground investigation were chemically tested using a standard suite of contaminants, including metals, PAH, total TPH and asbestos. Microbiological testing of 5 samples for faecal coliforms and clostridium perfrigens was also undertaken.

The Quantum report presents the results of testing but does not present any analysis. It is noted that both faecal coliforms and clostridium perfrigens were detected in the samples analysed, but no explanation or potential source is proposed by the quantum report.

Geotechnical Testing

In addition to the TRL DCP testing undertaken at the site, limited geotechnical laboratory testing was undertaken, including analysis of moisture content, particle size density, Atterberg testing and BRE SD1 testing of the Made Ground and Blown Sand Deposits. The results of this testing are presented factually but not discussed further.

15 infiltration rate tests were undertaken in 5 trial pits (within the Blown Sand Deposits) and indicated a variable rate of infiltration, ranging from 1.07E-4m/sec to 6.92E-5m/sec.

5.1.7 *Jubb Consulting Engineers Ltd. Porthcawl Placemaking, Phase 1 Desk Study Report (Ref: 21176-DTS-01) (August 2021).*

Jubb Consulting Engineers produced a Phase 1 Desk Top Study covering the entire Porthcawl Harbourside area, as part of the wider Porthcawl Placemaking assessment carried out in 2021.

The report presents no new intrusive data, providing only a review of previous GEO reports undertaken at the site; including two of the ESP reports (Site A and Site B) referenced above. The Jubb report does make any reference to the additional 5 ESP reports review above, or the Quantum Report, and as such its utility is limited.

The report does make an assessment of geo-environmental and geotechnical conditions at the site and states that further extensive, phased site investigation will be required to inform the design process.

5.1.8 *Arup. Porthcawl Sandy Bay Coastal Risk Management, Coney Beach Coastal Defence Revetment Basis of Design (Ref: 264874) (November 2022).*

In 2022 Arup produced a basis of design document for a proposed revetment on the western extent of Coney Beach in 2022. Whilst not specific to ground conditions, the document references surveys undertaken to locate a rising water main in the vicinity of the beach, undertaken in 2019 by Dwr Cymru. The findings of this trial pitting exercise are not attached in full, however it is anticipated they may be available on request.

5.2 Gap Analysis

Following the review of existing site investigation reports in Section 5.1, in the following section Hydrock will review site coverage and uncertainties to determine where further information may be required to support the masterplanning process. Figure 5.1 below indicates the rough extents of SI works at the site to date.



Figure 5.1: Existing site investigation data

5.2.1 *Suitability of data*

Whilst older site investigation reports can give a useful steer on ground conditions, the generally accepted timescale for validity of laboratory testing data is 5 years, due to the ever-evolving regulatory landscape and updates to testing methods and procedures. As such Hydrock has limited its review process to reports that have data still considered to be 'valid' i.e. in the last 5 years.

The laboratory testing data appended to the respective ESP and Quantum reports has been reviewed and confirmed to be from MCERTS and UKAS accredited laboratories.

Additional ground investigation will be required to validate the suitability of the existing data sets. Supplementary ground investigations will be required in a staged approach over the masterplanning and detailed design phases.

5.2.2 Identified data gaps – Phase 1

As presented in Figure 15; there is good site investigation coverage of Phase 1, with ESP having carried out a substantial amount of SI in this area.

Data gaps are present however, with the area north of the proposed Salt Lake Leisure development not investigated to date. This area is of particular interest due to its past industrial history, with Made Ground associated with the infilled dock likely to be of significant thickness in this area. Further SI would be required to fully profile the extent and depth of the infilled dock area.

A data gap also exists on the existing Hillsbro Car Park, with only the southern extent currently having been investigated. It is understood, however that this area has been proposed to be retained as car parking, and as such further SI information would not be required at this stage.

The following works are recommended to facilitate masterplanning at the site (these are discussed further in the Hydrock Recommendation report Ref: 32485-HYD-XX-XX-RP-X-0100).

- Phase 2 Ground Investigation (Due Diligence) – including deep boreholes and trial pits to investigate the data gap to the north of the proposed Salt Lake Leisure site.
- Foundation options appraisal to help zone foundations and propose building locations at the site.
- Infiltration rate assessment to inform drainage design.

The following works are recommended to assist with the future planning application and design of the development.

- Supplementary Phase 2 Ground Investigation to assist with detailed design of the development.
- Planning / design phase deliverable reports, e.g. Detailed Quantitative Risk Assessment (DQRA), Remediation Strategy & Verification Plan (RSVP), Materials Management Plan (MMP), Earthworks Specification; and Geotechnical Design Report.

5.2.3 Identified data gaps – Phase 2

Limited site investigation has been undertaken across the entirety of Phase 2, with only 9 shallow trial pits to a maximum depth of 3.2m undertaken in the vicinity of the Sandy Bay Bowl. No deeper investigation locations have been undertaken across the east of the site.

The 9 trial pits undertaken by Quantum included testing for microbiological testing of 5 samples for faecal coliforms and clostridium perfrigens, both of which were detected. Further microbiological testing will be required across the wider site area to determine the extent of this contamination. Chemical and geotechnical testing of samples was also undertaken, with the lab reports presented factually.

A full site investigation, including deeper exploratory locations will be required across Phase 2, particularly in the areas where residential development is proposed.

- Phase 2 Ground Investigation (Due Diligence) – including deep boreholes and trial pits to investigate the data gap across the whole of the Phase 2 site.

- Foundation options appraisal to help zone foundations and propose building locations at the site and advise on potential sea defences.
- Infiltration rate assessment to inform drainage design.

The following works are recommended to assist with the future planning application and design of the development.

- Supplementary Phase 2 Ground Investigation to assist with detailed design of the development.
- Planning / design phase deliverable reports, e.g. Detailed Quantitative Risk Assessment (DQRA), Remediation Strategy & Verification Plan (RSVP), Materials Management Plan (MMP), Earthworks Specification; and Geotechnical Design Report.

6. Acoustics

6.1 Acoustics Risk Review

The following sections give an overview of the risk associated to the development in regard to acoustics, noise and vibration. Figure 6.1 provides a key that explains how Hydrock has determined the risks and Table 6.1 gives a description of the key headings in the risk review.

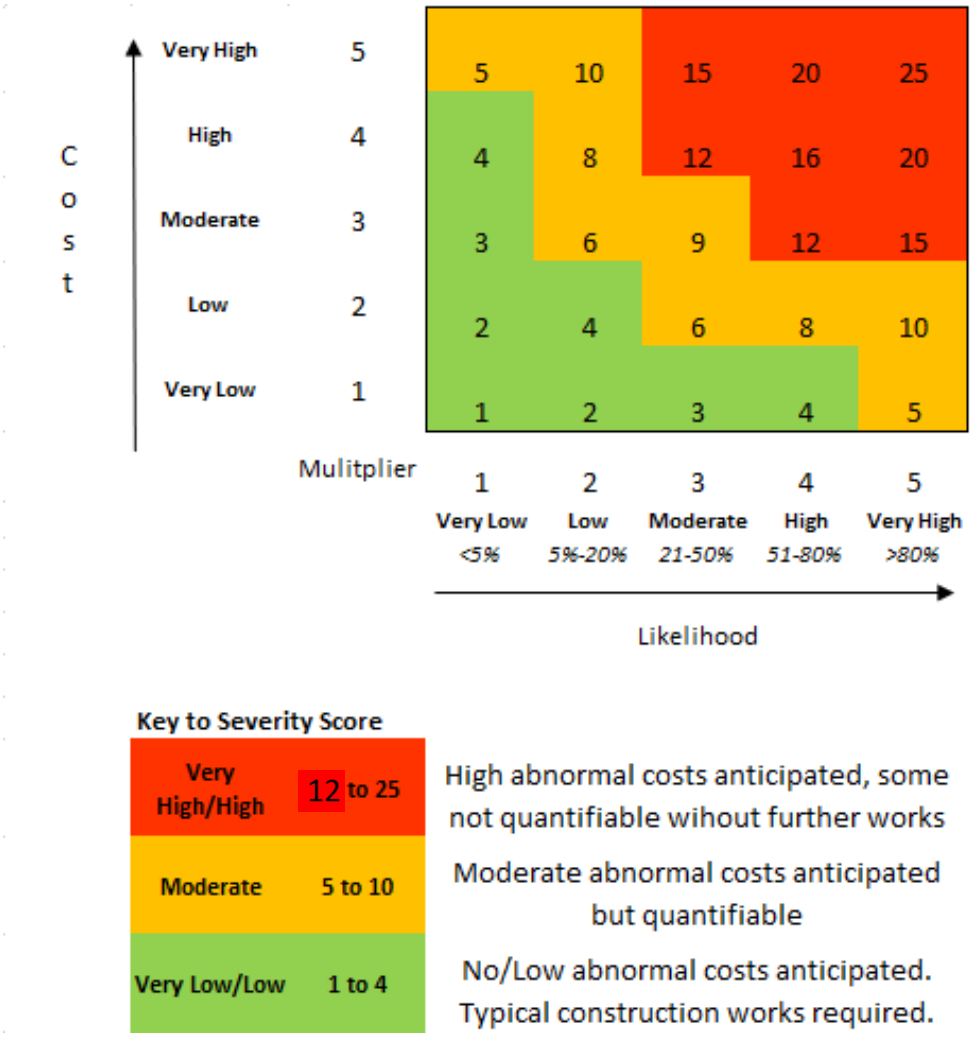


Figure 6.1: Key for Risk Register

Table 6.1: Description of headings in Risk Register

Item	Description
Topic	Headline topic/subject area
Risk	Overall risk rating (red/amber/green)
Description	Detailed description of the topic with supporting data where needed
Abnormal cost items	Abnormal cost items that could be incurred in mitigating the risk
Mitigation	Areas where mitigation/additional consideration will be required

6.2 Acoustics Risk Register

Table 6.2: Acoustics, Noise and Vibration Risk Register

Risk Register				
Topic:	**Risk:**	**Description:**	**Abnormal costs:**	**Mitigation:**
Acoustics:				
Noise Affecting the Site	9 (Moderate)	The site may be affected by road traffic from local roads. Other potential noise sources are mechanical plant or activities associated with the commercial uses, i.e. Coney Beach Amusement Park and Monster Park (if retained), Aldi, pubs/restaurants, etc. It is also noted that Porthcawl Fire Station is located to the north west of the site. An environmental noise survey will be required to determine the noise levels affecting the site.	Mitigation measures and ventilation strategy.	Sound insulation performance requirements and the ventilation strategy shall be developed based on the survey results. To comply with Approved Document O to the Building Regulations, it may not be possible to rely solely on open windows as overheating mitigation strategy. For example, the following may be necessary: mechanical overheating fans, cooling, and limiting solar gains at some dwellings. The risk of this being required at all proposed dwellings is low, but the cost of implementation could be medium at some dwellings.
Noise Emissions from the Site – Building Services Plant	4 (Low)	The site is likely to feature a building services plant, which generate noise. Noise emissions will need to be controlled to limits set in accordance with local and national guidance based on background sound levels measured on site.	Mitigation measures.	Selection of suitably quiet plant and equipment, use of suitable atmosphere side attenuators for MVHR or ASHP units, and creating enclosures for some types of plant. These mitigations are relatively standard for developments close to existing residential properties. They may not be required, for example, if proposed dwellings are naturally ventilated, but may be necessary if mechanical plant forms part of the solution for compliance with Approved Document O to the Building Regulation.
Noise Emissions from the Site – Additional Vehicle Trips	9 (Moderate)	The site may cause additional vehicle trips on nearby roads that will result in an increase in noise levels to the surrounding existing noise sensitive receptors. Development generated traffic noise shall be determined and based on the increase of noise levels likelihood of adverse impacts shall be assessed.	Mitigation measures.	If there is a significant increase, there may be a requirement for noise barriers, or improvements to glazing/vent of existing sensitive receptors.

Noise Emissions from the Site – Commercial Uses	12 (High)	Depending on the nature of the proposed commercial uses, noise emissions will need to be controlled to agreed levels with local authority, e.g. noise producing venues with live/amplified music, outdoor patron areas, etc.	Mitigation measures	Sound insulation performance, ventilation and screening requirements shall be developed based on the proposed uses and local authority requirements.

Appendix 13.1 – Lighting Impact Assessment

Porthcawl Lighting Impact Assessment



Revision Record

Disclaimer

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Appendix A Porthcawl Lighting Master Plan

Appendix B Spine Road Detailed Lighting Design

Stantec

Appendix 13.2 – Porthcawl Lighting Masterplan

Sensitive Boundaries - Bat Highways

Extra care shall be taken when designing the lighting around these highways to ensure an acceptable level of light spill (0.2lux on the horizontal plane & 0.4 lux on the vertical plane) is achieved.

Directional throw of lighting, shielding, wattage and colour temperature are key areas to concentrate on when producing a detailed design around these areas.

Newton Primary School - New Field

Lighting in the new school field expected to be minimal. It is not foreseen that the field will be in used during the evening/night-time but the court will need to be lit to 75 lux 0.5 Uo if it is planned to be used in the darker months. The lack of lighting will help reduce nuisance lighting those residents nearby. However, some lighting may need to be installed around the field for safety concerns.

Newton Primary School
Area outside of scope -
Existing lighting to remain

Coney Beach Public Car Park

Roads - 10lx 0.4Uo
Parking Spaces - 10lx 0.4Uo
Pathways - 5lx 0.25Uo

Shielding to be used to ensure dark bat highways.

MUGA, Parks, Pump Track & Garden

Directional, dark sky bollards to be utilised for pathway lighting

Pathways - 5lx 0.25Uo
Ramps - 10lx 0.4Uo

Sports pitch lighting to be designed to Lighting Classification III according to LG4.

Minimal decorative and feature lighting to be provided in parks and garden. No up lights to be used in this area to ensure dark bat highways.

Existing lighting columns to be retained along the road to the west.

See drawing 32486-STN-XX-XX-SK-E-0002 for detailed lighting design of the proposed spine road and the effect of this lighting on the bat highway to the north.

Existing Aldi and Car Park

Existing lighting to remain

Area 01

Area 02

Area 03

Area 04

Area 05

Area 06

Area 07

Area 08

Area 09

Area 10

Area 11

Area 12

Sandy Bay Ecological Remedial Works and Drainage

Lighting to only be provided to pathways utilising directions, dark sky bollards. Lighting should be installed only where necessary to keep the bat highway dark.

Pathways - 5lx 0.25Uo

Some safety/emergency lighting to be installed over drainage manifolds.

Sand Bay - Residential Development

Roads - 10lx 0.4Uo
Parking Spaces - 10lx 0.4Uo
Pathways - 5lx 0.25Uo

Decorative lighting to be provided in green social areas

Column heights, position and angle to be co-ordinated with residential windows to ensure minimal light intrusion into apartments.

A bat highway runs around the northern and eastern edge of this development, lighting shields will be required to ensure 0.2 lux on the horizontal and 0.4 lux on the vertical on these boundaries.

One way system throughout residential development.

No lighting expected to be installed in the sand dunes.

Safety lighting to be provided to mini golf course.

Pathways to be lit using bollards

Pathways - 5lx 0.25Uo

Decorative and feature lighting to be provided throughout.

Flood Defences

Decorative and feature lighting to be provided as this will be used as a social area. Area to be lit enough to ensure safety but with the aim to keep light spill onto the houses ans ocean to a minimum - 10 lux 0.25 Uo.

Higher lux levels are required on the change of level down onto Macworth Road - 20 lux 0.4 Uo.

Area outside of scope - existing lighting to be retained

Some existing lighting columns exist along this path. Within our new scheme we will need to light the full extent of the path baring in mind the bat highway to the south.

To achieve this the existing columns will be replaced and new TRT low level, directional, dark sky bollards to be installed across the entirety of the path. These will need to be faced north as to reduced light spill to the south.

5 lux 0.25 Uo

Coney Beach South - Residential Development

Column lighting to be provided throughout

Roads - 10lx 0.4Uo
Parking Spaces - 10lx 0.4Uo
Pathways - 5lx 0.25Uo

Decorative lighting to be provided in green social areas

Column heights, position and angle to be co-ordinated with residential windows to ensure minimal light intrusion into apartments

See Hillsboro South draft lighting plan for detailed design of the park

The area has been designed to have 10 lux 0.25 Uo on the paths and subtle decorative lighting highlighting features throughout the park

Exiting lighting columns along the Eastern Promenade to be retained.

TRT Chalice - 83W - 4000K

TRT can reduce the wattage of the existing luminaires on site if required. Internal shields can also be installed on site to limit light spill to the water.

Consideration to be given to reducing the colour temperature to 3000K to match the rest of the development, TRT can retrofit new LEDs and driver into the existing casing.



Image of luminaires currently installed



Column lighting to be provided for all roads, roundabouts and main pedestrian pathways. Existing columns to be retained on the north side of the roundabout.

Roads - 10lx 0.4Uo
Parking Spaces - 10lx 0.4Uo
Pathways - 5lx 0.25Uo

Decorative lighting shall be used in all amenity areas, ensuring a safe level of lighting throughout.

Bench lights, stair lights, uplights to highlight feature trees and interactive decorative projector lighting shall be utilised throughout.

No lighting expected to be installed throughout the sand dunes & Rhych Point- area to remain unlit.

1. A colour temperature of 3000K to be used for all functional lighting. This includes areas such as; roads, roundabouts, junctions and main pedestrian pathways.

2. A colour temperature of 2200-2700K to be used in all amenity area lighting. This includes areas such as; green parks, leisure parks, all decorative lighting and ecological areas of concern.

3. Where ecology is of concern, minimal lighting shall be installed with a colour temperature of less than 3000K. Internal/external shield are to be installed where applicable to ensure minimum light spil.

4. Development has been considered as an E3 environmental zone.

5. See attached document for examples of TRT Lighting products.

NOTES:

NOT FOR SITE PURPOSES: This drawing is a general arrangement plan only and is not intended for site purposes.

SCALE: Do not scale from this drawing.

SETTING OUT: All setting out, levels, dimensions to be agreed on site. Do not use the information on this drawing without checking all dimensions on site. Any discrepancies between drawings, specifications and site works are to be reported to The Urbanists. Order of construction and setting out is to be agreed on site.

CHECK: This drawing must be the latest revision, read in conjunction with all other drawings, details, specifications and schedules. All dimensions are in millimetres unless otherwise stated. Where and contradiction or uncertainty arises between the drawings and/or the schedule of works, it is the contractor's responsibility to seek verification from The Urbanists before proceeding. No claims will be met by The Urbanists, where the contractor continues work in absence of such confirmation.

Stantec

Project
Porthcawl Waterfront Regeneration

Sketch Title
Electrical Services Lighting Master Plan

Status: **For Information**

Stantec Job No: **333700659**

Drawn	Scale	Date
AB	NTS	07/11/2025

Sketch Number: **PWR-STN-XX-XX-DR-E-2000**

Revision: **P02**

TRTLIGHTING

Street Lighting



Aspect Gen 2



Optio



Oaken



Aspect Mini

MADE IN BRITAIN



TRTLIGHTING

Amenity Lighting



Circa 7



Circa Y



Circa

MADE IN BRITAIN



Luz



Chalis



TRTLIGHTING

Bollard Lighting



Via



iLara



FA

MADE IN BRITAIN

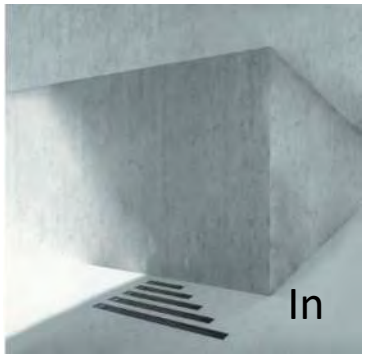


TRTLIGHTING

Inground Lighting



Iservo



In



R- Serie



Confine

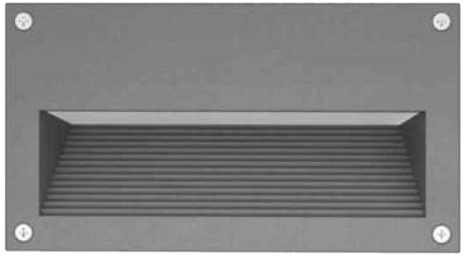


Traccia



TRTLIGHTING

Feature Lighting



iNerra



iRinga



iErgo



Chameleon



Chameleon



Altura handrail system

Appendix 13.3 – Spine Road Detailed Lighting Design

	Luminaire A	Luminaire B	Luminaire C	Luminaire D
Supplier	TRT Lighting	TRT Lighting	TRT Lighting	TRT Lighting
Type	ASX 125W/ 13TI WW/ CAS 70/ M_(Duplex) GK_3000K FO	ASX 125W/ 13TI WW/ CAS 70/w/ swc G2_EBS_3000K FO	ASX 125W/ 13TI WW/ CSS 135/ _Blv ori_G4_3000K FO	ASX 125W/ 13TI WW/ CSZ 71/w/ swc G1_3000K FO
Lamp(s)	42 0080 0000 100	42 0080 0000 100	42 0080 0000 100	42 0099 0000 100
Lamp Flux (klm)	12.62	12.05	13.10	14.08
Maintenance Factor	0.87	0.87	0.87	0.87
No. in Project	4	7	5	3

T45

Grid 1 Horizontal Illuminance (lux)

CTT45 / 20m

Grid 2 Horizontal Illuminance (lux)

Tarmac Grid Horizontal Illuminance (lux)

1160M 30m

2622M 60m

1. A colour temperature of 3000K to be used for all functional lighting. This includes areas such as; roads, roundabouts, junctions and main pedestrian pathways.

2. All columns along the northern side of the Spine Road have been modelled with light spill sheilds.

3. Lighting of Conflict Areas - Designed in Accordance with BS5489-1 2020. Conflict areas are typically junctions, intersections, roundabouts and pedestrian crossings, where significant streams of motorized traffic intersect with each other or with other road users such as pedestrians and cyclists. At conflict areas, the visual task is generally more difficult than on straight roads, and a higher luminance or illuminance class may be selected at the conflict area.

C4 – Eav = 10 Lux, Uo 0.40
>6.00m in environmental zones E3 or E4 from BS5489 LMF = 0.92
Maintenance factor = LLMF x LMF = 0.95 x 0.92 = 0.87

4. No account is taken for the blocking effect caused by buildings, trees etc. The calculation shown by this drawing assumes that the whole area being considered is in the same plane, i.e. there are no changes in gradient or elevation.

Stantec

Project
Porthcawl
Waterfront Regeneration

Sketch Title
Electrical Services
Spine Road Lighting

Status **For Information**

Stantec Job No
333700659

Drawn	Scale	Date
AB	**NTS**	**07/11/2025**

Sketch Number	Revision
PWR-STN-XX-XX-DR-E-2001	**P02**

Results Grid 1	
Eav	12.15
Emin	4.84
Emax	33.55
Emin/Emax	0.14
Emin/Eav	0.40
Results Grid 2	
Eav	11.13
Emin	4.42
Emax	33.30
Emin/Emax	0.13
Emin/Eav	0.40
Results Vertical Grid Horizontal	
Eav	0.09
Emin	0.04
Emax	0.09
Emin/Emax	0.39
Emin/Eav	0.68