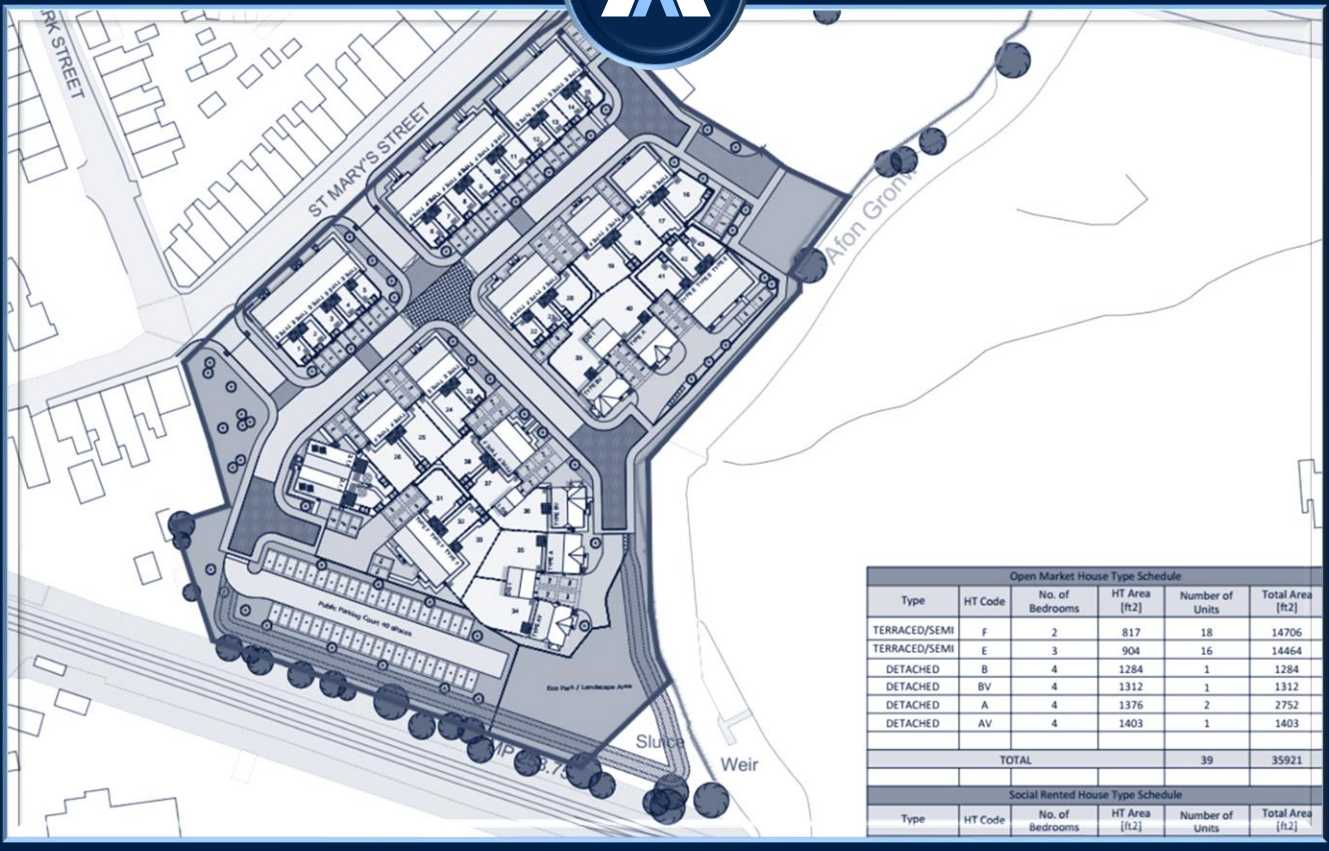
Land at Dairy Crest, Whitland

Transport Statement

Client: Obsidian Developments

28 November 2022

Document Reference: C22109/TS01



Open Market House Type Schedule					
Type	HT Code	No. of Bedrooms	HT Area [ft2]	Number of Units	Total Area [ft2]
TERRACED/SEMI	F	2	817	18	14706
TERRACED/SEMI	E	3	904	16	14464
DETACHED	B	4	1284	1	1284
DETACHED	BV	4	1312	1	1312
DETACHED	A	4	1376	2	2752
DETACHED	AV	4	1403	1	1403
TOTAL				39	35921
Social Rented House Type Schedule					
Type	HT Code	No. of Bedrooms	HT Area [ft2]	Number of Units	Total Area [ft2]

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QUALITY MANAGEMENT

REPORT DETAILS

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1	Final	28/11/2021	GP	DC	First Issue

NOTICE

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1. INTRODUCTION

1.1 Background

1.1.1 Apex Transport Planning Ltd has been commissioned to produce a Transport Statement (TS) to support a planning application for a proposed residential development on land to the southeast of St Mary's Street, Whitland, Carmarthenshire.

1.1.2 The proposals are for the redevelopment of the site for 43 new residential dwellings on part of the former Whitland Creamery brownfield site. The scheme comprises 39 open market houses and 4 social rented flats. The existing public car park, currently located to the south of the site, is to be replaced and relocated further south within a formal parking court, and the number of spaces increased. The vehicular access would be obtained from St Mary's Street at two locations. The proposed site layout is shown in Appendix A.

1.1.3 This TS provides an assessment of the sustainable connectivity and transport impacts of the proposed development and sets out details of the proposed parking and access arrangements. It has been produced to inform Carmarthenshire County Council (CCC), as the Local Highway Authority, of the highways and transport implications of the proposals.

1.2 Scope of Report

1.2.1 The proposals have been subject of a Pre-Application advice request (PRE/01025) 26/04/22, to which Carmarthenshire County Council (CCC) responded to on the 13/07/22. The response included the views of the Highways Planning Liaison Officer who has provided details advice in respect of the access proposals for the development. This included a request to assess the impact of the proposals at the St Mary's Street / Market Street (B43280) junction to the north of the site and consideration of on-street parking along St Mary's Street. These comments have been fully considered within this TS and a copy is included at Appendix B.

1.2.2 The TS has been structured to include the following, which is informed by CCC's Pre-Application response and based on Apex's knowledge of other similar sites:

- A description of the existing conditions including, site location and access, existing use, highway network, road safety analysis and existing travel behaviour in the surrounding area
- Review of the connectivity of the site by sustainable modes
- Description of the development proposals, demonstrating safe and appropriate access by all modes, car and cycle parking and servicing and delivery arrangements
- Consideration of the impact on parking availability on-street as a result of the access proposals and appropriate mitigation
- Forecast vehicle trip generation by all modes in the peak hours
- Consideration of the impact of the proposals on the local highway network including an assessment of the St Mary's Street / Market Street junction

2. EXISTING CONDITIONS

2.1 Site Location, Use and Access

2.1.1 The site is located to the south of Market Street (B4328) adjacent to St Mary's Street within Whitland, approximately 750m to the south of the A40. The site is bound to the north by existing residential properties served from Market Street, to the north and west by St Mary's Street which serves existing residential dwellings, by the Afon Gronw to the east and the West Wales railway line to the south.

2.1.2 The site largely consists of a derelict brownfield site which formed part of the Whitland Creamery. As such, the site has historically generated vehicle movements onto the network in relation to an employment use. A small area to the south of the site is currently used as a public car park.

2.1.3 Access is currently obtained from St Mary's Street via an existing access junction which currently serves the public car park, located approximately 130m south of the Market Street.

2.1.4 Figure 2-1 shows the indicative site location and surrounds.

Figure 2-1: Indicative Site Location

Source: Google Maps

2.2 Local Highway Network

2.2.1 St Mary's Street is located along the sites western boundary. It connects to Market Street (B4328) via a priority junction to the north and Park Street via a priority junction to the south. It continues as a one-way route to the south of Park Street for northbound movements only from St John Street (B4328). Appropriate signage is located at each end of the one-way section.

2.2.2 It is a single carriageway road measuring approximately 8m-8.3m in width and is subject to a 20mph speed limit. It benefits from footways on both sides and street lighting.

2.2.3 On-street parking occurs intermittently on both sides of the road which reduces the carriageway width in some locations to c.4.5m, albeit two-way car movements can still pass even when vehicles are parked on both sides of the street. As a residential street, the majority these parked vehicles would be associated with existing properties along St Mary's Street and the adjoining area. No parking restrictions are in place with the exception of double yellow lines at the junction with Park Street and Market Street. A sign is located at the junction with Market Street which states that the road is 'Unsuitable for heavy goods vehicles.' The route is considered suitable for accommodating movements associated with residential use.

2.2.4 St Mary's Street is connected to Station Road (B4328) and Park Street to the south of the site and Market Street (B4328) to the north. These connections provide a number of routes to and from the strategic routes which serve Whitland from all directions, including the A40.

2.2.5 Station Road (B4328) provides access to the site from the south via the one-way section of St Mary's Street. Station Road (B4328) serves Trevaughan to the south as well as providing a route to and from Pembrokeshire including to the A477 strategic route. It is a single carriageway road measuring approximately 7.3m in width within the vicinity of the site, and is subject to a 30mph speed limit which is in place to the south of Trevaughan. It crosses the West Wales Railway line via a signalised level crossing located approximately 30m south of St Mary's Street.

2.2.6 St Mary's Street is connected to Park Street as the major arm of a priority junction located adjacent to the south western boundary of the site within the vicinity of the existing access to the car park. Park Street is a residential street with approximately 20 properties fronting each side and connects to Market Street to the north via a priority junction. It is a single carriageway road measuring between approximately 6m-8m in width and is subject to a 30mph speed limit. On-street resident only parking is provided on the eastern side, which reduces the carriageway width in some locations to between 3.5m-4.5m in width in places. Parking restrictions are in place on the western side and residents are provided with rear access for vehicles to the west. The route is considered suitable for accommodating movements associated with residential uses.

2.2.7 Market Street (B4328) is located to the north of the site and serves as the main east-west route through Whitland, linking to the A40 approximately 1.0km to the west and 1.3km to the north. It is a single carriageway road measuring c.7.3m in width within the vicinity of the site. It is subject to a 20mph speed limit within the vicinity of the site, changing to 30mph east of Afon Gronw to the east of the site and to 60mph (national speed limit for single carriageway roads) upon exiting Whitland c.650m to the west of the site. There is intermittent on-street parking but generally the route is clear and parking restrictions ensure this including either side of the St Mary's Street junction and adjacent the school to the north of the St Mary's Street junction.

2.2.8 The A40 lies approximately 1.1km to the west of 1.4km to the east of the site and is accessible via the B4328 (Market Street). The A40 forms part of the Strategic Road Network (SRN) maintained by the

Welsh Government and provides the site with a key east-west link connecting to the M4 and Cardiff to the east via the A48 as well as the West Wales region.

2.3 Road Safety

2.3.1 Personal Injury Accident (PIA) data has been obtained from road safety data published annually by the Department for Transport (DfT). The statistics provide PIA data which has been recorded using the STATS19 accident reporting form. The most recently available five-year dataset, prior to the pandemic therefore covering a position with typical traffic flows, covers between 1st January 2015 and 31st December 2019. The review has also considered the data in 2020 and 2021. A total of seven years of data has therefore been reviewed.

2.3.2 The study area considered within the analysis covers the local highway network within the vicinity of the site, with the entire study area shown in Figure 2-2.

Figure 2-2: Location of Recorded PIA's

Source: Crashmap

2.3.3 Over the study period a total of three PIAs were recorded within the vicinity of the site and built up areas of Whitland. This comprised one serious and two slight injury incidents which occurred along the B4328 and West Street. There were no fatal incidents recorded within the study area.

2.3.4 The incidents occurred at different locations, with the serious PIA occurring adjacent to St John Street, with one slight PIA occurring on West Street approximately 300m east of the A40 and the other slight PIA occurring to the east of Afon Gronw.

2.3.5 The serious PIA involved a motorcyclist. There were no PIAs involving pedestrians, cyclists or HGV's.

2.3.6 There were no incidents relating to vehicles turning into or out of junctions connecting to the B4328, St Mary's Street or Station Road and no incidents occurred adjacent to the site or on St Mary's Street.

2.3.7 There were no clusters of four or more PIAs occurring in the same location, therefore no evidence to suggest a re-occurring road safety issue.

2.3.8 Although all incidents are regrettable, the PIAs that occurred do not indicate a specific pattern or issue with the geometry of the highway that would be exacerbated by the proposed development. There is no evidence of a highway safety issue for access from the site to the local facilities, particularly for pedestrian and cycle movements.

2.4 Public Car Parks

2.4.1 There are four free public car parks located within Whitland that are within close proximity to the site, which provide a total capacity of approximately c.78 spaces. One electric car charging point is located within the King Edward Street Car Park.

2.4.2 It is considered that the level of car parking available within the vicinity of the site is sufficient to support visitors to the site and Whitland. As detailed in Section 4, the proposals seek to increase the parking capacity at the St Mary's Street car park from c.28 to 40 spaces. This will assist with replacing the potential on-street parking removed through providing the additional site access (there is already an access to the existing car park which is effectively being replaced, so there would be no material change to the parking capacity from the construction of the southern access).

2.5 Traffic Flows

2.5.1 As requested by CCC, this TS includes an assessment of the St Mary's Street / Market Street (B4328) priority junction to the north of the site. In order to support this assessment a turning count survey was commissioned for this junction. The survey was undertaken on Thursday 10 November 2022, by independent traffic survey company Severnside Transportation Data Collection and was fully classified by turning movement, as well as providing queue length data.

2.5.2 The survey was undertaken between the hours of 0700-1000 and 1500-1900 and a review of the data showed that the peak hours of movements were 0800-0900 in the AM peak and 1515-1615 in the PM peak. The peak movements in the afternoon would likely be associated with pick-up times for Ysgol Llys Hywel located immediately opposite the junction.

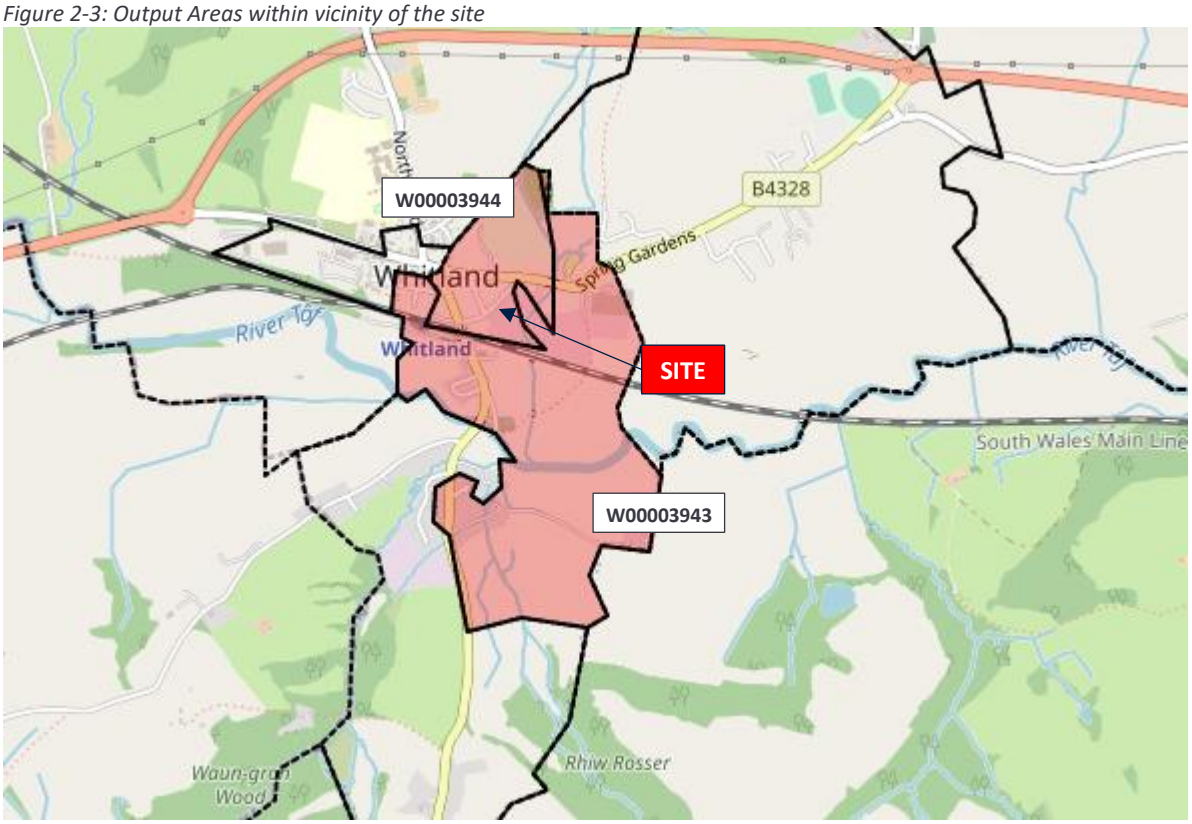
2.5.3 The full survey results and queue length surveys are provided in Appendix C. Traffic flow diagrams showing the observed vehicle turning movements as well as the percentage of turning movements into and out of St Mary's Street from each direction in the peak hours are provided in Appendix D.

2.6 Modal Share

2.6.1 The site is located within the output areas (OA) W00003944 and W00003943 within Whitland, although the W00003944 location is considered more representative as this is contained in Whitland.

2.6.2 The output areas are shown in Figure 2-3.

Figure 2-3: Output Areas within vicinity of the site



Source: Nomis

2.6.3 Table 2-1 shows how the existing residents of these output areas currently travel to work, together with a comparison against all households in Carmarthenshire, as obtained from 2011 Census data using the Nomis website (via Nomis dataset QS701EW).

Table 2-1: Journey to Work Modal Split

Mode	W00003943	W00003944	Carmarthenshire District
Public Transport	3%	**8%**	3%
Car Driver	74%	**63%**	76%
Motorcycle	1%	**1%**	1%
Car Passenger	7%	**4%**	7%
Bicycle	1%	**2%**	1%
On Foot	15%	**20%**	10%
Other	0%	**2%**	1%
Total	**100%**	**100%**	**100%**

2.6.4 The census data shows that an average of 63% of residents living in the most representative output area travel to work as a car driver. A total of 20% walk, 8% travel by public transport, 4% travel as a car passenger and 1% travel by bicycle.

2.6.5 The data shows that a lower proportion of residents travel to work by car and a higher proportion travel by sustainable travel than the entire of the Carmarthenshire area. This demonstrates the sustainable attributes of this location and ability for the surrounding infrastructure to accommodate pedestrian movements.

2.6.6 These statistics have been adjusted to exclude working from home. If this was included, c.7% of residents currently in work in the most representative output area, do so from home rather than commuting and this is likely to have significantly increased since 2011. This demonstrates that there is further potential for the site to constrain car use and working from home would be in accordance with the Welsh Government aspirations.

2.6.7 Travelling to work is also only one journey purpose during peak hours from a residential site. A significant proportion of journeys will also be for education, leisure, and retail purposes and these are likely to have higher levels of sustainable travel, particularly given the local primary school, retail, employment, leisure and public transport facilities are situated within short walking distances and accessible via appropriate routes (as shown in Section 3).

2.6.8 The data demonstrates that there is good potential for walking and public transport trips to be made to and from the site and that these movements already occur in this area, without evidence of a safety issue (as demonstrated in Section 2.3).

2.7 Car Ownership

2.7.1 The 2011 Census data (QS4163 – Car or Van availability) has been reviewed for the average car ownership for the most representative output area (W00003944). This shows an average of 1.13 cars per household (126 cars across 112 households). A total of 72% of the households have one car or less and just 7% of households within the site location have three cars or more.

2.7.2 Car ownership across the entire of CCC is slightly higher at 1.33, with 62% of households owning one car or less and only 10% owning three or more cars.

2.7.3 As such, there is evidence to suggest the site could have a lower car ownership than across the wider CCC and this accords with the modal share analysis which shows a higher level of sustainable travel than across CCC.

3. SUSTAINABLE CONNECTIVITY

3.1 Introduction

3.1.1 This section describes the opportunities to make everyday trips by non-car modes. It considers the likelihood of trips being made on foot, by cycle, bus and rail.

3.1.2 As acknowledged by CCC in the Pre-Application response, the site is situated in a sustainable location within close proximity to the local centre and railway station. The site location is demonstrated to be consistent with the aims of TAN18 and in accordance with sustainable transport policies in Future Wales, PPW11 and the LDP.

3.2 Walking and Cycling

3.2.1 Walking is the most important mode of travel at a local level and offers the greatest potential to replace short car journeys.

Walking

3.2.2 The site is well situated to benefit from existing walking routes. Suitable footways are provided within the immediate vicinity, as would be expected within an existing and established residential area, on the edge of a local centre. The majority of roads within the vicinity of the site have footways on one or both sides of the carriageway, providing links between the site and the surrounding facilities within Whitland including nearby public transport services.

3.2.3 The surrounding roads are subject to 20mph and 30mph speed limits and there are traffic signs indicating that the area is monitored for speeding. These speed limits are more attractive for walking and cycling movements on or adjacent to the carriageway. Indeed, the surrounding footway network already accommodates walking associated with the local centre location and surrounding residential uses and there is no evidence of an existing road safety issue related to pedestrian movements.

3.2.4 The site is connected to footways on the eastern side of St Mary's Street which measure between 1.5m-2m in width and are provided with street lighting. These footways connect to the surrounding network with barrier free routes in all directions, which serve the key facilities and services within Whitland including those along St John Street which is one of the main commercial streets within the local centre.

3.2.5 Crossing facilities are provided along the local routes to and from the site within Whitland, including dropped kerb crossings at key junctions and raised table and zebra crossings along Market Street and St John Street. A raised table crossing is located on Market Street (within a 20mph area) which provides a safe crossing point to and from Ysgol Llys Hywel to the north of the site.

3.2.6 St John Street provides a pedestrian friendly environment with wider footways measuring between 2.5m-3m in places including around the bus stops and is provided with two prominent crossing points.

3.2.7 The site is accessible to the public right of way (PRoW) network via existing footways. Public footpath 66/2/1 is located approximately 250m to the east of the site, which can be accessed via footways along Market Street (B4328). This footpath provides an alternative traffic-free route along the eastern edge of Whitland and across the West Wales Railway line within the vicinity of key employment areas.

3.2.8 The existing pedestrian infrastructure provides good quality barrier free pedestrian links to the local centre, local bus stops, the railway station as well as a wide range of key facilities within Whitland. Suitable crossing facilities are provided along the main routes which are subject to 20mph and 30mph

speed restrictions. Walking therefore offers an extremely attractive choice of travel mode for users of the site, including as part of a linked trip by bus or rail to further afield locations. Indeed, the Census modal share analysis, included in Section 2, shows that a reasonably high proportion of residents living in the surrounding area already travel to work on foot at 16%.

Cycling

3.2.9 Although there are no dedicated cycling facilities within Whitland and the surrounding areas, the roads surrounding the site provide a relatively flat gradient and are considered safe for cycling, based on the evidence in the road safety data and due to the low speeds on the immediate surrounding streets which are subject to 20mph and 30mph speed limits. Market Street (B4328) serves as the main route through Whitland and is subject to a 20mph speed limit.

Summary

3.2.10 The site is situated in a highly sustainable location, as would be expected for a site on the edge of a local centre. This will encourage walking and some cycling movements, and as such will reduce the need to own a car, consistent with relevant policy and guidance, including sustainable transport policies in Future Wales, PPW11 and TAN18.

3.3 Distances to Facilities

3.3.1 There are a number of publications which suggest guidance for appropriate and acceptable walking and cycling distances to facilities. For reference, these have been summarised as follows.

- Welsh Government - Active Travel (Wales) Act Guidance 2021: It is stated within paragraph 9.1.5 that "Walking is most suitable for journeys of less than two miles whilst cycling is also convenient for longer journeys, typically up to five miles for regular utility journeys". This equates to distances for walking of up to 3.2km and cycling of up to 8km. This also states in paragraph 9.5.3 that "Walkable neighbourhoods also referred to as 'low-traffic neighbourhoods,' or 'active neighbourhoods', (see figure 9.6) are characterised by having a range of facilities within 20 minutes' walking distance which people may access comfortably on foot." This would equate to c. 1.6km.
- CIHT (2015) – Planning for Walking: In relation to shorter trips in particular, (section 2.1) states that across Britain about '*80% of journeys shorter than 1 mile (1.6km) are made wholly on foot*'.
- CIHT - Guidelines for Providing for Journeys on Foot (2000): suggests preferred maximum distances for commuting journeys are up to 2km.
- DfT – LTN1/20 Cycle Infrastructure Design (paragraph 2.2.2) – states that *"Two out of every three personal trips are less than five miles in length, an achievable distance to cycle for most people"* (c.8km).

3.3.2 As such, based on guidance, it is considered that suitable walking distances are up to 3.2km, but journeys within 2km have a greater potential to be made on foot. A 2km distance equates to around a 25-minute walk travelling at 3mph (4.8kph). A 3.2km distance equates to around a 40 minute walk. Sites with a range of facilities within 1.6km (20 minutes' walk) are considered to be within a 'walkable neighbourhood' in accordance with Welsh Government - Active Travel (Wales) Act Guidance 2021.

3.3.3 It is considered that journeys of up to 8km are within a suitable cycling distance. A cycling journey of 8km would equate to approximately a 25-minute travel time.

3.3.4 To demonstrate the site's connectivity, facilities within appropriate distances which are accessed via suitable and established routes have been summarised in Table 3-1. The location of the facilities in the

context of the site are shown in Figure 3-1. These facilities have been summarised based on approximate travel distances from the site access via appropriate routes, not straight-line distances.

Table 3-1: Proximity of the site to local facilities and services

Facility / Amenity	Distance from site access (metres)	Walking Travel Time (minutes) *	Cycling Travel Time (minutes) *
Community Facilities			
1 Hywel Dda Gardens	100	1	0
2 Pengwinau Back - Little Penguins	190	2	1
3 Boots Pharmacy	230	3	1
4 Whitland post office	240	3	1
5 Whitland Sports and Social Club	260	3	1
6 Cash Machine	280	4	1
7 Whitland Town Hall	300	4	1
8 Whitland Library	300	4	1
9 Whitland Dental Surgery	300	4	1
10 Capel Calfaria	350	4	1
11 Whitland GP Surgery	450	6	1
12 St Mary's Church	500	6	2
13 Whitland Abbey	2900	36	9
Public Transport			
St John Street/Whitland Rail Station Bus stops	170	2	1
Whitland Rail Station	190	2	1
Market Street Bus Stops	200	3	1
Retail			
1 Mark John Butchers	190	2	1
2 Whitland Wholefoods	200	3	1
3 Whitland Local Centre- St John Street	230	3	1
4 Whitland Premier Stores	240	3	1
5 The Cake and Baguette Shop / Bakery	250	3	1
6 Farm Shop	270	3	1
7 Barbershop	270	3	1
8 Co-op food store	400	5	1
Education			
1 Ysgol Llys Hywel (Welsh medium school)	110	1	0
2 Dyffryn Taf Comprehensive School and College	650	8	2
Leisure			
1 Whitland Café	170	2	1
2 station house pub	180	2	1
3 Fish and chip shop	190	2	1
4 Whitland Chinese Restaurant Takeaway	300	4	1
5 Whitland Bowling Club	400	5	1
6 Whitland Rugby Football Club	400	5	1
7 Parc Llwyn Ty Gwyn	1200	15	4
8 Whitland Cricket Club	1300	16	4
Employment			
1 Former Creamery Site	200	3	1
2 Station Road Industrial Estates (south of railway line)	270	3	1
3 Riverlea Tractors Ltd	900	11	3
4 West Street Industrial units - Whitland Engineering	900	11	3
5 Whitland Industrial Estate	1000	13	3

** Based on walking speeds of 80 metres per minute and Cycling Speeds of 320 metres per minute*

Figure 3-1: Location of facilities within proximity of the site

Source: Google Maps
Note: Numbers and colours correlate to Table 3-1

3.3.5 Table 3-1 and Figure 3-1 show there are a significant number and range of facilities and services situated within comfortable walking and cycling distances which can be accessed via suitable active travel routes. All facilities are within Welsh Government guidance walking and cycling distances.

3.3.6 With the exception of Whitland Abbey, all facilities services identified are situated within a 1.6km (20 minute) walk of the site. Indeed, the majority of services and facilities highlighted within Whitland are located between 100m and 650m of the site including community facilities, public transport, retail, Education, Leisure and employment. As such, the site is consistent with Welsh Government's description of a 'walkable neighbourhood'.

3.3.7 The site is therefore situated in a highly sustainable location, as would be expected for a site on the edge of a local centre, in an existing and established urban area. This will encourage walking and cycling and reduce the reliance on the private car, consistent with relevant policies and guidance, including sustainable transport policies in Future Wales, PPW11 and TAN18.

3.4 Public Transport

Bus

3.4.1 The closest bus stops to the site are located on St John Street and Market Street, within a 200 metre walk from the site. Bus services 223, 224 and 322 stop at the Market Street stops, with service 224 also stopping at the St John Street stop. These stops are provided with shelters, bus flags, timetable information on one side of the road and are connected by street-lit footways.

3.4.2 Service 224 provides a service between Whitland and Carmarthen (via St Clears) from Market Street and St John Street, which are accessible to the site within 200m. These stops offer four services at 07:21 (excluding bank holidays), 10:05, 12:40 and 14:30 Monday to Saturday, with a journey time of 70 minutes.

3.4.3 Service 322 provides three daily services to Carmarthen at 09:53, 12:48 and 15:48, with two services operating from Carmarthen to Haverfordwest at 14:00 and 17:00.

3.4.4 Service 223 operates during school holidays only and is a request service on Tuesdays only with two services in each direction.

3.4.5 Service 224 provides services to Carmarthen in the AM from Market Street and service 322 returns at 17:00 on route to Haverfordwest. As such, these services provide opportunities for some commuting trips to be made between the site and Carmarthen and the daily services provide opportunities for non-commuting trips.

3.4.6 Table 3-2 provides a summary of the services.

Table 3-2: Local Bus Services

Route No.	Stop	Operator and Route	Frequency				
			Mon-Fri Peaks	Mon-Fri Daytime	Mon-Fri Evening	Sat	Sun
224	Keefe House, Market Street	Whitland – Carmarthen via St Clears Taf Valley Coaches	2 services at 07:20 and 10:00.	2 services at 12:40 and 14:30	-	4 daily services at 07:20, 10:06, 12:40 and 14:32	-
322	Keefe House, Market Street	Haverfordwest - Carmarthen Taf Valley Coaches	1 service to Carmarthen at 09:53.	2 services to Carmarthen at 12:48 and 15:48. 2 services to Haverfordwest at 14:00 and 17:00.	-	3 daily services in both directions, every 2-3 hours	-

3.4.7 The local bus stops provide a service to key regional destinations such as Carmarthen and Haverfordwest and provide some opportunities for residents to travel by sustainable modes.

Rail

3.4.8 The nearest rail services are provided at Whitland Rail Station, location approximately 190m to the south west of the site.

3.4.9 The station is situated on the West Wales Line connecting to Swansea, with services are operated by Transport for Wales (TfW). To the west of the station a branch line diverges towards Pembroke via Platform 2, with the main line continuing to Fishguard to the west.

3.4.10 The station provides step free access, a seating area, platform lighting and real-time rail arrival times. In addition, the station provides 20 CCTV monitored cycle racks along with five free car parking spaces (plus additional ad-hoc spaces nearby). The station can be easily accessed on foot using existing footways and there are opportunities for residents to cycle although at 190m walking is considered the primary mode.

3.4.11 Frequent rail services are provided from Whitland Station to Carmarthen and Swansea in the east with four services across the AM peak hours (between 0600 and 0900), and three services across the PM peak hours (between 1600-1900).

3.4.12 Services are provided to Pembroke Dock with a frequency of every two hours throughout the day between 0700 and 2130. Services to Milford Haven are available with a frequency of every two hours between 0600 and 2330.

3.4.13 Journey times to Milford Haven are 40-50 minutes, with 70 minutes to Pembroke Dock, 17 minutes to Carmarthen and 70 minutes to Swansea.

3.4.14 A combined walk and then rail journey therefore offers an attractive alternative mode for some residents to travel to more regional destinations from the site such as Carmarthen, Swansea, and Pembroke with onward services provided from Carmarthen and Swansea. This provides a realistic opportunity to replace some car journeys and reduce the requirement for travelling by car for potential future residents.

3.5 Summary

3.5.1 The site is situated in a highly sustainable location. Potential future residents can walk or cycle to a number of local facilities, services and employment areas within appropriate distances via good quality routes, reducing the need to own a car. In this regard, the site location is consistent with the sustainable transport policies in PPW11 (in particular paras 4.1.10 – 4.1.17).

3.5.2 The site also has good public transport links, which provide a suitable, attractive and realistic alternative to travelling by car, particularly the rail services. This will benefit and attract residents that would prefer to travel by public transport.

3.5.3 Potential future residents would have a realistic choice of modes of travel for all journey purposes. This will minimise the impact of the development and reduce the parking demand on the site.

3.5.4 The site location will encourage and promote sustainable travel behaviour, be attractive to residents who do not own a car or have low car ownership and is fully in accordance with transport policies in TAN18, PPW11 and Future Wales.

4. DEVELOPMENT PROPOSALS

4.1 Overview

4.1.1 The proposals are for a 43 dwelling scheme comprising 34 terraced/semi-detached units, 5 detached units and 4 social rented flats, to be accessed from the south-eastern side of St Mary's Street via two priority junctions. A summary of the proposals are set out as follows:

Open Market Housing

- 18no. two-bedroom semi / terraced dwellings
- 16no. three-bedroom semi / terraced dwellings
- 5no. four-bedroom dwellings

Total - 39 dwellings / 104 bedrooms

Social Rented Flats

- 4no. one-bedroom flats

Total - 4 dwellings / 4 bedrooms

4.1.2 The dwellings would be built to a high standard, which would encourage working from home in accordance with the aspirations of the Welsh Government. This will assist in constraining the level of vehicle generation from the site onto the local highway network.

4.1.3 The proposals will also provide a public parking court for 40 spaces which will replace the existing car park and increase the provision from existing levels by 12 spaces. The parking court will provide 8 dedicated spaces for existing residents with properties fronting St Mary's Street, which will be managed by the developer / town council through a voucher system (or similar) and the bays would be marked accordingly.

4.1.4 The proposed site layout is shown in Appendix A.

4.2 Access and Layout

Vehicular Access

4.2.1 Vehicular access would be obtained from two locations along the St Mary's Street boundary via priority junctions. The southern access junction is located within the vicinity of the site's existing access which currently serves a public car park. The proposals seek to retain public car park provision and the layout shows a larger new parking court located to the south of the site, which is connected to both site accesses.

4.2.2 Both accesses comprise a 5.5m access road with 6m junction radii which tie into St Mary's Street. Both junctions are provided with 2m footways on both sides and dropped kerb crossing facilities on either side to enable pedestrians to cross safety.

4.2.3 Swept path analysis showing vehicles entering and exiting the site appropriately is provided within Appendix E.

4.2.4 Visibility can be provided at 2.4m x 43m in each direction from each junction, which is in accordance with the recommended visibility splays for 30mph streets as set out in TAN18. Forward visibility is also

provided for drivers approaching the access locations for at least 60m in both directions, which is excess of the TAN18 recommended distances for 30mph speeds. These visibility distances have been shown at each site access plan included at Appendix F.

4.2.5 The two junctions have a centre line separation of 40m which is considered appropriate for the speeds on St Mary's Street, as well as ensuring that there is no impact on visibility splays from either junction. This also minimises the impact on the loss of on-street parking to the north of the northern access.

On-street parking impact

4.2.6 The construction of the new access junctions will lead to the loss of some kerbline which is currently available for on-street parking. In order to maintain suitable visibility it is recommended that double yellow line parking restrictions are provided along the length of the visibility splays from the northern access, as well as between the two access points. The potential double yellow line markings are shown in the access plan in Appendix F. These would be delivered via a Traffic Regulation Order (TRO). The applicant proposes a contribution of £5,000 for the delivery of the TRO by CCC which would allow for the design, advertisement and implementation of the TRO, once the order is made.

4.2.7 The highway code states that you should not stop or park within 10 metres of a junction. As such, including 10m either side of the existing car park junction, and the junction itself, the eastern side of St Mary's Street has 102m of available kerbline for parking, which is all to the north of the junction. Any vehicles parking to the south of the junction are doing so either within 10m of the junction, opposite the Park Street junction or obstructing the one-way section of St Mary's Street, all of which are contrary to the highway code.

4.2.8 With the proposals and the implementation of double yellow line parking restrictions, the available kerbline for parking would reduce to 54 metres and would all be to the north of the northern site access. This is a reduction of 48m of available kerb length for parking in comparison to the existing situation. This would equate to the loss of c. 8 'spaces' if assuming a vehicle length of 6m per 'space', as is the typical length of a perpendicular parking bay to enable sufficient space for manoeuvring.

4.2.9 The proposals would provide an increase of 12 car parking spaces in the public car park. This would increase the level of parking available to local residents by four overall spaces, considering the loss of on-street parking (which is being re-provided within the car park). As such, the access proposals are considered appropriate and would not result in a material impact on parking stress, all lost 'spaces' are being re-provided, plus additional capacity, without considering that on-street parking could also occur within the site itself.

Opposite Park Street Junction

4.2.10 Comments have been received from CCC in relation to the location of the proposed southern access being opposite the existing Park Street junction. As demonstrated on the drawings in Appendix F, visibility from this junction can be provided in line with TAN18 recommended distances for the posted speed limit and forward visibility can be provided to approaching vehicles to a level in excess of recommended distances. In addition, there is an existing junction situated with just 13m of the existing access and would not materially change the operation, for which there is no evidence of a safety issue. Indeed, the relocation of the junction will improve inter-visibility between vehicles on Park Street and vehicles exiting the southern site access.

4.2.11 As such, this location is considered safe for a proposed access junction, as one of two access points serving a residential development. There are also low background traffic volumes and speeds at this location and there would be a minimal increase in movements from the proposed development.

4.2.12 It is also possible for a vehicle to manoeuvre safely between the two access points with suitable visibility in all directions, including for forward visibility along St Mary's Street.

4.2.13 As such, the access location is considered safe and appropriate to accommodate the movements to and from the site.

Pedestrian Access

4.2.14 The proposed accesses include 2m footways on both sides which connect the internal site footways to the existing footways located along the site frontage with St Mary's Street. Each access will be provided with dropped kerb crossings, supplemented with tactile paving. The proposed footways connect the site to the wider pedestrian network as detailed in Section 3.

4.2.15 Footways continue along both sides of the internal roads for the majority of the site with the exception of the frontages to plots 2-14 which have a footway on the southern side and a small service strip alongside the on-plot parking spaces. The first internal junction from the northern access is proposed as a raised table junction which will enable greater permeability and priority for pedestrians as well as acting as a traffic calming feature to ensure the speeds within the site are low.

4.2.16 The internal footways also serve the public car parking court located at the southern end of the site. A footway link is also proposed along the eastern boundary of the site which connects the northern part of the site to the southern part of the site and eco park/landscaped area.

4.2.17 The site layout indicates potential for an active travel link to Market Street from a connection located in the north east corner of the site. This would provide an alternative link to and from the site in addition to the site access connections from St Mary's Street.

4.2.18 As such, the site would be fully permeable with the surrounding area and encourage walking movements to local facilities and services in line with transport policies in TAN18, PPW11 and the Active Travel Act.

4.3 Parking

Car Parking – proposed dwellings

4.3.1 The Carmarthenshire Parking Strategy outlines that the *"application of maximum standards is in accordance with national regional guidelines"* and as such the CSS Wales Parking Standards (2014) would be applicable.

4.3.2 According to the descriptions within the CSS standards, the site would lie in Parking Zone 2 – Town Centre or City Centre Fringe. The car parking standards for residential parking in Zones 2 to 6 state that a maximum of one car parking space should be provided per bedroom (up to a maximum of three spaces) and that one visitor space should be provided for every five units.

4.3.3 Applying the CSS Wales Parking Standards to the proposed development mix suggests a maximum of 103 spaces plus 9 visitor parking spaces could be provided. A total of 82 car parking spaces (including garages) are proposed throughout the site on driveways or in parking bays, as follows;

- One visitor parking space
- One space for all social rented flats (4 spaces)
- Two spaces for all four bed dwellings, plus a garage (15 spaces)
- Two spaces provided for all three bed dwellings other than plots 2, 3 and 4 (29 spaces)
- Two spaces provided for all two bed dwellings other than plots 7, 8 and 10 (33 spaces)

4.3.4 The level of parking provision is therefore in line with the CSS maximum parking standards.

4.3.5 The car ownership analysis in Section 2 demonstrates that a high proportion (72%) of households in the surrounding area own one or less cars, with an average of 1.13 cars per household for the most comparable surrounding area. If this level of car ownership were applied across the site, this would equate to a total demand for 49 vehicles. As such, this demonstrates that the parking is appropriate for the likely demand on the site and as such there would not be a material impact from overspill parking onto the surrounding highway network.

4.3.6 It is unlikely that every resident would be occupying their driveway spaces at all times, indeed it is likely that a number of households will not own the level of cars equating to the number of spaces as evidenced from the 2011 Census analysis. Therefore, a significant proportion of the visitor demand can be accommodated within the parking spaces across the site.

4.3.7 In addition, although the parking provision is considered suitable to accommodate residents and visitors, parking on-street within the development would also be appropriate, on the rare occasions where this is needed, and can be accommodated safely in some locations, including in front of driveways. This would further reduce the likelihood of overspill parking onto the highway. There are a number of locations within the site where parking can be suitably accommodated on-street, without impacting on safety or vehicle manoeuvring. The internal roads are proposed at 5.5m in width, which is typical for residential streets and appropriate to accommodate some intermittent on-street parking and enable through vehicle movements to pass safely.

4.3.8 On-street parking within the site would also provide the most efficient use of the land available, improving the design of the site and increasing amenity space, consistent with aspirations in MfS and Future Wales. In paragraph 8.3.13 of MfS it states, *"It is recommended that, in most circumstances, at least some parking demand in residential… areas is met with well-designed on-street parking."*

4.3.9 MfS also states that on-street parking is the most efficient and flexible use of space, and within paragraph 8.3.2 suggests that residential parking policies should take account of: *"Expected levels of car ownership, the importance of promoting good design and the need to use land efficiently."*

4.3.10 The parking is also considered to be in accordance with the Welsh Government overarching planning policy *Future Wales: The National Plan 2040* which states on page 86 that *"Planning authorities should promote car-free and low car developments in accessible locations."*

4.3.11 Policy 12 also states that *"Planning authorities must act to reduce levels of car parking in urban areas, including supporting car free developments in accessible locations."*

4.3.12 The proposed parking provision, given the sustainable location, is in accordance with the aspirations and policies of the Welsh Government for encouraging active travel and public transport use.

4.3.13 Based on the sustainable location of the site and to encourage sustainable travel in accordance with PPW11 and CCC policies, the residential parking provision is considered appropriate for the likely demand and within the maximum parking standards.

Car Parking – public car park

4.3.14 The proposals would increase the capacity of the existing public car park, which is provided as a dedicated parking court located to the south of the site. The car park comprises a total of 40 car parking spaces, an increase of 12 spaces from the existing provision of c.28 spaces. The proposed arrangement would provide formal marked bays which will improve the efficiency of use compared with the existing arrangements.

4.3.15 The car park will continue to be managed as per the current arrangements. The car park and the overall site are all within the ownership of Whitland Green Business Park Limited and the car park would remain available to the public and either managed by the developer or the Town Council. The parking court will provide 8 dedicated spaces for existing residents with properties fronting St Mary's Street, which will be managed by the developer / town council through a voucher system (or similar) and the bays would be marked accordingly.

Car Parking Layout

4.3.16 All driveway spaces within the site have minimum dimensions of 2.4m x 4.8m in accordance with the Parking SPG, with driveways adjacent to garages having at least 5.5m length per space.

Cycle Parking

4.3.17 The CSS Standards set out the cycle parking standards in Appendix 4. For residential apartments, there is a requirement for 1 stand per 5 bedrooms. These are provided in secure and covered cycle parking shelters.

4.3.18 All houses are provided with space for sheds which will provide secure cycle parking within the curtilage of each individual dwelling, in line with CSS guidance.

4.3.19 As such the proposals will provide an appropriate level of cycle parking in accordance with the guidance.

4.4 Servicing and Emergency Access

4.4.1 Servicing would mainly relate to refuse collection which would be undertaken on-street from the access road within the site.

4.4.2 There are two bin collection points provided at the eastern boundary of the site for refuse collection for plots 34-36 and 39-43. A refuse vehicle can safely stop at the kerbside for all other properties and swept paths have been shown in Appendix E demonstrating refuse vehicles turning appropriately and entering and exiting the site in forward gear.

4.4.3 MfS states Building Regulations on refuse collection distances in that waste collection vehicles should be able to get within 25 metres of the storage points. As collection can take place from kerbside throughout the site, including the bin collection points, the arrangements are in line with Building Regulations (and MfS) and considered safe and appropriate.

4.4.4 A fire tender will also be able to get within 45 metres of all properties and turn within the site, if needed. As such, the layout is appropriate for access by emergency vehicles.

5. TRIP GENERATION AND DISTRIBUTION

5.1 Introduction

5.1.1 This section sets out the estimated trip generation of the proposed development using the Trip Rate Information Computer System (TRICS). The TRICS database has been analysed for sites with similar characteristics in terms of use, scale, location, accessibility, and surrounding population.

5.1.2 The TRICS database predicts the likely numbers of arrivals and departures by utilising surveys of existing sites. Trip rates have been obtained and applied to establish the forecast trip generation during the network peak hours on a weekday and over a daily period.

5.1.3 Although the site has historically generated movements on the network relating to the former employment use, for a robust worst case analysis, all movements from the site relating to the proposed development have been considered as net new vehicle movements.

5.1.4 The proposed increase to the public car park, from c.28 to 40 spaces, is not considered to increase vehicle generation, particularly in the peak hours. The car park is not a trip generator in its own right. Although there may be some minimal changes in vehicle turning movements at local junctions, movements to and from the car park are considered to already be on the wider network and divert to the site, or would currently be accommodated by parking along the site boundary on St Mary's Street and would now park in the additional capacity in the car park. As such, vehicle generation from this use on the site has not been considered in this analysis.

5.2 Proposed Vehicle Trip Generation

5.2.1 The TRICS category '03 - RESIDENTIAL/A – HOUSES PRIVATELY OWNED' has been selected to derive trip rates for the potential residential development. Although there are some affordable dwellings as part of the proposals, which are likely to generate a lower level of vehicle movements, for a robust analysis all dwellings have been considered to be privately owned.

5.2.2 The following parameters have been applied to the search criteria to obtain sites as similar as possible:

- Vehicle Surveys
- Located in England and Wales (excluding London)
- Sites between 6 and 200 dwellings
- Surveys from Monday to Friday
- Edge of town centre locations
- From 2000 onwards
- Sites with a mixture of dwelling types
- Site with up to 15,000 population within 1 mile and up to 25,000 population within 5 miles
- Removal of sites in areas with car ownership of less than 1 vehicle per household
- Removed surveys from larger towns/ cities
- Removal of surveys undertaken during Covid lockdown periods

5.2.3 The application of these parameters resulted in a total of three surveys of similar sites. A summary of the forecast vehicle trip rates and trip generation associated with the 43 proposed residential development is shown in Table 5-1. The full outputs of the TRICS analysis including the sites used can be found in Appendix G.

Table 5-1: Proposed Houses - Vehicle Trip Rates and Trip Generation

Time Period	Trip Rates (per dwelling)			Trip Generation (43 units)		
	Arrivals	Departures	Two-way	Arrivals	Departures	Two-way
AM Peak (07:00-08:00)	0.075	0.237	0.312	3	10	13
AM Peak (08:00-09:00)	0.163	0.400	0.563	7	17	24
PM Peak (15:00-16:00)	0.263	0.275	0.538	11	12	23
PM Peak (16:00-17:00)	0.338	0.150	0.488	15	6	21
PM Peak (17:00-18:00)	0.350	0.263	0.613	15	11	26
12 Hours (07:00 -19:00)	2.427	2.576	5.003	104	111	215

5.2.4 The proposed development is forecast to generate approximately 24 two-way vehicular movements during the AM peak hour (0800-0900) and 26 two-way vehicle movements during the PM peak hour (1700-1800).

5.2.5 Over a 12-hour period, the proposed development is forecast to generate 215 two-way vehicle movements.

5.3 Initial Analysis of Traffic Impact

5.3.1 A two-way flow of 26 vehicles in the worst case PM peak hour, would equate to a maximum of one vehicle on the local highway network every 2-3 minutes, on average, during the busiest hour.

5.3.2 This level of trips would not result in a material impact on the capacity of the local highway network or the operation of local junctions. In addition, these movements would travel in different directions, particularly from the Market Street junction and therefore the impacts on the wider highway network will further reduce.

5.3.3 As shown in Section 2, there is no evidence of an existing safety issue within the vicinity of the site. As such, the minimal increase in vehicle movements associated with the site would not have an unacceptable impact on road safety, including at the site access locations which are considered safe and suitable as outlined in Section 4.

5.3.4 Although it is not considered that the proposals would have a material impact on the operation of the highway network, the highway authority has requested an operational assessment of the St Mary's Street / Market Street junction. As such, an assessment has been undertaken and is set out in Section 7. For the purposes of the assessment, the worst case development peak hours have been considered against the network peak hours.

5.4 Vehicle Distribution and Assignment

5.4.1 For the purposes of undertaken an operational assessment of the St Mary's Street / Market Street junction, the vehicles generated by the site have been distributed onto the network. For the purpose of a robust worst case assessment, it has been assumed that all development trips will travel through the junction.

5.4.2 The proposed development trips have been assigned onto the surrounding road network via Market Street using the turning count proportions recorded during the recent survey. In summary, this assumes the following movements to and from St Mary's Street:

AM Peak

- To Market Street west - 27%
- From Market Street west - 36%
- To Market Street east - 73%
- From Market Street east - 64%

PM Peak

- To Market Street west - 26%
- From Market Street west - 36%
- To Market Street east - 74%
- From Market Street east - 64%

5.4.3 The peak hour vehicle generation has been applied to the distribution percentages with the resultant assigned vehicle movements at the junction shown in the traffic flow diagrams in Appendix D.

5.5 Proposed Development Modal Split

5.5.1 An estimate of the number of journeys by each mode of travel has been set out in Table 5-2 through applying the average modal split for the site location using the Census data shown in Section 2, against the forecast vehicle generation in Table 5-2. The two-way movements by each mode have been shown in the peak hours and across a daily period (12 hours).

Table 5-2: Forecast Modal Split

Mode	Modal Split	Two-Way Movements		
		AM Peak	PM Peak	12 Hours
Public Transport	8%	3	3	27
Car Driver	63%	24	26	215
Motorcycle	1%	0	0	3
Car Passenger	4%	2	2	15
Bicycle	2%	1	1	6
On Foot	20%	8	8	68
Other	2%	1	1	6
Total	**100%**	**38**	**41**	**339**

5.5.2 The proposals are forecast to generate up to eight pedestrian movements in the peak hours, which would likely route north along either Park Street or St Mary's Street to the nearest facilities along Market Street including the nearest bus stops, and/or to the south to the local centre facilities. This level of movements would not result in a material impact on the existing operation of these local routes, which currently provide connections to key facilities without any evidence of a road safety issue.

6. FUTURE YEAR TRAFFIC FLOWS

6.1 Overview

6.1.1 This section outlines the future year traffic flows against which the impact of the development has been considered. This has considered TEMPRO growth factors.

6.2 Future Year Baseline Traffic Flows

6.2.1 In addition to a base year assessment (2022 for validation purposes), a future year of 2032 (10 years after planning submission) has been assessed.

6.2.2 To take account of background traffic growth on the local highway network within the vicinity of the site between 2022 and 2032, growth factors have been applied to the obtained 2022 base flow data at this junction. These growth factors have been calculated using the TEMPRO computer programme which consider growth in population, employment, and car ownership based on information derived from the National Trip Ends Model (NTEM).

6.2.3 Growth rates within Carmarthenshire 027, where the site is located, have been considered for all road types. The average weekday growth rate which has been applied to the 2022 AM and PM observed traffic flows is summarised as follows:

- 2022-2032 – Average Weekday: 1.0834

6.2.4 TEMPRO guidance specifies that the growth factors for individual areas are derived from forecasts at a local authority level which are informed by allocated housing and employment sites within the associated local development plans.

6.2.5 The long term effects of the pandemic on travel behaviour, particularly for commuting are not yet known. There is likely to be an increase in homeworking and reduction in peak hour vehicle movements into the future, particularly with technological and infrastructure improvements and efficiencies. A significant increase in homeworking would also be in accordance with the aspirations of Welsh Government.

6.2.6 As such, the application of unfettered growth rates based on traffic projections, is considered a robust method of obtaining future year traffic flows.

6.3 Future Year Traffic Flows and Assessment Scenarios

6.3.1 The 2022 base traffic flows in the identified peak hours have been factored by the calculated growth rates. For further robustness, the worst case development peak hour flows (0800-0900 and 1700-1800) have been added to the worst case background flow peak hours (0800-0900 and 1515-1615).

6.3.2 The resultant future year baseline and baseline plus development traffic flow diagrams in the AM and PM peak hours are set out within the traffic flow diagrams in Appendix D:

- 2032 Forecast Baseline – AM Network Peak Hour (0800-0900)
- 2032 Forecast Baseline – PM Network Peak Hour (1515-1615)
- 2033 Forecast Baseline plus development – AM Network Peak Hour (0800-0900)
- 2033 Forecast Baseline plus development – PM Network Peak Hour (1515-1615)

7. OPERATIONAL ASSESSMENTS

7.1 Overview

7.1.1 As requested by the highway authority, an assessment of the operation of the St Mary's Street / Market Street junction has been undertaken. For the purpose of presenting a robust worst case, all development trips have been assumed to travel through this junction.

7.1.2 This section sets out the approach for junction modelling and the results of the assessment.

7.2 Assessment Scenarios

7.2.1 Assessments have been undertaken during the AM (0800 - 0900) and PM (1515-1615) network peak hours. The scenarios which have been assessed within this TS for this junction are summarised as follows:

- 2022 Base Flows - AM Peak
- 2022 Base Flows - PM Peak
- 2032 Baseline – AM Peak
- 2032 Baseline – PM Peak
- 2032 Baseline + Development – AM Peak
- 2032 Baseline + Development – PM Peak

7.3 Model Inputs

7.3.1 Assessment of the junction has been undertaken using the Transport Research Laboratory (TRL) software Junctions 10 - PICADY module. Modelling has been undertaken using total traffic flows and HGV percentages.

7.3.2 A comparison of the 2022 base modelled queue lengths against the surveyed queue lengths has been made to assist with model validation and to ensure that the models robustly represent existing conditions. It is noted that the queue lengths in both the model and from the surveys represent average conditions on one day and that there are typical daily fluctuations in queues and flows. However, it is considered that this is an appropriate and accepted method to validate the model in order to determine the impact of the development at junctions and identify potential mitigation, if needed.

7.3.3 The modelling has been based on geometric measurements based on topographical survey mapping of the junction. This has been supplemented using aerial imagery on Market Street as this fell outside of the topographical survey area.

7.3.4 All models have been run with a 'one-hour' synthesised peak for robustness.

7.4 Model Reporting Outputs

7.4.1 The outputs of Junctions 10 provide a number of measurements to ascertain information of a junction's operation. The key measurements which are considered in this assessment are:

- 'Ratio of Flow to Capacity' (RFC)
- Maximum queue length in PCUs
- Delay in seconds per vehicle
- Level of service indicated by a letter between A (well within capacity) and F (at or over capacity)

7.4.2 The main indication of the performance of a junction is given by the RFC for each lane. The peak capacity is realised when the demand flow at the entry is great enough to cause a continuous queue of vehicles to wait on approach to the stop line. This is reached when the RFC attains a value of 1, although a value of 0.85 to 0.9 is typically considered the upper level of capacity at priority junctions.

7.4.3 Queue lengths provide an indication of how the overall junction performance may affect adjacent junctions on the highway network. The queue lengths are presented as the maximum over an hourly period. These also show whether the right turn queue length storage is appropriate.

7.4.4 When considering the operation of the junction all of these factors will be considered to form a view as to whether the impact of development generated traffic would be material and whether the site access would be appropriate in capacity terms.

7.4.5 These flows have been used in the model to assess the forecast operation of the site access junction.

7.4.6 The full outputs from the Junctions 10 modelling are provided in Appendix H.

7.5 Operational Assessment Results - St Mary's Street / Market Street Junction

Base Model and Queue Comparison

7.5.1 The model has been set up without a flare on the minor arm and with a single lane width of 3 metres, and a major arm width of 5 metres has been used. Measurements taken from the topographical survey commissioned for the site and using aerial mapping, show a minor arm lane width of 4m-5m and a major arm width of up to 7m. The adjustments take into consideration on-street parking on both the minor and major arms and is considered robust.

7.5.2 The results of the operational assessment for the 2022 base year are summarised in Table 7-1.

Table 7-1: 2022 Base Junction Analysis – St Mary's Street / Market Street

Arm	AM Peak (0800 – 0900)				PM Peak (1515 – 1615)			
	Queue (veh)	Max Delay (s)	RFC	LOS	Queue (veh)	Max Delay (s)	RFC	LOS
Arm B – St Mary's Street	0.2	10.11	0.19	B	0.2	9.79	0.18	A
Arm C – Market Street (w) Right Turn	0	5.27	0.01	A	0	5.06	0.01	A

7.5.3 Table 7-1 demonstrates that the St Mary's Street / Market Street junction currently operates well within its maximum theoretical capacity (RFC of 1) with a maximum RFC of 0.19 reported in the AM peak on Arm B – St Mary's Street. There is minimal queueing shown in the model.

7.5.4 Table 7-2 provides a comparison between the modelled queue length outputs shown in Table 7-1 and the queue survey data.

Table 7-2: Maximum average queue length comparison – St Mary's Street / Market Street

Arm	AM Peak (0800 – 0900)			PM Peak (1515 – 1615)		
	Observed (vehicles)	Model (vehicles)	+ / -	Observed (vehicles)	Model (vehicles)	+ / -
Arm B – St Mary's Street	2	1	-1	3	1	-2

Note: Vehicle queues reported from the model have been rounded for ease of comparison purposes

7.5.5 Table 7-2 demonstrates that the modelled and observed queues are consistent, with minimal queuing in all periods. The base model reflects the existing operation of the junction and is therefore valid and acceptable to assess future year conditions. In addition, the model has been set up with no flare and reduced road widths so is already considered robust.

2032 Future Year Assessment

7.5.6 The results of the operational assessment for the future year scenarios are summarised in Table 7-3 for the 2032 baseline scenario (without development) and in Table 7-4 for the 2032 baseline plus development scenario.

Table 7-3: 2032 Baseline Junction Analysis – St Mary's Street / Market Street

Arm	AM Peak (0800 – 0900)				PM Peak (1515 – 1615)			
	Queue (veh)	Max Delay (s)	RFC	LOS	Queue (veh)	Max Delay (s)	RFC	LOS
Arm B – St Mary's Street	0.3	10.55	0.21	B	0.2	10.14	0.19	B
Arm C – Market Street (w) Right Turn	0	5.27	0.01	A	0	5.04	0.01	A

Table 7-4: 2032 Baseline plus Development Junction Analysis – St Mary's Street / Market Street

Arm	AM Peak (0800 – 0900)				PM Peak (1515 – 1615)			
	Queue (veh)	Max Delay (s)	RFC	LOS	Queue (veh)	Max Delay (s)	RFC	LOS
Arm B – St Mary's Street	0.3	11.20	0.26	B	0.3	10.58	0.22	B
Arm C – Market Street (w) Right Turn	0	5.29	0.02	A	0	5.09	0.02	A

7.5.7 The assessment demonstrates that the St Mary's Street / Market Street junction is forecast to operate well within its maximum theoretical capacity in all scenarios, with a maximum RFC of 0.26 reported in the AM peak hour on the St Mary's Street arm.

7.5.8 Minimal increases in delay and RFC are experienced as a result of the proposed development and there are no increases in queue lengths. There would be no change in the level of service.

7.5.9 The results of the junction modelling show that the proposed development will not have a material impact on the operation of, or queuing at, the St Mary's Street / Market Street junction in the peak hours and no mitigation is required. The development can be accommodated appropriately on the network.

8. SUMMARY AND CONCLUSIONS

8.1 Summary

8.1.1 This Transport Statement (TS) has been provided in support of a planning application for a proposed residential development on Land south of St Mary's Street, Whitland, Carmarthenshire.

8.1.2 This report has been prepared to provide the necessary information for the Local Highway Authority to consider the merits of the proposals in terms of location, connectivity, highway safety, parking, access and the impact on the local highway network.

8.1.3 The proposals are for the redevelopment of the site for 43 new residential dwellings on part of the former Whitland Creamery brownfield site. The scheme comprises 39 open market houses and 4 social rented flats. The existing public car park, currently located to the south of the site, is to be replaced and relocated further south within a formal parking court, and the number of spaces increased. The vehicular access would be obtained from St Mary's Street at two locations.

8.1.4 The proposed parking provision is in accordance with the maximum CCC parking standards, as well as the objectives for encouraging sustainable travel and reducing car use as set out in PPW11 and Future Wales. It can also accommodate the likely demand for parking without an overspill onto the highway network.

8.1.5 The proposed site accesses provide suitable visibility in both directions and would be accompanied by double yellow line parking restrictions to ensure the visibility splays remain clear. The applicant proposes to provide a contribution towards the delivery of the TRO by CCC. This on-street parking management will ensure the access proposals are safe and suitable.

8.1.6 An assessment of the available kerbline for parking has been undertaken and the proposals would result in a loss of available kerbline space which could accommodate 8 vehicles parked on-street. The parking court will provide 8 dedicated spaces for existing residents with properties fronting St Mary's Street, which will be managed by the developer / town council through a voucher system (or similar) and the bays would be marked accordingly. This is therefore considered suitable mitigation for this loss in potential on-street parking capacity.

8.1.7 The proposals can accommodate service and delivery vehicles appropriately and these vehicles can enter and exit the site in forward gear.

8.1.8 The site is situated in a sustainable location, and this has been acknowledged by CCC during the Pre-Application response. Potential future residents can walk to a number and range of facilities, services, educational and employment locations within appropriate distances via good quality routes, reducing the need to own a car.

8.1.9 The site is also within close proximity of public transport links, including rail and bus services, which provide a suitable, attractive and realistic travel option. This will assist in constraining vehicle generation and reduce the need for residents to own a car. The location of the site would also benefit and attract residents that would prefer to travel by public transport.

8.1.10 Road safety data has been analysed and there is no evidence of a highway safety issue within the vicinity of the site which would be exacerbated by the proposals.

8.1.11 Trip generation analysis has been undertaken and this forecasts that the proposals would generate a maximum of one vehicle on the local highway network every 2-3 minutes, on average, during the

busiest hour. This level of vehicle movements would not have a material impact on the wider highway network.

8.1.12 An operational assessment has been undertaken at the St Mary's Street / Market Street junction, as requested by CCC. The assessment is robust and has been undertaken in a 2032 future year considering unfettered traffic growth (which may not occur). A number of adjustments were made to ensure a robust assessment, including modelling the minor arm as a 3m single lane without a flare and a major arm with a width of 5 metres. The assessment demonstrated that the junction would operate well within capacity with minimal queuing and is therefore considered suitable and safe to accommodate the proposals.

8.2 Conclusions

8.2.1 The site location will encourage and promote sustainable travel behaviour, attract residents who choose not to own a car or have low car ownership and is fully in accordance with transport policies in Future Wales, PPW11, and TAN18.

8.2.2 Data does not indicate a road safety issue which would be exacerbated by the proposals. The development would not have an unacceptable impact on road safety and the access arrangements and pedestrian routes will provide safe and suitable access for the proposed residential use.

8.2.3 The proposals will not have a material impact on the operation of the highway network including at the St Mary's Street / Market Street junction, and no mitigation is required.

8.2.4 It is therefore considered that there are no reasons relating to transport or highways for objecting to the application.

Appendix A Proposed Site Layout

N

19.4m MARKET STREET

20.2m

Whitland Bridge

PARK STREET

ST MARY'S STREET

Afon Gronw

Public Parking Court 40 spaces

Eco Park / Landscape Area

MP 258.75

Sluice

Weir

SP

Scale 1:500

0 10 20 50

SITE KEY

- Site Boundary
- 1.8m High close board fence
- 1.8m High brick screen wall
- 1.8m High close board personnel gate
- 0.45m High Timber Knee Rail
- Proposed retaining wall location *(refer to Engineering drawing for further details)*
- Primary door to dwelling *(Part M)*
- Secondary door(s) to dwelling
- Garage door
- Highway
- Highway Footpath
- Raised Highway Table
- Block Paving/ Service Strip
- Permeable Block Paving
- Private Driveway
- Gravel Surface
- Front Garden
- Rear Garden
- Amenity Space / Green Infrastructure / POS
- Swale / SUDs / Bio-retention Area
- Private Footpath - *PCC slabs*
- Social Rented Symbol
- Additional Window Symbol
- Existing Tree Location
- Indicative Ornamental Tree Planting Location
- Patio - *Concrete Pre-cast Slabs*
- Bin Collection - *Poured Concrete Slab* *[for plots not directly accessed off adopted highway]*
- Rear Garden Bin Storage - *Concrete Pre-cast Slabs*
- Rotary Line
- 2.1 x 1.35 Garden Shed - *Set on Poured Concrete Slab*

Open Market House Type Schedule					
Type	HT Code	No. of Bedrooms	HT Area [ft2]	Number of Units	Total Area [ft2]
TERRACED/SEMI	F	2	817	18	14706
TERRACED/SEMI	E	3	904	16	14464
DETACHED	B	4	1284	1	1284
DETACHED	BV	4	1312	1	1312
DETACHED	A	4	1376	2	2752
DETACHED	AV	4	1403	1	1403
TOTAL				39	35921
Social Rented House Type Schedule					
Type	HT Code	No. of Bedrooms	HT Area [ft2]	Number of Units	Total Area [ft2]
GF FLAT	1B-2P	1	546.4	2	1092.8
FF FLAT	1B-2P	1	613.8	2	1227.6
TOTAL				4	2320.4

REV.	DESCRIPTION	DATE
4	Engineering works added to layout. Public car park layout amended.	25.11.22

CLIENT
Obsidian Developments

JOB TITLE
St Mary's Street, Whitland.

DRAWING TITLE
Site Layout Plan

SCALE @ A1	DATE	DRAWN BY
1:500	September '22	KE
JOB NO.	DRAWING NO.	REVISION
2200	SP-01	4

hammond Architectural Ltd
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Appendix B CCC Pre-Application Response

Cyngor Sir Gâr
Carmarthenshire
County Council

sirgar.llyw.cymru
carmarthenshire.gov.wales

Gofynner am / Please ask for:	Charlotte Greves	Llinell Uniongyrchol / Direct Line:	01267 228618
E-bost Uniongyrchol / Direct Email:	celgreves@carmarthenshire.gov.uk	Eich cyf / Your ref:	
Dyddiad / Date:	13/07/2022	Fy nghyf / My ref:	**PRE/01025**

Agent

Amity Planning - Elene Gegeshidze
Creative Quarter
8A Morgan Arcade
Cardiff
CF10 1AF

Applicant

Obsidian Homes
Cadogan House
Spring Gardens
Whitland
SA34 0HR

Dear Sir / Madam

Application No: PRE/01025
Town and Country Planning (Pre-Application Services) (Wales) Regulations

I refer to your submission dated 26/04/2022 for:-

Proposal:	This proposal seeks to develop 47 new units of housing onto the former Whitland Creamery brownfield site. There are 33 units of terraced/semi-detached market housing proposed, 8 units of detached market housing and 6 flats of social housing type. The existing public car park is to be replaced and relocated further south. The site will also include new private parking provision in addition to the public parking capacity
Location:	Land South of St Marys Street, St Marys Street, SA34 0PY

Further to your Statutory Pre-Application request, please see below the response of the Local Planning Authority. In accordance with the Town and Country Planning (Pre-Application Services) (Wales) Regulations 2016, the response is set out under five headings.

Please note that this response is limited to an informal Officer's assessment only and any consultation responses received to date. Any informal advice received from those consultees who have not yet responded will be forwarded to you under separate cover.

(a) The planning history of the land on which the proposed development is to be carried out, so as far relevant to the proposed application:-

There is an extensive planning history for the site spanning a number of years however this largely relates to the site's former use as a creamery. There is no recent planning history that is directly relevant to the proposal.

b) The provisions of the development plan, so far as material to the proposed application:-

The area is covered by the Carmarthenshire Local Development Plan that was adopted in December 2014. The relevant policies are as follows:-

SP1 Sustainable Places and Spaces
SP3 Sustainable Distribution – Settlement Framework
SP5 Housing
SP6 Affordable Housing
SP14 Protection and Enhancement of the Natural Environment
SP 17 Infrastructure
Policy GP1 Sustainability and High Quality Design
Policy GP2 Development Limits
Policy GP3 Planning Obligations
Policy GP4 Infrastructure and New Development
Policy H2 Housing within Development Limits
Policy AH1 Affordable Housing
Policy AH2 Affordable Housing – Exception Sites
Policy TR2 Location of Development – Transport Considerations
Policy TR3 Highways in Developments - Design Considerations
Policy EQ4 Biodiversity
Policy EQ5 Corridors, Networks and Features of Distinctiveness
Policy EP1 Water and Environmental Capacity
Policy EP3 Sustainable Drainage

Further information on the LDP can be viewed on our website:-
http://www.carmarthenshire.gov.wales/home/residents/planning/policies-development-plans/local-development-plan

(c) Any supplementary planning guidance, so far as material to the proposed application:-

Nature Conservation and Biodiversity SPG
Affordable Housing SPG
Planning Obligations SPG
Leisure and Open Space – Requirement for New Developments SPG
Placemaking & Design

Further information on Supplementary Planning Guidance can be viewed on our website:-
https://www.carmarthenshire.gov.wales/home/council-services/planning/planning-policy/supplementary-planning-guidance-spg/

Useful advice and information on Ecology (including lists of Bat Surveyors and Ecological Consultants can be found on our website:-

http://www.carmarthenshire.gov.wales/home/residents/planning/planning-applications/do-you-need-planning-permission

(d) Any other considerations which are or could be material in the opinion of the authority

- Future Wales: The National Plan (2040)
- Planning Policy Wales (Edition 11, February 2021)
- Technical Advice Note (TAN) Wales 15: Development and Flood Risk (2004)

(e) An initial assessment of the proposed development on the basis of the information provided under paragraphs (a) to (d).

Description of the proposal

The proposal relates to the construction of 47 residential properties comprising 41 open market housing units and 6 social housing units. The enquiry includes a set of indicative drawings, which includes a location plan and a proposed site layout plan together with an indication of house types. This informal response is limited to the information provided with the enquiry and a desktop study of the site.

Informal Assessment of Proposal

Proposals for development should be considered in the context of the Local Development Plan (LDP) for Carmarthenshire (Adopted December 2014), unless material considerations indicate otherwise.

The application site is located outside and adjacent to the development limits of Whitland as defined by the adopted Local Development Plan. The site is also located outside of the proposed development limits for Whitland as identified within the Deposit Revised Local Development Plan 2018-2033. In considering the overarching principle of a housing site being outside development limits, the application would not conform with Policy H2 of the LDP. It is indicated that the majority of the dwellings are to be open market, and therefore Policy AH 2 (Affordable Housing – Exception Sites) has not been considered. Therefore presently, the proposal would not comply with LDP policy and would have to be considered as a departure.

Nevertheless, it is acknowledged that it is a centrally located Brownfield site (as recognised within Planning Policy Wales (PPW) Edition 11 2021) within Whitland and at a sustainable location within the town near to the railway station and main town centre. However, as you aware and as indicated in your supporting letter, the site is located within the C1 flood zone and this is an issue that is considered to be fundamental to the success of any future planning application and is the reason that the site is not currently included within the development limits for Whitland. Should the flooding issue be able to be overcome, and I understand that you are currently investigating/discussing the matter further with Natural Resources Wales, then residential development may be considered acceptable on this brownfield site.

Please however also be aware that the more recently published Flood Map for Planning shows the site to be located within Flood Zone 3 Rivers and Sea. This would form a material consideration as part of any decision as set out in recent guidance by NRW pending the delayed publication of the updated Technical Advice Note (TAN) Wales 15: Development and Flood Risk which is now due to adopted on 1 June 2023.

In addition, the proposal which would be classed as a major development and would trigger paragraph y of Schedule 4 of the DMPWO 2016 which requires the carrying out of a Pre Application Consultation prior to the submission of any formal planning application. The pre application consultation guidance can be found on the Welsh Government website.

Layout, Density, Impact on the Character and Appearance of the Area

In broad terms, the submitted indicative site layout provides a general idea as to how you intend to develop the site and gives an indication of house types. I have no immediate concerns regarding the layout. I understand that you wish to discuss this further during a site meeting as the layout of dwellings is to be largely dictated by the flood issues at the site which necessitates further explanation and therefore it is anticipated that the layout provided as part of the pre-application may be the subject of further changes.

However, in general terms, properties addressing St Mary's Street and existing properties opposite is welcomed and I am aware that the Town Council will welcome the retention of a car parking area to replace the current provision available at the site.

Later in this letter, I do provide some comments in relation to affordable housing which will in turn will affect the layout and proposed house types but this can be further discussed at our meeting on site. I will contact you separately to arrange this.

Residential Amenity

Given the site's location, it is not considered to give rise to specific concerns in relation to the impact on existing residents. However, this would have to be considered further once detailed designs to include levels details and cross sections are provided as part of any future application. This should also include consideration for planned development on the site on the opposite side of the watercourse

At no point should there be any unreasonable loss of amenity to neighbouring properties (such as loss of light, outlook, dominance and privacy). Consideration would also need to be given the standard of amenity for future occupiers of the dwellings and sufficient distances need to be maintained to safeguard privacy. All habitable rooms must be designed to have an acceptable standard of light, outlook and privacy and their amenity spaces sufficiently private and usable and appropriate for family-sized dwellings such as those that are proposed.

The Environmental Health Department are unlikely to raise any objections to the proposal but there is likely to be a recommendation for a condition to control dust arising from the construction phase, to protect air quality and the public.

Contaminated Land

The site is situated within the former Whitland Creamery Site, with other industrial / commercial land uses also noted at or within 250m of the site boundary. This includes a gas works and railway land, amongst other sites. Any planning application should be supported by a contaminated land risk assessment or this will need to be the subject of a condition included in any planning permission.

Highways

The Highways Planning Liaison Officer has provided detailed advice in respect of the access proposals for the development as follows.

1) Given the scale, inclusion of a public car park and the location of the site, any formal proposal made to the LPA should include a full Transport Statement (TS). The TS shall include the forecasted trip generation, traffic impact and junction analysis/modelling of the St Mary's Street / Market Street (B43280 junction to the north of the site.

2) Site Access(es) – These shall be designed in line with CCC's adopted standards and shall show/demonstrate visibility splay in line with Table B of TAN 18 (Page 44). Although indicative at this stage, it is noted the northern most access is below the adoptable standards and may have limited visibility to the north.

3) There is a high level of on-street parking along St. Mary's Street which is 'likely' associated with the existing terraced housing opposite the site, many of which do not benefit from any private/curtilage parking provision. Considerations shall be given to traffic management to ensure the proposed site access(es) and associated visibility splays are maintained free from obstruction i.e. Double Yellow Lines.

4) Considerations should also then be given to the likely displacement of the on-street parking along St. Mary's St and potential mitigation/alternative provision i.e. resident parking areas.

5) The number of dwellings accessed from shared use private drives exceed the thresholds contained within Carmarthenshire's Highways Design Guide (3-4). CCC do not currently adopt nor accept the use or principle of shared surface roads. The proposals shall be designed to CCC's adoptable standards.

6) Public Car Park Layout – The area could be better utilised to maximise the car parking capacity/potential. Considerations required in relation to the CSS Wales' Parking Standards including disabled, cycle/scooter and electric vehicle charging provision. Clarification required on current and on-going management/maintenance of the public car park, and whether the public parking is to be made a 'charged service'.

7) Active Travel - CCC are working to develop the active travel network through the Integrated Network Map (INM) and the demand library (public request database). The developer is advised to consider improvements locally and where necessary provide a contribution towards potential schemes.

8) Site Permeability – Access to the site may currently be gained to north-east of the site via Market Street / B4328. This however, along with the turning area for the northern element of the proposals are outside of the red site boundary. Clarification is sought here and whether there is potential for permeable active travel route to/from the site. Similarly, there is a footbridge at the eastern boundary of the site. The status of this is unknown but given the site to the east is allocated and has previous planning consent, consideration shall be given to a link / permeable access.

9) If the applicant intends to offer the proposed estate road for adoption to the highway Authority under Section 38 of the Highways Act 1980, then they are advised to contact the Authority's Highways Adoptions officer Mr Cliff Cleaton, at the earliest opportunity.

10) Any amendment or alteration of an existing public highway in connection with a new development shall be undertaken under a Section 278 Agreement of the Highways Act 1980. It is the responsibility of the developer to request the Local Highway Authority to proceed with this agreement and the developer is advised that the total costs of entering into such an agreement, as well as the costs of undertaking any physical works on site, shall be met by him.

11) Without prior consent from the Sustainable Drainage Approval Body (SAB) no surface water from the development herewith approved shall be disposed of, or connected into, existing highway surface water drains/systems.

It is therefore advised that any application fully takes into account the above matters.

Ecology, Trees and Landscaping

The site consists of a derelict brownfield site leftover from the Whitland Creamery demolition. Habitats are particularly disturbed and appear to contain some semi-improved grassland, scrub, hedgerow, tree lines and there is potential for invasive species such as Japanese Knotweed. The Afon Gronw is present to the east of the site and a railway line and associated tree line boundary is present to the south. It will be necessary, to consider ecological issues as part of any planning submission and these should be fully considered in an ecology report to be submitted with any application.

The development could result in habitat loss, fragmentation and/or modification (Relevant LDP Policy EQ4, EQ5) and disturbance/displacement of species Relevant LDP Policy SP14, EQ4

In particular existing hedges, trees, boundary woodland/treeline and watercourses should be fully retained and suitable buffer zones implemented. Habitats will require detailed ecological assessment to determine if they are suitable for the proposed development – consideration should be made if the site contains 'open mosaic habitats on previously developed land' a habitat listed on Section 7 list of the Environment Act (Wales) 2016. The adjacent river and any ditches may be suitable for otter and water vole, and should be assessed for their suitability. Scrub and hedgerow habitats may be suitable for nesting birds and badgers and several records exist within 1km of the site. Ecological enhancement must also be considered in line with LDP Policy.

Therefore, having regard to the above:

SCOPE OF WORK FOR INCLUSION IN A PRELIMINARY ECOLOGICAL APPRAISAL (PEA).

Desk Study

Any planning submission must document that a thorough ecological desk study has been undertaken to fully inform the application, this should include data from the Local Records Centre.

Ecological Impact – Habitats and Species

• An ecological assessment and /or survey will be required and must provide sufficient information to identify any nature conservation features (habitats/species) that are likely to be affected by the proposals and identify potential options for mitigation and enhancement. The likely impacts on any species protected under legislation (see below) and any direct or indirect impacts to species or habitats listed under the Carmarthenshire LBAP, UK BAP, or identified on the Section 7 list of the Environment Act (Wales) 2016 must also be considered. This should clarify if the site contains areas considered to meet the criteria for 'open mosaic habitats on previously developed land'. The survey must be carried out by a qualified ecological surveyor It should include:

• A Phase I habitat survey, to identify the quality and extent of the habitats present. Detailed habitat assessment should only be carried out between the months of April to September only. The habitat survey should also identify the presence of any invasive species. The report should identify the potential of the habitats on site for use by protected species.

• Reptiles. Common species of reptiles may be present within suitable habitats. These are protected by legislation. The site must be assessed for its potential to support reptiles. Surveys for reptiles must be undertaken if suitable habitat is to be removed. These assessments must inform a code of construction practice for the proposed works with regard to reptiles.

• Badgers and their setts are protected under The Protection of Badgers Act 1992. Activity within 30 metres of a sett
may require a licence. A site may contain badger setts, it is recommended that the site and where possible surrounding land within 30m be surveyed for badgers. There are records of badger within 1km of the site.

• Birds – the application must make an assessment of the bird populations currently using the application area and the impact of the development on these, in terms of loss of habitat and displacement. There are numerous bird records within 500 metres.

• The site is adjacent to a watercourse. This must be retained and integrated into the proposed development and appropriately managed. A suitable 7m buffer zone free from development should be put in place along the watercourse.

• The site is bordered by trees. These features must be retained and integrated into any proposed future application and appropriately managed. There should be a buffer between any hedge/woodland/tree line boundary and the development.

• An assessment of any waterbody, watercourse and ditch and their associated vegetation for their potential to support **otter and water vole** must be undertaken and reported in the PEA if works to or surrounding watercourses are proposed. Otter are protected under European and UK legislation. **Water vole** are protected under UK Legislation. If found suitable, the protection and enhancement of the water body and suitable vegetation for these species must be included as part of any scheme and if their habitat is to be affected then a survey will be required. Their presence is a material consideration when a local planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat. There are records of Otter within 1km of the site.

• All British bats are protected under European and UK legislation. There are records of Natterer's Bat, Noctule, Common Pipistrelle, Soprano Pipistrelle, Brown Long-eared, and a Greater Horseshoe within 500 metres of the site. Their presence is a material consideration when a local planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat. An assessment of any **trees for their potential for bat use** should be carried out and reported in a PEA, a full bat survey of any trees assessed to have bat potential should be conducted if these will be impacted upon. Mitigation must be provided as considered necessary based upon the survey findings. If the site is to be lit then **considerations should be made for bats and lighting**.

BIODIVERSITY ENHANCEMENTS

The Environment (Wales) Act 2016 and PPW 11 (Feb, 2021) requires the LPA to seek to enhance biodiversity through the planning process, the need for identification of biodiversity enhancements has been clarified in the letter from Welsh Government to Wales LPA Heads of Planning dated 23rd October 2019 which states that '*where biodiversity enhancement is not proposed as part of an application, significant weight will be given to its absence, and unless other significant material considerations indicate otherwise it will be necessary to refuse permission.'*

Therefore, it is recommended that a Biodiversity Enhancement Plan including locations, types, specifications and numbers of any proposed biodiversity enhancement measures is required **to be submitted** with any subsequent planning application to ensure the development complies with the Environment (Wales) Act 2016 and PPW 11 (Feb, 2021).

Relevant policies: SP1 Sustainable Places and Spaces, SP14 Protection and Enhancement of the Natural Environment, GP1 Sustainability and High Quality Design, EQ4 Biodiversity, EQ5 Corridors, Networks and Features of Distinctiveness, EP1 Water and Environmental Capacity. If you have any questions or seek clarification on any points please contact me.

Further advice is contained within the SPG document
https://www.carmarthenshire.gov.wales/media/3723/nat-env-and-biodiversity-draft-spg.pdf

In terms of landscaping, a comprehensive landscaping scheme of the site undertaken by a qualified landscape architect will be required with any formal application. Such a landscaping scheme will need to embrace and retain any existing and important landscape features within the site and include surveys of any trees affected by the development. The landscaping scheme will also need to incorporate any ecological requirements identified by the ecological report and the conclusions/recommendations of the tree report.

Drainage

It is recommended that details of foul and surface water drainage associated with all elements of the project is submitted with the formal planning application. Foul drainage should utilise existing public sewers where a connection is feasible.

The Council's Drainage Team have informally advised that:

New legislation relating to surface water management of new developments now requires approval from Sustainable Drainage Approval Bodies (SAB) throughout Wales. SABs now evaluate and approve drainage applications for new developments where for example; construction work have drainage implications and cover a construction area greater 100m2. As the development construction area proposed is likely to be greater than 100m2 and have drainage implications, the developer will need to apply for SAB approval. Please note that SAB applications are separate from planning applications and construction works must not commence before SAB approval is obtained. Further information on "how to apply" can be found on Councils' website at www.carmarthenshire.gov.wales/sab

As mentioned above the proposal, which would be a major development, would trigger paragraph y of Schedule 4 of the DMPWO 2016, and you are therefore required to carry out a Pre Application Consultation prior to the submission of any formal planning application. As part of that you are required to consult Welsh Water directly as a 'Specialist Consultee' at pre-application stage (following due process and submission of relevant forms – Schedule 1C, Article 2D).

Following a consultation to Welsh Water as part of this pre application enquiry they did however provide the following advice:

Welsh Water has a key role to play in the development and planning process as the services provided are at the forefront of public health and protection of the environment. Welsh Water encourages all developers to engage with them as early as possible in order to address any issues that may arise during the planning/construction process. Please also be advised that for any major development applications you will need to consult Welsh Water as a 'Specialist Consultee' by submission of the relevant information as set out in Schedule 1C, Article 2D of the Town & Country Planning (Development Management Procedure) (Wales) (Amendment) Order 2016.

Upon receipt of a pre-application enquiry, Welsh Water will provide a written response advising whether the local network(s) can support the proposal, whether offsite water mains and/or sewers will need to be provided, and whether there are any apparatus located within the land you wish to develop and the requirements for these apparatus. This service is provided for a fee of £86+ VAT and can be submitted by post or by completing the online enquiry form at

http://www.dwrcymru.com/en/Developer-Services. Further information can be obtained from the dedicated team of planning officers at Welsh Water on 0800 917 2652.

Planning Contributions

Affordable Housing Provision

The Council has a duty to deliver sustainable development. The construction of 47 dwellings would generate the need for on-site provision of affordable housing, in accordance with the requirements of Policy AH1 of the LDP.

The site lies within an area where a 30% contribution applies for windfall sites. As the proposal is for 47 units this would generally equate to 14 dwellings to be provided on site and an additional commuted sum contribution which would be calculated at application stage.

The indicative layout that you have provided only details 6 flats for social housing which would be an under provision of affordable housing and would therefore be contrary to policy AH1 of the LDP. Further details are provided with the Council's Supplementary Planning Guidance documents relating to Planning Obligations and Affordable Housing. Any formal application will require the applicant/landowner to enter into a legal agreement to ensure that the affordable housing on site provision/contribution is secured.

In addition to the above, comments are provided by the Council's Housing Department in relation to housing need for this area and how this need can be best met. Their response has advised that they would not accept flats for affordable housing and that the need should be provided for as follows:

"The Homes and Safer Communities Division can confirm that Whitland is an area of housing need. This need could be best met by providing either a mix or 2 bedroom, 4 person houses and 3 bedroom 5 person houses for low cost home ownership or by providing a mix of 2 bedroom, 4 person houses or 2 bedroom, 3 person bungalows for affordable rent. The expectation would be that if provided as affordable rent, no public subsidy would be required to make this provision financially viable for a social housing landlord. Namely, the purchase price would need to be sustainable on the basis of expected net rental income at social housing rates. Any homes provided for affordable rent must comply with Welsh Government's Development Quality Requirements (DQR). The space standards are shown below:
2 bed, 4 person house 83 m^2
2 bed, 3 person bungalow 58 m^2
All homes provided for low cost home ownership must meet the following minimum space standards:
2 bed between 70 m^2 and 84 m^2
3 bed between 80 m^2 and 94 m^2

In light of the above, the layout and house types will need to be amended in order to accord with Policy and meet the housing need for the area.

Education Contributions

The application would also trigger the requirement for Education contributions in accordance with the Planning Obligations SPG. I have consulted the education department and the contribution amount has been calculated on the basis of 41 open market dwellings. As I have highlighted above however this is likely to change as you will be required to provide more affordable housing units to accord with planning policy.

Total contribution amount £86,000 - This is based on 41 dwellings, and calculated on the higher scale of charge for Early Years/Primary, and higher scale of charge for the Secondary schools within the development catchment area having no surplus capacity.
The breakdown for this calculation is below.

Breakdown

Pupil Yield
Early Years – 41 x 0.04 = 1.64 (2)
Primary – 41 x 0.4 = 16.4 (16)
Secondary – 41 x 0.2 = 8.2 (8)

Calculation
Early Years – 2 x £3,000 = £6,000 (Llys Hywel)
Primary – 16 x £3,500 = £56,000 (Llys Hywel)
Secondary – 8 x £3,000 = £24,000 (Dyffryn Taf/Bro Myrddin)

Open Space/Recreation Contributions

I have not received a response from the Council's Parks department, however, it is likely that a contribution would be required towards the provision/enhancement of Public Open Space in the locality as part of the development and/or suitable on-site provision.

Highways Contributions

In terms of highways contributions, as you will note above the highways officer has indicated that highways contributions may be sought in for the development for local highway improvement schemes however they will be re-consulted as part of any future detailed application when they can be more specific as to what would be required.

Conclusion

The proposal relates to the construction of 47 dwellings on land which is at risk of flooding and which is outside of the defined development limits for Whitland. Whilst there are material considerations given the sites brownfield status and central location within the town that may outweigh the issue of the development limits, flood risk is the fundamental issue which will underpin the success of any future planning application. It is understood that this issue is being pursued directly with NRW and should the flooding issue be able to be overcome, then a residential development may be something that can be accepted on this site.

Full acceptability will depend on being able to satisfy all other relevant planning policies and guidelines including the matters outlined above.

You are welcome to contact me further to arrange a site meeting to discuss the layout of the site in more detail having regard to the flooding issues at the site. As advised, whilst the indicative layout raises no immediate concerns in terms of impacts upon visual and residential amenity, the proposal will require amendments in order to accord with affordable housing policies in respect of the on site provision proposed and other matters and as such further discussion would be beneficial. In addition, further information is required to be submitted as part of any future planning application in relation to ecology and landscaping matters.

Separate SAB Approval would be required for the proposal and you are encouraged to discuss your proposal separately with the Council's SAB Team and Welsh Water.

The Highways Department has requested further information is submitted with regards to various aspects/details required to deliver a scheme which would not have any unreasonable harm to highway/pedestrian safety. They advise that the final site layout and access proposals should be discussed and agreed with them.

The proposal would generate the need for on-site provision of affordable housing and a financial contributions towards Education. There may also be a requirement for financial contributions to public open space and highways. A legal agreement would be required to ensure that these are secured in the event that planning permission is forthcoming.

The above advice is given on the basis of the information currently available, and without prejudice to any formal determination that the Council may be required to make. Any subsequent applications will be subject to formal determination based upon consideration of the merits of each application, current planning policy, legislation, relevant consultation responses and other material planning considerations relevant at that time.

What to do next?
If you still wish to submit an application, the easiest way to submit an application is on-line via the Planning Portal. You can complete the application form; attach supporting documents and pay fees on-line, saving you the cost of printing and postage.

Additional information and guidance can be found on the Planning Portal and Welsh Government websites.

Should you require any further assistance please do not hesitate to contact the above-mentioned case officer.

DATED: 11/07/2022

Yn gywir / Yours faithfully

Rhodri Griffiths

Pennaeth Lle a Chynaliadwyedd / Head of Place and Sustainability

Appendix C Traffic Survey – St Mary's Street / Market Street Junction

THE SEVERNSIDE GROUP
Transportation Data Collection
Traffic Management
Inductive Loop Cutting
Fabrication

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

Survey Overview

Job No'/Job Name	SS935 Whitland
Date	Thursday 10 November 2022
Time	0700-1000 & 1500-1900
Survey Type	Classified JTC & Queue Length
Weather Conditions	Clear

Overview Map

Comments

THE SEVERNSIDE GROUP
Transportation Data Collection
Traffic Management
Inductive Loop Cutting
Fabrication

SS935 Whitland
Thursday 10 November 2022
0700-1000 & 1500-1900
Site 1

Site 1 - Cam 1-1

Overview

Streetview

THE SEVERNSIDE GROUP
Transportation Data Collection
Traffic Management
Inductive Loop Cutting
Fabrication

SS935 Whitland
Thursday 10 November 2022
0700-1000 & 1500-1900
Site 1

Site 1 - Cam 1-2

Overview

Streetview

Severnside
Transportation Data Collection

SS935 Whitland
Thursday 10 November 2022
0700-1000 & 1500-1900
Site 1

	Arm A - Arm A								Arm A - Arm B								Arm A - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0700-0715	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	9	1	0	0	0	0	0	**10**	**10**
0715-0730	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	12	8	0	0	1	0	0	**21**	**23**
0730-0745	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	23	4	2	0	0	0	0	**29**	**29**
0745-0800	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	29	5	2	0	1	0	0	**37**	**40**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**73**	**18**	**4**	**0**	**2**	**0**	**0**	**97**	**102**
0800-0815	1	0	0	0	0	0	0	**1**	2	0	0	0	0	0	0	**2**	43	11	0	0	1	0	0	**55**	**58**
0815-0830	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	54	11	1	0	5	0	0	**71**	**73**
0830-0845	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	43	7	2	0	2	0	0	**54**	**57**
0845-0900	2	0	0	0	0	0	0	**2**	2	0	0	0	0	0	0	**2**	43	10	1	0	1	0	0	**55**	**59**
Hourly Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**183**	**39**	**4**	**0**	**9**	**0**	**0**	**235**	**247**
0900-0915	0	0	0	0	0	0	0	**0**	0	2	0	0	0	0	0	**2**	22	7	2	1	0	0	0	**32**	**34**
0915-0930	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	22	12	0	0	0	0	0	**34**	**35**
0930-0945	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	20	5	0	0	0	0	1	**26**	**26**
0945-1000	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	25	10	1	2	0	0	0	**38**	**39**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**4**	**89**	**34**	**3**	**3**	**0**	**0**	**1**	**130**	**134**
3 Hour Totals (am)	3	0	0	0	0	0	0	**3**	16	2	0	0	0	0	0	**18**	345	91	11	3	11	0	1	**462**	**483**
1500-1515	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	40	6	0	0	1	0	0	**47**	**49**
1515-1530	2	0	0	0	0	0	0	**2**	3	0	0	0	0	0	0	**3**	50	6	0	0	2	0	0	**58**	**63**
1530-1545	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	38	6	0	0	0	0	0	**44**	**45**
1545-1600	0	0	0	0	0	0	0	**0**	2	1	0	0	0	0	0	**3**	37	4	3	0	0	0	0	**44**	**47**
Hourly Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**7**	**1**	**0**	**0**	**0**	**0**	**0**	**8**	**165**	**22**	**3**	**0**	**3**	**0**	**0**	**193**	**204**
1600-1615	0	0	0	0	0	0	0	**0**	1	1	0	0	0	0	1	**3**	35	8	2	0	0	0	0	**45**	**48**
1615-1630	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	32	5	1	0	1	0	0	**39**	**40**
1630-1645	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	37	6	1	0	2	0	0	**46**	**49**
1645-1700	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	**1**	29	6	0	1	0	0	0	**36**	**37**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**2**	**0**	**0**	**0**	**0**	**1**	**8**	**133**	**25**	**4**	**1**	**3**	**0**	**0**	**166**	**174**
1700-1715	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	41	5	0	1	1	0	0	**48**	**48**
1715-1730	0	0	0	0	0	0	0	**0**	4	0	0	0	0	0	0	**4**	34	2	1	1	0	0	0	**38**	**42**
1730-1745	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	33	2	0	0	0	0	0	**35**	**36**
1745-1800	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	29	4	0	0	1	0	0	**34**	**36**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**137**	**13**	**1**	**2**	**2**	**0**	**0**	**155**	**162**
1800-1815	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	27	3	0	1	0	0	0	**31**	**32**
1815-1830	0	0	0	0	0	0	0	**0**	2	1	0	0	0	0	0	**3**	23	2	0	0	1	0	0	**26**	**29**
1830-1845	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	29	2	0	0	0	0	0	**31**	**33**
1845-1900	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	23	3	0	0	0	1	0	**27**	**27**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**6**	**102**	**10**	**0**	**1**	**1**	**1**	**0**	**115**	**121**
4 Hour Totals (pm)	3	0	0	0	0	0	0	**3**	24	4	0	0	0	0	1	**29**	537	70	8	4	9	1	0	**629**	**661**
Day Total	6	0	0	0	0	0	0	**6**	40	6	0	0	0	0	1	**47**	882	161	19	7	20	1	1	**1091**	**1144**

	Arm B - Arm A								Arm B - Arm B								Arm B - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0700-0715	0	3	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**3**
0715-0730	9	2	0	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	**13**
0730-0745	9	2	0	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	**13**
0745-0800	6	0	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**7**
Hourly Total	**24**	**7**	**0**	**0**	**0**	**0**	**0**	**31**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**36**
0800-0815	11	1	0	0	0	0	1	**13**	0	0	0	0	0	0	0	**0**	3	1	0	0	0	0	0	**4**	**17**
0815-0830	17	2	0	0	0	0	0	**19**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**20**
0830-0845	10	1	0	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	**13**
0845-0900	11	2	0	0	0	0	0	**13**	0	0	0	0	0	0	0	**0**	13	1	0	0	0	0	0	**14**	**27**
Hourly Total	**49**	**6**	**0**	**0**	**0**	**0**	**1**	**56**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**2**	**0**	**0**	**0**	**0**	**0**	**21**	**77**
0900-0915	11	0	0	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	2	1	0	0	0	0	0	**3**	**14**
0915-0930	7	0	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**7**
0930-0945	4	1	1	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**6**
0945-1000	3	1	1	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**6**
Hourly Total	**25**	**2**	**2**	**0**	**0**	**0**	**0**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	**33**
3 Hour Totals (am)	98	15	2	0	0	0	1	**116**	0	0	0	0	0	0	0	**0**	27	3	0	0	0	0	0	**30**	**146**
1500-1515	7	0	0	0	0	0	0	**7**	0	0	0	0	0	0	0	**0**	5	0	0	0	0	0	0	**5**	**12**
1515-1530	8	0	0	0	0	0	0	**8**	0	0	0	0	0	0	0	**0**	9	0	0	0	0	0	0	**9**	**17**
1530-1545	20	2	0	0	0	0	0	**22**	0	0	0	0	0	0	0	**0**	4	0	0	0	0	0	0	**4**	**26**
1545-1600	11	1	0	0	0	0	0	**12**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	**14**
Hourly Total	**46**	**3**	**0**	**0**	**0**	**0**	**0**	**49**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**69**
1600-1615	11	0	0	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	4	0	0	0	0	0	0	**4**	**15**
1615-1630	6	3	0	0	0	0	0	**9**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**10**
1630-1645	8	1	0	0	0	0	0	**9**	0	0	0	0	0	0	0	**0**	3	0	0	0	0	0	0	**3**	**12**
1645-1700	11	2	0	0	0	0	0	**13**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**13**
Hourly Total	**36**	**6**	**0**	**0**	**0**	**0**	**0**	**42**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**50**
1700-1715	17	2	0	0	0	0	0	**19**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**19**
1715-1730	15	0	0	0	0	0	0	**15**	0	0	0	0	0	0	0	**0**	0	1	0	0	0	0	0	**1**	**16**
1730-1745	11	0	0	0	0	0	0	**11**	0	0	0	0	0	0	0	**0**	2	0	0	0	0	0	0	**2**	**13**
1745-1800	14	2	0	0	0	0	0	**16**	0	0	0	0	0	0	0	**0**	2	3	0	0	0	0	0	**5**	**21**
Hourly Total	**57**	**4**	**0**	**0**	**0**	**0**	**0**	**61**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**4**	**0**	**0**	**0**	**0**	**0**	**8**	**69**
1800-1815	5	1	0	0	0	0	0	**6**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**6**
1815-1830	10	2	0	0	0	0	0	**12**	0	0	0	0	0	0	0	**0**	1	1	0	0	0	0	0	**2**	**14**
1830-1845	13	1	0	0	0	0	0	**14**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**15**
1845-1900	4	0	0	0	0	0	0	**4**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**5**
Hourly Total	**32**	**4**	**0**	**0**	**0**	**0**	**0**	**36**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	**40**
4 Hour Totals (pm)	171	17	0	0	0	0	0	**188**	0	0	0	0	0	0	0	**0**	35	5	0	0	0	0	0	**40**	**228**
Day Total	269	32	2	0	0	0	1	**304**	0	0	0	0	0	0	0	**0**	62	8	0	0	0	0	0	**70**	**374**

	Arm C - Arm A								Arm C - Arm B								Arm C - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0700-0715	9	3	0	0	1	0	0	**13**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**13**
0715-0730	16	1	0	0	1	0	0	**18**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**18**
0730-0745	16	4	2	1	0	0	0	**23**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**24**
0745-0800	22	8	2	0	2	0	0	**34**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**34**
Hourly Total	**63**	**16**	**4**	**1**	**4**	**0**	**0**	**88**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**89**
0800-0815	22	2	1	0	1	0	0	**26**	1	0	0	0	0	0	0	**1**	2	0	0	0	0	0	0	**2**	**29**
0815-0830	24	4	0	0	1	0	0	**29**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**29**
0830-0845	27	5	0	0	2	0	0	**34**	3	0	0	0	0	0	0	**3**	0	0	0	0	0	0	0	**0**	**37**
0845-0900	34	6	0	0	0	0	0	**40**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**41**
Hourly Total	**107**	**17**	**1**	**0**	**4**	**0**	**0**	**129**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**136**
0900-0915	28	1	2	1	0	0	0	**32**	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	**34**
0915-0930	20	2	0	1	0	0	0	**23**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**24**
0930-0945	18	5	0	0	0	0	0	**23**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**23**
0945-1000	11	6	0	0	1	0	0	**18**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**18**
Hourly Total	**77**	**14**	**2**	**2**	**1**	**0**	**0**	**96**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**99**
3 Hour Totals (am)	247	47	7	3	9	0	0	**313**	7	0	0	0	0	0	0	**7**	4	0	0	0	0	0	0	**4**	**324**
1500-1515	13	3	2	0	1	0	0	**19**	4	0	0	0	0	0	0	**4**	0	0	0	0	0	0	0	**0**	**23**
1515-1530	25	7	0	2	1	0	0	**35**	2	0	0	0	0	0	0	**2**	1	0	0	0	0	0	0	**1**	**38**
1530-1545	52	4	0	0	6	0	0	**62**	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	**64**
1545-1600	32	0	0	0	1	0	0	**33**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**34**
Hourly Total	**122**	**14**	**2**	**2**	**9**	**0**	**0**	**149**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**159**
1600-1615	28	9	2	0	0	0	0	**39**	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	**41**
1615-1630	29	7	0	0	0	0	0	**36**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**37**
1630-1645	24	2	1	0	0	0	0	**27**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**27**
1645-1700	26	5	0	0	1	0	0	**32**	0	0	0	0	0	0	0	**0**	1	0	0	0	0	0	0	**1**	**33**
Hourly Total	**107**	**23**	**3**	**0**	**1**	**0**	**0**	**134**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**138**
1700-1715	20	2	0	0	0	0	0	**22**	1	0	0	0	0	0	0	**1**	1	0	0	0	0	0	0	**1**	**24**
1715-1730	22	1	0	0	0	0	0	**23**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**23**
1730-1745	25	5	0	1	0	0	0	**31**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**31**
1745-1800	23	2	1	0	0	0	0	**26**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**27**
Hourly Total	**90**	**10**	**1**	**1**	**0**	**0**	**0**	**102**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**105**
1800-1815	20	5	0	0	0	0	0	**25**	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	**0**	**26**
1815-1830	19	1	0	0	0	0	0	**20**	0	0	0	0	0	0	0	**0**	0	0	0	0	0	0	0	**0**	**20**
1830-1845	25	1	2	0	0	0	0	**28**	2	0	0	0	0	0	0	**2**	0	0	0	0	0	0	0	**0**	**30**
1845-1900	20	2	0	0	0	0	0	**22**	5	0	0	0	0	0	0	**5**	0	0	0	0	0	0	0	**0**	**27**
Hourly Total	**84**	**9**	**2**	**0**	**0**	**0**	**0**	**95**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**103**
4 Hour Totals (pm)	403	56	8	3	10	0	0	**480**	20	0	0	0	0	0	0	**20**	5	0	0	0	0	0	0	**5**	**505**
Day Total	650	103	15	6	19	0	0	**793**	27	0	0	0	0	0	0	**27**	9	0	0	0	0	0	0	**9**	**829**

	Origin - Arm A								Origin - Arm B								Origin - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0700-0715	9	1	0	0	0	0	0	**10**	0	3	0	0	0	0	0	**3**	9	3	0	0	1	0	0	**13**	**26**
0715-0730	14	8	0	0	1	0	0	**23**	11	2	0	0	0	0	0	**13**	16	1	0	0	1	0	0	**18**	**54**
0730-0745	23	4	2	0	0	0	0	**29**	11	2	0	0	0	0	0	**13**	17	4	2	1	0	0	0	**24**	**66**
0745-0800	32	5	2	0	1	0	0	**40**	7	0	0	0	0	0	0	**7**	22	8	2	0	2	0	0	**34**	**81**
Hourly Total	**78**	**18**	**4**	**0**	**2**	**0**	**0**	**102**	**29**	**7**	**0**	**0**	**0**	**0**	**0**	**36**	**64**	**16**	**4**	**1**	**4**	**0**	**0**	**89**	**227**
0800-0815	46	11	0	0	1	0	0	**58**	14	2	0	0	0	0	1	**17**	25	2	1	0	1	0	0	**29**	**104**
0815-0830	56	11	1	0	5	0	0	**73**	18	2	0	0	0	0	0	**20**	24	4	0	0	1	0	0	**29**	**122**
0830-0845	46	7	2	0	2	0	0	**57**	12	1	0	0	0	0	0	**13**	30	5	0	0	2	0	0	**37**	**107**
0845-0900	47	10	1	0	1	0	0	**59**	24	3	0	0	0	0	0	**27**	35	6	0	0	0	0	0	**41**	**127**
Hourly Total	**195**	**39**	**4**	**0**	**9**	**0**	**0**	**247**	**68**	**8**	**0**	**0**	**0**	**0**	**1**	**77**	**114**	**17**	**1**	**0**	**4**	**0**	**0**	**136**	**460**
0900-0915	22	9	2	1	0	0	0	**34**	13	1	0	0	0	0	0	**14**	30	1	2	1	0	0	0	**34**	**82**
0915-0930	23	12	0	0	0	0	0	**35**	7	0	0	0	0	0	0	**7**	21	2	0	1	0	0	0	**24**	**66**
0930-0945	20	5	0	0	0	0	1	**26**	4	1	1	0	0	0	0	**6**	18	5	0	0	0	0	0	**23**	**55**
0945-1000	26	10	1	2	0	0	0	**39**	4	1	1	0	0	0	0	**6**	11	6	0	0	1	0	0	**18**	**63**
Hourly Total	**91**	**36**	**3**	**3**	**0**	**0**	**1**	**134**	**28**	**3**	**2**	**0**	**0**	**0**	**0**	**33**	**80**	**14**	**2**	**2**	**1**	**0**	**0**	**99**	**266**
3 Hour Totals (am)	364	93	11	3	11	0	1	**483**	125	18	2	0	0	0	1	**146**	258	47	7	3	9	0	0	**324**	**953**
1500-1515	42	6	0	0	1	0	0	**49**	12	0	0	0	0	0	0	**12**	17	3	2	0	1	0	0	**23**	**84**
1515-1530	55	6	0	0	2	0	0	**63**	17	0	0	0	0	0	0	**17**	28	7	0	2	1	0	0	**38**	**118**
1530-1545	39	6	0	0	0	0	0	**45**	24	2	0	0	0	0	0	**26**	54	4	0	0	6	0	0	**64**	**135**
1545-1600	39	5	3	0	0	0	0	**47**	13	1	0	0	0	0	0	**14**	33	0	0	0	1	0	0	**34**	**95**
Hourly Total	**175**	**23**	**3**	**0**	**3**	**0**	**0**	**204**	**66**	**3**	**0**	**0**	**0**	**0**	**0**	**69**	**132**	**14**	**2**	**2**	**9**	**0**	**0**	**159**	**432**
1600-1615	36	9	2	0	0	0	1	**48**	15	0	0	0	0	0	0	**15**	30	9	2	0	0	0	0	**41**	**104**
1615-1630	33	5	1	0	1	0	0	**40**	7	3	0	0	0	0	0	**10**	30	7	0	0	0	0	0	**37**	**87**
1630-1645	40	6	1	0	2	0	0	**49**	11	1	0	0	0	0	0	**12**	24	2	1	0	0	0	0	**27**	**88**
1645-1700	29	7	0	1	0	0	0	**37**	11	2	0	0	0	0	0	**13**	27	5	0	0	1	0	0	**33**	**83**
Hourly Total	**138**	**27**	**4**	**1**	**3**	**0**	**1**	**174**	**44**	**6**	**0**	**0**	**0**	**0**	**0**	**50**	**111**	**23**	**3**	**0**	**1**	**0**	**0**	**138**	**362**
1700-1715	41	5	0	1	1	0	0	**48**	17	2	0	0	0	0	0	**19**	22	2	0	0	0	0	0	**24**	**91**
1715-1730	38	2	1	1	0	0	0	**42**	15	1	0	0	0	0	0	**16**	22	1	0	0	0	0	0	**23**	**81**
1730-1745	34	2	0	0	0	0	0	**36**	13	0	0	0	0	0	0	**13**	25	5	0	1	0	0	0	**31**	**80**
1745-1800	31	4	0	0	1	0	0	**36**	16	5	0	0	0	0	0	**21**	24	2	1	0	0	0	0	**27**	**84**
Hourly Total	**144**	**13**	**1**	**2**	**2**	**0**	**0**	**162**	**61**	**8**	**0**	**0**	**0**	**0**	**0**	**69**	**93**	**10**	**1**	**1**	**0**	**0**	**0**	**105**	**336**
1800-1815	28	3	0	1	0	0	0	**32**	5	1	0	0	0	0	0	**6**	21	5	0	0	0	0	0	**26**	**64**
1815-1830	25	3	0	0	1	0	0	**29**	11	3	0	0	0	0	0	**14**	19	1	0	0	0	0	0	**20**	**63**
1830-1845	31	2	0	0	0	0	0	**33**	14	1	0	0	0	0	0	**15**	27	1	2	0	0	0	0	**30**	**78**
1845-1900	23	3	0	0	0	1	0	**27**	5	0	0	0	0	0	0	**5**	25	2	0	0	0	0	0	**27**	**59**
Hourly Total	**107**	**11**	**0**	**1**	**1**	**1**	**0**	**121**	**35**	**5**	**0**	**0**	**0**	**0**	**0**	**40**	**92**	**9**	**2**	**0**	**0**	**0**	**0**	**103**	**264**
4 Hour Totals (pm)	564	74	8	4	9	1	1	**661**	206	22	0	0	0	0	0	**228**	428	56	8	3	10	0	0	**505**	**1394**
Day Total	928	167	19	7	20	1	2	**1144**	331	40	2	0	0	0	1	**374**	686	103	15	6	19	0	0	**829**	**2347**

	Destination - Arm A								Destination - Arm B								Destination - Arm C								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Total
0700-0715	9	6	0	0	1	0	0	**16**	0	0	0	0	0	0	0	**0**	9	1	0	0	0	0	0	**10**	**26**
0715-0730	25	3	0	0	1	0	0	**29**	2	0	0	0	0	0	0	**2**	14	8	0	0	1	0	0	**23**	**54**
0730-0745	25	6	2	1	0	0	0	**34**	1	0	0	0	0	0	0	**1**	25	4	2	0	0	0	0	**31**	**66**
0745-0800	28	8	2	0	2	0	0	**40**	3	0	0	0	0	0	0	**3**	30	5	2	0	1	0	0	**38**	**81**
Hourly Total	**87**	**23**	**4**	**1**	**4**	**0**	**0**	**119**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**78**	**18**	**4**	**0**	**2**	**0**	**0**	**102**	**227**
0800-0815	34	3	1	0	1	0	1	**40**	3	0	0	0	0	0	0	**3**	48	12	0	0	1	0	0	**61**	**104**
0815-0830	41	6	0	0	1	0	0	**48**	2	0	0	0	0	0	0	**2**	55	11	1	0	5	0	0	**72**	**122**
0830-0845	37	6	0	0	2	0	0	**45**	6	0	0	0	0	0	0	**6**	45	7	2	0	2	0	0	**56**	**107**
0845-0900	47	8	0	0	0	0	0	**55**	3	0	0	0	0	0	0	**3**	56	11	1	0	1	0	0	**69**	**127**
Hourly Total	**159**	**23**	**1**	**0**	**4**	**0**	**1**	**188**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**204**	**41**	**4**	**0**	**9**	**0**	**0**	**258**	**460**
0900-0915	39	1	2	1	0	0	0	**43**	1	2	0	0	0	0	0	**3**	25	8	2	1	0	0	0	**36**	**82**
0915-0930	27	2	0	1	0	0	0	**30**	1	0	0	0	0	0	0	**1**	23	12	0	0	0	0	0	**35**	**66**
0930-0945	22	6	1	0	0	0	0	**29**	0	0	0	0	0	0	0	**0**	20	5	0	0	0	0	1	**26**	**55**
0945-1000	14	7	1	0	1	0	0	**23**	1	0	0	0	0	0	0	**1**	26	10	1	2	0	0	0	**39**	**63**
Hourly Total	**102**	**16**	**4**	**2**	**1**	**0**	**0**	**125**	**3**	**2**	**0**	**0**	**0**	**0**	**0**	**5**	**94**	**35**	**3**	**3**	**0**	**0**	**1**	**136**	**266**
3 Hour Totals (am)	348	62	9	3	9	0	1	**432**	23	2	0	0	0	0	0	**25**	376	94	11	3	11	0	1	**496**	**953**
1500-1515	20	3	2	0	1	0	0	**26**	6	0	0	0	0	0	0	**6**	45	6	0	0	1	0	0	**52**	**84**
1515-1530	35	7	0	2	1	0	0	**45**	5	0	0	0	0	0	0	**5**	60	6	0	0	2	0	0	**68**	**118**
1530-1545	73	6	0	0	6	0	0	**85**	1	0	0	0	0	0	0	**1**	43	6	0	0	0	0	0	**49**	**135**
1545-1600	43	1	0	0	1	0	0	**45**	3	1	0	0	0	0	0	**4**	39	4	3	0	0	0	0	**46**	**95**
Hourly Total	**171**	**17**	**2**	**2**	**9**	**0**	**0**	**201**	**15**	**1**	**0**	**0**	**0**	**0**	**0**	**16**	**187**	**22**	**3**	**0**	**3**	**0**	**0**	**215**	**432**
1600-1615	39	9	2	0	0	0	0	**50**	2	1	0	0	0	0	1	**4**	40	8	2	0	0	0	0	**50**	**104**
1615-1630	35	10	0	0	0	0	0	**45**	2	0	0	0	0	0	0	**2**	33	5	1	0	1	0	0	**40**	**87**
1630-1645	32	3	1	0	0	0	0	**36**	3	0	0	0	0	0	0	**3**	40	6	1	0	2	0	0	**49**	**88**
1645-1700	37	7	0	0	1	0	0	**45**	0	1	0	0	0	0	0	**1**	30	6	0	1	0	0	0	**37**	**83**
Hourly Total	**143**	**29**	**3**	**0**	**1**	**0**	**0**	**176**	**7**	**2**	**0**	**0**	**0**	**0**	**1**	**10**	**143**	**25**	**4**	**1**	**3**	**0**	**0**	**176**	**362**
1700-1715	37	4	0	0	0	0	0	**41**	1	0	0	0	0	0	0	**1**	42	5	0	1	1	0	0	**49**	**91**
1715-1730	37	1	0	0	0	0	0	**38**	4	0	0	0	0	0	0	**4**	34	3	1	1	0	0	0	**39**	**81**
1730-1745	36	5	0	1	0	0	0	**42**	1	0	0	0	0	0	0	**1**	35	2	0	0	0	0	0	**37**	**80**
1745-1800	37	4	1	0	0	0	0	**42**	3	0	0	0	0	0	0	**3**	31	7	0	0	1	0	0	**39**	**84**
Hourly Total	**147**	**14**	**1**	**1**	**0**	**0**	**0**	**163**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**142**	**17**	**1**	**2**	**2**	**0**	**0**	**164**	**336**
1800-1815	25	6	0	0	0	0	0	**31**	2	0	0	0	0	0	0	**2**	27	3	0	1	0	0	0	**31**	**64**
1815-1830	29	3	0	0	0	0	0	**32**	2	1	0	0	0	0	0	**3**	24	3	0	0	1	0	0	**28**	**63**
1830-1845	38	2	2	0	0	0	0	**42**	4	0	0	0	0	0	0	**4**	30	2	0	0	0	0	0	**32**	**78**
1845-1900	24	2	0	0	0	0	0	**26**	5	0	0	0	0	0	0	**5**	24	3	0	0	0	1	0	**28**	**59**
Hourly Total	**116**	**13**	**2**	**0**	**0**	**0**	**0**	**131**	**13**	**1**	**0**	**0**	**0**	**0**	**0**	**14**	**105**	**11**	**0**	**1**	**1**	**1**	**0**	**119**	**264**
4 Hour Totals (pm)	577	73	8	3	10	0	0	**671**	44	4	0	0	0	0	1	**49**	577	75	8	4	9	1	0	**674**	**1394**
Day Total	925	135	17	6	19	0	1	**1103**	67	6	0	0	0	0	1	**74**	953	169	19	7	20	1	1	**1170**	**2347**

Severnside
Transportation Data Collection

SS935 Whitland
Thursday 10 November 2022
0700-1000 & 1500-1900
Site 1

	Arm B	
	Lane-1	Lane-2
0700-0705	0	1
0705-0710	1	0
0710-0715	0	1
0715-0720	0	1
0720-0725	0	1
0725-0730	2	1
0730-0735	0	1
0735-0740	0	1
0740-0745	0	0
0745-0750	0	0
0750-0755	0	2
0755-0800	0	1
0800-0805	1	1
0805-0810	1	1
0810-0815	1	1
0815-0820	1	2
0820-0825	0	3
0825-0830	0	1
0830-0835	1	1
0835-0840	0	1
0840-0845	0	1
0845-0850	1	1
0850-0855	1	1
0855-0900	1	1
0900-0905	1	1
0905-0910	1	1
0910-0915	0	1
0915-0920	0	1
0920-0925	0	1
0925-0930	1	2
0930-0935	0	1
0935-0940	0	1
0940-0945	0	0
0945-0950	0	1
0950-0955	1	2
0955-1000	0	1

	Arm B	
	Lane-1	Lane-2
1500-1505	0	1
1505-1510	0	1
1510-1515	0	1
1515-1520	1	1
1520-1525	1	1
1525-1530	1	1
1530-1535	1	2
1535-1540	1	5
1540-1545	0	1
1545-1550	1	1
1550-1555	0	3
1555-1600	1	1
1600-1605	0	2
1605-1610	1	1
1610-1615	1	1
1615-1620	1	1
1620-1625	0	1
1625-1630	1	1
1630-1635	1	0
1635-1640	0	2
1640-1645	1	1
1645-1650	0	1
1650-1655	0	2
1655-1700	0	2
1700-1705	0	1
1705-1710	1	1
1710-1715	0	1
1715-1720	1	1
1720-1725	1	1
1725-1730	1	2
1730-1735	0	1
1735-1740	0	1
1740-1745	0	1
1745-1750	1	2
1750-1755	0	1
1755-1800	1	3
1800-1805	0	1
1805-1810	0	0
1810-1815	0	1
1815-1820	0	1
1820-1825	0	1
1825-1830	0	1
1830-1835	0	1
1835-1840	0	0
1840-1845	0	2
1845-1850	0	0
1850-1855	1	1
1855-1900	0	1

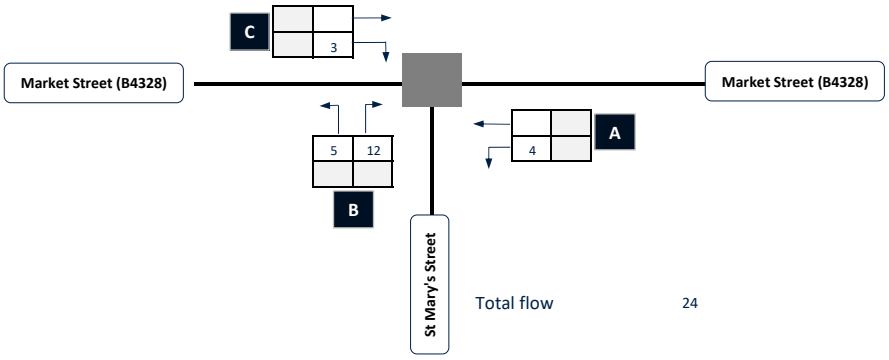
Appendix D Traffic Flow Diagrams

KEY

12	Total Vehicles
12	HGVs

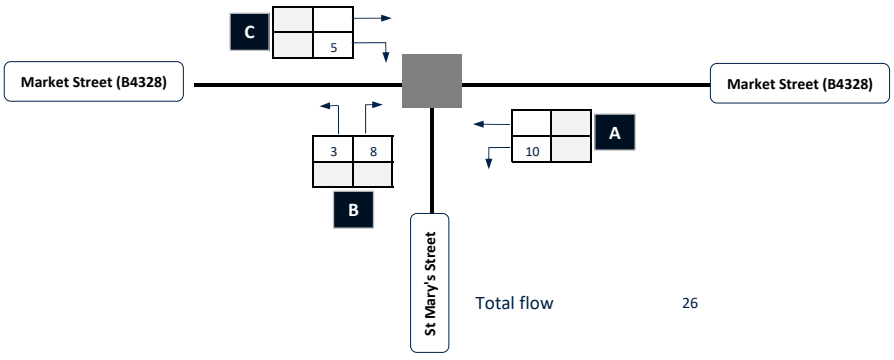
St Mary's St / Market St Junction

AM Peak Hour (0800-0900)



St Mary's St / Market St Junction

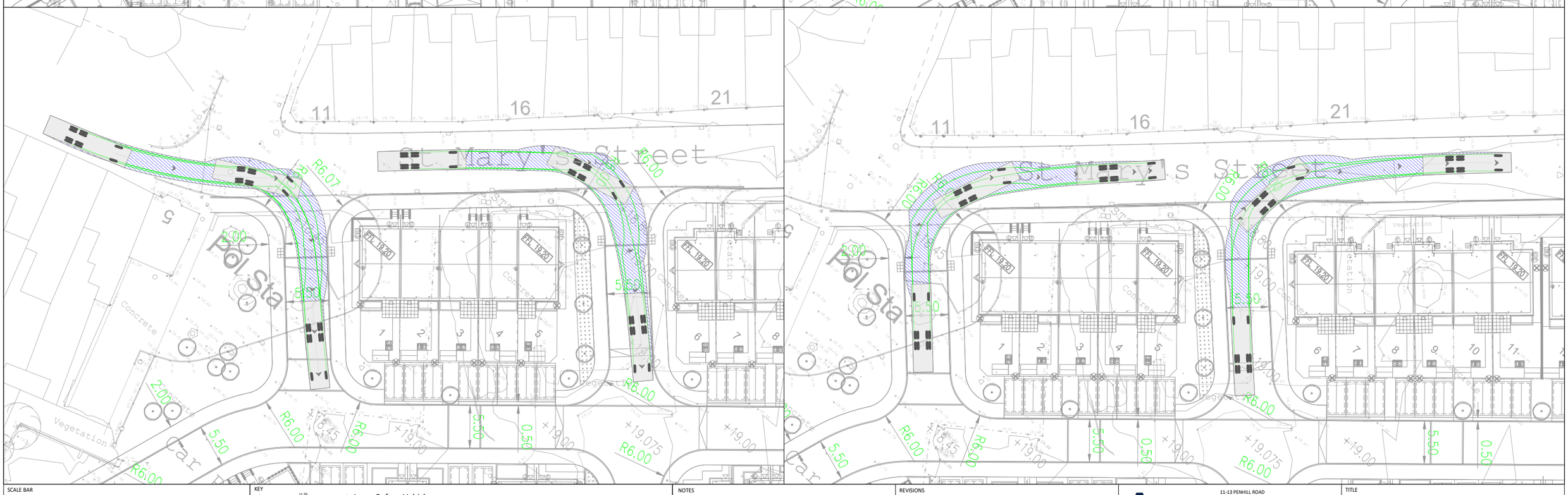
PM Peak Hour (1515-1615)



	Arr	Dep
AM	7	17
PM	15	11

Apex TRANSPORT PLANNING	**PROJECT:** Land at Dairy Crest, Whitland		**PLAN TITLE:** Traffic Figure Diagrams
	TIME PERIOD: AM Peak Hour (08:00 - 09:00) and PM Peak Hour (15:15 - 16:15)		Proposed Development Flows
	DATE: November 2022	**JOB NUMBER:** C22109	**DRAWN BY:** GP / **FIGURE:** D4

Appendix E Swept Path Analysis

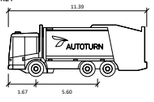


SCALE BAR

0m 10m 20m

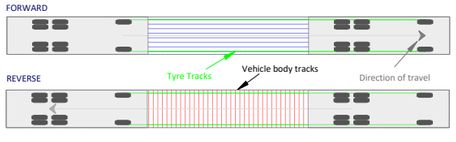
SCALE BAR (1:500)

KEY



Large Refuse Vehicle

	metres
Width	: 2.53
Track	: 2.15
Lock to Lock Time	: 4.0
Steering Angle	: 30.2



NOTES

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3. Drawing is based on topographical data and OS mapping. Ordnance Survey, (c) Crown Copyright 2022. All rights reserved. Licence number 100022432.
4. All land ownership details and rights of way to be confirmed.
5. Assumes all landscaping can be altered and no trees are subject to TPO.
6. Please do not scale from this drawing.

REVISIONS

Rev	Date	Description	By	App
P01	25/11/22	First Issue.	SD	DC

Apex TRANSPORT PLANNING
11-13 PENHILL ROAD
CARDIFF
CF11 9PQ
t: 02920 619 361
e: info@apextp.co.uk

CLIENT
OBSIDIAN DEVELOPMENTS

PROJECT
LAND AT DAIRY CREST, WHITLAND

TITLE
SWEPT PATH ANALYSIS SHOWING A LARGE REFUSE VEHICLE ACCESSING AND EGRESSING THE SITE ACCESS JUNCTIONS.

PROJECT NO.	SCALE @ A3
C22-109	1:500

STATUS DESCRIPTION	STATUS
INFORMATION	S2

DRAWING NO.
C22109-ATP-DR-TP-002

OVERVIEW PLAN

0m 50m

SCALE BAR (1:1000)

SCALE BAR

0m 10m 20m

SCALE BAR (1:500)

DESIGN VEHICLE

Large Refuse Vehicle

	metres
Width	: 2.53
Track	: 2.15
Lock to Lock Time	: 4.0
Steering Angle	: 30.2

FORWARD

REVERSE

Tyre Tracks

Vehicle body tracks

Direction of travel

NOTES

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REVISIONS

Rev	Date	Description	By	App
P01	25/11/22	First Issue.	GP	DC

Apex TRANSPORT PLANNING

11-13 PENHILL ROAD
CARDIFF
CF11 9PQ

t: 02920 619 361
e: info@apextp.co.uk

CLIENT

OBSIDIAN DEVELOPMENTS

PROJECT

LAND AT DAIRY CREST, WHITLAND

TITLE

SWEPT PATH ANALYSIS SHOWING A LARGE 11.39m REFUSE VEHICLE TURNING WITHIN THE SITE.

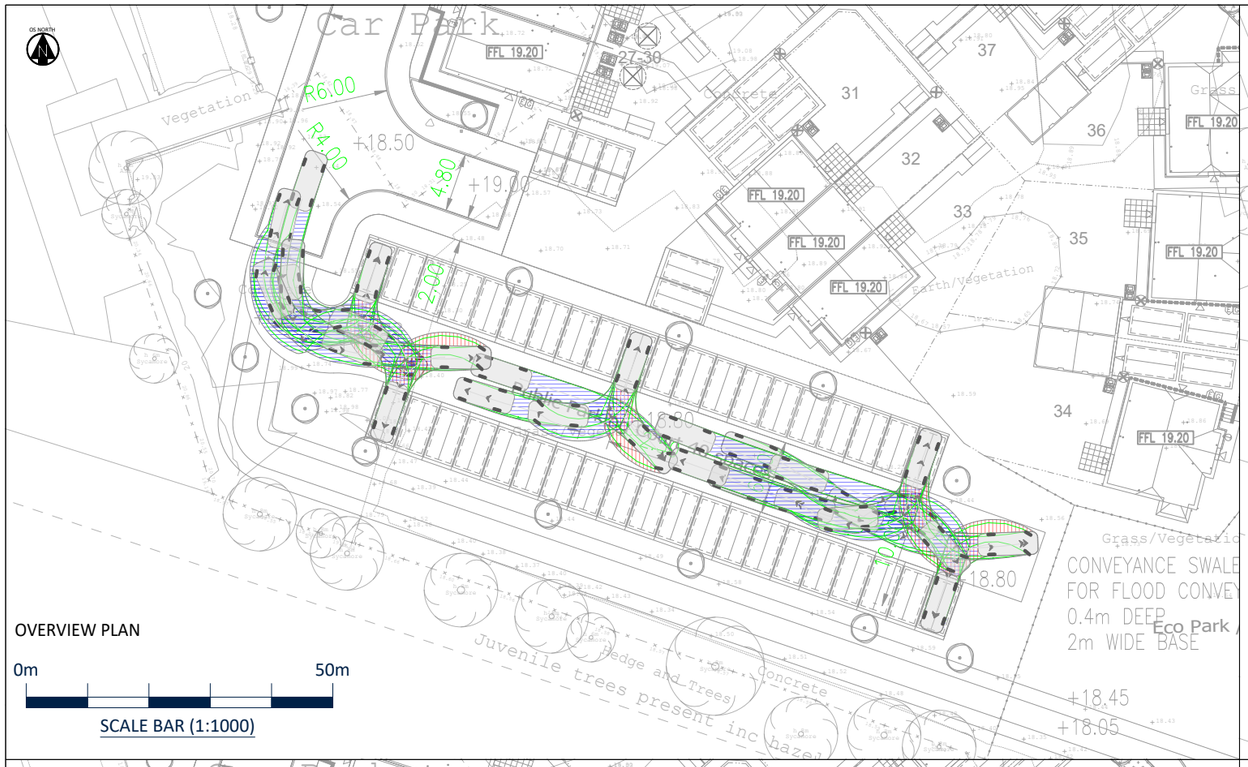
PROJECT NO. C22-109

SCALE @ A3 1:500 (UNLESS STATED)

STATUS DESCRIPTION INFORMATION

STATUS S2

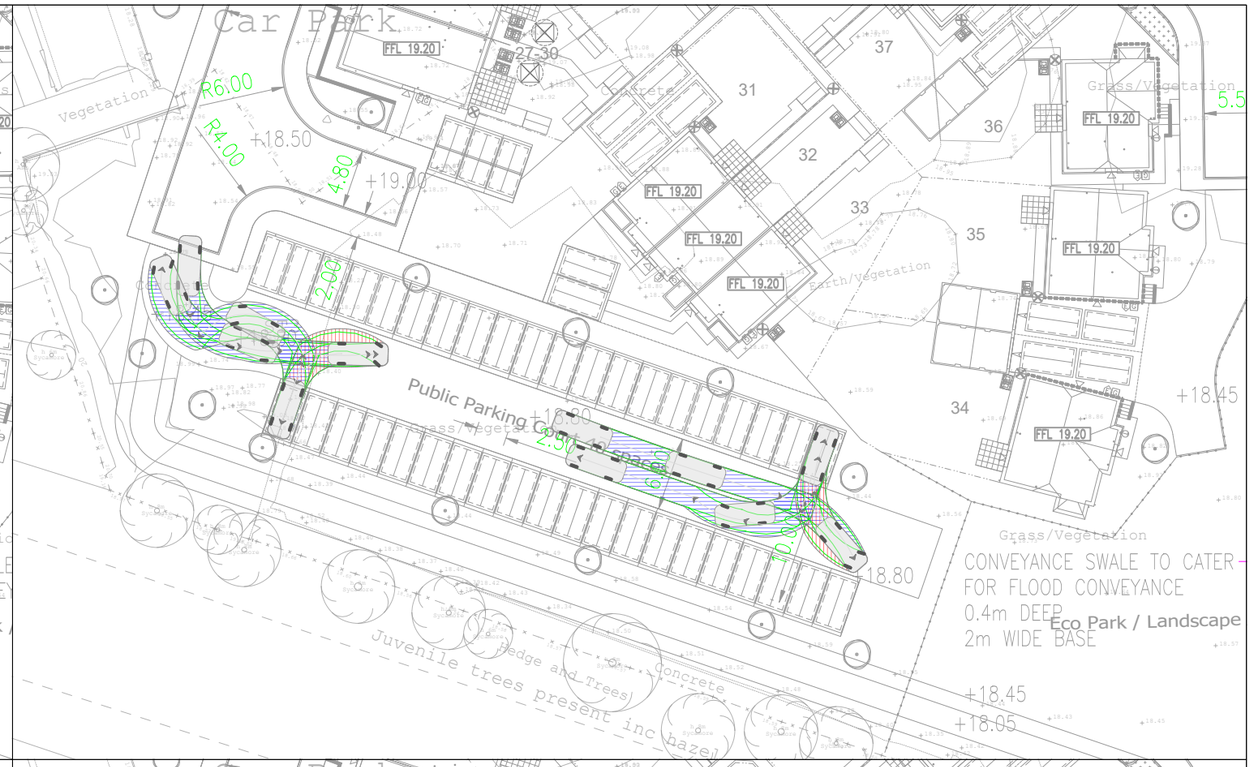
DRAWING NO. C22109-ATP-DR-TP-003

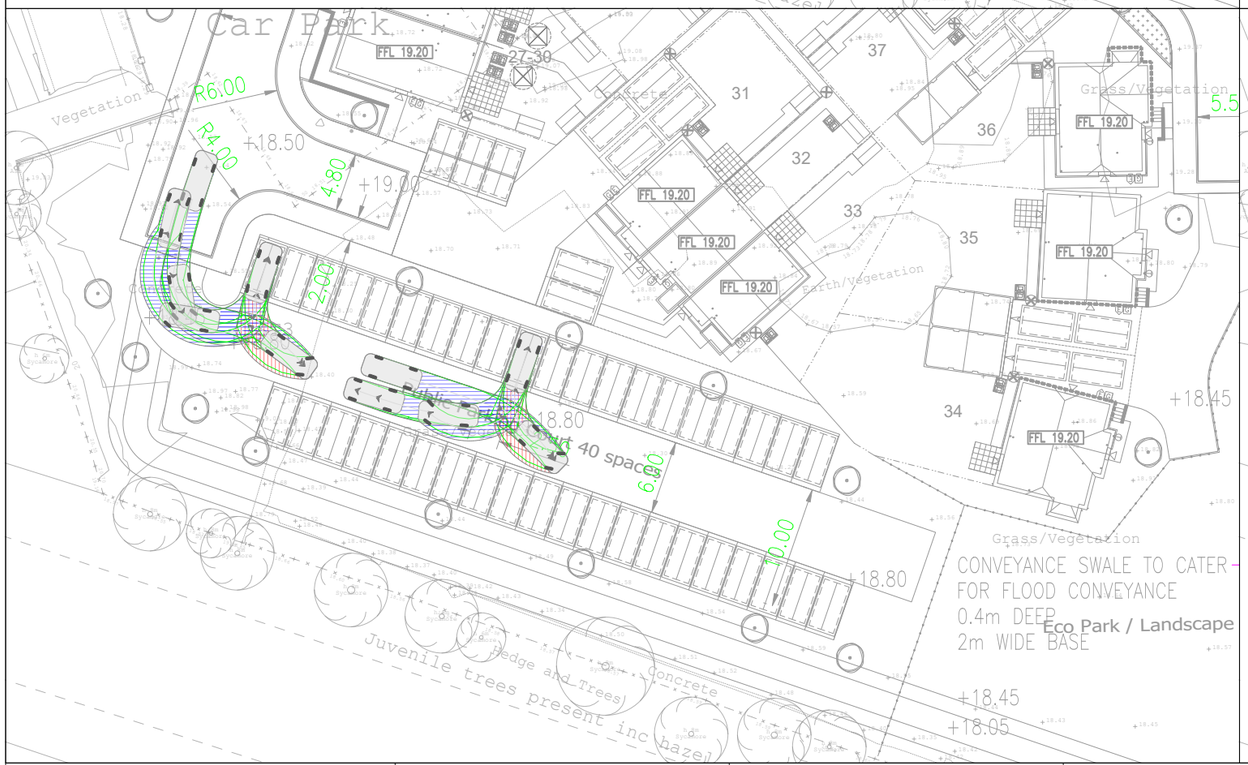


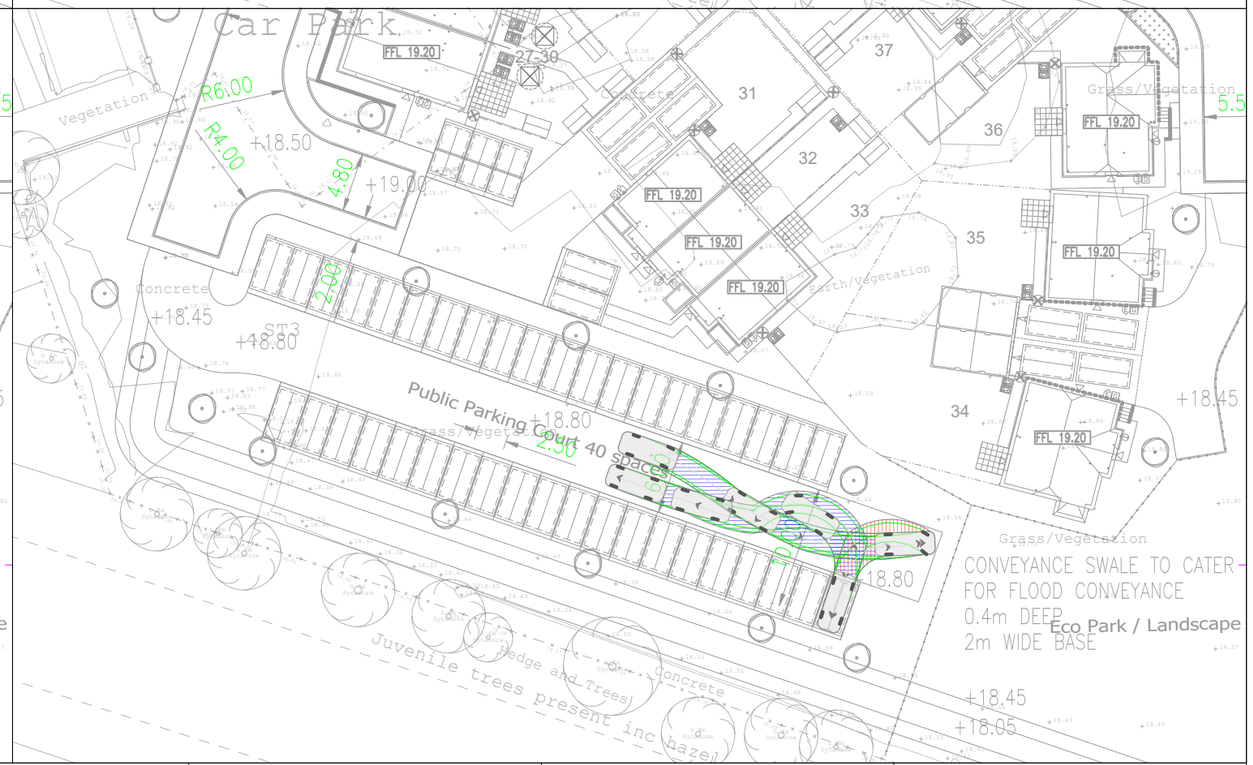
OVERVIEW PLAN

0m 50m

SCALE BAR (1:1000)







SCALE BAR

0m 10m 20m

SCALE BAR (1:500)

DESIGN VEHICLE

NOTES

REVISIONS *(CONTINUED)*

REVISIONS

Rev	Date	Description	By	App
P01	25/11/22	First issue.	SD	DC

Apex TRANSPORT PLANNING
11-13 PENHILL ROAD
CARDIFF
CF11 9PQ
t: 02920 619 361
e: info@apextp.co.uk

CLIENT
OBSIDIAN DEVELOPMENTS

PROJECT
LAND AT DAIRY CREST, WHITLAND

TITLE
SWEPT PATH ANALYSIS USING LARGE CAR

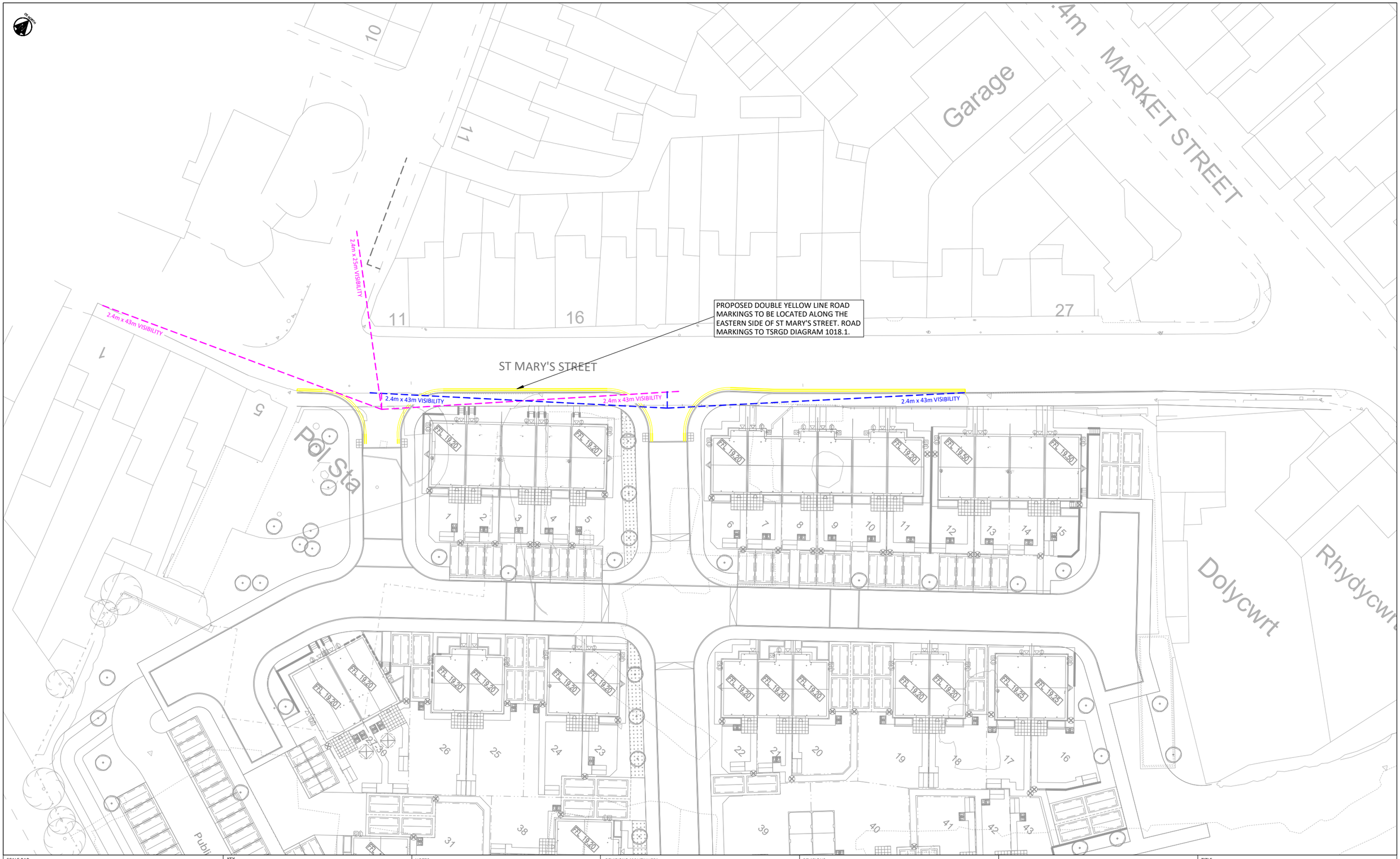
PUBLIC CAR PARK

PROJECT NO.	SCALE @ A3
C22-109	1:500 (UNLESS STATED)

STATUS DESCRIPTION	STATUS
INFORMATION	S2

DRAWING NO.
C22109-ATP-DR-TP-004

Appendix F Proposed Site Access Visibility Splays and Proposed Parking Restrictions



SCALE BAR

0m 10m 20m

SCALE BAR (1:500)

KEY

NOTES

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4. All land ownership details and rights of way to be confirmed.
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6. Please do not scale from this drawing.

REVISIONS *(CONTINUED)*

REVISIONS

Rev	Date	Description	By	App
P01	27/11/22	First Issue.	GP	DC

Apex TRANSPORT PLANNING
11-13 PENHILL ROAD
CARDIFF
CF11 9PQ
t: 02920 619 361
e: info@apextp.co.uk

CLIENT
AMITY PLANNING

PROJECT
LAND AT DAIRY CREST, WHITLAND

TITLE
SITE ACCESS VISIBILITY AND PROPOSED TRO PLAN

ST MARY'S STREET

PROJECT NO.	SCALE @ A3
C22-109	1:250

STATUS DESCRIPTION	STATUS
INFORMATION	S2

DRAWING NO.
C22109-ATP-DR-TP-001

Appendix G TRICS Output Reports

Calculation Reference: AUDIT-502501-221124-1141

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:

07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days
09	NORTH		
	CB	CUMBRIA	1 days
10	WALES		
	PS	POWYS	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
Actual Range: 14 to 50 (units:)
Range Selected by User: 6 to 200 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 30/06/22

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	2 days
Tuesday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town Centre	3

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	3

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3	3 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	1 days
10,001 to 15,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

1.1 to 1.5	2 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	3 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	3 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 CB-03-A-05 DETACHED/TERRACED HOUSING CUMBRIA
MACADAM WAY
PENRITH

Edge of Town Centre
Residential Zone
Total No of Dwellings: 50
Survey date: TUESDAY *21/06/16* *Survey Type: MANUAL*

2 NY-03-A-03 PRIVATE HOUSING NORTH YORKSHIRE
NEW ROW
BOROUGHBRIDGE

Edge of Town Centre
Residential Zone
Total No of Dwellings: 14
Survey date: MONDAY *15/09/08* *Survey Type: MANUAL*

3 PS-03-A-01 MIXED HOUSES POWYS
BRYN GLAS
WELSHPOOL

Edge of Town Centre
Residential Zone
Total No of Dwellings: 16
Survey date: MONDAY *11/05/15* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
HF-03-A-01	Not similar
NE-03-A-03	Not similar

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	27	0.075	3	27	0.237	3	27	0.312
08:00 - 09:00	3	27	0.163	3	27	0.400	3	27	0.563
09:00 - 10:00	3	27	0.225	3	27	0.138	3	27	0.363
10:00 - 11:00	3	27	0.050	3	27	0.113	3	27	0.163
11:00 - 12:00	3	27	0.125	3	27	0.138	3	27	0.263
12:00 - 13:00	3	27	0.175	3	27	0.200	3	27	0.375
13:00 - 14:00	3	27	0.263	3	27	0.287	3	27	0.550
14:00 - 15:00	3	27	0.163	3	27	0.150	3	27	0.313
15:00 - 16:00	3	27	0.263	3	27	0.275	3	27	0.538
16:00 - 17:00	3	27	0.338	3	27	0.150	3	27	0.488
17:00 - 18:00	3	27	0.350	3	27	0.263	3	27	0.613
18:00 - 19:00	3	27	0.237	3	27	0.225	3	27	0.462
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.427			2.576			5.003

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	14 - 50 (units:)
Survey date date range:	01/01/00 - 30/06/22
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	2

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Appendix H Junctions 10 Modelling Results – St Mary's Street / Market Street Junction

Junctions 10

PICADY 10 - Priority Intersection Module

Version: 10.0.4.1693

Filename: St Mary's St Junction.j10
Path: C:\Users\Apex Modelling\Desktop\Whitland - St Mary's St Junction
Report generation date: 28/11/2022 09:15:50

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2022 Base									
Stream B-AC	D1	0.2	10.11	0.19	B	D2	0.2	9.79	0.18	A
Stream C-AB		0.0	5.27	0.01	A		0.0	5.06	0.01	A
	2032 Base									
Stream B-AC	D3	0.3	10.55	0.21	B	D4	0.2	10.14	0.19	B
Stream C-AB		0.0	5.27	0.01	A		0.0	5.04	0.01	A
	2032 Base + Development									
Stream B-AC	D5	0.3	11.20	0.26	B	D6	0.3	10.58	0.22	B
Stream C-AB		0.0	5.29	0.02	A		0.0	5.09	0.02	A

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	Priority Junction Model
Location	St Mary's St / Market St Junction
Site number	
Date	23/11/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	C22109
Enumerator	DESKTOP-DDJJ6HG\Apex Modelling
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	mph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		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)
D1	2022 Base	AM	ONE HOUR	07:45	09:15	15
D2	2022 Base	PM	ONE HOUR	15:00	16:30	15
D3	2032 Base	AM	ONE HOUR	07:45	09:15	15
D4	2032 Base	PM	ONE HOUR	15:00	16:30	15
D5	2032 Base + Development	AM	ONE HOUR	07:45	09:15	15
D6	2032 Base + Development	PM	ONE HOUR	15:00	16:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2022 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.71	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.71	A

Arms

Arms

Arm	Name	Description	Arm type
A	Market St (B4328) - East		Major
B	St Mary's Street		Minor
C	Market St (B4328) - West		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	5.00			180.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	23	24

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	497	0.094	0.239	0.150	0.341
B-C	639	0.102	0.258	-	-
C-B	678	0.274	0.274	-	-

The slopes and intercepts shown above include custom intercept adjustments only.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2022 Base	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	244	100.000
B		✓	77	100.000
C		✓	134	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	9	235
	B	56	0	21
	C	129	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	6
	B	0	0	0
	C	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.19	10.11	0.2	B
C-AB	0.01	5.27	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	58	469	0.124	57	0.1	8.740	A
C-AB	4	687	0.006	4	0.0	5.271	A
C-A	96			96			
A-B	7			7			
A-C	177			177			

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	69	457	0.151	69	0.2	9.271	A
C-AB	5	690	0.008	5	0.0	5.258	A
C-A	115			115			
A-B	8			8			
A-C	211			211			

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	85	441	0.192	85	0.2	10.099	B
C-AB	7	693	0.010	7	0.0	5.240	A
C-A	141			141			
A-B	10			10			
A-C	259			259			

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	85	441	0.192	85	0.2	10.111	B
C-AB	7	693	0.010	7	0.0	5.245	A
C-A	141			141			
A-B	10			10			
A-C	259			259			

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	69	457	0.151	69	0.2	9.292	A
C-AB	5	690	0.008	5	0.0	5.267	A
C-A	115			115			
A-B	8			8			
A-C	211			211			

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	58	469	0.124	58	0.1	8.770	A
C-AB	4	687	0.006	4	0.0	5.274	A
C-A	96			96			
A-B	7			7			
A-C	177			177			

2022 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.60	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.60	A

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)
D2	2022 Base	PM	ONE HOUR	15:00	16:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	200	100.000
B		✓	72	100.000
C		✓	174	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	9	191
	B	53	0	19
	C	169	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C

From	A	0	0	5
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.18	9.79	0.2	A
C-AB	0.01	5.06	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

15:00 - 15:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	54	473	0.115	54	0.1	8.583	A
C-AB	5	716	0.006	5	0.0	5.059	A
C-A	126			126			
A-B	7			7			
A-C	144			144			

15:15 - 15:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	65	462	0.140	65	0.2	9.060	A
C-AB	6	724	0.008	6	0.0	5.008	A
C-A	151			151			
A-B	8			8			
A-C	172			172			

15:30 - 15:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	79	447	0.177	79	0.2	9.783	A
C-AB	7	736	0.010	7	0.0	4.940	A
C-A	184			184			
A-B	10			10			
A-C	210			210			

15:45 - 16:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	79	447	0.177	79	0.2	9.793	A
C-AB	7	736	0.010	7	0.0	4.942	A
C-A	184			184			
A-B	10			10			
A-C	210			210			

16:00 - 16:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	65	462	0.140	65	0.2	9.076	A
C-AB	6	724	0.008	6	0.0	5.016	A
C-A	151			151			
A-B	8			8			
A-C	172			172			

16:15 - 16:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	54	473	0.115	54	0.1	8.609	A
C-AB	5	716	0.006	5	0.0	5.062	A
C-A	126			126			
A-B	7			7			
A-C	144			144			

2032 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.79	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.79	A

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)
D3	2032 Base	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	265	100.000
B		✓	84	100.000
C		✓	145	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	10	255
	B	61	0	23
	C	140	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C

From	A	0	0	5
	B	0	0	0
	C	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.21	10.55	0.3	B
C-AB	0.01	5.27	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	63	464	0.136	63	0.2	8.957	A
C-AB	4	688	0.006	4	0.0	5.263	A
C-A	105			105			
A-B	8			8			
A-C	192			192			

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	76	451	0.167	75	0.2	9.574	A
C-AB	6	691	0.008	5	0.0	5.247	A
C-A	125			125			
A-B	9			9			
A-C	229			229			

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	92	434	0.213	92	0.3	10.537	B
C-AB	7	695	0.010	7	0.0	5.226	A
C-A	153			153			
A-B	11			11			
A-C	281			281			

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	92	434	0.213	92	0.3	10.554	B
C-AB	7	695	0.010	7	0.0	5.229	A
C-A	153			153			
A-B	11			11			
A-C	281			281			

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	76	451	0.167	76	0.2	9.597	A
C-AB	6	691	0.008	6	0.0	5.254	A
C-A	125			125			
A-B	9			9			
A-C	229			229			

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	63	464	0.136	63	0.2	8.993	A
C-AB	4	688	0.006	4	0.0	5.268	A
C-A	105			105			
A-B	8			8			
A-C	192			192			

2032 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.65	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.65	A

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)
D4	2032 Base	PM	ONE HOUR	15:00	16:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	217	100.000
B		✓	78	100.000
C		✓	188	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	10	207
	B	57	0	21
	C	183	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C

From	A	0	0	5
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.19	10.14	0.2	B
C-AB	0.01	5.04	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

15:00 - 15:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	59	469	0.125	58	0.1	8.757	A
C-AB	5	719	0.006	5	0.0	5.036	A
C-A	137			137			
A-B	8			8			
A-C	156			156			

15:15 - 15:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	70	457	0.153	70	0.2	9.293	A
C-AB	6	728	0.008	6	0.0	4.980	A
C-A	163			163			
A-B	9			9			
A-C	186			186			

15:30 - 15:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	86	441	0.195	86	0.2	10.127	B
C-AB	8	741	0.010	8	0.0	4.905	A
C-A	199			199			
A-B	11			11			
A-C	228			228			

15:45 - 16:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	86	441	0.195	86	0.2	10.141	B
C-AB	8	741	0.010	8	0.0	4.910	A
C-A	199			199			
A-B	11			11			
A-C	228			228			

16:00 - 16:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	70	457	0.153	70	0.2	9.316	A
C-AB	6	728	0.008	6	0.0	4.986	A
C-A	163			163			
A-B	9			9			
A-C	186			186			

16:15 - 16:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	59	469	0.125	59	0.1	8.788	A
C-AB	5	719	0.006	5	0.0	5.041	A
C-A	137			137			
A-B	8			8			
A-C	156			156			

2032 Base + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		2.20	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.20	A

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)
D5	2032 Base + Development	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	269	100.000
B		✓	101	100.000
C		✓	148	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	14	255
	B	73	0	28
	C	140	8	0

Vehicle Mix

Heavy Vehicle Percentages

	To			

		A	B	C
From	A	0	0	6
	B	0	0	0
	C	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.26	11.20	0.3	B
C-AB	0.02	5.29	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	76	463	0.164	75	0.2	9.257	A
C-AB	7	687	0.010	7	0.0	5.290	A
C-A	104			104			
A-B	11			11			
A-C	192			192			

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	91	450	0.202	91	0.2	9.997	A
C-AB	9	690	0.013	9	0.0	5.281	A
C-A	124			124			
A-B	13			13			
A-C	229			229			

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	111	433	0.257	111	0.3	11.181	B
C-AB	11	694	0.016	11	0.0	5.268	A
C-A	152			152			
A-B	15			15			
A-C	281			281			

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	111	433	0.257	111	0.3	11.202	B
C-AB	11	694	0.016	11	0.0	5.274	A
C-A	152			152			
A-B	15			15			
A-C	281			281			

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	91	450	0.202	91	0.3	10.028	B
C-AB	9	690	0.013	9	0.0	5.290	A
C-A	124			124			
A-B	13			13			
A-C	229			229			

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	76	463	0.164	76	0.2	9.306	A
C-AB	7	687	0.010	7	0.0	5.294	A
C-A	104			104			
A-B	11			11			
A-C	192			192			

2032 Base + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Major arm width	Arm C - Major arm geometry	For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.92	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.92	A

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)
D6	2032 Base + Development	PM	ONE HOUR	15:00	16:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	227	100.000
B		✓	89	100.000
C		✓	193	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	20	207
	B	65	0	24
	C	183	10	0

Vehicle Mix

Heavy Vehicle Percentages

	To			

		A	B	C
From	A	0	0	5
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.22	10.58	0.3	B
C-AB	0.02	5.09	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

15:00 - 15:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	67	467	0.143	66	0.2	8.971	A
C-AB	9	717	0.013	9	0.0	5.083	A
C-A	136			136			
A-B	15			15			
A-C	156			156			

15:15 - 15:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	80	455	0.176	80	0.2	9.591	A
C-AB	12	726	0.016	12	0.0	5.036	A
C-A	162			162			
A-B	18			18			
A-C	186			186			

15:30 - 15:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	98	438	0.224	98	0.3	10.561	B
C-AB	15	738	0.021	15	0.0	4.975	A
C-A	197			197			
A-B	22			22			
A-C	228			228			

15:45 - 16:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	98	438	0.224	98	0.3	10.580	B
C-AB	15	738	0.021	15	0.0	4.978	A
C-A	197			197			
A-B	22			22			
A-C	228			228			

16:00 - 16:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	80	455	0.176	80	0.2	9.617	A
C-AB	12	726	0.016	12	0.0	5.045	A
C-A	162			162			
A-B	18			18			
A-C	186			186			

16:15 - 16:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	67	467	0.143	67	0.2	9.009	A
C-AB	9	717	0.013	9	0.0	5.088	A
C-A	136			136			
A-B	15			15			
A-C	156			156			