

**Proposed residential development of 35 units  
at land to the south of  
Willowbrook Drive,  
St Mellons  
Cardiff**

**Transport Statement**

**May 2024**

A decorative graphic at the bottom of the page consisting of a wavy, multi-colored band in shades of red, orange, and yellow.

**Applicant:** Wates Construction Ltd.

**Project no:** T24.110

**Document ref no:** T24.110.TS.PAC

**Document issue date:** 20 May 2024

**Project name:** Willowbrook Drive

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# INTRODUCTION

## 1.1 Background

1.1.1 Asbri Transport Ltd have been instructed by Wates Construction Ltd to produce a Transport Statement in support of a planning application for the proposed development of up to 35 residential dwellings, located on land to the south of Willowbrook Drive, to the south-west of St Mellons in Cardiff.

1.1.2 The development proposed includes 18 affordable units and 17 units that will be offered for sale on the open market.

## 1.2 Purpose of the report

1.2.1 The purpose of this Transport Statement is to detail the likely transport characteristics of the proposed development and identify the potential impact of the proposals on the surrounding transport network. This report also considers the on-site layout regarding parking provision.

## 1.3 Structure of the report

1.3.1 Following this introductory chapter, the report is structured as follows:

- Section 2 describes the existing transport conditions surrounding the development and reviews personal injury collision data for the study area;
- Section 3 outlines the development proposals;
- Section 4 considers the likely vehicle demand generated by the proposed development;
- Section 5 identifies the impact of the development on the surrounding highway network; and,
- Section 6 provides the conclusions of the report



## 2 EXISTING SITUATION

### 2.1 Introduction

2.1.1 To assess the impact of the development proposals, it is necessary to establish the conditions that exist within the surrounding transport network. This section of the report therefore describes the existing highway network and reviews collision data.

### 2.2 Site Location

2.2.1 The application site is located to the south-west of the St Mellons area of Cardiff and is made up of land, located to the west of Willowbrook Drive. The site is bounded by Crickhowell Road to the south and south east and Trefaser Crescent to the west. To the north lies playing fields and a woodland area.

2.2.2 The location of the site is shown in **Figure 2.1**.

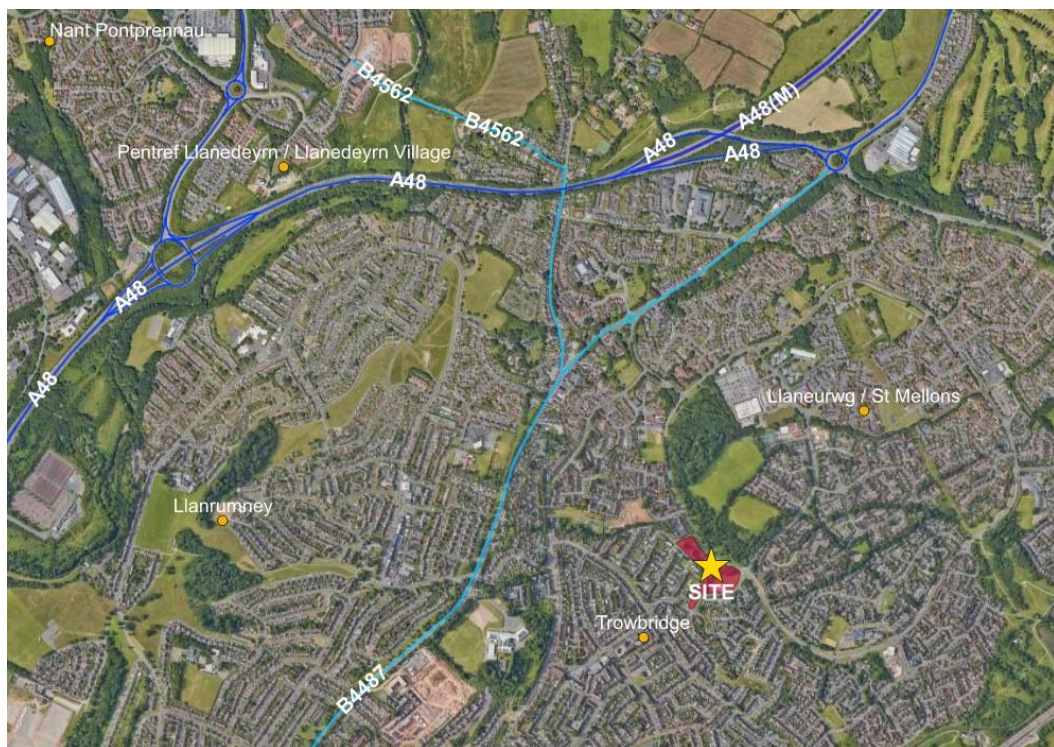


Figure 2.1 Site location

## 2.3 Local Highway Network

2.3.1 The local highway network surrounding the site is shown in **Figure 2.2**.



Figure 2.2 Local highway network

### ***Willowbrook Drive***

2.3.2 Willowbrook Drive forms a ring road around central St Mellons, providing access to the wider area of St Mellons. Willowbrook Drive segregates the application site.

2.3.3 Willowbrook Drive has an approximate carriageway width of 6m with a 2m shared pedestrian cyclist route provided along the western side of the carriageway. A raised zebra crossing is located approximately 200m to the north of the proposed site. At this location, a short section of footway is provided along the eastern side of Willowbrook Drive which provides a pedestrian and cyclist only access to Brockhampton Road, located to the east and within proximity to several local amenities within St Mellons.

2.3.4 Willowbrook Drive is subject to a speed of 20mph within the vicinity of the site. To the north of the site, speed calming measures are in place in the form of speed tables. Double yellow lines are also demarcated on the eastern side of the carriageway heading northbound from Brookfield Drive.

### ***Crickhowell Road***

- 2.3.5 Near the site, Crickhowell Road forms a 4-arm roundabout junction with Willowbrook Drive. To the north-east, Crickhowell Road provides access to St Mellon's district centre which provides a number of local amenities. From the roundabout junction with Willowbrook Drive, for approximately 230m footway provision is only initially present along the eastern side of the carriageway heading northbound towards the centre of St Mellons. From James Court onwards, footway is provided along both sides of the carriageway with shared use for cyclists.
- 2.3.6 To the south, Crickhowell Road provides access to a number of residential dwellings. Footway is provided along the eastern side of the carriageway.
- 2.3.7 Street lighting is present along the length of Crickhowell Road and a number of bus stops with shelter provision are also provided.
- 2.3.8 There are no parking restrictions present in the form of double yellow lines within the vicinity of the site. Crickhowell Road is subject to a 20mph speed limit.

## **2.4 Highway Safety**

- 2.4.1 Personal Injury Collision (PIC) data has been obtained for the most recent five-year period (2018-2022) from the Stats Wales database.
- 2.4.2 The assessed area and collisions occurring within close proximity to the site are shown in **Figure 2.3** and a summary of these collisions is within **Table 2.1**.
- 2.4.3 It can be observed that within the latest 5-year period, a total of 7 collisions have occurred; all considered slight. These collisions have involved a total of 2 have involved pedestrians and 1 have involved a cyclist. The collisions have resulted in a total of 9 casualties and involved a sum of 11 vehicles.
- 2.4.4 A small cluster of 4 slight collisions has occurred at the Tresigin/Hendre Road/Abergale Road staggered crossroads. It should be noted that this section of carriageway has reduced to a default 20mph speed limit as part of the Welsh Government 30mph speed limit reduction, of which will be thought to considerably reduce traffic collisions and improve highway safety.



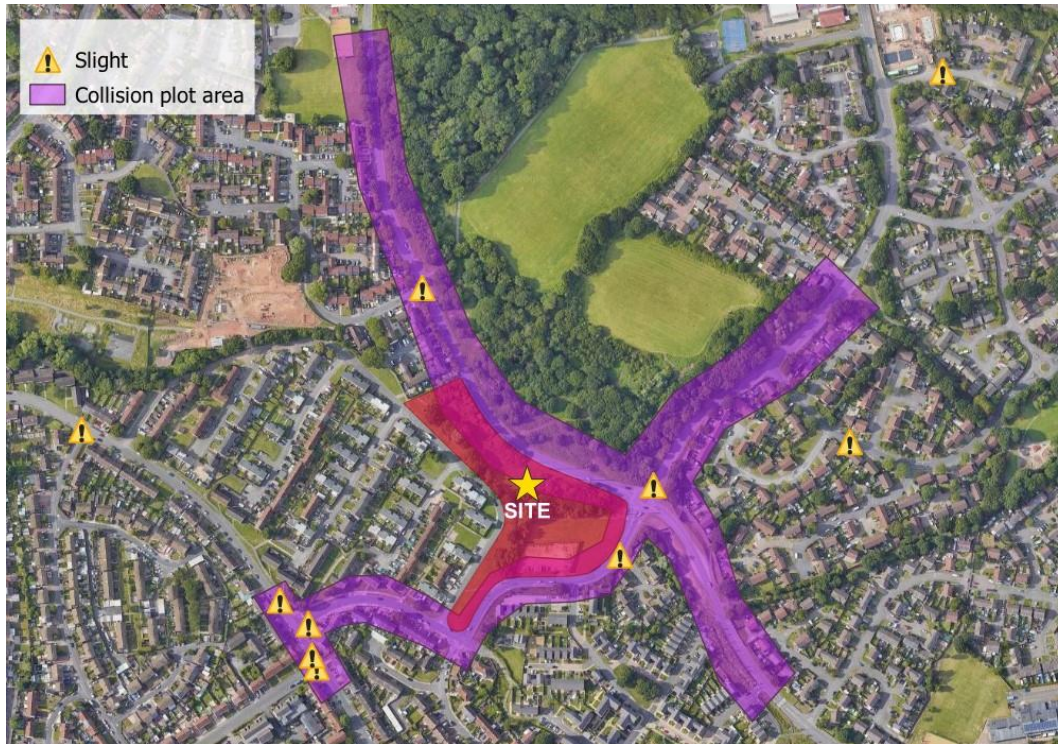


Figure 2.3 PIC analysis locations

Year	Severity				Pedestrians	Cyclists	Casualties	Vehicles
	Fatal	Serious	Slight	Total				
2018	0	0	0	0	0	0	0	0
2019	0	0	2	2	0	0	4	3
2020	0	0	1	1	0	1	1	2
2021	0	0	3	3	1	0	3	5
2022	0	0	1	1	1	0	1	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>9</b>	<b>11</b>

Table 2.1 PIC analysis summary

### 3 SITE ACCESSIBILITY & SUSTAINABILITY

#### 3.1 Active Travel

3.1.1 Active Travel infrastructure within the vicinity of the site is shown below in **Figure 3.1**.



Figure 3.1 Active Travel infrastructure

#### ***Walking***

3.1.2 There is a footway provided along the western/southern edge of Willowbrook Drive of approximately 2m in width. This carriageway has street lighting along its length which provides safe passage for pedestrian to the surrounding local areas and local nodes.

3.1.3 There is a Zebra crossing present on Willowbrook Drive to the north of the application site. This provides access to the shared pedestrian/cyclist route linking Willowbrook Drive to Brockhampton Road.

3.1.4 There is a pedestrian underpass that provides a segregated crossing of Willowbrook Drive located immediately east of the Crickhowell Road roundabout.

- 3.1.5 To the north of the roundabout a footway continues along the eastern side of Crickhowell Road. Approximately 300m north of the roundabout there is an uncontrolled crossing of Crickhowell Road with a central refuge.
- 3.1.6 There are a number of shared cycle/pedestrian routes throughout St Mellons, with one running along the western carriageway of Willowbrook Drive.
- 3.1.7 All of the facilities available in St Mellons and the surrounding suburban areas are within comfortable walking distances of the application site.

### ***Cycling***

- 3.1.8 There are no national cycle network routes within the immediate vicinity of the site, but the discussed shared pedestrian/cyclist route located to the north of the site which heading in a northeast direction, brings cyclists to the Cypress Drive/Fortran Road priority junction. From here, cyclists are an 800m cycle along carriageway to join NCN Route 88.
- 3.1.9 NCN Route 88 is a proposed coastal route between Newport, Cardiff, Bridgend and Margam Country Park which is currently open in sections.
- 3.1.10 To the southwest, there is intermittent cycle path provision to direct cyclists to Cardiff City Centre. Cardiff's Primary Cycle Network forms a web of links across the city centre. The extent of these links is shown in **Figure 3.2**.



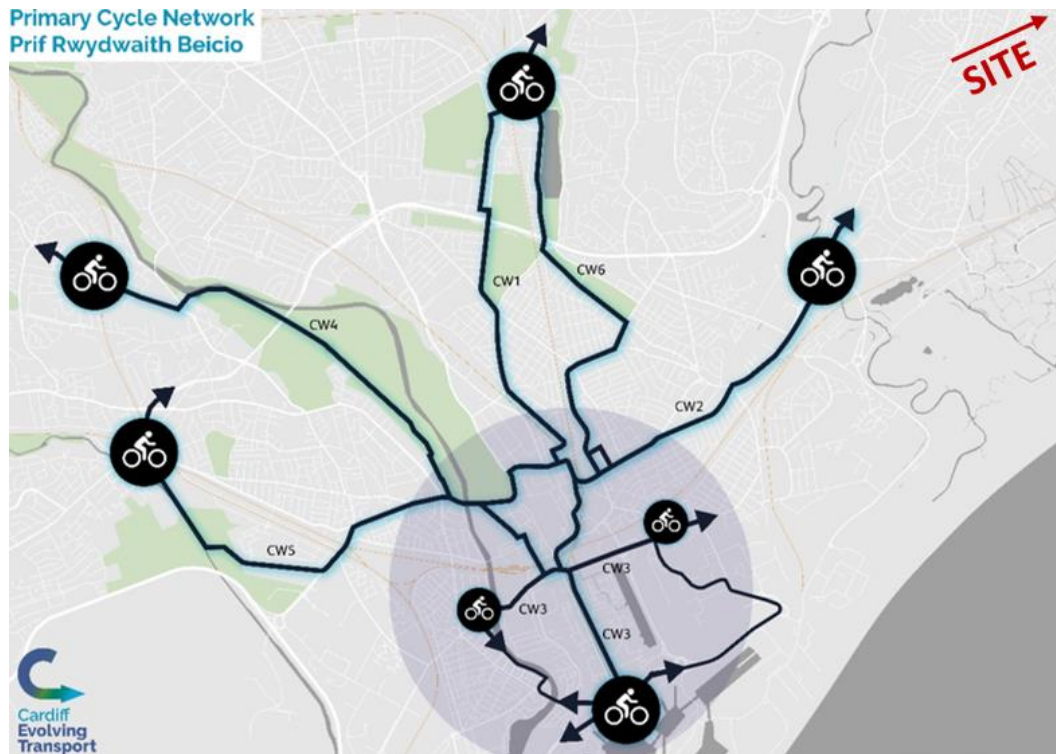


Figure 3.2 Cardiff Primary Cycle Network

### 3.2 Public Transport

3.2.1 The site is well served by public transport with a range of bus stops within walking distance. The CIHT Planning for Walking documents states that;

*“For bus stops in residential areas, 400m has traditionally been regarded as a cut-off point and, in town centres, 200m. People will walk up to 800m to get to a railway station, which reflects the greater perceived quality or importance of rail services.”*

3.2.2 Public transport infrastructure within the vicinity of the site has therefore been plotted in **Figure 3.3**.



Figure 3.3 Public transport infrastructure

### **Bus**

- 3.2.3 The nearest bus stop to the site is located along Crickhowell Road and Willowbrook Drive and are within 200m walking distance of the proposed site access locations. The bus stops on Crickhowell Road operate in both and east and westbound direction and are both in the form of bus cage markings on the carriageway and bus flag. Bus timetable information is available via both the Cardiff Bus website and Traveline Cymru.
- 3.2.4 There are further bus stops in both directions on Willowbrook Drive which operate with bus flags and unmarked laybys.
- 3.2.5 **Table 3.1** details the bus services operating from here and other stops within walking distance of the site.



Route No.	Destination	Frequency
44/45	Cardiff City Centre - St Mellons (stop located 650m on Llanelirwg Way)	<b>Mon-Sat:</b> Every 10-20 mins from 06:27-22:41 then 23:51 <b>Sun:</b> ~ every 30 mins from 08:03-09:55 the half hourly until 23:51
	St Mellons - Cardiff City Centre	<b>Mon-Sat:</b> Every 10-20 mins from 05:01-21:17 then 22:17 <b>Sun:</b> ~ every 30 mins from 08:58 then every 10-20 mins until 17:41, then half hourly until 22:11-23:35
54	St. Mellons - Heath Hospital	<b>Mon-Fri:</b> 06:39
101/102	Pentrebane - Llanrumney	<b>Mon-Fri:</b> Every 1-1.5 hrs from 06:34-19:14
815	Splott - Ysgol Bro Edern	<b>Mon-Fri:</b> 07:36
	Ysgol Bro Edern - Splott	<b>Mon-Fri:</b> 15:57

Table 3.1 Bus services operating within proximity

3.2.6 A bus route network map for Cardiff City Centre is shown in **Figure 3.4** which details the network of routes operating from the site. As can be seen, the services operating from the proximity of Willowbrook Drive facilitate a range of bus connections in and around the city centre.

3.2.7 The service no 44/45 calls within proximity to Cardiff Central Railway Station allowing a connection to the wider rail network. This service also calls near Cardiff Queens Street Railway Station of which provides a direct service to Cardiff Bay.



Figure 3.4 Cardiff City Centre bus network

### ***Rail***

3.2.8 The closest train stations to the site are Cardiff Queen Street and Cardiff Central, located approximately 7km to the south west of the site of which as discussed above, is directly accessible via the bus service no 44/45.

3.2.9 Cardiff Queen street is served by Transport for Wales providing regular services to Cardiff Central, Cardiff Bay, Penarth, Barry and Merthyr Tydfil to name but a few.

### ***South Wales Metro***

3.2.10 As part of the South Wales Metro improvements, the following improvements are being implemented within Cardiff as immediate priorities:

- Rail: improvements to Cardiff Central railway station to alleviate overcrowding and congestion
- Bus: Cardiff Bus Interchange with 14 bus bays, cafes and shops
- Active Travel: 1,000 new high-quality cycle parking spaces to be delivered

3.2.11 The Cardiff Transport Hub is to be located directly adjacent to Cardiff Central railway station, on the site of Marland House and the NCP Marland car park, shown in **Figure 3.5** below.

3.2.12 The hub will provide a core for bus and rail infrastructure around Cardiff and will improve connectivity to the public transport network.

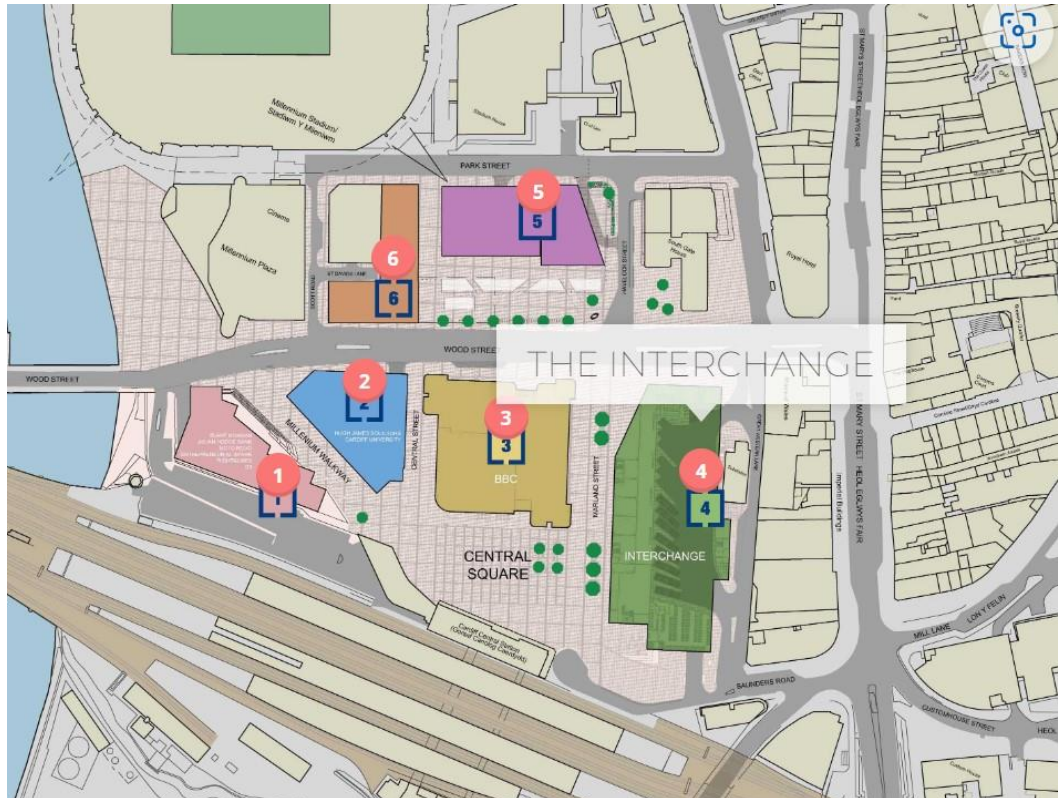


Figure 3.5 Cardiff Transport Interchange proposals

### 3.3 Local Amenities

- 3.3.1 The Chartered Institution of Highways and Transportation (CIHT) guidelines for ‘Providing for Journeys on Foot’ indicate that the desirable walking distance for commuting is 500 metres, the acceptable walking distance is 1km, and 2km is the preferred maximum. The desirable walking distance for ‘Elsewhere’ (this includes access to local amenities) is 330m, the acceptable distance is 800m and 1.2km is the preferred maximum.
- 3.3.2 **Figure 3.6** shows the locations of the amenities within range of the site with walking distances shown in **Table 3.2**.





Figure 3.6 Local amenities within proximity of site

Facility	Distance (m)	Walk Time (minutes)	Cycle Time (minutes)
Premier	700	8	6
Ysgol Gynradd Maes y Dderwen	700	8	6
The Beacon Centre	700	8	6
SPAR Trowbridge	750	9	6
Neighbourhood Centre (including Tesco Superstore, Morrisons Daily, St Mellons Library and Hub, St Mellons Pharmacy and Brynderwen Surgery)	700	8	6
Meadowlane Primary School	800	10	6
Bishop Childs CIW Primary School	1000	12	8
St John's College	1200	14	10
Ty'r Winch pub	1200	14	10
The Church Inn	1200	14	10
Ysgol Gynradd Pen-y-Bryn	1200	14	10

Table 3.2 Local amenities within proximity

3.3.3 As can be seen from the above, there are a good range of facilities within proximity of the site with St Mellons neighbourhood centre located an 850m walk to the north from the site.

3.3.4 The neighbourhood centre benefits from a Tesco Superstore, St Mellons Library and Hub, St Mellons Pharmacy and Brynderwen Surgery. This is accessible via the footways on both Willowbrook Drive and Crickhowell Road.

## 4 DEVELOPMENT PROPOSALS

### 4.1 Land Use

4.1.1 The proposed development is to accommodate up to 35 private and affordable residential dwellings made up of the following mix detailed in **Table 4.1**. The proposed layout of the development is included at **Appendix A**.

Social		
Name	Type	Quantity
A1	4P2B house	6
211	2P1B flat	8
322/	3P2B flat	2
321	1P1B acc. Flat	2
Subtotal		18
Private		
Name	Type	Quantity
2B1	Coach house	1
B	2-bed house	8
D	3-bed house	2
K	4-bed house	4
Subtotal		17
Overall total		35

Table 4.1 Accommodation schedule

### 4.2 Access

#### *Vehicular*

4.2.1 Vehicular access to the northern parcel of the site will be achieved via three access points; two priority junctions onto Willowbrook Drive and one junction onto Crickhowell Road.

4.2.2 The required visibility splay at the site access junctions is based on Manual for Streets (MfS) sight stopping distances (SSD) of vehicles travelling at 20mph.

4.2.3 It can be seen from **Appendix B** that the required visibility splays of 2.4m 'x' distance by 25 'y' distance can be accommodated within land owned by the applicant or highway authority.

### ***Pedestrians & Cyclists***

- 4.2.4 Pedestrian access to the site will be provided via the main vehicular access points. The vehicular access to the site will incorporate facilities for pedestrians with a 2m wide footway provided on the carriageway.
- 4.2.5 Existing footpath provision within the site will be maintained and new footpaths will link to these.
- 4.2.6 A new footway will be provided on the northern edge of the Crickhowell Road carriageway which will tie into existing footway provision.

### ***Service and refuse Vehicle Access***

- 4.2.7 All proposed access points have been designed to accommodate a range of vehicles that are likely to service the site.
- 4.2.8 Service vehicles will only be required to enter the southernmost section of the site, and refuse collection will be kerb-side on Willowbrook Drive for the northern sections.
- 4.2.9 Swept path analysis of the southern turning head has been undertaken with; an 11.2m refuge vehicle, a Mercedes Sprinter panel van and a DB32 fire appliance.
- 4.2.10 All vehicles referenced above, can access and manoeuvre within the sites satisfactorily, as shown in **Appendix C**.

## **4.3 Parking**

### ***Vehicular***

- 4.3.1 As part of the development proposals, it is intended to provide car parking spaces in compliance with the adopted parking standards. This level of car parking has been allocated taking into consideration Cardiff City Councils Supplementary Planning Guidance Parking Guidance and Standards 2018.
- 4.3.2 **Table 4.1** below outlines the maximum number of car parking spaces based on the adopted standards.

Development type	Maximum car parking space per unit	Minimum cycle parking	Disabled parking provision
1-bedroom dwellings	1	1 per bedroom	Provided in car parking allocation
2+ person dwellings	2	1 per bedroom	

Table 4.2 Car parking SPG

4.3.3 Based on the above, the development is able to provide a total of 59 car parking spaces. The development proposes to provide this to standard; 59 car parking spaces with an additional 2 car parking spaces for visitors.

4.3.4 Regarding electric vehicles, the parking SPG states that;

*“Where there is an opportunity for developments to include vehicle charging points the Council will encourage their provision and seek to secure an appropriate level of provision through the planning process.”*

**Bicycle**

4.3.5 Cardiff’s cycle parking guidelines state a minimum of 1 cycle space per bedroom is to be provided.

4.3.6 Additionally, the SPG states that;

4.3.7 *“Residential and long stay cycle parking should be secure and sheltered. The shelter may be in the form of accommodation within buildings, in cycle sheds or other sheltered structures and can include cycle lockers or cages located in close proximity to the main building access. For houses, where cycle parking is not specifically accommodated within individual dwellings (e.g. where garages are not available), appropriate alternative secure and sheltered provision should be made. Where communal cycle parking is provided, it is often better to have several small groups of stands rather than one large facility.”*

4.3.8 It is therefore required that the residential development should provide minimum a total of 71 bicycle parking spaces; 14 for proposed flats and 55 for the proposed houses.

4.3.9 Secure sheds will be provided, as on other Cardiff Living projects, within the enclosed gardens/shared amenity spaces appended to each dwelling unit to provide 1 bicycle space per bedroom.

## 5 TRANSPORT CHARACTERISTICS

### 5.1 Introduction

5.1.1 In order to assess the impact of the site on the existing transport infrastructure, it is necessary to assess the likely level of vehicular trips generated by proposed residential use on the site.

5.1.2 This section of the report, therefore outlines the methodology used to predict traffic generation for the proposed development, and provides an estimate of future trips to/from the development site.

### 5.2 Trip Rates

5.2.1 The vehicle trip generation rates for the units have been obtained from the TRICS 7.6.4 database. Sites were selected on the basis of the following selection criteria:

- Land use: Residential – mixed private/affordable housing;
- Survey days: Monday – Friday;
- Location of the development: UK excluding Greater London, Northern Ireland and Republic of Ireland; and

5.2.2 The multi-modal trip generation for the site is details in **Table 5.1**, with the full TRICS output shown in **Appendix D**.

Mode	Time Period	Total Trip Rate			Trip Rate (35 dwellings)		
		Arrivals	Departures	Total	Arrivals	Departures	Total
Total vehicles	08:00-09:00	0.131	0.346	0.477	5	12	17
	17:00-18:00	0.297	0.143	0.440	10	5	15
	<b>Daily</b>	<b>2.255</b>	<b>2.105</b>	<b>4.360</b>	<b>79</b>	<b>74</b>	<b>153</b>
Pedestrians	08:00-09:00	0.063	0.192	0.255	2	7	9
	17:00-18:00	0.062	0.041	0.103	2	1	4
	<b>Daily</b>	<b>0.700</b>	<b>0.697</b>	<b>1.397</b>	<b>25</b>	<b>24</b>	<b>49</b>
Cyclists	08:00-09:00	0.003	0.013	0.016	0	0	1
	17:00-18:00	0.008	0.003	0.011	0	0	0
	<b>Daily</b>	<b>0.052</b>	<b>0.055</b>	<b>0.107</b>	<b>2</b>	<b>2</b>	<b>4</b>
Public Transport	08:00-09:00	0.002	0.033	0.035	0	1	1
	17:00-18:00	0.026	0.005	0.031	1	0	1
	<b>Daily</b>	<b>0.135</b>	<b>0.145</b>	<b>0.280</b>	<b>5</b>	<b>5</b>	<b>10</b>

Table 5.1 Multi-modal trip generation: Residential – mixed private/affordable housing



5.2.3 It can be observed from the above that in terms of vehicles, it is expected that the site will generate up to 17 two-way vehicle movements during the AM peak and 15 two-way vehicle movements during the PM peak. Over the course of the day, the site is likely to generate up to 153 two-way vehicle movements.

5.2.4 In terms of Active Travel, pedestrians will likely generate up to 9 two-way movements during the AM and 4 two-way movements during the PM peak period. Cyclists are likely to generate up to 1 two-way movements during the AM peak and 0 two-way movement during the PM peak.

5.2.5 Public transport users are likely to generate 1 two-way movement during both the AM and PM peak.

### **5.3 Potential Impact**

5.3.1 It is envisaged that the proposed development will have a minimal impact on the operational performance of the local highway network with the movement generated by the development undertaken by active or public transport travel.

5.3.2 It is also considered that a well-developed Travel Plan could further reduce this impact by reducing single occupancy vehicle travel.

## **6 CONCLUSION**

### **6.1 Summary**

6.1.1 This Transport Statement has been produced to accompany a full planning application for the proposed development of up to 35 mixed tenure residential dwellings on and located to the south-west of Willowbrook Drive, St Mellons, Cardiff.

6.1.2 An analysis of the local highway and transport network, including provision for pedestrians, cyclists and public transport movement has been undertaken and it has been concluded that there are opportunities for residents of the proposed development to undertake trips by alternative modes to the private car.

6.1.3 The site is located within proximity to existing bus services and several local amenities and facilities. The site is within a short walking distance of approximately 700m equating to an 8-9-minute walk to the St Mellons neighbourhood centre.

6.1.4 Vehicular and pedestrian access to the site is proposed via several simple priority junctions with Willowbrook Drive and Crickhowell Road.

6.1.5 A new footpath link is proposed connecting the footway on the western side of Willowbrook Drive with exiting footpath provision that abuts the western and southern boundary of the northern development land parcel.

6.1.6 The development is to be accompanied by 63 car parking spaces. This level of car parking has been allocated taking into consideration Cardiff City Council's Car Parking Standards 2018.

6.1.7 It is predicted that in terms of vehicles, it is expected that the site will generate up to 17 two-way vehicle movements during the AM peak and 15 two-way vehicle movements during the PM peak. Over the course of the day, the site is likely to generate up to 153 two-way vehicle movements.

### **6.2 Conclusion**

6.2.1 In conclusion, it is considered that this development is appropriate and acceptable in traffic and transport terms. On the basis of the vehicle trip generation assessment, it is

proposed that the traffic movements associated with the proposed development could be accommodated on the highway network and will not have a detrimental impact on the operational performance of the local highway network.

6.2.2 There is a good level of pedestrian infrastructure by way of routes and crossing provision in the vicinity of the site.

# Appendices

# Appendix A





**SCHEDULE**

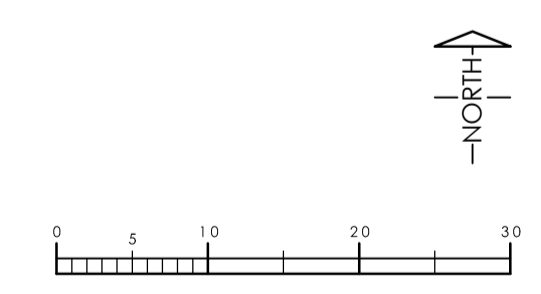
<b>Social</b>		
A1	4p2b House	06 No.
211	2p1b Flat	08 No.
322/	3p2b Flat	02 No.
321	1b1b acc. Flat	02 No.
TOTAL		18 No.
<b>Sale</b>		
2B1	Coach House	01 No.
B	2 Bed House	08 No.
C	3 Bed House	02 No.
D	3 Bed House	04 No.
K	4 Bed House	02 No.
TOTAL		17 No.
<b>OVERALL TOTAL</b>		<b>35 No.</b>

- Soft & Hard Landscape Principles**
- Public facing soft landscaping managed by SAB/CCC/ManCo
  - Public facing private frontage managed by residents/CCC/ManCo
  - Private rear gardens managed by residents/CCC/ManCo
  - Mastic asphalt adopted highway
  - Block paviors - opportunity for use in SuDS strategy
  - Private drives and other pathways - materials to be agreed

- Trees (subject to Tree Survey)**
- Existing trees & RPAs to be retained
  - Existing trees to be removed
  - Indicative strategic landscaping Landscape architect to confirm landscape design & specification

- Boundary Structures**
- 2.1m high screen wall
  - 0.6m high screen wall
  - 0.6m high screen wall topped with 1.2m high railings (1.8m o/a)
  - 0.6m high railings with access gate
  - 1.8m high Close-boarded fence
  - Garden gates

- Site furniture**
- 2.4 x 1.2m shed for 2/3 Bed units
  - 2.4 x 2m shed for 4 Bed units
  - Clothes drying rotary lines for Affordable units
  - "Broxap Wardle" secured cycle shelter for 8 cycles.
  - Electric Vehicle(EV) charging point



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rev	date	description	by
A	01.04.2022	Plots 29-30, 33-34 & 23-24 amended	BG
B	19.12.2022	Amended layout	JM
C	23.02.2023	Layout revised in response to CCC placemaking comments	JM
D	10.03.2023	Layout further revised in response to placemaking comments	JM
E	04.08.2023	Layout further revised in response to LPA comments 12/05/23	JM
F	24.10.2023	Revised in response to Landscape Arch & CCC Refuse comments	JM
G	31.10.2023	Revised in response to engineer's comments	JM
H	06.12.2023	Revised to accord with revised sales mix	JM
J2	19.04.2024	Revised to respond to engineer's SuDS strategy comments	JM
K	14.05.2024	Revised to accommodate mix & further SuDS requirements	JM
L	14.05.2024	Schedule corrected	JM

Status:  
**CONCEPT**

Drawn: CC  
Director: JM  
Date: December 2021  
Scale: 1:500 @ A1

Client: Wates Residential Limited  
Project: Willowbrook Drive -South Site  
Title: Site Layout  
Ref: 2485-00(02)101

Rev: L





# Appendix B

Drawing Title  
**2.4m x 43m visibility splay**

Job No  
**T24.110**

Job Title  
**Willowbrook South**

Client  
**Wates Construction Ltd.**

Scale	2:1
Designed by	KEW
Drawn by	KEW
Approved by	PO'C
Date 1st issued	01/05/24
Document ref. no	T24.110.CAD.D3
Revision no	-

**Revision History**

Rev	Date	Amendment	Editor





# Appendix C

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Drawing Title  
**DB32 Fire Appliance  
 Swpet path analysis**

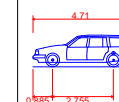
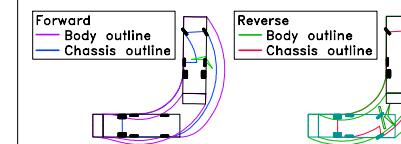
Job No  
**T24.110**

Job Title  
**Willowbrook South**

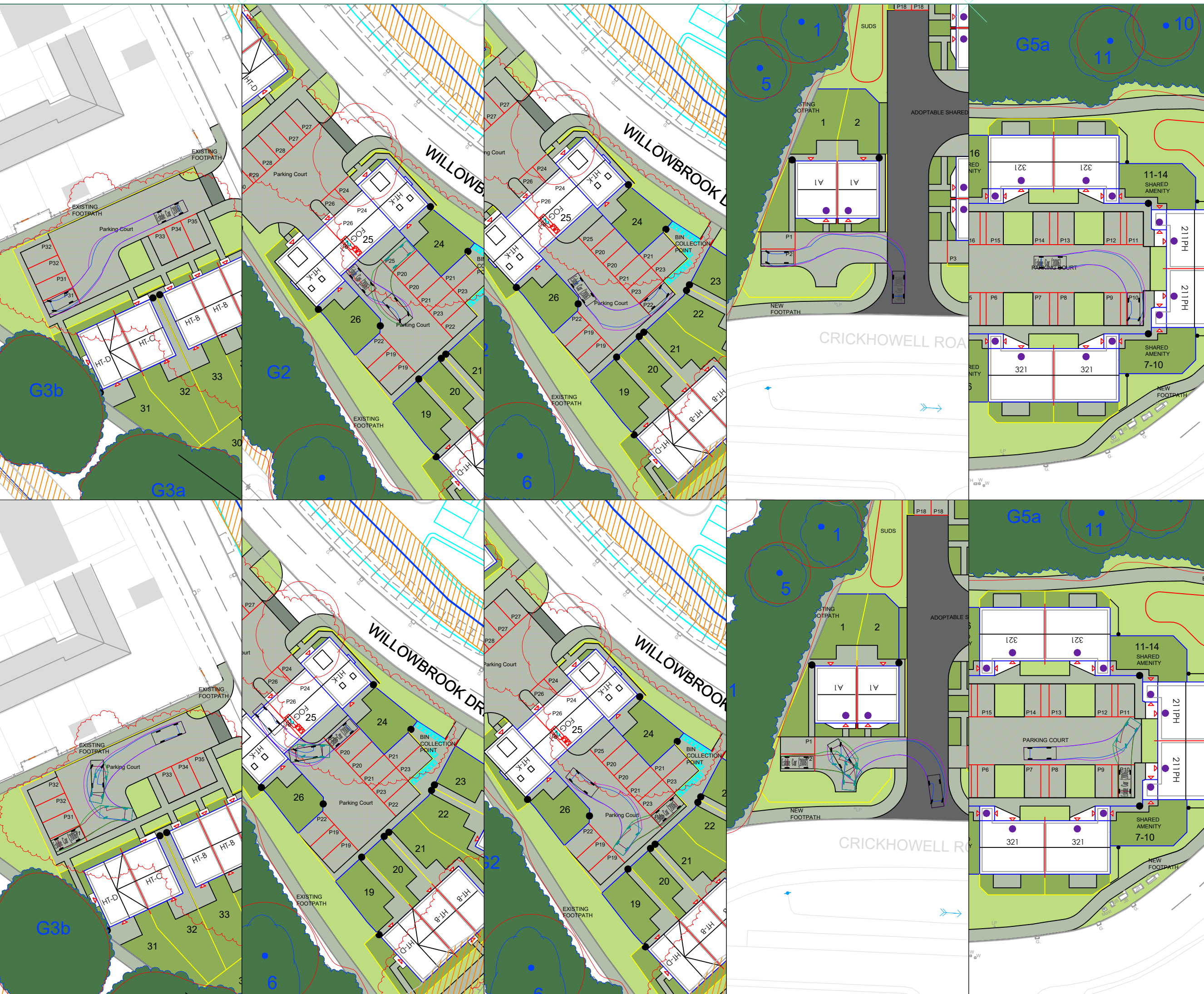
Client  
**Wates Construction Ltd.**

Scale 2:1  
 Designed by KEW  
 Drawn by KEW  
 Approved by PO'C  
 Date 1st issued 01/05/24  
 Document ref. no T24.110.CAD.D3  
 Revision no -

Revision History			
Rev	Date	Amendment	Editor



Estate Car (2006)  
 Overall Length 4.710m  
 Overall Width 1.804m  
 Overall Body Height 1.442m  
 Min Body Ground Clearance 0.207m  
 Max Track Width 1.756m  
 Lock to lock time 4.00s  
 Kerb to Kerb Turning Radius 5.950m





Drawing Title  
**11.5m Refuse Vehicle  
 Swpet path analysis**

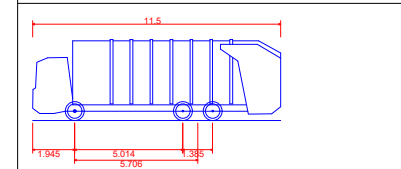
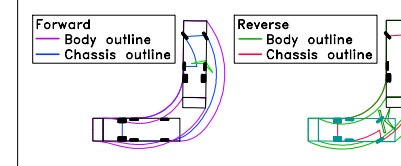
Job No  
**T24.110**

Job Title  
**Willowbrook South**

Client  
**Wates Construction Ltd.**

Scale 2:1  
 Designed by KEW  
 Drawn by KEW  
 Approved by PO'C  
 Date 1st issued 01/05/24  
 Document ref. no T24.110.CAD.D3  
 Revision no -

Revision History			
Rev	Date	Amendment	Editor



**11.5m Refuse Vehicle**  
 Overall Length 11.500m  
 Overall Width 2.530m  
 Overall Body Height 3.756m  
 Min Body Ground Clearance 0.309m  
 Track Width 2.530m  
 Lock to lock time 4.00s  
 Kerb to Kerb Turning Radius 11.550m



Drawing Title  
**Mercedes Sprinter  
 Swpet path analysis**

Job No  
**T24.110**

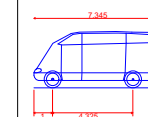
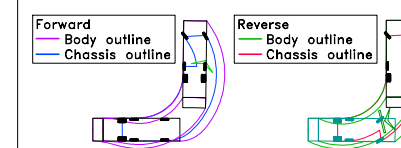
Job Title  
**Willowbrook South**

Client  
**Wates Construction Ltd.**

Scale 2:1  
 Designed by KEW  
 Drawn by KEW  
 Approved by PO'C  
 Date 1st issued 01/05/24  
 Document ref. no T24.110.CAD.D3  
 Revision no -

**Revision History**

Rev	Date	Amendment	Editor



Mercedes Sprinter Panel Van 518CDI Extra Long Super High Roof  
 Overall Length 7.345m  
 Overall Width 1.993m  
 Overall Body Height 3.030m  
 Min Body Ground Clearance 0.400m  
 Track Width 1.993m  
 Lock to lock time 5.00s  
 Wall to Wall Turning Radius 7.800m





Drawing Title  
**DB32 Fire Appliance  
 Swpet path analysis**

Job No  
**T24.110**

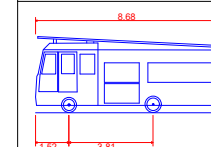
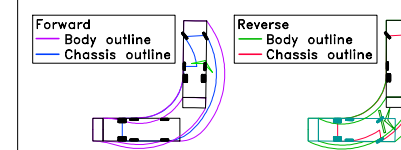
Job Title  
**Willowbrook South**

Client  
**Wates Construction Ltd.**

Scale 2:1  
 Designed by KEW  
 Drawn by KEW  
 Approved by PO'C  
 Date 1st issued 01/05/24  
 Document ref. no T24.110.CAD.D3  
 Revision no -

**Revision History**

Rev	Date	Amendment	Editor



**DB32 Fire Appliance**  
 Overall Length 8.680m  
 Overall Width 2.180m  
 Overall Body Height 3.452m  
 Min Body Ground Clearance 0.337m  
 Max Track Width 2.121m  
 Lock to lock time 6.00s  
 Kerb to Kerb Turning Radius 7.910m



# Appendix D

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL  
Category : M - MIXED PRIVATE/AFFORDABLE HOUSING  
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	BH BRIGHTON & HOVE	1 days
	CT CENTRAL BEDFORDSHIRE	1 days
	ES EAST SUSSEX	5 days
	HC HAMPSHIRE	4 days
	HF HERTFORDSHIRE	2 days
	KC KENT	2 days
	MW MEDWAY	1 days
	OX OXFORDSHIRE	1 days
	SC SURREY	2 days
	WS WEST SUSSEX	8 days
03	SOUTH WEST	
	DC DORSET	1 days
	DV DEVON	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	2 days
	NF NORFOLK	3 days
06	WEST MIDLANDS	
	WK WARWICKSHIRE	1 days
09	NORTH	
	CU CUMBERLAND	1 days

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

## Primary Filtering selection:

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

Parameter: No of Dwellings  
Actual Range: 20 to 200 (units: )  
Range Selected by User: 9 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: 01/01/16 to 23/11/23

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

Selected survey days:

Monday	3 days
Tuesday	5 days
Wednesday	12 days
Thursday	10 days
Friday	6 days

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

Selected survey types:

Manual count	36 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)	8
Edge of Town	26
Neighbourhood Centre (PPS6 Local Centre)	2

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

Selected Location Sub Categories:

Industrial Zone	1
Residential Zone	34
No Sub Category	1

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	25 days - Selected
Servicing vehicles Excluded	23 days - Selected

## Secondary Filtering selection:

Use Class:

C3 36 days

*This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS@.*

Population within 500m Range:

All Surveys Included



## Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	13 days
10,001 to 15,000	11 days
15,001 to 20,000	2 days
20,001 to 25,000	3 days
25,001 to 50,000	5 days

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

Population within 5 miles:

25,001 to 50,000	9 days
50,001 to 75,000	7 days
75,001 to 100,000	5 days
100,001 to 125,000	2 days
125,001 to 250,000	11 days
250,001 to 500,000	2 days

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

Car ownership within 5 miles:

0.6 to 1.0	7 days
1.1 to 1.5	25 days
1.6 to 2.0	4 days

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

Travel Plan:

Yes	30 days
No	6 days

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

PTAL Rating:

No PTAL Present	36 days
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*This data displays the number of selected surveys with PTAL Ratings.*

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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LIST OF SITES relevant to selection parameters

1	BH-03-M-01 OVERDOWN RISE PORTSLADE	MIXED HOUSES & FLATS	BRIGHTON & HOVE
	Edge of Town Residential Zone Total No of Dwellings: 125 <i>Survey date: THURSDAY 09/03/23</i>		<i>Survey Type: MANUAL</i>
2	CA-03-M-01 BANNOLD ROAD WATERBEACH	MIXED HOUSES & FLATS	CAMBRIDGESHIRE
	Edge of Town Residential Zone Total No of Dwellings: 52 <i>Survey date: WEDNESDAY 20/06/18</i>		<i>Survey Type: MANUAL</i>
3	CA-03-M-02 FORDHAM ROAD SOHAM	MIXED HOUSES & FLATS	CAMBRIDGESHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 87 <i>Survey date: WEDNESDAY 28/06/21</i>		<i>Survey Type: MANUAL</i>
4	CT-03-M-01 HITCHIN ROAD SHEFFORD	MIXED HOUSES & FLATS	CENTRAL BEDFORDSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 75 <i>Survey date: WEDNESDAY 28/06/23</i>		<i>Survey Type: MANUAL</i>
5	CU-03-M-04 STANHOPE ROAD CARLISLE	SEMI -DETACHED & TERRACED	CUMBERLAND
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 20 <i>Survey date: FRIDAY 24/06/16</i>		<i>Survey Type: MANUAL</i>
6	DC-03-M-02 KINGS ROAD DORCHESTER FORDINGTON	TERRACED & BUNGALOWS	DORSET
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 37 <i>Survey date: FRIDAY 16/09/16</i>		<i>Survey Type: MANUAL</i>
7	DV-03-M-02 SAINT PETER' SQUAY TOTNES	MIXED HOUSES & FLATS	DEVON
	Edge of Town Residential Zone Total No of Dwellings: 90 <i>Survey date: FRIDAY 29/03/19</i>		<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

8	ES-03-M-10 DITTONS ROAD POLEGATE	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings: 108 <i>Survey date: MONDAY 11/07/16</i>		<i>Survey Type: MANUAL</i>
9	ES-03-M-14 KINGS DRIVE EASTBOURNE UPPERTON	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings: 119 <i>Survey date: THURSDAY 15/11/18</i>		<i>Survey Type: MANUAL</i>
10	ES-03-M-15 FIELD END MARESFIELD	MIXED HOUSES	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings: 80 <i>Survey date: WEDNESDAY 13/03/19</i>		<i>Survey Type: MANUAL</i>
11	ES-03-M-16 BARNHORN ROAD BEXHILL LITTLE COMMON	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings: 119 <i>Survey date: WEDNESDAY 10/07/19</i>		<i>Survey Type: MANUAL</i>
12	ES-03-M-19 PARK ROAD HAILSHAM	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings: 149 <i>Survey date: THURSDAY 17/06/21</i>		<i>Survey Type: MANUAL</i>
13	HC-03-M-10 RAWLINGS LANE ALTON	MIXED HOUSES & FLATS	HAMPSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 176 <i>Survey date: TUESDAY 05/03/19</i>		<i>Survey Type: MANUAL</i>
14	HC-03-M-14 ROMSEY ROAD WINCHESTER STANMORE	MIXED HOUSES & FLATS	HAMPSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 200 <i>Survey date: WEDNESDAY 26/05/21</i>		<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

15	HC-03-M-15 COOMBE ROAD YATELEY	MIXED HOUSES & FLATS	HAMPSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 150 <i>Survey date: MONDAY 16/05/22</i>		<i>Survey Type: MANUAL</i>
16	HC-03-M-18 HAVANT ROAD HAVANT BEDHAMPTON	MIXED HOUSES & FLATS	HAMPSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 149 <i>Survey date: FRIDAY 17/03/23</i>		<i>Survey Type: MANUAL</i>
17	HF-03-M-01 BRIDLINGTON ROAD WATFORD SOUTH OXHEY	BLOCKS OF FLATS	HERTFORDSHIRE
	Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total No of Dwellings: 174 <i>Survey date: FRIDAY 11/06/21</i>		<i>Survey Type: MANUAL</i>
18	HF-03-M-05 WEST ROAD SAWBRIDGEWORTH	TERRACED & DETACHED	HERTFORDSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 159 <i>Survey date: THURSDAY 23/11/23</i>		<i>Survey Type: MANUAL</i>
19	KC-03-M-02 HERMITAGE LANE MAIDSTONE BARMING	MIXED HOUSES AND FLATS	KENT
	Edge of Town No Sub Category Total No of Dwellings: 119 <i>Survey date: TUESDAY 05/06/18</i>		<i>Survey Type: MANUAL</i>
20	KC-03-M-03 BUNYARD WAY MAIDSTONE ALLINGTON	MIXED HOUSES & FLATS	KENT
	Edge of Town Residential Zone Total No of Dwellings: 140 <i>Survey date: TUESDAY 22/05/18</i>		<i>Survey Type: MANUAL</i>
21	MW-03-M-01 OTTERHAM QUAY LANE RAINHAM	MIXED HOUSES	MEDWAY
	Edge of Town Residential Zone Total No of Dwellings: 128 <i>Survey date: WEDNESDAY 21/06/23</i>		<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

22	NF-03-M-03	MIXED HOUSES		NORFOLK
	NORTH WALSHAM ROAD			
	NORTH WALSHAM			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		70	
	<i>Survey date: WEDNESDAY</i>		<i>18/09/19</i>	<i>Survey Type: MANUAL</i>
23	NF-03-M-59	MIXED HOUSES		NORFOLK
	NORWICH COMMON			
	WYMONDHAM			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		153	
	<i>Survey date: THURSDAY</i>		<i>29/09/22</i>	<i>Survey Type: MANUAL</i>
24	NF-03-M-63	MIXED HOUSES		NORFOLK
	NORTH WALSHAM ROAD			
	NORTH WALSHAM			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		100	
	<i>Survey date: WEDNESDAY</i>		<i>21/09/22</i>	<i>Survey Type: MANUAL</i>
25	OX-03-M-01	MIXED HOUSES		OXFORDSHIRE
	WENMAN ROAD			
	THAME			
	Edge of Town			
	Industrial Zone			
	Total No of Dwellings:		100	
	<i>Survey date: THURSDAY</i>		<i>28/06/18</i>	<i>Survey Type: MANUAL</i>
26	SC-03-M-10	MIXED HOUSES & FLATS		SURREY
	AARONS HILL			
	GODALMING			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		108	
	<i>Survey date: THURSDAY</i>		<i>09/06/22</i>	<i>Survey Type: MANUAL</i>
27	SC-03-M-13	DETACHED HOUSES & FLATS		SURREY
	HOLLAND ROAD			
	OXTED			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		168	
	<i>Survey date: TUESDAY</i>		<i>22/11/22</i>	<i>Survey Type: MANUAL</i>
28	WK-03-M-02	MIXED HOUSES		WARWICKSHIRE
	BISHOPTON LANE			
	STRATFORD UPON AVON			
	BISHOPTON			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		130	
	<i>Survey date: FRIDAY</i>		<i>29/06/18</i>	<i>Survey Type: MANUAL</i>



LIST OF SITES relevant to selection parameters (Cont.)

29	WS-03-M-10	MIXED FLATS & HOUSES	WEST SUSSEX
	BROYLE ROAD CHICHESTER		
	Suburban Area (PPS6 Out of Centre) Residential Zone		
	Total No of Dwellings:	194	
	Survey date: WEDNESDAY	23/03/16	Survey Type: MANUAL
30	WS-03-M-12	HOUSES & FLATS	WEST SUSSEX
	UPPER SHOREHAM ROAD SHOREHAM BY SEA		
	Suburban Area (PPS6 Out of Centre) Residential Zone		
	Total No of Dwellings:	192	
	Survey date: WEDNESDAY	27/04/16	Survey Type: MANUAL
31	WS-03-M-13	TERRACED & FLATS	WEST SUSSEX
	IRENE AVENUE WORTHING LANCING		
	Suburban Area (PPS6 Out of Centre) Residential Zone		
	Total No of Dwellings:	23	
	Survey date: TUESDAY	27/06/16	Survey Type: MANUAL
32	WS-03-M-18	MIXED HOUSES & FLATS	WEST SUSSEX
	WESTLOATS LANE BOGNOR REGIS NORTH BERSTED		
	Suburban Area (PPS6 Out of Centre) Residential Zone		
	Total No of Dwellings:	86	
	Survey date: THURSDAY	17/10/19	Survey Type: MANUAL
33	WS-03-M-19	MIXED HOUSES & FLATS	WEST SUSSEX
	ADLINGTON GARDENS BOGNOR REGIS		
	Suburban Area (PPS6 Out of Centre) Residential Zone		
	Total No of Dwellings:	32	
	Survey date: THURSDAY	17/10/19	Survey Type: MANUAL
34	WS-03-M-20	MIXED HOUSES & FLATS	WEST SUSSEX
	OLD GUILDFORD ROAD HORSHAM BROADBRIDGE HEATH		
	Neighbourhood Centre (PPS6 Local Centre) Residential Zone		
	Total No of Dwellings:	121	
	Survey date: THURSDAY	24/10/19	Survey Type: MANUAL
35	WS-03-M-22	MIXED HOUSES & FLATS	WEST SUSSEX
	RUSPER ROAD CRAWLEY IFIELD		
	Edge of Town Residential Zone		
	Total No of Dwellings:	91	
	Survey date: MONDAY	19/10/20	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

36	WS-03-M-25	MIXED HOUSES	WEST SUSSEX
	CLAPPERS LANE		
	BRACKLESHAM BAY		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	110	
	Survey date: WEDNESDAY	24/11/21	Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING

MULTI-MODAL TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 1.83

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	36	115	0.080	36	115	0.261	36	115	0.341
08:00 - 09:00	36	115	0.131	36	115	0.346	36	115	0.477
09:00 - 10:00	36	115	0.129	36	115	0.161	36	115	0.290
10:00 - 11:00	36	115	0.126	36	115	0.141	36	115	0.267
11:00 - 12:00	36	115	0.122	36	115	0.138	36	115	0.260
12:00 - 13:00	36	115	0.143	36	115	0.143	36	115	0.286
13:00 - 14:00	36	115	0.146	36	115	0.140	36	115	0.286
14:00 - 15:00	36	115	0.131	36	115	0.163	36	115	0.294
15:00 - 16:00	36	115	0.246	36	115	0.168	36	115	0.414
16:00 - 17:00	36	115	0.238	36	115	0.138	36	115	0.376
17:00 - 18:00	36	115	0.297	36	115	0.143	36	115	0.440
18:00 - 19:00	36	115	0.239	36	115	0.138	36	115	0.377
19:00 - 20:00	1	119	0.126	1	119	0.008	1	119	0.134
20:00 - 21:00	1	119	0.101	1	119	0.017	1	119	0.118
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			2.255			2.105			4.360

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: 20 - 200 (units: )  
Survey date date range: 01/01/16 - 23/11/23  
Number of weekdays (Monday-Friday): 36  
Number of Saturdays: 0  
Number of Sundays: 0  
Surveys automatically removed from selection: 8  
Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are 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 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING  
 MULTI-MODAL CYCLISTS  
 Calculation factor: 1 DWELLS  
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	36	115	0.002	36	115	0.007	36	115	0.009
08:00 - 09:00	36	115	0.003	36	115	0.013	36	115	0.016
09:00 - 10:00	36	115	0.003	36	115	0.005	36	115	0.008
10:00 - 11:00	36	115	0.002	36	115	0.005	36	115	0.007
11:00 - 12:00	36	115	0.002	36	115	0.002	36	115	0.004
12:00 - 13:00	36	115	0.003	36	115	0.002	36	115	0.005
13:00 - 14:00	36	115	0.003	36	115	0.003	36	115	0.006
14:00 - 15:00	36	115	0.005	36	115	0.004	36	115	0.009
15:00 - 16:00	36	115	0.009	36	115	0.003	36	115	0.012
16:00 - 17:00	36	115	0.007	36	115	0.004	36	115	0.011
17:00 - 18:00	36	115	0.008	36	115	0.003	36	115	0.011
18:00 - 19:00	36	115	0.005	36	115	0.004	36	115	0.009
19:00 - 20:00	1	119	0.000	1	119	0.000	1	119	0.000
20:00 - 21:00	1	119	0.000	1	119	0.000	1	119	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.052			0.055			0.107

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING  
 MULTI-MODAL PEDESTRIANS  
 Calculation factor: 1 DWELLS  
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	36	115	0.024	36	115	0.051	36	115	0.075
08:00 - 09:00	36	115	0.063	36	115	0.192	36	115	0.255
09:00 - 10:00	36	115	0.046	36	115	0.037	36	115	0.083
10:00 - 11:00	36	115	0.035	36	115	0.035	36	115	0.070
11:00 - 12:00	36	115	0.038	36	115	0.040	36	115	0.078
12:00 - 13:00	36	115	0.046	36	115	0.038	36	115	0.084
13:00 - 14:00	36	115	0.035	36	115	0.039	36	115	0.074
14:00 - 15:00	36	115	0.045	36	115	0.064	36	115	0.109
15:00 - 16:00	36	115	0.164	36	115	0.058	36	115	0.222
16:00 - 17:00	36	115	0.081	36	115	0.046	36	115	0.127
17:00 - 18:00	36	115	0.062	36	115	0.041	36	115	0.103
18:00 - 19:00	36	115	0.053	36	115	0.048	36	115	0.101
19:00 - 20:00	1	119	0.008	1	119	0.008	1	119	0.016
20:00 - 21:00	1	119	0.000	1	119	0.000	1	119	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.700			0.697			1.397

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

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



TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING  
 MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	36	115	0.002	36	115	0.040	36	115	0.042
08:00 - 09:00	36	115	0.002	36	115	0.033	36	115	0.035
09:00 - 10:00	36	115	0.002	36	115	0.010	36	115	0.012
10:00 - 11:00	36	115	0.004	36	115	0.009	36	115	0.013
11:00 - 12:00	36	115	0.005	36	115	0.009	36	115	0.014
12:00 - 13:00	36	115	0.008	36	115	0.008	36	115	0.016
13:00 - 14:00	36	115	0.007	36	115	0.008	36	115	0.015
14:00 - 15:00	36	115	0.006	36	115	0.004	36	115	0.010
15:00 - 16:00	36	115	0.027	36	115	0.008	36	115	0.035
16:00 - 17:00	36	115	0.027	36	115	0.005	36	115	0.032
17:00 - 18:00	36	115	0.026	36	115	0.005	36	115	0.031
18:00 - 19:00	36	115	0.019	36	115	0.006	36	115	0.025
19:00 - 20:00	1	119	0.000	1	119	0.000	1	119	0.000
20:00 - 21:00	1	119	0.000	1	119	0.000	1	119	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.135			0.145			0.280

*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.*