

Prepared on behalf of

Sirius Planning Limited

**Proposed Plastic Recycling and Processing Facility
Land off Goat Mill Road, Merthyr Tydfil**

Transport Assessment

Control Sheet

CLIENT: Sirius Planning Limited

PROJECT TITLE: Proposed Plastic Recycling and Processing Facility
Land off Goat Mill Road, Merthyr Tydfil

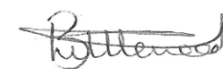
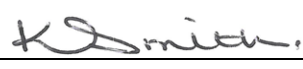
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This document has been prepared in accordance with procedure OP/P02 of the *Fairhurst Quality and Environmental Management System*

This document has been prepared in accordance with the instructions of the client, Sirius Planning Limited, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

Acknowledgements:

OpenRouteService has been used to generate walking and cycling isochrones. Appropriate attribution is provided alongside each image produced.

'Google My Maps' has been used to produce figures for illustrative purposes only. Appropriate attribution is provided alongside each image produced.

Accident data has been reviewed using www.crashmap.co.uk

The TRICS database has been used in this report to calculate traffic generations.

2011 Census: Method of Travel to Work data has been used to estimate modal split.

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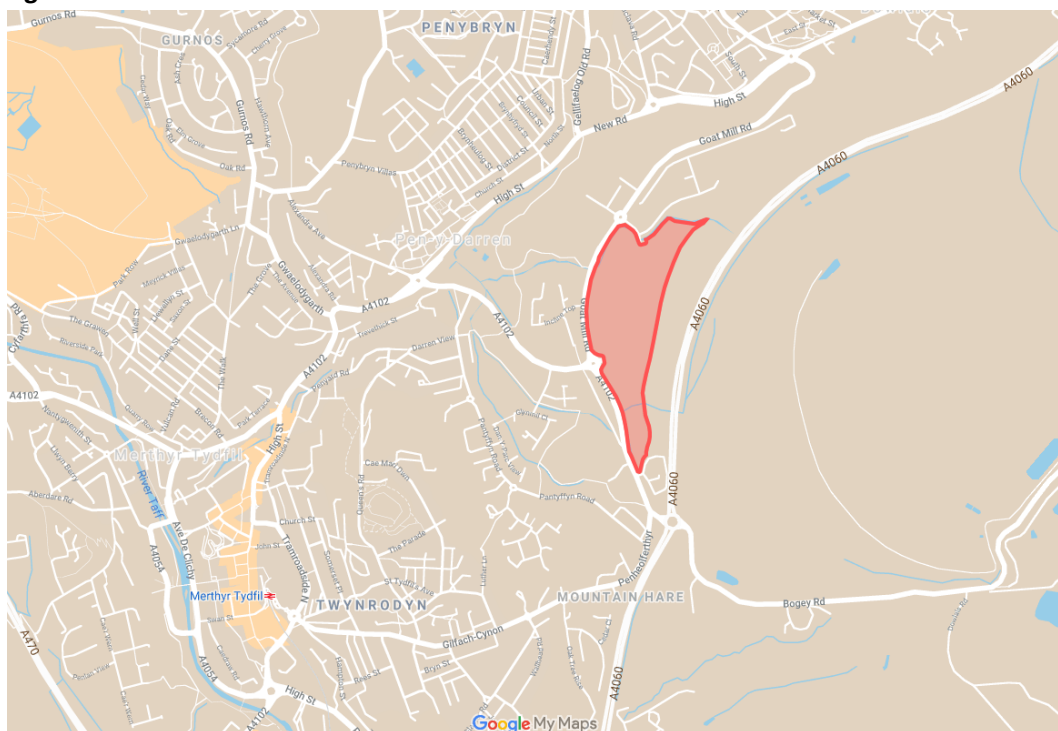
APPENDIX D

Traffic Distribution % Diagram

1 Introduction

- 1.1 Sanderson Associates (Consulting Engineers) Limited has been appointed by Sirius Planning Limited to advise on traffic and transportation issues surrounding the development of a plastic recycling and processing facility on land off Goat Mill Road, Merthyr Tydfil by their client Jayplas. The location of the site is shown in Figure 1.

Figure 1 – Site Location



[Map Data © 2021]

- 1.2 The development proposals broadly comprise the erection of two industrial buildings within which the plastic material will be sorted and processed. One of the buildings will also accommodate a two storey office/administration area. A total Gross Floor Area of 22,260m² is proposed along with external hardstanding/storage areas.
- 1.3 As a result of the COVID-19 pandemic during 2020/2021 it has not been possible, or appropriate, to commission traffic surveys to establish a baseline situation on the highway network in the vicinity of the site. Therefore, a Scoping Note was submitted to Merthyr Tydfil Borough Council (MTBC) on 5 June 2020.

1.4 Initial comments were received from the Highways Officer at MTBC on 19 June 2020, which are replicated below, and which have been addressed within this Transport Assessment and accompanying Travel Plan:-

- a) *due to the current pandemic situation it is considered not appropriate to undertake a Transport Assessment, or in the near future, as results are unlikely to be representative of 'normal conditions',*
- b) *proposal to accept/process 150,000 tonnes of 'plastic waste',*
- c) *24hr/7 day operations, deliveries to be received 06:00 & 18:00, internal operations will be on daily 4 shift pattern*
- d) *TRICS assessment expected for the development indicates just over 1 vehicle per minute during network peaks'*
- e) *OGV movements, 1 OGV trip per 6minutes/30 minutes in the AM & PM peaks*
- f) *High Street Dowlais has 7.5 ton weight limit, except for access*
- g) *presumed OGV traffic to utilise the A4060/A4102/Bogey Road junction*
- h) *no discernible impact on the operation of the highway network by the volume of OGV trips*
- i) *Travel Plan to be submitted with the Transport assessment*

In conclusion based on the indicative information/assumptions provided at this stage no major concerns however analysis of future submissions will be considered on their merits.

1.5 Planning Policy Context

National Planning Policy

1.5.1 **Planning Policy Wales (PPW)** 'Edition 11' was released on the 24th February 2021 and sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales.

1.5.2 The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation.

1.5.3 In relation to Sustainable Transport, PPW (paragraph 4.1.11) states the following:

“Development proposals must seek to maximise accessibility by walking, cycling and public transport, by prioritising the provision of appropriate on-site infrastructure and, where necessary, mitigating transport impacts through the provision of off-site measures, such as the development of active travel routes, bus priority infrastructure and financial support for public transport services.”

1.5.4 PPW TAN 18: Transport - Annex D: Transport Assessment states that;

“Transport assessment (TA) should clearly set out what the impact of a proposed development, or redevelopment, are likely to be so that they are easily understood. It should be based on the person and freight trips generated by the development and include analysis of potential effects on existing movement patterns.”

Local Planning Policy

The Adopted Merthyr Tydfil Replacement Local Development Plan 2016 - 2031

1.5.5 The Merthyr Tydfil Replacement Local Development Plan (LDP) 2016 - 2031 provides the local planning policy framework for the area and was adopted by Council on 29th January 2020. The Council also provide various Supplementary Planning Guidance (SPG) which include information on specific policies and topic areas. Whilst some SPG's refer to the previous adopted LDP (2006 – 2021), the adopted SPG's remain material considerations in the planning application process.

1.5.6 The policies considered relevant to the traffic and transportation elements of the proposed development are referred to overleaf;

Policy SW12: Improving the Transport Network

“Development that encourages a modal shift towards sustainable transport will be supported, including the enhancement of pedestrian, cycle, rail and bus facilities, in addition to any necessary road improvements. Development proposals will be expected to demonstrate how they reduce the need to travel and encourage the use of sustainable transport.”

LDP Objective7 Transport

“To support an integrated transport system, promote active travel and ensure new developments are accessible by walking, cycling and public transport links.”

- 1.5.7 The site is identified on MTBC’s Proposals Map as an Allocated Employment Site (Policy ref: EcW-1.2). The site, referred to as “Goatmill Road” is summarised as follows:

“This 16.98 hectare site (14.75ha net) is allocated for B1(b), B1(c), B2 and B8 uses. The site is currently owned by the Council and lies to the South and East of a larger Goat Mill Road industrial area. The Council’s Engineers have advised that the principle of development is considered acceptable. There is existing highway access available immediately adjacent to the site although local improvements are likely to be required. Access is likely to be gained from two existing roundabouts on Goat Mill Road.”

- 1.5.8 Policy EcW-1.2 also states that:

“A comprehensive Transport Assessment or Road Safety Audit (RSA) (depending on the scale of the proposal) should be carried out to identify the required local and wider highway network improvements.”

1.6 The Development in Planning Policy Context

- 1.6.1 This Transport Assessment has been prepared to accompany a planning application for the development and to satisfy the assessment requirements set out within National and Local Planning Policies.

-
- 1.6.2 The following chapters of this report provide details relating to the existing site and local highway network as well as an audit of the site's accessibility by sustainable travel modes. The information provided demonstrates that there are no inherent accident issues on the local highway network and that the sites location provides a reasonable level of opportunity to travel sustainably.
- 1.6.3 A traffic impact assessment has also been undertaken which demonstrates that the development is unlikely to have a material adverse impact upon the operation or safety of the local highway network.
- 1.6.4 A Travel Plan is submitted alongside the Transport Assessment which sets out how the developer will promote the uptake of sustainable travel, so far as is practicable, and reduce the number of single occupancy vehicle trips generated by the site. The Travel Plan includes details of the Travel Plan Co-ordinator and their duties, measures to promote sustainable travel, Travel Plan targets and how the performance of the Travel Plan will be monitored.

2 Existing Situation

2.1 *The Site and the Surrounding Area*

2.1.1 The site is an allocated employment site (Policy ref: EcW-1.2) located approximately 2km north-east of Merthyr Tydfil centre on land broadly bounded by the A4060 to the east and Goat Mill Road to the west.

2.1.2 The site comprises an area of land that has been subjected to past historical development, which has since been reclaimed and landscaped. The site does not benefit from any extant planning permission and is currently used informally for recreational purposes.

2.1.3 Immediately to the north of the site is the existing Goat Mill Road Industrial Estate which accommodates a number of industrial uses that generally fall within the B2 and B8 Use Classes.

2.2 *Highway Network*

2.2.1 The site has two existing points of access on to the public highway, these being a 4-arm roundabout junction with Goat Mill Road / 'Triumph' access to the north of the site and a 4-arm roundabout junction with Goat Mill Road / A4102 towards the southern end of the site.

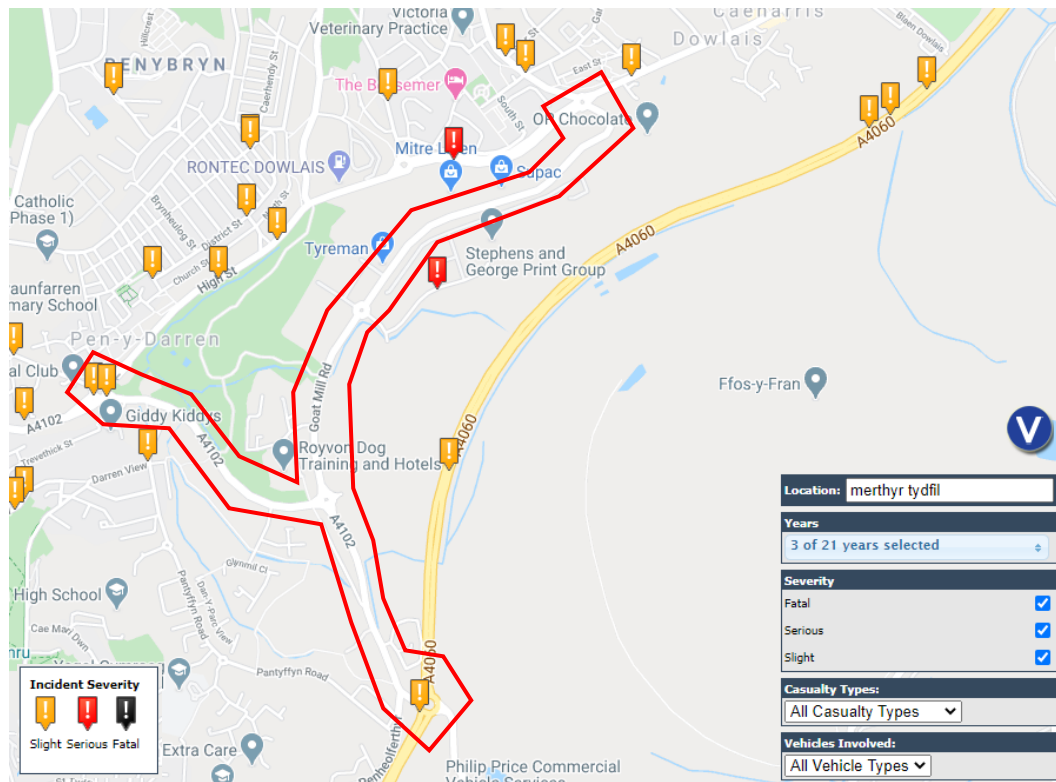
2.2.2 Goat Mill Road is a two-lane single carriageway that is subject to a speed limit of 30mph. The road is street-lit and provides pedestrian footways on both sides. The road predominantly serves existing industrial development to the north of the site, but also provides access to small clusters of residential development towards the south.

2.2.3 At its northern extent, Goat Mill Road forms the southern arm of a 4-arm roundabout junction with High Street and Victoria Street. At its southern extent, Goat Mill Road forms the western arm of a 4-arm roundabout junction with the A4060 and Bogey Road.

- 2.2.4 High Street provides an alternative route to / from the A4060 and A465 to the north-east of the site, however, this route features a traffic regulation order (TRO) prohibiting vehicles over 7.5T except for access. As such, the vast majority of HGV traffic travelling to / from the site would do so via the Goat Mill Road / A4060 / Bogey Road junction to the south of the site.
- 2.2.5 High Street is also a two-lane single carriageway that is subject to a speed limit of 30mph and has street lighting and footways on both sides of the road. Traffic calming measures in the form of speed humps are also present through the village of Dowlais.
- 2.2.6 The A4060 is a trunk road which features a dual carriageway with central reservation. The road effectively serves as the eastern bypass to Merthyr Tydfil and provides a connection between the A470 to the south of Merthyr Tydfil and the A465 to the north.
- 2.3 Accident History**
- 2.3.1 In line with national guidance, this section of the report provides an analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent 3-year period.
- 2.3.2 For the purpose of this assessment, the study area includes the full extent of Goat Mill Road between High Street and the A4060 and the A4102 between Goat Mill Road and High Street / Alexandra Avenue. The study area is outlined in red in Figure 2.
- 2.3.3 Figure 2 is an extract from the Crashmap databased which identifies the location and injury severity of all recorded incidents that have occurred within the latest three year period (1st Jan 2017 – 31st Dec 2019).

Figure 2 – Accident Data

[www.crashmap.co.uk]



- 2.3.4 The Crashmap database identifies that in the last three year period there have been no recorded incidents of any injury severity along the full extent of Goat Mill Road.
- 2.3.5 One incident classified as being 'slight' in severity has been recorded along the A4060 on the northbound approach to the roundabout junction with Goat Mill Road and two incidents (both 'slight') have been recorded at / in close proximity to the A4102 / High Street / Alexandra Avenue roundabout junction.
- 2.3.6 It is therefore concluded that there are no existing collision trends or clusters of collisions that are likely to be exacerbated by traffic movements associated with the proposed development.

3 Accessibility by Sustainable Modes

3.1 Introduction

3.1.1 This section of the Transport Statement provides an audit of the accessibility of the site by the following modes of travel:

- Walking
- Cycling
- Public Passenger Transport (Bus and Rail)

3.1.2 This Transport Statement should be read in line with the Travel Plan submitted as part of the planning application which sets out a range of measures to encourage staff to travel to / from the site by more sustainable modes of travel, where practicable.

3.2 Accessibility on Foot

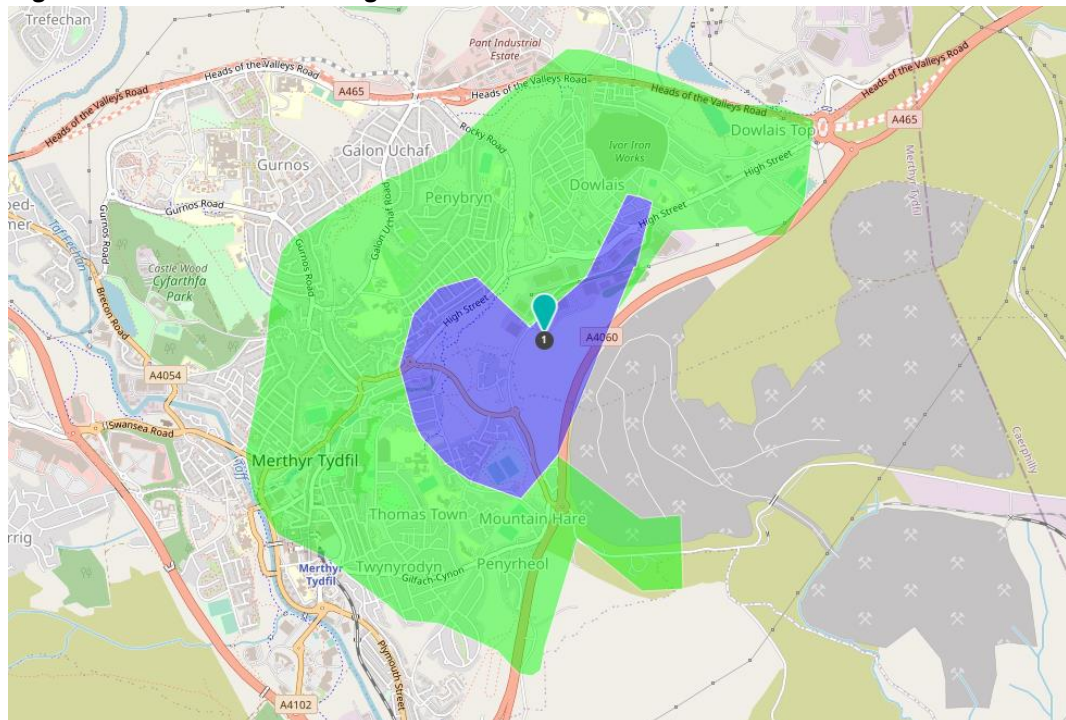
3.2.1 Walking is the most important mode of transport in the local level and can replace short car trips in journeys under 2km, which contribute to congestion and pollution, and the need for car parking.

3.2.2 The IHT publication “*Providing for Journeys on Foot*” also identifies suggested acceptable walking distances for commuting, school and sight-seeing as follows with times based on a walking speed of 1.4m/s.

Desirable 500m	6 minutes
Acceptable 1000m	12 minutes
Preferred maximum 2000m	24 minutes

3.2.3 Figure 3 identifies 1km and 2km walking isochrones from the site to provide an indication of the general extent to which the local area can be accessed on foot.

Figure 3 – 1km / 2km Walking Isochrones

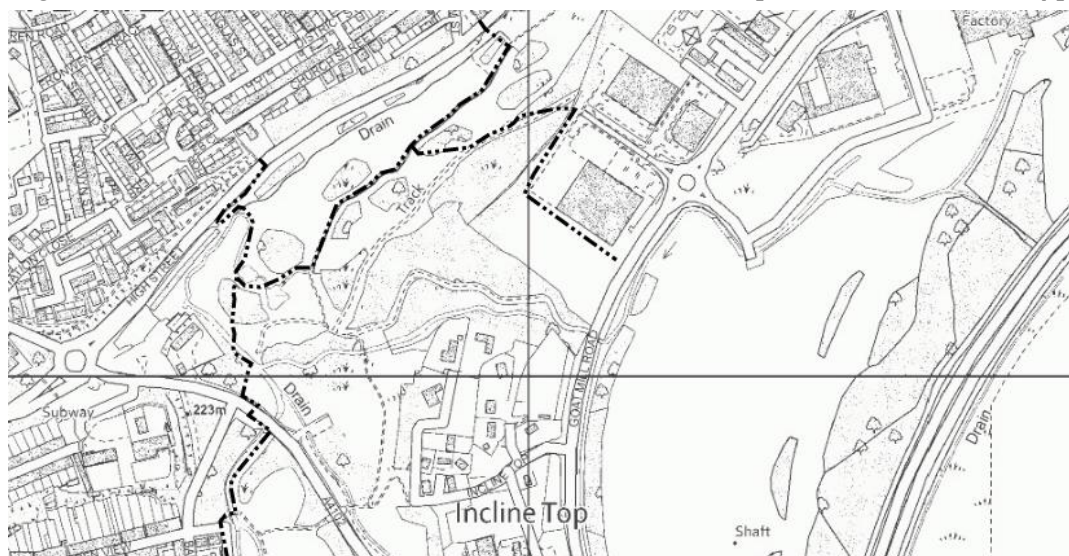


[© OpenStreetMap Contributors]

- 3.2.4 The following extract taken from the Replacement LDP 2016-2031 Constraints Map identifies the extent and location of existing Active Travel Routes (dashed black line) in proximity to the site. These active travel routes increase the pedestrian permeability of the surrounding area and reduce walking distances between the site and bus stop facilities along High Street.

Figure 4 – Active Travel Routes

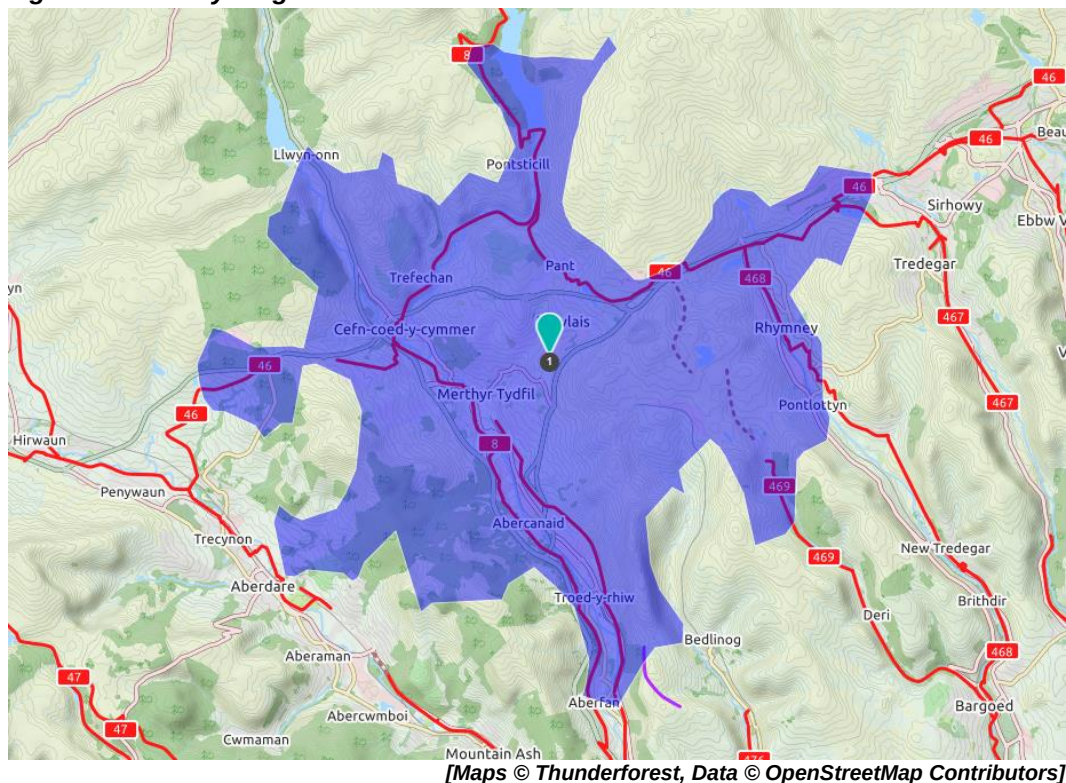
[MTBC Constraints Map]



3.3 Accessibility by Cycle

- 3.3.1 Like walking, cycling has an important part to play in reducing congestion, improving accessibility and reducing pollution. Cycling may also allow people without cars to reach destinations that they may otherwise be unable to reach.
- 3.3.2 CIHT's Planning for Cycling (2014) states that the majority of cycling trips are for short distances, with 80% being less than five miles and with 40% being less than two miles. However, the majority of trips by all modes are also short distances (67% are less than five miles, and 38% are less than two miles); therefore, the bicycle is a potential mode for many of these trips. Electric bicycles extend the range that can be cycled comfortably, and combined cycle-rail or cycle-bus journeys offer an alternative to car travel for many longer trips.
- 3.3.3 Figure 5 identifies an 8km (5 mile) cycling isochrone from the site as well as the surrounding cycle network.

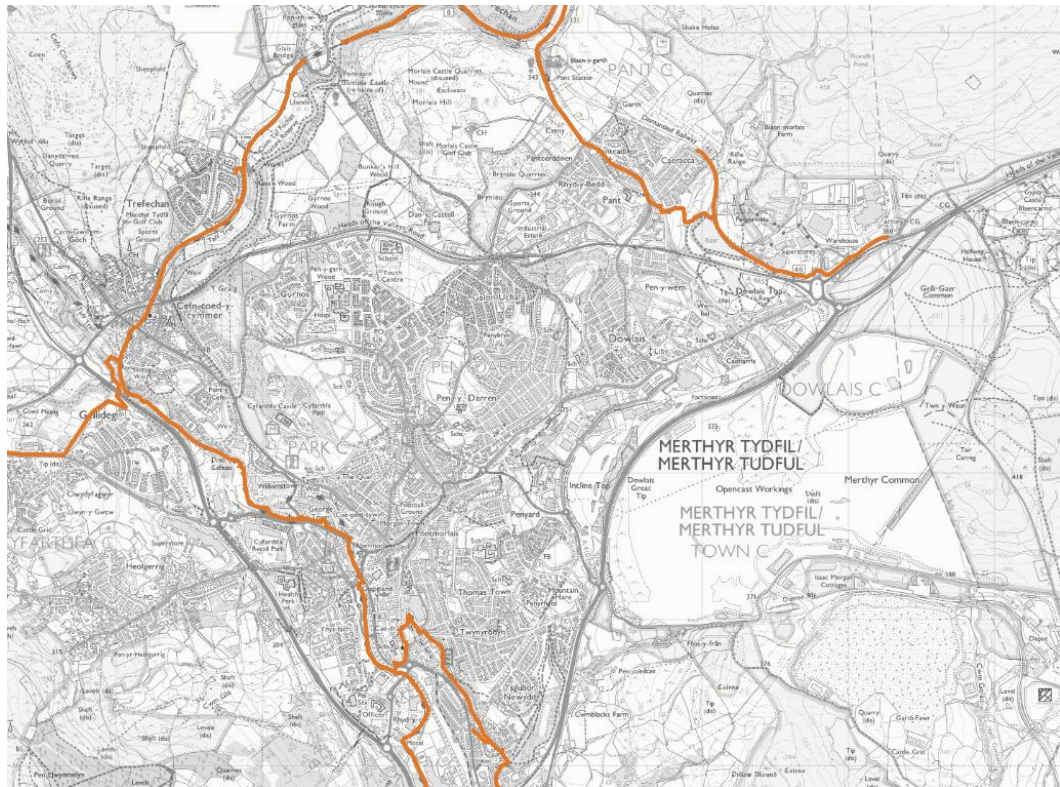
Figure 5 –8km Cycling Isochrone



3.3.4 The following extract from MTBC's Constraints Map shows the location and extent of Strategic Cycleways (orange line) in and around Merthyr Tydfil, including 'The Taff Trail' and 'Taith Trevithick Trail' to the south and the 'Heads of the Valley Trail' to the north. It is considered that these routes increase cycle connectivity through the borough and may be utilised by staff travelling to / from the site.

Figure 6 – Strategic Cycleways

[MTBC Constraints Map]

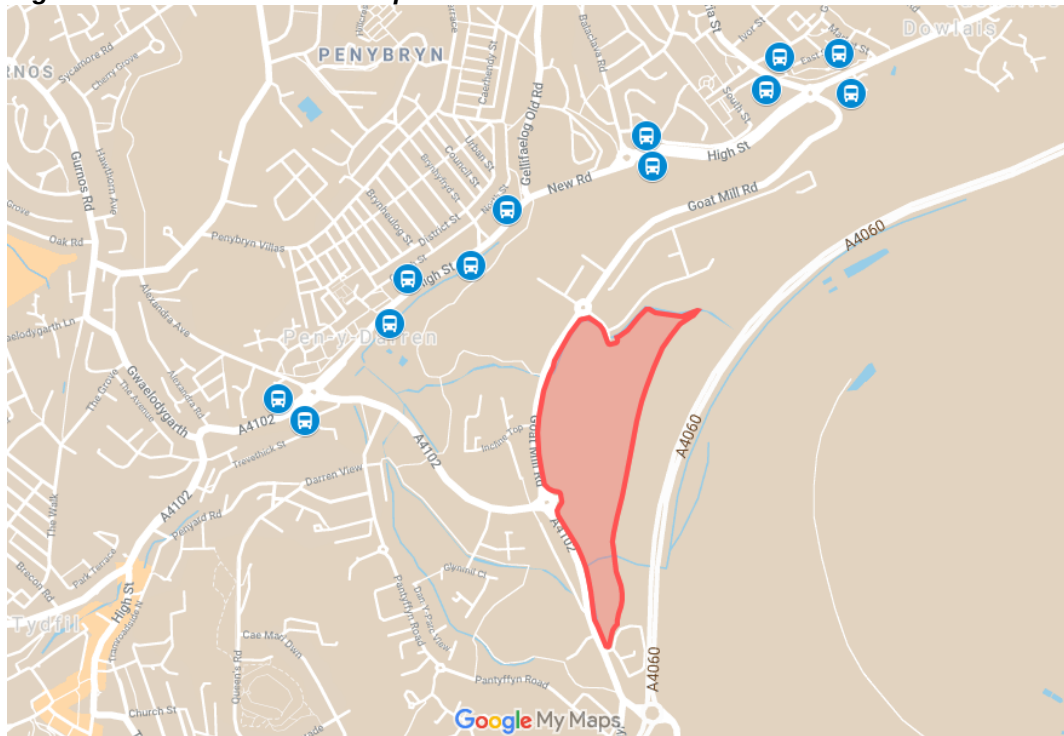


3.3.5 To accommodate cyclists within the site, a total of 8 N° cycle parking spaces are proposed in the form of sheltered 'Sheffield Stands'. Shower and changing facilities will also be available.

3.4 Accessibility by Bus

- 3.4.1 The closest bus stops to the site are located on High Street approximately 820m – 950m walking distance from the site entrance. The location of these stops as well as other local bus stops is illustrated on Figure 7.

Figure 7 – Location of Bus Stops



[Map data © 2021]

- 3.4.2 These bus stops provide access to bus service numbers 1, 2, 35, T4 TrawsCymru and X4. A summary of the service frequencies and route itineraries is provided in Table 1.

Table 1 – Summary of Bus Services

Service N°	Route	Mon - Sat Daytime	Mon - Sat Evening	Sunday
1	Merthyr Tydfil Bus Stn - Bargoed Interchange	120 mins	No Service	No Service
2	Merthyr Tydfil Bus Stn - Bargoed Interchange	120 mins	No Service	No Service
35	Merthyr Tydfil Bus Stn - Rhydybedd	30 mins	No Service	No Service
T4	Newtown - Cardiff	60 mins	No Service	No Service
X4	Merthyr Tydfil Bus Stn - Cardiff	60 mins	No Service	No Service

3.4.3 Collectively, around 5 bus services per hour are available through the week operating between Merthyr Tydfil town centre and destinations including Cardiff and Bargoed.

3.4.4 Currently there are no evening or Sunday services, however, it is noted that some services are operating temporary timetables due to the ongoing Covid-19 situation. It is possible that some evening and Sunday services may be re-introduced when it is appropriate to do so.

3.5 *Accessibility by Rail*

3.5.1 The nearest rail station to the site is Merthyr Tydfil Station, located approximately 2.3km south of the site within the town centre. The station is the terminus of the Merthyr branch of the Merthyr Line and passenger services are provided by Transport for Wales

3.5.2 The station operates a half-hourly service to and from Cardiff.

3.5.3 The station is considered to be accessible from the proposed development by cycle with cycle parking facilities available at the station, by bus as it is located around a 4 minute walk from the bus station, and by taxi as a taxi rank is provided outside the station.

3.6 *Accessibility Summary*

3.6.1 It is considered that the sites location provides a reasonable level of opportunity to travel sustainably. The uptake of sustainable travel modes will be promoted through the implementation of the Travel Plan, which should be read in conjunction with this report.

4 Development Proposals

4.1 Overview

- 4.1.1 The proposal is for the development of two employment warehouse units (total 22,260m² GFA) with internal office accommodation (1,000m² GFA) (Use Classes B1, B2 and B8) which will be used for the recycling and processing of plastic materials, an external storage area, car parking (73 spaces with an overflow car park of 17 spaces), weighbridge and gatehouse will also be provided as part of the development. A proposed site layout is included at **Appendix A**.

4.2 Operational Characteristics

- 4.2.1 The proposed site, when fully operational, will accept and process c. 150,000 tonnes of plastic materials per annum. The facility is designed with the objective of recovering value from materials destined for landfill and thus reducing the amount of waste being disposed by landfill.
- 4.2.2 It is envisaged that the plant and internal operations of the proposed development will operate continuously 24 hours per day and 7 days a week and the external operations, including when the facility will generally accept delivery and the dispatch of plastics, will operate during day time working hours, i.e. 06:00 to 18:00.
- 4.2.3 Once fully operational it is envisaged that the facility will have the capacity to provide direct full-time employment for approximately 110+ persons which will be a combination of skilled and semi-skilled work. The plant and internal operations will operate on a 24hr / 7 day basis and operatives will be employed on a daily 4-shift pattern.

4.3 Parking

- 4.3.1 The parking standards currently adopted by the Council are the CCS Wales Parking Standards (2008). The applicable standards for the proposed B2 Land Use fall under the 'Industry' category and vary by zones which reflect the sites location. The maximum parking standard for Industry in Zone 4 (Suburban or near Urban) is 1 space per 120m². This equates to a maximum provision of 186 spaces when applied to the proposed GFA of 22,260m².

- 4.3.2 The proposed provision of 90 car parking spaces (73 spaces plus 17 overflow spaces) equates to ~48% of the maximum standard set out in CSS Wales. Whilst this would appear to be a material departure from standard, it is considered that the provisions are appropriate when considered against the number of staff likely to be on site at any one time.
- 4.3.3 Given the site will operate on a 24hr / 7 day basis and operatives will be employed on a daily 4-shift pattern, based on the total workforce of ~110 staff the number of staff likely to be on site at any one time is expected to be in the order of 55 (at shift changeover periods).
- 4.3.4 Allowing for the fact that not all staff will arrive by car as single occupants, it is considered that the proposed 73 spaces plus 17 additional overflow spaces would be more than sufficient to meet demand.
- 4.3.5 The following table presents 2011 Census: Method of Travel to Work data for the local area, local authority and Wales. The data suggests that in Merthyr Tydfil, around 66% of people travel to work by car as a driver, with a further 11% travelling as passenger.

Table 2 – 2011 Census: Method of Travel to Work data

Method of Travel to Work	Merthyr Tydfil 002 % working	Merthyr Tydfil % working	Wales % working
Work Mainly at or From Home	2.1%	2.5%	5.4%
Underground, Metro, Light Rail, Tram	0.1%	0.1%	0.1%
Train	0.9%	1.9%	2.0%
Bus, Minibus or Coach	7.4%	7.0%	4.6%
Taxi	1.3%	0.9%	0.5%
Motorcycle, Scooter or Moped	0.3%	0.3%	0.6%
Driving a Car or Van	65.3%	65.8%	67.4%
Passenger in a Car or Van	11.9%	10.6%	6.8%
Bicycle	0.2%	0.3%	1.4%
On Foot	9.7%	10.0%	10.6%
Other Method of Travel to Work	0.7%	0.5%	0.6%

- 4.3.6 The Census data supports the assertion that the proposed level of parking is likely to prove sufficient to accommodate the parking demand generated by 55 staff.

- 4.3.7 6 N° disabled parking spaces and 4 N° motorcycle parking spaces will be provided; both of which equate to, or exceed, 5% of car parking provisions in accordance with CSS Wales standards.
- 4.3.8 With regards to electric vehicle charging facilities, there are no applicable standards set out within CSS Wales (2008) as the document was prepared when the usage of electric vehicles was rare. In the absence of applicable standards within CCS Wales, reference is made to Planning Policy Wales (PPW) which states that *“to encourage the use of Ultra Low Emission Vehicles (ULEVs), the planning system should encourage and support the provision of ULEV charging points as part of new development. Where car parking is provided for new non-residential development, planning authorities should seek a minimum of 10% of car parking spaces to have ULEV charging points.”*
- 4.3.9 In order to futureproof the development it is proposed to provide 7 N° active electric vehicle charging spaces (~10% of the main car parking provisions), with a further 4 N° passive charging spaces (i.e. includes sub-surface infrastructure but without a charging point) which would allow EVC provisions to increase to ~15% of total parking, should the demand arise.
- 4.3.10 With regards to cycle parking, CSS Wales sets out the following standards:

TYPE OF DEVELOPMENT	CYCLE PARKING PROVISION	
	Long Stay	Short Stay
<u>e) Industry and Industrial Warehousing</u>		
Industry	1 stand per 500m ²	1 stand per 1000m ²

- 4.3.11 Based on the proposed GFA, the application of the above standards would result in a long stay cycle parking requirement of 45 spaces and a short stay requirement of 22 spaces.
- 4.3.12 The application of the above standards would likely result in a significant over-provision of cycle parking facilities when considered against the number of staff on site at any one time, and the likely uptake in cycling; which 2011 Census data would suggest is likely to be less than 1%.

-
- 4.3.13 The draft Travel Plan submitted alongside this Transport Assessment includes targets to increase the uptake of sustainable travel modes by staff. In relation to cycling the target is to achieve a 5% mode share of staff travelling to / from work. Based on the proposed workforce of 110+ staff, this equates to 6 N° cycle parking spaces.
- 4.3.14 To ensure that sufficient infrastructure is available on site to accommodate the target demand for cycling and also provide an allowance for any visitors arriving by cycle (which is expected to be minimal), the site will provided a total of 8 N° cycle parking spaces which will be secure, sheltered and located in proximity to the building entrances.

5 Trip Generation and Impact

5.1 This section of the report seeks to establish the potential number of vehicular traffic movements generated by the proposed employment development and their likely distribution on to the local highway network.

5.2 Trip Generation

5.2.1 The TRICS database has been utilised to estimate the multimodal and vehicle trip generation potential of the proposed development.

5.2.2 Whilst the proposal comprises a mixture of B1/B2/B8 land uses, it is considered that the B1 and B8 elements of the development are ancillary to the main B2 industrial units, and will not generate traffic movements in their own right.

5.2.3 Therefore, for assessment purposes, the TRICS trip rates for B2 land use have been applied to the full 22,260m² GFA of the proposed 2 N^o industrial units. It should be noted that the TRICS filtering parameters have been refined so far as is practicable to reflect the characteristics of the proposed development. Notably, only sites that operate 24/7 have been included. A copy of the TRICS output is enclosed at **Appendix B**.

Table 3 – Total Vehicle Trip Generations – 22,260m² B2 Land Use

Total Vehicles	Trip Rates		Trip Generations		
	Arrivals	Departures	Arrivals	Departures	Total
AM Peak (08:00 - 09:00)	0.314	0.065	70	14	84
PM Peak (17:00 - 18:00)	0.059	0.252	13	56	69
Daily	1.719	1.776	383	395	778

5.2.4 From the total vehicle generations identified above, the following level of OGV movements would be expected;

Table 4 – OGV Trip Generations – 22,260m² B2 Land Use

OGV	Trip Rates		Trip Generations		
	Arrivals	Departures	Arrivals	Departures	Total
AM Peak (08:00 - 09:00)	0.027	0.021	6	5	11
PM Peak (17:00 - 18:00)	0.005	0.007	1	2	3
Daily	0.288	0.209	64	47	111

- 5.2.5 Based on the TRICS assessment, the development could be expected to generate in the order of 84 vehicle movements (two-way) during the AM peak period and 69 vehicle movements (two-way) during the PM peak period; roughly equating to 1 - 2 vehicle movements per minute during network peaks.
- 5.2.6 OGV movements would likely be in the order of 11 trips (two-way) in the AM peak and 3 trips (two-way) in the PM peak; equating to roughly 1 OGV trip per 5 - 6 minutes / 20 minutes in the AM and PM peaks, respectively.
- 5.2.7 Further to the generations identified above (which are deemed to be representative of general B2 land use), information has been provided by the client which allows for a comparative assessment of OGV movements to be made based on first principles. Details of which are as follows;

Operations

- The site will have a throughput capacity of 150,000 tonnes per annum.
- The site will operate Monday – Saturday AM (5.5 days per week) which equates to 286 full working days per year.
- Deliveries will occur over a 12hr period between 6am – 6pm.
- Based on the above, the site's throughput capacity is 525 tonnes per day / 44 tonnes per hour.

Deliveries In

- Material (baled plastic) will be delivered to the site in 17 tonne payloads. These vehicles would then depart the site unladen.
- Based on an hourly throughput capacity of 44tph; this equates to less than 3 arrivals / 3 departures per hour. 6 OGV trips (two-way).

Deliveries Out

- Material (plastic bags, pellets and crumbs) will be delivered out of the site in 22 tonne payloads. These vehicles would arrive at the site unladen.
- Based on an hourly throughput capacity of 44tph; this equates to less than 2 arrivals / 2 departures per hour. 4 OGV trips (two-way).

5.2.8 From the above, it is expected that the site will generate in the order of 10 HGV movements (two-way) per hour. As the OGV traffic generation estimates based on first principles are slightly greater than those forecast by the TRICS database, these higher flows will be used within the following assessment.

5.3 *Traffic Distribution*

5.3.1 For the purpose of the Transport Assessment, the distribution of both OGV and LGV traffic will be considered. There is likely to be a material difference in the distribution of OGV / LGV's due to their varying origins and destinations, and the presence of various traffic regulation orders on the wider highway network; including a 7.5t weight limit (except for access) along High Street to the north of the roundabout junction with Goat Mill Road.

5.3.2 With regards to the distribution of OGV's; these are likely to be longer distance trips travelling via the strategic road network. For the purpose of providing a robust assessment it is presumed that all OGV traffic would arrive / depart the site via the A4060 / A4102 / Bogey Road roundabout junction, with a 50/50 split northbound / southbound. In reality, the distribution of OGV traffic is likely to vary as materials are imported / exported to different locations.

- 5.3.3 Based on the predicted OGV trips, it is considered that even during network peak periods the volume of OGV's generated by the development (approximately 1 trip every 6 minutes) is unlikely to have any discernible impact on the operation of the highway network.
- 5.3.4 With regards to the distribution of LGV traffic (staff and visitors); 2011 Census: Origin – Destination statistics have been used to identify the origin of all those who work within the local area (Merthyr Tydfil 002 middle super output area). A breakdown of the route assignments for each MSOA is provided at **Appendix C**.
- 5.3.5 The vehicle trip generations have been assigned to the local highway network as per the respective LGV and OGV distributions and the resulting peak hour traffic flows are illustrated at **Appendix D**.
- 5.3.6 A summary of the vehicle impact at each junction is provided as follows:

Site Access / Goat Mill Rd

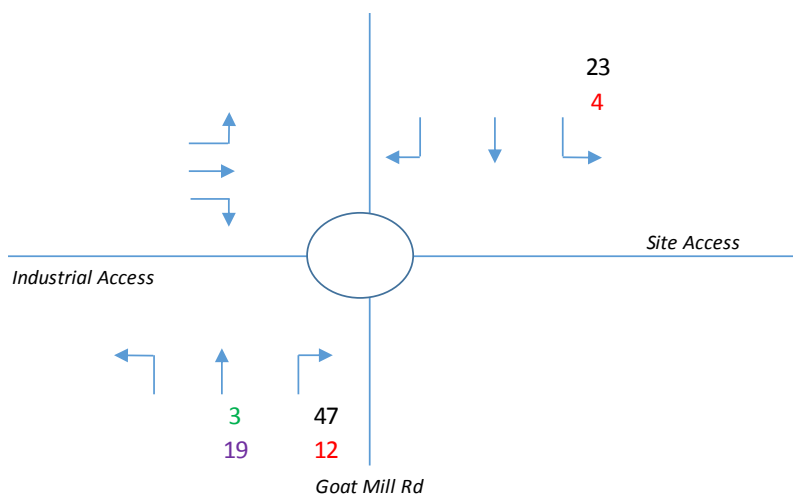


Table 5 – Traffic Impact at Site Access / Goatmill Road

Peak Hour	Vehicles	Vehicles Per Minute
AM	73	1.2
PM	35	0.6

Site Egress / Goat Mill Rd / A4102

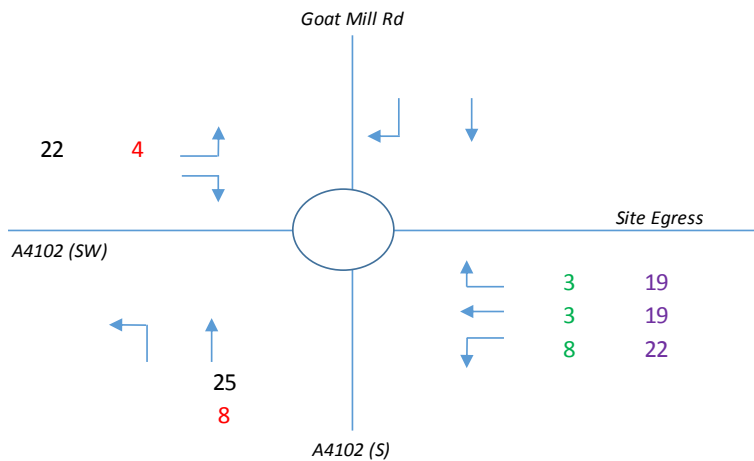


Table 6 – Traffic Impact at Site Egress / Goatmill Road

Peak Hour	Vehicles	Vehicles Per Minute
AM	61	1.0
PM	72	1.2

High St / Victoria St / Goat Mill Rd

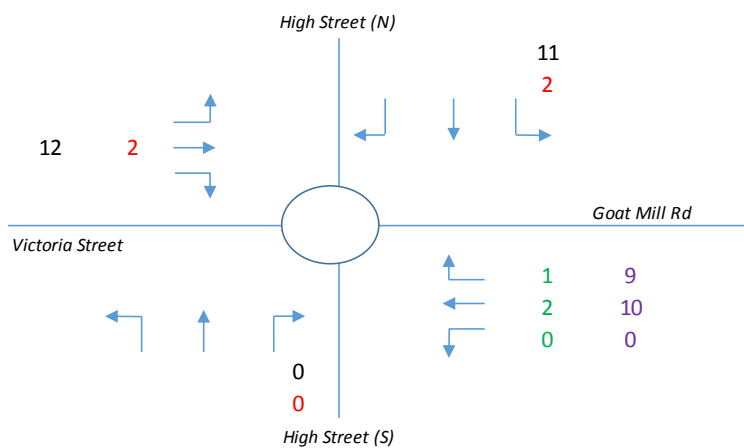


Table 7 – Traffic Impact at High St / Victoria St / Goat Mill Rd

Peak Hour	Vehicles	Vehicles Per Minute
AM	26	0.4
PM	23	0.4

A4102 / Penheolferthyr

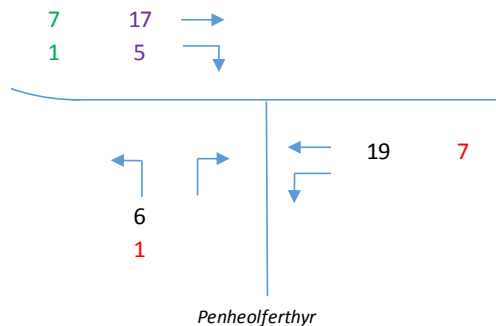


Table 8 – Traffic Impact at A4102 / Penheolferthyr

Peak Hour	Vehicles	Vehicles Per Minute
AM	33	0.6
PM	30	0.5

A4102 / A4060 / Bogey Rd

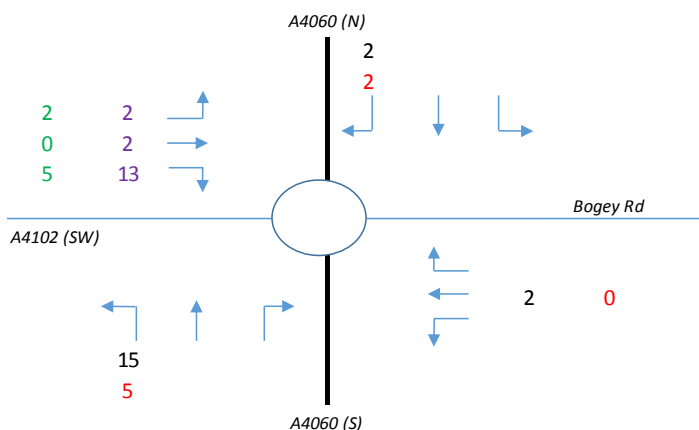


Table 9 – Traffic Impact at A4102 / A4060 / Bogey Rd

Peak Hour	Vehicles	Vehicles Per Minute
AM	26	0.4
PM	24	0.4

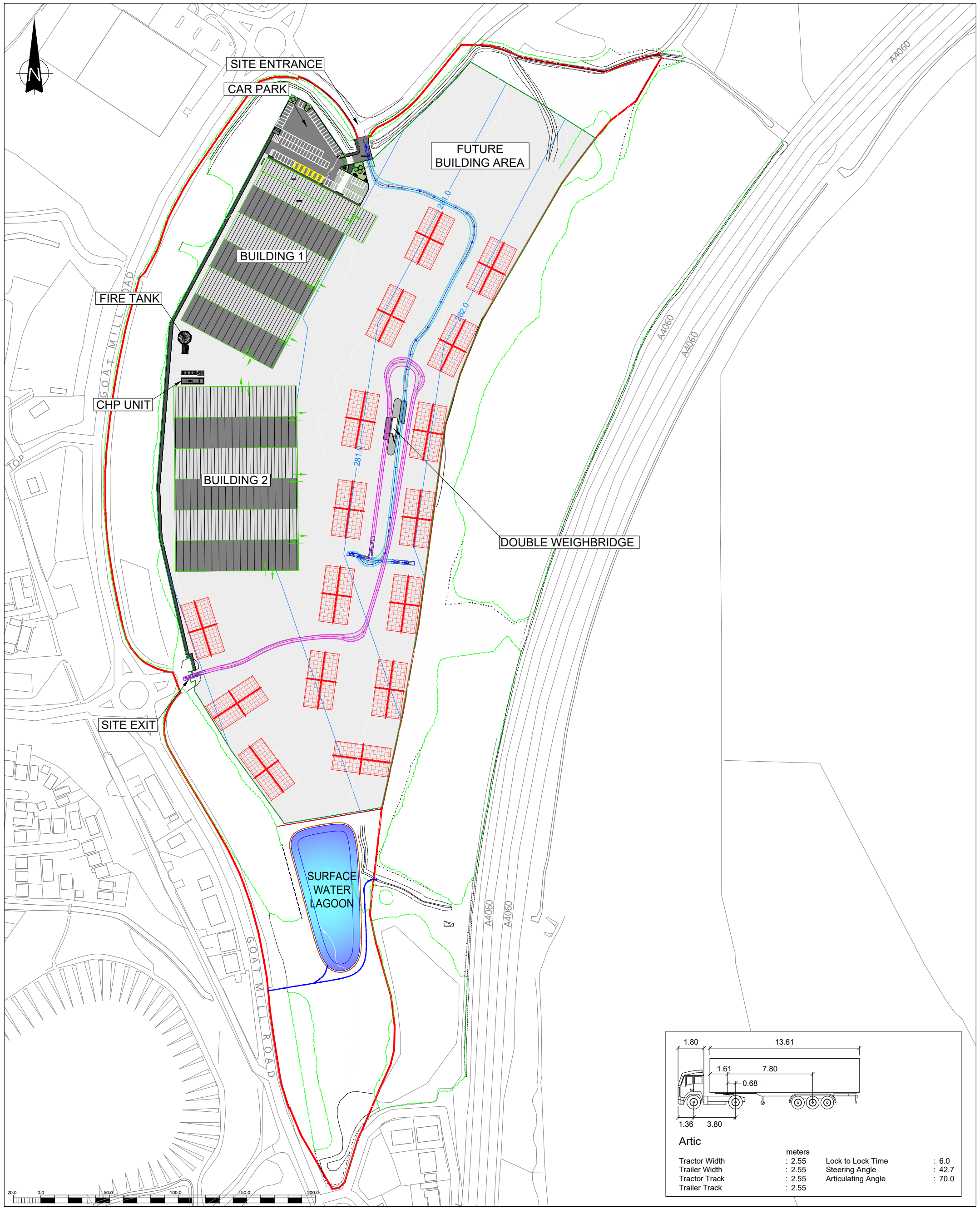
5.3.7 From the information above it is considered that the proposed development is likely to have a modest traffic impact at the site access and egress junctions. Meanwhile, the increase in traffic flows at off-site junctions is considered to be negligible and would unlikely have any discernible adverse impact upon the operation of the local network. On this basis it is considered that the proposal would not warrant any detailed junction capacity analysis, further than what is detailed above.

6 Summary and Conclusions

- 6.1 Sanderson Associates (Consulting Engineers) Limited has been appointed by Sirius Planning Limited to advise on traffic and transportation issues surrounding the development of a plastic recycling and processing facility on land off Goat Mill Road, Merthyr Tydfil by their client Jayplas.
- 6.2 The proposal is for the development of two employment warehouse units (total 22,260m² GFA) with internal office accommodation (1,000m² GFA) (Use Classes B1, B2 and B8) which will be used for the recycling and processing of plastic materials, an external storage area, car parking (73 spaces plus 17 overflow spaces), weighbridge and gatehouse will also be provided as part of the development.
- 6.3 The proposed car parking provisions are considered sufficient to meet the predicted parking demand generated by the proposal. Disabled parking is provided in line with standards (5%) and electric vehicle charging (EVC) facilities will be provided in line with PPW requirements (10%) with passive infrastructure provided to increase EVC provisions to 15% should sufficient demand arise.
- 6.4 Cycle parking facilities are proposed in the form of 8 N^o sheltered Sheffield Stands. The level of provision will be sufficient to accommodate the target demand for cycle to work journeys (5%) as well as providing 2 N^o spaces for visitors.
- 6.5 There are no inherent accident issues on the local highway network in the vicinity of the site that would give rise to any highway safety concerns. There are no highway safety problems that would be exacerbated by the proposed development.
- 6.6 The sites location provides a reasonable level of opportunity to travel sustainably. The uptake of sustainable travel modes will be promoted through the implementation of the Travel Plan, which should be read in conjunction with this report.

-
- 6.7 The proposed development is likely to have a modest traffic impact at the site access and egress junctions. Meanwhile, the increase in traffic flows at off-site junctions is considered to be negligible and would unlikely have any discernible adverse impact upon the operation of the local network. It is therefore considered that the development should not be prevented on highways grounds.

APPENDIX A
Proposed Site Layout



CLIENT



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JOB TITLE

GOAT MILL ROAD, MERTHYR

DRAWING TITLE

SWEPT PATH ANALYSIS

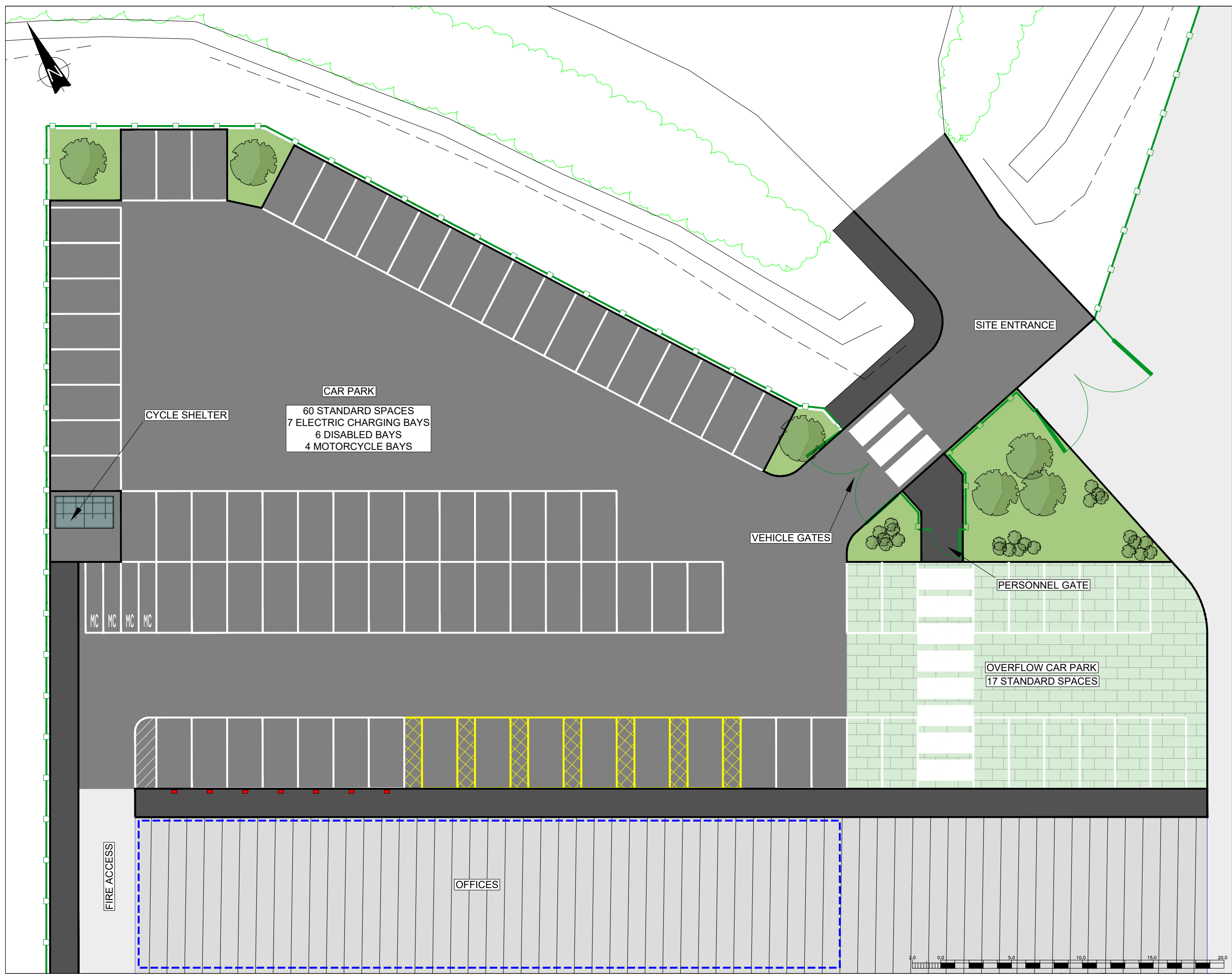
KEY

- PLANNING APPLICATION BOUNDARY
- PROPOSED DEVELOPMENT PLATFORM CONTOURS
- PROPOSED PALADIN SECURITY FENCE
- PROPOSED TIMBER CLOSE BOARDED FENCE
- PROPOSED TIMBER POST AND RAIL FENCE
- PROPOSED FOOTPATH
- PROPOSED BALE STORAGE

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REV	DESCRIPTION	DATE	BY
S.T	13/1/2022	D.B	28/2/2022

SCALE	SHEET	DRAWING NUMBER	REVISION
1:2500	A3P	JAY1001/04/07	0



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NOTES

- SEE DRAWING NUMBER JAY1001/04/15 FOR DETAILS OF EXTERNAL FINISHES
- SEE DRAWING NUMBER JAY1002/04/12 FOR DETAILS OF CYCLE SHELTER
- SEE DRAWING NUMBER JAY1002/04/12 FOR DETAILS OF CHARGING POINT

KEY

- LANDSCAPED AREAS
- TARMAC ROADS
- TARMAC FOOTPATHS
- CONCRETE HARDSTANDING
- PERMEABLE 'GRASSCRETE'
- PROPOSED FENCE
- ELECTRIC CAR CHARGING POINT

REV	DESCRIPTION	DATE	BY

CLIENT

4245 Park Approach, Thorpe Park, Leeds. LS15 8GB. 0113 264 9960

JOB TITLE

GOAT MILL ROAD, MERTHYR

DRAWING TITLE

CAR PARK DETAILS

DRAWN	DATE	APPROVED	DATE
S.T	25/2/2022	D.B	25/2/2022

SCALE	SHEET	DRAWING NUMBER	REVISION
1:500	A3L	JAY1001/04/14	0

APPENDIX B

TRICS Data

Calculation Reference: AUDIT-109307-200602-0636

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : C - INDUSTRIAL UNIT
 MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	WS WEST SUSSEX	1 days
03	SOUTH WEST	
	CW CORNWALL	1 days
	DV DEVON	1 days
04	EAST ANGLIA	
	NF NORFOLK	1 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
06	WEST MIDLANDS	
	HE HEREFORDSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 days
10	WALES	
	CF CARDIFF	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 1068 to 43325 (units: sqm)
 Range Selected by User: 1068 to 80000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 24/09/19

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

Selected survey days:

Monday	1 days
Tuesday	1 days
Wednesday	1 days
Thursday	5 days

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

Selected survey types:

Manual count	8 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 undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Edge of Town	5
Free Standing (PPS6 Out of Town)	1

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

Selected Location Sub Categories:

Industrial Zone	5
Commercial Zone	1
Out of Town	1
No Sub Category	1

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

Secondary Filtering selection:

Use Class:

B1	4 days
B2	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 1 mile:

1,000 or Less	1 days
1,001 to 5,000	3 days
10,001 to 15,000	1 days
15,001 to 20,000	2 days
25,001 to 50,000	1 days

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

Population within 5 miles:

5,001 to 25,000	1 days
50,001 to 75,000	4 days
125,001 to 250,000	2 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	6 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:

Yes	1 days
No	7 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	8 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

1	CF-02-C-02 MAES-Y-COED ROAD CARDIFF	BAKERY	CARDIFF
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Gross floor area:	14125 sqm	
	Survey date: THURSDAY	06/10/16	Survey Type: MANUAL
2	CH-02-C-01 GADBROOK PARK NORTHWICH HIGH SHURLACH	BAKERY	CHESHIRE
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	15000 sqm	
	Survey date: THURSDAY	21/06/07	Survey Type: MANUAL
3	CW-02-C-02 NORMANDY WAY BODMIN	LIGHTING COMPANY	CORNWALL
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	17675 sqm	
	Survey date: WEDNESDAY	06/06/07	Survey Type: MANUAL
4	DS-02-C-01 STUBLEY LANE NEAR SHEFFIELD DRONFIELD	BAKERY	DERBYSHIRE
	Edge of Town		
	No Sub Category		
	Total Gross floor area:	23500 sqm	
	Survey date: THURSDAY	22/06/06	Survey Type: MANUAL
5	DV-02-C-02 GRACE ROAD SOUTH EXETER	ENERGY RECOVERY FACILITY	DEVON
	MARSH BARTON TRAD. EST.		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Gross floor area:	3513 sqm	
	Survey date: THURSDAY	06/07/17	Survey Type: MANUAL
6	HE-02-C-02 COLLEGE ROAD HEREFORD BURCOTT	THERMAL PROCESSING	HEREFORDSHIRE
	Edge of Town		
	Commercial Zone		
	Total Gross floor area:	1880 sqm	
	Survey date: TUESDAY	22/10/13	Survey Type: MANUAL
7	NF-02-C-02 HARDWICK ROAD KINGS LYNN	GROCERY FACTORY	NORFOLK
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	43325 sqm	
	Survey date: MONDAY	19/09/05	Survey Type: MANUAL
8	WS-02-C-02 MAYDWELL AVENUE NEAR HORSHAM SLINFOLD	AVIATION COMPANY	WEST SUSSEX
	Free Standing (PPS6 Out of Town)		
	Out of Town		
	Total Gross floor area:	11375 sqm	
	Survey date: THURSDAY	23/01/14	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
DC-02-C-07	B1 Land Use

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

MULTI-MODAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30	1	11375	0.026	1	11375	0.000	1	11375	0.026
06:30 - 07:00	1	11375	0.123	1	11375	0.044	1	11375	0.167
07:00 - 07:30	8	16299	0.081	8	16299	0.050	8	16299	0.131
07:30 - 08:00	8	16299	0.139	8	16299	0.028	8	16299	0.167
08:00 - 08:30	8	16299	0.197	8	16299	0.030	8	16299	0.227
08:30 - 09:00	8	16299	0.117	8	16299	0.035	8	16299	0.152
09:00 - 09:30	8	16299	0.073	8	16299	0.038	8	16299	0.111
09:30 - 10:00	8	16299	0.056	8	16299	0.035	8	16299	0.091
10:00 - 10:30	8	16299	0.053	8	16299	0.051	8	16299	0.104
10:30 - 11:00	8	16299	0.051	8	16299	0.043	8	16299	0.094
11:00 - 11:30	8	16299	0.035	8	16299	0.035	8	16299	0.070
11:30 - 12:00	8	16299	0.040	8	16299	0.041	8	16299	0.081
12:00 - 12:30	8	16299	0.044	8	16299	0.072	8	16299	0.116
12:30 - 13:00	8	16299	0.054	8	16299	0.054	8	16299	0.108
13:00 - 13:30	8	16299	0.085	8	16299	0.051	8	16299	0.136
13:30 - 14:00	8	16299	0.095	8	16299	0.051	8	16299	0.146
14:00 - 14:30	8	16299	0.064	8	16299	0.166	8	16299	0.230
14:30 - 15:00	8	16299	0.049	8	16299	0.058	8	16299	0.107
15:00 - 15:30	8	16299	0.054	8	16299	0.072	8	16299	0.126
15:30 - 16:00	8	16299	0.040	8	16299	0.086	8	16299	0.126
16:00 - 16:30	8	16299	0.034	8	16299	0.082	8	16299	0.116
16:30 - 17:00	8	16299	0.036	8	16299	0.146	8	16299	0.182
17:00 - 17:30	8	16299	0.025	8	16299	0.102	8	16299	0.127
17:30 - 18:00	8	16299	0.034	8	16299	0.150	8	16299	0.184
18:00 - 18:30	8	16299	0.035	8	16299	0.081	8	16299	0.116
18:30 - 19:00	8	16299	0.035	8	16299	0.043	8	16299	0.078
19:00 - 19:30	1	11375	0.035	1	11375	0.044	1	11375	0.079
19:30 - 20:00	1	11375	0.009	1	11375	0.088	1	11375	0.097
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			1.719			1.776			3.495

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

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

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Parameter summary

Trip rate parameter range selected:	1068 - 43325 (units: sqm)
Survey date range:	01/01/05 - 24/09/19
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	9
Surveys manually removed from selection:	1

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

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

MULTI-MODAL OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30	1	11375	0.000	1	11375	0.000	1	11375	0.000
06:30 - 07:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
07:00 - 07:30	8	16299	0.006	8	16299	0.006	8	16299	0.012
07:30 - 08:00	8	16299	0.005	8	16299	0.008	8	16299	0.013
08:00 - 08:30	8	16299	0.012	8	16299	0.009	8	16299	0.021
08:30 - 09:00	8	16299	0.015	8	16299	0.012	8	16299	0.027
09:00 - 09:30	8	16299	0.021	8	16299	0.012	8	16299	0.033
09:30 - 10:00	8	16299	0.023	8	16299	0.010	8	16299	0.033
10:00 - 10:30	8	16299	0.015	8	16299	0.008	8	16299	0.023
10:30 - 11:00	8	16299	0.021	8	16299	0.011	8	16299	0.032
11:00 - 11:30	8	16299	0.015	8	16299	0.008	8	16299	0.023
11:30 - 12:00	8	16299	0.019	8	16299	0.014	8	16299	0.033
12:00 - 12:30	8	16299	0.021	8	16299	0.016	8	16299	0.037
12:30 - 13:00	8	16299	0.014	8	16299	0.011	8	16299	0.025
13:00 - 13:30	8	16299	0.021	8	16299	0.011	8	16299	0.032
13:30 - 14:00	8	16299	0.010	8	16299	0.009	8	16299	0.019
14:00 - 14:30	8	16299	0.012	8	16299	0.011	8	16299	0.023
14:30 - 15:00	8	16299	0.013	8	16299	0.008	8	16299	0.021
15:00 - 15:30	8	16299	0.007	8	16299	0.008	8	16299	0.015
15:30 - 16:00	8	16299	0.008	8	16299	0.006	8	16299	0.014
16:00 - 16:30	8	16299	0.007	8	16299	0.008	8	16299	0.015
16:30 - 17:00	8	16299	0.008	8	16299	0.008	8	16299	0.016
17:00 - 17:30	8	16299	0.003	8	16299	0.002	8	16299	0.005
17:30 - 18:00	8	16299	0.002	8	16299	0.005	8	16299	0.007
18:00 - 18:30	8	16299	0.007	8	16299	0.005	8	16299	0.012
18:30 - 19:00	8	16299	0.003	8	16299	0.003	8	16299	0.006
19:00 - 19:30	1	11375	0.000	1	11375	0.000	1	11375	0.000
19:30 - 20:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.288			0.209			0.497

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

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

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

MULTI-MODAL CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30	1	11375	0.000	1	11375	0.000	1	11375	0.000
06:30 - 07:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
07:00 - 07:30	8	16299	0.004	8	16299	0.003	8	16299	0.007
07:30 - 08:00	8	16299	0.004	8	16299	0.001	8	16299	0.005
08:00 - 08:30	8	16299	0.005	8	16299	0.001	8	16299	0.006
08:30 - 09:00	8	16299	0.001	8	16299	0.000	8	16299	0.001
09:00 - 09:30	8	16299	0.001	8	16299	0.000	8	16299	0.001
09:30 - 10:00	8	16299	0.001	8	16299	0.001	8	16299	0.002
10:00 - 10:30	8	16299	0.000	8	16299	0.002	8	16299	0.002
10:30 - 11:00	8	16299	0.002	8	16299	0.002	8	16299	0.004
11:00 - 11:30	8	16299	0.001	8	16299	0.001	8	16299	0.002
11:30 - 12:00	8	16299	0.001	8	16299	0.000	8	16299	0.001
12:00 - 12:30	8	16299	0.000	8	16299	0.002	8	16299	0.002
12:30 - 13:00	8	16299	0.002	8	16299	0.000	8	16299	0.002
13:00 - 13:30	8	16299	0.009	8	16299	0.002	8	16299	0.011
13:30 - 14:00	8	16299	0.005	8	16299	0.001	8	16299	0.006
14:00 - 14:30	8	16299	0.002	8	16299	0.017	8	16299	0.019
14:30 - 15:00	8	16299	0.001	8	16299	0.001	8	16299	0.002
15:00 - 15:30	8	16299	0.000	8	16299	0.003	8	16299	0.003
15:30 - 16:00	8	16299	0.000	8	16299	0.002	8	16299	0.002
16:00 - 16:30	8	16299	0.001	8	16299	0.001	8	16299	0.002
16:30 - 17:00	8	16299	0.001	8	16299	0.007	8	16299	0.008
17:00 - 17:30	8	16299	0.004	8	16299	0.002	8	16299	0.006
17:30 - 18:00	8	16299	0.001	8	16299	0.002	8	16299	0.003
18:00 - 18:30	8	16299	0.000	8	16299	0.004	8	16299	0.004
18:30 - 19:00	8	16299	0.002	8	16299	0.002	8	16299	0.004
19:00 - 19:30	1	11375	0.000	1	11375	0.000	1	11375	0.000
19:30 - 20:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.048			0.057			0.105

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

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

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30	1	11375	0.035	1	11375	0.000	1	11375	0.035
06:30 - 07:00	1	11375	0.158	1	11375	0.053	1	11375	0.211
07:00 - 07:30	8	16299	0.105	8	16299	0.053	8	16299	0.158
07:30 - 08:00	8	16299	0.157	8	16299	0.022	8	16299	0.179
08:00 - 08:30	8	16299	0.216	8	16299	0.030	8	16299	0.246
08:30 - 09:00	8	16299	0.125	8	16299	0.035	8	16299	0.160
09:00 - 09:30	8	16299	0.079	8	16299	0.037	8	16299	0.116
09:30 - 10:00	8	16299	0.066	8	16299	0.040	8	16299	0.106
10:00 - 10:30	8	16299	0.055	8	16299	0.053	8	16299	0.108
10:30 - 11:00	8	16299	0.057	8	16299	0.048	8	16299	0.105
11:00 - 11:30	8	16299	0.038	8	16299	0.035	8	16299	0.073
11:30 - 12:00	8	16299	0.045	8	16299	0.050	8	16299	0.095
12:00 - 12:30	8	16299	0.057	8	16299	0.084	8	16299	0.141
12:30 - 13:00	8	16299	0.060	8	16299	0.064	8	16299	0.124
13:00 - 13:30	8	16299	0.092	8	16299	0.061	8	16299	0.153
13:30 - 14:00	8	16299	0.111	8	16299	0.053	8	16299	0.164
14:00 - 14:30	8	16299	0.079	8	16299	0.192	8	16299	0.271
14:30 - 15:00	8	16299	0.062	8	16299	0.062	8	16299	0.124
15:00 - 15:30	8	16299	0.079	8	16299	0.080	8	16299	0.159
15:30 - 16:00	8	16299	0.051	8	16299	0.114	8	16299	0.165
16:00 - 16:30	8	16299	0.037	8	16299	0.096	8	16299	0.133
16:30 - 17:00	8	16299	0.040	8	16299	0.179	8	16299	0.219
17:00 - 17:30	8	16299	0.027	8	16299	0.110	8	16299	0.137
17:30 - 18:00	8	16299	0.034	8	16299	0.172	8	16299	0.206
18:00 - 18:30	8	16299	0.036	8	16299	0.088	8	16299	0.124
18:30 - 19:00	8	16299	0.037	8	16299	0.046	8	16299	0.083
19:00 - 19:30	1	11375	0.035	1	11375	0.044	1	11375	0.079
19:30 - 20:00	1	11375	0.009	1	11375	0.088	1	11375	0.097
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			1.982			1.989			3.971

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

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

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

MULTI-MODAL PEDESTRIANS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30	1	11375	0.000	1	11375	0.000	1	11375	0.000
06:30 - 07:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
07:00 - 07:30	8	16299	0.005	8	16299	0.009	8	16299	0.014
07:30 - 08:00	8	16299	0.012	8	16299	0.001	8	16299	0.013
08:00 - 08:30	8	16299	0.007	8	16299	0.002	8	16299	0.009
08:30 - 09:00	8	16299	0.009	8	16299	0.005	8	16299	0.014
09:00 - 09:30	8	16299	0.015	8	16299	0.012	8	16299	0.027
09:30 - 10:00	8	16299	0.012	8	16299	0.012	8	16299	0.024
10:00 - 10:30	8	16299	0.010	8	16299	0.008	8	16299	0.018
10:30 - 11:00	8	16299	0.012	8	16299	0.008	8	16299	0.020
11:00 - 11:30	8	16299	0.005	8	16299	0.010	8	16299	0.015
11:30 - 12:00	8	16299	0.008	8	16299	0.009	8	16299	0.017
12:00 - 12:30	8	16299	0.013	8	16299	0.021	8	16299	0.034
12:30 - 13:00	8	16299	0.010	8	16299	0.011	8	16299	0.021
13:00 - 13:30	8	16299	0.035	8	16299	0.016	8	16299	0.051
13:30 - 14:00	8	16299	0.028	8	16299	0.024	8	16299	0.052
14:00 - 14:30	8	16299	0.012	8	16299	0.042	8	16299	0.054
14:30 - 15:00	8	16299	0.002	8	16299	0.013	8	16299	0.015
15:00 - 15:30	8	16299	0.004	8	16299	0.031	8	16299	0.035
15:30 - 16:00	8	16299	0.005	8	16299	0.023	8	16299	0.028
16:00 - 16:30	8	16299	0.005	8	16299	0.010	8	16299	0.015
16:30 - 17:00	8	16299	0.015	8	16299	0.015	8	16299	0.030
17:00 - 17:30	8	16299	0.012	8	16299	0.010	8	16299	0.022
17:30 - 18:00	8	16299	0.008	8	16299	0.008	8	16299	0.016
18:00 - 18:30	8	16299	0.005	8	16299	0.006	8	16299	0.011
18:30 - 19:00	8	16299	0.007	8	16299	0.005	8	16299	0.012
19:00 - 19:30	1	11375	0.000	1	11375	0.000	1	11375	0.000
19:30 - 20:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.256			0.311			0.567

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

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

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30	1	11375	0.000	1	11375	0.000	1	11375	0.000
06:30 - 07:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
07:00 - 07:30	8	16299	0.010	8	16299	0.001	8	16299	0.011
07:30 - 08:00	8	16299	0.004	8	16299	0.001	8	16299	0.005
08:00 - 08:30	8	16299	0.002	8	16299	0.000	8	16299	0.002
08:30 - 09:00	8	16299	0.005	8	16299	0.002	8	16299	0.007
09:00 - 09:30	8	16299	0.002	8	16299	0.000	8	16299	0.002
09:30 - 10:00	8	16299	0.001	8	16299	0.000	8	16299	0.001
10:00 - 10:30	8	16299	0.002	8	16299	0.000	8	16299	0.002
10:30 - 11:00	8	16299	0.000	8	16299	0.000	8	16299	0.000
11:00 - 11:30	8	16299	0.002	8	16299	0.001	8	16299	0.003
11:30 - 12:00	8	16299	0.000	8	16299	0.000	8	16299	0.000
12:00 - 12:30	8	16299	0.000	8	16299	0.000	8	16299	0.000
12:30 - 13:00	8	16299	0.001	8	16299	0.001	8	16299	0.002
13:00 - 13:30	8	16299	0.001	8	16299	0.000	8	16299	0.001
13:30 - 14:00	8	16299	0.000	8	16299	0.001	8	16299	0.001
14:00 - 14:30	8	16299	0.003	8	16299	0.018	8	16299	0.021
14:30 - 15:00	8	16299	0.000	8	16299	0.003	8	16299	0.003
15:00 - 15:30	8	16299	0.001	8	16299	0.020	8	16299	0.021
15:30 - 16:00	8	16299	0.000	8	16299	0.008	8	16299	0.008
16:00 - 16:30	8	16299	0.000	8	16299	0.008	8	16299	0.008
16:30 - 17:00	8	16299	0.000	8	16299	0.002	8	16299	0.002
17:00 - 17:30	8	16299	0.002	8	16299	0.002	8	16299	0.004
17:30 - 18:00	8	16299	0.002	8	16299	0.002	8	16299	0.004
18:00 - 18:30	8	16299	0.001	8	16299	0.002	8	16299	0.003
18:30 - 19:00	8	16299	0.001	8	16299	0.002	8	16299	0.003
19:00 - 19:30	1	11375	0.000	1	11375	0.000	1	11375	0.000
19:30 - 20:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.040			0.074			0.114

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

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

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30	1	11375	0.035	1	11375	0.000	1	11375	0.035
06:30 - 07:00	1	11375	0.158	1	11375	0.053	1	11375	0.211
07:00 - 07:30	8	16299	0.124	8	16299	0.066	8	16299	0.190
07:30 - 08:00	8	16299	0.176	8	16299	0.025	8	16299	0.201
08:00 - 08:30	8	16299	0.231	8	16299	0.033	8	16299	0.264
08:30 - 09:00	8	16299	0.140	8	16299	0.042	8	16299	0.182
09:00 - 09:30	8	16299	0.096	8	16299	0.048	8	16299	0.144
09:30 - 10:00	8	16299	0.079	8	16299	0.052	8	16299	0.131
10:00 - 10:30	8	16299	0.067	8	16299	0.063	8	16299	0.130
10:30 - 11:00	8	16299	0.070	8	16299	0.059	8	16299	0.129
11:00 - 11:30	8	16299	0.045	8	16299	0.047	8	16299	0.092
11:30 - 12:00	8	16299	0.054	8	16299	0.059	8	16299	0.113
12:00 - 12:30	8	16299	0.070	8	16299	0.106	8	16299	0.176
12:30 - 13:00	8	16299	0.072	8	16299	0.076	8	16299	0.148
13:00 - 13:30	8	16299	0.137	8	16299	0.079	8	16299	0.216
13:30 - 14:00	8	16299	0.145	8	16299	0.078	8	16299	0.223
14:00 - 14:30	8	16299	0.096	8	16299	0.268	8	16299	0.364
14:30 - 15:00	8	16299	0.065	8	16299	0.079	8	16299	0.144
15:00 - 15:30	8	16299	0.084	8	16299	0.134	8	16299	0.218
15:30 - 16:00	8	16299	0.055	8	16299	0.146	8	16299	0.201
16:00 - 16:30	8	16299	0.042	8	16299	0.114	8	16299	0.156
16:30 - 17:00	8	16299	0.055	8	16299	0.202	8	16299	0.257
17:00 - 17:30	8	16299	0.045	8	16299	0.124	8	16299	0.169
17:30 - 18:00	8	16299	0.044	8	16299	0.183	8	16299	0.227
18:00 - 18:30	8	16299	0.042	8	16299	0.100	8	16299	0.142
18:30 - 19:00	8	16299	0.047	8	16299	0.054	8	16299	0.101
19:00 - 19:30	1	11375	0.035	1	11375	0.044	1	11375	0.079
19:30 - 20:00	1	11375	0.009	1	11375	0.088	1	11375	0.097
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			2.318			2.422			4.740

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.

APPENDIX C

2011 Census: Origin / Destination data

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

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population All usual residents aged 16 and over in employment the week before the census
units Persons
date 2011
method of travel to work Driving a car or van

	place of work											
usual residence : 2011 super output area - middle layer	W02000284 : Merthyr Tydfil 002	%	MSOA Centroid Co-ordinates		Rocky Road	Victoria Street	High Street (NE)	A4102 (SW)	A4102 (S)	A4060 (N)	A4060 (S)	Bogey Road
W02000284 : Merthyr Tydfil 002	450	19.1%	51.76415254	-3.357839922		19.1%						
W02000415 : Merthyr Tydfil 008	242	10.3%	51.76301375	-3.37966145				10.3%				
W02000285 : Merthyr Tydfil 003	233	9.9%	51.7537305	-3.400256413				9.9%				
W02000287 : Merthyr Tydfil 005	204	8.7%	51.74170006	-3.368164704					8.7%			
W02000288 : Merthyr Tydfil 006	152	6.5%	51.69880018	-3.342061993							6.5%	
W02000286 : Merthyr Tydfil 004	140	5.9%	51.74807876	-3.386195297				5.9%				
W02000290 : Caerphilly 001	129	5.5%	51.75398237	-3.278856753			5.5%					
W02000291 : Caerphilly 002	80	3.4%	51.7208148	-3.243086615			3.4%					
W02000289 : Merthyr Tydfil 007	60	2.5%	51.66376368	-3.305139335							2.5%	
W02000252 : Rhondda Cynon Taf 001	48	2.0%	51.73823092	-3.503289018				2.0%				
W02000319 : Blaenau Gwent 006	36	1.5%	51.76921951	-3.242635789			1.5%					
W02000254 : Rhondda Cynon Taf 003	32	1.4%	51.71603222	-3.463809198				1.4%				
W02000316 : Blaenau Gwent 003	32	1.4%	51.78485834	-3.250470161			1.4%					
W02000256 : Rhondda Cynon Taf 005	30	1.3%	51.69687652	-3.429478067				1.3%				
W02000253 : Rhondda Cynon Taf 002	27	1.1%	51.72186487	-3.45601762				1.1%				
W02000255 : Rhondda Cynon Taf 004	21	0.9%	51.70944287	-3.418593524				0.9%				
W02000263 : Rhondda Cynon Taf 012	21	0.9%	51.6487285	-3.331131907							0.9%	
W02000292 : Caerphilly 003	21	0.9%	51.69152734	-3.222159798								0.9%
W02000257 : Rhondda Cynon Taf 006	19	0.8%	51.68296232	-3.381603302							0.8%	
W02000320 : Blaenau Gwent 007	18	0.8%	51.75832501	-3.197397704			0.8%					
W02000295 : Caerphilly 006	16	0.7%	51.68029494	-3.16190899			0.7%					
W02000302 : Caerphilly 013	16	0.7%	51.64584172	-3.259586141							0.7%	
W02000317 : Blaenau Gwent 004	15	0.6%	51.78468533	-3.212673854			0.6%					
W02000318 : Blaenau Gwent 005	15	0.6%	51.77486114	-3.162506819			0.6%					
W02000297 : Caerphilly 008	14	0.6%	51.66640414	-3.242978781								0.6%
W02000313 : Caerphilly 024	13	0.6%	51.5702436	-3.232266075							0.6%	
W02000314 : Blaenau Gwent 001	13	0.6%	51.7997228	-3.213462601			0.6%					
W02000321 : Blaenau Gwent 008	13	0.6%	51.73448349	-3.136637291			0.6%					
W02000338 : Monmouthshire 003	13	0.6%	51.8196407	-3.077428155			0.6%					
W02000265 : Rhondda Cynon Taf 014	12	0.5%	51.64194836	-3.465509191							0.5%	
W02000308 : Caerphilly 019	11	0.5%	51.59447338	-3.236510859							0.5%	
W02000311 : Caerphilly 022	11	0.5%	51.58286444	-3.212089852							0.5%	
W02000266 : Rhondda Cynon Taf 015	10	0.4%	51.62733771	-3.342318032							0.4%	
W02000296 : Caerphilly 007	10	0.4%	51.66678483	-3.214674701								0.4%
W02000293 : Caerphilly 004	9	0.4%	51.6888235	-3.234053313								0.4%
W02000309 : Caerphilly 020	9	0.4%	51.5933904	-3.194449877							0.4%	
W02000274 : Rhondda Cynon Taf 023	8	0.3%	51.58384067	-3.45255672							0.3%	
W02000315 : Blaenau Gwent 002	8	0.3%	51.79978751	-3.177636221			0.3%					
W02000414 : Powys 020	7	0.3%	51.9526768	-3.441977395				0.3%				
W02000271 : Rhondda Cynon Taf 020	7	0.3%	51.60675822	-3.411799562							0.3%	
W02000273 : Rhondda Cynon Taf 022	7	0.3%	51.5901917	-3.319288495							0.3%	
W02000278 : Rhondda Cynon Taf 027	7	0.3%	51.55996297	-3.330525127							0.3%	
W02000298 : Caerphilly 009	7	0.3%	51.66535489	-3.199068221								0.3%
W02000303 : Caerphilly 014	7	0.3%	51.63930748	-3.12961272							0.3%	
W02000307 : Caerphilly 018	7	0.3%	51.59945346	-3.271420441							0.3%	
W02000386 : Cardiff 020	6	0.3%	51.51145122	-3.218552417							0.3%	
W02000258 : Rhondda Cynon Taf 007	6	0.3%	51.67622395	-3.540112635				0.3%				
W02000264 : Rhondda Cynon Taf 013	6	0.3%	51.64533455	-3.434959059							0.3%	
W02000270 : Rhondda Cynon Taf 019	6	0.3%	51.61040284	-3.328655557							0.3%	
W02000279 : Rhondda Cynon Taf 028	6	0.3%	51.55380835	-3.354369123							0.3%	
W02000282 : Rhondda Cynon Taf 031	6	0.3%	51.52137041	-3.392111032							0.3%	
W02000294 : Caerphilly 005	6	0.3%	51.68149624	-3.20156846								0.3%
W02000301 : Caerphilly 012	6	0.3%	51.64960821	-3.228850634							0.3%	
W02000312 : Caerphilly 023	6	0.3%	51.57990856	-3.236018093							0.3%	
W02000323 : Torfaen 001	6	0.3%	51.773546	-3.081901392			0.3%					
W02000372 : Cardiff 006	5	0.2%	51.52145232	-3.260852308							0.2%	
W02000396 : Cardiff 030	5	0.2%	51.49595809	-3.17042269							0.2%	
W02000260 : Rhondda Cynon Taf 009	5	0.2%	51.6675854	-3.465800109				0.2%				
W02000261 : Rhondda Cynon Taf 010	5	0.2%	51.66057948	-3.510236076				0.2%				
W02000280 : Rhondda Cynon Taf 029	5	0.2%	51.53693733	-3.449018078							0.2%	
W02000299 : Caerphilly 010	5	0.2%	51.66570489	-3.14651143							0.2%	
W02000300 : Caerphilly 011	5	0.2%	51.65312617	-3.194711191							0.2%	
	2,355	100.0%			0.0%	19.1%	16.7%	33.8%	8.7%	0.0%	18.9%	2.8%

APPENDIX D
Traffic Distribution % Diagram

	Arr	Dep
AM	x	x
PM	x	x

