

Prepared on behalf of

Wellshill Civils and Plant Ltd

**Proposed Aggregates Recycling Facility,
Land adjacent Heol-y-Splot, South Cornelly, Bridgend**

Transport Assessment

Acknowledgements:

National Geographic Society MapMaker has been utilised to generate figures used in the report

The Crashmap database has been utilised to obtain collision records for the local highway network

Disclaimer

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Junctions 9 output – 2030 Base Sensitivity + Development

1 Introduction

- 1.1 Sanderson Associates (Consulting Engineers) Ltd has been appointed by Wellshill Civil and Plant Ltd to provide a Transport Assessment in support of a planning application for a proposed Aggregates Recycling Facility on land adjacent Heol-y-Splot, South Cornelly, Bridgend. The location of the proposed development site is shown in **Figure 1** below.



Figure 1 – Site Location

National Geographic Society Mapmaker

- 1.2 The proposed development is for the treatment/recycling of waste (aggregates recycling facility). The facility would receive and process inert aggregates and soils sourced from off-site excavation, construction and demolition activities within the locality of Bridgend and neighbouring areas. The development would include the installation of a wash plant, construction of an office and staff welfare building, weighbridge and associated office, storage/stock piles and ancillary works. The site would potentially receive and process up to 200,000 tonnes per annum of inert construction and demolition waste.

1.3 A Pre-Application Enquiry was undertaken in May 2020 by Technia Environment and Planning Ltd on behalf of the applicant and a response was received on the 8th July 2020 from Bridgend County Borough Council (Ref: PE/213/2020).

1.4 Within the pre-application response, comments were provided from the Council's Highway Officer, as set out below:

"It is considered that the proposal would result in an increase in vehicular movements which would need to be quantified and mitigated. It should be noted that the Heol-y-Splot arm of the roundabout is currently used by a number of intensive uses such as the quarrying operations and any future application would have to demonstrate that the roundabout junction has the capacity to accommodate the new traffic generated by the development. It would also need to demonstrate that the new traffic does not unbalance the roundabout such that the northbound A4229 arm is not affected by queuing traffic – there is very little opposing traffic from South Cornelly/Porthcawl Road Arm.

As a result of the above, a Transport Assessment will be required to support any future planning application. In addition, the applicant will be required to provide off-road parking as per the adopted parking standards SPG17 as well as indicating how employees can travel to the site sustainably using public or sustainable transport modes as well as providing cycle parking on site.

The transport hierarchy found in TAN18 must also be addressed in any future Planning application as well as the Active Travel Act which will require the applicant to provide safe walking and cycling infrastructure to get to and from the site."

1.5 Further to the pre-application response, a Transport Assessment Scoping Note has been prepared by Sanderson Associates (Report ref: 11661-001-01). This was submitted to the Local Highway Authority, Bridgend County Borough Council, to obtain their agreement to the scope of this Transport Assessment. A copy of the scoping note submitted to the LHA is attached at **Appendix A**.

1.6 A response was received from the Local Highway Authority in relation to the submitted Scoping Report which set out the following:

- *We will not be prepared to use 4 year old traffic data from Vectos. New survey data will be required and from the data we are seeing from recent traffic surveys in Wales the data is not dissimilar to pre Covid levels. In addition the old survey data can be used as a 'sense check' against the new traffic counts.*
- *The roundabout is significantly unbalanced with vehicles from the quarry, therefore a capacity analysis is required, regardless of how low you believe the traffic to be generated from your site, even a small increase could have a material impact and this needs to be quantified and mitigated if needed.*
- *The future growth year should be 10 years from opening not 5. 2020 base year - 2030 future year*
- *I am unable to understand the trip generation rational for the site. It seems to be based on the processing capacity of the site and the size of the vehicles bringing materials to the site. Does this include collection and delivery of the finished product? I assume that the site will only be able to store a certain amount of finished product. Has TRICS been interrogated?*
- *The quantum of parking seems excessive for this operation and I would refer you to SPG 17 – parking standards for Bridgend which will allow you to undertake a calculation of parking spaces based on the size of the site and not the number of employees. As you may be aware the Active Travel Act seeks to reduce the reliance on the private motor vehicle and therefore the thrust of government policy is to reduce parking at destinations.*

1.7 This report has been prepared taking into account the comments received with regard to the submitted Scoping Report. With regard to the trip generation of the site, this has been based on a first principles approach as detailed later in this document, given the bespoke nature of the site and the lack of comparative sites within the TRICS database. With regard to car parking, additional information was requested from the Local Highway Authority with regard to the level of parking to be provided, given the bespoke nature of the development. It was requested that

car parking be provided in line with Industrial Land Use, taking into account the whole site size.

- 1.8 Further correspondence with officers at the Local Highway Authority with regard to the parking requirements for the site was received on the 25th November 2020, which confirmed that the parking standards are maximum standards and as such the proposed development is providing significantly less than the maximum which is acceptable. With regards to operational parking, it needed to be demonstrated that the operational vehicles associated with the proposal, such as tippers, HGVs can be parked on site overnight and not on the highway.
- 1.9 The comments above are addressed in this Transport Assessment and therefore there is no reason why the development proposals should not be deemed acceptable from a highways perspective.

National and Local Policy

- 1.10 National policy for Wales is contained in the document Planning Policy Wales (PPW) (Edition 10, December 2018).
- 1.11 National planning policy on highway and transport matters is provided throughout PPW as well as in Technical Advice Note (TAN) 18: Transport (2007). The latter provides guidance to Local Authorities about integrating land use and transport planning and explains how transport impacts should be assessed and mitigated. It provides advice on:-
- Integration between land use planning and transport
 - Location of development
 - Parking
 - Design of development
 - Walking and cycling
 - Public transport
 - Planning for transport infrastructure

- Assessing impacts and managing implementation

1.12 Local Planning Policy

1.13 The Bridgend Local Development Plan 2013 is the primary document that contains the policies that the development will be assessed against. The policies relevant to transport and highways which the development will be assessed against are:

- **Policy SP2** – *All development should contribute to creating high quality, attractive, sustainable places which enhance the community in which they are located whilst having full regard to the natural, historic and built environment;*
- **Policy SP3** – *Strategic Transport Planning Principles – aims to promote safe, sustainable and healthy forms of transport through good design, enhanced walking and cycling provision and improved public transport provision;*
- **Policy PLA11** – *All development will be required to provide appropriate levels of parking. This should be in accordance with the adopted parking standards contained within SPG17: Parking Standards;*

1.14 In line with the above and the response to the Scoping Note, this Transport Assessment addresses the key transport issues including:

- The local highway network and its highway safety record;
- The proposed development and its operational facilities;
- The impact of the development on the local highway network in terms of highway safety and capacity;
- Accessibility of the site in relation to sustainable transport and local facilities; and
- The predicted multi modal trip generation of the site.

1.15 This Transport Assessment demonstrates that there would not be an unacceptable impact on highway safety associated with the development and that the residual cumulative impacts of the development are not severe. As such, there are no transport reasons why planning should not be granted.

2 Existing Situation

2.1 *The Site and the Surrounding Area*

2.1.1 The site is located to the north of Heol-y-Splot, to the southeast of the village of South Cornelly. The site is allocated in principle within the Local Development Plan for a regional or local waste management facility under Strategic Policy SP7 (site reference: SP7(1)).

2.1.2 The site is bound by South Cornelly industrial estate to the west, brownfield land immediately to the north, with undeveloped land and a quarry further north and east and Heol-y-Splot to the south.

2.1.3 A planning application was submitted and subsequently withdrawn in 2016 for a development on the site. The proposals (reference no. P/16/444/FUL) were for the construction of a waste wood recycling facility including the reprofiling ground levels, drainage infrastructure, access, perimeter fence, staff welfare unit and weigh bridge with kiosk. This application was withdrawn before a formal consultation response was provided from the Local Highway Authority with regard to the application.

2.2 *The Local Highway Network*

2.2.1 The development is to be accessed via two priority T-junctions with Heol-y-Splot along the southern boundary of the site. The eastern access will be for use by HGVs and the western access will be for use by staff. Heol-y-Splot is an industrial access road which provides access to a Recycling Company to the south of the carriageway, and further east to Breedon Bridgend Concrete Plant and Quarry.

2.2.2 Heol-y-Splot in the vicinity of the site accesses has an approximate carriageway width of 7.2m and is a two-way single carriageway route. Only vehicles accessing the Breedon Bridgend Concrete Plant would need access further east past the proposed development site.

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- 2.2.3 Heol-y-Splot is subject to the national speed limit for a single carriageway route, however given the nature of the route, serving only the Breedon Bridgend Concrete Plant to the west, it is unlikely that vehicles will be travelling at the speed limit, as it is expected that the majority of vehicular traffic would be HGVs.
- 2.2.4 To the west of the western vehicular access, the carriageway on Heol-y-Splot narrows to approximately 5.0m wide, due to a build out on the southern side of the carriageway adjacent the entrance to the recycling site. The signage associated with the build out, states that vehicles travelling eastbound have priority to those travelling westbound, who should give way. This feature acts as a speed reduction measure in the vicinity of the proposed site accesses.
- 2.2.5 Further west, Heol-y-Splot continues and approximately 130m west of the western site boundary meets the A4229 and Porthcawl Road at a four arm roundabout junction. To the south of the junction, the A4229 is a single carriageway route subject to a 50mph speed limit providing access south towards Porthcawl.
- 2.2.6 To the west of the junction, the A4229 provides a bypass route around South Cornelly. This is a two-way single carriageway route, subject to national speed limit and is not street lit. This provides a route around South Cornelly, providing a direct link to the M4 at Junction 37. From this junction, vehicles can head east on the M4 towards Bridgend and Cardiff and west towards Port Talbot and Swansea.
- 2.2.7 The northern arm of the roundabout junction, Porthcawl Road, provides access into the village of South Cornelly. It is subject to a 30mph speed limit and is street lit along the length of the route. This provides a direct route through the village which connects further north to the A4229 and provides a route further north to North Cornelly.
- 2.2.8 Between the northern and eastern arms of the roundabout there is a petrol filling station with convenience store and Subway Takeaway. Access into the PFS site is

taken from Heol-y-Splot, with vehicles exiting via Porthcawl Road to the north of the roundabout junction.

2.3 Road Traffic Collision Data

2.3.1 Road Traffic Collision Data has been obtained from the Crashmap database for the most recent five year period available (2015-2019). The study area considers the length of Heol-y-Splot adjacent the site and the roundabout junction of A4229 / Porthcawl Road / Heol-y-Splot and its approaches, as shown in **Figure 2**.

2.3.2 As can be seen in Figure 2 there have been three recorded personal injury collisions in the study area in the most recent five year period, less than one collision per year. The full record of the personal injury collisions to have occurred at attached at **Appendix B**.



Figure 2 – Road Traffic Collision Data **Crashmap**

2.3.3 It can be seen from the record of collisions above that no recorded personal injury collisions have taken place on Heol-y-Splot during the latest five year period. The three collisions to have occurred, all of which have been classified as slight, occurred on the western arm of the roundabout or on the circulatory in the vicinity of this arm.

-
- 2.3.4 The collision on the A4229 on approach to the roundabout (Ref: 2019621900101) occurred on Wednesday 9th January 2019 at 13:34 and occurred when the weather was fine and the road surface dry. The collision involved a rear end shunt type collision between a vehicle proceeding normally along the carriageway colliding with the rear of a vehicle proceeding normally but is held up.
- 2.3.5 The collision that occurred where the A4229 western approach meets the roundabout circulatory (Ref: 2019621900949) occurred on Friday 12th July at 10:06 when the weather was fine and the road surface was dry. The collision involved a car in the act of turning right being struck at the rear of the vehicle by a following pedal cycle.
- 2.3.6 One of the recorded collisions (Ref: 2015621501276) occurred on Friday 31st July 2015 when the weather was fine and the road surface was dry. The collision involved a vehicle proceeding normally along the carriageway colliding with the nearside of a cyclist.
- 2.3.7 Given that there have only been three collisions in the most recent five year period, it is clear to see that there are no personal injury collision trends that would give rise to any specific highway safety problems. It is not expected that the proposed development would result in a material impact to the collision record given its expected trip generation.

3 Accessibility by Sustainable Travel Modes

3.1 Introduction

3.1.1 This section includes an assessment of the accessibility of the site by non-car modes, to review the opportunities that exist for employees to travel by sustainable modes, which is a core objective of local and national policy.

3.1.2 However, the propensity for people to travel by sustainable modes such as walking and cycling varies by development type. Due to the nature of the development as an Aggregates Recycling Facility, naturally the vast majority of trips generated by the development are vehicle trips associated with the transportation of materials.

3.2 Accessibility on Foot

3.2.1 Walking is the most important mode of transport at the local level and can replace short car trips for journeys under 2km, which contribute to congestion and pollution, and the need for car parking. Walking is the most sustainable form of transport and provides one way of reducing pressure on the environment. People walking are also travelling at a pace that gives them greater connection with their surroundings and can have positive benefits in relation to a community's security through increased surveillance. Walking stimulates both personal health and the health of communities and local economies. Government health improvement advice states that just 30 minutes brisk walking 5 times a week can bring about significant reductions in the risk of coronary heart disease, high blood pressure and diabetes.

3.2.2 In relation to acceptable walking distances, Manual for Streets (MfS) offers the following guidance in Section 4.4 "The Walkable Neighbourhood".

"Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes (up to 800m) walking distance of residential areas which residents may access comfortably on foot. However, this is not an upper limit and PPG13 states that walking offers the greatest potential to replace short car trips. Particularly those under 2 km. MfS encourages a reduction in the need to travel by

car through the creation of mixed-use neighbourhoods with interconnected street patterns, where daily needs are within walking distance of most residents.”

- 3.2.3 **Figure 3**, indicates destinations that lie within an 800m and 2000m radius of the application site. It is noted that walking routes will not follow simple radii as shown on this plan, which is provided as an indication of where destinations lie and the general extent to which the local area can be accessed on foot.

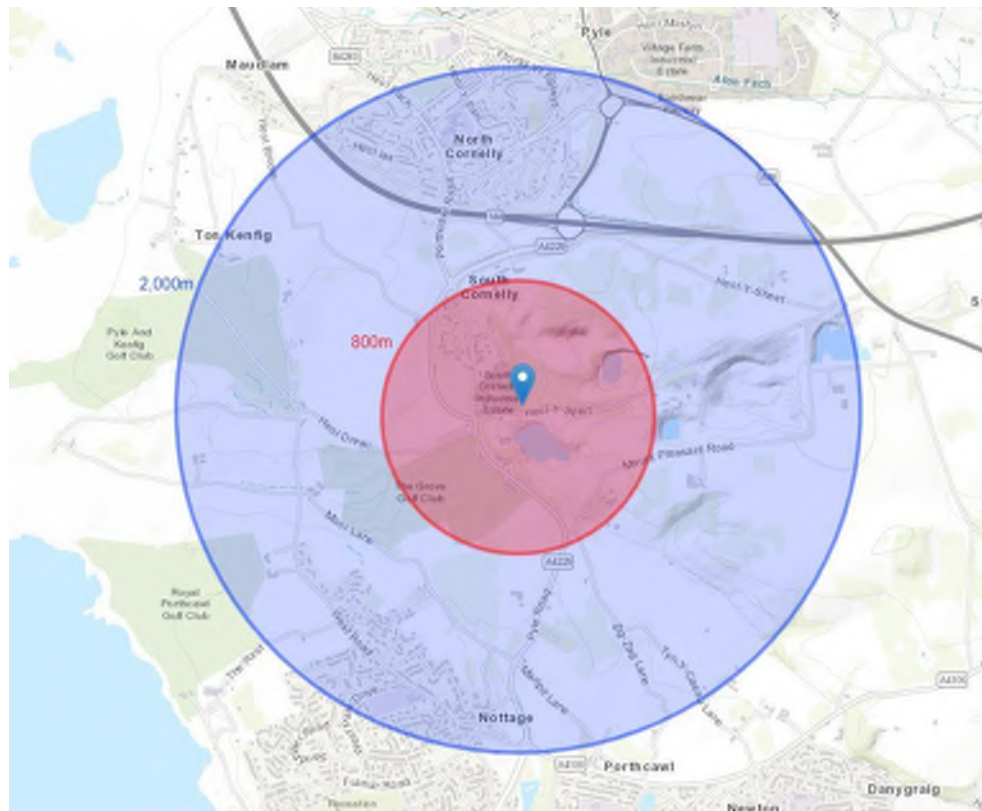


Figure 3 - Indicative Walking Radii National Geographic Society Mapmaker

- 3.2.4 As can be seen from Figure 3, residential areas of South Cornelly, parts of Nottage and parts of North Cornelly are within a 2km walking distance of the site. It is therefore expected that some employees who live within a reasonable walking distance of the site, may choose to walk to work.

- 3.2.5 In addition to this, adjacent the A4229 / Porthcawl Road / Heol-y-Splot roundabout junction is an Esso petrol station with small convenience store and a Subway fast food outlet. Employees at the proposed development can access these facilities on foot from the site, which reduces the reliance on the private car.

3.3 Accessibility by Cycle

- 3.3.1 Like walking, cycling has an important part to play in reducing congestion, improving accessibility and reducing pollution. Cycling is also linked to increased general health and fitness which has personal benefits as well as economic benefits in terms of health service costs. The bicycle is generally more affordable than the car and hence there are financial benefits to the promotion of cycling. Cycling may also allow people without cars to reach destinations that they may otherwise be unable to reach. Cycling has the potential to substitute for short car trips, particularly those under 5km and to form part of a longer public transport trip.
- 3.3.2 **Figure 4** below, indicates destinations that lie within 5km and 7.5km of the application site. Again, it is noted that cycling will not follow the simple radius shown on this plan and is provided to give an indication of where destinations lie and the general extent to which the site is accessible by cycle.

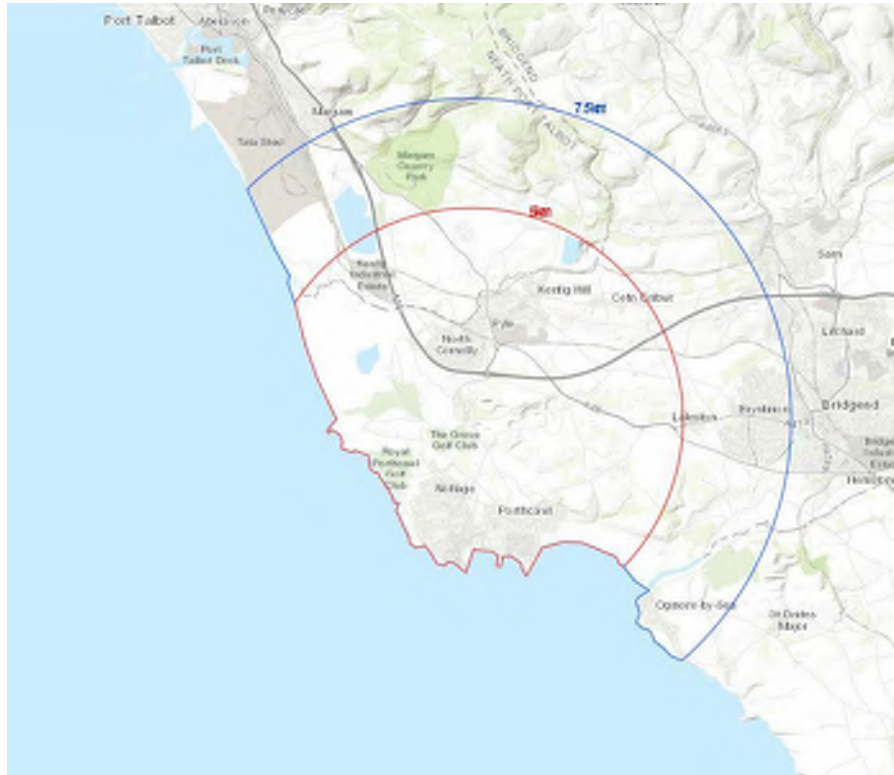


Figure 4 - Indicative Cycling Radii National Geographic Society Mapmaker

- 3.3.3 Figure 4 indicates that there is a relatively large residential catchment located within cycling distance of the site, including Nottage, Porthcawl, North Cornelly and Pyle. It is expected that employees who live in these areas could cycle to the site for their journeys to/from work.
- 3.3.4 Although it is recognised that there are no dedicated cycle facilities in the vicinity of the site, it is expected that the Porthcawl Road route between the site and North Cornelly would be suitable for cyclists and therefore employees who live in North Cornelly and are able to cycle, could do so to access the site.
- 3.3.5 Cycle parking will be provided as part of the development proposals so as to encourage the use of the bike to access the site. The exact type and number of cycle storage facilities will be agreed as the planning application progresses.

3.4 **Accessibility by Public Transport**

3.4.1 The nearest bus stops to the site are located on the A4229 to the south of the roundabout junction of A4229 / Porthcawl Road / Heol-y-Splot. The location of the stops is shown in **Figure 5** below. The stops are located within a 280m and 350m walking distance for northbound and southbound services respectively, measured from the eastern entrance to the site, from which staff and visitors will enter the site.

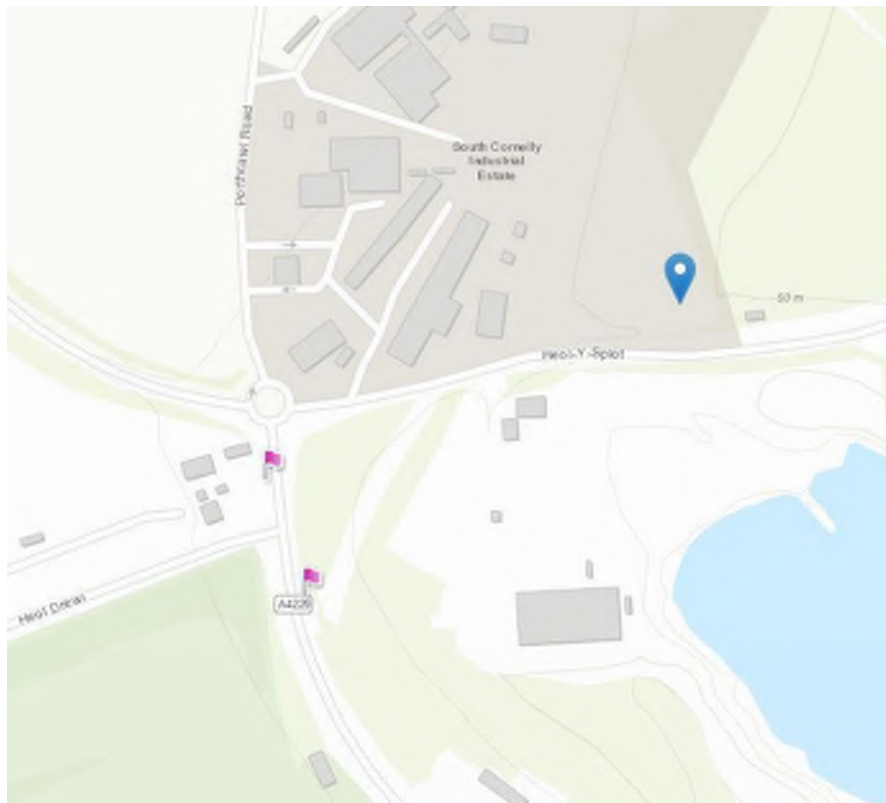


Figure 5 – Location of Bus Stops *National Geographic Society Mapmaker*

- 3.4.2 The bus stops on A4229 for northbound and southbound services both have a layby with a simple flag bus stop. The stops are served by the No. 63 bus service which provides a route between Bridgend and Porthcawl.
- 3.4.3 The No. 63 service operates Monday-Saturday between 07:20 and 18:40 towards Porthcawl and between 06:20 and 18:40 towards Bridgend. It provides an

approximate 20 minute service frequency Monday to Saturday. Given the service frequency, times of operation and the destinations served, it is expected that some staff from further afield will utilise the No. 63 bus service to get to the site.

- 3.4.4 The closest train station to the site is Pyle station, located approximately 3.2km to walking/cycling distance to the north of the site.

3.5 *Accessibility Summary*

- 3.5.1 Given the availability of bus service providing a 20 minute frequency within an acceptable walking distance of the site, it could be expected that some trips to the site could be undertaken by bus, particularly by those employees commuting from further afield.
- 3.5.2 It could be expected that those employees who are able, could cycle to the site as there are a number of residential areas and surrounding towns within a reasonable cycling distance of the site.

4 Development Proposals

4.1 Overview

4.1.1 The development proposals are for a change of use of the existing site to an Aggregates Recycling Facility.

4.1.2 The purpose of the development is for the treatment/recycling of waste (aggregates recycling facility). The facility would receive and process inert aggregates and soils sourced from off-site excavation, construction and demolition activities within the locality of Bridgend and neighbouring areas.

4.2 Proposed Site Operation

4.2.1 The development would include the installation of aggregates recycling equipment, construction of an office and staff welfare building, weighbridges and weighbridge office, storage/stock piles and ancillary works. The site would potentially receive and process up to 200,000 tonnes per annum of inert construction and demolition waste.

4.2.2 Inert construction and demolition waste will be crushed before passing by conveyor into the aggregates recycling equipment where it will be sized through a series of water-rinsed screens to produce clean processed aggregates for use in construction and highway works. The sized aggregates will fall into storage bays beneath the aggregates recycling equipment. Water within the aggregates recycling plant will pass through a filter press (within which solids will be removed to produce a clay that is also used within construction), before being recirculated to the wet screening.

4.2.3 The operating hours for the site are as follows and no processing of aggregates will be undertaken outside of these hours:

- 07:00-19:00 Monday to Friday
- 08:00-13:00 Saturdays
- The site will not operate on Sundays or Bank Holidays

- 4.2.4 There will be up to 10 full time employees at the site. An assessment of the expected vehicle volumes using the site and the impact on the local highway network is set out in Section 5.0 and Section 6.0, respectively.

4.3 Access

- 4.3.1 It is proposed to provide two dedicated accesses into the site. The first access along Heol-y-Splot into the western parcel of land will be dedicated for use by staff and visitors only in private vehicles and will not permit access by HGVs. There will then be a dedicated access into the eastern parcel of land for use by HGVs.
- 4.3.2 The drawing attached at **Appendix C** demonstrates the position of the proposed accesses. The access for staff/visitors has been designed to be 8.6 wide with 10m kerb radii. The access for HGVs has been designed to be 12m wide 15m kerb radii.
- 4.3.3 As can be seen on the drawing at **Appendix C**, visibility splays of 4.5m x 70m can be achieved from the HGV access and visibility splays of 2.4m x 70m from the staff/visitor access in line with DMRB for vehicles travelling below 30mph, which is deemed to be most applicable in this location. It is recognised that this section of Heol-y-Splot is subject to national speed limit restrictions for a single carriageway route, however, given the nature of the route serving the proposed site and a quarry only, it is expected that the majority of vehicle traffic will be HGVs travelling much slower than the prescribed speed limit. In addition to this, to the west of the site, the build out to the south of the carriageway acts as a speed reduction measure, whereby vehicles travelling in both directions need to slow down in order to see if another vehicle is coming in the opposite direction given the usable width of the carriageway is reduced to a single lane.
- 4.3.4 The proposed HGV access into the site is designed to provide sufficient width for two HGVs to enter and leave the site simultaneously. Gates will be provided into the site, however these will be set back from the edge of the carriageway to enable HGVs to pull off and clear of the highway if the security gates are closed. The largest vehicles expecting to need access to the site is a 10m rigid tipper and

therefore the gates will be set back to accommodate this type of vehicle pulling off the carriageway.

4.3.5 The inbound weighbridge will be set back further to enable three HGVs (including one waiting on the weighbridge) to fully enter the site. This will reduce the likelihood of HGVs needing to wait on Heol-y-Splot to gain access to the site, and in turn, causing an obstruction to other vehicles.

4.3.6 Swept path analysis of the proposed HGV access has been undertaken using a Large Tipper vehicle, which is expected to be the largest vehicle needing access to the site. The drawing attached at **Appendix C**, demonstrates that a vehicle can turn into the site simultaneous to a vehicle exiting the site.

4.4 Vehicle Parking

4.4.1 Bridgend County Borough Council Supplementary Planning Guidance (SPG) 17 sets out parking standards for new developments within the Borough. The proposed development is located in Zone 5 according to Map 25, contained within the SPG. There is no specific guidance within the SPG for a development such as that proposed. At the request of the Local Highway Authority, during the pre-application scoping for the site, parking for the site should be assessed based on 'industrial land use' for the entire size of the site, with the office and car parking areas excluded.

4.4.2 The proposed development site, without the proposed office and parking spaces, has a total area of 34,993sqm. The parking for the proposed development, for both operational and non-operational parking has been based on 'Industry' for Zones 5 & 6. With regard to non-operational parking, this should be based on 1 space per 80 sqm. On this basis, there should be a maximum operational parking of 437 spaces. The parking standards are maximum requirements and given that the proposed development is to only have 14 car parking spaces, it is deemed acceptable and in line with current legislation.

- 4.4.3 With regard to the operational parking to be provided, it can be seen on the proposed site layout plan attached at **Appendix C** that there is sufficient capacity within the site in terms of dedicated HGV parking and other areas within the site to accommodate HGVs on the site overnight and therefore they will not be a situation where these vehicles need to park on the highway overnight.
- 4.4.4 Given the bespoke nature of the development and the likely number of staff (10) to be on site at any one time, it is deemed that the 14 car parking spaces proposed as well as the dedicated HGV parking, meets the operational requirements of the site.
- 4.4.5 This level of provision is deemed to meet the requirements of the site to cover shift changeover times and general day-to-day activities at the site. It is proposed to provide one of the staff/visitor parking spaces as a disabled parking space.

5 Predicted Trip Generation

5.1 Given the bespoke nature of the development and as agreed in the Scoping Note, the predicted trip generation of the site has been determined based on a first principles approach. The trip generation estimates set out in this section of the report have previously been provided highways officers at Bridgend County Borough Council as part of the Scoping Note.

5.2 ***Staff Trip Generation***

5.2.1 There will be up to 10 full time employees based at the site. As set out in Section 3.0, there are opportunities for staff to travel to the site by sustainable modes of travel, particularly walking from South Cornelly and by bus from further afield utilising the bus stops on the A4229. Notwithstanding this, in order to provide a robust assessment, an assumption has been made that all staff will arrive by car in the same hour period and depart the site by car in the same hour period.

5.3 ***HGV Trip Generation***

5.3.1 The predicted trip generation of the site, in relation to the handling of materials has been calculated based on the number of tonnes per annum the site can handle, 200,000 tonnes. The vehicles bringing the materials to the site will have an approximate load capacity of 24.7 tonnes. Therefore there will be approximately 8,097 loads per annum.

5.3.2 Given the proposed operating hours of the site, five weekdays of 12 hours and one weekend day (Saturday) of 5 hours, there would be a total operating time of 65 hours per week. This equates to approximately 3 loads per hour to the site, per day. The recycled material will be dispatched from the site in different vehicles to the ones bringing the material to site and therefore this will result in an additional 3 loads per hour departing the site.

5.3.3 The above does not take account of backhauling, and therefore it is expected that there would be a maximum of 12 two-way HGV trips per hour, taking account of

the vehicle trips when the HGVs are empty, either inbound or outbound to/from the site.

5.4 **Total trip generation**

5.4.1 As a worst case scenario, it has been considered that staff would arrive/depart in the same hour and in that hour, there would be the maximum number of HGV vehicle movements expected. Table 5/1 sets out the predicted trip generation of the site, for the morning peak hour when staff would be arriving and the evening peak hour when staff would be departing.

	Morning Peak Hour			Evening Peak Hour		
	Arr	Dep	Total	Arr	Dep	Total
Staff	10	0	10	0	10	10
HGVs	6	6	12	6	6	12
Total	16	6	22	6	16	22

Table 5/1 – Predicted Trip Generation

5.4.2 As set out in Table 5/1, as a worst case scenario, it is expected that the development could generate 22 two-way trips in the peak operational hours for the site.

5.5 **Distribution**

5.5.1 With regard to the distribution of trips to the site, it is expected that the majority of trips to the site will originate from the M4. Therefore the distribution of vehicle trips is likely to be:

- 90% to/from Porthcawl Road (to/from the M4); and
- 10% to/from A4229 South.

5.5.2 The predicted trip distribution of trips to/from the site is demonstrated on **Figure A** attached at **Appendix D**. Also attached at **Appendix D** is the predicted trip generation of the site based on the trip distribution on **Figures B&C**.

6 Impact Assessment

6.1 Base Traffic Flows

- 6.1.1 As agreed with officers at Bridgend County Council Highways Development Control, a fully classified turning count has been undertaken at the junction of A4229 / Porthcawl Road / Heol-y-Splot. The survey covered the periods 07:00-10:00 and 15:30-18:30 and were undertaken on Thursday 12th November 2020.
- 6.1.2 The network peak hours were 08:15-09:15 in the AM peak and 15:30-16:30 in the PM peak. The full traffic count data is included at **Appendix E**, and the surveyed peak hour flows are illustrated at **Figures D & E** at **Appendix E**.
- 6.1.3 In order to understand the baseline scenario in terms of the operation of the A4229 / Porthcawl Road / Heol-y-Splot, an operational assessment of the junction based on the 2020 base traffic flows has been undertaken using the ARCADY module of the Junctions 9 computer modelling software. The geometric parameters for the model have been determined based on measurements taken from OS Mapping. The results of the operational assessment are set out in Table 6/1 below, with the full outputs attached at **Appendix F**.

	Morning Peak Hour			Evening Peak Hour		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Porthcawl Road	0	3	0.12	0	3	0.11
Heol-y-Splot	0	3	0.06	0	3	0.06
A4229 South	1	3	0.40	1	3	0.42
A4229 West	2	6	0.59	1	6	0.58

Table 6/1 – 2020 Base Operational Assessment

- 6.1.4 The results of the operational assessment of the 2020 base scenario as set out in Table 6/1 demonstrate that the roundabout currently operates within capacity (RFC of less than 0.85) on all arms of the junction.

6.2 Traffic Growth

6.2.1 As requested by the Local Highway Authority, it is proposed to assess the development in the content of 10 years from the year of the application, so 2030.

6.2.2 To establish the likely growth in traffic from the 2020 base traffic flows to a future year of 2030, TEMPro 7.2 and table RTF 2018 Scenario 1 have been used to determine 2030 base year flows using the growth rates as set out in Table 6/2.

	AM	PM
2020-2030	1.0958	1.1018

Table 6/2 – TempPro Growth Rates

6.2.3 The growth rates above are based on all roads for the Middle Super Output Area of Bridgend 018 within which the junction to be assessed is partly situated. The growth rates for this area are higher than those for Bridgend 010 within which the site is situated, and therefore this represents a robust prediction of traffic growth. The resultant 2030 base traffic flows are shown on **Figures F&G** at **Appendix G**.

6.2.4 In order to understand the impact of the expected traffic growth to 2030 from the 2020 base scenario, an operational assessment of the junction has been undertaken with the results set out in Table 6/3 below.

	Morning Peak Hour			Evening Peak Hour		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Porthcawl Road	0	3	0.14	0	3	0.13
Heol-y-Splot	0	3	0.07	0	3	0.07
A4229 South	1	3	0.44	1	3	0.46
A4229 West	2	7	0.65	2	6	0.64

Table 6/3 – 2030 Base Operational Assessment

6.2.5 The results of the operational assessment of the roundabout junction in the 2030 base scenario, demonstrates that the junction will continue to operate within capacity during the morning and evening peak period.

6.3 *Predicted Junction Operation*

6.3.1 The predicted trip generation of the site, as shown on **Figure B & C** at **Appendix D** have been added to the 2030 base scenario to generate the 2030 Base + Development traffic flows.

6.3.2 The computer modelling programme Junctions 9 has been used to model the junction in question in order to assess capacity, queuing and delay levels at the opening and design year. The results below demonstrate the operation of the junction in the 2030 Base and 2030 Base + Development Scenario.

	Morning Peak Hour			Evening Peak Hour		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Porthcawl Road	0	3	0.14	0	3	0.13
Heol-y-Splot	0	3	0.08	0	3	0.09
A4229 South	1	3	0.44	1	3	0.47
A4229 West	2	7	0.67	2	7	0.65

Table 6/4 – 2030 Base + Development Operational Assessment

6.3.3 From the capacity modelling undertaken it shows that the junction would continue to operate within its practical capacity, generally accepted as being represented by a RFC (Ratio of Flow to Capacity) of 0.850 with no material queuing. The output results can be found in **Appendix H**. The impact of the development generated traffic on top of the 2030 Base traffic flows is negligible.

6.4 *Sensitivity Testing*

6.4.1 Given the ongoing Covid-19 pandemic, it is unclear whether the traffic surveys undertaken represent a “normal” scenario. Therefore sensitivity testing has been undertaken to demonstrate that even with higher levels of growth at the junction in question, the junction will continue to operate within capacity and therefore there is no reason why the proposed development should not be acceptable in capacity terms.

6.4.2 Given the predicted level of traffic growth at the junction between 2020 and 2030 is in the region of 10%, a sensitivity test has been undertaken where this traffic growth is 20%, instead of the predicted 10%. The results set out in Table 6/5 demonstrate the operational assessment of the junction with 20% background traffic growth, plus the predicted development traffic.

	Morning Peak Hour			Evening Peak Hour		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Porthcawl Road	0	4	0.17	0	4	0.15
Heol-y-Splot	0	3	0.09	0	3	0.10
A4229 South	1	3	0.49	1	3	0.51
A4229 West	3	9	0.73	2	8	0.71

Table 6/5 – 2030 Base Sensitivity + Development Operational Assessment

6.4.3 The results in Table 6/5 demonstrate that with 20% background traffic growth, plus the development generated traffic, the junction would still continue to operate within capacity with a highest RFC of 0.73 and a maximum queue of 3 PCUs. The full outputs are attached at **Appendix H**.

6.4.4 There is therefore no reason, in terms of highway capacity, why the development should be refused.

7 Summary and Conclusions

- 7.1 Sanderson Associates (Consulting Engineers) Ltd has been appointed by Wellshill Civil and Plant Ltd to provide a Transport Assessment in support of a planning application for a proposed Aggregates Recycling Facility on land adjacent Heol-y-Splot, South Cornelly, Bridgend.
- 7.2 The proposed development is for the treatment/recycling of waste (aggregates recycling facility). The facility would receive and process inert aggregates and soils sourced from off-site excavation, construction and demolition activities within the locality of Bridgend and neighbouring areas. The development would include the installation of a wash plant, construction of an office and staff welfare building, weighbridge and associated office, storage/stock piles and ancillary works. The site would potentially receive and process up to 200,000 tonnes per annum of inert construction and demolition waste.
- 7.3 A Pre-Application Enquiry was undertaken in May 2020 by Technia Environment and Planning Ltd on behalf of the applicant. A further Transport Assessment Scoping Note was prepared and submitted to the Local Highway Authority to agree the scope of this report.
- 7.4 A review of personal injury collision data has been undertaken and given that there have only been three collisions in the most recent five year period, it is clear to see that there are no personal injury collision trends that would give rise to any specific highway safety problems. It is not expected that the proposed development would result in a material impact to the collision record given its expected trip generation.
- 7.5 Given the availability of a 20 minute service frequency bus service within an acceptable walking distance of the site, it could be expected that some trips to the site could be undertaken by bus, particularly by those commuting from further afield. It is recognised that beyond South Cornelly and North Cornelly, other residential areas are located too far away to expect employees to walk to the site. Notwithstanding this, it could be expected that those employees who are able,

could cycle to the site as there are a number of residential areas and surrounding towns within a reasonable cycling distance of the site.

- 7.6 It has been demonstrated that as a worst case scenario the proposed development would generate a maximum of 22 two-way trips in any one hour period. This takes account of staff arrivals/departures and the movements of HGVs to/from the site.
- 7.7 Traffic surveys have been undertaken to establish a base scenario on the local highway network. The TEMPro database has been utilised to generate growth factors to a future base year of 2030, 10 years after the submission of the application. The results of the base modelling demonstrates that the roundabout junction to the west of the site is predicted to continue to operate within capacity in the 2030 base scenario.
- 7.8 Operational assessment have been undertaken to assess the impact of the proposed development on the roundabout junction to the west of the site. This demonstrates that the proposed development would have a negligible impact on the operation of the junction. Sensitivity tests have been undertaken to take account of additional background traffic growth and a higher level of development trip generation which demonstrate that the roundabout will continue to operate within capacity.
- 7.9 It can be concluded that the proposed development will have a negligible impact on the operation of the local highway in terms of highway safety and capacity and therefore there are no reasons why the development should not be acceptable in transport terms.

APPENDIX A

Sanderson Associates Transport Assessment Scoping Note

Transport Assessment Scoping Note

Project:	Land adjacent Heol-y-Splot, South Cornelly, Bridgend, CF33 4RE	Project No:	11661
Subject:	Transport Assessment Scoping Note		
Prepared by:	John Turner	Date:	06.10.2020
Checked by:	Simon Burkinshaw	Date:	06.10.2020

1 Introduction

Sanderson Associates (Consulting Engineers) Ltd has been appointed by Wellshill Civils and Plant Ltd to provide highways consultancy services in relation to land adjacent Heol-y-Splot, South Cornelly, Bridgend, CF33 4RE. The development proposals are for a change of use of the existing site to an Aggregates Washing Facility.

The purpose of the development is for the treatment/recycling of waste (aggregates washing facility). The facility would receive and process inert aggregates and soils sourced from off-site excavation, construction and demolition activities within the locality of Bridgend and neighbouring areas. These materials would be recycled to produce products for use in off-site construction and land developments. The facility would not be part of or integral to any quarrying operations for receiving or processing quarried virgin rock.

The development would include the installation of a wash plant, construction of an office and staff welfare building, weighbridges and weighbridge office, storage/stock piles and ancillary works. The site would potentially receive and process up to 200,000 tonnes per annum of inert construction and demolition waste.

A Pre-Application Enquiry was undertaken in May 2020 by Technia Environment and Planning Ltd on behalf of the applicant and a response was received on the 8th July 2020 from Bridgend County Borough Council (Ref: PE/213/2020).

Within the pre-application response, comments were provided from the Council's Highway Officer, as set out below:

"It is considered that the proposal would result in an increase in vehicular movements which would need to be quantified and mitigated. It should be noted that the Heol-y-Splot arm of the roundabout is currently used by a number of intensive uses such as the quarrying operations and any future application would have to demonstrate that the roundabout junction has the capacity to accommodate the new traffic generated by the development. It would also need to demonstrate that the new traffic does not unbalance the roundabout such that the northbound A4229 arm is not affected by queuing traffic – there is very little opposing traffic from South Cornelly/Porthcawl Road Arm.

As a result of the above, a Transport Assessment will be required to support any future planning application. In addition, the applicant will be required to provide off-road parking as per the adopted parking standards SPG17 as well as indicating how employees can travel to the site sustainably using public or sustainable transport modes as well as providing cycle parking on site.

The transport hierarchy found in TAN18 must also be addressed in any future Planning application as well as the Active Travel Act which will require the applicant to provide safe walking and cycling infrastructure to get to and from the site.'

Given the request for a Transport Assessment to be provided as part of any future planning application, this Scoping Note aims to set out the scope of the Transport Assessment. The views of the Local Highway Authority are sought regarding the contents of this report.

2 Development Proposals

The Applicant proposes to construct an Aggregate Washing Facility at the site. The development will include the installation of a wash plant, construction of an office and staff welfare building, weighbridges and weighbridge office, storage and ancillary works.

The site is allocated in principle within the Local Development Plan for a regional or local waste management facility under Strategic Policy SP7 (site reference: SP7(1)).

The site is to be accessed from Heol-y-Splot which meets the A4229 around 150m to the south west of the site and subsequently connects with the M4 at junction 37, approximately 1.25km to the north east of the site.

It is proposed to provide two dedicated accesses into the site. The first access along Heol-y-Splot into the western parcel of land will be dedicated for use by staff only in private vehicles. There will then be a dedicated access into the eastern parcel of land, dedicated for use by HGVs. This access will be designed to provide sufficient width for two HGVs to enter and leave the site simultaneously. The access geometry will be designed to meet current highway standards and will include the requisite visibility splays.

The proposal includes 14 car parking spaces to the south of the Office Building (including 1 disabled parking space). A further 4 parking spaces for HGVs will be created to the north of the wash plant. Adequate space is available for additional staff or HGV parking within the site.

The proposed use is considered compatible with the adjacent land uses, subject to demonstrating that it will not result in any unacceptable impacts on the local environment or local amenity.

3 Trip Generation and Distribution

The site will receive and process up to 200,000 tonnes per annum of inert construction and demolition waste.

Inert construction and demolition waste will be crushed before passing by conveyor into the wash plant where it will be washed and sized through a series of screens to produce clean processed aggregates for use in construction and highway works. The sized aggregates will fall into storage bays beneath the wash plant. Water within the wash plant will pass through a filter press (within which solids will be removed to produce a clay that is also used within construction), before being recirculated to the washing process.

The operating hours for the site are:

- 07:00-19:00 Monday to Friday
- 08:00-13:00 Saturdays
- The site will not operate on a Sundays and Bank Holidays
- No processing of aggregates will be undertaken outside of these hours.

There will be up to 10 full time employees at the site. In order to provide a robust assessment, an assumption will be made within the operational assessments that all staff arrive by car in the same hour period. Therefore there will be 10 arrivals in the morning peak hour and 10 departures in the evening peak hour. In reality, given the opening hours of the site, it is expected that staff will arrive at the site before the local highway morning peak hour and depart after the peak hour on the local highway network. In addition to this, some staff may travel by public transport, car share or use active modes of travel to travel to the site.

The predicted trip generation of the site, in relation to the handling of materials has been calculated based on the number of tonnes per annum the site can handle, 200,000 tonnes. The vehicles bringing the materials to the site will have an approximate load capacity of 24.7 tonnes. Therefore there will be approximately 8,097 loads per annum.

Given the proposed operating hours of the site, 5 weekdays of 12 hours and five working hours on a weekend, totalling 65 hours of operation per week, this equates to approximately 3 loads per hour brought to the site, per day. The recycled materials will be dispatched using different vehicles and therefore this will result in an additional 3 loads per hour. The above does not take account of backhauling, and therefore it is expected that there would be a maximum of 12 two-way HGV trips per hour, taking account of the vehicle trips when the HGVs are empty. The predicted trip generation of the site, based on the above can be seen on the flow diagram at **Appendix A**. For simplicity, this flow diagram does not separate the movements into the site using the two accesses to be provided.

With regard to the distribution of trips to the site, it is expected that the majority of trips to the site will originate from the M4. Therefore the distribution of vehicle trips is likely to be:

- 90% to/from Porthcawl Road (to/from the M4); and
- 10% to/from A4229 South.

The figures attached at **Appendix A** demonstrate the predicted trip distribution and trip generation of the site in the morning and evening peak hours respectively.

The agreement of the Local Highway Authority on the trip generation as set above is requested.

4 Junction Modelling

Given the trip generation of the site, as set out in Section 3 of this Scoping Note, it is our view that traffic modelling of any junction, to assess the impact of this development is not warranted. We would like the Local Highway Authority to confirm whether junction modelling is still required, now that detailed trip generation information has been provided. If junction modelling is not required, then a Transport Statement would be submitted as part of the planning application.

However, if the operation of the A4229 / Porthcawl Road / Heol-y-Splot roundabout is still required, this will be assessed using the ARCADY element of the Junctions 9 software. The geometric parameters to be entered into the junction model will be obtained from OS Mapping data of the roundabout junction.

Given the predicted trip generation of the site and the existing flows along Heol-y-Splot we do not feel that it is necessary to undertake an operational assessment of the proposed access arrangement.

5 Relevant Planning History

A planning application was submitted and subsequently withdrawn in 2016, reference no. P/16/444/FUL for the construction of a waste wood recycling facility including the reprofiling ground levels, drainage infrastructure, access, perimeter fence, staff welfare unit and weigh bridge with kiosk. This application was withdrawn before a formal consultation response from the Local Highway Authority with regard to the application.

As part of the planning application, a Transport Assessment was prepared and submitted by Vectos. As part of the Transport Assessment a Manually Classified Turning Count was undertaken at the A4229 / Porthcawl Road / Heol-y-Splot junction on Tuesday 10th May 2016 for the AM (07:00-10:00) and PM (15:30-18:30) peak periods. The observed peak periods for the junction were between 08:00-09:00 and 17:00-18:00.

The Figure attached at **Appendix B**, demonstrates the morning and evening peak hour traffic flows at the A4229 / Porthcawl Road / Heol-y-Splot junction, as previously submitted as part of the Vectos TA.

Due to the ongoing issues relating to the Covid-19 pandemic and its impact on baseline traffic conditions, it is unlikely that new traffic survey data can be procured that would represent a “normal” scenario, to inform the Transport Assessment. Therefore, should operational assessments still be required, it is proposed that baseline traffic data is utilised from the Vectos Transport Assessment.

It is recognised that the content of the Transport Assessment prepared by Vectos has not been consulted on and therefore the traffic flows have not been reviewed, however it is our opinion that this provides the most up-to-date and relevant baseline traffic flow information on which to base further operational assessments, if required, in the absence of up-to-date traffic flows. The views of the Local Highway Authority on the use of this traffic data are sought.

6 Assessment Year and Traffic Growth

If junction modelling is required, given the existing traffic flows intended to be used were recorded in 2016, growth factors will be applied to these flows to take account of background traffic growth since 2016 to the present year (2020).

The Temprow database has been used to obtain growth factors for Bridgend 010, the Middle Super Output Area, within which the site is located. The growth factors that will be applied to all of the existing traffic movements at the junction of the A4229 / Porthcawl Road / Heol-y-Splot are listed below:

- 2016-2020 AM Peak – 1.0569
- 2016-2020 PM Peak – 1.0574

In addition to the growth factors to get to the current year. A future year scenario will be assessed as part of the Transport Assessment, if junction modelling is still required. In line with guidance, this will take account of traffic growth to a future year of 2025, five years post submission of the planning application. The traffic growth factors, obtained from Temprow for Bridgend 010 for 2016-2025 are set out below:

- 2016 – 2025 AM Peak – 1.1043
- 2016 – 2025 PM Peak – 1.1049

The agreement of the Local Highway Authority on the use of these forecast traffic growth figures is requested.

7 Proposed Access Arrangements

There is to be a dedicated access for staff in their private cars, which will separate staff vehicle movements from HGV movements to/from the site. A layout of this access and the dedicated HGV access into the site is provided at **Appendix C**.

The proposed HGV access into the site is to be designed to provide sufficient width for two HGVs to enter and leave the site simultaneously. The access geometry will be designed to meet current highway standards and will include the required visibility splays. Gates will be provided into the site, however these will be set back from the edge of the carriageway to enable HGVs to pull off and clear of the highway if the security gates are closed. The largest vehicles expecting to need access to the site is a 10m rigid tipper and therefore the gates will be set back to accommodate this type of vehicle pulling off the carriageway.

The inbound weighbridge will be set back further to enable three HGVs (including one waiting on the weighbridge) to fully enter the site. This will reduce the likelihood of HGVs needing to wait on Heol-y-Splot to gain access to the site, and in turn, causing an obstruction to other vehicles.

8 Road Safety Assessment

The Transport Assessment will include an assessment of the existing transport network which will include a review of the Personal Injury Collision Data on the local network, based on the latest five year period available. Records of collisions will be obtained from the Crashmap Database. The Collision Data summary will include the section of Heol-y-Splot from which the site is accessed, the roundabout junction of A4229 / Heol-y-Splot / Porthcawl Road and its approaches.

9 Sustainable Transport

The accessibility of the development will be assessed for alternative modes of transport to the private car.

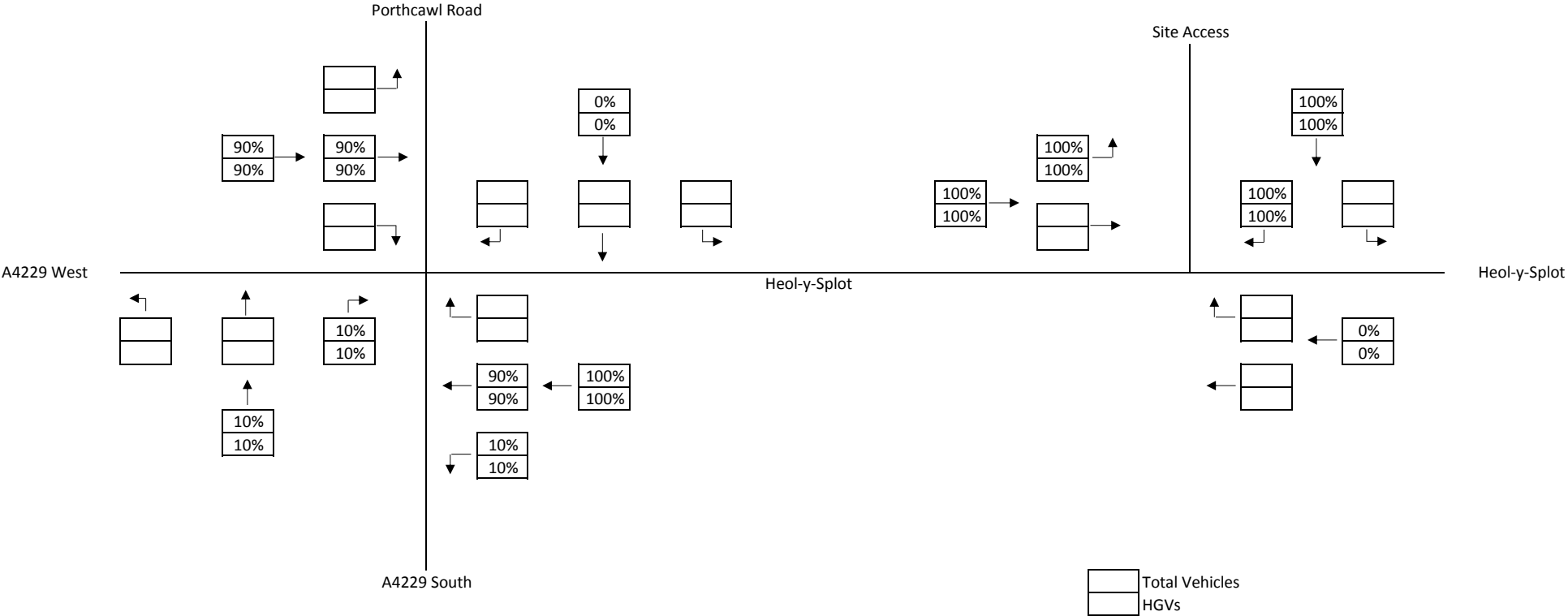
End.

Appendix A – Predicted trip distribution and trip generation

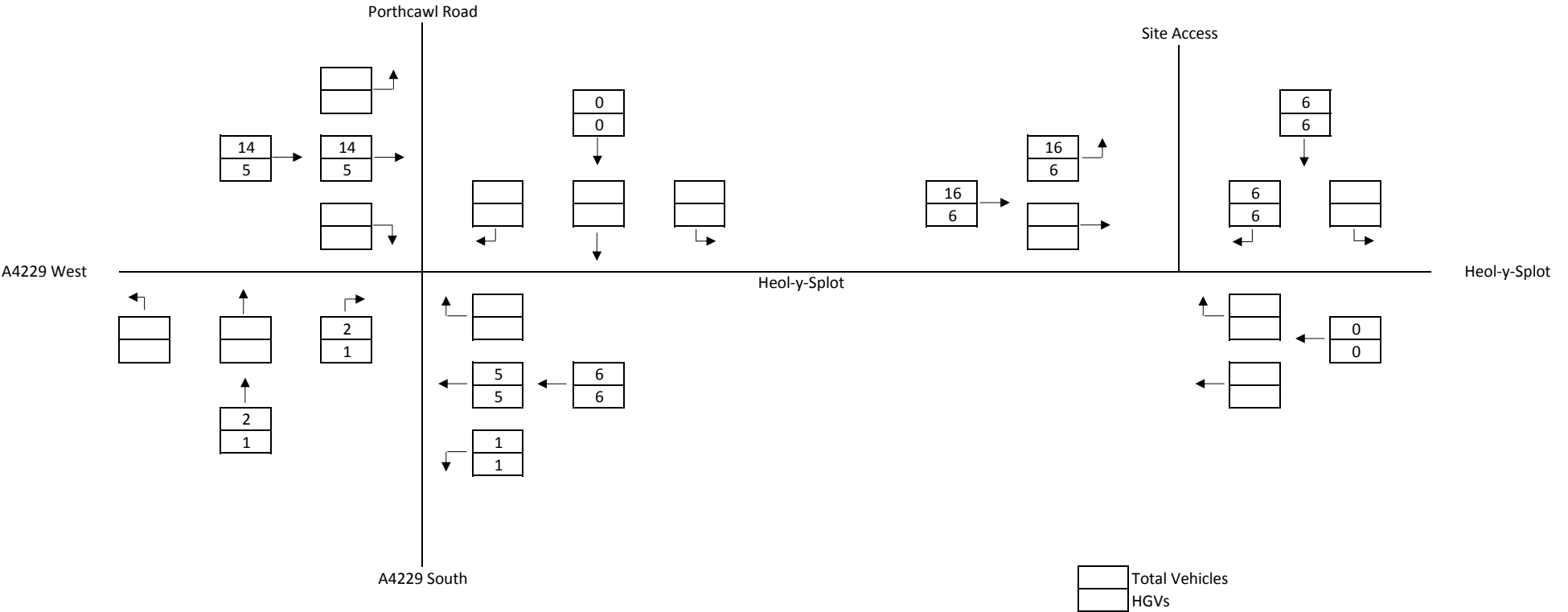
Appendix B – Traffic flows taken from Vectos Transport Assessment

Appendix C – Proposed access arrangements

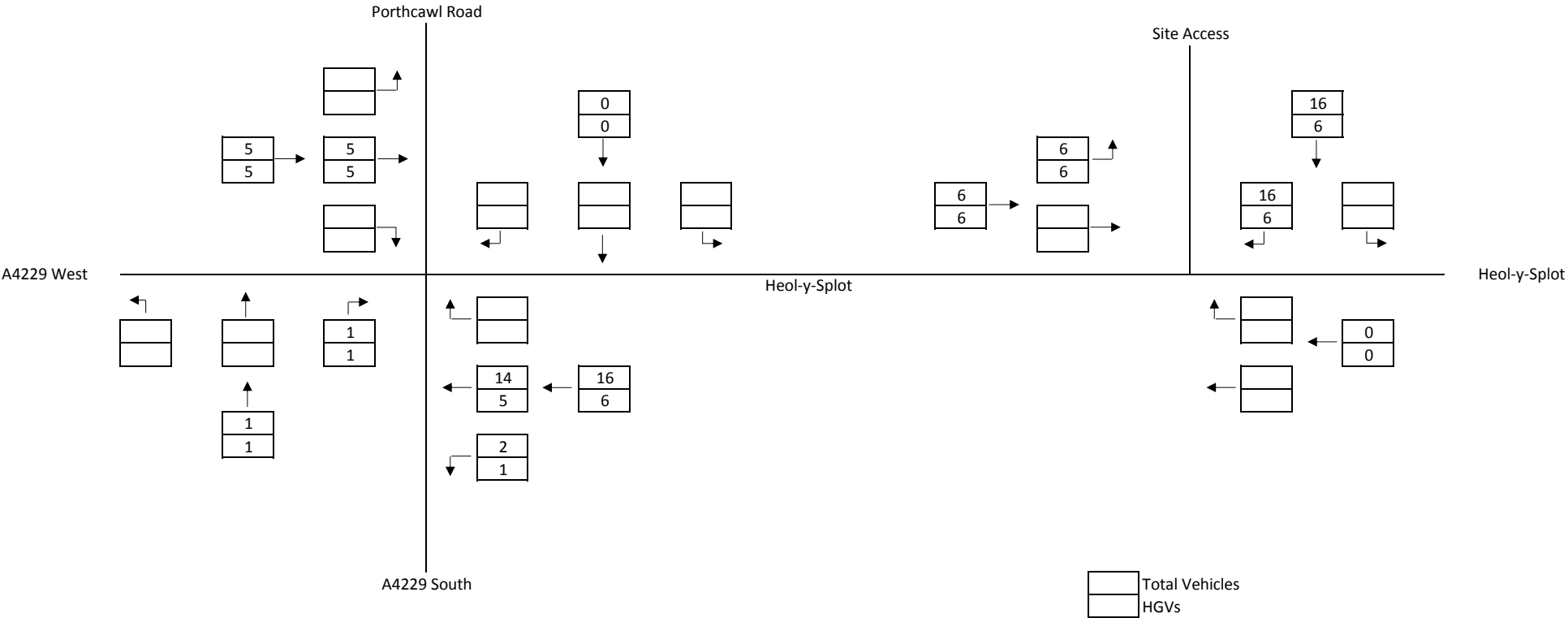
PREDICTED TRIP DISTRIBUTION
11661 - Land Adjacent Heol-y-Splot, South Cornelly Bridgend
AM AND PM PEAK



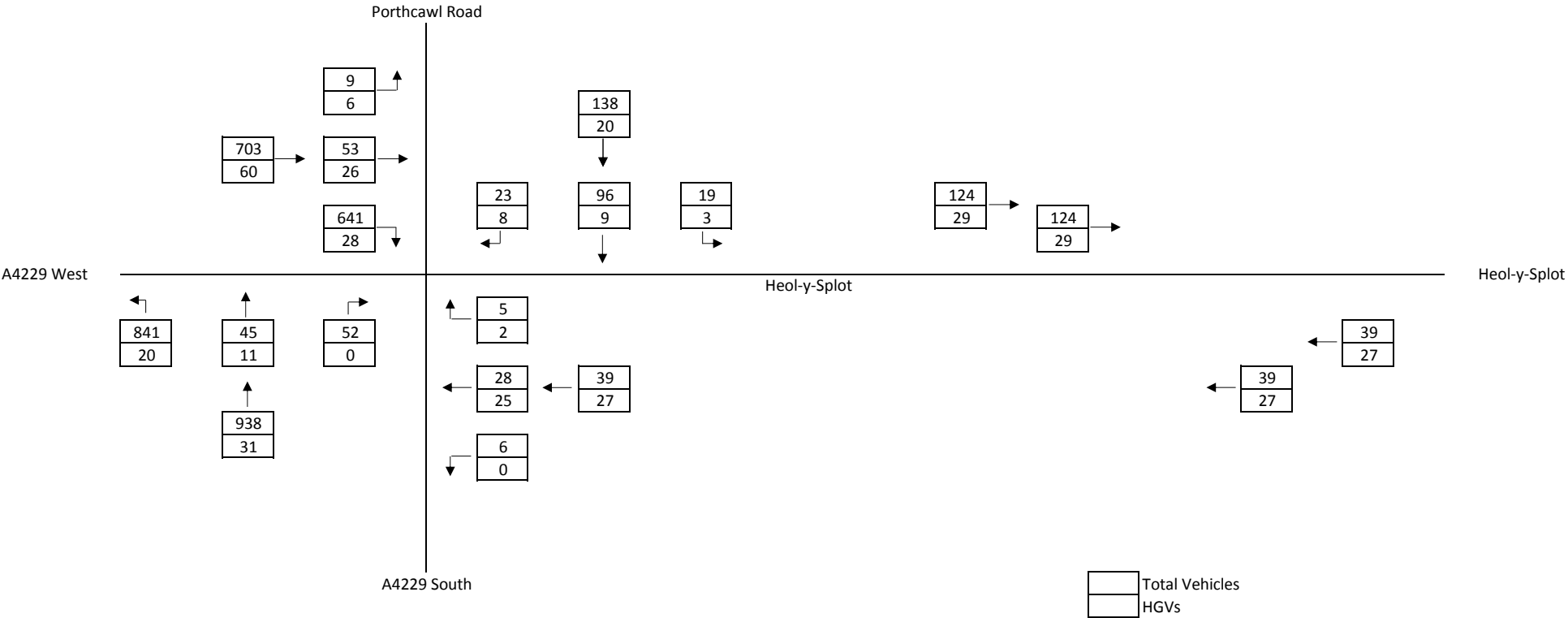
TRIP GENERATION AM
11661 - Land Adjacent Heol-y-Splot, South Cornelly Bridgend
AM PEAK



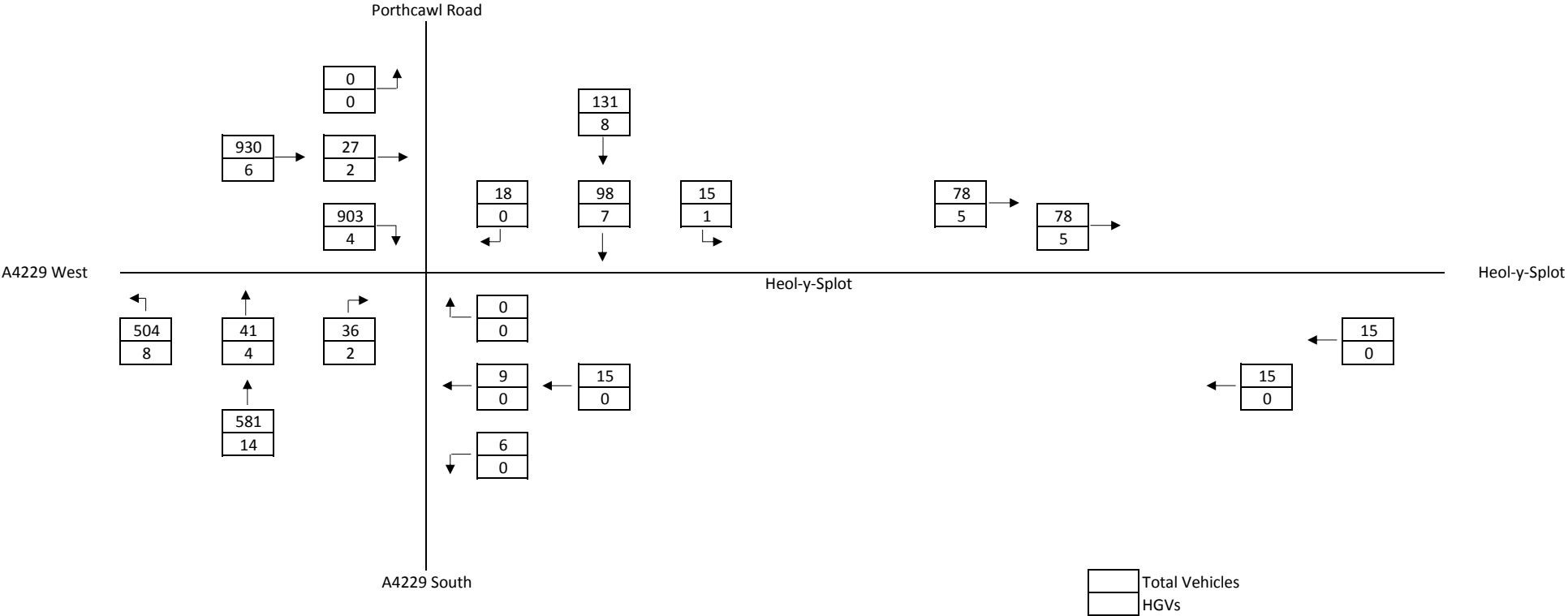
TRIP GENERATION PM
11661 - Land Adjacent Heol-y-Splot, South Cornelly Bridgend
PM PEAK



EXISTING FLOWS (2016) TAKEN FROM VECTOS TA
11661 - Land Adjacent Heol-y-Splot, South Cornelly Bridgend
TUESDAY 10TH MAY 2016
08:00-09:00
AM PEAK



EXISTING FLOWS (2016) TAKEN FROM VECTOS TA
11661 - Land Adjacent Heol-y-Splot, South Cornelly Bridgend
TUESDAY 10TH MAY 2016
17:00-18:00
PM PEAK



APPENDIX B

Crashmap Personal Injury Collision Data



crashmap.co.uk

No

Crash Date: Friday, July 31, 2015 **Time of Crash:** 7:02:00 AM **Crash Reference:** 2015621501276

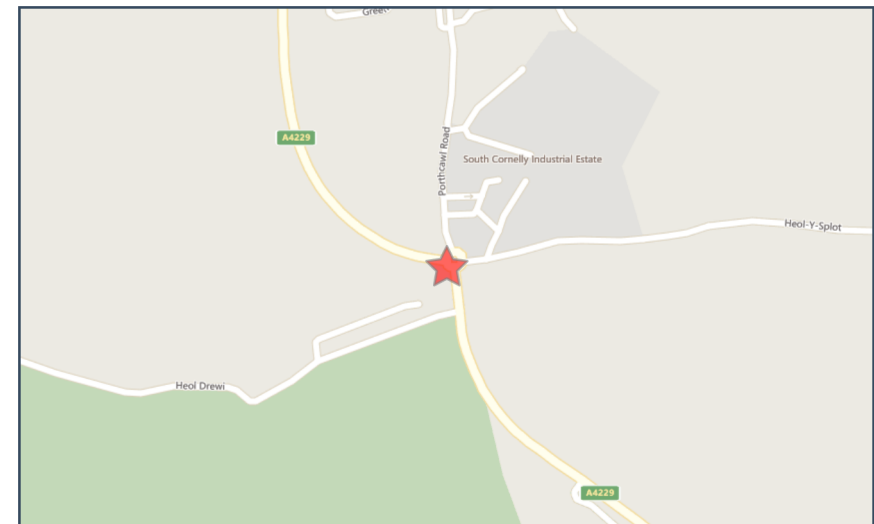
Highest Injury Severity: Slight
Highway Authority: Bridgend
Local Authority: Bridgend County Borough
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 30
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Roundabout
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Roundabout
Junction Control: Give way or uncontrolled

Road Number: A4229

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 281977 179947



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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No

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Commuting to/from work	None	None
2	Pedal cycle	-1	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	2	Slight	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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crashmap.co.uk

No

Crash Date: Wednesday, January 09, 2019 **Time of Crash:** 1:34:00 PM **Crash Reference:** 2019621900101

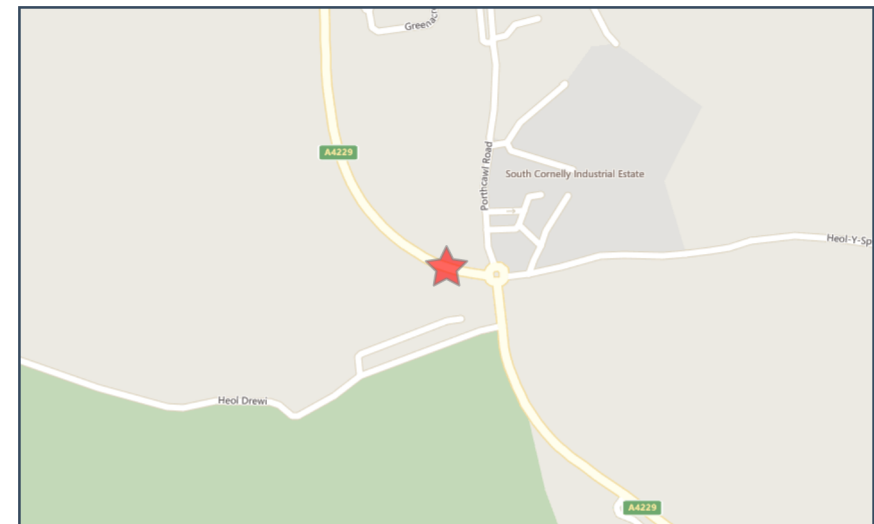
Highest Injury Severity: Slight
Highway Authority: Bridgend
Local Authority: Bridgend County Borough
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 40
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Not at or within 20 metres of junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Not Applicable

Road Number: A4229

Number of Casualties: 2

Number of Vehicles: 2

OS Grid Reference: 281916 179973



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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No

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)		5 Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)		3 Male	46 - 55	Vehicle is waiting to proceed normally but is held up	Back	Journey as part of work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	21 - 25	Unknown or other	Unknown or other
2	2	Slight	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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crashmap.co.uk

No

Crash Date: Friday, July 12, 2019 **Time of Crash:** 10:06:00 AM **Crash Reference:** 2019621900949

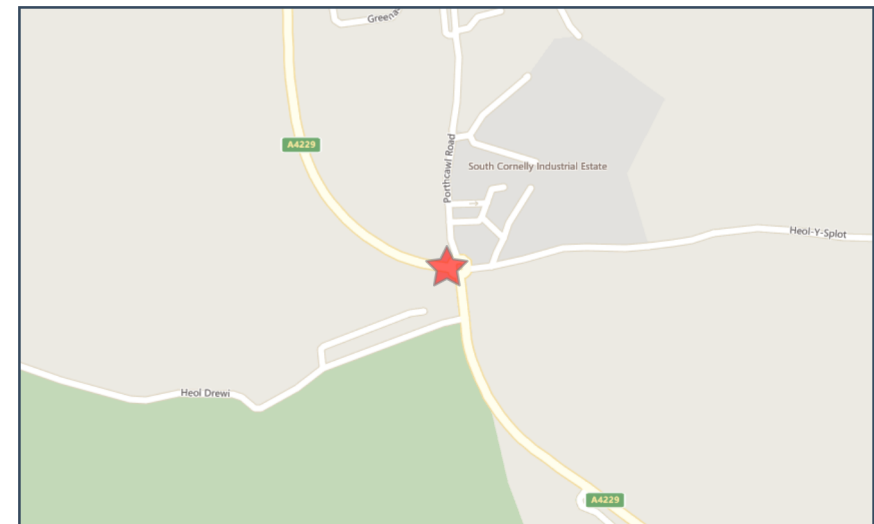
Highest Injury Severity: Slight
Highway Authority: Bridgend
Local Authority: Bridgend County Borough
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 30
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: Roundabout
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Give way or uncontrolled

Road Number: A4229

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 281972 179960



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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No

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	2	Female	36 - 45	Vehicle is in the act of turning right	Back	Other	None	None
2	Pedal cycle	-1	Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	2	Slight	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services

APPENDIX C

Site Layout Plan

***Drg. No. 11661-001 - Swept path analysis and visibility splays at proposed
access***



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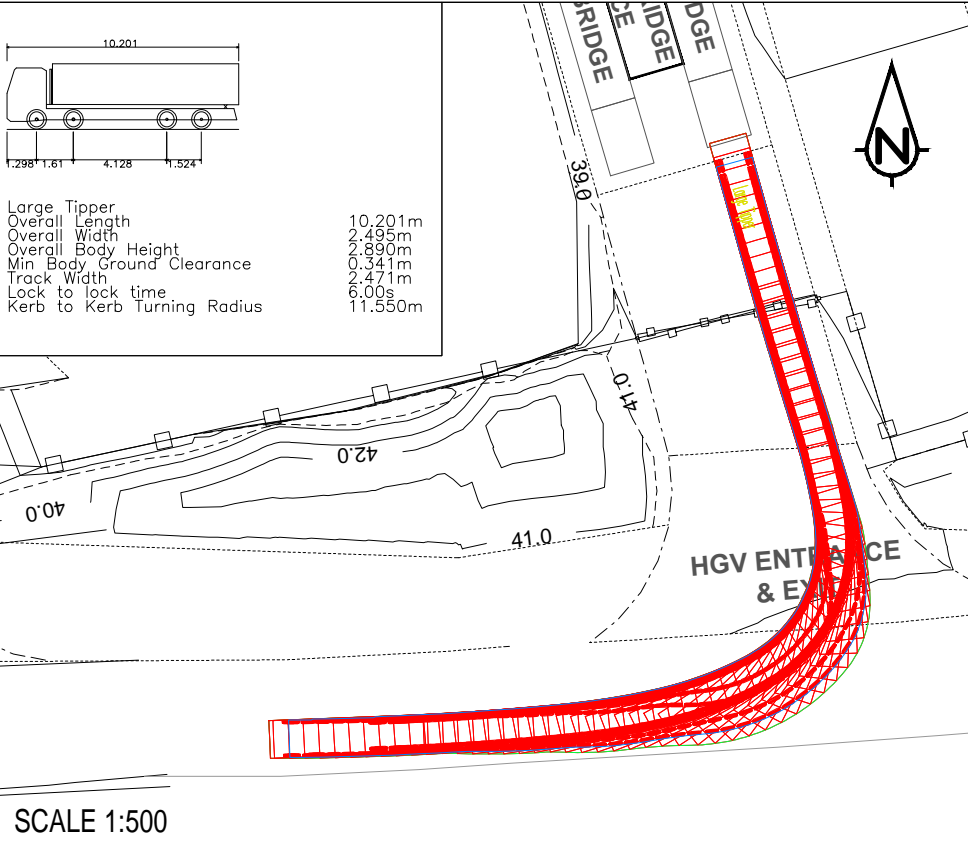
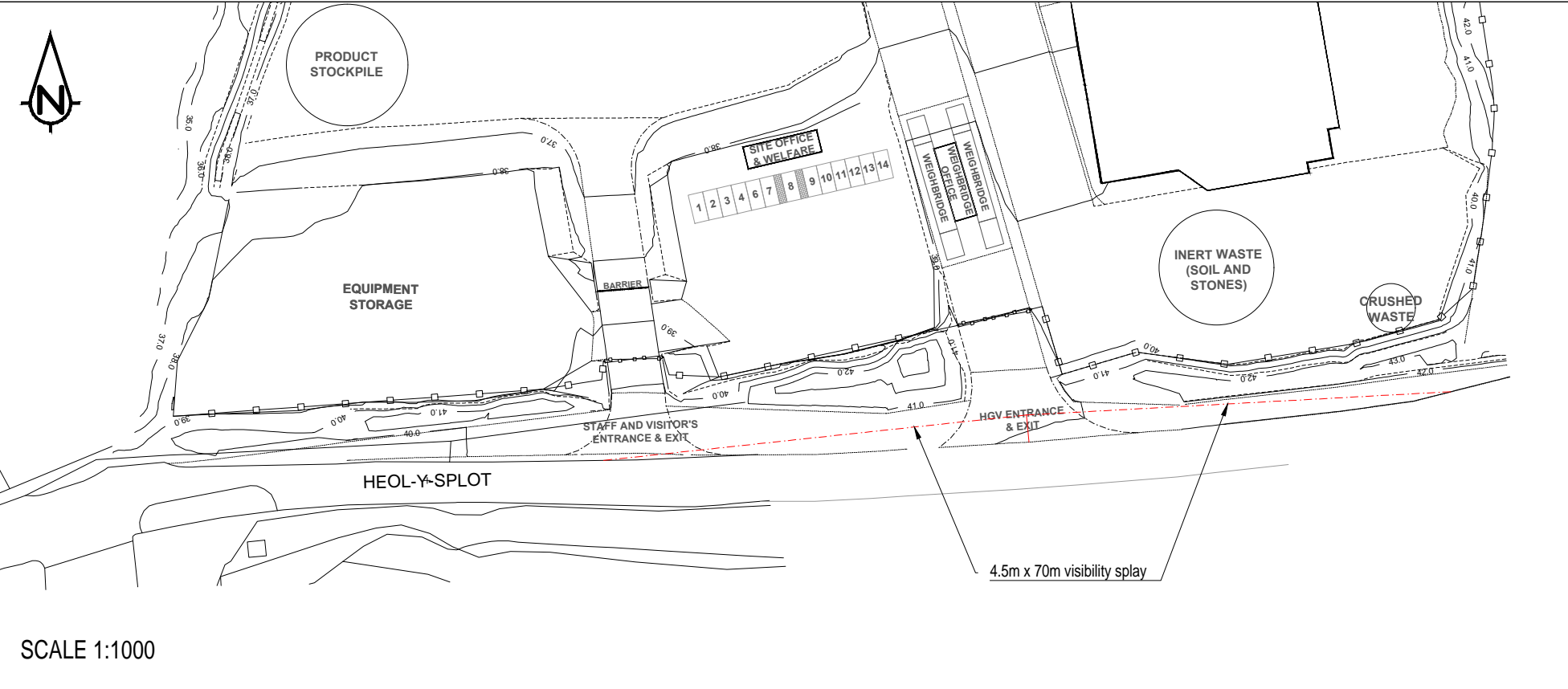
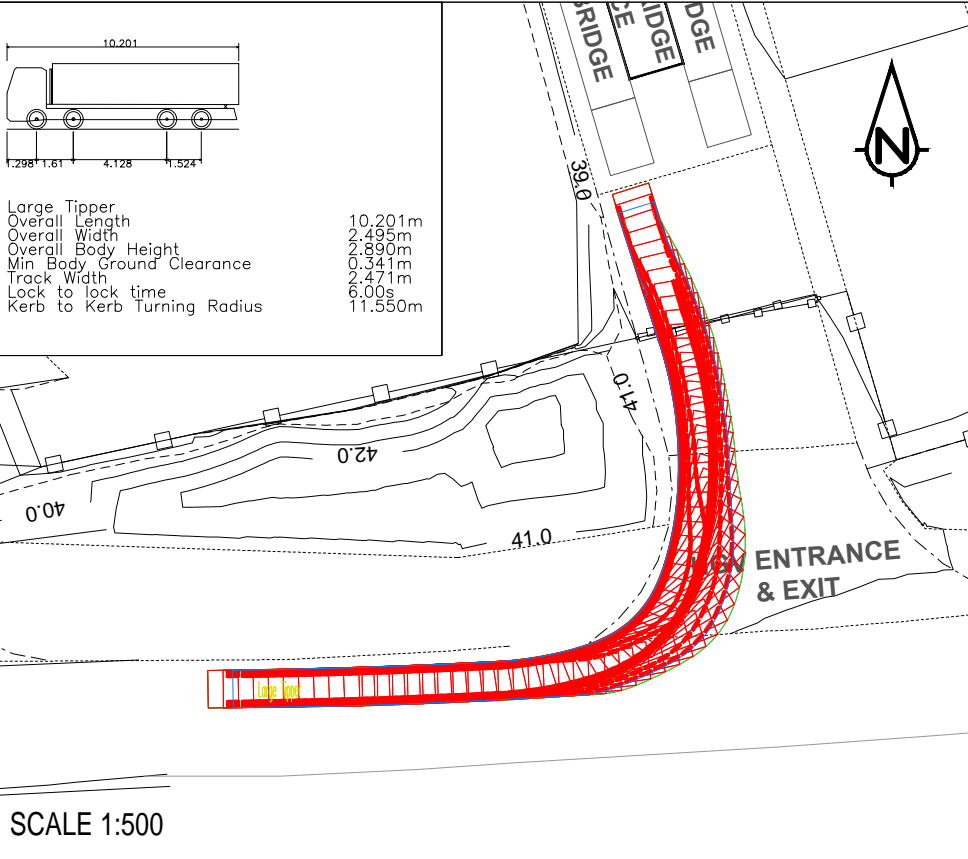
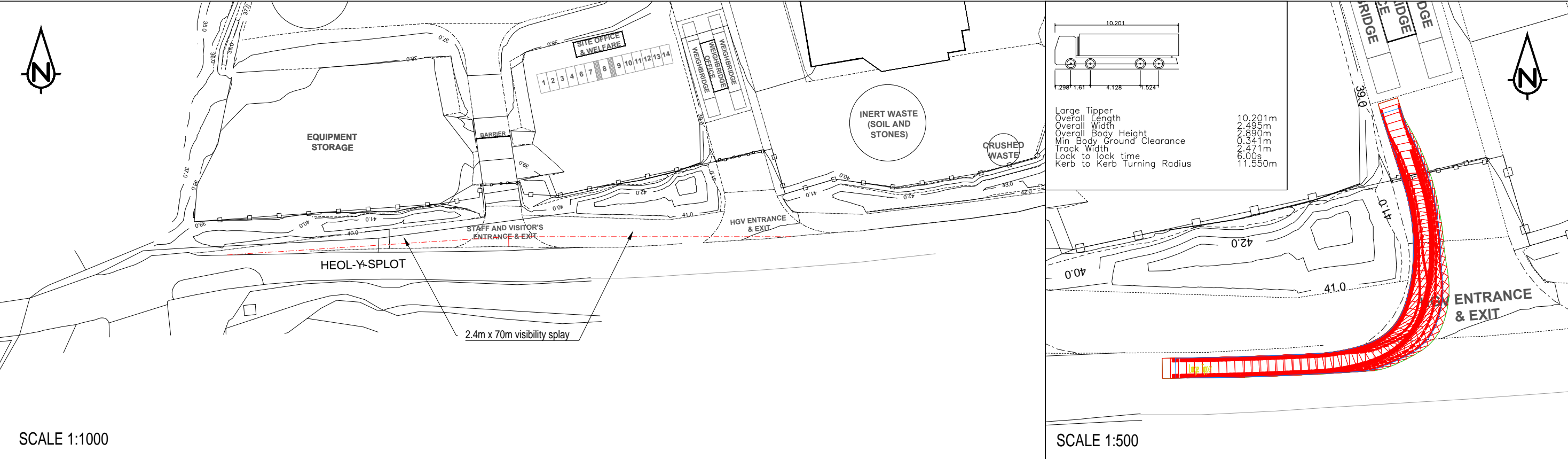
NOT INTENDED TO REPRESENT DETAILED DESIGN


AMENDMENTS	REV	DETAILS	DATE	MADE BY	CHKD BY
	REF				
	A	INCLUDE ADDITIONAL LAND AND UPDATE LAYOUT	15/10/20	15/10/20	15/10/20
	A	UPDATED PLANT LAYOUT	25/10/20	25/10/20	25/10/20



TECHNIA ENVIRONMENT AND PLANNING LTD
SUITE 4, ST. MARGARET'S PARK
PENGAM ROAD, ABERBARGOED, CF81 9FW
TEL: 02921 900400
EMAIL: PLANNING@TEPL.EU

LAND ADJACENT TO HEOL-Y-SPLIT, SOUTH CORNELLY, BRIDGEND, CF33 4RD				Drawn	SW	Scale 1:1,000
				Ch'kd	BP	
SITE PLAN				Appr'd	LS	@A3
				Date	07/05/20	
Job No.	WCP	Drg No.	11060 - 000 - C			



 <p>sanderson associates (consulting engineers) ltd Highways Traffic Transportation Water T 01924 844080 mail@sandersonassociates.co.uk F 01924 844081 www.sandersonassociates.co.uk</p>	Proposed Aggregates Recycling Facility Land adjacent Heol-y-Splot, South Cornelly, Bridgend				Scale As Shown		Drawn By JT	
	Swept path analysis and visibility splays				Drawing Size A3		Checked By SB	
					Date November 2020		Approved By SB	
					Drawing Number 11661-001		Rev	
	Rev	Amendment		Drawn	Date	Checked		

Appendix D

Figure A – Predicted Trip Distribution

Figures B&C – Trip Generation AM and PM

FIGURE A - PREDICTED TRIP DISTRIBUTION
11661 - Land Adjacent Heol-y-Splot, South Cornelly Bridgend
AM AND PM PEAK

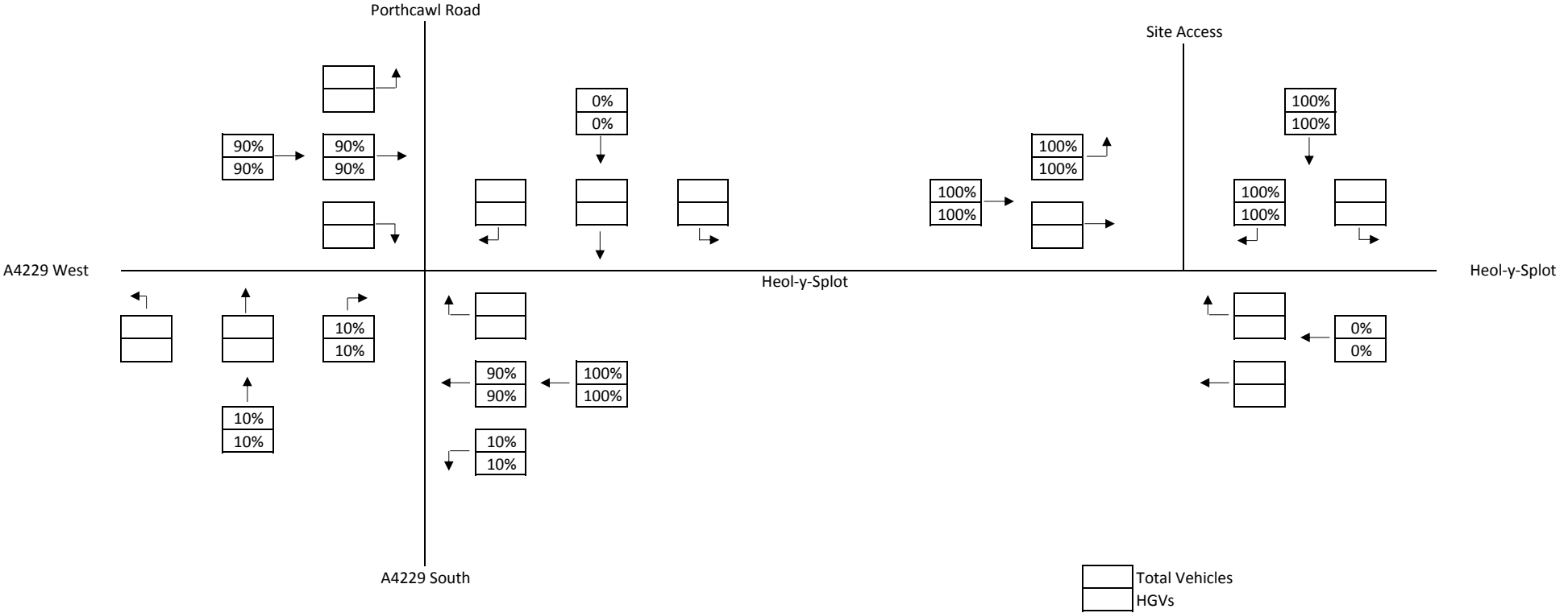


FIGURE B - TRIP GENERATION AM
11661 - Land Adjacent Heol-y-Splot, South Cornelly Bridgend
AM PEAK

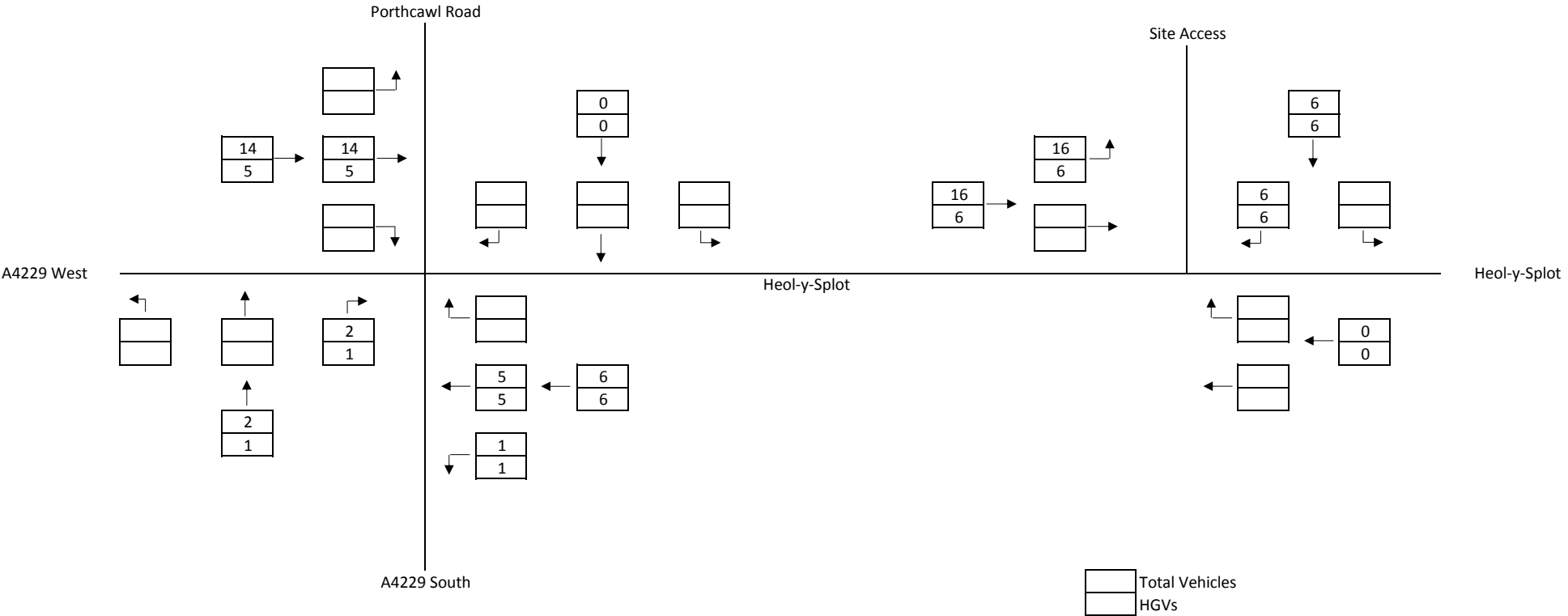
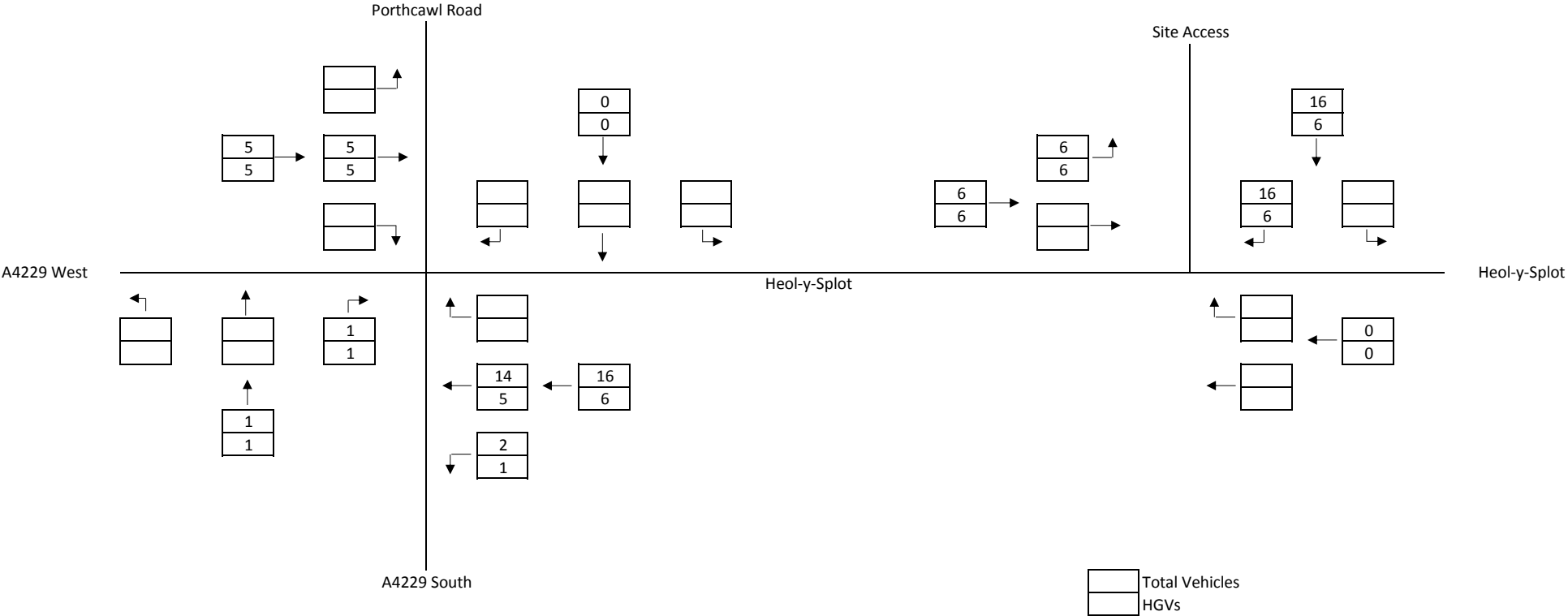


FIGURE C - TRIP GENERATION PM
11661 - Land Adjacent Heol-y-Splot, South Cornelly Bridgend
PM PEAK



Appendix E

Fully Classified Turning Count Data

Figure D – 2020 Base Peak Hour Traffic Flow AM Peak

Figure E – 2020 Base Peak Hour Traffic Flow PM Peak

Network Peak Hour Generator

click on yellow cell to change Peak Hour parameters

Session:

Weekday AM Peak

Vehicle Class:

ALL

Start Time:

07:00

End Time:

07:00

Note: The site diagram is for reference purposes only and is not an exact representation of the site surveyed

South Cornelly, Bridgend
Classified Junction Count

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

Movement 1.1: Left from Porthcawl Road to Heol -Y- Splot									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	2	0	0	1	1	0	4	5.80
0715 - 0730	0	0	0	0	1	0	0	0	1	1.00
0730 - 0745	0	0	1	0	0	1	1	0	3	4.80
0745 - 0800	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	0	0	4	0	1	2	2	0	9	12.60
Hourly Average	0.00	0.00	1.00	0.00	0.25	0.50	0.50	0.00	2.25	3.15
0800 - 0815	0	0	1	0	1	0	0	0	2	2.00
0815 - 0830	0	0	2	0	0	0	1	0	3	4.30
0830 - 0845	0	0	0	0	2	0	0	0	2	2.00
0845 - 0900	0	0	3	0	1	0	1	0	5	6.30
Hourly Total	0	0	6	0	4	0	2	0	12	14.60
Hourly Average	0.00	0.00	1.50	0.00	1.00	0.00	0.50	0.00	3.00	3.65
0900 - 0915	0	0	3	0	2	0	0	0	5	5.00
0915 - 0930	0	0	3	0	1	2	0	0	6	7.00
0930 - 0945	0	0	2	0	2	0	2	0	6	8.60
0945 - 1000	0	0	3	0	6	1	0	0	10	10.50
Hourly Total	0	0	11	0	11	3	2	0	27	31.10
Hourly Average	0.00	0.00	2.75	0.00	2.75	0.75	0.50	0.00	6.75	7.78
Session Total	0	0	21	0	16	5	6	0	48	58.30
Session Average	0.00	0.00	1.75	0.00	1.33	0.42	0.50	0.00	4.00	4.86

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

Movement 1.1: Left from Porthcawl Road to Heol -Y- Splot									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1530 - 1545	0	0	2	0	1	0	1	0	4	5.30
1545 - 1600	0	0	0	0	0	0	3	0	3	6.90
1600 - 1615	0	0	2	0	0	0	2	0	4	6.60
1615 - 1630	0	0	3	0	2	0	0	0	5	5.00
Hourly Total	0	0	7	0	3	0	6	0	16	23.80
Hourly Average	0.00	0.00	1.75	0.00	0.75	0.00	1.50	0.00	4.00	5.95
1630 - 1645	0	0	3	0	0	0	2	0	5	7.60
1645 - 1700	0	0	0	0	1	0	0	0	1	1.00
1700 - 1715	0	0	3	0	1	0	0	0	4	4.00
1715 - 1730	0	0	2	0	1	0	2	0	5	7.60
Hourly Total	0	0	8	0	3	0	4	0	15	20.20
Hourly Average	0.00	0.00	2.00	0.00	0.75	0.00	1.00	0.00	3.75	5.05
1730 - 1745	0	0	1	0	1	0	1	0	3	4.30
1745 - 1800	0	0	0	0	1	0	0	0	1	1.00
1800 - 1815	0	0	1	0	0	0	1	0	2	3.30
1815 - 1830	0	0	2	0	1	0	0	0	3	3.00
Hourly Total	0	0	4	0	3	0	2	0	9	11.60
Hourly Average	0.00	0.00	1.00	0.00	0.75	0.00	0.50	0.00	2.25	2.90
Session Total	0	0	19	0	9	0	12	0	40	55.60
Session Average	0.00	0.00	1.58	0.00	0.75	0.00	1.00	0.00	3.33	4.63

South Cornelly, Bridgend
Classified Junction Count

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

Movement 1.2: Southbound from Porthcawl Road to A4229 (South)									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	1	0	0	0	0	0	1	1.00
0715 - 0730	0	0	4	0	4	1	0	0	9	9.50
0730 - 0745	0	0	0	0	3	0	0	1	4	5.00
0745 - 0800	0	0	4	0	5	1	0	1	11	12.50
Hourly Total	0	0	9	0	12	2	0	2	25	28.00
Hourly Average	0.00	0.00	2.25	0.00	3.00	0.50	0.00	0.50	6.25	7.00
0800 - 0815	3	0	6	0	3	0	0	0	12	9.60
0815 - 0830	1	0	21	0	2	0	0	1	25	25.20
0830 - 0845	1	0	17	0	3	1	0	1	23	23.70
0845 - 0900	0	0	17	0	6	0	0	0	23	23.00
Hourly Total	5	0	61	0	14	1	0	2	83	81.50
Hourly Average	1.25	0.00	15.25	0.00	3.50	0.25	0.00	0.50	20.75	20.38
0900 - 0915	1	0	8	1	4	0	0	1	15	15.20
0915 - 0930	0	0	11	0	7	0	1	1	20	22.30
0930 - 0945	0	0	7	0	3	0	0	1	11	12.00
0945 - 1000	2	0	10	0	8	0	0	1	21	20.40
Hourly Total	3	0	36	1	22	0	1	4	67	69.90
Hourly Average	0.75	0.00	9.00	0.25	5.50	0.00	0.25	1.00	16.75	17.48
Session Total	8	0	106	1	48	3	1	8	175	179.40
Session Average	0.67	0.00	8.83	0.08	4.00	0.25	0.08	0.67	14.58	14.95

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

Movement 1.2: Southbound from Porthcawl Road to A4229 (South)									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1530 - 1545	1	2	15	0	3	0	0	0	21	19.00
1545 - 1600	0	0	13	0	4	0	0	0	17	17.00
1600 - 1615	0	0	12	0	4	0	0	2	18	20.00
1615 - 1630	1	0	15	0	4	0	0	2	22	23.20
Hourly Total	2	2	55	0	15	0	0	4	78	79.20
Hourly Average	0.50	0.50	13.75	0.00	3.75	0.00	0.00	1.00	19.50	19.80
1630 - 1645	2	0	17	0	2	0	0	0	21	19.40
1645 - 1700	0	0	18	0	7	0	0	1	26	27.00
1700 - 1715	0	0	17	0	2	0	0	1	20	21.00
1715 - 1730	0	0	16	0	2	0	0	1	19	20.00
Hourly Total	2	0	68	0	13	0	0	3	86	87.40
Hourly Average	0.50	0.00	17.00	0.00	3.25	0.00	0.00	0.75	21.50	21.85
1730 - 1745	0	0	17	0	3	0	0	0	20	20.00
1745 - 1800	0	0	10	0	1	0	0	2	13	15.00
1800 - 1815	0	0	16	0	1	0	0	0	17	17.00
1815 - 1830	0	0	11	0	0	0	0	1	12	13.00
Hourly Total	0	0	54	0	5	0	0	3	62	65.00
Hourly Average	0.00	0.00	13.50	0.00	1.25	0.00	0.00	0.75	15.50	16.25
Session Total	4	2	177	0	33	0	0	10	226	231.60
Session Average	0.33	0.17	14.75	0.00	2.75	0.00	0.00	0.83	18.83	19.30

South Cornelly, Bridgend
Classified Junction Count

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

Movement 1.3: Right from Porthcawl Road to A4229 (West)									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	6	1	0	0	7	7.50
0715 - 0730	0	0	3	0	5	1	2	0	11	14.10
0730 - 0745	0	0	2	0	8	1	0	0	11	11.50
0745 - 0800	0	1	3	0	1	2	2	0	9	12.00
Hourly Total	0	1	8	0	20	5	4	0	38	45.10
Hourly Average	0.00	0.25	2.00	0.00	5.00	1.25	1.00	0.00	9.50	11.28
0800 - 0815	0	0	0	0	3	1	0	0	4	4.50
0815 - 0830	0	0	0	0	4	3	1	0	8	10.80
0830 - 0845	0	0	2	0	3	2	1	0	8	10.30
0845 - 0900	0	0	2	0	1	0	1	0	4	5.30
Hourly Total	0	0	4	0	11	6	3	0	24	30.90
Hourly Average	0.00	0.00	1.00	0.00	2.75	1.50	0.75	0.00	6.00	7.73
0900 - 0915	0	0	3	0	0	2	1	0	6	8.30
0915 - 0930	0	0	2	0	4	1	0	0	7	7.50
0930 - 0945	0	0	2	0	1	1	1	0	5	6.80
0945 - 1000	0	0	2	0	6	0	0	0	8	8.00
Hourly Total	0	0	9	0	11	4	2	0	26	30.60
Hourly Average	0.00	0.00	2.25	0.00	2.75	1.00	0.50	0.00	6.50	7.65
Session Total	0	1	21	0	42	15	9	0	88	106.60
Session Average	0.00	0.08	1.75	0.00	3.50	1.25	0.75	0.00	7.33	8.88

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

Movement 1.3: Right from Porthcawl Road to A4229 (West)									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1530 - 1545	0	1	5	0	1	1	1	0	9	10.20
1545 - 1600	0	0	1	0	0	1	0	0	2	2.50
1600 - 1615	0	0	4	0	1	0	1	0	6	7.30
1615 - 1630	0	0	4	0	0	0	1	0	5	6.30
Hourly Total	0	1	14	0	2	2	3	0	22	26.30
Hourly Average	0.00	0.25	3.50	0.00	0.50	0.50	0.75	0.00	5.50	6.58
1630 - 1645	0	0	1	0	0	0	1	0	2	3.30
1645 - 1700	0	0	5	0	2	0	0	0	7	7.00
1700 - 1715	0	0	3	0	0	0	1	0	4	5.30
1715 - 1730	0	0	3	0	3	0	1	0	7	8.30
Hourly Total	0	0	12	0	5	0	3	0	20	23.90
Hourly Average	0.00	0.00	3.00	0.00	1.25	0.00	0.75	0.00	5.00	5.98
1730 - 1745	0	0	1	0	1	0	0	0	2	2.00
1745 - 1800	0	0	3	0	0	0	1	0	4	5.30
1800 - 1815	0	0	5	0	1	0	0	0	6	6.00
1815 - 1830	0	0	1	0	1	0	1	0	3	4.30
Hourly Total	0	0	10	0	3	0	2	0	15	17.60
Hourly Average	0.00	0.00	2.50	0.00	0.75	0.00	0.50	0.00	3.75	4.40
Session Total	0	1	36	0	10	2	8	0	57	67.80
Session Average	0.00	0.08	3.00	0.00	0.83	0.17	0.67	0.00	4.75	5.65

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

[illegible]

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

[illegible]

South Cornelly, Bridgend
Classified Junction Count

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

Movement 1.5: Left from Heol -Y- Splot to A4229 (South)									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0800 - 0815	0	0	1	0	1	0	0	0	2	2.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	2	0	0	0	0	0	2	2.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	3	0	1	0	0	0	4	4.00
Hourly Average	0.00	0.00	0.75	0.00	0.25	0.00	0.00	0.00	1.00	1.00
0900 - 0915	0	0	0	0	1	0	0	0	1	1.00
0915 - 0930	0	0	1	0	0	0	0	0	1	1.00
0930 - 0945	0	0	0	0	0	0	0	0	0	0.00
0945 - 1000	0	0	0	0	0	1	0	0	1	1.50
Hourly Total	0	0	1	0	1	1	0	0	3	3.50
Hourly Average	0.00	0.00	0.25	0.00	0.25	0.25	0.00	0.00	0.75	0.88
Session Total	0	0	4	0	2	1	0	0	7	7.50
Session Average	0.00	0.00	0.33	0.00	0.17	0.08	0.00	0.00	0.58	0.63

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

Movement 1.5: Left from Heol -Y- Splot to A4229 (South)									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1530 - 1545	1	0	1	0	0	0	0	0	2	1.20
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
1600 - 1615	1	0	0	0	1	0	0	0	2	1.20
1615 - 1630	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	2	0	2	0	1	0	0	0	5	3.40
Hourly Average	0.50	0.00	0.50	0.00	0.25	0.00	0.00	0.00	1.25	0.85
1630 - 1645	1	0	0	0	0	0	0	0	1	0.20
1645 - 1700	0	0	3	0	0	0	0	0	3	3.00
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	3	0	1	0	0	0	4	4.00
Hourly Total	1	0	6	0	1	0	0	0	8	7.20
Hourly Average	0.25	0.00	1.50	0.00	0.25	0.00	0.00	0.00	2.00	1.80
1730 - 1745	0	0	3	0	0	0	0	0	3	3.00
1745 - 1800	0	0	2	0	0	0	0	0	2	2.00
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	5	0	0	0	0	0	5	5.00
Hourly Average	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	1.25	1.25
Session Total	3	0	13	0	2	0	0	0	18	15.60
Session Average	0.25	0.00	1.08	0.00	0.17	0.00	0.00	0.00	1.50	1.30

South Cornelly, Bridgend
Classified Junction Count

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

Movement 1.6: Westbound from Heol -Y- Splot to A4229 (West)									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	1	7	0	8	17.60
0715 - 0730	0	0	0	0	0	4	6	0	10	19.80
0730 - 0745	0	0	0	0	0	0	10	0	10	23.00
0745 - 0800	0	0	0	0	2	5	7	0	14	25.60
Hourly Total	0	0	0	0	2	10	30	0	42	86.00
Hourly Average	0.00	0.00	0.00	0.00	0.50	2.50	7.50	0.00	10.50	21.50
0800 - 0815	0	0	0	0	2	4	3	0	9	14.90
0815 - 0830	0	0	2	0	1	0	5	0	8	14.50
0830 - 0845	0	0	0	0	2	3	7	0	12	22.60
0845 - 0900	0	0	0	0	0	0	4	0	4	9.20
Hourly Total	0	0	2	0	5	7	19	0	33	61.20
Hourly Average	0.00	0.00	0.50	0.00	1.25	1.75	4.75	0.00	8.25	15.30
0900 - 0915	0	0	0	0	0	2	9	0	11	23.70
0915 - 0930	0	0	2	0	1	3	7	0	13	23.60
0930 - 0945	0	0	0	0	0	1	6	0	7	15.30
0945 - 1000	0	0	0	0	2	0	9	0	11	22.70
Hourly Total	0	0	2	0	3	6	31	0	42	85.30
Hourly Average	0.00	0.00	0.50	0.00	0.75	1.50	7.75	0.00	10.50	21.33
Session Total	0	0	4	0	10	23	80	0	117	232.50
Session Average	0.00	0.00	0.33	0.00	0.83	1.92	6.67	0.00	9.75	19.38

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

Movement 1.6: Westbound from Heol -Y- Splot to A4229 (West)									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1530 - 1545	0	1	3	0	0	1	3	0	8	11.80
1545 - 1600	0	0	7	0	2	1	3	0	13	17.40
1600 - 1615	0	0	4	0	6	1	2	0	13	16.10
1615 - 1630	0	0	8	0	1	0	5	0	14	20.50
Hourly Total	0	1	22	0	9	3	13	0	48	65.80
Hourly Average	0.00	0.25	5.50	0.00	2.25	0.75	3.25	0.00	12.00	16.45
1630 - 1645	0	0	5	0	1	0	1	0	7	8.30
1645 - 1700	0	0	9	0	1	0	1	0	11	12.30
1700 - 1715	0	0	8	0	0	0	1	0	9	10.30
1715 - 1730	0	0	3	0	1	0	1	0	5	6.30
Hourly Total	0	0	25	0	3	0	4	0	32	37.20
Hourly Average	0.00	0.00	6.25	0.00	0.75	0.00	1.00	0.00	8.00	9.30
1730 - 1745	0	1	4	0	0	0	1	0	6	6.70
1745 - 1800	0	0	4	0	1	0	4	0	9	14.20
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	1	0	1	0	2	3.30
Hourly Total	0	1	8	0	2	0	6	0	17	24.20
Hourly Average	0.00	0.25	2.00	0.00	0.50	0.00	1.50	0.00	4.25	6.05
Session Total	0	2	55	0	14	3	23	0	97	127.20
Session Average	0.00	0.17	4.58	0.00	1.17	0.25	1.92	0.00	8.08	10.60

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

	Movement 1.7: Right from Heol -Y- Splot to Porthcawl Road								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	1	0	1	2.30
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	1	0	1	2.30
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.25	0.58
0800 - 0815	0	0	0	0	0	0	2	0	2	4.60
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	1	0	1	2.30
Hourly Total	0	0	0	0	0	0	3	0	3	6.90
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.75	1.73
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	0	0	1	0	1	2.30
0930 - 0945	0	0	0	0	0	0	0	0	0	0.00
0945 - 1000	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	1	0	1	2.30
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.25	0.58
Session Total	0	0	0	0	0	0	5	0	5	11.50
Session Average	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.42	0.96

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

[illegible]

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

	Movement 1.8: U-Turn from Heol -Y- Splot to Heol -Y- Splot								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	1	0	1	2.30
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	1	0	1	2.30
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.25	0.58
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	0	0	0	0	0	0	0	0.00
0945 - 1000	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Session Total	0	0	0	0	0	0	1	0	1	2.30
Session Average	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.08	0.19

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

[illegible]

South Cornelly, Bridgend
Classified Junction Count

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

Movement 1.9: Left from A4229 (South) to A4229 (West)									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	70	0	19	0	1	0	90	91.30
0715 - 0730	0	0	106	0	26	3	0	1	136	138.50
0730 - 0745	0	0	110	2	31	0	0	0	143	143.00
0745 - 0800	0	0	144	1	32	2	0	1	180	182.00
Hourly Total	0	0	430	3	108	5	1	2	549	554.80
Hourly Average	0.00	0.00	107.50	0.75	27.00	1.25	0.25	0.50	137.25	138.70
0800 - 0815	0	0	129	2	22	1	1	1	156	158.80
0815 - 0830	0	0	130	4	14	1	0	0	149	149.50
0830 - 0845	0	0	146	3	17	0	0	3	169	172.00
0845 - 0900	0	0	165	0	21	0	0	0	186	186.00
Hourly Total	0	0	570	9	74	2	1	4	660	666.30
Hourly Average	0.00	0.00	142.50	2.25	18.50	0.50	0.25	1.00	165.00	166.58
0900 - 0915	0	0	155	1	18	6	1	0	181	185.30
0915 - 0930	0	2	93	0	20	1	0	0	116	115.30
0930 - 0945	0	1	87	0	19	0	0	0	107	106.40
0945 - 1000	0	0	105	4	15	1	0	0	125	125.50
Hourly Total	0	3	440	5	72	8	1	0	529	532.50
Hourly Average	0.00	0.75	110.00	1.25	18.00	2.00	0.25	0.00	132.25	133.13
Session Total	0	3	1440	17	254	15	3	6	1738	1753.60
Session Average	0.00	0.25	120.00	1.42	21.17	1.25	0.25	0.50	144.83	146.13

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

Movement 1.9: Left from A4229 (South) to A4229 (West)									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1530 - 1545	0	1	181	5	19	3	0	1	210	211.90
1545 - 1600	0	0	142	2	28	1	0	1	174	175.50
1600 - 1615	0	0	157	1	35	0	0	0	193	193.00
1615 - 1630	0	0	147	0	10	1	0	0	158	158.50
Hourly Total	0	1	627	8	92	5	0	2	735	738.90
Hourly Average	0.00	0.25	156.75	2.00	23.00	1.25	0.00	0.50	183.75	184.73
1630 - 1645	0	1	136	0	25	0	0	0	162	161.40
1645 - 1700	0	0	131	1	21	1	1	0	155	156.80
1700 - 1715	0	0	138	0	10	0	0	0	148	148.00
1715 - 1730	0	0	123	0	19	1	0	0	143	143.50
Hourly Total	0	1	528	1	75	2	1	0	608	609.70
Hourly Average	0.00	0.25	132.00	0.25	18.75	0.50	0.25	0.00	152.00	152.43
1730 - 1745	0	1	112	0	11	0	0	0	124	123.40
1745 - 1800	0	3	97	0	8	0	0	0	108	106.20
1800 - 1815	0	0	81	0	6	0	0	0	87	87.00
1815 - 1830	0	0	87	0	3	0	0	0	90	90.00
Hourly Total	0	4	377	0	28	0	0	0	409	406.60
Hourly Average	0.00	1.00	94.25	0.00	7.00	0.00	0.00	0.00	102.25	101.65
Session Total	0	6	1532	9	195	7	1	2	1752	1755.20
Session Average	0.00	0.50	127.67	0.75	16.25	0.58	0.08	0.17	146.00	146.27

South Cornelly, Bridgend
Classified Junction Count

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

Movement 1.10: Northbound from A4229 (South) to Porthcawl Road									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	1	1	2.00
0715 - 0730	1	0	2	0	2	0	0	1	6	6.20
0730 - 0745	1	0	1	0	3	0	0	0	5	4.20
0745 - 0800	0	0	7	0	2	0	0	1	10	11.00
Hourly Total	2	0	10	0	7	0	0	3	22	23.40
Hourly Average	0.50	0.00	2.50	0.00	1.75	0.00	0.00	0.75	5.50	5.85
0800 - 0815	0	0	2	0	2	0	0	3	7	10.00
0815 - 0830	1	0	6	0	2	1	0	1	11	11.70
0830 - 0845	0	0	10	0	0	0	0	0	10	10.00
0845 - 0900	0	0	7	0	9	0	0	1	17	18.00
Hourly Total	1	0	25	0	13	1	0	5	45	49.70
Hourly Average	0.25	0.00	6.25	0.00	3.25	0.25	0.00	1.25	11.25	12.43
0900 - 0915	0	0	10	0	4	0	0	1	15	16.00
0915 - 0930	0	0	4	0	8	0	0	1	13	14.00
0930 - 0945	0	0	6	0	1	0	0	0	7	7.00
0945 - 1000	0	0	5	0	1	1	0	1	8	9.50
Hourly Total	0	0	25	0	14	1	0	3	43	46.50
Hourly Average	0.00	0.00	6.25	0.00	3.50	0.25	0.00	0.75	10.75	11.63
Session Total	3	0	60	0	34	2	0	11	110	119.60
Session Average	0.25	0.00	5.00	0.00	2.83	0.17	0.00	0.92	9.17	9.97

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

Movement 1.10: Northbound from A4229 (South) to Porthcawl Road									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1530 - 1545	0	0	13	0	1	0	0	0	14	14.00
1545 - 1600	0	0	6	0	1	0	0	1	8	9.00
1600 - 1615	0	0	5	0	1	0	0	0	6	6.00
1615 - 1630	0	0	9	0	2	0	0	2	13	15.00
Hourly Total	0	0	33	0	5	0	0	3	41	44.00
Hourly Average	0.00	0.00	8.25	0.00	1.25	0.00	0.00	0.75	10.25	11.00
1630 - 1645	0	0	5	0	3	0	0	0	8	8.00
1645 - 1700	1	0	7	0	0	0	0	1	9	9.20
1700 - 1715	0	0	10	0	2	0	0	1	13	14.00
1715 - 1730	1	0	5	0	3	0	0	1	10	10.20
Hourly Total	2	0	27	0	8	0	0	3	40	41.40
Hourly Average	0.50	0.00	6.75	0.00	2.00	0.00	0.00	0.75	10.00	10.35
1730 - 1745	0	0	5	0	0	0	0	0	5	5.00
1745 - 1800	0	0	7	0	1	0	0	1	9	10.00
1800 - 1815	0	0	11	0	1	0	0	1	13	14.00
1815 - 1830	0	0	9	0	0	0	0	1	10	11.00
Hourly Total	0	0	32	0	2	0	0	3	37	40.00
Hourly Average	0.00	0.00	8.00	0.00	0.50	0.00	0.00	0.75	9.25	10.00
Session Total	2	0	92	0	15	0	0	9	118	125.40
Session Average	0.17	0.00	7.67	0.00	1.25	0.00	0.00	0.75	9.83	10.45

South Cornelly, Bridgend
Classified Junction Count

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

Movement 1.11: Right from A4229 (South) to Heol -Y- Splot									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	4	0	3	0	0	0	7	7.00
0715 - 0730	0	0	5	0	1	0	0	0	6	6.00
0730 - 0745	0	0	6	0	0	0	1	0	7	8.30
0745 - 0800	0	1	8	0	2	0	0	0	11	10.40
Hourly Total	0	1	23	0	6	0	1	0	31	31.70
Hourly Average	0.00	0.25	5.75	0.00	1.50	0.00	0.25	0.00	7.75	7.93
0800 - 0815	0	0	7	0	2	0	0	0	9	9.00
0815 - 0830	0	0	9	0	2	1	0	0	12	12.50
0830 - 0845	0	0	4	0	0	0	0	0	4	4.00
0845 - 0900	0	0	8	0	1	1	0	0	10	10.50
Hourly Total	0	0	28	0	5	2	0	0	35	36.00
Hourly Average	0.00	0.00	7.00	0.00	1.25	0.50	0.00	0.00	8.75	9.00
0900 - 0915	0	0	9	0	1	0	0	0	10	10.00
0915 - 0930	0	0	4	0	1	0	0	0	5	5.00
0930 - 0945	0	0	6	0	0	1	0	0	7	7.50
0945 - 1000	0	0	2	0	1	0	0	0	3	3.00
Hourly Total	0	0	21	0	3	1	0	0	25	25.50
Hourly Average	0.00	0.00	5.25	0.00	0.75	0.25	0.00	0.00	6.25	6.38
Session Total	0	1	72	0	14	3	1	0	91	93.20
Session Average	0.00	0.08	6.00	0.00	1.17	0.25	0.08	0.00	7.58	7.77

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

Movement 1.11: Right from A4229 (South) to Heol -Y- Splot									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1530 - 1545	0	0	10	0	3	0	0	0	13	13.00
1545 - 1600	0	0	7	0	2	0	0	0	9	9.00
1600 - 1615	0	0	13	0	1	0	0	0	14	14.00
1615 - 1630	0	1	7	1	2	0	0	0	11	10.40
Hourly Total	0	1	37	1	8	0	0	0	47	46.40
Hourly Average	0.00	0.25	9.25	0.25	2.00	0.00	0.00	0.00	11.75	11.60
1630 - 1645	0	0	5	0	2	0	0	0	7	7.00
1645 - 1700	1	0	4	0	0	0	0	0	5	4.20
1700 - 1715	0	0	6	0	2	0	0	0	8	8.00
1715 - 1730	0	0	7	0	1	0	0	0	8	8.00
Hourly Total	1	0	22	0	5	0	0	0	28	27.20
Hourly Average	0.25	0.00	5.50	0.00	1.25	0.00	0.00	0.00	7.00	6.80
1730 - 1745	0	0	4	0	0	0	0	0	4	4.00
1745 - 1800	0	0	7	0	0	0	0	0	7	7.00
1800 - 1815	0	0	8	0	0	0	0	0	8	8.00
1815 - 1830	0	0	5	0	1	0	0	0	6	6.00
Hourly Total	0	0	24	0	1	0	0	0	25	25.00
Hourly Average	0.00	0.00	6.00	0.00	0.25	0.00	0.00	0.00	6.25	6.25
Session Total	1	1	83	1	14	0	0	0	100	98.60
Session Average	0.08	0.08	6.92	0.08	1.17	0.00	0.00	0.00	8.33	8.22

South Cornelly, Bridgend
Classified Junction Count

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

Movement 1.13: Left from A4229 (West) to Porthcawl Road									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	5	0	0	0	5	5.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	2	0	0	0	2	2.00
Hourly Total	0	0	0	0	7	0	0	0	7	7.00
Hourly Average	0.00	0.00	0.00	0.00	1.75	0.00	0.00	0.00	1.75	1.75
0800 - 0815	0	0	1	0	2	1	0	0	4	4.50
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	2	0	0	0	2	2.00
Hourly Total	0	0	1	0	4	1	0	0	6	6.50
Hourly Average	0.00	0.00	0.25	0.00	1.00	0.25	0.00	0.00	1.50	1.63
0900 - 0915	0	0	0	0	0	1	2	0	3	6.10
0915 - 0930	0	0	2	0	1	1	1	0	5	6.80
0930 - 0945	0	0	2	0	1	0	0	0	3	3.00
0945 - 1000	0	0	2	0	1	1	0	0	4	4.50
Hourly Total	0	0	6	0	3	3	3	0	15	20.40
Hourly Average	0.00	0.00	1.50	0.00	0.75	0.75	0.75	0.00	3.75	5.10
Session Total	0	0	7	0	14	4	3	0	28	33.90
Session Average	0.00	0.00	0.58	0.00	1.17	0.33	0.25	0.00	2.33	2.83

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

Movement 1.13: Left from A4229 (West) to Porthcawl Road									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1530 - 1545	0	1	1	0	1	1	0	0	4	3.90
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
1600 - 1615	0	0	2	0	0	2	1	0	5	7.30
1615 - 1630	0	0	2	0	1	0	1	0	4	5.30
Hourly Total	0	1	5	0	2	3	2	0	13	16.50
Hourly Average	0.00	0.25	1.25	0.00	0.50	0.75	0.50	0.00	3.25	4.13
1630 - 1645	0	0	0	0	0	0	1	0	1	2.30
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	0	0	1	0	1	0	2	3.30
Hourly Total	0	0	0	0	1	0	2	0	3	5.60
Hourly Average	0.00	0.00	0.00	0.00	0.25	0.00	0.50	0.00	0.75	1.40
1730 - 1745	0	0	1	0	0	0	0	0	1	1.00
1745 - 1800	0	0	1	0	0	0	0	0	1	1.00
1800 - 1815	0	0	1	0	0	0	0	0	1	1.00
1815 - 1830	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	0	0	4	0	0	0	0	0	4	4.00
Hourly Average	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
Session Total	0	1	9	0	3	3	4	0	20	26.10
Session Average	0.00	0.08	0.75	0.00	0.25	0.25	0.33	0.00	1.67	2.18

South Cornelly, Bridgend
Classified Junction Count

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

Movement 1.14: Eastbound from A4229 (West) to Heol -Y- Splot									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	1	6	0	4	1	1	0	13	14.20
0715 - 0730	0	1	1	0	4	3	6	0	15	23.70
0730 - 0745	0	0	1	0	4	6	2	0	13	18.60
0745 - 0800	0	0	2	0	2	2	5	0	11	18.50
Hourly Total	0	2	10	0	14	12	14	0	52	75.00
Hourly Average	0.00	0.50	2.50	0.00	3.50	3.00	3.50	0.00	13.00	18.75
0800 - 0815	0	0	2	0	1	4	4	0	11	18.20
0815 - 0830	0	0	6	0	6	2	17	0	31	54.10
0830 - 0845	0	0	7	0	5	3	12	0	27	44.10
0845 - 0900	0	0	4	0	2	0	6	0	12	19.80
Hourly Total	0	0	19	0	14	9	39	0	81	136.20
Hourly Average	0.00	0.00	4.75	0.00	3.50	2.25	9.75	0.00	20.25	34.05
0900 - 0915	0	0	3	0	3	0	11	0	17	31.30
0915 - 0930	0	0	4	0	1	0	5	0	10	16.50
0930 - 0945	0	0	2	0	2	1	6	0	11	19.30
0945 - 1000	0	0	3	0	5	0	5	0	13	19.50
Hourly Total	0	0	12	0	11	1	27	0	51	86.60
Hourly Average	0.00	0.00	3.00	0.00	2.75	0.25	6.75	0.00	12.75	21.65
Session Total	0	2	41	0	39	22	80	0	184	297.80
Session Average	0.00	0.17	3.42	0.00	3.25	1.83	6.67	0.00	15.33	24.82

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

Movement 1.14: Eastbound from A4229 (West) to Heol -Y- Splot									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1530 - 1545	0	0	4	0	1	1	13	0	19	36.40
1545 - 1600	0	0	7	0	3	1	9	0	20	32.20
1600 - 1615	0	0	10	0	1	1	7	0	19	28.60
1615 - 1630	0	0	8	0	1	0	5	0	14	20.50
Hourly Total	0	0	29	0	6	3	34	0	72	117.70
Hourly Average	0.00	0.00	7.25	0.00	1.50	0.75	8.50	0.00	18.00	29.43
1630 - 1645	2	0	7	0	1	0	6	0	16	22.20
1645 - 1700	0	0	4	0	2	0	0	0	6	6.00
1700 - 1715	0	0	5	0	3	0	5	0	13	19.50
1715 - 1730	0	0	3	0	1	0	1	0	5	6.30
Hourly Total	2	0	19	0	7	0	12	0	40	54.00
Hourly Average	0.50	0.00	4.75	0.00	1.75	0.00	3.00	0.00	10.00	13.50
1730 - 1745	0	0	6	0	1	0	4	0	11	16.20
1745 - 1800	0	0	4	0	1	0	1	0	6	7.30
1800 - 1815	0	0	5	0	1	0	0	0	6	6.00
1815 - 1830	0	0	4	0	1	0	1	0	6	7.30
Hourly Total	0	0	19	0	4	0	6	0	29	36.80
Hourly Average	0.00	0.00	4.75	0.00	1.00	0.00	1.50	0.00	7.25	9.20
Session Total	2	0	67	0	17	3	52	0	141	208.50
Session Average	0.17	0.00	5.58	0.00	1.42	0.25	4.33	0.00	11.75	17.38

South Cornelly, Bridgend
Classified Junction Count

Site 1 of 1
Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

Lat/Long
lat 51.506217° lon -3.701761°

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

Movement 1.15: Right from A4229 (West) to A4229 (South)									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	42	0	5	1	0	2	50	52.50
0715 - 0730	0	0	43	0	12	1	0	1	57	58.50
0730 - 0745	0	0	57	1	14	0	0	0	72	72.00
0745 - 0800	0	0	68	1	34	2	1	0	106	108.30
Hourly Total	0	0	210	2	65	4	1	3	285	291.30
Hourly Average	0.00	0.00	52.50	0.50	16.25	1.00	0.25	0.75	71.25	72.83
0800 - 0815	0	0	126	6	12	5	0	1	150	153.50
0815 - 0830	0	0	157	1	31	5	0	1	195	198.50
0830 - 0845	0	0	184	0	34	2	1	0	221	223.30
0845 - 0900	0	0	112	0	20	1	1	0	134	135.80
Hourly Total	0	0	579	7	97	13	2	2	700	711.10
Hourly Average	0.00	0.00	144.75	1.75	24.25	3.25	0.50	0.50	175.00	177.78
0900 - 0915	0	0	104	0	19	3	1	0	127	129.80
0915 - 0930	1	1	98	1	27	2	0	0	130	129.60
0930 - 0945	0	0	96	0	19	3	0	0	118	119.50
0945 - 1000	0	0	108	0	14	2	0	0	124	125.00
Hourly Total	1	1	406	1	79	10	1	0	499	503.90
Hourly Average	0.25	0.25	101.50	0.25	19.75	2.50	0.25	0.00	124.75	125.98
Session Total	1	1	1195	10	241	27	4	5	1484	1506.30
Session Average	0.08	0.08	99.58	0.83	20.08	2.25	0.33	0.42	123.67	125.53

Date
Thursday 12 November 2020

Weather
Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

Movement 1.15: Right from A4229 (West) to A4229 (South)									Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1530 - 1545	0	0	129	0	18	1	0	2	150	152.50
1545 - 1600	0	0	150	1	27	2	0	0	180	181.00
1600 - 1615	0	2	159	0	18	0	0	0	179	177.80
1615 - 1630	0	1	152	1	26	0	0	0	180	179.40
Hourly Total	0	3	590	2	89	3	0	2	689	690.70
Hourly Average	0.00	0.75	147.50	0.50	22.25	0.75	0.00	0.50	172.25	172.68
1630 - 1645	0	0	161	1	28	0	0	0	190	190.00
1645 - 1700	0	0	165	0	28	0	0	0	193	193.00
1700 - 1715	0	0	149	0	25	0	0	0	174	174.00
1715 - 1730	0	0	164	0	20	0	0	0	184	184.00
Hourly Total	0	0	639	1	101	0	0	0	741	741.00
Hourly Average	0.00	0.00	159.75	0.25	25.25	0.00	0.00	0.00	185.25	185.25
1730 - 1745	0	0	145	0	11	0	0	0	156	156.00
1745 - 1800	0	0	149	0	13	0	0	0	162	162.00
1800 - 1815	0	0	134	0	19	0	1	0	154	155.30
1815 - 1830	0	0	118	0	15	0	0	0	133	133.00
Hourly Total	0	0	546	0	58	0	1	0	605	606.30
Hourly Average	0.00	0.00	136.50	0.00	14.50	0.00	0.25	0.00	151.25	151.58
Session Total	0	3	1775	3	248	3	1	2	2035	2038.00
Session Average	0.00	0.25	147.92	0.25	20.67	0.25	0.08	0.17	169.58	169.83

Classified Junction Count

Porthcawl Road
Heol -Y- Splot
A4229 (South)
A4229 (West)

lat 51.506217° lon -3.701761°

Thursday 12 November 2020

Cloudy
Temp: 10°C

0700 - 1000 (Weekday AM Peak)

[illegible]

Thursday 12 November 2020

Cloudy
Temp: 12°C

1530 - 1830 (Weekday PM Peak)

[illegible]

FIGURE D - 2020 Base - Surveyed Traffic Flows
11661 - Land Adjacent Heol-y-Splot, South Cornelly Bridgend
Thursday 12th November 2020
08:15-09:15
AM PEAK

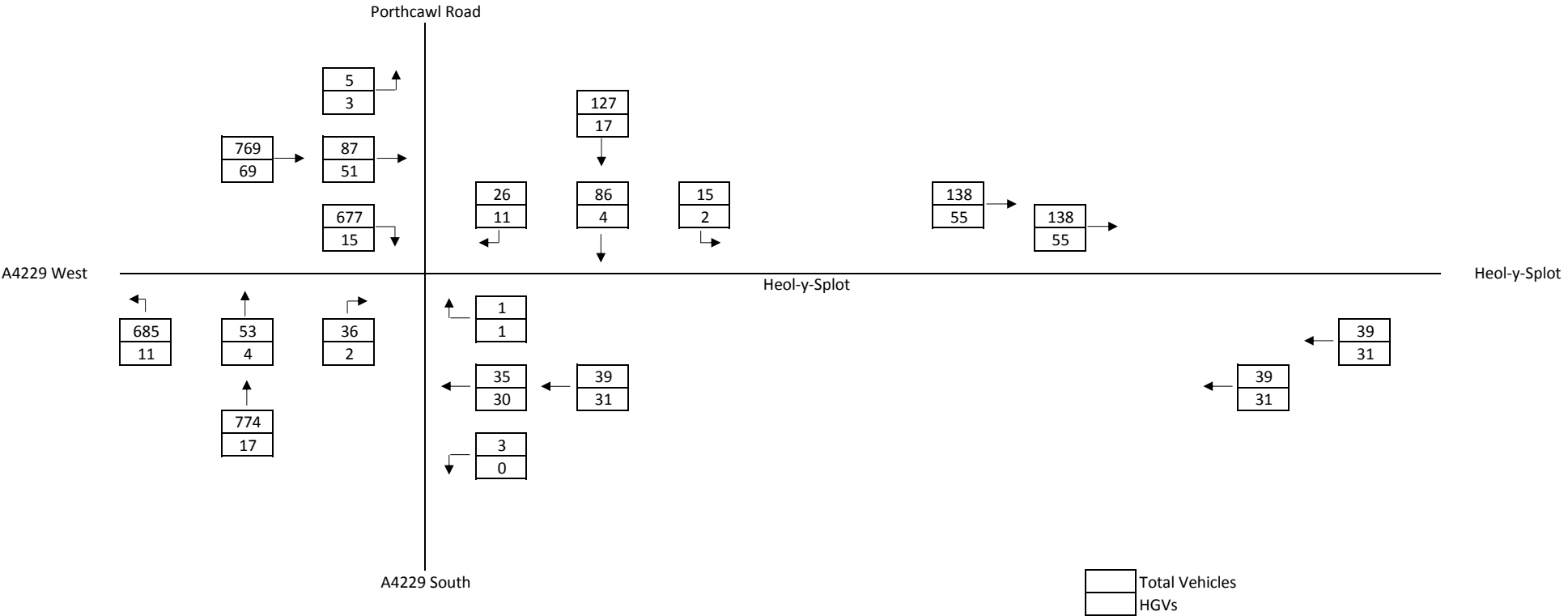
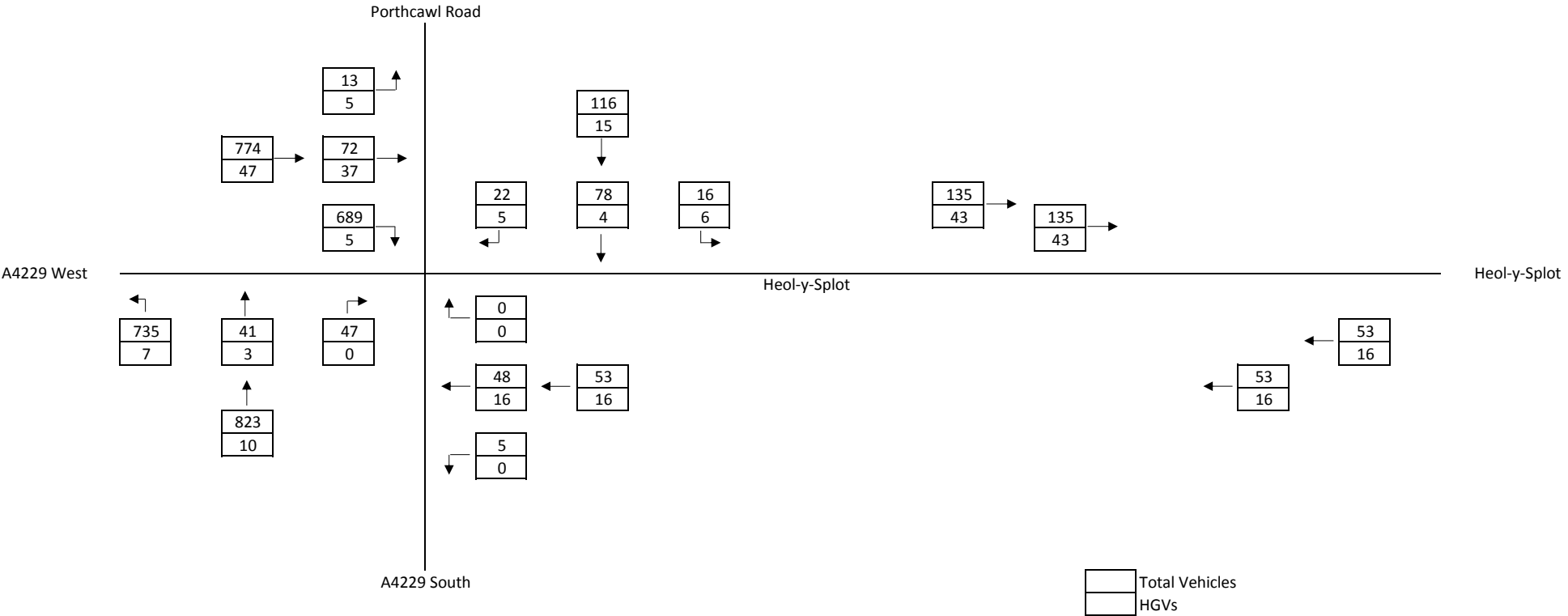


FIGURE E - 2020 Base - Surveyed Traffic Flows
11661 - Land Adjacent Heol-y-Splot, South Cornelly Bridgend
Thursday 12th November 2020
15:30-16:30
PM PEAK



Appendix F
Junction 9 Output – 2020 Base

Junctions 9						
ARCADY 9 - Roundabout Module						
Version: 9.5.1.7462 © Copyright TRL Limited, 2019						
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk						
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution						

Filename: A4229 - Porthcawl Road - Heol-y-Splot.j9

Path: J:\11000\11600\11661_LandAdjacentToHeolyS\engineering\Traffic_Programs\Arcady

Report generation date: 24/11/2020 11:55:08

»2020 Base, AM

»2020 Base, PM

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2020 Base						
1 - Porthcawl Road	0.1	3.20	0.12	0.1	3.12	0.11
2 - Heol-y-Splot	0.1	2.97	0.06	0.1	2.93	0.06
3 - A4229 South	0.7	2.76	0.40	0.7	2.84	0.42
4 - A4229 West	1.5	5.71	0.59	1.4	5.51	0.58

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.

File summary

File Description

Title	A4229 / Porthcawl Road / Heol-y-Splot
Location	South Cornelly, Bridgend
Site number	
Date	05/11/2020
Version	
Status	(new file)
Identifier	
Client	Wellshill Civils and Plant
Jobnumber	11661
Enumerator	SANDERSONASSOC\john.turner
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	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2020 Base	AM	ONE HOUR	08:00	09:30	15	✓		
D2	2020 Base	PM	ONE HOUR	15:15	16:45	15	✓		
D3	2030 Base	AM	ONE HOUR	08:00	09:30	15			
D4	2030 Base	PM	ONE HOUR	15:15	16:45	15			
D5	Trip Generation	AM	ONE HOUR	08:00	09:30	15			
D6	Trip Generation	PM	ONE HOUR	15:15	16:45	15			
D7	2030 Base + Dev	AM	ONE HOUR	08:00	09:30	15		Simple	D3 + D5
D8	2030 Base + Dev	PM	ONE HOUR	15:15	16:45	15		Simple	D4 + D6
D9	2030 Base Sens (+20%)	AM	ONE HOUR	08:00	09:30	15			
D10	2030 Base Sens (+20%)	PM	ONE HOUR	15:15	16:45	15			
D11	2030 Base Sens (+20%) + Dev	AM	ONE HOUR	08:00	09:30	15		Simple	D9 + D5
D12	2030 Base Sens (+20%) + Dev	PM	ONE HOUR	15:15	16:45	15		Simple	D10 + D6
D13	2030 Base Sens (+30%)	AM	ONE HOUR	08:00	09:30	15			
D14	2030 Base Sens (+30%)	PM	ONE HOUR	15:15	16:45	15			
D15	2030 Base Sens (+30%) + Dev	AM	ONE HOUR	08:00	09:30	15		Simple	D13 + D5
D16	2030 Base Sens (+30%) + Dev	PM	ONE HOUR	15:15	16:45	15		Simple	D14 + D6
D17	Trip Generation (Sensitivity)	AM	ONE HOUR	08:00	09:30	15			
D18	Trip Generation (Sensitivity)	PM	ONE HOUR	15:15	16:45	15			
D19	2030 Base + Sensitivity Dev	AM	ONE HOUR	08:00	09:30	15		Simple	D3 + D17
D20	2030 Base + Sensitivity Dev	PM	ONE HOUR	15:15	16:45	15		Simple	D4 + D18
D21	2030 Base Sens (+20%) + Sensitivity Dev	AM	ONE HOUR	08:00	09:30	15		Simple	D9 + D17
D22	2030 Base Sens (+20%) + Sensitivity Dev	PM	ONE HOUR	15:15	16:45	15		Simple	D10 + D18

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2020 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - A4229 South - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		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.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Porthcawl Road	
2	Heol-y-Splot	
3	A4229 South	
4	A4229 West	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Porthcawl Road	3.80	8.30	14.5	49.0	40.0	17.0	
2 - Heol-y-Splot	3.90	8.80	17.3	11.0	40.0	28.0	
3 - A4229 South	4.20	8.20	47.0	27.0	40.0	29.0	
4 - A4229 West	3.70	7.80	13.1	13.0	40.0	43.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Porthcawl Road	0.719	1971
2 - Heol-y-Splot	0.671	1896
3 - A4229 South	0.759	2261
4 - A4229 West	0.604	1617

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2020 Base	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Porthcawl Road		ONE HOUR	✓	144	100.000
2 - Heol-y-Splot		ONE HOUR	✓	70	100.000
3 - A4229 South		ONE HOUR	✓	791	100.000
4 - A4229 West		ONE HOUR	✓	838	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
From	1 - Porthcawl Road	0	17	90	37
	2 - Heol-y-Splot	2	0	3	65
	3 - A4229 South	57	38	0	696
	4 - A4229 West	8	138	692	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
From	1 - Porthcawl Road	0	0	0	0
	2 - Heol-y-Splot	0	0	0	0
	3 - A4229 South	0	0	0	0
	4 - A4229 West	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Porthcawl Road	0.12	3.20	0.1	A	132	198
2 - Heol-y-Splot	0.06	2.97	0.1	A	64	96
3 - A4229 South	0.40	2.76	0.7	A	726	1089
4 - A4229 West	0.59	5.71	1.5	A	769	1153

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	108	27	651	1504	0.072	108	50	0.0	0.1	2.579	A
2 - Heol-y-Splot	53	13	614	1484	0.036	53	145	0.0	0.0	2.515	A
3 - A4229 South	596	149	78	2202	0.270	594	589	0.0	0.4	2.237	A
4 - A4229 West	631	158	73	1573	0.401	628	599	0.0	0.7	3.797	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	129	32	779	1412	0.092	129	60	0.1	0.1	2.807	A
2 - Heol-y-Splot	63	16	735	1402	0.045	63	173	0.0	0.0	2.687	A
3 - A4229 South	711	178	93	2190	0.325	711	705	0.4	0.5	2.433	A
4 - A4229 West	753	188	87	1565	0.481	752	717	0.7	0.9	4.426	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	159	40	954	1286	0.123	158	74	0.1	0.1	3.191	A
2 - Heol-y-Splot	77	19	900	1292	0.060	77	212	0.0	0.1	2.962	A
3 - A4229 South	871	218	114	2174	0.401	870	862	0.5	0.7	2.759	A
4 - A4229 West	923	231	107	1553	0.594	921	878	0.9	1.4	5.673	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	159	40	956	1285	0.123	159	74	0.1	0.1	3.195	A
2 - Heol-y-Splot	77	19	902	1291	0.060	77	212	0.1	0.1	2.965	A
3 - A4229 South	871	218	115	2174	0.401	871	864	0.7	0.7	2.761	A
4 - A4229 West	923	231	107	1553	0.594	923	879	1.4	1.5	5.711	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	129	32	782	1409	0.092	130	60	0.1	0.1	2.812	A
2 - Heol-y-Splot	63	16	738	1400	0.045	63	174	0.1	0.0	2.691	A
3 - A4229 South	711	178	94	2190	0.325	712	708	0.7	0.5	2.436	A
4 - A4229 West	753	188	87	1565	0.481	755	718	1.5	0.9	4.459	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	108	27	655	1501	0.072	109	50	0.1	0.1	2.586	A
2 - Heol-y-Splot	53	13	618	1481	0.036	53	146	0.0	0.0	2.519	A
3 - A4229 South	596	149	78	2202	0.270	596	592	0.5	0.4	2.242	A
4 - A4229 West	631	158	73	1573	0.401	632	601	0.9	0.7	3.830	A

2020 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - A4229 South - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		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.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.05	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2020 Base	PM	ONE HOUR	15:15	16:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Porthcawl Road		ONE HOUR	✓	131	100.000
2 - Heol-y-Splot		ONE HOUR	✓	69	100.000
3 - A4229 South		ONE HOUR	✓	833	100.000
4 - A4229 West		ONE HOUR	✓	821	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
	1 - Porthcawl Road	0	22	82	27
	2 - Heol-y-Splot	0	0	5	64
	3 - A4229 South	44	47	0	742
	4 - A4229 West	18	109	694	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
	1 - Porthcawl Road	0	0	0	0
	2 - Heol-y-Splot	0	0	0	0
	3 - A4229 South	0	0	0	0
	4 - A4229 West	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Porthcawl Road	0.11	3.12	0.1	A	120	180
2 - Heol-y-Splot	0.06	2.93	0.1	A	63	95
3 - A4229 South	0.42	2.84	0.7	A	764	1147
4 - A4229 West	0.58	5.51	1.4	A	753	1130

Main Results for each time segment

15:15 - 15:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	99	25	637	1514	0.065	98	47	0.0	0.1	2.543	A
2 - Heol-y-Splot	52	13	602	1492	0.035	52	134	0.0	0.0	2.500	A
3 - A4229 South	627	157	68	2209	0.284	626	586	0.0	0.4	2.271	A
4 - A4229 West	618	155	68	1576	0.392	616	626	0.0	0.6	3.739	A

15:30 - 15:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	118	29	763	1423	0.083	118	56	0.1	0.1	2.757	A
2 - Heol-y-Splot	62	16	721	1412	0.044	62	160	0.0	0.0	2.666	A
3 - A4229 South	749	187	82	2199	0.341	748	701	0.4	0.5	2.481	A
4 - A4229 West	738	185	82	1568	0.471	737	748	0.6	0.9	4.326	A

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	144	36	934	1300	0.111	144	68	0.1	0.1	3.113	A
2 - Heol-y-Splot	76	19	882	1304	0.058	76	196	0.0	0.1	2.931	A
3 - A4229 South	917	229	100	2185	0.420	916	858	0.5	0.7	2.836	A
4 - A4229 West	904	226	100	1557	0.581	902	916	0.9	1.4	5.480	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	144	36	936	1299	0.111	144	68	0.1	0.1	3.116	A
2 - Heol-y-Splot	76	19	884	1302	0.058	76	196	0.1	0.1	2.934	A
3 - A4229 South	917	229	100	2185	0.420	917	860	0.7	0.7	2.838	A
4 - A4229 West	904	226	100	1557	0.581	904	917	1.4	1.4	5.513	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	118	29	766	1421	0.083	118	56	0.1	0.1	2.764	A
2 - Heol-y-Splot	62	16	724	1410	0.044	62	160	0.1	0.0	2.670	A
3 - A4229 South	749	187	82	2199	0.341	750	704	0.7	0.5	2.484	A
4 - A4229 West	738	185	82	1568	0.471	740	750	1.4	0.9	4.359	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	99	25	641	1511	0.065	99	47	0.1	0.1	2.548	A
2 - Heol-y-Splot	52	13	605	1489	0.035	52	134	0.0	0.0	2.505	A
3 - A4229 South	627	157	69	2209	0.284	628	589	0.5	0.4	2.278	A
4 - A4229 West	618	155	69	1576	0.392	619	628	0.9	0.6	3.765	A

Appendix G

Figure F - 2030 Base Traffic Flows AM Peak

Figure G – 2030 Base Traffic Flows PM Peak

FIGURE F - 2030 Base
11661 - Land Adjacent Heol-y-Splot, South Cornelly Bridgend
08:15-09:15
AM PEAK

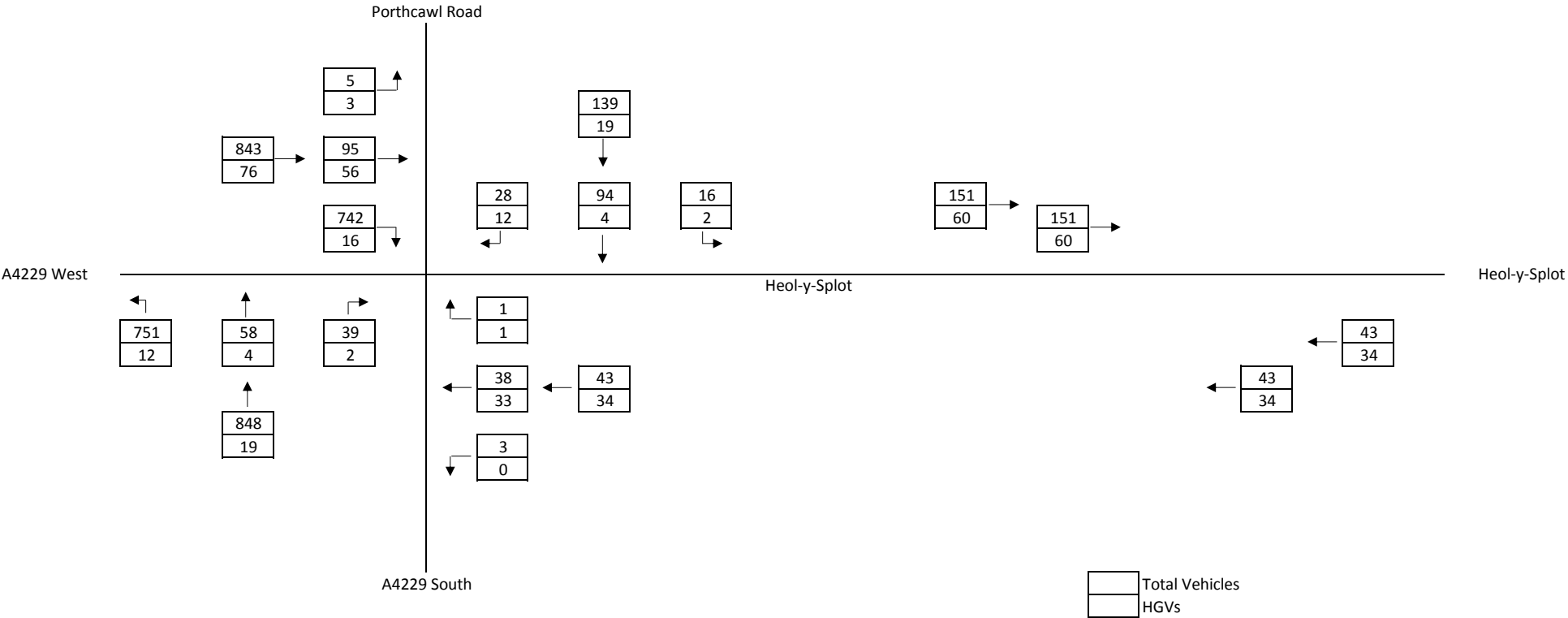
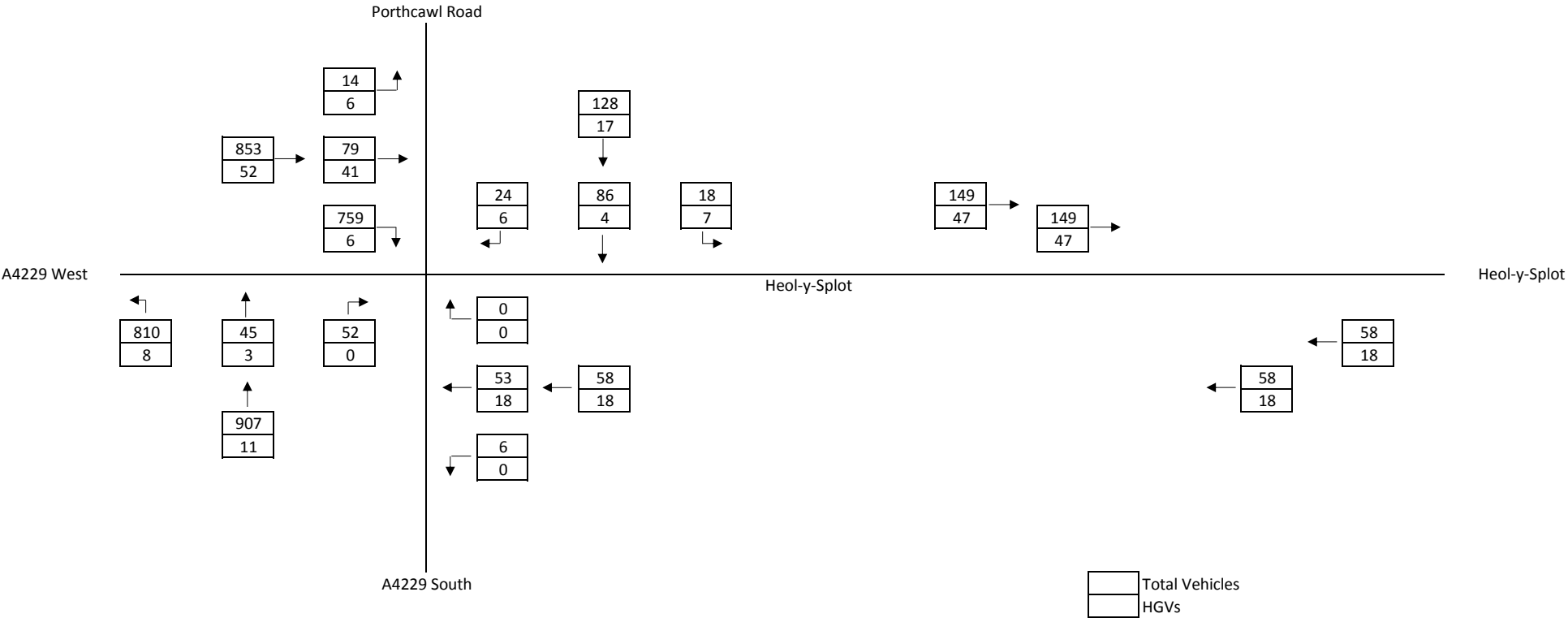


FIGURE G - 2030 Base
11661 - Land Adjacent Heol-y-Splot, South Cornelly Bridgend
15:30-16:30
PM PEAK



Appendix H

Junctions 9 output – 2030 Base

Junctions 9 output - 2030 Base + Development

Junctions 9 output – 2030 Base Sensitivity + Development

Junctions 9		
ARCADY 9 - Roundabout Module		
Version: 9.5.1.7462 © Copyright TRL Limited, 2019		
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The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution		

Filename: A4229 - Porthcawl Road - Heol-y-Splot.j9

Path: J:\11000\11600\11661_LandAdjacentToHeolyS\engineering\Traffic_Programs\Arcady

Report generation date: 24/11/2020 11:56:16

- »2030 Base, AM
- »2030 Base, PM
- »2030 Base + Dev, AM
- »2030 Base + Dev, PM
- »2030 Base Sens (+20%) + Dev, AM
- »2030 Base Sens (+20%) + Dev, PM

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2030 Base						
1 - Porthcawl Road	0.2	3.43	0.14	0.1	3.36	0.13
2 - Heol-y-Splot	0.1	3.13	0.07	0.1	3.10	0.07
3 - A4229 South	0.8	2.97	0.44	0.9	3.09	0.46
4 - A4229 West	1.9	6.69	0.65	1.8	6.49	0.64
2030 Base + Dev						
1 - Porthcawl Road	0.2	3.49	0.14	0.2	3.39	0.13
2 - Heol-y-Splot	0.1	3.17	0.08	0.1	3.17	0.09
3 - A4229 South	0.8	2.99	0.44	0.9	3.13	0.47
4 - A4229 West	2.0	6.99	0.67	1.8	6.64	0.65
2030 Base Sens (+20%) + Dev						
1 - Porthcawl Road	0.2	3.82	0.17	0.2	3.66	0.15
2 - Heol-y-Splot	0.1	3.38	0.09	0.1	3.37	0.10
3 - A4229 South	0.9	3.27	0.49	1.0	3.42	0.51
4 - A4229 West	2.7	8.75	0.73	2.4	8.04	0.71

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.

File summary

File Description

Title	A4229 / Porthcawl Road / Heol-y-Splot
Location	South Cornelly, Bridgend
Site number	
Date	05/11/2020
Version	
Status	(new file)
Identifier	
Client	Wellshill Civils and Plant
Jobnumber	11661
Enumerator	SANDERSONASSOC\john.turner
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	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2020 Base	AM	ONE HOUR	08:00	09:30	15			
D2	2020 Base	PM	ONE HOUR	15:15	16:45	15			
D3	2030 Base	AM	ONE HOUR	08:00	09:30	15	✓		
D4	2030 Base	PM	ONE HOUR	15:15	16:45	15	✓		
D5	Trip Generation	AM	ONE HOUR	08:00	09:30	15			
D6	Trip Generation	PM	ONE HOUR	15:15	16:45	15			
D7	2030 Base + Dev	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D3 + D5
D8	2030 Base + Dev	PM	ONE HOUR	15:15	16:45	15	✓	Simple	D4 + D6
D9	2030 Base Sens (+20%)	AM	ONE HOUR	08:00	09:30	15			
D10	2030 Base Sens (+20%)	PM	ONE HOUR	15:15	16:45	15			
D11	2030 Base Sens (+20%) + Dev	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D9 + D5
D12	2030 Base Sens (+20%) + Dev	PM	ONE HOUR	15:15	16:45	15	✓	Simple	D10 + D6
D13	2030 Base Sens (+30%)	AM	ONE HOUR	08:00	09:30	15			
D14	2030 Base Sens (+30%)	PM	ONE HOUR	15:15	16:45	15			
D15	2030 Base Sens (+30%) + Dev	AM	ONE HOUR	08:00	09:30	15		Simple	D13 + D5
D16	2030 Base Sens (+30%) + Dev	PM	ONE HOUR	15:15	16:45	15		Simple	D14 + D6
D17	Trip Generation (Sensitivity)	AM	ONE HOUR	08:00	09:30	15			
D18	Trip Generation (Sensitivity)	PM	ONE HOUR	15:15	16:45	15			
D19	2030 Base + Sensitivity Dev	AM	ONE HOUR	08:00	09:30	15		Simple	D3 + D17
D20	2030 Base + Sensitivity Dev	PM	ONE HOUR	15:15	16:45	15		Simple	D4 + D18
D21	2030 Base Sens (+20%) + Sensitivity Dev	AM	ONE HOUR	08:00	09:30	15		Simple	D9 + D17
D22	2030 Base Sens (+20%) + Sensitivity Dev	PM	ONE HOUR	15:15	16:45	15		Simple	D10 + D18

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2030 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - A4229 South - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		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.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Porthcawl Road	
2	Heol-y-Splot	
3	A4229 South	
4	A4229 West	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Porthcawl Road	3.80	8.30	14.5	49.0	40.0	17.0	
2 - Heol-y-Splot	3.90	8.80	17.3	11.0	40.0	28.0	
3 - A4229 South	4.20	8.20	47.0	27.0	40.0	29.0	
4 - A4229 West	3.70	7.80	13.1	13.0	40.0	43.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Porthcawl Road	0.719	1971
2 - Heol-y-Splot	0.671	1896
3 - A4229 South	0.759	2261
4 - A4229 West	0.604	1617

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2030 Base	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Porthcawl Road		ONE HOUR	✓	156	100.000
2 - Heol-y-Splot		ONE HOUR	✓	76	100.000
3 - A4229 South		ONE HOUR	✓	866	100.000
4 - A4229 West		ONE HOUR	✓	917	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
From	1 - Porthcawl Road	0	18	98	40
	2 - Heol-y-Splot	2	0	3	71
	3 - A4229 South	62	41	0	763
	4 - A4229 West	8	151	758	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
From	1 - Porthcawl Road	0	0	0	0
	2 - Heol-y-Splot	0	0	0	0
	3 - A4229 South	0	0	0	0
	4 - A4229 West	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Porthcawl Road	0.14	3.43	0.2	A	143	215
2 - Heol-y-Splot	0.07	3.13	0.1	A	70	105
3 - A4229 South	0.44	2.97	0.8	A	795	1192
4 - A4229 West	0.65	6.69	1.9	A	841	1262

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	117	29	712	1460	0.080	117	54	0.0	0.1	2.681	A
2 - Heol-y-Splot	57	14	672	1445	0.040	57	157	0.0	0.0	2.593	A
3 - A4229 South	652	163	85	2197	0.297	650	644	0.0	0.4	2.326	A
4 - A4229 West	690	173	79	1570	0.440	687	656	0.0	0.8	4.066	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	140	35	853	1359	0.103	140	65	0.1	0.1	2.953	A
2 - Heol-y-Splot	68	17	804	1356	0.050	68	189	0.0	0.1	2.795	A
3 - A4229 South	779	195	102	2184	0.356	778	771	0.4	0.6	2.560	A
4 - A4229 West	824	206	94	1560	0.528	823	785	0.8	1.1	4.873	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	172	43	1043	1222	0.141	172	79	0.1	0.2	3.426	A
2 - Heol-y-Splot	84	21	984	1235	0.068	84	231	0.1	0.1	3.124	A
3 - A4229 South	953	238	124	2167	0.440	953	943	0.6	0.8	2.964	A
4 - A4229 West	1010	252	115	1548	0.652	1007	961	1.1	1.8	6.620	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	172	43	1046	1220	0.141	172	79	0.2	0.2	3.433	A
2 - Heol-y-Splot	84	21	986	1234	0.068	84	231	0.1	0.1	3.129	A
3 - A4229 South	953	238	124	2167	0.440	953	946	0.8	0.8	2.966	A
4 - A4229 West	1010	252	116	1548	0.652	1010	962	1.8	1.9	6.689	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	140	35	857	1356	0.103	140	65	0.2	0.1	2.964	A
2 - Heol-y-Splot	68	17	808	1354	0.050	68	189	0.1	0.1	2.803	A
3 - A4229 South	779	195	102	2184	0.356	779	775	0.8	0.6	2.564	A
4 - A4229 West	824	206	95	1560	0.528	827	787	1.9	1.1	4.930	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	117	29	717	1457	0.081	118	54	0.1	0.1	2.688	A
2 - Heol-y-Splot	57	14	676	1442	0.040	57	158	0.1	0.0	2.600	A
3 - A4229 South	652	163	85	2196	0.297	653	648	0.6	0.4	2.333	A
4 - A4229 West	690	173	79	1570	0.440	692	659	1.1	0.8	4.107	A

2030 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - A4229 South - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		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.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2030 Base	PM	ONE HOUR	15:15	16:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Porthcawl Road		ONE HOUR	✓	145	100.000
2 - Heol-y-Splot		ONE HOUR	✓	74	100.000
3 - A4229 South		ONE HOUR	✓	918	100.000
4 - A4229 West		ONE HOUR	✓	905	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
	1 - Porthcawl Road	0	25	90	30
	2 - Heol-y-Splot	0	0	3	71
	3 - A4229 South	48	52	0	818
	4 - A4229 West	20	120	765	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
	1 - Porthcawl Road	0	0	0	0
	2 - Heol-y-Splot	0	0	0	0
	3 - A4229 South	0	0	0	0
	4 - A4229 West	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Porthcawl Road	0.13	3.36	0.1	A	133	200
2 - Heol-y-Splot	0.07	3.10	0.1	A	68	102
3 - A4229 South	0.46	3.09	0.9	A	842	1264
4 - A4229 West	0.64	6.49	1.8	A	830	1246

Main Results for each time segment

15:15 - 15:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	109	27	702	1467	0.074	109	51	0.0	0.1	2.651	A
2 - Heol-y-Splot	56	14	663	1451	0.038	56	148	0.0	0.0	2.580	A
3 - A4229 South	691	173	76	2204	0.314	689	643	0.0	0.5	2.374	A
4 - A4229 West	681	170	75	1572	0.433	678	690	0.0	0.8	4.014	A

15:30 - 15:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	130	33	841	1367	0.095	130	61	0.1	0.1	2.910	A
2 - Heol-y-Splot	67	17	794	1363	0.049	66	177	0.0	0.1	2.776	A
3 - A4229 South	825	206	91	2192	0.376	825	770	0.5	0.6	2.630	A
4 - A4229 West	814	203	90	1563	0.520	812	826	0.8	1.1	4.787	A

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	160	40	1029	1232	0.130	159	75	0.1	0.1	3.355	A
2 - Heol-y-Splot	81	20	972	1244	0.066	81	216	0.1	0.1	3.097	A
3 - A4229 South	1011	253	111	2177	0.464	1010	942	0.6	0.9	3.081	A
4 - A4229 West	996	249	110	1551	0.642	994	1011	1.1	1.8	6.428	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	160	40	1032	1230	0.130	160	75	0.1	0.1	3.361	A
2 - Heol-y-Splot	81	20	974	1242	0.066	81	217	0.1	0.1	3.101	A
3 - A4229 South	1011	253	111	2177	0.464	1011	945	0.9	0.9	3.086	A
4 - A4229 West	996	249	110	1551	0.643	996	1012	1.8	1.8	6.489	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	130	33	845	1364	0.096	131	61	0.1	0.1	2.917	A
2 - Heol-y-Splot	67	17	798	1360	0.049	67	178	0.1	0.1	2.784	A
3 - A4229 South	825	206	91	2192	0.376	826	774	0.9	0.6	2.639	A
4 - A4229 West	814	203	90	1563	0.521	816	827	1.8	1.1	4.838	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	109	27	707	1464	0.075	109	51	0.1	0.1	2.659	A
2 - Heol-y-Splot	56	14	667	1448	0.038	56	149	0.1	0.0	2.587	A
3 - A4229 South	691	173	76	2203	0.314	692	647	0.6	0.5	2.382	A
4 - A4229 West	681	170	75	1572	0.433	683	692	1.1	0.8	4.054	A

2030 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - A4229 South - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		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.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.86	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2030 Base + Dev	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D3 + D5

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Porthcawl Road		ONE HOUR	✓	156	100.000
2 - Heol-y-Splot		ONE HOUR	✓	88	100.000
3 - A4229 South		ONE HOUR	✓	869	100.000
4 - A4229 West		ONE HOUR	✓	936	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
From	1 - Porthcawl Road	0	18	98	40
	2 - Heol-y-Splot	2	0	5	81
	3 - A4229 South	62	44	0	763
	4 - A4229 West	8	170	758	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
	1 - Porthcawl Road	0	0	0	0
	2 - Heol-y-Splot	0	0	0	0
	3 - A4229 South	0	0	0	0
	4 - A4229 West	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Porthcawl Road	0.14	3.49	0.2	A	143	215
2 - Heol-y-Splot	0.08	3.17	0.1	A	81	121
3 - A4229 South	0.44	2.99	0.8	A	797	1196
4 - A4229 West	0.67	6.99	2.0	A	859	1288

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	117	29	728	1448	0.081	117	54	0.0	0.1	2.705	A
2 - Heol-y-Splot	66	17	672	1445	0.046	66	174	0.0	0.0	2.610	A
3 - A4229 South	654	164	92	2191	0.299	653	645	0.0	0.4	2.338	A
4 - A4229 West	705	176	81	1568	0.449	701	664	0.0	0.8	4.138	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	140	35	872	1345	0.104	140	65	0.1	0.1	2.988	A
2 - Heol-y-Splot	79	20	804	1356	0.058	79	208	0.0	0.1	2.818	A
3 - A4229 South	781	195	110	2177	0.359	781	773	0.4	0.6	2.578	A
4 - A4229 West	841	210	97	1559	0.540	840	794	0.8	1.2	4.998	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	172	43	1067	1205	0.143	172	79	0.1	0.2	3.483	A
2 - Heol-y-Splot	97	24	984	1236	0.078	97	255	0.1	0.1	3.160	A
3 - A4229 South	957	239	135	2158	0.443	956	945	0.6	0.8	2.989	A
4 - A4229 West	1031	258	119	1546	0.667	1027	972	1.2	2.0	6.903	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	172	43	1070	1203	0.143	172	79	0.2	0.2	3.491	A
2 - Heol-y-Splot	97	24	986	1234	0.079	97	255	0.1	0.1	3.165	A
3 - A4229 South	957	239	135	2158	0.443	957	948	0.8	0.8	2.995	A
4 - A4229 West	1031	258	119	1546	0.667	1030	973	2.0	2.0	6.986	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	140	35	877	1341	0.105	140	65	0.2	0.1	2.997	A
2 - Heol-y-Splot	79	20	808	1353	0.058	79	209	0.1	0.1	2.827	A
3 - A4229 South	781	195	111	2177	0.359	782	777	0.8	0.6	2.581	A
4 - A4229 West	841	210	97	1559	0.540	845	796	2.0	1.2	5.063	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	117	29	733	1445	0.081	118	54	0.1	0.1	2.712	A
2 - Heol-y-Splot	66	17	676	1442	0.046	66	175	0.1	0.0	2.616	A
3 - A4229 South	654	164	93	2191	0.299	655	649	0.6	0.4	2.345	A
4 - A4229 West	705	176	81	1568	0.449	706	666	1.2	0.8	4.182	A

2030 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - A4229 South - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		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.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	4.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2030 Base + Dev	PM	ONE HOUR	15:15	16:45	15	✓	Simple	D4 + D6

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Porthcawl Road		ONE HOUR	✓	145	100.000
2 - Heol-y-Splot		ONE HOUR	✓	96	100.000
3 - A4229 South		ONE HOUR	✓	920	100.000
4 - A4229 West		ONE HOUR	✓	915	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
From	1 - Porthcawl Road	0	25	90	30
	2 - Heol-y-Splot	0	0	6	90
	3 - A4229 South	48	54	0	818
	4 - A4229 West	20	130	765	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
	1 - Porthcawl Road	0	0	0	0
	2 - Heol-y-Splot	0	0	0	0
	3 - A4229 South	0	0	0	0
	4 - A4229 West	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Porthcawl Road	0.13	3.39	0.2	A	133	200
2 - Heol-y-Splot	0.09	3.17	0.1	A	88	132
3 - A4229 South	0.47	3.13	0.9	A	844	1266
4 - A4229 West	0.65	6.64	1.8	A	840	1259

Main Results for each time segment

15:15 - 15:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	109	27	711	1460	0.075	109	51	0.0	0.1	2.663	A
2 - Heol-y-Splot	72	18	663	1451	0.050	72	157	0.0	0.1	2.611	A
3 - A4229 South	693	173	90	2193	0.316	691	645	0.0	0.5	2.393	A
4 - A4229 West	689	172	77	1571	0.438	686	704	0.0	0.8	4.053	A

15:30 - 15:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	130	33	852	1359	0.096	130	61	0.1	0.1	2.928	A
2 - Heol-y-Splot	86	22	794	1363	0.063	86	188	0.1	0.1	2.819	A
3 - A4229 South	827	207	108	2179	0.380	826	773	0.5	0.6	2.659	A
4 - A4229 West	823	206	92	1562	0.527	821	843	0.8	1.1	4.850	A

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	160	40	1042	1223	0.131	159	75	0.1	0.1	3.385	A
2 - Heol-y-Splot	106	26	972	1244	0.085	106	230	0.1	0.1	3.162	A
3 - A4229 South	1013	253	132	2161	0.469	1012	945	0.6	0.9	3.130	A
4 - A4229 West	1007	252	112	1550	0.650	1005	1032	1.1	1.8	6.569	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	160	40	1045	1221	0.131	160	75	0.1	0.2	3.391	A
2 - Heol-y-Splot	106	26	974	1242	0.085	106	230	0.1	0.1	3.167	A
3 - A4229 South	1013	253	132	2161	0.469	1013	948	0.9	0.9	3.135	A
4 - A4229 West	1007	252	112	1550	0.650	1007	1033	1.8	1.8	6.637	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	130	33	856	1356	0.096	131	61	0.2	0.1	2.936	A
2 - Heol-y-Splot	86	22	798	1360	0.063	86	188	0.1	0.1	2.825	A
3 - A4229 South	827	207	108	2179	0.380	828	777	0.9	0.6	2.668	A
4 - A4229 West	823	206	92	1562	0.527	825	844	1.8	1.1	4.906	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	109	27	716	1457	0.075	109	51	0.1	0.1	2.670	A
2 - Heol-y-Splot	72	18	667	1448	0.050	72	158	0.1	0.1	2.616	A
3 - A4229 South	693	173	90	2192	0.316	693	649	0.6	0.5	2.403	A
4 - A4229 West	689	172	77	1571	0.439	690	707	1.1	0.8	4.095	A

2030 Base Sens (+20%) + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - A4229 South - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		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.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.82	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D11	2030 Base Sens (+20%) + Dev	AM	ONE HOUR	08:00	09:30	15	✓	Simple	D9 + D5

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Porthcawl Road		ONE HOUR	✓	172	100.000
2 - Heol-y-Splot		ONE HOUR	✓	96	100.000
3 - A4229 South		ONE HOUR	✓	952	100.000
4 - A4229 West		ONE HOUR	✓	1024	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
	1 - Porthcawl Road	0	20	108	44
	2 - Heol-y-Splot	2	0	6	88
	3 - A4229 South	69	48	0	835
	4 - A4229 West	10	184	830	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
	1 - Porthcawl Road	0	0	0	0
	2 - Heol-y-Splot	0	0	0	0
	3 - A4229 South	0	0	0	0
	4 - A4229 West	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Porthcawl Road	0.17	3.82	0.2	A	158	237
2 - Heol-y-Splot	0.09	3.38	0.1	A	88	132
3 - A4229 South	0.49	3.27	0.9	A	874	1310
4 - A4229 West	0.73	8.75	2.7	A	940	1409

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	129	32	796	1400	0.093	129	61	0.0	0.1	2.833	A
2 - Heol-y-Splot	72	18	736	1402	0.052	72	189	0.0	0.1	2.706	A
3 - A4229 South	717	179	101	2185	0.328	715	707	0.0	0.5	2.445	A
4 - A4229 West	771	193	89	1563	0.493	767	726	0.0	1.0	4.499	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	155	39	953	1287	0.120	154	73	0.1	0.1	3.178	A
2 - Heol-y-Splot	86	22	881	1304	0.066	86	226	0.1	0.1	2.954	A
3 - A4229 South	856	214	120	2170	0.394	855	847	0.5	0.6	2.737	A
4 - A4229 West	921	230	107	1553	0.593	919	869	1.0	1.4	5.660	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	189	47	1164	1135	0.167	189	89	0.1	0.2	3.806	A
2 - Heol-y-Splot	106	26	1077	1173	0.090	106	276	0.1	0.1	3.372	A
3 - A4229 South	1048	262	147	2149	0.488	1047	1035	0.6	0.9	3.263	A
4 - A4229 West	1127	282	131	1538	0.733	1123	1063	1.4	2.7	8.557	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	189	47	1169	1131	0.167	189	89	0.2	0.2	3.820	A
2 - Heol-y-Splot	106	26	1081	1170	0.090	106	277	0.1	0.1	3.380	A
3 - A4229 South	1048	262	148	2149	0.488	1048	1039	0.9	0.9	3.269	A
4 - A4229 West	1127	282	131	1538	0.733	1127	1065	2.7	2.7	8.749	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	155	39	960	1282	0.121	155	73	0.2	0.1	3.196	A
2 - Heol-y-Splot	86	22	887	1301	0.066	86	228	0.1	0.1	2.966	A
3 - A4229 South	856	214	121	2170	0.394	857	853	0.9	0.7	2.746	A
4 - A4229 West	921	230	107	1553	0.593	925	871	2.7	1.5	5.782	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	129	32	802	1396	0.093	130	61	0.1	0.1	2.843	A
2 - Heol-y-Splot	72	18	741	1398	0.052	72	190	0.1	0.1	2.714	A
3 - A4229 South	717	179	101	2184	0.328	717	712	0.7	0.5	2.454	A
4 - A4229 West	771	193	90	1563	0.493	773	729	1.5	1.0	4.568	A

2030 Base Sens (+20%) + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - A4229 South - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		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.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	5.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D12	2030 Base Sens (+20%) + Dev	PM	ONE HOUR	15:15	16:45	15	✓	Simple	D10 + D6

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Porthcawl Road		ONE HOUR	✓	157	100.000
2 - Heol-y-Splot		ONE HOUR	✓	105	100.000
3 - A4229 South		ONE HOUR	✓	1001	100.000
4 - A4229 West		ONE HOUR	✓	996	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
	1 - Porthcawl Road	0	26	99	32
	2 - Heol-y-Splot	0	0	9	96
	3 - A4229 South	53	58	0	890
	4 - A4229 West	22	141	833	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1 - Porthcawl Road	2 - Heol-y-Splot	3 - A4229 South	4 - A4229 West
	1 - Porthcawl Road	0	0	0	0
	2 - Heol-y-Splot	0	0	0	0
	3 - A4229 South	0	0	0	0
	4 - A4229 West	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Porthcawl Road	0.15	3.66	0.2	A	144	216
2 - Heol-y-Splot	0.10	3.37	0.1	A	96	145
3 - A4229 South	0.51	3.42	1.0	A	919	1378
4 - A4229 West	0.71	8.04	2.4	A	914	1371

Main Results for each time segment

15:15 - 15:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	118	30	773	1416	0.083	118	56	0.0	0.1	2.773	A
2 - Heol-y-Splot	79	20	722	1411	0.056	79	169	0.0	0.1	2.702	A
3 - A4229 South	754	188	96	2188	0.344	752	705	0.0	0.5	2.503	A
4 - A4229 West	750	187	83	1567	0.479	746	764	0.0	0.9	4.367	A

15:30 - 15:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	141	35	926	1306	0.108	141	67	0.1	0.1	3.089	A
2 - Heol-y-Splot	94	24	865	1315	0.072	94	202	0.1	0.1	2.948	A
3 - A4229 South	900	225	115	2174	0.414	899	844	0.5	0.7	2.822	A
4 - A4229 West	895	224	100	1557	0.575	894	914	0.9	1.3	5.411	A

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	173	43	1132	1158	0.149	173	82	0.1	0.2	3.653	A
2 - Heol-y-Splot	116	29	1058	1186	0.097	115	247	0.1	0.1	3.362	A
3 - A4229 South	1102	276	141	2154	0.512	1101	1032	0.7	1.0	3.412	A
4 - A4229 West	1097	274	122	1544	0.710	1092	1119	1.3	2.4	7.905	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	173	43	1136	1155	0.150	173	83	0.2	0.2	3.664	A
2 - Heol-y-Splot	116	29	1061	1184	0.098	116	248	0.1	0.1	3.369	A
3 - A4229 South	1102	276	141	2154	0.512	1102	1036	1.0	1.0	3.421	A
4 - A4229 West	1097	274	122	1544	0.710	1096	1121	2.4	2.4	8.045	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	141	35	932	1302	0.108	141	68	0.2	0.1	3.104	A
2 - Heol-y-Splot	94	24	870	1312	0.072	95	203	0.1	0.1	2.957	A
3 - A4229 South	900	225	115	2174	0.414	901	850	1.0	0.7	2.833	A
4 - A4229 West	895	224	100	1557	0.575	900	917	2.4	1.4	5.509	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Porthcawl Road	118	30	779	1412	0.084	118	57	0.1	0.1	2.784	A
2 - Heol-y-Splot	79	20	727	1408	0.056	79	170	0.1	0.1	2.711	A
3 - A4229 South	754	188	96	2188	0.344	754	710	0.7	0.5	2.513	A
4 - A4229 West	750	187	84	1567	0.479	752	767	1.4	0.9	4.427	A