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TECHNICAL NOTE

PROJECT: Former Fuel Depot, Bognor Road, Chichester

REPORT: 23160/TN/01 – Trip Rates, Attraction and Parking Levels

DATE: October 2023

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1. This Technical Note has been prepared by Highgate Transportation (HTp) to provide a summary of the impact in terms of forecast vehicular trips and parking requirements associated with a proposed minor change in the distribution of floorspace of approved land uses within the permitted mixed-use development located at the former fuel depot, Bognor Road, Chichester.

2. The development comprises the following:

    i. B1(c)/B2/B8 (with ancillary Trade Counter)
    ii. A3 Roadside
    iii. C1 Hotel
    iv. Mixed A3-A4 Pub/Restaurant
    v. Mixed A3-A5 Roadside
    vi. D2 Leisure (gym only)

3. The use classes outlined above reflect those specified in the application and the approved Parameter Plan – Floorspace Distribution and Quantum reference 7702-PL (00) 003 Rev F. Notwithstanding the provisions of the Twon and Country Planning (General Permitted Development) Order 2015, or in any other statutory instrument amending, revoking and re-enacting the Order, the development permitted shall not be used other that for the purposes specified above.

4. Outline permission for this development was granted in April 2021 (application reference O/19/00619/OUT). The overall quantum of development (in terms of floor area) will remain unchanged. An amendment is sought to the quanta of each land use within the parameters of the site. **Table 1** sets out the proposed minor changes.

Table 1 – Permitted and proposed floorspaces by land use

Land Use	Permitted floorspace (sqm GFA)	Proposed floorspace (sqm GFA)	Change (sqm GFA)
B1(c)/B2/B8 (with ancillary trade)	7,870	8,614	+744
A3 Roadside	349	323	-26
C1 Hotel	2,800 (84 bedrooms)	2,800	0
Mixed A3-4 Pub/Restaurant	615	156	-459
Mixed A3-5 Roadside	227	712	+485
D2 Leisure (gym only)	930	186	-744
Total	**12,733**	**12,733**	**0**

5. This Technical Note considers the impact of the proposed changes based on the previously agreed trip rates, as set out in WSP's 2014 Transport Assessment and March 2019 Transport Supporting Note 1, and the parking requirements for cars and cycles, based on which the outline planning permission was granted. Copies of the earlier reports are included at **Appendix 1** and **2** respectively.

Trip Rates and Attraction

6. Previously agreed trip rates are set out in **Table 2**, and forecast trip attraction based on these trip rates is set out in **Table 3** for the permitted development profile and **Table 4** for the proposed development profile.

Table 2 – Previously agreed trip rates

Land Use	Total Vehicle Trip Rates (per 100sqm GFA)				
	AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)		Daily
	Arrival	Departure	Arrival	Departure	
Employment – Industrial Estate	0.324	0.065	0.026	0.454	3.701
Hotel, Food and Drink – Road-Side Food	4.421	4.000	5.053	5.263	111.366
Hotel, Food and Drink – Hotels*	0.11	0.175	0.144	0.092	3.196
Hotel, Food and Drink – Pub/Restaurant	0	0.118	2.638	1.556	43.845
Hotel, Food and Drink – Fast Food Drive Through	3.333	2.681	6.957	7.029	187.841
Leisure – Fitness Club (Private)	0.817	0.616	1.571	0.789	25.471

*Trip rates for hotels given per bedroom

Table 3 – Trip attraction - permitted development profile

Land use	Quantum (sqm GFA)	Trip Attraction				
		AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)		Daily
		Arr	Dep	Arr	Dep	
Mixed Industrial	7,870	25	5	2	36	291
A3 Roadside	349	15	14	18	18	389
C1 Hotel*	2,800	9	15	12	8	268
Mixed A3-4 Pub/Restaurant	615	0	1	16	10	270
Mixed A3-5 Roadside (drive thru)	227	8	6	16	16	426
D2 Leisure (gym)	930	8	6	15	7	237
Total	**12,791**	**65**	**46**	**78**	**95**	**1881**

*Trip attraction for hotels calculated using per bedroom trip rates for 84 bedrooms

Table 4 – Trip attraction – proposed development profile

Land use	Quantum	Trip Attraction				
		AM Peak Hour (0800-0900)		PM Peak Hour (1700-1800)		Daily
		Arr	Dep	Arr	Dep	
Mixed Industrial	8,614	28	6	2	39	319
A3 Roadside	323	14	13	16	17	360
C1 Hotel	2,800	9	15	12	8	268
Mixed A3-4 Pub/Restaurant	156	0	0	4	2	68
Mixed A3-5 Roadside (drive thru)	712	24	19	50	50	1337
D2 Leisure (gym)	186	2	1	3	1	47
Total	**12,791**	**77**	**54**	**87**	**118**	**2400**

*Trip attraction for hotels calculated using per bedroom trip rates for 84 bedrooms

7. It can be seen from the previous transport work (**Appendix 1** and **2**) that a larger development profile was tested for on the local highway network than set out in the above **Tables 3** and **4**, with the resulting trip generation summary and total trips demonstrated in the following extract, taken from WSP March 2019 Technical Note 1 (**Appendix 2**).

Table 1 – Trip Generation summary

No of Units	GFA[1]	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
		Arrivals	Departures	Two-way	Arrivals	Departures	Two-way
Industrial Estate	12,950	50	17	67	10	58	69
Costa Coffee/A3-5 units	349	15	14	29	18	18	36
Premier Inn	84	9	15	34	12	8	29
Beefeater	557.4	0	0	0	15	11	37
(Cross visitation)		-1	-1	-3	-3	-2	-7
A3 Drive-thru	227	9	9	18	13	13	26
Gym	930	8	6	13	15	7	22
Total	**15,013**	**90**	**59**	**159**	**80**	**114**	**212**
Original application		96	52	148	100	158	257
Difference from consented scheme		-6	8	11	-20	-43	-45

8. The comparison between the trips attracted by the proposed development profile (**Table 4**) and that from both the original application and the 2019 update (shown in the WSP extract above) are set out in **Table 5**.

Table 5 – Trip attraction comparison

Scheme	AM Peak			PM Peak		
	Arr	Dep	Two-way	Arr	Dep	Two-way
2014 Original	96	52	148	100	158	257
2019 Update	90*	60*	150*	80*	112*	192*
2023 Proposals	77	54	131	87	118	205

*Adjusted to reflect data provided in body of table

9. In summary, it can be seen that the proposed change to floor area distribution between the permitted land uses results in less trips attracted during the AM peak hour than either the original or 2019 updated scheme. Although 5% more trips may be attracted in the PM peak for the proposed floor area redistribution than were forecast with the 2019 scheme, it can be seen that there is a 20% decrease from the original permitted scheme tested on the highway network.

10. It can also be noted that the PM scenario, at only [205 – 192 =] 13 trips more than the 2019 scheme, this is less than one additional trip per 15 minutes, which is well within the daily variation of flow in any event and so is not a significant or severe impact.

11. To conclude, it is clear that there will be no increased impact above that outlines for the original permitted scheme, which was tested on the local highway network, and therefore no further mitigation is required.

Parking Requirements

12. The WSCC cycle and car parking standards have been reviewed and it can be confirmed that the WSCC parking standards were updated in 2020 'Guidance on Parking at New Developments' i.e. since the outline permissions.

13. Therefore, the minor change in the distribution of floorspace of approved land uses within the permitted mixed-use development has been assessed against the current standards.

Cycle Parking

14. This application is submitted in outline. However, it can be confirmed that the development will adhere to the WSCC 2020 parking standards, which are indicated for ease of reference in **Table 6**. Given that staff numbers are not yet known, this provides an indication for future development requirements.

Table 6 – Cycle parking requirements

Land Use	WSCC Standard	Permitted Quantum	Permitted Req.	Proposed Quantum	Proposed Req.	Δ
C1 Hotel	1/8 car-parking spaces (min. 2)	84 rooms (84 car parking spaces)	11	84 rooms (84 car parking spaces)	11	0
Mixed A3-A4 Pub/Restaurant	1/4 staff and 1/25sqm for customers	615sqm	2 + 25	156sqm	1 + 6	-20
A3 Roadside	1/4 staff and 1/25sqm for customers	349sqm	1 + 14	323sqm	1 + 13	-1
Mixed A3-5 Roadside (drive thru)	1/4 staff and 1/25sqm for customers	227sqm	1 + 9	712sqm	2 + 28	+20
D2 Leisure (gym)	1/4 staff plus visitor/customer cycle parking	930sqm	2 + 10	186sqm	1 + 2	-9
B1 (c)	1/150sqm for staff and 1/500sqm for visitors	7,870sqm	Min. 16+8 Max. 52+16 Est. ~43+16	8,614sqm	Min. 17+8 Max. 57+17 Est. ~47+17	Min. +1 Max. +6 Est. ~+5
B2	1/200sqm for staff and 1/500sqm for visitors					
B8	1/500sqm for staff and 1/100sqm for visitors					
TOTAL	-	12,733sqm	134	12,733sqm	129	-5

*based on methodology from 22/02041/REM TS (26.5% B1(c), B2 standards for B2/B8 mix)

15. In summary, from **Table 6** it can be seen that the cycle parking requirements across the site will be fairly similar, with only a slight reduction in cycle parking requirements between the permitted and proposed minor change to floorspace distribution.

Car Parking

16. Car parking requirements for the permitted and the proposed floorspace distributions based on current WSCC vehicular parking standards are set out in **Table 7**.

Table 7 – Car parking requirements

Land Use	WSCC Standard	Permitted Quantum	Permitted Req.	Proposed Quantum	Proposed Req.	Δ
C1 Hotel	1/room	84 rooms	84	84 rooms	**84**	0
Mixed A3-A4 Pub/Restaurant	1/5sqm public area + 2 staff spaces per bar (or 5m length of bar for large bars)	615sqm**	61 + 2	156sqm**	**16 + 2**	-45
A3 Roadside	1/5sqm public area + 2 staff spaces per bar (or 5m length of bar for large bars)	349sqm	35 + 2	323sqm	**32 + 2**	-3
Mixed A3-5 Roadside (drive thru)	1/5sqm public area + 2 staff spaces per bar (or 5m length of bar for large bars)	227sqm**	23	712sqm	**71**	+48
D2 Leisure (gym)	1/22sqm	930sqm	42	186sqm	**8**	-34
B1 (c)	1/30sqm (26.5%)	7,870sqm	Min. 79 Max. 262 Est. ~153*	8,614sqm	Min. 86 Max. 287 **Est. ~167***	Min. +7 Max. +25 Est. +~14
B2	1/40sqm					
B8	1/100sqm					
TOTAL	-	12,733sqm	402	12,733sqm	**382**	**-20**

*based on methodology from 22/02041/REM TS (26.5% B1(c), 1/70sqm for B2/B8 mix)
**parking standard applied to 50% of the GFA to represent public areas as per WSCC standard

17. From **Table 7** it can be seen that the minor change in floorspace distribution among the permitted land use classes results in a reduction in car parking provision across the site.

18. The permitted scheme agreed a parking discount of 20% where unallocated parking was shared between various land uses.

19. This discount can again be applied to the C1 hotel, A3-4 pub/restaurant, A3 roadside and D2 leisure (gym). From **Table 7** it can be seen that [84 + 18 + 34 + 8 =] 144 parking spaces are required in total when accounting for each land use class independently. Therefore, a minimum of up to around [144 – 20% =] 115 parking spaces will be provided in total for these four land uses.

20. It can also be seen from **Table 7** that the B1(c), B2 and B8 land uses will require a minimum of around 86 parking spaces. However, taking into account the likely split between these land uses, there may be a requirement for around 167 car parking spaces to serve the 8,614sqm of floorspace.

21. Applying the previously agreed discount of 20% to this figure results in around [167 – 20% =] 134 car parking spaces to be provided on site across these B land uses.

22. In summary, given the above, it is clear that the parking requirements for the proposed minor change in floorspace distribution between the permitted land use classes will be less than that previously required and therefore that the car parking provision on site will be achievable.

Summary and Conclusions

23. This Technical Note has been prepared by HTp to provide a summary of the impact in terms of forecast vehicular trips and parking requirements associated with a proposed minor change in the distribution of floorspace of approved land uses within the permitted mixed-use development located at the former fuel depot, Bognor Road.

24. Outline permission for this development was granted in April 2021. The overall quantum of development (in terms of floor area) will remain unchanged. An amendment is sought to the quanta of each land use within the parameters of the site.

25. The trip attraction exercise demonstrated that there is forecast to be a net reduction in AM Peak hour vehicle movements arising from the proposed minor change to floorspace distribution, with only a minor increase in the PM peak hour from that permitted in 2019; both of which are well below the 2014 tested and approved trip attraction quanta.

26. It is therefore clear that there will be no impact on the local highway network as a result of the proposals and therefore no further highway mitigation is required. The applicant has already successfully implemented significant improvements to the highway infrastructure, including the construction of a new slip road, signalised junction, 2 bus stops, and a substantial financial contribution towards future A27/A259 (Bognor Road Roundabout) works.

27. Cycle parking provision will adhere to WSCC'S 2020 parking standards and it has been confirmed that this is similar to the previously permitted land use floorspace distribution.

28. The car parking requirements for the proposed minor change in floorspace distribution between the permitted land use classes will be less than that previously required and therefore that the car parking provision on site will be achievable.

29. Furthermore, a 20% discount is proposed to again be applied to the car parking provision on site, for shared uses to avoid over-provision and reduce the amount of unnecessary hard standing areas within the overall site.

30. It is therefore concluded that there are no transport or highway related reasons why this application cannot be permitted.

UNITED BY OUR DIFFERENCE

WSP

BOGNOR BRIDGE ROAD, CHICHESTER

Transport Assessment

18/11/2014

Revised: 2014-12-18

Confidentiality: Public

Quality Management

Issue/revision	Issue 1	Revision 1	Revision 2	Revision 3
Remarks	Draft	Draft	Final	
Date	24/10/2014	18/11/2014	18/12/14	
Prepared by	A.Smith R.Mercy	A. Smith R. Mercy	S Allen	
Signature				
Checked by	S.Allen	S. Allen	A Lewis	
Signature				
Authorised by	A.Lewis	A. Lewis	A Lewis	
Signature				
Project number	70003803	70003803	70003803	
Report number				
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BOGNOR BRIDGE ROAD, CHICHESTER

Transport Assessment

18/11/2014

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Appendices

Appendix A	Personal Injury Accident Data
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1 Introduction

1.1 Preamble

1.1.1 WSP has been appointed by Hanbury Properties Ltd to prepare a Transport Assessment (TA) in support of an outline planning application for a proposed mixed use (employment, waste and retail) development at the site north of the A259 Bognor Road in Chichester, West Sussex. As part of the outline application the means of access is to be considered in detail – although these would be subject to a S278 Agreement where modest amendments would be reasonable in accordance with the Highways Act and any associated agreement.

1.1.2 The scope of this Transport Assessment has been discussed at meetings with West Sussex County Council (WSCC) on 29th September 2014 and the Highways Agency (HA) on 3rd October 2014. A formal Scoping Note was also submitted to these authorities for agreement in October 2014.

1.2 Site Location

1.2.1 The site is located to the east of the A27 Chichester bypass and to the north of the A259 Bognor Road and is some 2.3km (2.1km at the crow-flies) west of Chichester railway station. To the north, the site is bounded by the railway line and to the east by an existing caravan storage park. The location of the site is shown on Figure 1.

1.2.2 The Highways Agency (HA) is the highway authority for the A27 trunk road which forms part of the Strategic Road Network (SRN) west of the development proposals. West Sussex County Council (WSCC) are the local highway authority and administer local roads including the A259 Bognor Road. The primary access and sole vehicular access point to the site will be onto the A259 Bognor Road and will consolidate the existing site accesses on to A259.

1.3 Existing Site

1.3.1 The site comprises a fuel storage and distribution depot, subsequently used by commercial operators. The site is previously developed land and is brownfield. The site benefits from an existing temporary waste permission, to recycle inert waste on site.

1.3.2 The existing access arrangement to the site is provided from separate left-in and left-out priority junctions onto the A259 dual carriageway. Both accesses are currently gated with the western access located approximately 160m from the A27 / A259 roundabout and the eastern access being around 215m from the roundabout.

1.3.3 Self-sown vegetation exists within the public highway across the site frontage. Some of this should be removed to preserve safe and adequate visibility at the existing access points.

1.4 Proposed Development

1.4.1 The site has been promoted in the Minerals & Waste Plan and the District Local Plan as a waste and employment development site. The site is allocated in the county waste plan for up to 1 ha of waste use.

1.4.2 The outline planning application is considered to include around 16,000m^2 Gross Floor Area (GFA) of mixed commercial uses (including employment, retail and waste) with the formation of a new vehicular access onto A259 Bognor Road.

1.4.3 The scheme proposes to tie in with the HA and WSCC proposals as well as making land available to increase capacity at the Bognor Bridge Road Roundabout junction.

1.5 Report Structure

1.5.1 This report follows the Guidelines for Transport Assessments (GTA), and embraces issues discussed through pre-application consultation with the highway authorities and outlined in the Transport Assessment (TA) scope.

1.5.2 In line with pre-application consultation and the submitted TA scope, a range of issues will be considered within this report, summarised as follows:

- Section 2 reviews the accessibility of the site by walking, cycling and public transport. It also reviews the existing conditions on the surrounding highway network;
- Section 3 reviews relevant national and local planning policy and guidance;
- Section 4 provides a summary of A27 corridor studies by the Highways Agency and WSCC;
- Section 5 outlines the development proposals;
- Section 6 sets out the anticipated trip generation of the development proposals;
- Section 7 demonstrates the site's likely impact on the neighbouring highway network; and
- Section 8 summarises and concludes the TA.

1.5.3 In accordance with the emerging Local Plan and Community Infrastructure Levy (CIL) it is anticipated that the development would be required to mitigate the development impact on the highway network through planning obligations, the provision of land for WSCC / HA led highway improvements and possible financial contributions, physical infrastructure or other obligations such as the commitment to Travel Plan measures relating to the operation or use of the development uses. As the Draft Local Plan and its associated evidence base is subject to an Examination in Public (EiP) and any associated CIL tariff will not emerge until after the plan is adopted it is assumed that these planning obligations will include both planning conditions and a legal agreement.

2 Existing Conditions

2.1 Introduction

2.1.1 Sustainable modes of transport are an important consideration for any new development as these help to frame how future employees, visitors and customers are likely to travel.

2.1.2 A key priority for any sustainable development is to reduce the reliance on the motor vehicle by providing a safe environment for the movement of all users, while also promoting healthier ways of living. This section describes the local walking and cycling conditions, as well as the existing public transport services in the vicinity of the site to inform the potential for sustainable transport and identify gaps in the network which may affect travel choice.

2.1.3 This section will also detail the existing highway network in the local area. In some instances, motor vehicles will remain the preferred mode of transport, but the development will look to preserve and enhance road safety and endeavour to ensure journey time reliability, particularly for the Strategic and Primary road network thereby maintaining an effective and efficient transport network.

2.1.4 The development is situated east of the Whyke neighbourhood, and is situated to the east of the A27 Chichester bypass. The proposed development is within 2km of the town centre of Chichester, which forms the nearest major urban and economic centre where the town centre offers an extensive network of public transport provision and cycle network links to most conurbations in the sub-region.

2.2 Non-Motorised User Network

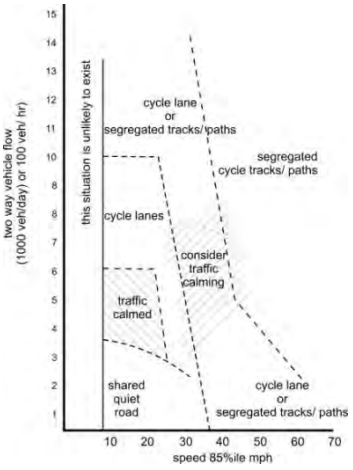
2.2.1 The location of the proposed development places it at the edge of the existing urban edge of Chichester. It provides an environment which allows for ease of access to and from Chichester town centre via a number of routes, depicted in Figure 2.

2.2.2 Adjacent to the site there is an uncontrolled at-grade crossing of the A259 close to the Bognor Road roundabout that can accommodate the movement of both pedestrians and cyclists. This Non-motorised user (NMU) facility is intended to serve as an alternative to cyclists using the circulatory carriageway of the Roundabout, where cyclists are at greatest risk at the junction.

2.2.3 The A27 carries approximately 45,000 (AADT) vehicle movements per day. Approximately 75m to the south of the A27 / A259 Bognor Road roundabout there is a shared use over bridge, which provides a grade-separated crossing of the dual carriageway for pedestrians and cyclists which in turn provides access to Chichester and the associated interchange facilities at the railway and bus stations. The over-bridge is connected to the at grade A259 crossing facility via a shared use pedestrian/cycle route. Based on the DMRB, this existing facility can be considered to adequately address severance.

2.2.4 The ramped pedestrian and cycle over-bridge crossing the A27 Chichester bypass provides access to Quarry Lane and ultimately Chichester bus station and Chichester railway station via this quiet lane suitable for on-road cycling (see image right).

2.2.5 The shared use path also provides a connection to an uncontrolled at-grade crossing of Vinnetrow Road where the severance can be defined as ‘slight’ currently.



Guidelines for Cycle Audit & Cycle Review, IHT

2.2.6 This connects the site with Bognor Road which in turn provides a direct connection to the centre of Chichester.

2.2.7 There are a number of existing public rights of way situated either near the development as described below:

- 2792/1 Path around Vinnetrow business centre;
- Path 274 – South of Drayton House; and
- 3022/1 Path – just south of Quarry Lake.

2.2.8 Pedestrian and cycling isochrones (Figures 3 and 4, respectively) have been produced to illustrate the high level of accessibility which the proposed development will benefit directly from. IHT 'Guidelines for Providing Journeys on Foot', summarised in Table 2.1 below, states that people will walk up to 2km to work. Figure 3 shows that approximately half of Chichester is within this walking distance of the site.

Table 2.1: IHT Walk Journey Distance and Time Threshold

IHT Standard	Distance (m)		Walk Time (mins)	
	Commuting, Walking to School and Recreation	Other Non-Commuter Journeys	Commuting, Walking to School and Recreation	Other Non-Commuter Journeys
Desirable	500	400	6 ¼	5
Acceptable	1,000	800	12 ½	10
Considered	2,000	1,200	25	15

Source: IHT 'Guidelines for Providing Journeys on Foot' (2000)

2.2.9 Immediately adjacent to the site, located on the south of the A259 Bognor Road, is the South Coast Cycle Route.

2.2.10 The South Coast Cycle Route is a key part of the network and ties in with a number of local streets and designated cycle routes. To further promote cycle use, WSCC provide a number of online services, including cycle journey planners and information on nearby cycle stores. The two nearest cycle shops to the proposed site are located within 1.5km and provide an opportunity for users, employees and visitors to have nearby maintenance options for cycle journeys. The two cycle shops are;

- City Cycles located on Bognor Road, approximately 850m from the site; and
- Hargrove Cycles located on the A259, The Hornet, approximately 1.5km from the site.

2.2.11 In additional to the local designated cycle routes, Chichester also benefits from having National and Regional Cycle Route networks passing through it. These routes provide key leisure and longer distance cycle opportunities across destinations in the area.

- National Cycle Route 2 – from Chichester, provides access west, via local routes and sections to Havant, Portsmouth and Fareham
- Regional Cycle Route 88 – which continues via on-road routes to Selsey in the south and Singleton in the north.

2.3 Public transport network and accessibility

Journeys by Bus

2.3.1 Chichester and the local area benefits from a high quality and easily accessible local bus network. A number of bus services operated by Stagecoach serve the vicinity of the site. Other operators in the Chichester area also include Emsworth and District as well as National Express.

2.3.2 Figure 5 provides a summary of the public transport accessibility for the site in relation to the bus services available.

2.3.3 The nearest existing bus stops that serve routes U7 and 700 are on Bognor Road, west of the roundabout, adjacent to The Peacheries . These bus stops are located approximately 700m from the site. From here the site can be accessed by lit, safe footways and shared paths across the A27, as discussed in Section 2.2. Table 2.2 below provides the route summaries and frequencies for the bus services that are provided at The Peacheries bus stop.

Table 2.2: Bus Services at The Peacheries Bus Stop

Route No.	Route	Time of Services	Monday – Friday Frequency	Saturday Frequency	Sunday Frequency
U7	Chichester, Tesco Store - Westgate - Chichester University - Merston - South Bersted - Bognor Regis	0741 - 1858	Daytime every 80-90 minutes. Evenings (term times only) every 70 minutes via North Bersted.	1 late journey Saturday night/Sunday morning.	N/A
700	Southsea - Portsmouth - Havant - Chichester, Cathedral and Bus Station R- Bognor Regis -Littlehampton - Worthing – Brighton	0558 - 2135	To/from Brighton every 15 minutes To/from Southsea every 30 minutes.	To/from Brighton every 15 minutes To/from Southsea every 30 minutes.	Every 30 minutes

Source: Bus Timetables, Autumn 2014

2.3.4 Route 700 is classed as the Coastliner service, and provides access to a number of key destinations including Bognor Regis, Littlehampton, Worthing and Brighton to the east, and Havant, Portsmouth and Southsea to the west.

2.3.5 Longer distance coach travel is also available via National Express, who operate a number of services accessible from Chichester Bus Station, which in turn can be reached by using Route 700.

2.3.6 Chichester Bus Station is located opposite Chichester Railway station and provides access to services 46, 47, 52, 53, 55, 56, 60 and 700.

Journeys by Train

2.3.7 The proposed development is located approximately 2.4km from Chichester Railway Station. Figure 5 provides an indication of the public transport accessibility for the site in relation to the railway station and the associated available services.

2.3.8 Table 2.3 below outlines the current railway frequencies and travel times from Chichester railway station and includes a selection of the key destinations served along with typical journey times within typical journey to work timescales.

Table 2.3: Destinations and Frequencies from Chichester Railway Station

Destination / Origin	Outbound		Inbound	
	AM Peak Direct (0800-0900)	Journey Time (minutes)	PM Peak Direct (1700-1800)	Journey Time (minutes)
Fishbourne	1	3	2	3
Barnham	5	7	6	7
Havant	4	15	6	16
Littlehampton	2	17	1	17
Portsmouth Harbour	3	34	2	31
Southampton Central	1	57	2	54
Brighton	1	50	2	52
London Victoria (via Horsham)	2	1hr 35	2	1hr 27

Source: Southwest Trains Timetables, Autumn 2014

2.3.9 The close proximity of the railway station to the proposed development will enable more sustainable travel choices for visitors, shoppers but principally employees along coastal routes.

2.3.10 The station benefits from a car park, which has 20 spaces with 3 accessible spaces available. In addition, taxi ranks can be found on either side of the station. The station is manned and is open Monday to Sunday between the times of 05:30 - 23:00 and has typical facilities such as toilets, ATM, self-service ticket machines and a café.

2.3.11 In terms of cycle parking, the station benefits from having approximately 70 cycle stands. 40 cycle racks are provided in the Car Park 1 area, with an additional 10 racks located on platform 1. Ten racks are provided in Car Park 2, with a further 10 racks located on Platform 2. All cycle racks at the station are covered, and benefit from some CCTV coverage, providing a safe and easy cycle storage option for linked trips.

2.4 Road Network and Operation

2.4.1 The geographical scope of the Transport Assessment has been informed from pre-application discussions with West Sussex County Council (WSCC) and the Highways Agency (HA).

2.4.2 The site is located to the north of the A259 Bognor Road, which provides a link in to Chichester town centre to the northwest and to Bognor Regis in the south east. To the east the A259 Bognor Road forms a four arm roundabout junction with B2144 Drayton Lane.

2.4.3 The A259 Bognor Road is a two lane dual carriageway, subject to the national speed limit and forms the eastern arm of the A27 / A259 junction.

2.4.4 The A27 Chichester Bypass / A259 Bognor Road junction located near to site is a large five arm roundabout known as the Bognor Road roundabout. To the north and south the A27 is two lane dual carriageway subject to the national speed limit.

2.4.5 The A259 Bognor Road to the west of the A27 gives access into Chichester and is a two-way single carriageway with a 30mph speed limit. .

A27 south-west of the A259 Bognor Road Roundabout

2.4.6 Vinnetrow Road is also a single carriageway local road and forms the south eastern arm of the Bognor Road roundabout. Vinnetrow road provides access to the Chichester Lakeside Holiday Park as well as the Leythorne Nursery and industrial haulage vehicles services and buildings. It is the subject of a 40mph speed limit south of the roundabout.

2.4.7 Quarry Lane is a single lane carriageway, with a 20mph speed limited located to the south west of the Bognor Road roundabout. Whilst Quarry Lane does not access on to the roundabout, it provides a connection to the shared use overbridge and pedestrian / cycle paths. There are a number of parking bays located along the southern edge of the carriageway with no parking restrictions.

2.4.8 Quarry Lane and the A259 Bognor Road to the west of the site provide access to a number of industrial units, including the Quarry Lane industrial estate, which includes a range of trade retail uses.

2.4.9 To the east of the site is a further roundabout, forming a four arm junction with the A259 Bognor Road and the B2144 Drayton Lane.

2.4.10 The Department for Transport (DfT) have an online interactive service which provides AADF (Annual Average Daily Flow) information for a number of count locations. The two locations selected nearby to the site are listed below, and also shown on Figure 1.

- Site 6296 – A27, south of Bognor Road Roundabout
- Site 6834 – A259, north west of Bognor Road Roundabout

2.4.11 Table 2.4, presents a yearly profile for the two count locations, from the year 2000 to 2013.

Table 2.4: AADF Information for sites in Chichester, from 2000 to 2013

AADF Year	6296 – A27 South of Bognor Road Rndbt Total AADF Flows	6834 – A259 North west of Bognor Road Rndbt Total AADF Flows
2000	27683	13683
2001	28596	13334
2002	38240	12501
2003	39527	12288
2004	40824	12493
2005	40849	12099
2006	51907	10256
2007	52250	10128
2008	51953	9929
2009	51438	10139
2010	43553	10169
2011	43889	10231
2012	43618	10117
2013	44197	10115

Source: DfT Traffic Count Database (http://www.dft.gov.uk/traffic-counts/cp.php), Autumn 2014

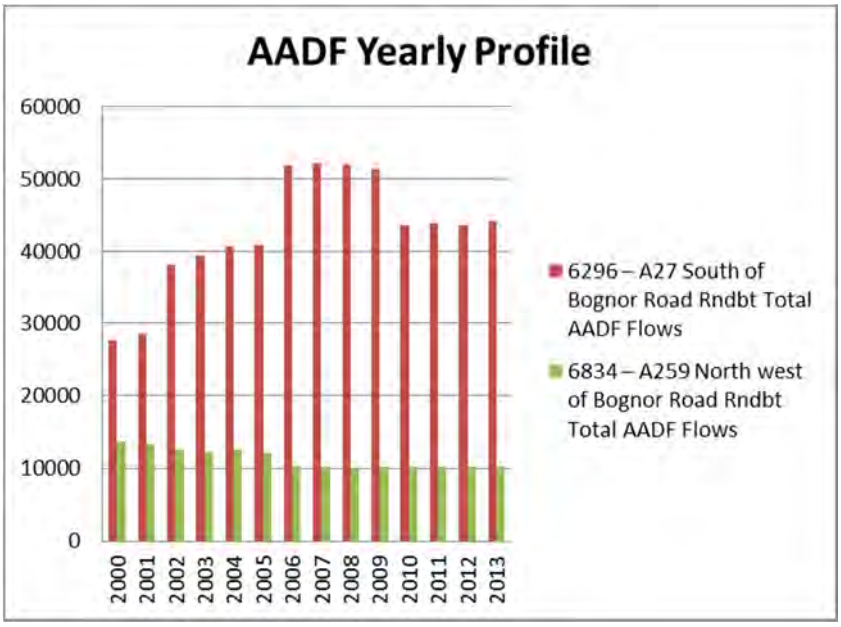
2.4.12 The AADF information indicates that the 2013 flows are considerably less than the 2007 peak flows on the A27. From the year 2010 to 2013, the flow on the A27 was observed to remain similar. The A259 was seen to have decreased traffic flows from the 2000 counts. From 2009 onwards, the AADF information suggests that the flows have shown little variability. The yearly profile is shown in Image 1 below.

2.4.13 Changes in the traffic flows between 2006-2009 are likely to have occurred due to wider highway network changes in the region, such as the A3 Hindhead Tunnel in Surrey and the A27 Southerham improvements, to the north-east of Brighton. Traffic flows have also changed on the A259 (2005-2006) suggesting some infrastructure changes or development have contributed to changes west of Chichester.

2.4.14 Whilst the recession has resulted in some traffic flow changes on the A259 (2007-2009), traffic flows returned to broadly pre-recession levels in 2010.

2.4.15 It is evident that the A27/A259 Roundabout has accommodated around 8,000 vehicles per day (vpd) in 2007 than current levels 2013, thus it is possible to conclude that the traffic flows have been higher in the past demonstrating a level of service which has been maintained in the past.

Image 1: AADF Yearly Profile



Source: DfT Traffic Count Database, Autumn 2014

Personal Injury Accident (PIA) Statistics

2.4.16 Personal Injury Accident (PIA) data for the latest five year period, between 1st September 2009 and 31st August 2014, has been obtained from Sussex Safer Roads Partnership for the highway network in the vicinity of the site. The full data, including a plot of each accident location is outlined within Appendix A and is summarised in Table 2.5 below.

Table 2.5: Summary of Personal Injury Accidents

Location	Severity			Vulnerable Road Users		
	Slight	Serious	Fatal	Pedestrian	Pedal Cyclist	Motor Cyclist
Bognor Road Roundabout (Junction and Approach)	35	3	0	0	1	7
A27 (North of Bognor Road Roundabout)	1	0	0	0	0	0
A259 (East of Bognor Road Roundabout)	4	0	0	0	1	0
A259 / B2144 Roundabout	6	1	0	0	0	3

Source: Sussex Safer Roads Partnership, Autumn 2014

2.4.17 Through examination of the data, summarised in Table 2.5 above, it has been shown that of the 50 incidents, 12 involved vulnerable road users. A summary of the incidents is provided below.

2.4.18 There were a total of five incidents on the A259 east of Bognor Road Roundabout, of which one involved a cyclist and all of which were of slight severity. The incident involving a cyclist occurred where a car driver failed to look as they exited a minor junction and turned into the path of an oncoming cyclist. There were two incidents which were caused by driver error and a subsequent loss of control, and one incident where a vehicle collided with the rear of the vehicle in front. The final incident occurred when a driver had a medical episode and lost control of the vehicle. While there were no incidents on the eastbound carriageway within 150m of the proposed site access, there was an incident on the westbound carriageway of the A259, which was caused by driver error.

2.4.19 In the latest five year period, there have been a total of 38 incidents (an average of 7.6 accidents per year) at the Bognor Road Roundabout, both on the junction and on the immediate approaches to the junction. Of these, three were serious and ten involved vulnerable road users, two of which were of serious severity. All of the incidents were caused by driver error. Nine of the incidents, of which three involved a motorcyclist, were caused when a vehicle entered the roundabout without seeing another vehicle already negotiating the junction. Eleven incidents were caused when drivers were in the wrong lane, or were travelling too close to other vehicles as they negotiated the roundabout. Of these, two involved motorcyclists, one involved a pedal cyclist and one incident involving two cars was classed as serious. There were 11 incidents where a vehicle was stationary on approach to the junction and the vehicle behind it collided with its rear, one of these incidents involved a motorcyclist and was classed as serious. Seven incidents were caused when drivers misjudged other vehicles behaviour as they traversed the roundabout, causing a collision. Of these, three incidents involved motorcyclists, one of had a serious severity.

2.4.20 There was one incident on the A27 north of the Bognor Road Roundabout. This incident occurred when a vehicle failed to see slow moving traffic ahead and collided with the car in front, causing a chain reaction and involving five cars.

2.4.21 The general summary of crashes at the A27 / A259 roundabout suggests that vehicle speeds into the roundabout are at times excessive. Similarly vehicle turning movements within a relatively small five-arm roundabout appear to contribute to collisions occurring within the circulatory carriageway.

2.4.22 Finally, there were seven incidents at the junction of the A259 Bognor Road and B2144, three of which involved motorcyclists, and one which had a serious severity. Three incidents, including two involving motorcyclists, occurred when drivers failed to judge the speed of the vehicle in front of them as they approached the junction, resulting in a collision. Two incidents occurred due to driver error; one due to incorrect indicating while negotiating the roundabout, and the other due to the driver approaching the vehicle too fast and overshooting the give-way line subsequently hitting a motorcyclist. Two incidents were caused by aggressive driving; one of which resulted in a collision from behind, and the other resulted in a serious collision with an oncoming vehicle on the opposite side of the carriageway.

COBALT Accident Analysis

2.4.23 In order to understand whether the number of accidents recorded at the Bognor Road Roundabout is above or below average for a strategic junction of this type, further analysis using the Department for Transport's (DfT) COBALT software was undertaken. The software calculates a typical accident rate for road links and junctions based upon their characteristics and traffic flow data.

2.4.24 Table 2.6 below shows the typical and observed accident rates for the highway network in the vicinity of the site.

Table 2.6: COBALT Typical Accident Rates and Observed Accident Rates

Junction or Link	COBALT Typical Annual Accident Rate	Observed Annual Accident Rate (5 Year Average)
Bognor Road Roundabout	13.7	7.6
A27 (North of Roundabout)	0.2	0.2
A259 (East of Roundabout)	1.0	0.8

2.4.25 The results in the table above show that, despite the high number of incidents that have occurred, the Bognor Road Roundabout has a lower than typical accident rate based upon its size and the level of traffic that it carries. The A259 in the vicinity of the site has a **lower** than average accident rate, while the A27 has an average accident rate.

2.5 Summary

2.5.1 This section has demonstrated that the site offers a high level of accessibility from the existing settlement edge of Chichester and the town centre. People will walk 2km to work using lit, safe routes to the site.

2.5.2 The analysis of the Chichester railway station highlights the importance of interconnecting transport choices for users. The proximity of the site to the railway station means it will be conducive to walking and cycling. This is especially prudent as it has been shown that there is an interconnected network of cycle routes available surrounding the site further providing access. The existing bus routes supporting the site are already in place and offer good connectivity to key destinations.

2.5.3 Analysis of the PIA data for the latest five years has shown that the vast majority of the incidents were caused by a form of driver error and therefore there are no existing safety concerns on the highway network in the vicinity of the proposed development. The proposed signalisation of the Bognor Road Roundabout by WSCC, before 2019, will further help to improve the safety of the junction, as well as improve its capacity.

3 Transport Policy Context

3.1 Introduction

3.1.1 This section of the report sets out the transport policy context of the proposed development.

3.2 National Policy

National Planning Policy Framework, DCLG, March 2012

3.2.1 Adopted on 27 March 2012, the National Planning Policy Framework (NPPF) seeks to reduce the complexity and improve the accessibility of the planning system, whilst protecting the environment and encouraging growth in a sustainable manner.

3.2.2 The NPPF replaces previous national planning policy guidance notes and statements, becoming the definitive national planning guidance from which local planning authorities can, in collaboration with their communities, produce local plans appropriate to the character and needs of their area.

3.2.3 Transport forms one of the 12 core land use planning principles set out by the NPPF. This principle directs that locations which are sustainable or which can be made sustainable should become the focus for significant development.

3.2.4 This transport statement demonstrates how the proposed development fulfils the requirements set out in paragraph 32 of NPPF, to account for:

- the opportunities for sustainable transport modes to be used, reducing the need for major transport infrastructure;
- provision of safe and suitable access to the site for all people; and
- improvements which can be undertaken within the transport network to limit the significant impacts of the development.

The Future of Transport – A Network for 2030

3.2.5 In July 2004 the Government set out its policy for the future of transport in the White Paper 'The Future of Transport: A Network for 2030'. The White Paper considers the factors likely to impact travel and transport in the period to 2030 and details the actions the government intends to take. The increased demand for travel is considered, as is the consideration of getting the right balance between the benefits of transport, but not impacting people and the environment.

3.2.6 An important objective of the White Paper is:

"Balancing the need to travel with the need to improve quality of life. This means seeking solutions that meet long term economic, social and environmental goals."

3.2.7 To achieve the objective, the content of the paper is based around three major themes.

- sustained investment;
- improvements in transport management; and
- planning ahead.

3.2.8 The White Paper, drawing upon these three central themes, attempts to provide a long term national strategy which sets out a sustained programme of investment and innovation for tackling Britain's transport challenges.

Circular 02/2013

3.2.9 The Strategic Road Network (SRN) includes the A27 and A23/M23 corridors which are administrated by the HA. The HA's overarching role, as defined by their latest Circular 02/2013 (September 2013) is to operate, maintain and improve the strategic road network in England, guided by its core principles of 'safe roads, reliable journeys, informed travellers'.

3.2.10 In respect of its role, the guidance suggests that the Agency will take a more proactive stance in working with Local Planning Authorities (LPAs) in the development of their local plan. Importantly, it is for the first time adopting a more graduated approaches to the creation of new junction on trunk roads, particularly where these help the management of their network, help to deliver sustainable development opportunities where these lead to mileage reductions. The HA will, however, continue to seek infrastructure improvements where these are shown to be a direct requirements of developments.

3.3 Local Policy

West Sussex Local Transport Plan (2011 – 2026)

3.3.1 Adopted in February 2011, the third Local Transport Plan (LTP3) for West Sussex builds upon the foundations of the two previous plans that sought to improve the transport network for local residents, businesses and visitors to West Sussex.

3.3.2 The plan includes four key strategies that guide the approach to maintaining, managing and investing in transport and meeting the main objective of improving the quality of life for the people of West Sussex. These strategies are set out below:

- Promoting economic growth;
- Tackling climate change;
- Providing access to services, employment and housing; and
- Improving safety, security and health.

3.3.3 WSCC is also responsible for all roads and transport planning in West Sussex except the A27 and M23/A23 (motorways and trunk roads), which are the responsibility of the Highways Agency.

3.3.4 The Highways Agency and WSCC both recognise the importance of infrastructure to support growth in job opportunities. The site will provide additional jobs for the Chichester area.

Chichester District Council – Local Plan (2014 to 2019)

3.3.5 The Local Plan provides the broad policy framework and a long-term strategy to manage development, protect the environment, deliver infrastructure and promote sustainable communities within Chichester District (excluding the area within the South Downs National Park) to 2029. Once adopted, all planning applications will be assessed against the policies in the Local Plan.

3.3.6 On 30 May 2014, the Chichester Local Plan: Key Policies 2014-2029 and supporting documents were submitted for independent examination to the Secretary of State for Communities and Local Government via the Planning Inspectorate.

3.3.7 This includes multiple policies that influence the transport strategy for the area and the growth in new development. WSSC maintains a transport model that includes these developments and have provided traffic flows from this for the year 2031; this is discussed further in Chapter 7 of this report.

3.3.8 The vision and objectives of the plan includes:

- A strong local economy where businesses can thrive and prosper. This includes reference to providing '*a range of good quality sites and premises, especially in and around Chichester City and in locations with good access to the A27*.'
- Traffic management to mitigate congestion. Through '*support and promote initiatives to mitigate the impacts of congestion and manage traffic flows on the road network, especially the A27*.'

3.3.9 Provision is made in the emerging Plan to deliver a total of 6,973 homes over the period 2012-2029. Of this 5,821 are in the east-west corridor, in which the proposed development is situated. Figure 6 shows the distribution of housing sites in and around Chichester.

3.3.10 The emerging Local Plan states that the potential growth in the District's labour force has been identified as around 3,200 new jobs over the period 2011-2029 based upon the plan's housing provision need. This is equivalent to an overall requirement for approximately 160,000sqm of B1-B8 Land Use floor space across the district. After existing or permitted employment land and floor space has been taken into account, there is an estimated requirement for around 25 hectares of new employment land, of which 5 hectares is for office development and 20 hectares is for industrial and warehousing uses.

3.3.11 Until the EiP is complete it is unclear if the housing and employment forecasts will be ratified. At this juncture it is possible that additional land *may* need to be identified such that the plan period might need to be accelerated (i.e. the plan period brought forward to an earlier forecast year).

3.3.12 Paragraphs 7.19 and 7.20 of the local plan state the following

"Development over the Plan period is also constrained by issues of traffic congestion in and around Chichester City, particularly linked to junctions on the A27 Bypass. The Government Spending Review in June 2013 has identified improvements to the A27 Chichester Bypass in a list of projects for long-term capital investment…"

"Phasing of development in and around Chichester City will need to be coordinated in conjunction with delivery of these proposed transport improvements."

3.3.13 As the site has been allocated in the County Waste Plan it is deemed likely that the site is already assumed as an allocated site. On this basis the headroom provided in the A27 improvement works will in some part already have accounted for elements of traffic generated by the proposed development site.

3.3.14 Policy 8: Transport and accessibility states the following:

"The Council will work with West Sussex County Council, other transport and service providers and developers to improve accessibility to key services and facilities and to provide an improved and better integrated transport network."

3.3.15 This policy also references the need to ensure that development is in accessible locations and a coordinated package of improvements to junctions on the A27 Chichester Bypass, that will increase road capacity, reduce traffic congestion, improve safety, and improve access to Chichester city from surrounding areas.

3.3.16 Policy 13 relates to the need to work with WSCC and other organisations to develop an integrated transport strategy for the city. Statements relevant to the proposed development include:

- Introducing bus lanes and bus priority measures along key routes (including the A259 Bognor Road approaching its junction with the A27).
- Delivering strategic cycle routes linking the city centre, residential areas and key facilities, including proposed areas of new housing, employment and greenspace within and close to the city.

3.3.17 In conjunction with Policy 13 it is understood that WSCC/ Chichester District Council (CDC) hope to allocate land south of the development site to provide a Park & Ride facility. Subject to a supporting car parking policy within the town centre and bus priorities (such as 'green-wave' priorities at traffic signals) it would be reasonable to assume that around 10% (1000vph) of the A259 traffic, or nearly 14% of the forecast traffic flows through the roundabout could be removed.

3.3.18 Policy 39 relates to transport, accessibility and parking. This policy states that planning permission will be granted for development where it can be demonstrated that all the following criteria have been considered:

- All development provides for the access and transport demands they create, through provision of necessary improvements to transport networks, services and facilities, either directly by the developer or indirectly in the form of financial contributions.
- Development is located and designed to minimise additional traffic generation and movement, and should not create or add to problems of safety, congestion, air pollution, or other damage to the environment.
- The proposal has safe and adequate means of access and internal circulation/turning arrangements for all modes of transport relevant to the proposal.
- The proposal encourages development that can be accessed by sustainable modes of transport, in part, through the creation of links between new development and existing pedestrian, cycle and public transport networks.
- The proposal provides for safe, easy and direct movement for those with mobility difficulties.
- The proposal does not create residual cumulative impacts which are severe; and
- Proposals provide for high quality linkage direct from the development to the broadband network.

WSCC Local Plan Position Statement (March 2013)[1]

3.3.19 WSCC provided a position statement in March 2013 to formally articulate their opinion on the Chichester Transport Study. Inter alia the statement included the following:

- *The County Council has worked collaboratively to inform the Chichester Transport Study and on the basis of a technical assessment of the work carried out, supports its conclusions.*
- *There is reasonable confidence that the package of local transport infrastructure improvements and smarter choices measures (or a similar package of measures) is likely to provide sufficient mitigation so that any residual cumulative impacts would not be severe.*
- *It will be important to ensure that the mitigation package is comprehensively delivered. The cost of delivering this package is likely to be substantial and will, therefore, require genuine cooperation between local authorities and require pooling of resources.*

Highways Agency Local Plan Position Statement (March 2013)[2]

3.3.20 The Highways Agency also provided a position statement in March 2013 to formally articulate their opinion on the Chichester Transport Study. The Highways Agency position at the time was that the HA were confident that there were a reasonable balance of capacity, safety and journey time reliability improvements to the A27 which would support the level and locations of development considered in the emerging Local Plan. This position was subject to assurances that the financial requirements for mitigation (infrastructure and demand management) are viable and that funding sources can be demonstrated.

3.3.21 Inter alia the statement also included the following:

[1] http://www.chichester.gov.uk/index.cfm?articleid=22456

[2] http://www.chichester.gov.uk/index.cfm?articleid=22456

- *Based upon the evidence to date, our assessment concludes that at this stage of the Local Plan, traffic impacts overall have not demonstrably been fully mitigated at every junction. However, we are content with the overall scale of infrastructure mitigation being considered when coupled with the demand management initiatives that have been built into the modelling. It would appear that variants on the junction improvements proposed (of a similar magnitude and cost) are likely to be able to provide sufficient mitigation so that any residual impact is not deemed severe.*
- *Ongoing transport assessment work will be required to further develop the mitigation measures in order to better demonstrate that the transport impacts can be properly mitigated from operational, safety and DMRB compliance perspectives.*
- *There will also be a need to discuss the phasing of mitigation works in relation to the delivery of development and this is likely to raise the issue of how forward funding of mitigation measures will be achieved where mitigation needs to be in place in advance of delivery of development.*

WSCC Waste Local Plan (April 2014)

3.3.22 The existing fuel depot site at Bognor Road has been allocated within the WSCC Waste Local Plan to help meet the identified shortfall in transfer, recycling and recovery capacity. Therefore WSCC judge the site to be a suitable location for the development of waste facilities. The site's allocation is for up to one hectare of waste uses, as part of the redevelopment of the site for complementary non-waste uses.

3.4 Applicable Parking Standards

3.4.1 Both West Sussex County Council and Chichester District Council have published parking standards. This section will outline the parking standards for Chichester District Council, as these have been published most recently, in 2007.

Car Parking Standards

3.4.2 The Chichester District Council car parking standards are summarised in their Planning Guidance Note 5 (September 2007) and are outlined in Table 3.1 below. The Chichester Zone 2 parking standards apply to the Bognor Road Development.

Table 3.1: Chichester District Council Zone 2 Car Parking Standards

Land Use	Car Parking Standards
Food Retail	1 space per 19sqm of development
A2 and B1	1 space per 40sqm of development
B1 (for developments smaller than 500sqm)	1 space per 33sqm of development
B2	1 space per 53sqm of development

Cycle Parking Standards

3.4.3 The Chichester District Council pedal cycle parking standards are summarised in their Planning Guidance Note 5 (September 2007) and are outlined in Table 3.2 below.

Table 3.2: Chichester District Council Cycle Parking Standards

Land Use	Staff Cycle Parking Standards	Visitor Cycle Parking Standards
A1	1 space per 100sqm of development	1 space per 100sqm of development
B1	1 space per 150sqm of development	1 space per 500sqm of development
B2	1 space per 200sqm of development	1 space per 500sqm of development
B8	1 space per 500sqm of development	1 space per 1000sqm of development

3.4.4 With regards to motorcycle parking, the Chichester District Council cycle parking standards state that one motorcycle space should be provided for every 10 car parking spaces in commercial developments.

4 A27 Corridor and Local Plan Studies

4.1 Introduction

4.1.1 This chapter of the report reviews the A27 corridor studies relevant to this transport assessment.

4.2 Highways Agency

South Coast Central Route Strategy – Evidence Report (April 2014)

4.2.1 The A27 around Chichester is part of the road network included in the study covered by the South Coast Central Route Strategy. The evidence report states that the A27 between the A259 and A285 is the sixth least reliable location in the study area in terms of journey time[3]. This section of the A27 is also nationally ranked as the 63rd least reliable placing it fairly high on the HA's priority for strategic improvement. The on time reliability of this section is 59.4% of vehicle miles are on time.

4.2.2 The evidence report also provides statistics on peak hour speeds, delay, and safety, including:

- Average speed at peak times (mph) between April 2012 and March 2013 were 21 to 30 mph.[4]
- The Chichester Bypass is in the top 20% of locations in the strategy area for vehicle hours delay (measured as total travel time experienced over and above the expected theoretical free-flow travel time).[5]

4.2.3 The evidence report also identifies key future considerations for the route[6], including:

- A27 Major Improvement Scheme at Chichester. This includes upgrading of six junctions on the existing 3.5 km bypass.
- 2,450 new homes in Chichester area by 2021.
- 949 new jobs by 2021.

4.2.4 The evidence report also identifies[7] that by 2031 an additional 1,250 houses and 1,513 jobs are planned. The growth aspirations in and around Chichester were discussed previously in Section 3.3 of this report.

4.2.5 The evidence report discusses key opportunities and challenges and states that the key challenge at Chichester is travel speed reduction leading to unreliable journey times.[8]

4.2.6 Other challenges identified in the evidence report for the A27 include[9]:

- Ensuring that the strategy planning reflects the built up nature of the A27 corridor and that the majority of planned development lies along the route.
- Capacity constraints at key junctions causing delays – improvements required as key to enabling investment and development.
- Ensure that all planned growth is considered in planning mitigation and infrastructure.

[3] Table 2.2, Page 12 of South Coast Central Route Strategy – Evidence Report (April 2014)

[4] Figure 2.1, Page 14 of South Coast Central Route Strategy – Evidence Report (April 2014)

[5] Figure 2.2, Page 16 of South Coast Central Route Strategy – Evidence Report (April 2014)

[6] Figure 3, Page 38 of South Coast Central Route Strategy – Evidence Report (April 2014)

[7] Table 3.1, Page 41 of South Coast Central Route Strategy – Evidence Report (April 2014)

[8] Figure 4, Page 50, South Coast Central Route Strategy – Evidence Report (April 2014)

[9] Table 4.1, Page 61, South Coast Central Route Strategy – Evidence Report (April 2014)

- Support locations for job growth.
- Multiple sections on the A27 where drivers are delayed by congestion, including around Chichester.
- The role of transport in regeneration is essential to recognise. Housing delivery is particularly constrained in this route.
- Severance effect of the A27 on non-motorised users.
- Coordination between local highway authorities and concern that the Highways Agency is predominantly focused on the through route function rather than local objectives.
- Concern that not all existing development was being considered whilst planned development was being concentrated on the A27 corridor.

4.2.7 The evidence report concludes[10] that Chichester will be one of the most challenging locations because:

"*The bypass of the city and its roundabouts experience significant conflict between the combined volumes of both long distance and local traffic movements (particularly for north-south traffic). Many of these junctions are closely spaced and at capacity. The safety record of the bypass is poor.*"

4.2.8 In summary, the report confirms that there is a need to upgrade the junctions on the A27 corridor to facilitate growth in development, reduce delay and improve journey time reliability, and improve safety.

A27 Chichester Improvement[11]

4.2.9 The Highways Agency is proposing a package of improvements along the A27 Chichester Bypass, including:

- Building two at-grade junctions at:
  - Fishbourne roundabout with the A27 under
  - Bognor Road roundabout with A27 over
- Minor improvements to increase capacity at the Portfield roundabout
- Public transport access across the A27 and left-in left-out only junctions for other traffic at:
  - Stockbridge Road junction (A286)
  - Whyke Road junction (B2145)
  - Oving Road junction (B2144)

4.2.10 To cater for the diverted traffic from the Stockbridge and Whyke junctions two options are proposed by the Highways Agency:

- Option 1: Widen the A27 to three lanes in each direction between the Stockbridge and Whyke junctions.
- Option 2: Provide a new single carriageway road, called the 'Stockbridge Link Road' linking the new two level Fishbourne roundabout junction with the A286 south of Stockbridge.

4.2.11 A summary of the Highways Agency proposals is shown in Figure 7 and summarised in Table 4.1.

[10] Section 4.7.7, Page 67, South Coast Central Route Strategy – Evidence Report (April 2014)

[11] www.highways.gov.uk/roads/road-projects/a27-chichester-improvement

Table 4.1: Summary of A27 options considered by the Highways Agency[12]

JUNCTION	TWO LEVEL JUNCTIONS				TRAFFIC SIGNAL JUNCTION	ROUNDABOUT	LOCAL ROAD CLOSURE
	A27 raised over local road	A27 lowered beneath local road	Local road raised over A27	Local road lowered beneath A27			
Fishbourne Roundabout	SoCoMMS (South Coast Multi Modal Study) scheme rejected due to visual impact	Not feasible due to ground water conditions	Preferred solution	Not feasible due to ground water conditions and topography	Not feasible due to insufficient capacity	Not feasible due to insufficient capacity	Not feasible due to insufficient capacity
Stockbridge Roundabout	SoCoMMS (South Coast Multi Modal Study) scheme rejected due to visual impact	Not feasible due to ground water conditions and impact on adjacent properties	Not feasible due to visual impact	Not feasible due to ground water conditions and proximity to adjacent properties	Preferred solution	Not feasible due to insufficient capacity	Not feasible due to insufficient capacity
Whyke Roundabout	Not feasible due to visual impact on adjacent properties	Not feasible due to ground water conditions and impact on adjacent properties	Not feasible due to visual impact on adjacent properties	Not feasible due to ground water conditions and proximity to adjacent properties	Preferred solution	Not feasible due to insufficient capacity	SoCoMMS (South Coast Multi Modal Study)solution not feasible due to insufficient capacity
Bognor Roundabout	SoCoMMS (South Coast Multi Modal Study) scheme is the preferred solution	Not feasible due to ground water conditions	Not feasible due to layout of local roads at the junction	Not feasible due to ground water conditions and layout of local roads at the junction	Not feasible due to insufficient capacity	Not feasible due to insufficient capacity	Not feasible due to insufficient capacity
Oving Junction	Not feasible due to visual impact	Not feasible due to ground water conditions and impact on adjacent properties	Not feasible due to visual impact and proximity of junctions	Not feasible due to ground water conditions and proximity to properties and junctions	Preferred solution	Not feasible due to insufficient capacity	SoCoMMS (South Coast Multi Modal Study) solution not feasible due to insufficient capacity
Portfield Roundabout	Level separation not required as an improved roundabout has sufficient capacity.				Not feasible due to insufficient capacity	Preferred solution	Not feasible due to insufficient capacity
Northern Route	Not justified because only a small proportion of the traffic on the A27 travels right through the Bypass (about 10 -20%), does not meet the requirements to deliver the objectives and would be too environmentally damaging						

4.2.12 The scheme preferred by the Highways Agency for the Bognor Road roundabout is referred to as the SoCoMMS (South Coast Multi Modal Study).[13] This includes the following:

- Realignment of Vinnetrow Road to join the A27 at a left-in / left-out junction west of the Bognor Road. Also potentially could be accommodated as a left-in / left-out junction on the westbound on-slip.
- Grade separation of junction.
- Larger bridge structure over the railway.

[12] http://www.highways.gov.uk/roads/road-projects/a27-chichester-improvement/

[13] Section 5.1.7 of Chichester Area Strategy Development Plan, South Coast Corridor Multi Modal Study prepared for GOSE (August 2002)

- Land required to the west of the junction to facilitate the scheme.

4.2.13 A possible design for this scheme has been drafted by WSP and attached in Appendix B. A key factor to any decision on the A27 corridor however is a need to understand the generalised capacity of the corridor as a whole, where increases in capacity have contributed to increases in travel demand. For Example the recent Post Opening Project Evaluation (POPE) study of the A27 Southerham to Beddingham Improvement noted an eight percent increase in traffic. Whilst this can have a number of positive effects, reducing traffic on less suitable routes and improving journey time reliability, it can also contribute to mode shift towards less sustainable motorised vehicle trips.

4.2.14 On 1st December 2014, the Government announced major investment for 18 new road schemes in London and the Southeast. Part of this included a £350 million investment to improving the A27 in addition to the A27 Chichester bypass improvements to upgrade the 4 junctions on the Chichester bypass announced on 2013.

4.3 West Sussex County Council

A Route Strategy and Action Plan for the A27: Final Report (D8) (July 2013)

4.3.1 WSCC commissioned Atkins to develop a strategy and action plan for the A27 to drive forward options that can be delivered in the short term to reduce congestion, improve journey times, and unlock the economic potential of the area.

4.3.2 In terms of the junction upgrade, the study concluded the following:

- Fishbourne roundabout: 'Through About' signalised roundabout. The A27 straight ahead through signalised roundabout and left signalised filter lanes.
- Stockbridge roundabout: Signalised junction. A27 widened to three straight ahead lanes. Left filter lanes and all right turn movements prohibited.
- Whyke roundabout: Signalised junction. A27 widened to three straight ahead lanes. Left filter lanes. All right turn movements prohibited.
- Bognor Road roundabout: Signalised reconfigured roundabout. A27 widened to three straight ahead lanes. A259 Bognor Road widened to three lanes. Vinnetrow Road diversion to signalised junction with A259.
- Oving roundabout: Signalised junction. A27 two lanes straight ahead and left turn only.
- Portfield roundabout: A27 new dedicated lanes westbound and revised roundabout layout and geometry. A27 revised Portfield roundabout layout and geometry. New left-in/left-out junctions with A27 to south and east of Portfield roundabout. New footbridges.

4.3.3 The Bognor Road roundabout scheme designed by Atkins is included in Appendix B. This shows:

- Three traffic lanes on the northern, eastern, and southern approaches to the junctions. Two lanes on western approach to the junction. Three traffic lanes in circulating section of the roundabout.
- Vinnetrow Road diversion to signalised junction with A259. The exit from Vinnetrow Road is left turn onto Bognor Road. Right turn and left turn permitted from Bognor Road into Vinnetrow Road.

4.3.4 An analysis of the operation of this design is provided in Section 7.7. Notably the potential improvements to the Stockbridge and Whyke Roundabouts include signalised junctions. Through appeal negotiations for a development south of Chichester (Clappers Lane) i-Transport has identified that the forecast maximum capacity of these junctions is in the order of 2,500-2,700vph in the tidal direction, contributing to the generalised capacity of the A27 corridor. Any individual junction improvement on the corridor would therefore be limited to this traffic flow, whereas the existing A27/A259 Bognor Road Roundabout has a theoretical capacity of around 2,050vph thus the

signalisation of the roundabout provides a cost effective solution to the corridor until other options can be considered and advanced.

Chichester District Council – Local Plan - Transport Study of Strategic Development Options and Sustainable Transport Measures (March 2013)

4.3.5 The purpose of the Study was to assess the effects on the highways network likely to arise as a result of potential options under consideration for the Local Plan, and to identify measures that could potentially mitigate these impacts.

4.3.6 The report provides details of the area wide traffic assessments and forecasting of future travel demands and traffic effects of potential housing growth and other development in the Chichester area. The study used the Chichester Area Transport Model (CATM) to examine area wide impacts of local growth. The preferred option that was tested used a housing target of 4,700 homes by 2031.

4.3.7 Key conclusions from tests of future housing growth scenarios, without transport mitigation measures to minimise local impacts were, as follows:

- Background traffic growth (2012-31) will reduce overall network performance without any additional housing growth beyond currently committed sites.
- With additional planned housing growth without mitigation – key indicators of journey times and congestion levels increase further, leading to deteriorating travel times and accessibility in Chichester and its environs.

4.3.8 Transport mitigation measures were tested to reduce these impacts of future growth. These measures include the following:

- Improvements to junctions on the A27. All proposals are 'at grade' (surface level) improvements, within existing highway boundaries, retaining all traffic movements
- 'Smarter Choice' and demand management measures to encourage public transport use and walking/ cycling. These measures are especially important within the urban area of Chichester, providing sustainable options for local, shorter trips.

4.3.9 While the works for the A27 improvements lie within the highway boundary, the stopping sight distances necessary for the safe operation of the junction would require additional land. The developer is able to contribute this land to aid the implementation of the junction upgrade.

4.3.10 Key conclusions from testing the effectiveness of these mitigation measures are, as follows:

- A combination of the A27 junction improvements and Smarter Choices can effectively mitigate the area-wide impacts of planned housing growth. The effects lead to local traffic conditions broadly consistent with those forecast for 2031 without the planned housing growth levels, and in some localities/routes at levels less than forecast for 2031 without planned development (the 2031 baseline).
- Growth scenarios including mitigation measures will result in higher traffic volumes on key routes, including the A27 Chichester bypass, though junction improvements have the potential to ensure journey times, congestion levels and road safety are managed to levels comparable with current performance and better than the forecasts for 2031 without additional growth (the 2031 baseline).
- A comprehensive area-wide package of smarter choice initiatives can ensure significant reductions in local traffic, with particular benefits to the local road network within Chichester.

4.3.11 The study also notes that when compared to the 2031 Baseline, the A27 mitigation measures have increased capacity and reduced congestion along the A27. Overall journey times along the A27 have reduced along the route except through the Bognor Road Roundabout. The Bognor Road Roundabout has experienced an increase in congestion indicating the proposed mitigation scheme requires further refinement to its design. Identification of an improved solution has potential to further reduce journey times along the A27, potentially to levels lower than the 2031 Baseline case.

4.3.12 The study proposed the solution shown in Figure 7-a of the report. The study acknowledges that *'at this stage, continued development of solutions for Bognor Road roundabout is required.'*

4.4 Summary

4.4.1 This review highlights that there are differences between the Highways Agency and WSCC strategies for upgrading the capacity of the Bognor Road roundabout. These differences will need to be considered during the development of the highway access strategy for the proposed development, considering both the timing of development and infrastructure over the Local Plan period.

5 Proposed Development

5.1 Introduction

5.1.1 The proposed development comprises the construction of a mix of land uses, including employment, retail and waste, on land formerly used as a fuel storage depot, to the north-east of the Bognor Road Roundabout.

5.2 Land Use Scale and Mix

5.2.1 The proposed development will occupy a parcel of land of the north of the A259 Bognor Road and to the east of the A27 Chichester By-Pass. It will comprise a mix of land uses, including employment, retail and waste. Table 5.1 provides a summary of the approximate development accommodation schedule for the illustrative masterplan.

Table 5.1: Development Accommodation Schedule

No of Units	GFA[14]
Industrial Estate	13,500
Discount Food Retail	2,500
Roadside Food Retail	750
Total	**16,750**

5.3 Site Vehicle Access

5.3.1 The proposed development would be provided with a vehicular access located on its southern side, offering connection to the A259 Bognor Road. The junction would take the form of a signalised T-junction with a left-in, left / right-out function. This will close the existing two accesses and formalise them into one.

5.3.2 The proposed layout for the site access is shown in WSP Drawing 3803/SK/017 Rev C.

5.4 Sustainable Transport Strategy

5.4.1 New signalised crossings from the site access to the southern side of the A259 Bognor Road will be provided. These will connect into the existing pedestrian and cycle route along the road and provide access to Chichester City Centre and public transport interchanges in the centre. This will allow safe crossing of the A259 for users of the site.

5.4.2 Currently, the closest bus stops are located adjacent to The Peacheries on the A259 Bognor Road. However, discussions will be undertaken with WSCC and Stagecoach about the existing routes on the A259, past the site, and whether any improvements are required. Discussions will focus on the provision of new bus stops adjacent to the site access on Bognor Road to enhance the accessibility of the site by public transport, should they be necessary.

[14] Approximate gross floor area (GFA)

5.4.3 To further encourage the use of public transport to access the site, there is the potential to contribute to link selective vehicle detection SVD (or 'green-wave') priorities for buses at the signalised site access junction and at Bognor Road Roundabout on the A259 westbound when it is signalised. This would serve to give priority to buses along the route through the signals and therefore reduce the journey time between the site and Chichester City Centre by bus.

5.5 Parking Provision and Strategy

5.5.1 As the outline application except for access, which is covered in detail, the internal site layout will be subject to a reserved matters application. At this juncture it is expected that the proposed development's car and cycle parking provision will comply with the standards outlined within Chichester District Council's Planning Guidance Note 5, as summarised within Section 3.

5.6 Summary

5.6.1 The proposed development will comprise a mix of land uses and will be accessed via a signalised T-junction that connects to the A259 Bognor Road. The development will be accessible by walking and cycling, and discussions will be undertaken with the local bus operator about the provision of additional bus request stops close to the site access.

5.6.2 The vehicular access strategy and sustainable transport strategy comply with CDC's Local Plan Policy 39, which states that the proposed development should provide for the access and transport demands that they create. Furthermore, safe and adequate means of access has been provided for all modes, through the new vehicular access, the proposed provision of a new bus stop, and the provision of new foot/cycle paths that link into the existing network.

6 Trip Generation

6.1 Introduction

6.1.1 This section considers the trip generation associated with the proposed mixed use development and demonstrates the likely number of additional vehicles that could be anticipated on the local highway network.

6.2 Existing Site Trip Generation

6.2.1 The site benefits from an existing fuel and distribution depot use, the trips of which can be taken into consideration when comparing the additional trip generation from the proposed development. A robust estimate of the existing trip generation is provided below, based upon information included in a Vectos Transport Statement for the site from February 2013. This report provided the evidence for a waste use at the site, for which planning consent was granted and thus the associated traffic is considered extant.

6.2.2 The existing land use has five fuel storage tanks, four of which are in excess of 720,500 litres. The Vectos report states that 50% of these tanks are filled, and 50% are emptied every day by fuel tankers that have a capacity of between 21-34,000 litres per tanker. Based upon this information, the estimated daily trip generation is provided in Table 6.1 below.

Table 6.1: Daily Estimated Trip Generation for Existing Land Use

Trip Purpose	Daily		
	Arrivals	Departures	Total
Filling Tanks	45	45	90
Distribution	72	72	144
Staff	8	8	16
Total Trips	125	125	250

6.2.3 The Vectos report estimates that approximately 10% of the total daily trips by fuel tankers will occur in each of the AM and PM peak periods. It is expected that 100% of staff trips will occur during the peak hours. The resulting peak hour trip generation is provided in Table 6.2 below.

Table 6.2: Peak Hour Estimated Trip Generation for Existing Land Use

Trip Purpose	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Filling Tanks	5	5	10	5	5	10
Distribution	7	7	14	7	7	14
Staff	8	0	8	0	8	8
Total Trips	20	12	32	12	20	32

6.2.4 Table 6.2 shows that the existing land use currently generates 32 two-way trips in each of the AM

and PM peak hours. As these are trips that currently use the local highway network, it is reasonable to discount them from the proposed trip generation.

6.3 Proposed Trip Generation

6.3.1 To determine the effects that the proposed development will have on the local highway network, an assessment has been made of the trip generation for the development, and where these trips are likely to be travelling on the highway network. The full trip rate methodology was submitted to WSCC in the Transport Scoping Note in October 2014.

6.3.2 Table 6.3 summarises the trip rates for the whole of the site, which are considered robust and representative of the proposed development. The full TRICS outputs can be found in Appendix C.

Table 6.3: Development Vehicular Trip Rates (weekdays)

Land Use	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arrivals	Departures	Two-way	Arrivals	Departures	Two-way
Industrial Estate	0.324	0.065	0.389	0.026	0.454	0.480
Discount Food Retail	1.171	0.799	1.970	3.048	3.381	6.429
Roadside Food Retail	4.421	4.000	8.421	5.053	5.263	8.211

Source: TRICS 2014 v7.1.2

6.3.3 Given the range of land uses, it is considered that the collective traffic generation will robustly forecast the total trip generation for all retail uses and will also take into account the likely pass-by and cross-visitation trips related to the proposed retail land uses. It has been assumed that 30% of trips are from vehicles that are passing-by the site, and 10% are cross-visitation.

6.3.4 Table 6.4 outlines the estimated trip generation for the proposed development based upon the masterplan floor areas and the trip rates provided in Table 6.3, deducting the existing land use. Collectively, the development is forecast to generate 122 and 247 two-way vehicle movements. However, to make the assessment robust and as the permitted use has not been operating since Hanbury Properties acquired the site, the traffic flows at the site access and the Bognor Road Roundabout have not discounted when assessing the operation of the junctions.

Table 6.4: Development Vehicular Trip Generation (weekdays)

Land Use	Gross Floor Area (approx sqm)	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
		Arrivals	Departures	Two-way	Arrivals	Departures	Two-way
Industrial Estate	13,500	44	9	53	4	61	65
Discount Food Retail	2,500	29	20	49	76	85	161
Roadside Food Retail	750	33	30	63	38	39	77
Retail Cross Visitation Discount		-6	-5	-11	-11	-12	-24
Gross Trip Generation	**16,750**	**100**	**54**	**154**	**106**	**173**	**279**
Existing Land Use Discount		-20	-12	-32	-20	-12	-32
Net Trip Generation	**16,750**	**80**	**42**	**122**	**86**	**161**	**247**

Source: Consultant Calculated, not rounding errors

7 Impact Assessment

7.1 Introduction

7.1.1 This section considers the impact of the proposed development on the local highway network, in the context of the trip generation outlined in the previous chapter.

7.2 Traffic Model

7.2.1 As there are significant growth plans in the local area, traffic flows from the Chichester Area Transport Model (CATM) were considered the most appropriate to use to test the impact of the proposed development. WSCC provided WSP with traffic flows for a 2031 future year including the Chichester District Plan Preferred Strategy (CDCPS).

Committed Development

7.2.2 For the purposes of this assessment, the background and committed developments are considered to be within the CATM traffic model future year, along with the refined preferred option scenarios. The fuel depot site has been promoted as previously development land for inclusion within the proposed employment land allocations.

7.2.3 The CATM forecasts provide the cumulative development traffic impact of all developments within the district to 2031. Whilst the CATM does not specifically identify the 'employment' uses, ahead of the Land Allocations Development Plan Document, it forecasts some 50 Ha of employment land. The associated employment land could therefore be assumed to be included within the Local Plan 2031 CATM forecast traffic flows provided by WSCC.

Assessment Years

7.2.4 Given that the forecast year within the CATM traffic model is 2031, the development impact has been tested for this future year. This assessment also takes into account the proposed WSCC signalised scheme for the Bognor Road roundabout. However, should the proposed signalisation for the roundabout not be implemented by 2019, the existing priority design of the roundabout has also been examined for a 2019 future year.

7.2.5 The 2019 traffic flows have been derived by reducing the 2031 CATM flows by a 2019 to 2031 TEMPRO growth factor. The TEMPRO factor used was for the trunk roads in Chichester area is shown below in Table 7.1.

Table 7.1: TEMPRO Growth Factor 2019 – 2031 (Trunk Roads, Chichester)

	Growth Factor
AM Peak	1.1736
PM Peak	1.1842

7.3 Vehicle Trip Distribution

7.3.1 Retail trip distribution has been determined using a gravity model of local residential areas and local retail land uses. The employment trip distribution has been calculated using the 2011 Census Journey to Work statistics. Development trips will then be assigned to routes on the local network.

7.3.2 The employment trip distribution was calculated using 2011 Census Journey to Work data. A summary of the key trip generators is provided in Table 7.2.

Table 7.2: Employment Trip Distribution

Origin	Proportion of Trips
Chichester	37%
Bognor Regis	20%
Havant	9%
Portsmouth	6%
Worthing	3%
Other	25%
Total	**100%**

7.3.3 For the retail trip distribution, six local wards surrounding the site were considered in the gravity model approach respecting the Retail Impact Assessment. The proportion of trips generated by each ward was calculated with respect to the population size. The wards considered and the distribution of trips from each ward is provided in Table 7.3 below.

Table 7.3: Retail Trip Distribution

Ward	Population aged 16-74	Distribution
Lavant	1,734	8%
Chichester East	6,514	29%
Chichester South	4,845	21%
Sidlesham	1,786	8%
North Mundham	1,599	7%
Bersted	6,126	27%
Total	**22,604**	**100%**

7.3.4 Discussions with the highway authorities identified the need to assess the A259 Bognor Road in the vicinity of the site access, and the A27 Bognor Road Roundabout. The development trips have been distributed along the following five routes:

- A259 Bognor Road (east of the site access);
- Vinnetrow Road;
- A27 Chichester By-Pass (south of Bognor Road Roundabout);

- A259 Bognor Road (west of Bognor Road Roundabout); and
- A27 Chichester By-Pass (north of Bognor Road Roundabout).

7.3.5 The forecast 2031 (CATM) Local Plan development traffic flows include a range of committed development including up to 1,513 future jobs planned for the Chichester area. Within the model a more robust 'office' based trip rate was used when determining the level of trips associated with the employment. It is believed that the employment proposed as part of this development forms part of the1,513 future jobs planned for the Chichester area. Trips associated with the B1c/B2/B8 elements of the proposed development will generate fewer trips than an 'office'. To avoid the risk of double-counting, this TA has retained the (robust) forecast traffic flows at the Bognor Road junction within the existing CATM data, adding the retail elements of the proposed development. This approach will ensure that the development proposals are considered in a robust manner but without duplicating traffic forecasts. The assigned forecast traffic includes:

- A259 Site Access Junction – considers all forecast development based upon the trip rates above;
- A27 Bognor Road Roundabout – considers the retail traffic uses, with 30% pass-by and 10% cross-visitation.

7.3.6 Table 7.4 provides a summary of the routes and the proportion of retail and employment trips that have been assigned to them.

Table 7.4: Development Trip Distribution

Route	Retail Trip Distribution	Employment Trip Distribution
A259 Bognor Road (east of the site access);	29%	25%
Vinnetrow Road	5%	0%
A27 Chichester By-Pass (south of Bognor Road Roundabout)	22%	43%
A259 Bognor Road (west of Bognor Road Roundabout);	36%	4%
A27 Chichester By-Pass (north of Bognor Road Roundabout)	8%	28%
Total	**100%**	**100%**

7.3.7 Figures 8 and 9 show the 2019 Baseline traffic flows, while Figures 10 and 11 show the traffic flows for the 2019 Baseline + Development scenario.

7.3.8 Figures 12 and 13 show the 2031 CDCPS Baseline traffic flows, and Figures 14 and 15 show the traffic flows for the 2031 CDCPS Baseline + Development scenario. Notably the 2019 with development forecasts demonstrate that the A27 (south) flows are likely to be lower than the 2007 traffic peak due to the reduction in traffic flows over time, as shown previously in Table 2.4.

7.4 Junction Assessments

7.4.1 This Impact Assessment chapter will assess the impact of the proposed development on two junctions: the existing Bognor Road Roundabout and the proposed site access.

7.4.2 The existing design of Bognor Road Roundabout is a five-arm priority roundabout. By 2019, WSCC have proposed that they will upgrade the junction to be signalised, as shown in WSP Drawing 3803/SK/011 Rev B. This plan also highlights land that would be required to accommodate appropriate levels of stopping sight distance (SSD) from between the A27 (north) and the A259 Bognor Road (east), based on a 60kph design speed.

7.4.3 The HA are also promoting a flyover scheme and stated at the Chichester Examination in Public on 5th November 2014 that it intended to progress the scheme for improving the junction with an anticipated delivery date of 2019.

7.4.4 Although the junction has previously operated with over 8,000vph above 2013 levels, in the unlikely event the improvement is not complete by 2019, the impact of the proposed development on the existing priority roundabout design has been considered incorporating some development within the District.

7.4.5 The proposed site access identifies a limited turning movement signalised T-junction onto A259 Bognor Road. The proposed design is shown in WSP Drawing 3803/SK/017 Rev C.

7.4.6 The junction assessments have been carried out using a number of software tools including Junctions 8 and LINSIG. Where junction capacity assessments have been undertaken, the results have been presented in summary form in the main report, with the full outputs contained in Appendix D.

7.5 Assessment Scenarios

7.5.1 The following future scenarios will be tested for the Bognor Road Roundabout:

- 2019 Baseline (Existing Priority Roundabout);
- 2019 Baseline + Proposed Development (Existing Priority Roundabout with mitigation);
- 2031 CDCPS Baseline (With Proposed WSCC Signalisation);
- 2031 CDCPS Baseline + Development (With Proposed WSCC Signalisation); and
- 2031 CDCPS Baseline + Development (With Proposed WSCC Signalisation with mitigation).

7.5.2 The proposed site access junction will be tested for the 2031 CDCPS Baseline + Development scenario.

7.6 Site Access Junction

7.6.1 The proposed site access junction offers a separation of over 180m from the roundabout circulatory carriageway to the junction stop line, permitting around 31 vehicles in each lane before the new traffic signal controlled junction might affect the preceding junction.

7.6.2 Table 7.5 provides a summary of the LINSIG assessment of the signalised site access junction. The results show that the junction will operate well within capacity, with a maximum end queue of 8 vehicles (46m) in the PM peak, thereby demonstrating that the risk of queues affecting the preceding junction is negligible.

Table 7.5: Site Access: 2031 CDCPS Baseline + Development

Arm	AM Peak Period (08:00-09:00)		PM Peak Period (17:00-18:00)	
	DoS	End Queue	DoS	End Queue
A259 Bognor Road (EB)	46.6%	5	49.7%	6
Site Access	16.6%	1	55.0%	3
A259 Bognor Road (WB)	60.9%	7	63.7%	8

7.6.3 Table 7.5 also indicates that the junction operates well within theoretical capacity ensuring that the potential Vinnetrow Road connection or Park & Ride access, as shown in the WSCC scheme in Appendix B, could be integrated into the junction arrangement with minimal effect at a later date.

7.7 Bognor Road Roundabout

2019 Forecast Year

7.7.1 Table 7.6 below shows a summary of the Junctions 8 results for the 2019 Baseline scenario at the existing Bognor Road Roundabout, adopting a simulated peak hour profile (O-D Tab, 112.5% of forecast traffic demand during the peak 30 minute intervals), accounting for the unequal lane usage that occurs on the A27 arms of the junction. An extended summary of the Junctions 8 outputs, showing the results for each lane on the junction arms, can be found in Appendix D, alongside the full assessment outputs.

7.7.2 The results show that the A27 southbound and A259 eastbound arms are operating over capacity in both the 2019 Baseline AM and PM peak hours, with queues of up to 854 vehicles on A27 northbound in the AM peak. The A27 northbound is also approaching capacity in the AM and PM peaks.

Table 7.6: Bognor Road Roundabout: 2019 Baseline

Arm	AM Peak Period (08:00-09:00)		PM Peak Period (17:00-18:00)	
	RFC	End Queue	RFC	End Queue
A27 Chichester By-Pass (SB)	1.017	854	1.010	708
A259 Bognor Road (WB)	0.500	1	0.530	1
A27 Chichester By-Pass (NB)	1.018	181	1.002	201
A259 Bognor Road (EB)	0.663	2	0.777	3

7.7.3 Given that it is known that improvement schemes are planned by both WSCC and the HA for the roundabout, and that a development is required to demonstrate a 'nil detriment' position where the 'residual' impact is not 'severe'. The development is not obliged to resolve existing capacity issues, only show adequate mitigation of its impacts. However, in line with pre-application discussions a package of options will be explored to reflect the emerging Local Plan CIL aspirations and the A27 corridor strategy.

7.7.4 Should either the WSCC proposed signalisation of the roundabout, or the A27 grade separated scheme, not be in place by the time the development is occupied, the developer could provide a section of land, as shown in WSP Drawing 3803/SK/011 Rev B, to implement a capacity improvement to the A27 north of the roundabout, onto the A259 Bognor Road.

7.7.5 The applicants are also willing to make this land available to WSCC or the HA to ensure that the junction is future-proofed and therefore this and other options can be preserved within the site masterplan. This significant benefit offered will enable WSCC and the HA to implement either of their proposed improvement schemes at the A27 / Bognor Road junction.

7.7.6 Table 7.7 below shows the results that an improvement to the existing priority roundabout, as shown in WSP Drawing 3803/SK/016 Rev B, would have on its operation in the 2019 Baseline + Development scenario.

Table 7.7: Bognor Road Roundabout: 2019 Baseline + Development + Mitigation

Arm	AM Peak Period (08:00-09:00)		PM Peak Period (17:00-18:00)	
	RFC	End Queue	RFC	End Queue
A27 Chichester By-Pass (SB)	1.012	190	1.013	271
A259 Bognor Road (WB)	0.648	2	0.720	3
A27 Chichester By-Pass (NB)	1.013	374	1.022	273
A259 Bognor Road (EB)	0.678	2	0.825	4

7.7.7 The results in Table 7.7 show that the operation of the A27 southbound will improve significantly with the implementation of a lane for left-turning traffic. While it is acknowledged that the RFC and queues on the A27 northbound do increase, it is considered that the improvement to the roundabout as a whole would be sufficient to mitigate the impact of the development traffic.

7.7.8 The results in Tables 7.6 and 7.7 show the maximum RFC and the corresponding end queue. In some cases, the maximum end queue is not within the same 15 minute segment as the maximum RFC. This is a result of an accumulation of traffic over the peak hour, despite the flow through the junction improving. Tables containing the maximum end queue and corresponding RFC can be found in Appendix D.

7.7.9 As the junction has accommodated higher traffic flows in 2007 and the medium term plan for the junction is to include some traffic signalisation, this mitigation would be sufficient to offset the development impact until the WSCC or HA improvement was implemented if indeed any improvement is required. However, given that an improvement is intended to be in place by 2019, it is unlikely that any interim improvement would be required.

2031 Forecast Year

7.7.10 As a minimum it is assumed the WSCC Bognor Road Roundabout improvements will be in place by 2031. The junction has therefore been tested using the WSCC signalised design.

7.7.11 Based on our (WSP) assessment of the proposed junction arrangement it is evident that the junction could be considered to operate broadly within or close to capacity during the peak hours however the optimisation of the very short circulatory lengths within the roundabout requires very short cycle times, prioritising turning movements within the roundabout. The resultant effect is that traffic queues on the approaches will be affected, although it is evident that the WSCC scheme has been designed

to optimise capacity (providing three-lane approaches on most arms).

7.7.12 Table 7.8 below shows the results of the LINSIG impact assessment for the 2031 Baseline scenario. The results show that most arms of the roundabout are operating at or close to capacity. The arm which experiences the greatest Degree of Saturation (DoS) is A27 northbound.

Table 7.8: Bognor Road Roundabout: 2031 CDCPS Baseline

Arm	AM Peak Period (08:00-09:00)		PM Peak Period (17:00-18:00)	
	DoS	End Queue	DoS	End Queue
A27 Chichester By-Pass (SB)	107.1%	62	156.3%	229
A259 Bognor Road (WB)	133.1%	71	110.0%	45
A27 Chichester By-Pass (NB)	238.1%	540	85.7%	15
A259 Bognor Road (EB)	68.5%	6	106.7%	24
Circulatory (EB)	69.6%	7	66.3%	4
Circulatory (SB)	85.9%	6	81.9%	5
Circulatory (WB)	77.6%	13	75.3%	8
Circulatory (NB)	33.8%	6	66.9%	2

7.7.13 Similar to the tidal traffic patterns, Table 7.8 reveals that levels of queues and delays at the proposed roundabout will be material on some approaches but materially better than they would be without any changes to the junction.

7.7.14 Table 7.9 summarises the results of the 2031 Baseline + Development scenario. The summary table shows that there is a slight increase in DoS and end queues on some arms, with similar levels of delay.

Table 7.9: Bognor Road Roundabout: 2031 CDCPS Baseline + Development

Arm	AM Peak Period (08:00-09:00)		PM Peak Period (17:00-18:00)	
	DoS	End Queue	DoS	End Queue
A27 Chichester By-Pass (SB)	125.7%	136	171.1%	263
A259 Bognor Road (WB)	117.6%	51	115.1%	59
A27 Chichester By-Pass (NB)	285.7%	603	88.0%	16
A259 Bognor Road (EB)	72.5%	7	108.6%	27
Circulatory (EB)	55.0%	7	65.2%	11
Circulatory (SB)	79.2%	6	75.9%	5
Circulatory (WB)	78.4%	9	82.1%	6
Circulatory (NB)	26.8%	3	68.8%	1

7.7.15 Therefore, to mitigate the impact of the development and to achieve a nil-detriment situation, it is proposed that on the eastern approach to the roundabout (A259 Bognor Road), lane 1 and 2 should be allowed to turn left, with lane 2 sharing the left and ahead movement. In the current WSCC design, only lane 1 can turn left. In addition, the cycle time should be raised from the previously modelled 60 seconds to 63 seconds. This improvement can be provided within the design being proposed by WSCC with little cost.

Table 7.10: Bognor Road Roundabout: 2031 CDCPS Baseline + Development (With Mitigation)

Arm	AM Peak Period (08:00-09:00)		PM Peak Period (17:00-18:00)	
	DoS	End Queue	DoS	End Queue
A27 Chichester By-Pass (SB)	110.5%	77	131.7%	167
A259 Bognor Road (WB)	183.0%	126	94.7%	14
A27 Chichester By-Pass (NB)	178.5%	412	89.7%	18
A259 Bognor Road (EB)	72.1%	7	74.3%	7
Circulatory (EB)	74.0%	7	82.4%	7
Circulatory (SB)	77.8%	5	89.5%	7
Circulatory (WB)	78.3%	9	78.0%	7
Circulatory (NB)	46.3%	0	76.0%	3

7.7.16 The results in Table 7.10 show that the proposed lane allocation change provides overall mitigation across all arms of the roundabout. While the DoS and queue lengths have slightly increased on some arms of the roundabout, they have significantly reduced on others.

7.7.17 In order for the WSCC scheme to be safely and efficiently designed, land currently within the site boundary is likely to be required to provide the Stopping Sight Distance (SSD). This land is shown on WSP Drawing 3803/SK/011 Rev B as a hatched area to the west of the site.

7.7.18 If the land were not being promoted for development and became the subject of a Compulsory Purchase Order Inquiry it may not be possible to deliver the A27/A259 Roundabout improvements by 2019. There is the opportunity therefore, as part of the development scheme, to incorporate land necessary to deliver the junction improvement as part of a package of planning obligations. Based on initial dialogue it is anticipated that an enhanced scheme could be achieved, even preserving the potential for a partial grade separation of the junction which is not achievable within the existing highway boundary. The developer is able to offer this land as part of the development proposals to solve this issue.

7.7.19 Subject to the collective view of the planning and highway authorities it is considered that post application negotiations be developed based on an emerging (HA) preferred option scheme for the junction.

Highways Agency (HA) Scheme

7.7.20 As part of their A27 corridor improvements Hanbury and WSP have identified land that could be preserved and protected to enable a grade separated design for the Bognor Road Roundabout to be developed before 2031. Such an arrangement would reduce the development potential of the site but would remove the physical / environmental constraints which exists at the Stockbridge Roundabout, thus enabling deliverability of the HA scheme

7.7.21 Adopting this pragmatic approach it would be possible to support improvements the A27 / A259 Bognor Road Roundabout and mitigate the impact of traffic from the proposed development in the following scenarios:

- Interim improvements to the existing priority roundabout should neither the WSCC or HA scheme come forward by 2019;
- Enabling deliverability of the WSCC signalised scheme through provision of land within the development site, with minor design improvements that can be easily accommodated within the scheme which will improve capacity, mitigating the impact of the development trips.
- Enabling the deliverability of the HA flyover scheme through provision of land along the western edge of the development site

7.8 Summary

7.8.1 The proposed development is expected to generate approximately 154 two-way trips in the AM peak and 279 trips in the PM peak, using a robust assessment that excludes the traffic that could be associated with the existing site. The retail trips have been distributed using a gravity model approach and the majority of trips are expected to access the development from the west, via the A27 roundabout. Similarly, the employment trips, which have been distributed using Census 2011 data.

7.8.2 The existing Bognor Road priority roundabout has been modelled in the 2019 future year to understand how the proposed development might affect queues and delays if the development were fully occupied and the A27 improvements delayed. The 2019 Baseline assessment results show that most arms of the junction are forecast to operate close to or over capacity. An improvement scheme could be provided using land within the development scheme. This suggested improvements to the A27, provides an overall mitigation for the additional development impact.

7.8.3 The 2031 impact assessments assume that the WSCC signalised scheme is in operation. The 2031 Forecast Baseline assessment shows that the roundabout will operate over capacity but respecting the generalised capacity of the A27 corridor will exhibit similar levels of congestion and delay as seen today. The addition of proposed development traffic has a minor impact on the performance of the roundabout. However to provide an overall mitigation solution for the additional development traffic, WSP have suggested improvements to the signal scheme that can easily be accommodated within the existing design. This mitigation scheme preserves or enhances journey time reliability at the junction.

7.8.4 The developer is prepared to provide an area of land to the south-west of the proposed development site which would serve to mitigate the developments impact. Therefore, the WSCC and HA will be able to implement their improvement schemes within the given land with the potential of wider betterment for all road users.

7.8.5 The proposed site access signalised T-junction is forecast to operate with spare capacity in the 2031 Baseline + Development scenario with negligible queues that will not affect the operation of the roundabout and could be linked to achieve some bus priority.The results of the impact assessment outlined in this chapter have shown that the proposed development complies with CDC's Local Plan Policy 39 which states that new development should not create residual cumulative impacts which are severe.

8 Framework Travel Plan

8.1 Background

8.1.1 This Framework Travel Plan has been produced in tandem with a Transport Assessment (TA). Both are aspects of an Outline Planning Application (OPA) being submitted in support of the proposed development at Bognor Road, Chichester. It is anticipated that the full production and implementation of the Travel Plan will be covered by a condition of this application.

8.2 Context - What is a Travel Plan?

8.2.1 An employment travel plan is an integrated 'tool' that seeks to address transport challenges through reducing traffic congestion and encouraging alternative transport choices for employees and visitors. It sets objectives and tangible targets to drive a 'real' change in transport behaviour.

8.2.2 The travel plan will adopt a package of measures in order to meet these targets. The measures will be funded through the provision of an agreed finite, budget provided by the developer.

8.3 Purpose of the Travel Plan

8.3.1 A travel plan is a tool to encourage future occupiers of the development to display sustainable travel behaviour and positively influence the travel choices of their staff.

8.3.2 This Framework Travel Plan (FTP) sets out how the eventual travel plan for the site will be delivered, including outlining the institutional mechanisms required for its successful implementation.

8.3.3 From a social perspective, the main aim is to reduce the impact of the development upon the surrounding local community. However, the delivery of the plan will be achieved through specific objectives, namely:

- Increasing the attractiveness of walk, cycle and public transport;
- Reducing the number of single-occupancy car trips.

8.4 Existing Guidance

8.4.1 The formulation of an FTP is guided by UK best practice guidelines. The aim is to deliver the maximum possible uptake of sustainable transport modes and ensure that the framework for implementation is logical, flexible and clearly sequenced. The key sources of this information include;

- Smarter Choices - Changing the way we travel (June 2005).
- Making Travel Plans Work (DfT, 2002)
- Guidance on Transport Assessment, Appendix B (DfT, 2007) – this contains guidance thresholds for when Travel Plans are required;
- Using the planning process to secure travel plans. Best practice guidance for local authorities, developers and occupiers (DfT 2002); and
- West Sussex County Council (Highways Authority) Policy – Transport Assessment Methodology June 2007.
- West Sussex Country Council – Development Travel Plan Policy

8.4.2 The Development Travel Plan policy provides clear guidance on what a Travel Plan should achieve and how it should be structured and delivered.

8.4.3 In addition to the stipulation for a Travel Plan, WSCC have outlined the following requirements for a travel plan:

- TPs should include targets, measures, management and monitoring proposals.
- Monitoring must be carried out by an independent surveyor, and
- Proposals for enforcement should also be incorporated within the TP document (e.g. commitments or recourse in the event of a failure to meet the TP Targets).

8.5 Existing Travel Situation

8.5.1 The FTP will set out the existing travel situation including pedestrian facilities, cycle routes and facilities, public transport information and proposed parking levels within the site. This information will be similar to Section 2 of the TA.

8.6 Travel Plan Objectives

8.6.1 The over-arching objectives of the Travel Plan will be prepared in accordance with the aims of the Good Practice Guidance for Travel Plans and the WSCC Development Travel Plan Policy. These documents also support the Government's criteria to improve integration, accessibility, safety, the environment and economy. The objectives are overlapping and are as follows:

- To improve accessibility to all services and facilities;
- To increase awareness of the sustainable travel choices available to employees and visitors;
- To promote the use of alternatives to the private car including walking, cycling, bus, train and car sharing;
- To address the causes of climate change through reducing emissions of greenhouse gases, particularly those associated with private car use;
- To reduce car trips, particularly single occupancy car trips for journeys to work.

8.7 Targets

8.7.1 The Travel Plan will endeavour to reduce the usage of single occupancy private cars in favour of alternative modes of travel, such as walking, cycling and public transport.

8.7.2 The Travel Plan will establish realistic targets, which will be reviewed at various intervals, following the occupation of the site. The use of a number of measures will allow for a degree of flexibility to be built in, as well as ensuring the best possible mix of incentives.

8.8 Quantified Targets

8.8.1 Quantified targets are the 'measurable' element of a Travel Plan. The targets that are set are designed to be achievable, but a challenge at the same time. As such, the progress made towards achieving these targets can be measured during the Travel Plan implementation period.

8.8.2 Example targets would be:

- Minimisation of single occupancy car use

- Increase mode share of bus compared to other modes.
- Maximise the use of bicycles as a realistic mode choice for trips to and from the workplace
- To attain a relative modal split of trips by foot to and from the workplace

8.9 Action Targets

8.9.1 In order to attain the quantified targets outlined above, it is important that a number of action targets are also specified. These ensure that the quantified targets are closely monitored, that employees are afforded the opportunity to be actively involved throughout the life of the Travel Plan and the services and measures that are identified are sufficiently supported and promoted.

8.9.2 Five key action targets have been identified:

- Provision of a Travel Information Pack for each occupier of employment and retail units;
- Development of a parking strategy which manages provision and any potential for excessive demand;
- To conduct comprehensive surveys in order to monitor its success in meeting the predetermined targets and gauge employees and visitors perceptions on potential areas for improvement;
- To record a snapshot on the effectiveness of the measures employed, and;
- To hold employee forums and steering group meetings.

8.9.3 Agreements will be reached in the consultation over a full Travel Plan with regards to targets which are considered to best fit with the nature of the development.

8.10 Sustainable Transport Measures

8.10.1 This section will discuss the different measures that could be put in place in order to attain the targets that are likely to be identified as part of the Travel Plan.

8.10.2 Through best practice taking advantage of the tax incentives, a cross section of initiatives that will be considered as part of the Travel Planning process could include:

- Marketing and promotional campaigns aimed at raising awareness and understanding of sustainable modes and the impact of car travel;
- Bus taster tickets for new employees, normally to take the form of a 1 week travel card option.
- Cycle voucher scheme to be negotiated by Travel Plan Co-ordinator
- Travel Planning Website
- Travel Information Packs to be given to every employee when they begin working. This would introduce them to the travel plan and provide information on bus timetables, car sharing opportunities, local footpaths, local walking clubs etc.
- Installation of a community notice board at two different locations on the site, showing travel information pertaining to the site, for example, bus timetable.
- Promotion of informal car sharing / set up of dedicated site specific car sharing database to be done through the Travel Planning Website
- Personal Travel Planning
- The provision of sufficient cycle parking, to cater for the initial forecast cycling demand, and the subsequent rise in demand

- The position of changing and possibly shower provision within the development to support larger-range cycle trips
- The development will ensure that there is not an over-provision of car parking spaces, that might otherwise incentivise more car-based journeys

8.10.3 The most crucial element will be the Travel Information Pack (TIP) which will provide information at the very start of the travel decision-making process. New environments and lifestyle changes are often conducive to people making decisions or re-enforcing previous ones. It is therefore critical that employees are targeted when they begin working at the site

8.11 Implementation and Management

8.11.1 In line with guidance, a Travel Plan Coordinator (TPC) will be appointed for the development.

8.11.2 The TPC, with support from the developers and management staff will be responsible for developing the Travel Plan, implementing the measures and being the first point of contact for residents.

8.11.3 The ultimate role of the TPC, during the period of appointment, will be to establish a Travel Plan with a structure and form that will be easily manageable into the future and beyond the initial commitment.

8.12 Monitoring

8.12.1 As the Travel Plan is intended to be a 'live' document, it will be revised and updated, where necessary, after each evaluation report. Revisions will largely be limited to reporting on results and feedback to date and updating the Action Plan so that it is a useful and rolling record of progress and next steps.

8.12.2 In line with WSCC guidance, an outline programme of monitoring, review and enforcement will be undertaken for five years from the date of first occupation. As the development includes several land uses it might be practical to defer the first monitoring report until the development is at least 50% occupied.

8.13 Conclusions

8.13.1 This Framework Travel Plan sets out the considerations that will be considered in developing the Travel Plan and outlines Hanbury Properties' commitment to its implementation.

8.13.2 A number of matters have been recognised as being important in the successful implementation of a Travel Plan. As much priority should be placed on the range of sustainable measures supporting the plan as part of the employee recruitment and retention process to ensure that travel to / from work forms part of a work / life balance and best influences sustainable lifestyle choices.

8.13.3 Having outlined the provisions which a Travel Plan would seek to deliver, this framework document provides the necessary grounding in demonstrating the applicant's commitment to the process. Setting out the groundwork will give an opportunity for further discussions to take place in the discharge of any planning condition attached to the planning application for the development relating to the implementation of a Travel Plan.

9 Conclusion

9.1.1 WSP has been appointed by Hanbury Properties Ltd to prepare a transport assessment in support of an outline planning application for a proposed mixed use (employment, waste and retail) development at the site north of the A259 Bognor Road in Chichester, West Sussex.

9.1.2 The Local Plan allocation for employment in and around Chichester is 3.200 new jobs, to be partially provided through 50 hectares of new employment land. The existing fuel depot at Bognor Road has the advantage of being promoted through both the Chichester District Council Local Plan for employment uses and the West Sussex Minerals and Waste Plan for a waste facility.

9.1.3 This Transport Assessment has been informed and directed by national and local guidance to ensure compliance against a range of policy, sustainability, safety and capacity criteria. The report considers the existing conditions and reveals that the site lies in a sustainable location with connection to existing walking and cycling routes, and is close to public transport stops and interchanges. Vehicles will access the site via a new signalised T-junction from the A259 Bognor Road and new bus stops can be provided within 400m of the site entrance.

9.1.4 Assessment of the impact of the proposed development on the Bognor Road Roundabout showed that while the additional traffic generated by the development creates a minor impact on the local highway network, minor improvements will provide sufficient mitigation to both the existing design and the proposed WSCC signalised design.

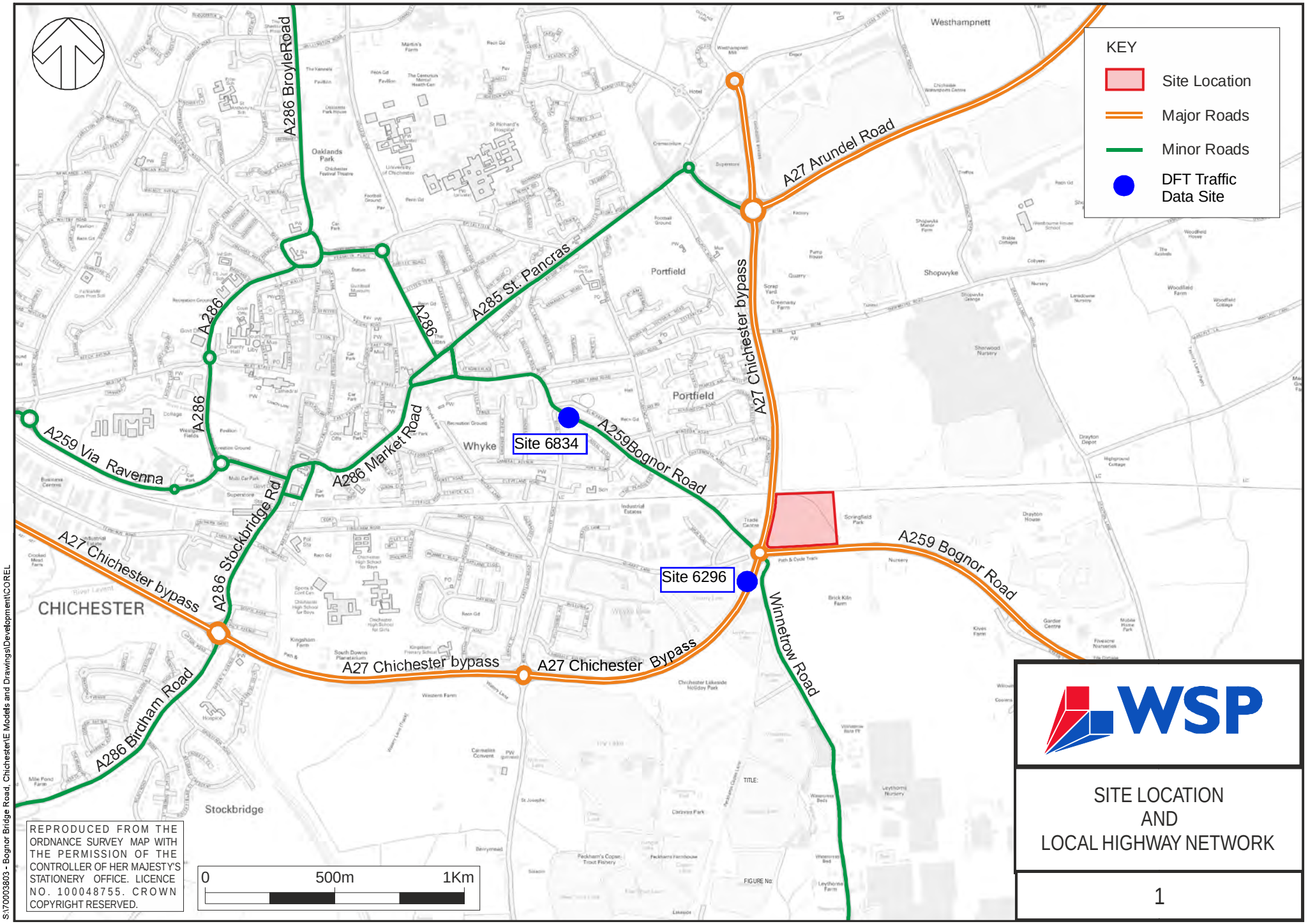
9.1.5 A review of historical traffic flows reveals that the roundabout has operated satisfactorily with higher flows (2007) than those now forecast for 2019 with the proposed development. It may therefore be sufficient to rely on current planned improvements rather than explore potential interim improvements.

9.1.6 The proposed development is anticipated to generate a minor increase in travel demand, representing a small increase in vehicular traffic flows. Therefore, under the policy test set out in the NPPF, it is considered that planning permission should not be refused on transport grounds.

9.1.7 WSP has identified that the planned A27 / A259 roundabout improvements will require some control of land forming part of the proposed development site. The developer has offered to potentially provide some land to the north-east of the Bognor Road roundabout as mitigation for the development's impact.

9.1.8 WSP has identified some land is required to deliver the WSCC improvement plans. With careful planning slightly more land could support an enhanced medium-term plan for the roundabout signalisation. This could be designed to preserve the potential for future grade separation thereby delivering the best possible outcome for the planning and highway authorities and the travelling public. Following on from pre-application discussions, post application dialogue can continue to ensure that the development offers a valuable contribution towards the development mitigation and the transport needs of Chichester and the A27 corridor.

Figures



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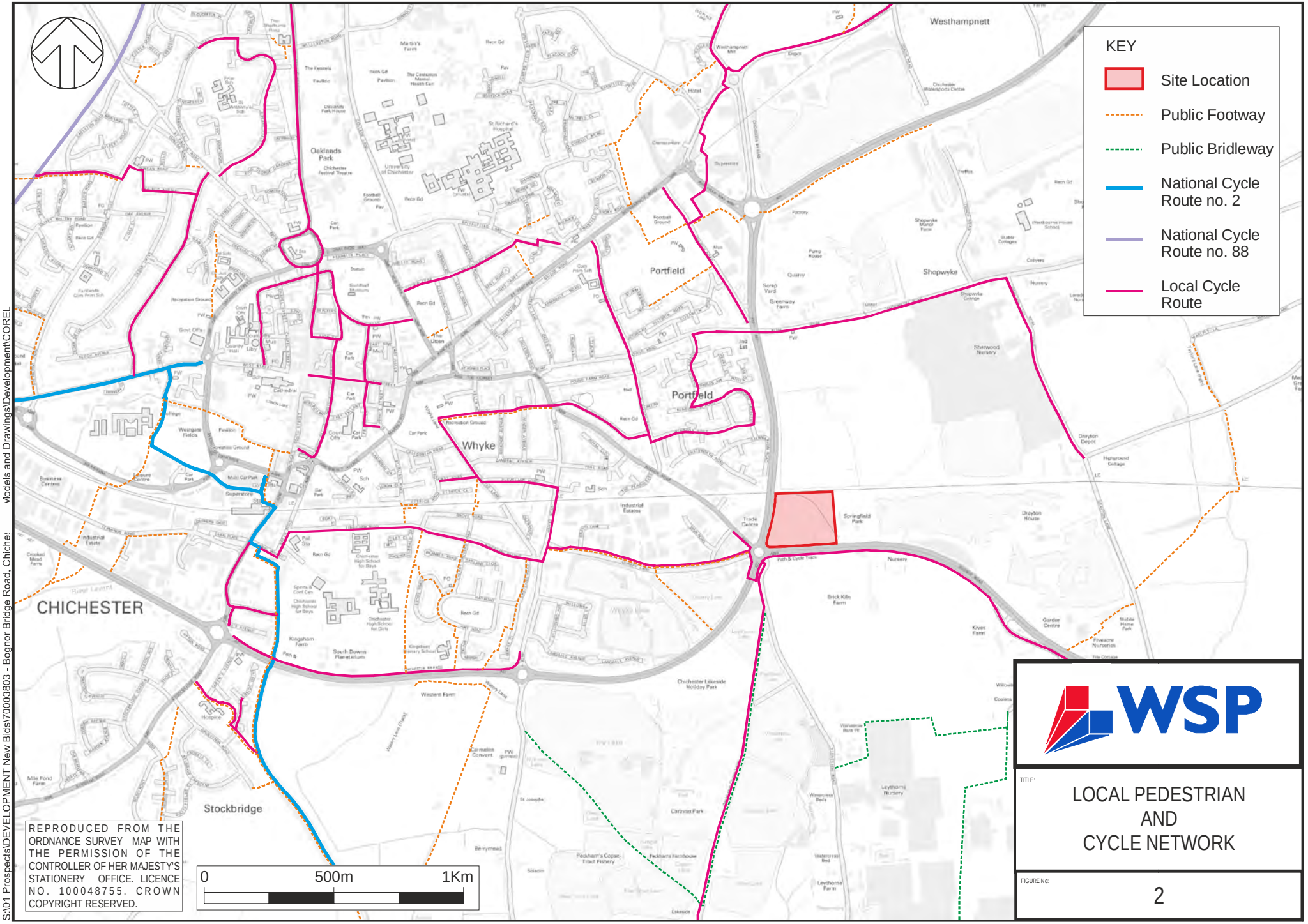
WSP

SITE LOCATION
AND
LOCAL HIGHWAY NETWORK

1



WSP

TITLE:

LOCAL PEDESTRIAN AND CYCLE NETWORK

FIGURE No:

2

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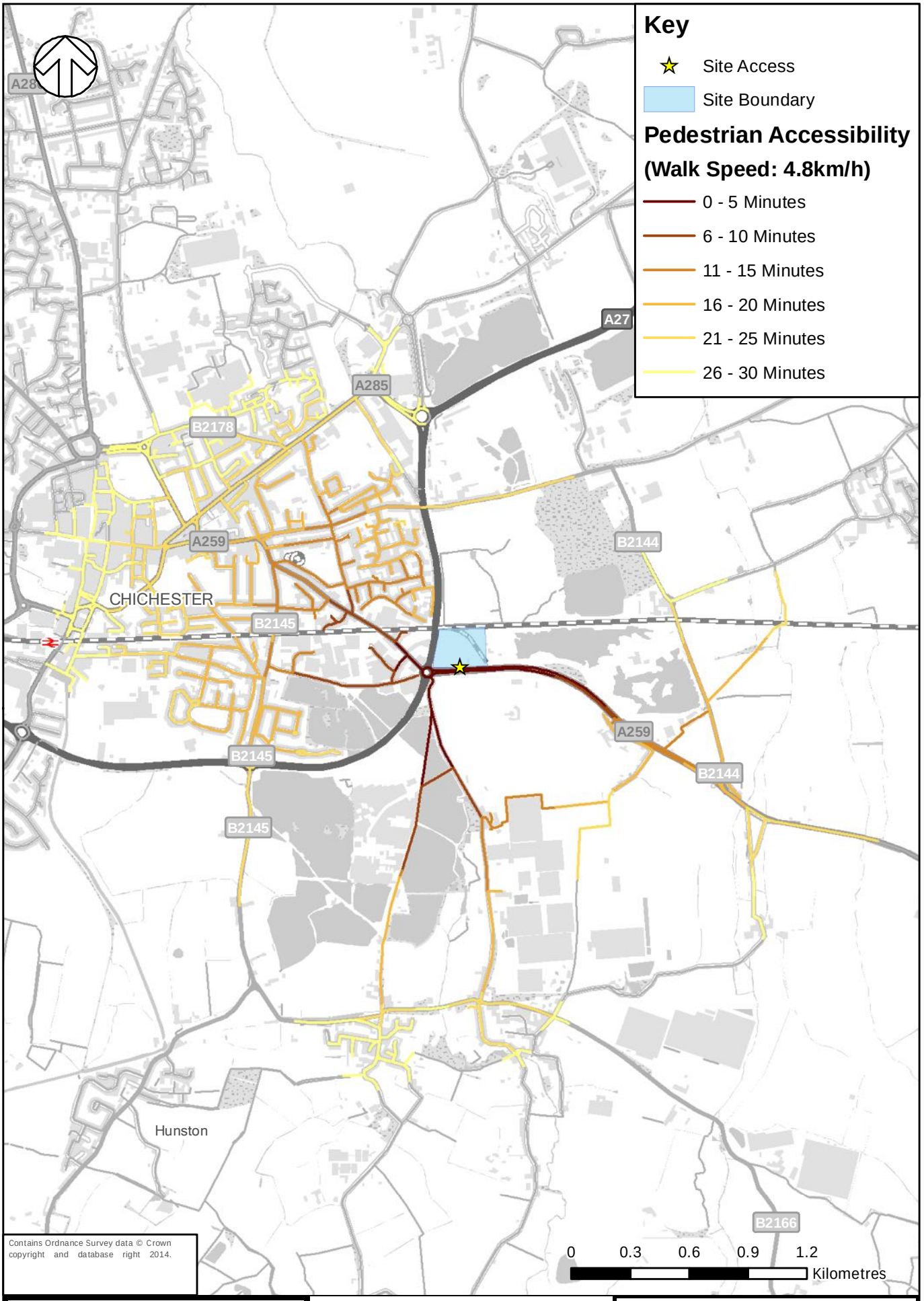

TITLE:

PEDESTRIAN ACCESSIBILITY ISOCHRONE

FIGURE No:

3

Drawn By: ukpde003 Date Modified: 03/11/2014

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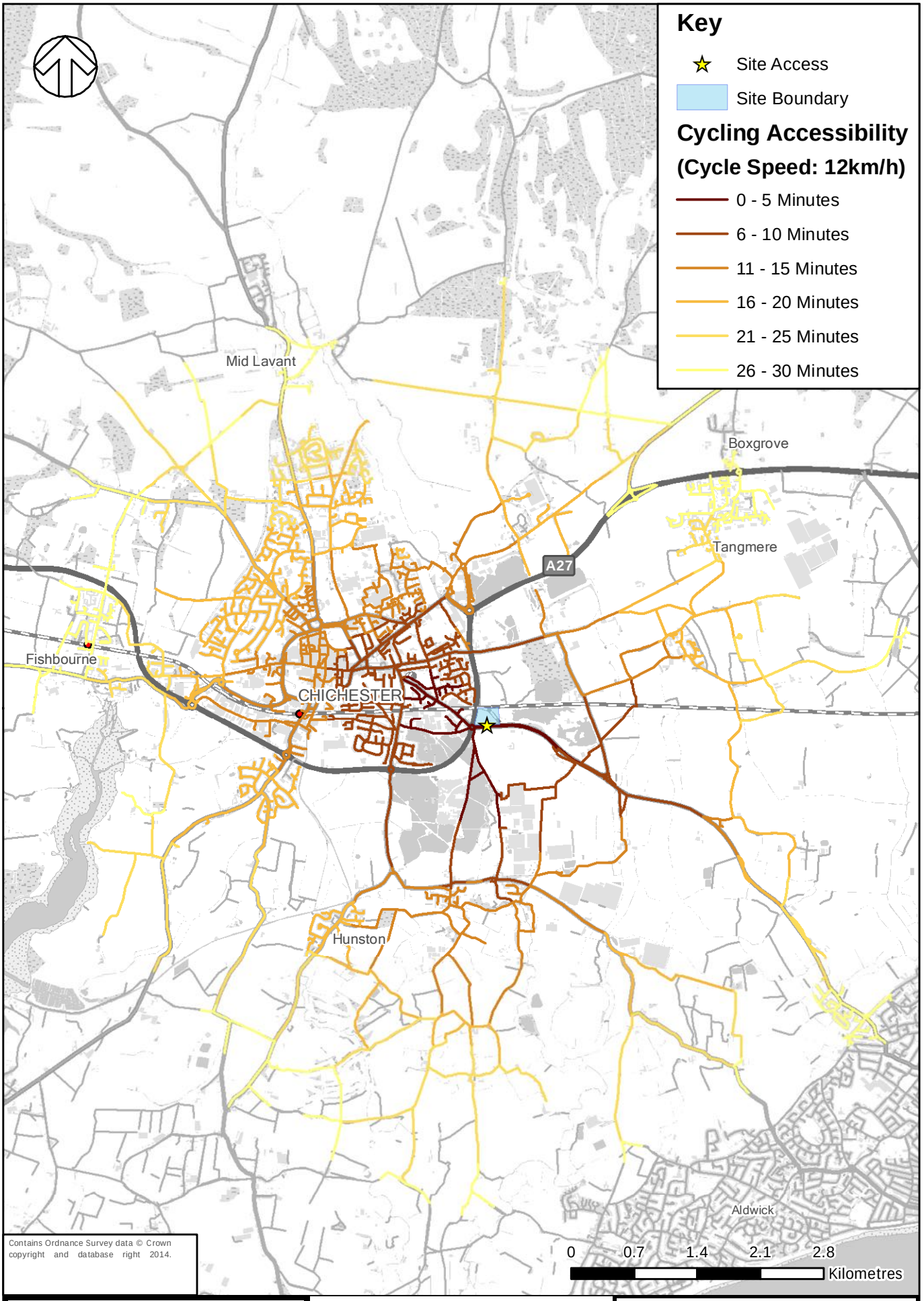

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TITLE:

CYCLING ACCESSIBILITY ISOCHRONE

FIGURE No:

4

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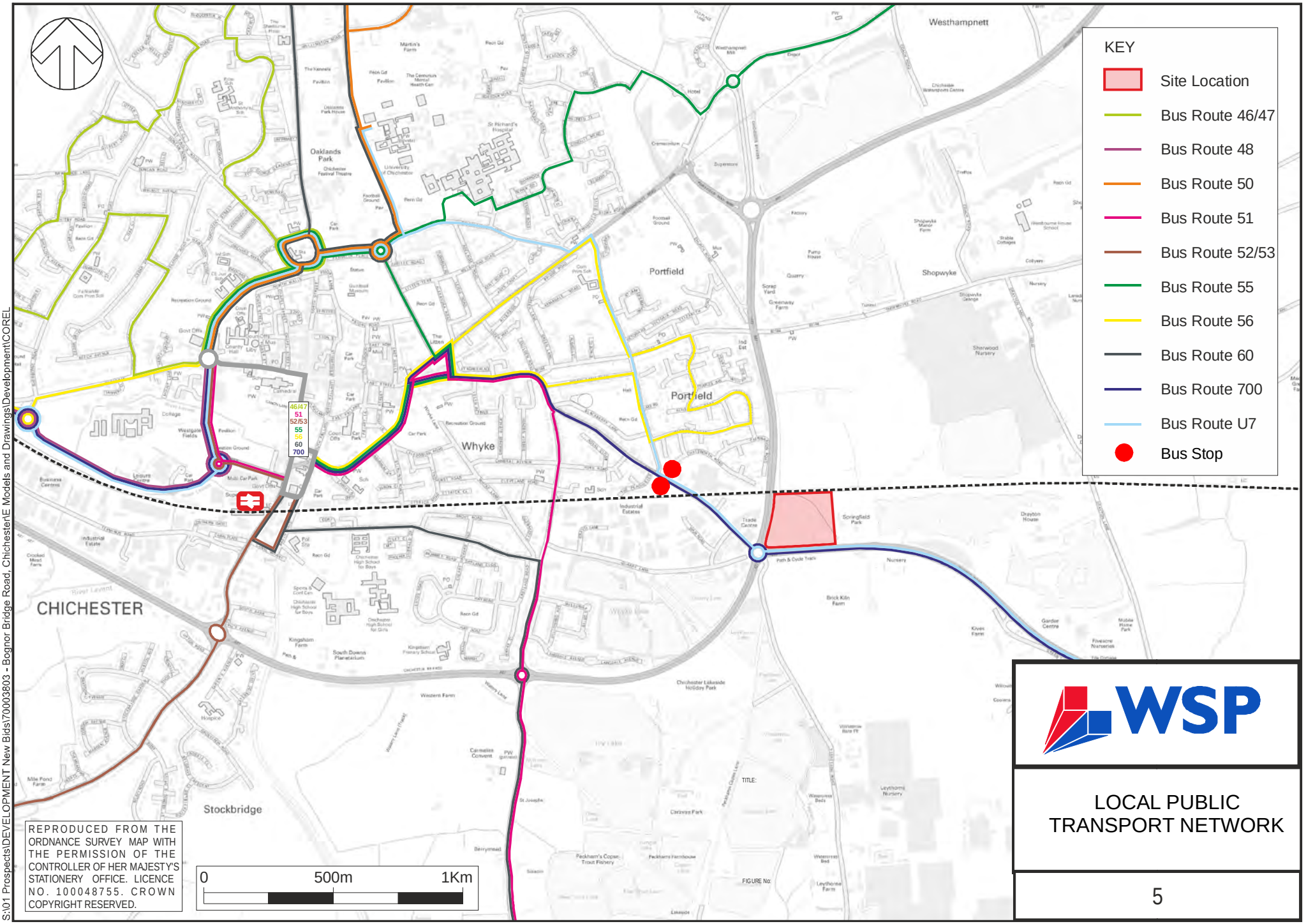
KEY
Site Location
Bus Route 46/47
Bus Route 48
Bus Route 50
Bus Route 51
Bus Route 52/53
Bus Route 55
Bus Route 56
Bus Route 60
Bus Route 700
Bus Route U7
Bus Stop
CHICHESTER
Whyke
Portfield
Portfield
Shopwyke
Westhampnett
Oaklands Park
Stockbridge
46/47
51
52/53
55
56
60
700
0
500m
1Km
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TITLE:
LOCAL PUBLIC TRANSPORT NETWORK
FIGURE No:
5
S:\01 Prospects\DEVELOPMENT New Bids\70003803 - Bognor Bridge Road, Chichester\E Models and Drawings\Development\COREL

KEY

- FUEL DEPOT
- SHOPWYKE
  500 homes
  4 Ha employment (B1 and/or B2)
- TANGMERE STRATEGIC EMPLOYMENT
  4.5 Ha employment (B1-B8)
- TANGMERE
  1000 homes
- WESTHAMPNETT AND NORTH EAST CHICHESTER
  500 homes
- WEST OF CHICHESTER
  1600 homes (1000 by 2029)
  6 Ha employment (B1)

0 500m 1Km

WSP

TITLE:

CHICHESTER HOUSING DEVELOPMENTS

FIGURE No:

6

S:\01 Prospects\DEVELOPMENT New Bids\70003803 - Bognor Bridge Road, Chichester\E Models and Drawings\Development\COREL

KEY

Site Location

Portfield Roundabout -
minor junction improvements to existing roundabout.

Oving Road Junction -
existing traffic signal junction improved with restricted movements. Access across A27 for public transport only with signal controlled priority. Left in/out only for all other vehicles.

Bognor Roundabout -
two-level junction with A27 at a level 7m over the existing roundabout.

Fishbourbne Junction -
two-level junction with local road 7m over the A27 at existing ground level.
Option 1 without Stockbridge link road.
Option 2 with Stockbridge link road.

Option 2
Stockbridge Link Road
Single carriageway with footway/cycleway.

Stockbridge Junction -
roundabout converted to traffic signal junction with restricted movements. Access across A27 for public transport only with signal controlled priority. Left only for all other vehicles.

Whyke Junction -
existing roundabout converted to traffic signal junction with restricted movements. Access across A27 for public transport only with signal controlled priority. Left in/out only for all other vehicles.

0 500m 1Km

WSP

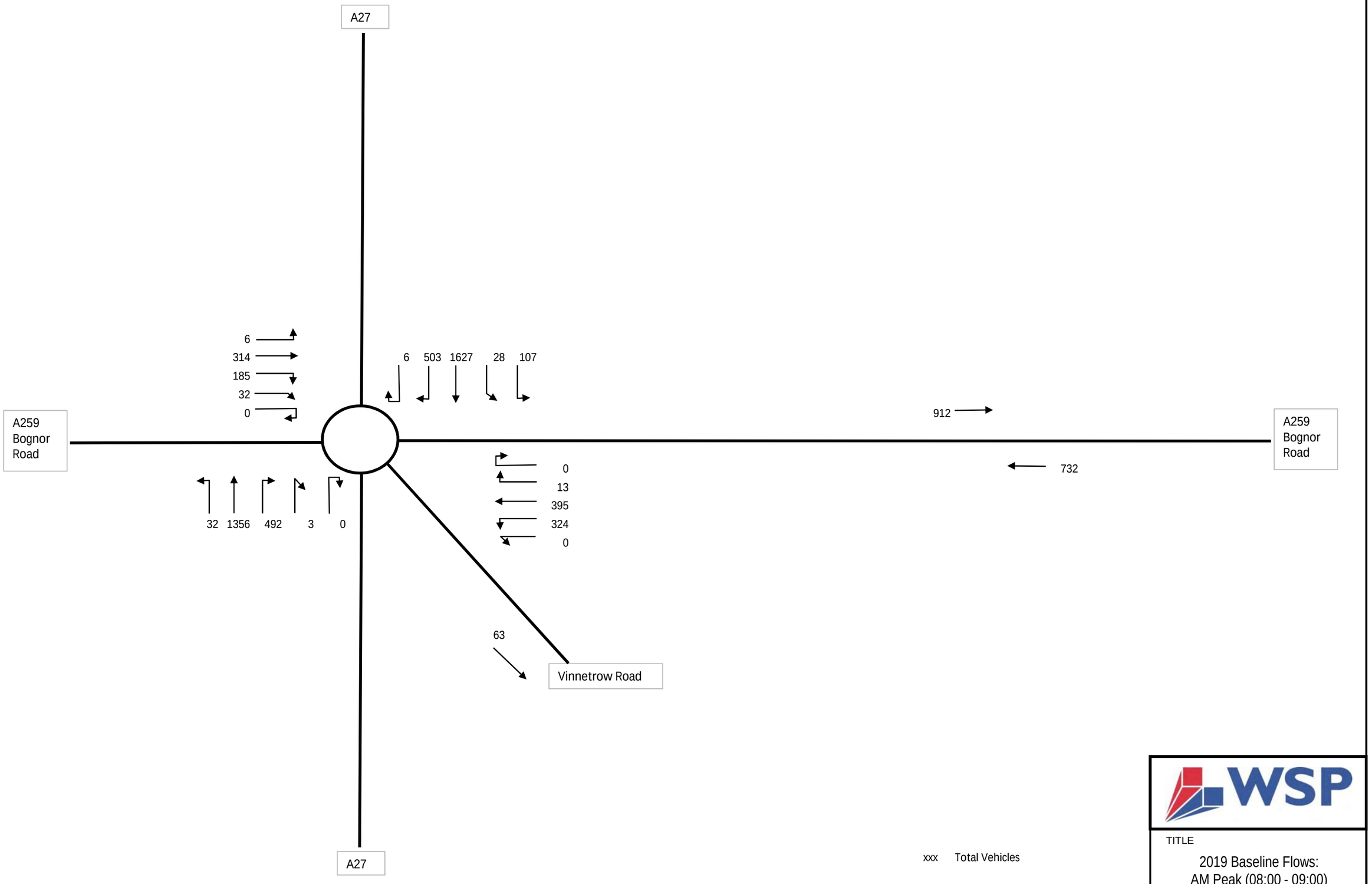
TITLE:

HIGHWAYS AGENCY
JUNCTION IMPROVEMENT
PROPOSALS

FIGURE No:

7

S:\01 Prospects\DEVELOPMENT New Bids\70003803 - Bognor Bridge Road, Chichester\E Models and Drawings\Development\COREL

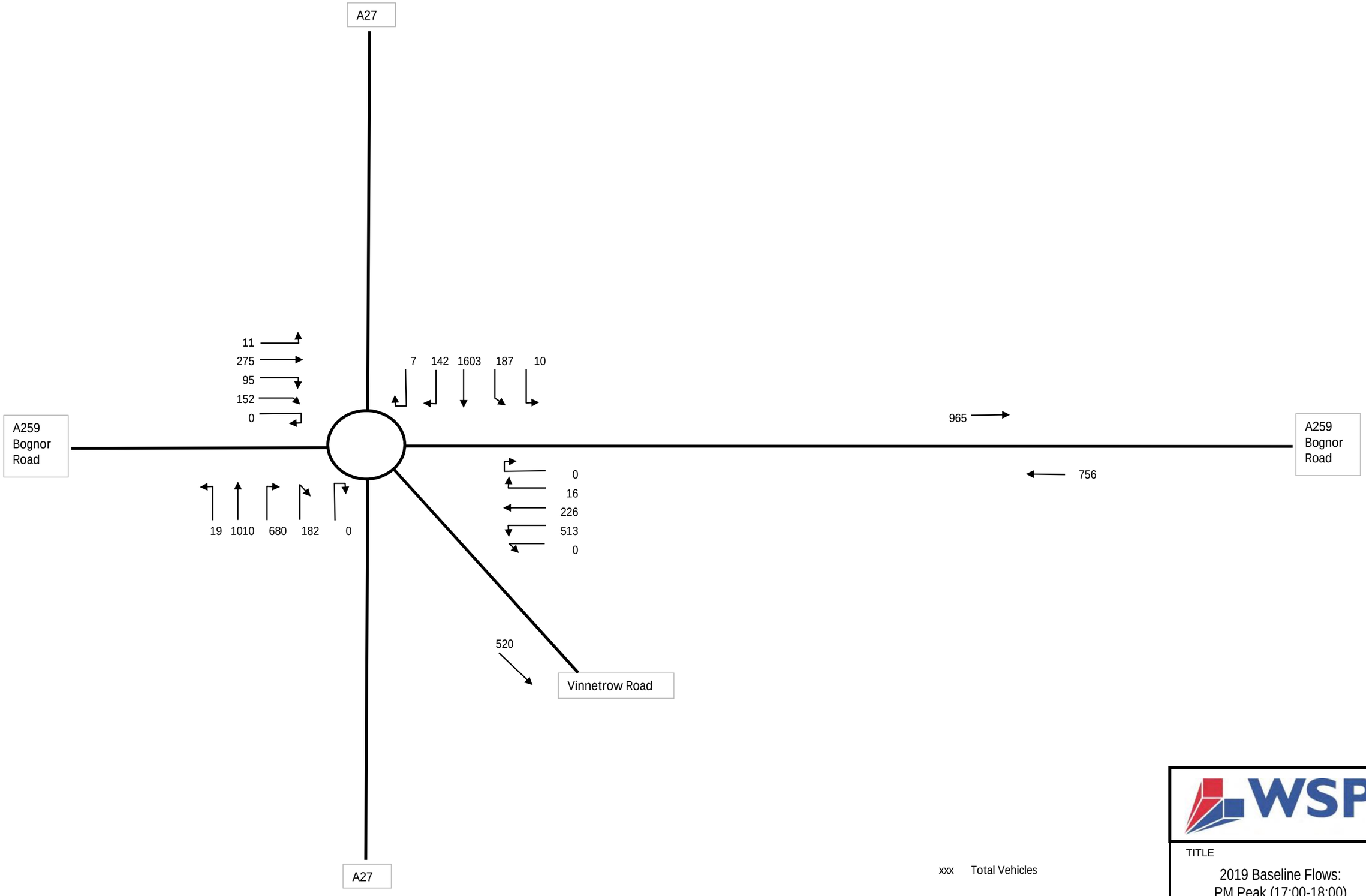


WSP

TITLE

2019 Baseline Flows:
AM Peak (08:00 - 09:00)

FIGURE No: 8



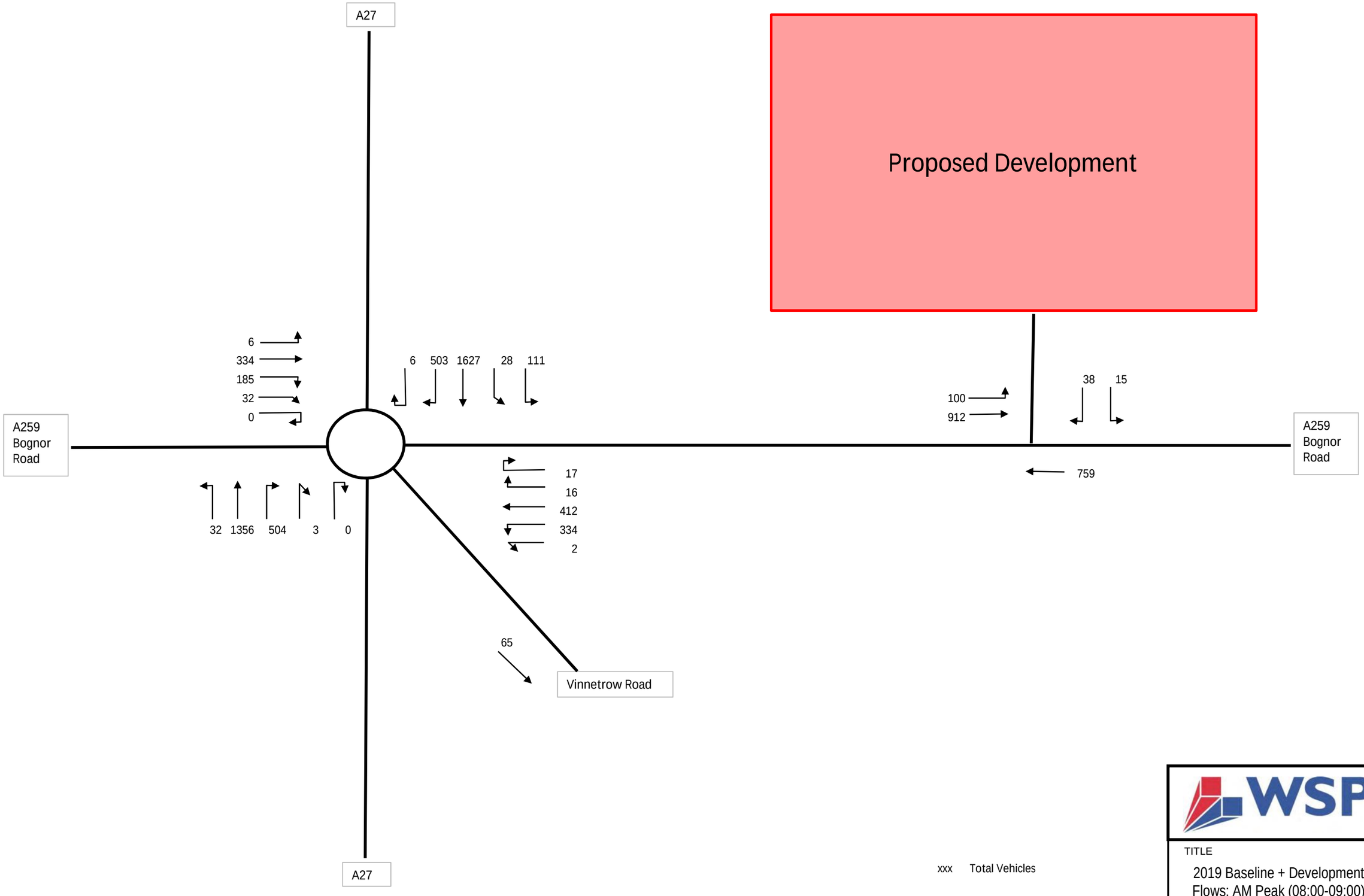
xxx Total Vehicles

WSP

TITLE

2019 Baseline Flows:
PM Peak (17:00-18:00)

FIGURE No: 9



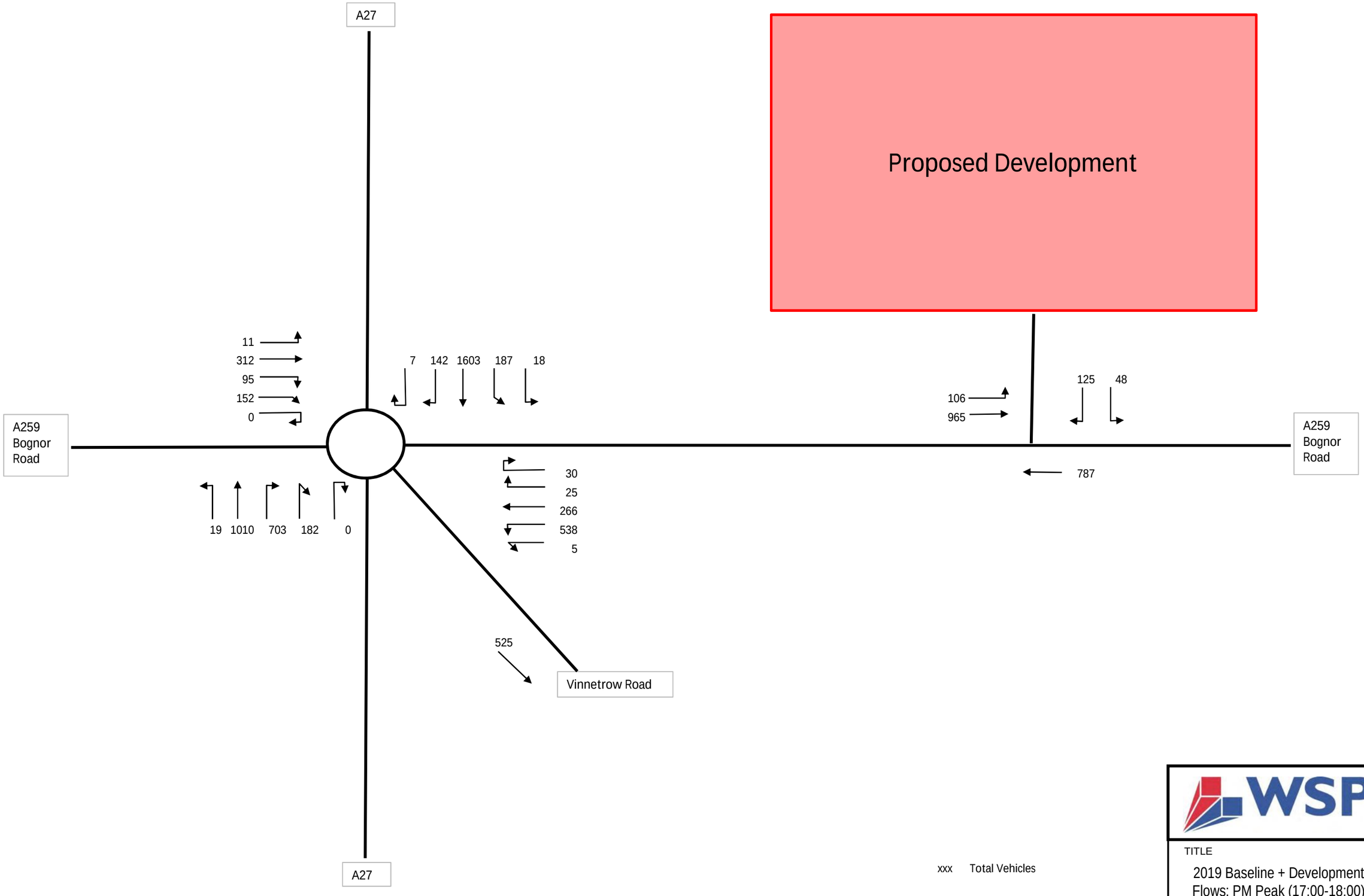
xxx Total Vehicles

WSP

TITLE

2019 Baseline + Development Flows: AM Peak (08:00-09:00)

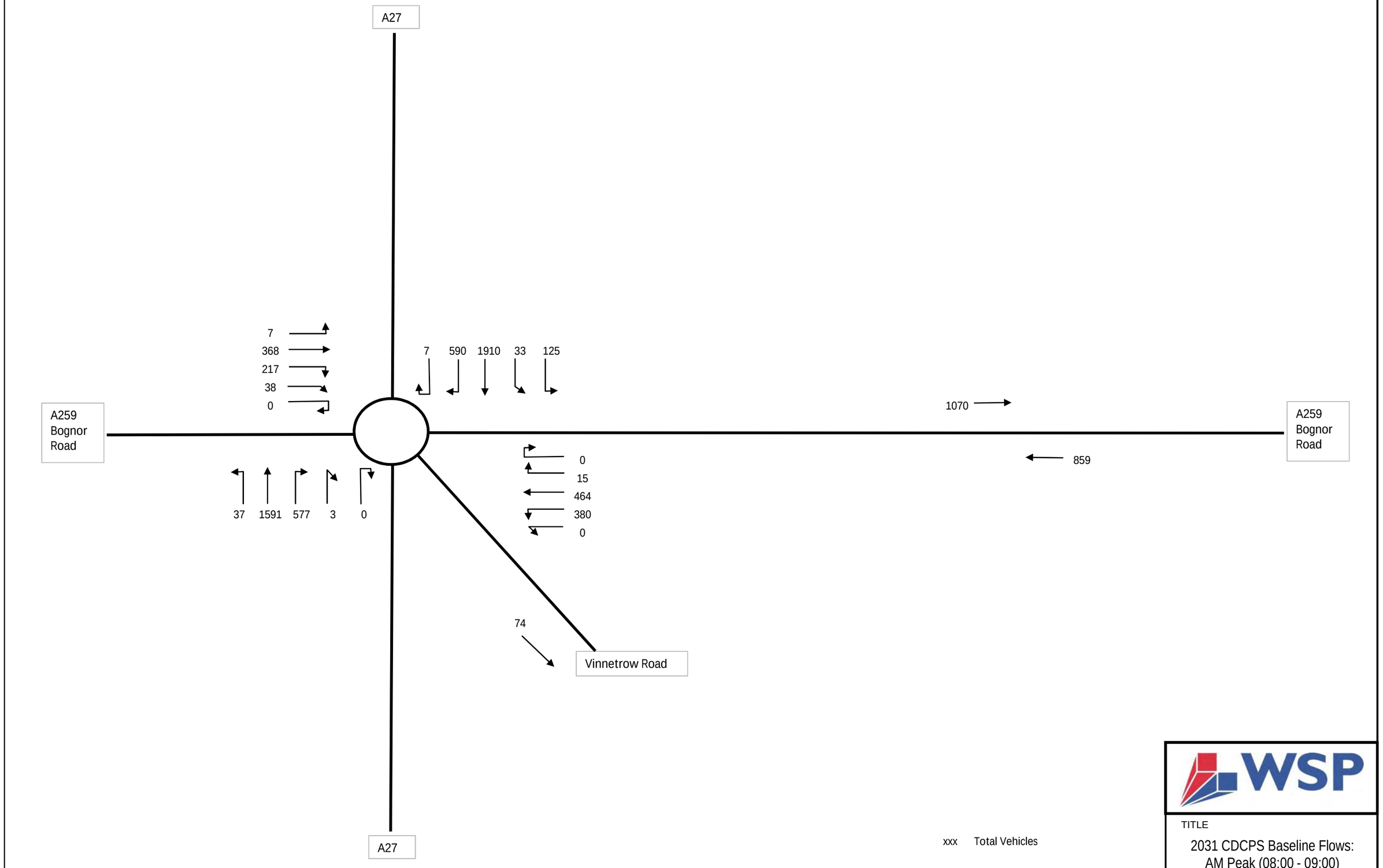
FIGURE No: 10



TITLE

2019 Baseline + Development Flows: PM Peak (17:00-18:00)

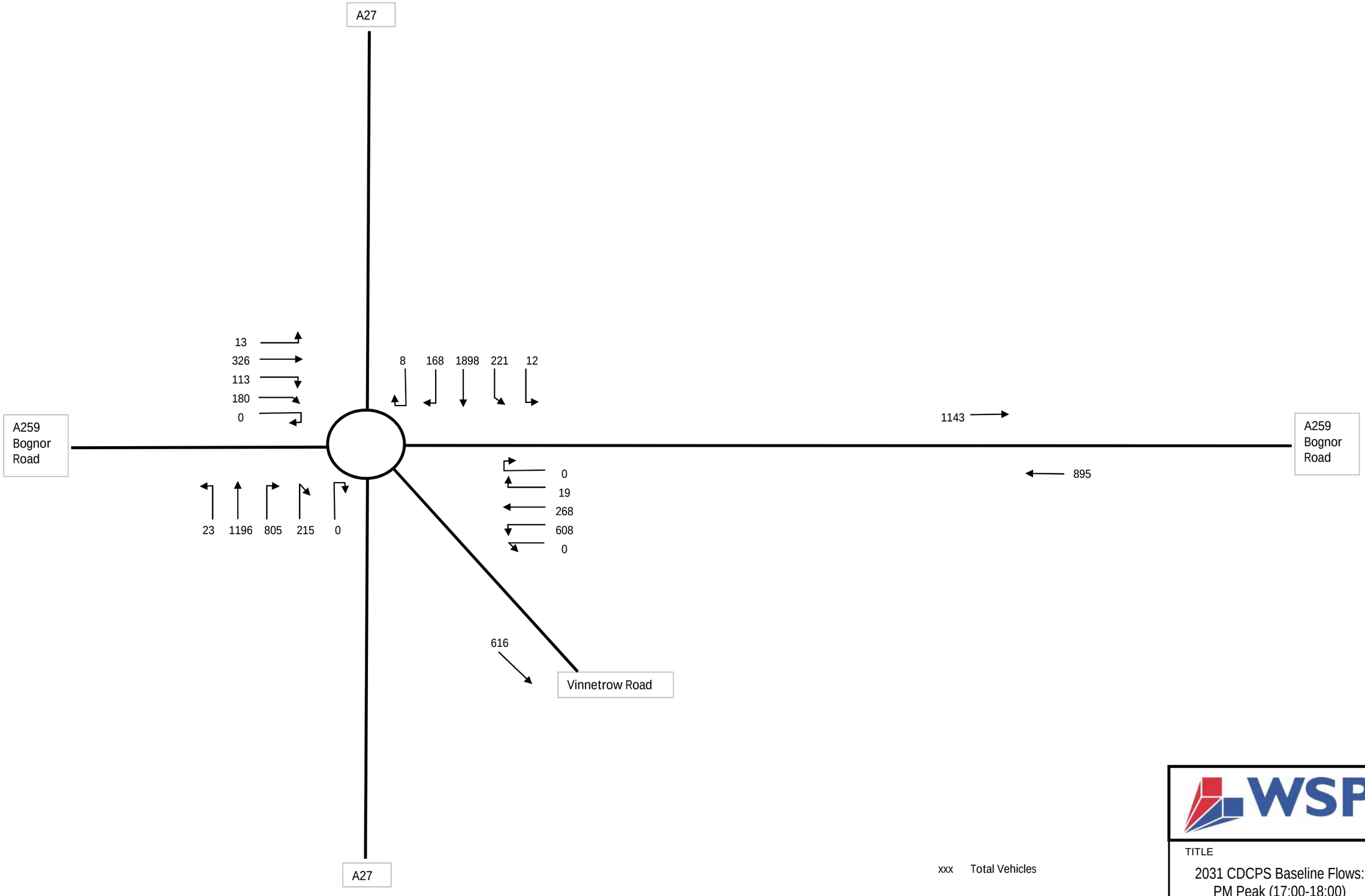
FIGURE No: 11



TITLE

2031 CDCPS Baseline Flows: AM Peak (08:00 - 09:00)

FIGURE No: 12

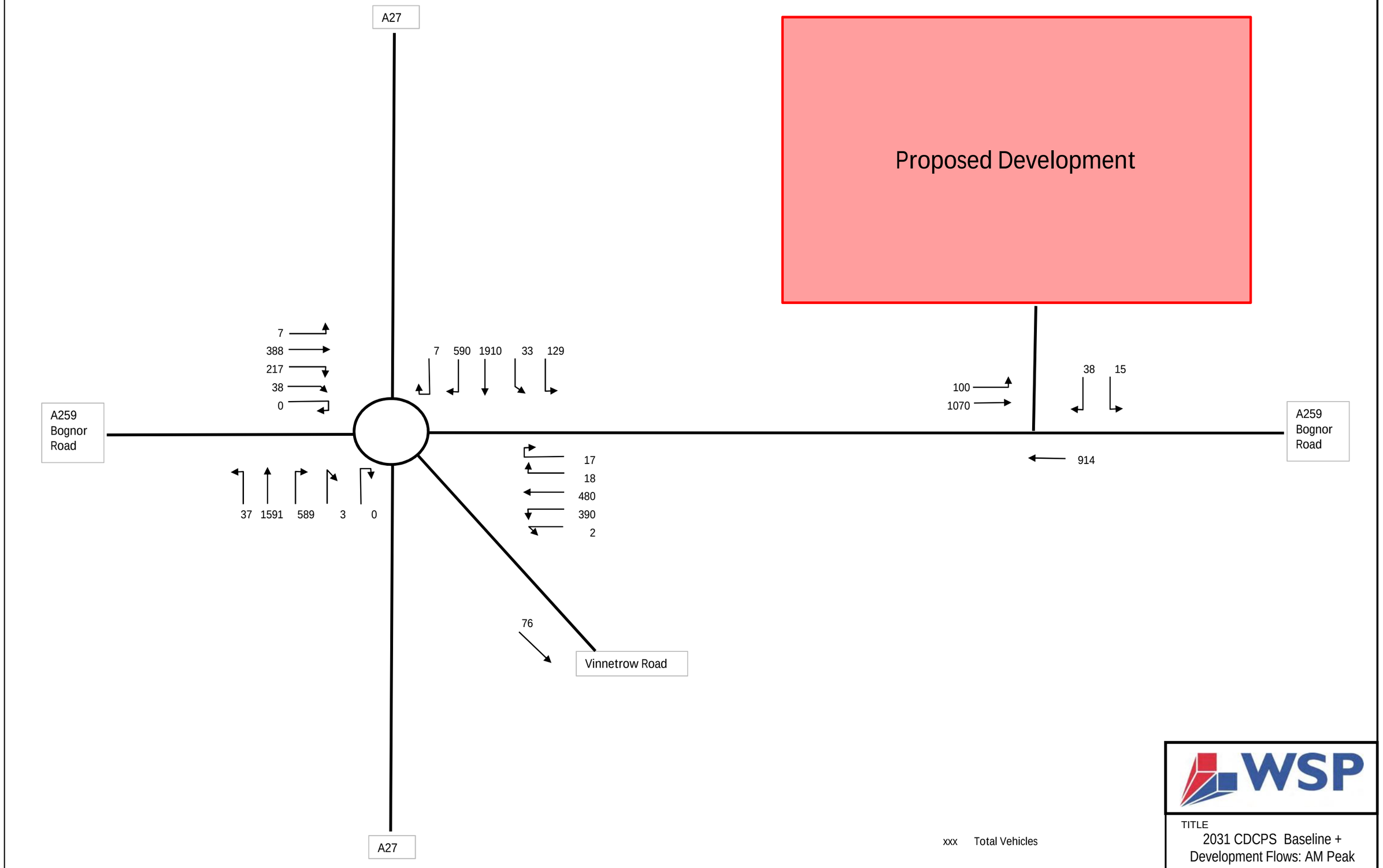


xxx Total Vehicles

TITLE

2031 CDCPS Baseline Flows:
PM Peak (17:00-18:00)

FIGURE No: 13



TITLE
2031 CDCPS Baseline + Development Flows: AM Peak

FIGURE No: 14

A27

Proposed Development

13
363
113
180
0

8 168 1898 221 20

106
1143

125 48

A259 Bognor Road

957

A259 Bognor Road

30
28
308
633
5

23 1196 828 215 0

621

Vinnetrow Road

A27

xxx Total Vehicles

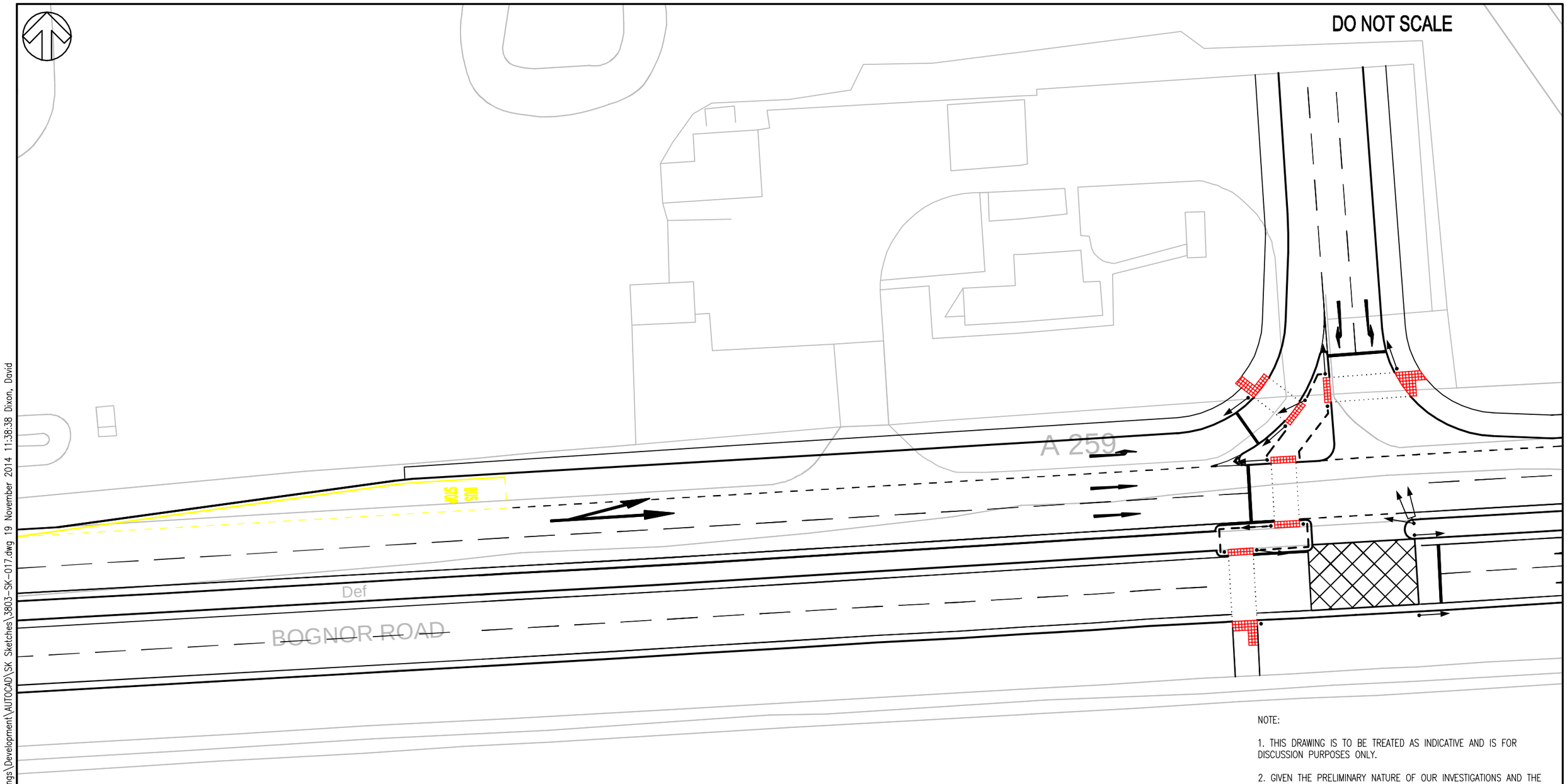
WSP

TITLE
2031 CDCSP Baseline + Development Flows: PM Peak (17:00-18:00)

FIGURE No: 15

Drawings

DO NOT SCALE



NOTE:

1. THIS DRAWING IS TO BE TREATED AS INDICATIVE AND IS FOR DISCUSSION PURPOSES ONLY.

2. GIVEN THE PRELIMINARY NATURE OF OUR INVESTIGATIONS AND THE LIMITATIONS OF OUR BRIEF WE HAVE NOT FULLY SOUGHT TO OBTAIN NOR BECOME AWARE OF ANY SIGNIFICANT INFORMATION RELATED TO HAZARDS THAT MIGHT AFFECT THE CONSTRUCTION OR MAINTENANCE OF THIS PROJECT

3. ANY DESIGNERS WHO PROGRESS THESE PROPOSALS OR DESIGN FURTHER WILL NEED TO RECONSIDER THE PROPOSALS BASED UPON THE INFORMATION WHICH SUBSEQUENTLY BECOMES AVAILABLE INCLUDING POTENTIAL SITE HAZARDS

REV	DATE	BY	DESCRIPTION	CHK	APD
C	19/11/14	DDD	AMENDMENTS TO BUS STOP	SA	SA
B	18/11/14	RM	CHANGE TO TACTILE PAVING	SA	SA
A	11/11/14	LEW	ISSUED	AJL	AJL

DRAWING STATUS: FOR INFORMATION ONLY

WSP
Mountbatten House, Basing View, Basingstoke, Hampshire RG21 4HJ
Tel: +44 (0)1256 318800 Fax: +44 (0)1256 318700
http://www.wspgroup.com

CLIENT:

ARCHITECT:

PROJECT: BOGNOR BRIDGE, CHICHESTER

TITLE: POTENTIAL SITE ACCESS ARRANGEMENT

SCALE @ A3:	CHECKED:	APPROVED:
1:500	SA	SA
CAD FILE:	DESIGN-DRAWN:	DATE:
3803-SK-017.DWG	FI	November 14
PROJECT No:	DRAWING No:	REV:
70003803	3803-SK-017	C

S:\70003803 - Bognor Bridge Road, Chichester\E Models and Drawings\Development\AUTOCAD\SK Sketches\3803-SK-017.dwg 19 November 2014 11:38:38 Dixon, David

S:\70003803 - Bognor Bridge Road, Chichester\E Models and Drawings\Development\AUTOCAD\SK Sketches 18/11/2014 12:01:12 Mercy, Rachel

DO NOT SCALE

KEY

HIGHWAY BOUNDARY

INDICATIVE SIGNAL POLE LOCATION

POTENTIAL LAND TO BE PROVIDED BY THE DEVELOPER

ROUNDABOUT TO ATKINS DRAWING NUMBER: A27-ATK-ZZ-DR-D-104B REV P

ALIGNMENT TO BE CONFIRMED

CHICHESTE

BOGNOR RO

Path & Cycle Path

Path & Cycle Track

Post

65 to 68

11.9m

12.2m

Beaver Nursery Units

NOTE:

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REV	DATE	BY	DESCRIPTION	CHK	APD
B	18/11/14	RM	SITE ACCESS REMOVED	SA	SA
A	10/10/14	AJT	FIRST ISSUE	RM	SA

DRAWING STATUS: FOR INFORMATION ONLY

WSP

Mountbatten House, Basing View, Basingstoke, Hampshire RG21 4HJ
Tel: +44 (0)1256 318800 Fax: +44 (0)1256 318700
http://www.wspgroup.com

CLIENT:

ARCHITECT:

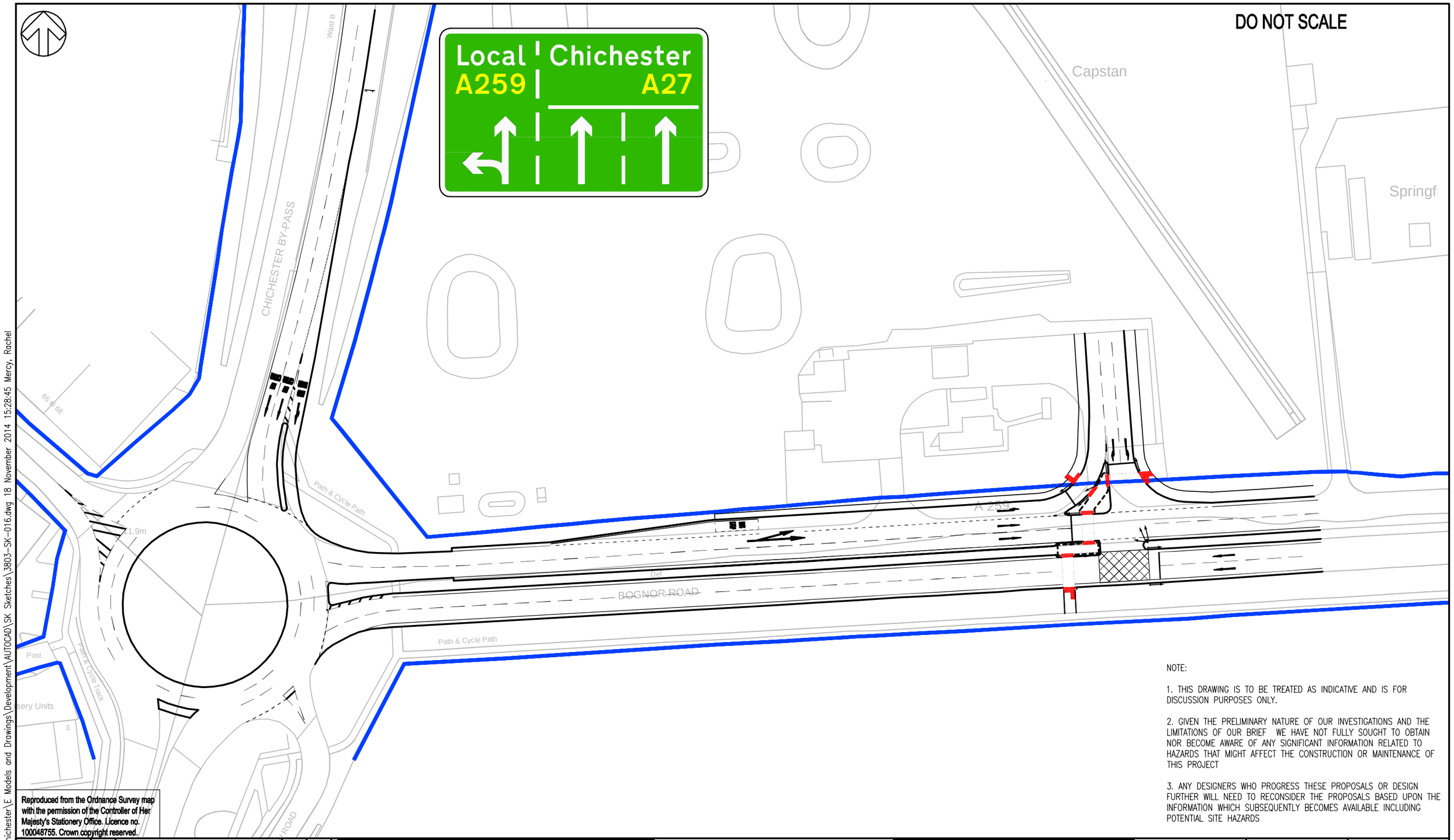
PROJECT: BOGNOR BRIDGE ROAD, CHICHESTER

TITLE: WSCC A27 SIGNALISED ROUNDABOUT DESIGN

SCALE @ A3:	CHECKED:	APPROVED:
1:1000	RM	SA
CAD FILE:	**DESIGN-DRAWN:**	**DATE:**
3803-SK-011	AJT	November 2014

PROJECT No:	DRAWING No:	REV:
70003803	3803/SK/011	B

DO NOT SCALE



NOTE:

1. THIS DRAWING IS TO BE TREATED AS INDICATIVE AND IS FOR DISCUSSION PURPOSES ONLY.

2. GIVEN THE PRELIMINARY NATURE OF OUR INVESTIGATIONS AND THE LIMITATIONS OF OUR BRIEF WE HAVE NOT FULLY SOUGHT TO OBTAIN NOR BECOME AWARE OF ANY SIGNIFICANT INFORMATION RELATED TO HAZARDS THAT MIGHT AFFECT THE CONSTRUCTION OR MAINTENANCE OF THIS PROJECT

3. ANY DESIGNERS WHO PROGRESS THESE PROPOSALS OR DESIGN FURTHER WILL NEED TO RECONSIDER THE PROPOSALS BASED UPON THE INFORMATION WHICH SUBSEQUENTLY BECOMES AVAILABLE INCLUDING POTENTIAL SITE HAZARDS

REV	DATE	BY	DESCRIPTION	CHK	APD
B	18/11/14	RM	CHANGE TO TACTILE PAVING	SA	SA
A	06/11/14	FI	ISSUED	AJL	AJL

DRAWING STATUS: FOR INFORMATION ONLY

WSP
Mountbatten House, Basing View, Basingstoke, Hampshire RG21 4HJ
Tel: +44 (0)1256 318800 Fax: +44 (0)1256 318700
http://www.wspgroup.com

CLIENT:

ARCHITECT:

PROJECT: BOGNOR BRIDGE, CHICHESTER

TITLE: POTENTIAL A27 / BOGNOR ROAD ROUNDABOUT IMPROVEMENT

SCALE @ A3:	CHECKED:	APPROVED:
1:1000	SA	SA
CAD FILE:	DESIGN-DRAWN:	DATE:
3803-SK-016.DWG	FI	November 14
PROJECT No:	DRAWING No:	REV:
70003803	3803-SK-016	B

S:\70003803 - Bognor Bridge Road, Chichester\E Models and Drawings\Development\AUTOCAD\SK Sketches\3803-SK-016.dwg 18 November 2014 15:28:45 Mercy, Rachel

Appendices

Appendix A: Personal Injury Accident Data

Bognor Road - Chichester – WSP

Collision report 01/09/2009 – 31/08/2014

Date produced
03 October 2014

Sussex Safer Roads
PARTNERSHIP

Safer Roads
Safer Communities
Sharing the Responsibility

Produced by Sussex Safer Roads Partnership on behalf of Sussex Police

Data regarding personal injury collisions is recorded by Sussex Police in accordance with the DfT Stats 19 requirements. The data is subsequently used by Sussex Safer Roads Partnership for monitoring and planning. While every effort is made to ensure that this data is accurate, it is subject to change should further information become available.

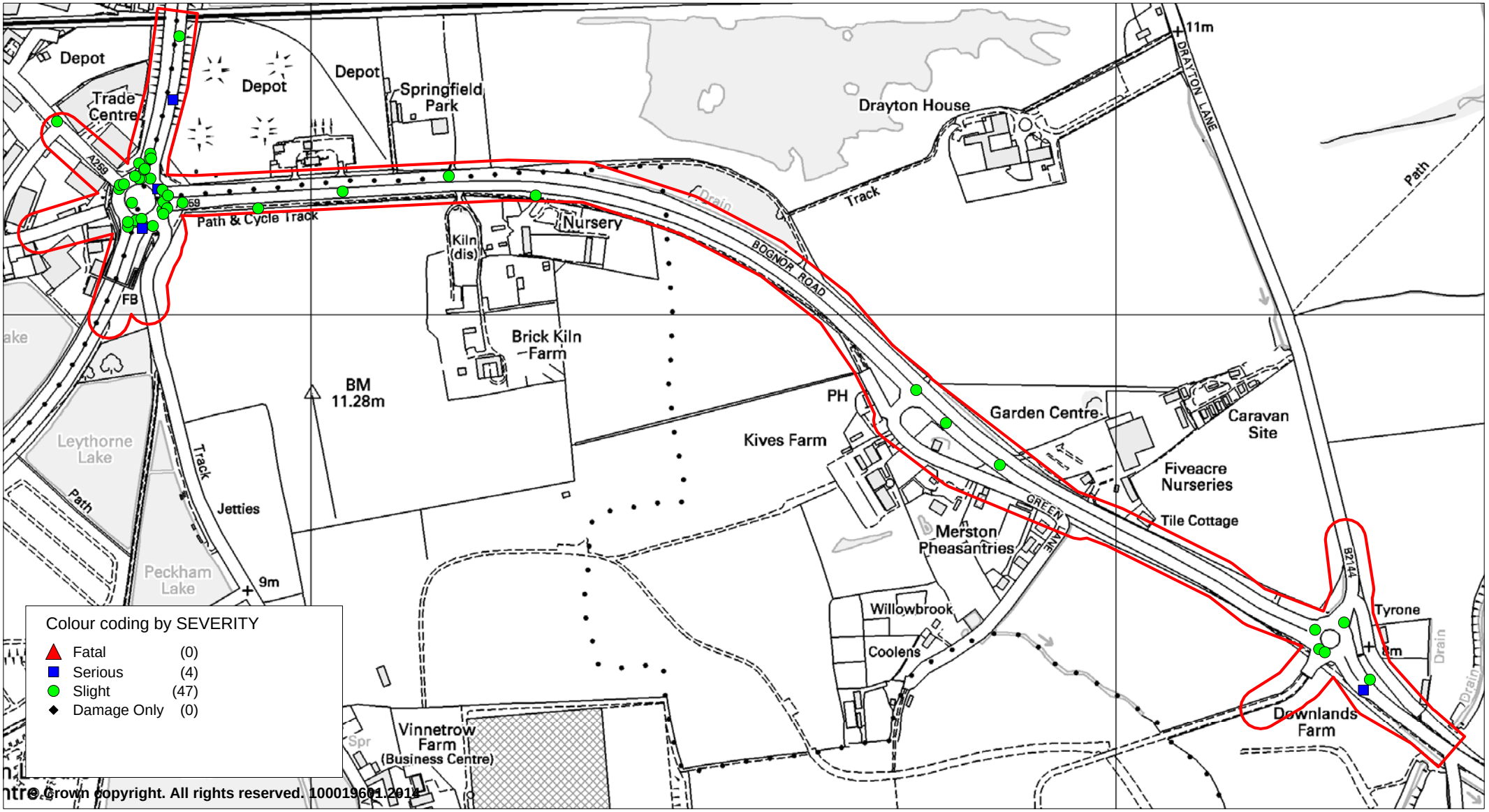
This data may not be fully validated and while every effort is made to ensure its accuracy any statistics provided may not match those published elsewhere.

Sussex Safer Roads Partnership does not hold collision data either where there are no recorded casualties or the incident has not been reported to Sussex Police.

For further information:

web: www.sussexsaferroads.gov.uk

email: data@sussexsaferroads.gov.uk



Sussex Safer Roads PARTNERSHIP

Collision data
Bognor Road - Chichester - WSP
01/09/2009 - 31/08/2014

SCALE	1 : 6567
DATE	03/10/2014
DRAWING No.	
DRAWN BY	

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection:
Selected using Manual Selection

Notes:

			Vehicles						Casualties		
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class						Sex / Age / Sev		
	Date										
Road No.											
2nd Road No.	Time										
Grid Ref.	D/L										
	R.S.C										
	Weather										
	Speed										
	Account of Accident										
Causation Factor:											

0906888
Saturday 19/09/2009
R1: A 27
1146 hrs
R2: A 259
E 487,815
N 104,130
Dry
Fine without high winds
70 mph

A27 BOGNOR BRIDGE ROUNDABOUT m of A259

Veh 2	Car	39	Ch/lane to left	N	to S				
Veh 1	Car	18	Turning left	E	to SW	Dri	F	18	Slight

Causation Factor:		Participant:	Confidence:
1st:	Disobeyed Give Way or Stop sign or markings	Vehicle 001	Very Likely

V1 ENTERED THE ROUNDABOUT INTO THE SIDE OF V2. MINOR DAMAGE TO BOTH VEHICLES AND SLIGHT INJURY TO DRIVER 1.

0907200
Tuesday 29/09/2009
R1: A 27
1520 hrs
R2: A 259
E 487,782
N 104,172
Dry
Fine without high winds
70 mph

A27 CHICHESTER BY PASS m of A259 BOGNOR ROAD

Veh 2	Car	33	Go/head	W	to E				
Veh 1	M/C > 500 cc	41	Turning right	SE	to NE	Dri	M	41	Slight
Veh 1	M/C > 500 cc	41	Turning right	SE	to NE		F	40	Slight

Causation Factor:		Participant:	Confidence:
1st:	Poor turn or manoevre	Vehicle 001	Very Likely
2nd:	Failed to look properly	Vehicle 001	Very Likely
3rd:	Failed to judge other persons path or speed	Vehicle 002	Possible
4th:	Poor turn or manoevre	Vehicle 002	Possible

VEHICLE 2 ENTERED ROUNDABOUT AFTER GIVING WAY TO VEHICLE 1. VEHICLE 1 ENTERED FROM BOGNOR BUT WAS UNSURE OF CORRECT EXIT. APPEARED TO BE LEAVING ROUNDABOUT INTO CHICHESTER ON A259 BUT REALISED AT LAST MOMENT IT WAS THE WRONG EXIT. THEN CONTINUED AROUND T
O NEXT EXIT, THEN CONTINUED ROUND TOWARDS NEXT EXIT BUT COLLIDED WITH THE NEARSIDE OF VEHICLE 2 WHICH WAS EXITING ROUNDABOUT ON A27 E'BOUND CARRIAGEWAY LANE 2.

0907882
Friday 23/10/2009
R1: A 259
0721 hrs
R2: B 2144
E 489,253
N 103,584
Wet/Damp
Raining without high winds
40 mph

A259 CHICHESTER ROAD m of B2144 DRAYTON LANE

Veh 2	M/C < 125 cc	23	Go/head	SE	to NW	Dri	M	23	Slight
Veh 1	Car	51	Starting	SW	to N				

Causation Factor:		Participant:	Confidence:
1st:	Failed to judge other persons path or speed	Vehicle 001	Very Likely

VEH.2 (M/C) TRAVELLING NW ON A259 ENTERED R/A IN LANE 2 INTENDING TO GO STRAIGHT AHEAD. VEH.1 EMERGED FROM DOWNLANDS FARM FOOD PARK JUNCTION INTENDING TO TURN RIGHT INTO PATH OF VEH.2 COLLIDING WITH SAME UNSEATING RIDER CAUSING MINOR INJURY.

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection: **Notes:**
Selected using Manual Selection

			Vehicles						Casualties		
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class						Sex / Age / Sev		
	Date										
Road No.	Time										
2nd Road No.											
Grid Ref.	D/L										
	R.S.C										
	Weather										
	Speed										
	Account of Accident										
Causation Factor:											

0908111 Wednesday 28/10/2009 — A27 SOUTHBOUND 158m North of A259 BOGNOR ROAD

R1: A 27

1856 hrs

Darkness: street lights present

E 487,836

Dry

N 104,346

Fine without high winds

70 mph

Veh 2	Car	28	Go/head	N	to S	Dri	F	28	Slight
Veh 3	Car	21	Go/head	N	to S	Dri	F	21	Slight
Veh 4	Car	46	Go/head	N	to S	FSP	F	79	Slight
Veh 4	Car	46	Go/head	N	to S	Dri	F	46	Slight
Veh 1	Car	20	Go/head	N	to S	Dri	F	20	Slight

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 001	Very Likely

V,2,3 AND 4 TRAVELLING SOUTH IN SLOW MOVING TRAFFIC QUEUE IN N/S LANE APPROACHING ROUNDABOUT. V1 TRAVELLING SOUTH AS SHE CAME OVER THE SLIGHT HILL FAILED TO REACT, BRAKED HARD AND HIT THE BACK OF V2 PUSHING THAT INTO V3 THEN INTO V4 CAUSING DAMAGE TO ALL
VEHICLES

0908233 Wednesday 04/11/2009 — A27 CHICHESTER BY PASS m of A259 BOGNOR ROAD

R1: A 27

1650 hrs

R2: A 259

Darkness: street lights present

E 487,786

Dry

N 104,188

Fine without high winds

70 mph

Veh 2	Car	19	Wait go ahead held	N	to S	Dri	M	19	Slight
Veh 1	Goods < 3.5t	25	Go/head	N	to S				

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 001	Very Likely
2nd:	Following too close	Vehicle 001	Very Likely

V2 WAS IN RIGHT HAND LANE APPROACHING BOGNOR BRIDGE ROUNDABOUT. V2 STOPPED TO GIVE WAY TO TRAFFIC, V1 HAS COLLIDED WITH REAR OF V2, CAUSING DAMAGE TO V2 AND INJURY TO DRIVER.

0908459 Thursday 12/11/2009 — A259 CHICHESTER ROAD m of B2144 DRAYTON LANE

R1: A 259

1440 hrs

R2: B 2144

E 489,316

Dry

N 103,546

Fine without high winds

60 mph

Veh 2	M/C < 50 cc	17	Go/head	NW	to SE	Dri	M	17	Slight
Veh 1	Car		Go/head	NW	to SE				

Causation Factor:		**Participant:**	**Confidence:**
1st:	Passing too close to cyclist, horse rider or pedestrian	Vehicle 001	Very Likely
2nd:	Loss of control	Vehicle 002	Very Likely
3rd:	Inexperienced or learner driver/rider	Vehicle 002	Possible
4th:	Failed to judge other persons path or speed	Vehicle 001	Possible

BOTH V1 AND V2 WERE DRIVNG FROM CHICHESTER TOWARDS BOGNOR. V2 WAS DRIVING AROUND THE ROUNDABOUT AND MOVED RIGHT OVER TO THE LEFT HANDSIDE AS HE WAS MOVING SLOWER THEN V1. V1 APPROACHED V2 AS THEY MADE OFF FROM THE ROUNDABOUT V1 HAS COME VERY CLOSE TO V2
CAUSING HIM TO LOSE CONTROL AND FALL OFF INTO A NEARBY DITCH.

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection: **Notes:**
Selected using Manual Selection

			Vehicles							Casualties		
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class							Sex / Age / Sev		
	Date											
Road No.	Time											
2nd Road No.												
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												
0909246	Tuesday	A259 BOGNOR ROAD m of C0										
	08/12/2009	QUARRY LANE	Veh 2	Pedal cycle	36	Go/head	S	to N	Dri	M	36	Slight
R1: A 259	1610 hrs		Veh 1	Car	60	Go/head	N	to S				
R2: C	Darkness: street lighting											
E 487,684	Wet/Damp											
N 104,240	Raining without high winds											
	30 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 001	Possible
2nd:	Careless/Reckless/In a hurry	Vehicle 001	Possible
3rd:	Nervous/Uncertain/Panic	Vehicle 001	

VEH (1) CLIPPED RIDER OF PEDAL CYCLIST (2) NO DAMAGE TO VEHICLE OR CYCLE.

0909308	Wednesday	A259 BOGNOR ROAD 218m South of										
	09/12/2009	A27 CHICHESTER	Veh 2	Car	36	Go/head	S	to N				
R1: A 259	1728 hrs		Veh 3	Car	23	Go/head	S	to N	Dri	F	23	Slight
	Darkness: street lights present		Veh 1	Car	39	Go/head	S	to N	Dri	F	39	Slight
E 488,039	Dry											
N 104,153	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 001	Very Likely
2nd:	Distraction in vehicle	Vehicle 001	Very Likely
3rd:	Careless/Reckless/In a hurry	Vehicle 001	

V1, V2, AND V3, WERE ALL TRAVELLING IN A WESTERLY DIRECTION ALONG DUAL CARRIAGE IN LANE 1. V2 AND V3 WERE SLOWLY DUE TO STATIONARY TRAFFIC FOR THE R/A. V1 FAILED TO SEE THIS AND COLLIDED WITH V2 WHICH WAS AT THAT POINT STATIONARY AS WAS V3 CAUSING V2 TO
HIT V3.

1003396	Wednesday	A27 of A249 BOGNOR ROAD BOGNOR										
	26/05/2010	BRIDGE ROUNDABOUT	Veh 2	Car	59	Go/head	N	to S				
R1: A 27	1710 hrs		Veh 3	Car	27	Go/head	N	to S	Dri	F	27	Slight
R2: A 27			Veh 1	Car		Turning left	E	to S				
E 487,800	Dry											
N 104,169	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Swerved	Vehicle 001	Very Likely

V2 WAS TRAVELLING FROM EAST TO WEST, LANE 1, NEGOTIATING THE ROUNDABOUT WHEN A VEHICLE V1 PULLED OUT OF A JUNCTION CAUSING V2 TO SWERVE, INTO LANE 2, IN AN OVER REACTION AND WITHOUT CHECKING MIRRORS, COMING TOGETHER WITH V3

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection:
Selected using Manual Selection

Notes:

			Vehicles						Casualties		
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class						Sex / Age / Sev		
	Date										
Road No.	Time										
2nd Road No.											
Grid Ref.	D/L										
	R.S.C										
	Weather										
	Speed										
	Account of Accident										
Causation Factor:											
1004009	Sunday	A27 of A259 BOGNOR ROAD									
	20/06/2010		Veh 2	Car	25	Go/head	S	to N			
R1: A 27	1640 hrs		Veh 1	M/C > 500 cc	49	Ch/lane to right	S	to E	F	50	Slight
R2: A 27											
E 487,788	Dry										
N 104,169	Fine without high winds										
	70 mph										

Causation Factor:		**Participant:**	**Confidence:**
1st:	Poor turn or manoevre	Vehicle 001	Very Likely

VEHICLE 1 NORTH ON A27 IN LANE 1 APPROACHING ABOVE ROUNDABOUT. VEHICLE 2 ALSO NORTH IN LANE 2 OF A27 APPROACHING SAME ROUNDABOUT. BOTH VEHICLES ENTERED ROUNDABOUT. VEHICLE 2 POSITIONED TO CONTINUE NORTH ALONG A27. VEHICLE 1 WENT FROM NEARSIDE LANE TO OFF
SIDE, INTENDING TO CONTINUE AROUND ROUNDABOUT BUT STRUCK REAR NEARSIDE OF VEHICLE 2.

1004628	Sunday	A27 BOGNOR BRIDGE										
	04/07/2010	ROUNDABOUT of A259 BOGNOR BRIDGE ROUNDABOUT	Veh 2	Car	22	Wait go ahead held	E	to W	Dri	M	22	Slight
R1: A 27	2121 hrs		Veh 3	Car	19	Go/head	W	to E				
R2: A 27	Darkness: street lights present		Veh 1	Car	29	Ch/lane to right	W	to S				
E 487,777	Dry											
N 104,139	Fine without high winds											
	30 mph											

6th:	Other	Vehicle 001	Very Likely

V1 TRAVELLING EAST ALONG A27 IN OUTSIDE LANE OF ROUNDABOUT. V3 TRAVELLING EAST IN INSIDE LANE OF ROUNDABOUT. V1 DOES NOT TURN OFF LEFT AS PER LANE GUIDANCE. V3 HEADING STRAIGHT OVER ROUNDABOUT IN OUTSIDE LANE. V1 CONTINUES AROUND THE ROUNDABOUT IN OUTSID
E LANE CUTTING ACROSS CARRIAGEWAY AND PATH OF V3. V1 HITS LEFT WING OF V3 AND THEN COLLIDES WITH V2 WHICH IS STATIONARY AT THE ROUNDABOUT JUNCTION HEADING WEST.

1007371	Tuesday	A259 BOGNOR ROAD of B2144										
	02/11/2010	DRAYTON LANE	Veh 2	M/C < 125 cc	46	Go/head	SE	to N	Dri	F	46	Slight
R1: A 259	0755 hrs		Veh 1	Car	29	Go/head	NW	to SE				
R2: B 2144												
E 489,248	Wet/Damp											
N 103,608	Fine without high winds											
	60 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Travelling too fast for conditions	Vehicle 001	Very Likely
2nd:	Slippery road (due to weather)	Vehicle 001	Very Likely

VEHICLE 2 WAS TRAVELLING FROM BOGNOR REGIS ON THE A259 AND WAS NEGOTIATING THE DRAYTON ROUNDABOUT INTENDING TO LEAVE IT AT THE DRAYTON LANE EXIT. VEHICLE 1 WAS TRAVELLING ALONG THE A259 FROM THE DIRECTION OF CHICHESTER AND AS IT HAS APPROACHED THE DRAYT
ON ROUNDABOUT IT HAS COLLIDED WITH A TRAFFIC SIGN BEFORE OVER SHOOTING THE ROUNABOUT AND COLLIDING WITH VEHICLE 2.

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection:
Selected using Manual Selection

Notes:

			Vehicles						Casualties			
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class						Sex / Age / Sev			
	Date											
Road No.	Time											
2nd Road No.												
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												
1007398	Wednesday	A27 CHICHESTER BY PASS of A259										
	20/10/2010	BOGNOR ROAD	Veh 2	Car	40	Go/head	N	to S	Dri	M	40	Slight
R1: A 27	2012 hrs		Veh 1	Car	18	Stopping	E	to SW				
R2: A 27	Darkness: street lights present											
E 487,820	Dry											
N 104,133	Fine without high winds											
	50 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 001	Very Likely
2nd:	Distraction in vehicle	Vehicle 001	Possible
3rd:	Dazzling headlights	Vehicle 001	Possible
4th:	Careless/Reckless/In a hurry	Vehicle 001	Possible
5th:	Slippery road (due to weather)	Vehicle 001	Possible
6th:	Defective lights or indicators	Vehicle 001	Possible

VEH 2 HAD STOPPED AT ROUNDABOUT ON A27 INDICATING LEFT VEH 1 CAME UP BEHIND AND CRASHED INTO VEH 2 DAMAGING REAR BUMPER AND PLINTH.

1008065	Saturday	A259 EXIT FROM NURSERY of A27										
	27/11/2010	CHICHESTER BYPASS BRICK KILN	Veh 2	Pedal cycle	43	Stopping	W	to E	Dri	M	43	Slight
R1: A 259	1300 hrs	NURSERYBOGNOR ROADMERSTON	Veh 1	Car	25	Turning left	S	to W				
R2: A 27												
E 488,279	Dry											
N 104,148	Fine without high winds											
	50 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Junction overshoot	Vehicle 001	Possible

VEHICLE 2,A CYCLIST WAS TRAVELLING EAST TOWARDS BOGNOR ON CYCLE LANE, VEH 1 CAME OUT OF ENTRANCE OF BRICK KILN NURSERY, HIT VEH 2, CYCLIST FELL OFF BIKE INJURING SHOULDER. VEH 1 STOPPED,BUT ONLY CYCLIST GAVE DETAILS NO DETAILS OF VEH 1.

1100218	Tuesday	A27 CHICHESTER BY PASS of A259										
	11/01/2011	CHICHESTER ROAD ON R/A	Veh 2	Car	68	Turning right	W	to S	FSP	M	46	Slight
R1: A 27	0933 hrs		Veh 1	Car	40	Go/head	E	to W				
R2: A 27												
E 487,816	Dry											
N 104,140	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 001	Very Likely

V2 ALREADY ON R/A COMING FROM QUARRY LANE HEADING INTO VINNETROW ROAD WHEN V1 EMERGERGED FROM CHICHESTER ROAD W/B AND COLLIDED INTO SIDE OF V2. PAX OF V2 SUSTAINED SLIGHT NOSE INJURY AS RESULT OF IMPACT.

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection:
Selected using Manual Selection

Notes:

			Vehicles							Casualties		
Police Ref.	Day	Location Description	Veh No	Type	Age	Manv	Dir		Class	Sex	Age	Sev
	Date											
Road No.	Time											
2nd Road No.												
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												

1100382
R1: A 259
R2: A 27
E 487,840
N 104,139

Tuesday
18/01/2011
1000 hrs
Dry
Fine without high winds
30 mph

A259 BOGNOR ROAD of A27 CHICHESTER-BY-PASS BOGNOR EXIT ONTO BOGNOR BRIDGE

Veh No	Type	Age	Manv	Dir		Class	Sex	Age	Sev
Veh 2	Car	45	Wait go ahead held	E	to	NW	RSP	F	48	Slight
Veh 2	Car	45	Wait go ahead held	E	to	NW	Dri	F	45	Slight
Veh 1	Goods > 7.5t		Wait go ahead held	E	to	NW				

Causation Factor:		**Participant:**	**Confidence:**
1st:	Following too close	Vehicle 001	Very Likely

VEHICLE 2 STATIONARY AT ROUNDABOUT - FIRST VEHICLE IN QUEUE - VEHICLE 1 HIT VEHICLE 2 ON REAR - CAUSED EXTENSIVE DAMAGE TO REAR BUMPER - CAUSED INJURIES TO DRIVER AND PASSENGER IN VEHICLE 2 - VEHICLE 2 PULLED OVER TO LEFT AND WAITED FOR VEHICLE 1 TO ALSO
PULL OVER BUT VEHICLE 1 DROVE OFF.

1100855
R1: A 27
R2: A 27
E 487,799
N 104,194

Tuesday
08/02/2011
1910 hrs
Darkness: street lighting
Wet/Damp
Unknown
70 mph

A27 CHICHESTER BYPASS of A259 BOGNOR ROAD BOGNOR BRIDGE ROUNDABOUT

Veh No	Type	Age	Manv	Dir		Class	Sex	Age	Sev
Veh 2	Car	28	Wait go ahead held	NW	to	S	Dri	F	28	Slight
Veh 2	Car	28	Wait go ahead held	NW	to	S	RSP	M	7	Slight
Veh 2	Car	28	Wait go ahead held	NW	to	S	RSP	F	6	Slight
Veh 1	Car	40	Go/head	NW	to	S				

Causation Factor:		**Participant:**	**Confidence:**
1st:	Sudden braking	Vehicle 001	Very Likely
2nd:	Loss of control	Vehicle 001	Possible
3rd:	Distraction in vehicle	Vehicle 001	Possible
4th:	Defective brakes	Vehicle 001	Possible
5th:	Careless/Reckless/In a hurry	Vehicle 001	Possible
6th:	Aggressive driving	Vehicle 001	Possible

VEHICLE 2 WAS STATIONARY IN TRAFFIC. VEHICLE 1 DROVE INTO REAR OF VEHICLE 2.

1005289
R1: A 27
R2: A 27
E 487,800
N 104,200

Friday
06/08/2010
1640 hrs
Wet/Damp
Raining without high winds
70 mph

A27 of A259

Veh No	Type	Age	Manv	Dir		Class	Sex	Age	Sev
Veh 2	Car	30	Go/head	N	to	S	Dri	F	30	Slight
Veh 1	Car	51	Go/head	N	to	S				

Causation Factor:		**Participant:**	**Confidence:**
1st:	Following too close	Vehicle 001	Very Likely

V1 TRAV E ON A27 IN HEAVY TRAFFIC STOPPING AND STARTING. V1 LOST CONCENTRATION AND WENT INTO THE BACK OF V2. DETAILS EXCHANGED BUT DRIVER OF V2 COMPLAINED THAT HER NECK WAS ACHNG.

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection: **Notes:**
Selected using Manual Selection

			Vehicles							Casualties			
Police Ref.	Day	Location Description	Veh No	Type	Age	Manv	Dir		Class	Sex	Age	Sev	
	Date												
Road No.													
2nd Road No.	Time												
Grid Ref.	D/L												
	R.S.C												
	Weather												
	Speed												
	Account of Accident												
Causation Factor:													
1101125	Thursday	A259 BOGNOR ROAD 580m West of B2144											
	17/02/2011		Veh 2	Car	25	Go/head	SE	to	NW	Dri	M	25	Slight
R1: A 259	0830 hrs		Veh 1	Car		Go/head	SE	to	NW				
E 488,789	Dry												
N 103,865	Fine without high winds												
	70 mph												

Causation Factor:		**Participant:**	**Confidence:**
1st:	Aggressive driving	Vehicle 001	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 001	Very Likely

VEHICLE 1 IS REPORTED TO HAVE BEEN TAILGAITING VEHICLE 2 AND WHEN VEHICLE 2 SLOWED DOWN DUE TO QUEUEING TRAFFIC VEHICLE 1 COLLIDED WITH THE REAR OF THE VEHICLE 2. THE DRIVER OF VEHICLE 2 PULLED OVER IN THE ENTRANCE TO THE INDIA GATE RESTAURANT ON BOGNOR
ROAD AND THE DRIVER OF VEHICLE 1 CONTINUED TOWARDS CHICHESTER.

1103269	Wednesday	A27 of U VINNETROW ROAD											
	25/05/2011		Veh 2	Car	70	Go/head	N	to	S	FSP	F	69	Slight
R1: A 27	1557 hrs		Veh 1	Car	35	Turning left	S	to	W				
R2: U													
E 487,792	Dry												
N 104,110	Fine without high winds												
	70 mph												

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to judge other persons path or speed	Vehicle 001	Very Likely
2nd:	Failed to signal/Misleading signal	Vehicle 002	Possible
3rd:	Failed to look properly	Vehicle 001	

V1 MISJUDGED PATH OF V2 AND PULLED OUT OF JUNCTION ONTO THE ROUNDABOUT IN FRONT OF V2. V2 COLLIDED REAR NEAR SIDE TO V1 FRONT OFF SIDE.

1008329	Wednesday	A259 50m South of B2144											
	08/12/2010		Veh 2	Goods < 3.5t	20	Go/head	SE	to	N	Dri	F	20	Slight
R1: A 259	1541 hrs		Veh 1	Car	36	Go/ahead LH bend	N	to	SE	RSP	M	35	Serious
			Veh 1	Car	36	Go/ahead LH bend	N	to	SE	Dri	F	36	Slight
E 489,308	Wet/Damp												
N 103,533	Fine without high winds												
	60 mph												

Causation Factor:		**Participant:**	**Confidence:**
1st:	Aggressive driving	Vehicle 001	Very Likely

VEH 1 HAS BEEN HEADING SOUTH ON MAIN A259, WHEN FOR UNKNOWN REASON HAS CROSSED THE LOW LEVEL CENTRAL RESERVATION AREA AND COLLIDED HEAD ON WITH VEH 2 WHO HAD BEEN TRAVELLING NORTH ON THE A259

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection:
Selected using Manual Selection

Notes:

			Vehicles						Casualties			
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class						Sex / Age / Sev			
	Date											
Road No.	Time											
2nd Road No.												
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												
1103009	Saturday	A27 CHICHESTER BYPASS 100m North of A259 BOGNOR ROAD	Veh 2	Goods < 3.5t	32	Wait go ahead held	E	to W				
	14/05/2011		Veh 3	Car	50	Wait go ahead held	E	to W				
R1: A 27	1049 hrs		Veh 1	M/C > 500 cc	38	Go/head	E	to W	Dri	F	38	Serious
E 487,828	Dry											
N 104,267	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Careless/Reckless/In a hurry	Vehicle 001	Very Likely
2nd:	Failed to look properly	Vehicle 001	Very Likely
3rd:	Travelling too fast for conditions	Vehicle 001	

IT WOULD APPEAR THAT VEHICLE TWO HAD BEEN TRAVELLING WEST ON THE WESTBOUND A27 WHEN IT HAD BEEN HELD UP BY STATIONARY TRAFFIC APPROACHING THE BOGNOR BRIDGE ROUNDABOUT. AS VEHICLE ONE APPROACHED FROM BEHIND , THE DRIVER FAILED TO OBSERVE THE STATIONARY QU
EUE OF TRAFFIC OVER THE BROW OF THE HILL AND COLLIDED AT SPEED AFTER SKIDDING, WITH THE REAR OF VEHICLE TWO.THE RIDER THEN EXITED HER MACHINE , COLLIDING WITH THE REAR OF VEHICLE THREE.

1103652	Sunday	A27 A27 of A259 A259	Veh 2	Car	62	Go/head	W	to E				
	12/06/2011		Veh 1	Car	21	Go/head	W	to E	Dri	F	21	Slight
R1: A 27	1230 hrs											
R2: A 27												
E 487,781	Wet/Damp											
N 104,115	Raining without high winds											
	30 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to judge other persons path or speed	Vehicle 001	Very Likely
2nd:	Slippery road (due to weather)	Vehicle 001	Very Likely

V1 HIT REAR OF V2 CAUSED DAMAGE. DETAILS EXCHANGED BUT DRIVER OF V1 HAS INJURY SO REPORTED TO JSPS. V1 AND V2 WERE HEADING EAST TOWARDS BRIGHTON.

1008314	Wednesday	A27 CHICHESTER BY PASS of A259 BOGNOR ROAD AT THE ROUND ABOUT	Veh 2	Car	17	Go/head	W	to E	FSP	M	36	Slight
	08/12/2010		Veh 2	Car	17	Go/head	W	to E	Dri	F	17	Slight
R1: A 27	0950 hrs		Veh 1	Goods > 7.5t	60	Go/head	W	to E				
R2: A 27												
E 487,772	Wet/Damp											
N 104,109	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Poor turn or manoevre	Vehicle 001	Very Likely

VEHICLE 2 LEARNER DRIVER UNDER INSTRUCTION APPROACHED ROUND ABOUT WITH THE INTENTION OF CONTINUING EAST ON A27. VEHICLE 2 STOPPED IN LANE 2 HANDBRAKE ON WAITING TO FILTER ONTO ROUND ABOUT. VEHICLE 1 STOPPED AT ROUND ABOUT IN LANE 3. WHEN CLEAR TO FILTER
ONTO ROUND ABOUT VEHICLE 1 PULLED AWAY AND STRUCK THE DRIVERSIDE OF VEHICLE 2 LIFTING THE VEHICLE OFF THE GROUND CAUSING DAMAGE AND INJURY X 2

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection: **Notes:**
Selected using Manual Selection

			Vehicles						Casualties			
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class						Sex / Age / Sev			
	Date											
Road No.												
2nd Road No.	Time											
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												
1102609	Monday	A27 BOGNOR ROAD of A259 BOGNOR ROAD ROUNDABOUT	Veh 2	Taxi	23	Go/head	N	to S	Dri	M	23	Slight
	25/04/2011		Veh 1	Taxi	50	Go/head	N	to S				
R1: A 27	1200 hrs											
R2: A 27												
E 487,801	Dry											
N 104,194	Fine without high winds											
	30 mph											

Causation Factor: **Participant:** **Confidence:**

1st: Careless/Reckless/In a hurry — Vehicle 001 — Very Likely

V2 TRAVELLING ON A27 ON THE WESTBOUND TRAVELLING SOUTH SLOWING DOWN APPROACHING BOGNOR ROAD ROUNDABOUT WHERE V1 WENT INTO THE BACK OF THE V2 CAUSING DAMAGE TO REAR BUMPER, V1 SUFFERED WHIPLASH.

1105694	Monday	A27 CHICHESTER BY PASS of A259 BOGNOR ROAD. AT BOGNOR BRIDGE ROUNDABOUT	Veh 2	Car	59	Go/ahead LH bend	S	to W	Dri	M	59	Slight
	12/09/2011		Veh 1	Car	47	Go/head	S	to N	Dri	F	47	Slight
R1: A 27	1554 hrs											
R2: A 27												
E 487,789	Dry											
N 104,112	Fine without high winds											
	70 mph											

Causation Factor: **Participant:** **Confidence:**

1st: Poor turn or manoevre — Vehicle 001 — Very Likely
2nd: Illegal turn or direction of travel — Vehicle 001 — Very Likely

VEH 1 ON A259 IN LANE 1 APPROACHING RA WITH A27. VEH 2 IN LANE 2 ALSO APPROACHING RA. BOTH MOVED ON TO RA VEH 2 TAKING 2ND EXIT. VEH 1 WANTED 3RD EXIT AND WAS IN WRONG LANE. VEH 1 CRASHED INTO NEARSIDE REAR OF VEH 2.

1105851	Sunday	A27 of C0 VINNETROW ROAD	Veh 2	Car	29	Go/head	E	to NW	RSP	M	28	Slight
	18/09/2011		Veh 2	Car	29	Go/head	E	to NW	Dri	F	29	Slight
R1: A 27	1405 hrs		Veh 1	Car	60	Go/head	E	to W				
R2: C 7												
E 487,782	Dry											
N 104,117	Fine without high winds											
	70 mph											

Causation Factor: **Participant:** **Confidence:**

1st: Careless/Reckless/In a hurry — Vehicle 001 — Possible

VEHICLE 2 TRAVELLING INSIDE LANE FROM A259, VEHICLE 1 TRAVELLING OUTSIDE LANE FROM A259. VEHICLE 1 GOING DIRECTLY ACROSS ROUNDABOUT TO A27 (2ND EXIT), VEHICLE 2 TRAVELLING AROUND THE ROUNDABOUT TO 3RD EXIT, AS VEHICLE 1 TURNED INTO A27 WESTBOUND IT STRUC
K VEHICLE 2 WHO WAS CONTINUING AROUND ROUNDABOUT CAUSING DAMAGE.. DETAILS WERE EXCAHNGED BY BOTH PARTIES. A COUPLE OF HOURS LATER DRIVER OF VEH 2 WENT TO HOSPITAL AS HAD BACK PAIN.

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection:
Selected using Manual Selection

Notes:

			Vehicles						Casualties			
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class						Sex / Age / Sev			
	Date											
Road No.	Time											
2nd Road No.												
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												
1200320	Wednesday	A259 BOGNOR ROAD of A27 BOGNOR ROAD	Veh 2	M/C < 50 cc	18	Go/head	W to E	Dri	F	18	Slight	
	18/01/2012		Veh 1	Car	30	Ch/lane to left	S to N					
R1: A 259	1448 hrs											
R2: A 27												
E 487,772	Wet/Damp											
N 104,115	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Careless/Reckless/In a hurry	Vehicle 001	Possible
2nd:	Inexperienced or learner driver/rider	Vehicle 002	Possible
3rd:	Poor turn or manoevre	Vehicle 001	

V2 TRAVELLING EAST ON A259 FROM BOGNOR REGIS ENTERED ONTO ROUNDABOUT INFRONT OF V1 WHO WAS ON V2 OFFSIDE INDICATING TO EXIT BUT CONTINUED , V1 CHANGED LANES PULLING INFRONT OF V2 CAUSING V2 TO BRAKE HARD TO AVOID COLLISION ENDING UP SLIPPING ON GRAVE
L ON EDGE OF CARRAIGEWAY AND CAME OFF CAUSING MINOR INJURY TO LEFT KNEE/LEG. NO CONTACT MADE WITH V1

1201665	Friday	A27 BOGNOR BRIDGE ROUNDABOUT of A259 BOGNOR BRIDGE ROUNDABOUT	Veh 2	Car	17	Go/head	W to E	Dri	F	17	Slight	
	30/03/2012		Veh 1	Goods < 3.5t	35	Ch/lane to left	NW to E					
R1: A 27	1625 hrs											
R2: A 259												
E 487,761	Dry											
N 104,156	Fine without high winds											
	30 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 001	Very Likely
2nd:	Failed to signal/Misleading signal	Vehicle 001	Possible

VEHICLE 2 COMING FROM A 259 WESTERNLY DIRECTION IN INSIDE LANE, VEHICLE 1 SAME ROAD AND DIRECTION IN OUTSIDE LANE. VEHICLE 2 TRAVELLED ROUND RA TO EXIT ONTO A259 BOGNOR BRIDGE ROAD, VEHICLE 1 WAS IN OUTSIDE LANE TRAVELLING IN SAME DIRECTION, WHEN VEH
1 VEERED INTO INSIDE LANE HTTING OFFSIDE OF VEHICLE 2, CAUSING DAMAGE

1203128	Monday	A27 BOGNOR BRIDGE ROUNDABOUT of A259	Veh 2	Car	19	Go/head	NW to SE	Dri	F	19	Slight	
	18/06/2012		Veh 1	Car	20	Turning right	E to NW					
R1: A 27	1625 hrs											
R2: A 259												
E 487,821	Dry											
N 104,132	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to judge other persons path or speed	Vehicle 001	Very Likely

V2 HAD ENTERED ROUNDABOUT FROM BOGNOR ROAD AND WAS INDICATING TO TURN LEFT INTO VINETROW RD & WAS STRUCK ON RNS BY V1 WHICH HAD ENTERED THE ROUNDABOUT FROM THE BOGNOR DIRECTION

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection:
Selected using Manual Selection

Notes:

			Vehicles						Casualties			
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class						Sex / Age / Sev			
	Date											
Road No.	Time											
2nd Road No.												
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												
1200155	Tuesday	A27 BOGNOR BRIDGE										
	10/01/2012	ROUNDABOUT CHICHESTER At	Veh 2	Car	46	Turning right	S	to E	Dri	F	46	Slight
R1: A 27	0951 hrs	Junction 3m North of A259 BOGNOR	Veh 1	Goods > 7.5t	45	Turning right	S	to E				
R2: A 259												
E 487,815	Dry											
N 104,155	Fine without high winds											
	30 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Poor turn or manoevre	Vehicle 001	Possible

VEHICLE 1 (ARTICULATED LORRY) WAS IN LANE 1 OUTSIDE LANE WITH THE PURPOSE OF GOING NORTH/NORTH EAST AROUND THE ROUNDABOUT ONTO THE A259 BOGNOR ROAD TOWARDS BOGNOR REGIS. VEHICLE 2 (CAR) WAS IN LANE 2 WITH THE INTENTION OF GOING NORTH/NORTH EAST AROUN
D THE ROUNDABOUT ONTO THE A259 BOGNOR ROAD TOWARDS BOGNOR REGIS. BOTH VEHICLES LOW SPEED. VEHICLE 1 MADE CONTACT WITH VEHICLE 2 CAUSING DAMAGE TO VEHICLE 2 NEAR SIDE FRONT CORNER AND BUMPER,DAMAGE TO FRONT NEARSIDE HEADLIGHT AND INDICATORS. DETAILS O
F BOTH DRIVERS EXCHANGED, VEHICLE 1 LEFT SCENE BEFORE POLICE ARRIVED AT SCENE,

1201403	Tuesday	A259 CHICHESTER RD CHICHESTER										
	13/03/2012	At Junction of B2144 DRAYTON LANE	Veh 2	Car	24	Go/head	E	to W	Dri	M	24	Slight
R1: A 259	1330 hrs		Veh 1	Car	36	Go/head	E	to W				
R2: B 2144												
E 489,260	Dry											
N 103,580	Fine without high winds											
	30 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Careless/Reckless/In a hurry	Vehicle 001	Possible
2nd:	Failed to signal/Misleading signal	Vehicle 001	Very Likely

VEH (2) WHILST TRAVERSING THE R-A-BT WAS FORCED ONTO IT BY VEH (1) WHO HAD INDICATED TO TAKE 1ST LEFT TURN BUT WENT STRAIGHT AHEAD.

1202813	Thursday	B2144 MERSTON At Junction of A259										
	31/05/2012		Veh 2	Car	40	Wait to turn left	N	to E	RSP	F	35	Slight
R1: B 2144	1440 hrs		Veh 2	Car	40	Wait to turn left	N	to E	Dri	M	40	Slight
R2: A 259			Veh 1	Car	29	Go/head	N	to S				
E 489,284	Dry											
N 103,617	Fine without high winds											
	30 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 001	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 001	Possible

VEHICLE TWO STATIONARY AT APPROACH TO ROUNDABOUT, VEHICLE ONE DIRECTLY BEHIND STRUCK REAR OF VEHICLE TWO CAUSING DRIVER AND PASSENGER TO SUSTAIN WHIPLASH INJURIES.

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection: **Notes:**
Selected using Manual Selection

			Vehicles						Casualties			
Police Ref.	Day	Location Description	Veh No	Type	Age	Manv	Dir	Class	Sex	Age	Sev	
	Date											
Road No.	Time											
2nd Road No.												
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												
1205366	Friday	A259 CHICHESTER 50m South of A27										
	12/10/2012	outside 50M SOUTH OF BOGNOR	Veh 2	M/C > 500 cc	57	Go/head	S	to N	Dri	M	57	Slight
R1: A 259	1415 hrs	BRIDGE R/A IN NORTHBOUND LANE	Veh 3	Goods 3.5 - 7.5t		Go/head	S	to N				
			Veh 1	Car	61	Ch/lane to left	S	to N				
E 487,934	Wet/Damp											
N 104,132	Fine without high winds											
	60 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Vehicle blind spot	Vehicle 001	Very Likely

VEHICLE 1 WAS TRAVELLING NORTH ON A259 TOWARDS BOGNOR BRIDGE ROUNDABOUT IN LANE 2. VEHICLE 1 WENT TO OVERTAKE DHL LORRY AND MOVE INTO LANE 1. IN DOING SO DID NOT SEE VEHICLE 2 IN FRONT OF DHL LORRY, SIDE SWIPED AND STRUCK VEHICLE 2 AND CAUSED RIDER O
F VEHICLE 2 TO LOOSE CONTROL AND BE THROWN FROM BIKE.

1206673	Friday	A259 BOGNOR ROAD MERSTON At										
	14/12/2012	Junction of U GREEN LANE	Veh 1	Car	30	Go/head	N	to S	Dri	M	30	Slight
R1: A 259	0134 hrs											
R2: U	Darkness: no street lighting											
E 488,752	Wet/Damp											
N 103,906	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Swerved	Vehicle 001	Possible

SINGLE VEHICLE RTC WHEREBY VEHICLE 1 COLLIDED WITH CENTRAL RESERVATION ON DUAL CARRIAGEWAY

1206954	Friday	A27 CHICHESTER At Junction of A259										
	28/12/2012	BOGNOR BRIDGE ROUNDABOUT	Veh 2	Car	50	Wait go ahead held	W	to E	FSP	F	52	Slight
R1: A 27	1650 hrs	outside BOGNOR BRIDGE	Veh 1	Car	39	Starting	W	to E				
R2: A 259	Darkness: street lights present											
E 487,762	Wet/Damp											
N 104,161	Raining with high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Nervous/Uncertain/Panic	Vehicle 001	Possible
2nd:	Failed to look properly	Vehicle 001	Very Likely

DRIVER OF V1 HAS BEEN BEHIND V2 JUST LOOKING TO PULL ONTO THE ROUNDABOUT. V1 HAS GONE INTO THE BACK OF V2. THE PASSENGER OF V2 WAS COMPAINAING OF MINOR NECK PAIN ON POLICE ARRIVAL

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection:
Selected using Manual Selection

Notes:

			Vehicles						Casualties			
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class						Sex / Age / Sev			
	Date											
Road No.												
2nd Road No.	Time											
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												
1301957	Thursday	A27 CHICHESTER At Junction of A259										
	18/04/2013	BOGNOR ROAD	Veh 2	Car	18	Go/head	S	to N	Dri	F	18	Slight
R1: A 27	1256 hrs		Veh 1	Car	73	Go/head	W	to E				
R2: A 259												
E 487,767	Dry											
N 104,162	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to judge other persons path or speed	Vehicle 001	Very Likely

V1 TRAVELLING SOUTH JOINED ROUNDABOUT AND COLLIDED INTO V2 WHICH WAS IN THE PROCESS OF NEGOTIATING THE ROUND ABOUT TRAVELLING FROM SOUTH TO NORTH IN THE NEARSIDE LANE.

1302289	Tuesday	A27 CHICHESTER BY PASS										
	07/05/2013	CHICHESTER At Junction of A259	Veh 2	Goods < 3.5t	50	Go/head	W	to E	Dri	M	50	Slight
R1: A 27	1419 hrs	BOGNOR ROAD outside ON R/A	Veh 1	Other M/veh	53	Turning right	W	to S				
R2: A 259												
E 487,786	Dry											
N 104,169	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Inexperience of driving on the left	Vehicle 001	Very Likely
2nd:	Poor turn or manoevre	Vehicle 001	Very Likely
3rd:	Failed to look properly	Vehicle 001	Very Likely
4th:	Failed to judge other persons path or speed	Vehicle 001	Very Likely

IT WOULD APPEAR THAT VEHICLE ONE WAS TRAVELLING EAST ALONG THE A27 CHICHESTER BY PASS , APPROACHING BOGNOR BRIDGE R/A. AT THIS TIME THE VEHICLE, WAS TRAVELLING IN LANE TWO(LANE ONE BEING THE FILTER TO HEAD NORTH INTO CHICHESTER). THE DRIVER OF VEHICL
E ONE INTENDED TO NEGOTIATE THE RA AND TURN RIGHT ONTO THE A259 BOGNOR ROAD. AS THE DRIVER MOVED HIS VEHICLE(A LHD ROAD SWEEPING LORRY) A FORD TRANSIT, (VEHICLE TWO) USED LANE THREE INTENDING TO EXIT STRAIGHT ON(EAST) AND CONTINUE THE A27. THE TWO V
EHICLES COLLIED AS VEHICLE ONE CONTINED ROUND THE RA NOW IN LANE ONE.

1302873	Friday	A259 CHICHESTER ROAD										
	07/06/2013	CHICHESTER At Junction of A27	Veh 2	M/C > 125 cc	42	Go/head	W	to S	Dri	F	42	Slight
R1: A 259	0956 hrs		Veh 1	Car	76	Go/head	E	to W				
R2: A 27												
E 487,822	Dry											
N 104,148	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 001	Very Likely

V1 WAS ENTERING ROUNDABOUT AND FAILED TO SEE V2 UNTIL THE LAST MINUTE. DRIVER OF V1 REACTED TO PREVENT A COLLISION AT THE SAME TIME RIDER OF V2 REACTED, CAUSING V2 TO ENTER LANE TWO OF A259. THE FRONT WHEEL THE STUCK LOOSE GRAVEL ON THE ROAD SURFACE
AND LOST TRACTION CAUSING DRIVER TO FALL OFF.

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection:
Selected using Manual Selection

Notes:

			Vehicles							Casualties		
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class							Sex / Age / Sev		
	Date											
Road No.	Time											
2nd Road No.												
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												

1302967 Tuesday 11/06/2013 0939 hrs
R1: A 259
A259 CHICHESTER ROAD CHICHESTER. 81m East of U GREEN LANE outside KIVES FARM

Veh 2	Car	22	Go/head	E	to W	Dri	F	22	Slight		
Veh 1	Car		Ch/lane to right	E	to W						

E 488,856 Wet/Damp
N 103,813 Fine without high winds
70 mph

Causation Factor:		**Participant:**	**Confidence:**
1st:	Loss of control	Vehicle 001	Very Likely

V1 AND V2 HEADING WEST ALONG A259 ON DAMP ROAD SURFACE. V1 IN LANE 1 AND V2 IN LANE 2. V1 THEN MOVED FROM LANE 1 TO LANE 2 INTO PATH OF V2, CAUSING V2 TO LOSE CONTROL AND V1 EXITED ROAD TO OFFSIDE, IMPACTED WITH CENTRAL BARRIER BEFORE COMING TO A RES
T. V1 NOT HIT AND DID NOT STOP (MY HAVE BEEN UNAWARE OF RESULTS OF ACTIONS).

1303498 Monday 08/07/2013 0754 hrs
R1: A 27
R2: A 259
A27 CHICHESTER BYPASS CHICHESTER At Junction of A259 BOGNOR ROAD outside ON

Veh 2	Car	29	Go/head	S	to N	Dri	F	29	Slight		
Veh 1	Goods < 3.5t	37	Turning right	S	to E						

E 487,781 Dry
N 104,172 Fine without high winds
60 mph

Causation Factor:		**Participant:**	**Confidence:**
1st:	Poor turn or manoevre	Vehicle 001	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 001	Very Likely
3rd:	Inexperience of driving on the left	Vehicle 001	

IT WOULD APPEAR THAT VEHICLE TWO WAS DRIVING EAST ALONG THE A27 FROM PORTSMOUTH WHEN IT APPROACHED THE ROUNDABOUT IN LANE TWO INTENDING TO CONTINUE ITS JOURNEY ON THE A27 EASTBOUND. VEHICLE ONE WAS ALSO APPROACHING THE R/A EASTBOUND IN LANE ONE. THE
DRIVER INTEDED TO TURN RIGHT TOWARDS BOGNOR REGIS. AS THE TWO VEHICLES NEGOTIATED THE ROUNDABOUT VEHICLE ONES OFF SIDE COLLIDED WITH VEHICLE TWOS NEARSIDE.

1303611 Saturday 13/07/2013 1952 hrs
R1: A 27
R2: A 259
A27 CHICHESTER AT JUNCTION OF A259
Daylight:street lights present

Veh 1	Car	39	Starting	E	to S						
Veh 2	M/C > 500 cc	56	Turning left	N	to SE		F	62	Slight		

E 487,816 Dry
N 104,125 Fine without high winds
70 mph

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 1	Possible
2nd:	Nervous/Uncertain/Panic	Vehicle 1	Possible
3rd:	Nervous/Uncertain/Panic	Vehicle 1	

V1 HAS ENTERED THE ROUNDABOUT FAILING TO GIVE WAY TO V2 WHICH IS ON THE ROUNDABOUT. V2 HAS TAKEN AVOIDING ACTION WHICH HAS RESULTED IN RIDER, PILLION AND MOTORCYCLE FALLING ONTO THE FLOOR.

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection: **Notes:**
Selected using Manual Selection

			Vehicles						Casualties			
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class						Sex / Age / Sev			
	Date											
Road No.	Time											
2nd Road No.												
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												
1303240	Tuesday	A259 BOGNOR ROAD CHICHESTER										
	25/06/2013	AT JUNCTION OF A27 CHICHESTER BYPASS	Veh 1	Goods < 3.5t	35	O/take m/veh o/side	E	to W				
R1: A 259	1530 hrs		Veh 2	Bus/coach	55	Go/head	S	to N	Seat	F	40	Slight
R2: A 27	Daylight:street lights present		Veh 2	Bus/coach	55	Go/head	S	to N	Seat	M	21	Slight
E 487,789	Dry											
N 104,119	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to judge other persons path or speed	Vehicle 1	Very Likely

V2 ON A259 BOGNOR ROAD/A27 ROUNDABOUT. V2 HAS ENTERED ROUNDABOUT FROM A259 BOGNOR ROAD SOUTH SIDE AND IS HEADING TOWARDS CHICHESTER INTENDING TO LEAVE ON A259 BOGNOR ROAD NORTHSIDE. V1 HAS APPEARED ON OFFSIDE OF V2 AND HAS ATTEMPTED TO LEAVE THE ROUNDABO
UT ON THE WESTBOUND A27. V1 HAS COLLIDED WITH OFFSIDE FRONT OF V2. SECTION 170 COMPLIANT BUT 2 X INJURIES TO PASSENGERS REPORTED ON V2, A STAGECOACH BUS.

1304771	Tuesday	A259 CHICHESTER AT JUNCTION OF										
	10/09/2013	A27	Veh 1	Car	25	Wait go ahead held	S	to N				
R1: A 259	1005 hrs		Veh 2	Car	74	Wait go ahead held	S	to N	FSP	F	70	Slight
R2: A 27	Daylight:street lights present											
E 487,803	Dry											
N 104,110	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
2nd:	Failed to look properly	Vehicle 1	Possible

V2 FACING NORTH, STATIONARY IN NEARSIDE LANE APPROACHING BOGNOR BRIDGE ROUNDABOUT JUNCTION WITH A27. V1 FACING IN SAME DIRECTION, BEHIND V2. V1 HAS DRIVEN INTO THE REAR OF V2 CAUSING DAMAGE TO THE OFFSIDE REAR. SECTION 170 COMPLIANT BUT INJURY REPORTED T
O PASSENGER IN V2.

1302792	Thursday	A27 CHICHESTER AT JUNCTION OF										
	30/05/2013	A259	Veh 1	Goods < 3.5t		Go/head	E	to W				
R1: A 27	0745 hrs		Veh 2	Car	44	Go/head	E	to W	Dri	F	44	Slight
R2: A 259	Daylight:street lights present											
E 487,819	Dry											
N 104,135	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 1	Very Likely

V2 HIT FROM BEHIND BY V1. V2 SIGNALLED TO V1 TO PULL OVER, V1 DROVE ROUND AT SPEED. V2 FOLLOWED V1 AND DREW ALONGSIDE HIM . V1 SHOUTED ABUSE AND WAS THREATENING TOWARDS V2 SO SHE CARRIED ON HER JOURNEY.

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection:
Selected using Manual Selection

Notes:

			Vehicles						Casualties			
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class						Sex / Age / Sev			
	Date											
Road No.	Time											
2nd Road No.												
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												
1401451	Sunday	A27 CHICHESTER AT JUNCTION OF										
	16/03/2014	A259 BOGNOR ROAD OUTSIDE	Veh 1	Car	26	Go/head	N	to S	Dri	M	26	Serious
R1: A 27	1922 hrs	BOGNOR BRIDGE RA	Veh 2	Car	44	Go/head	N	to S				
R2: A 259	Darkness: street lights present											
E 487,809	Dry											
N 104,156	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Careless/Reckless/In a hurry	Vehicle 1	Possible
2nd:	Careless/Reckless/In a hurry	Vehicle 2	Possible

2 VEHICLES ENTER RA, COLLIDE RESULTING IN V1 OVERTURNING

1402888	Sunday	A27 CHICHESTER AT JUNCTION OF										
	25/05/2014	A259	Veh 1	Car	42	Go/head	N	to S	Dri	F	42	Slight
R1: A 27	1634 hrs		Veh 2	M/C > 500 cc	32	Go/head	N	to E	Dri	M	32	Slight
R2: A 259	Daylight:street lights present		Veh 3	Car	63	Wait go ahead held	E	to N				
E 487,818	Dry											
N 104,146	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Nervous/Uncertain/Panic	Vehicle 1	Possible
2nd:	Failed to signal/Misleading signal	Vehicle 1	Possible
3rd:	Failed to judge other persons path or speed	Vehicle 2	

BOTH V1 AND V2 ENTERED ONTO THE BOGNOR BRIDGE R/A FROM CHICHESTER ON THE BOGNOR ROAD. V1 WAS IN LANE 1 ON THE R/A AND V2 IN LANE 2. V2'S INTENTION WAS TO GO AHEAD ONTO THE A259 TOWARDS BOGNOR, V1 ONTO VINNETROW ROAD. V2 ANTICIPATED V1 TRAVELLING IN THE S
AME DIRECTION, V1 CONTINUED AROUND THE R/A TOWARDS VINNETROW ROAD AND A COLLISION OCCURRED. V2 HIT V3 WAITING TO ENTER THE R/A.

1400995	Friday	A27 CHICHESTER AT JUNCTION OF										
	21/02/2014	A259	Veh 1	Goods 3.5 - 7.5t	23	O/take on n/side	S	to E				
R1: A 27	1125 hrs		Veh 2	Car	51	Go/head	S	to N	FSP	F	42	Slight
R2: A 259	Daylight:street lights present		Veh 2	Car	51	Go/head	S	to N	RSP	M	12	Slight
E 487,792	Dry											
N 104,180	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Poor turn or manoevre	Vehicle 1	Possible
2nd:	Failed to signal/Misleading signal	Vehicle 1	Possible

V1 AND V2 WERE BOTH TRAVELLING EASTBOUND ON THE A27 ON THE CHICHESTER BYPASS APPROACHING THE ROUNDABOUT WITH THE A259. V1 WAS IN THE INSIDE LANE, V2 WAS IN THE OUTSIDE LANE. AS BOTH VEHICLES HAVE ENTERED THE ROUNDABOUT AT APPROXIMATELY THE SAME TIME, V2
HAS GONE TO CONTINUE STRAIGHT AHEAD AND V1 HAS CONTINUED TO DRIVE AROUND THE ROUNDABOUT WITH A VIEW TO TURN OFF TOWARDS BOGNOR ON THE A259. AS V2 HAS GONE TO EXIT THE ROUNDABOUT, THE REAR NEARSIDE CORNER OF THE VEHICLE HAS COLLIDED WITH THE FRONT

Details of Personal Injury Accidents for Period - **01/09/2009** **to** **31/08/2014** (60) months

Selection: **Notes:**
Selected using Manual Selection

			Vehicles						Casualties			
Police Ref.	Day	Location Description	Veh No / Type / Age / Manv / Dir / Class						Sex / Age / Sev			
	Date											
Road No.	Time											
2nd Road No.												
Grid Ref.	D/L											
	R.S.C											
	Weather											
	Speed											
	Account of Accident											
Causation Factor:												
1404013	Wednesday	A27 CHICHESTER AT JUNCTION OF										
	16/07/2014	A259 BOGNOR ROAD OUTSIDE	Veh 1	Car	27	Ch/lane to right	S	to N	Dri	F	27	Slight
R1: A 27	1154 hrs	APPROX 30 YARDS EAST OF	Veh 2	Car	62	Go/head	S	to N				
R2: A 259	Daylight:street lights present											
E 487,793	Dry											
N 104,181	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 1	Possible
2nd:	Failed to judge other persons path or speed	Vehicle 1	Possible

V1 HAD EXITED BOGNOR BRIDGE RA IN LANE 1 OF THE A27 TRAVELLING NORTH. V2 WAS TRAVELLING IN LANE 2. V1 MOVED ACROSS INTO L2 AND COLLIDED WITH V2.

1404462	Monday	A259 BOGNOR ROAD CHICHESTER										
	04/08/2014	342M EAST OF A27 OUTSIDE NEAR	Veh 1	Car	47	Go/head	W	to E	Dri	M	47	Slight
R1: A 259	0936 hrs	TO ENTRANCE TO SPRINGFIELD										
	Daylight:street lights present											
E 488,171	Dry											
N 104,172	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Illness or disability, mental or physical	Vehicle 1	Possible

V1 WAS TRAVELLING EASTBOUND ALONG A259 BOGNOR ROAD. DRIVER SUSPECTED TO HAVE SUFFERED A MEDICAL EPISODE, LEFT THE ROAD TO THE NEARSIDE, ENTERED DITCH AND ROLLED.

1404823	Wednesday	A27 CHICHESTER BY PASS										
	20/08/2014	CHICHESTER AT JUNCTION OF A259	Veh 1	Car	40	Wait to turn right	W	to S				
R1: A 27	1620 hrs	BOGNOR ROAD OUTSIDE BOGNOR	Veh 2	M/C > 500 cc	25	Wait to turn right	W	to S	Dri	M	25	Serious
R2: A 259	Daylight:street lights present											
E 487,790	Dry											
N 104,107	Fine without high winds											
	70 mph											

Causation Factor:		**Participant:**	**Confidence:**
1st:	Inexperience with type of vehicle	Vehicle 2	Possible
2nd:	Careless/Reckless/In a hurry	Vehicle 1	Possible
3rd:	Failed to look properly	Vehicle 1	

V2 WAS IN LANE TWO INDICATING TO TURN RIGHT INTO BOGNOR ROAD WHEN MOTORCYCLE STALLED. V1, ALSO IN LANE TWO, HAS COLLIDED WITH REAR OF V2, CAUSING DAMAGE TO V2.

Appendix B: WSCC Bognor Road Junction Upgrade Scheme

DO NOT SCALE

PROPOSED FLYOVER RAMP BETWEEN 4% TO 6% GRADIENT DEPENDING ON EXISTING GROUND LEVELS AND SLOPE LEADING TO CURRENT JUNCTION

70m STOPPING SIGHT DISTANCE

PROPOSED AT-GRADE TOUCAN CROSSINGS

CONNECTION TO FOOTWAY AND CYCLEWAY NETWORK

EXISTING FOOTBRIDGE AND ASSOCIATED RAMPS TO BE STOPPED UP AND DEMOLISHED

PROPOSED FLYOVER RAMP WITH 4% GRADIENT

PROPOSED BOGNOR ROAD DEVELOPMENT

CHICHESTER BY-PASS

BOGNOR ROAD

Depot

Beaver Nursery Units

Beaver Trade Park

El Sub Sta

Path & Cycle Path

Path & Cycle Track

Post

11.9m

12.2m

10.4m

9.9m

TW=19.89

TW=14.93

TW=15.49

TW=15.97

TW=14.45

TW=15.17

TW=14.21

TW=15.09

TF=13.22

TF=13.18 +

TW=14.41

104280.000N

104180.000N

104080.000N

487800.000E

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REV	DATE	BY	DESCRIPTION	CHK	APD
A	02/10/14	AJT	STOPPING SITE DISTANCE AMENDMENT	JC	AL
A	24/09/14	LEW	FIRST ISSUE	SM	AL

DRAWING STATUS: FOR INFORMATION ONLY

WSP
Mountbatten House, Basing View, Basingstoke, Hampshire RG21 4HJ
Tel: +44 (0)1256 318800 Fax: +44 (0)1256 318700
http://www.wspgroup.com

CLIENT: HANBURY PROPERTIES

ARCHITECT: ROBERTS LIMBRICK

PROJECT: BOGNOR BRIDGE ROAD, CHICHESTER

TITLE: POTENTIAL A27 FLYOVER

SCALE @ A0:	CHECKED:	APPROVED:
1:500	SM	AJL
CAD FILE:	DESIGN DRAWN:	DATE:
3803-SK-007.dwg	LEW	September 14
PROJECT No:	DRAWING No:	REV:
70003803	3803-SK-007	B

NOTE:

1. THIS DRAWING IS TO BE TREATED AS INDICATIVE AND IS FOR DISCUSSION PURPOSES ONLY.

2. GIVEN THE PRELIMINARY NATURE OF OUR INVESTIGATIONS AND THE LIMITATIONS OF OUR BRIEF WE HAVE NOT FULLY SOUGHT TO OBTAIN NOR BECOME AWARE OF ANY SIGNIFICANT INFORMATION RELATED TO HAZARDS THAT MIGHT AFFECT THE CONSTRUCTION OR MAINTENANCE OF THIS PROJECT.

3. ANY DESIGNERS WHO PROGRESS THESE PROPOSALS OR DESIGN FURTHER WILL NEED TO RECONSIDER THE PROPOSALS BASED UPON THE INFORMATION WHICH SUBSEQUENTLY BECOMES AVAILABLE INCLUDING POTENTIAL SITE HAZARDS.

S:\70003803 - Bognor Bridge Road, Chichester\E Models and Drawings\Development\AUTOCAD\SK Sketches\3803-SK-007.dwg 30/10/2014 16:38:57 Marsland, Richard

Rev P1

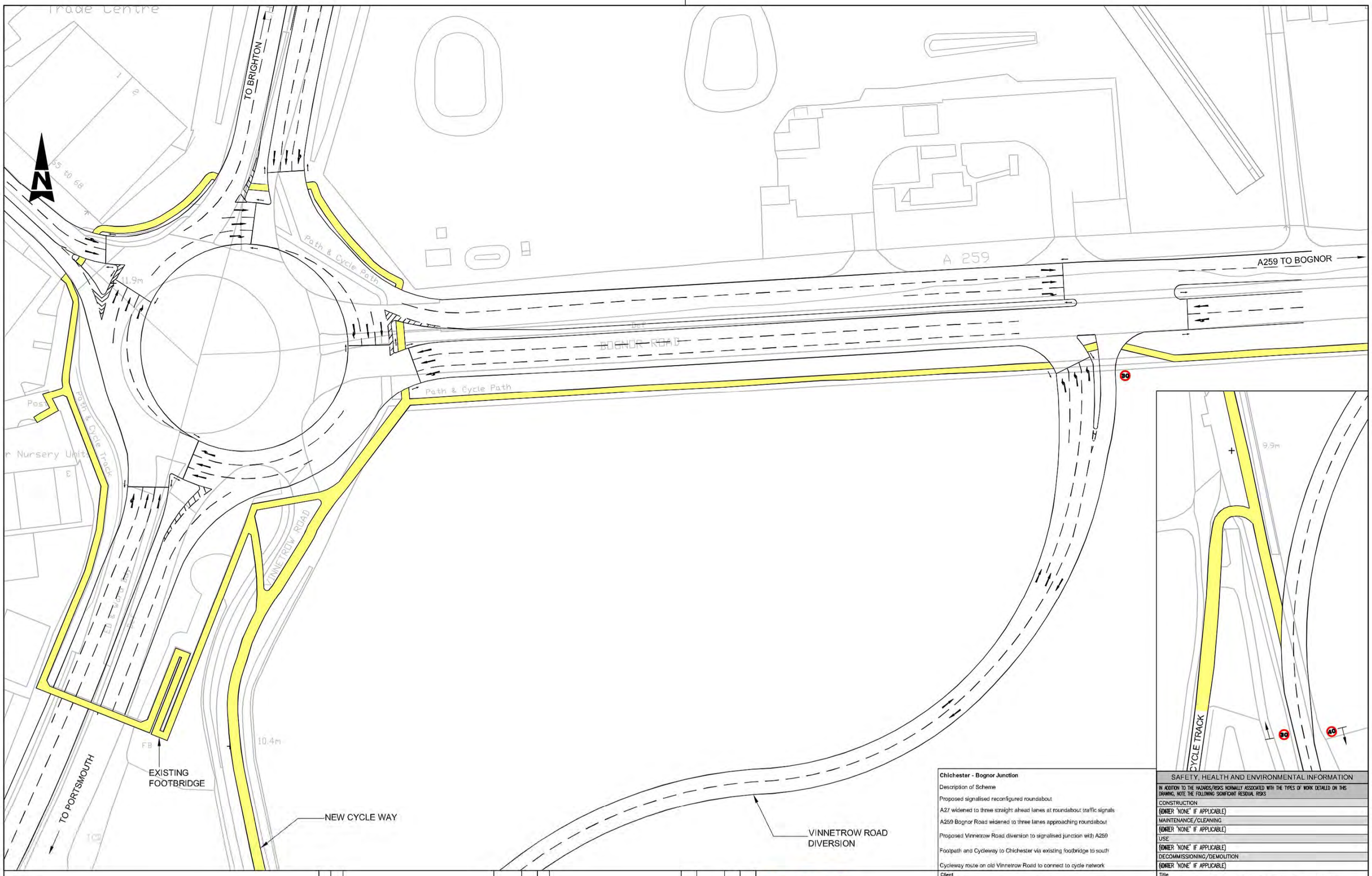
Drawing Number A27-ATK-ZZ-DR-D-104b

Status S2

DO NOT SCALE

A3

0 10 50



Notes:

- Foot / Cycle way route

Stat	Rev	Purpose of issue	Date	Auth
S2	P1	For Information	07/05/13	AB

Rev	Description	By	Date	Chk'd	Auth
P1	Initial Issue	MN	07/05/13	RM	AB

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Chichester - Bognor Junction

Description of Scheme

Proposed signalised reconfigured roundabout

A27 widened to three straight ahead lanes at roundabout traffic signals

A259 Bognor Road widened to three lanes approaching roundabout

Proposed Vinnetrow Road diversion to signalised junction with A259

Footpath and Cycleway to Chichester via existing footbridge to south

Cycleway route on old Vinnetrow Road to connect to cycle network

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS
CONSTRUCTION
(ENTER 'NONE' IF APPLICABLE)
MAINTENANCE/CLEANING
(ENTER 'NONE' IF APPLICABLE)
USE
(ENTER 'NONE' IF APPLICABLE)
DECOMMISSIONING/DEMOLITION
(ENTER 'NONE' IF APPLICABLE)

Client: WEST SUSSEX COUNTY COUNCIL

Project: A27 ROUTE STRATEGY

Title: CHICHESTER - BOGNOR ROAD JUNCTION

Sheet Size	Original Scale	Designed/Drawn	Checked	Authorised
A3	1:1000	MN Date 15/04/13	RM Date 07/05/13	AB Date 07/05/13

Status	Drawing Number	Rev
S2	A27-ATK-ZZ-DR-D-104b	P1

File: P:\GBEMB\TP\HA\PROJECTS\5118445 - A27 Route Strategy\20-CAD\01-WIP\A\DR\A27-ATK-ZZ-DR-D-104b.dwg
Date: Jun 06, 2013 - 1:08pm Plotted by: MANMOTSO

P:\GBEMB\TP\HA\PROJECTS\5118445 - A27 Route Strategy\20-CAD\01-WIP\A\DR\A27-ATK-ZZ-DR-D-104b.dwg

Appendix C: TRICS Outputs

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : D - INDUSTRIAL ESTATE
VEHICLES

Selected regions and areas:
02 SOUTH EAST
KC KENT 1 days

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

Filtering Stage 2 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: 7715 to 7715 (units: sqm)
Range Selected by User: 708 to 167416 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 02/10/09 to 02/10/14

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:
Wednesday 1 days

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

Selected survey types:
Manual count 1 days
Directional ATC Count 0 days

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

Selected Locations:
Edge 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:
Residential Zone 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.

Filtering Stage 3 selection:

Use Class:
B2 1 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®.

Filtering Stage 3 selection (Cont.):

Population within 1 mile:
25,001 to 50,000 1 days

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

Population within 5 miles:
25,001 to 50,000 1 days

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

Car ownership within 5 miles:
1.1 to 1.5 1 days

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

Travel Plan:
No 1 days

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

LIST OF SITES relevant to selection parameters

1 KC-02-D-02 INDUSTRIAL ESTATE KENT
SOUTHWELL ROAD

DEAL
Edge of Town
Residential Zone
Total Gross floor area: 10715 sqm
Survey date: WEDNESDAY 28/11/12 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
CA-02-D-02	Not representative of site.
CB-02-D-04	Not representative of site.
DV-02-D-06	Not representative of site.
ES-02-D-06	Not representative of site.
NF-02-D-03	Not representative of site.
TW-02-D-07	Not representative of site.
WM-02-D-02	Not representative of site.

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 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									
06:30 - 07:00									
07:00 - 07:30	1	7715	0.091	1	7715	0.000	1	7715	0.091
07:30 - 08:00	1	7715	0.220	1	7715	0.013	1	7715	0.233
08:00 - 08:30	1	7715	0.181	1	7715	0.052	1	7715	0.233
08:30 - 09:00	1	7715	0.143	1	7715	0.013	1	7715	0.156
09:00 - 09:30	1	7715	0.091	1	7715	0.052	1	7715	0.143
09:30 - 10:00	1	7715	0.130	1	7715	0.039	1	7715	0.169
10:00 - 10:30	1	7715	0.052	1	7715	0.052	1	7715	0.104
10:30 - 11:00	1	7715	0.065	1	7715	0.078	1	7715	0.143
11:00 - 11:30	1	7715	0.065	1	7715	0.039	1	7715	0.104
11:30 - 12:00	1	7715	0.065	1	7715	0.039	1	7715	0.104
12:00 - 12:30	1	7715	0.026	1	7715	0.078	1	7715	0.104
12:30 - 13:00	1	7715	0.065	1	7715	0.078	1	7715	0.143
13:00 - 13:30	1	7715	0.104	1	7715	0.039	1	7715	0.143
13:30 - 14:00	1	7715	0.026	1	7715	0.104	1	7715	0.130
14:00 - 14:30	1	7715	0.065	1	7715	0.026	1	7715	0.091
14:30 - 15:00	1	7715	0.117	1	7715	0.078	1	7715	0.195
15:00 - 15:30	1	7715	0.091	1	7715	0.104	1	7715	0.195
15:30 - 16:00	1	7715	0.078	1	7715	0.117	1	7715	0.195
16:00 - 16:30	1	7715	0.078	1	7715	0.130	1	7715	0.208
16:30 - 17:00	1	7715	0.052	1	7715	0.207	1	7715	0.259
17:00 - 17:30	1	7715	0.026	1	7715	0.298	1	7715	0.324
17:30 - 18:00	1	7715	0.000	1	7715	0.156	1	7715	0.156
18:00 - 18:30	1	7715	0.013	1	7715	0.052	1	7715	0.065
18:30 - 19:00	1	7715	0.000	1	7715	0.013	1	7715	0.013
19:00 - 19:30									
19:30 - 20:00									
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:			1.844			1.857			3.701

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

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

Parameter summary

Trip rate parameter range selected:	7715 - 7715 (units: sqm)
Survey date date range:	02/10/09 - 02/10/14
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	8

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

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : C - DISCOUNT FOOD STORES
VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	KC	KENT	1 days
03	SOUTH WEST		
	DC	DORSET	1 days
05	EAST MIDLANDS		
	NR	NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days

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

Filtering Stage 2 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: 1334 to 1900 (units: sqm)
Range Selected by User: 865 to 1900 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/06 to 27/11/12

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:

Tuesday	4 days
Wednesday	1 days

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	2
Edge 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	1
Commercial Zone	1
Built-Up Zone	1
No Sub Category	2

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

Filtering Stage 3 selection:

Use Class:

A1	5 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:

5,001 to 10,000	1 days
10,001 to 15,000	2 days
25,001 to 50,000	2 days

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

Population within 5 miles:

5,001 to 25,000	1 days
50,001 to 75,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	1 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:

1.1 to 1.5	5 days

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

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	5 days

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

Yes	1 days
No	4 days

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

LIST OF SITES relevant to selection parameters

1	DC-01-C-02	LIDL		DORSET
	POOLE ROAD			
	BRANKSOME			
	BOURNEMOUTH			
	Suburban Area (PPS6 Out of Centre)			
	Commercial Zone			
	Total Gross floor area:		1334 sqm	
	Survey date: TUESDAY		15/07/08	Survey Type: MANUAL
2	KC-01-C-02	ALDI		KENT
	WELL ROAD			
	MAIDSTONE			
	Edge of Town Centre			
	Built-Up Zone			
	Total Gross floor area:		1407 sqm	
	Survey date: TUESDAY		27/11/12	Survey Type: MANUAL
3	NR-01-C-01	ALDI		NORTHAMPTONSHIRE
	DALTON ROAD			
	CORBY			
	Edge of Town			
	Industrial Zone			
	Total Gross floor area:		1345 sqm	
	Survey date: WEDNESDAY		19/11/08	Survey Type: MANUAL
4	NY-01-C-02	LIDL		NORTH YORKSHIRE
	STATION ROAD			
	THIRSK			
	Edge of Town Centre			
	No Sub Category			
	Total Gross floor area:		1527 sqm	
	Survey date: TUESDAY		11/10/11	Survey Type: MANUAL
5	SH-01-C-01	LIDL		SHROPSHIRE
	CASTLE STREET			
	HADLEY			
	TELFORD			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Gross floor area:		1900 sqm	
	Survey date: TUESDAY		16/06/09	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
MS-01-C-02	Location
MS-01-C-03	Location

TRIP RATE for Land Use 01 - RETAIL/C - DISCOUNT FOOD STORES
VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	1547	0.302	3	1547	0.108	3	1547	0.410
08:00 - 09:00	5	1503	1.171	5	1503	0.799	5	1503	1.970
09:00 - 10:00	5	1503	2.476	5	1503	1.970	5	1503	4.446
10:00 - 11:00	5	1503	3.727	5	1503	3.181	5	1503	6.908
11:00 - 12:00	5	1503	3.953	5	1503	3.634	5	1503	7.587
12:00 - 13:00	5	1503	3.527	5	1503	3.833	5	1503	7.360
13:00 - 14:00	5	1503	3.194	5	1503	3.514	5	1503	6.708
14:00 - 15:00	5	1503	3.487	5	1503	3.261	5	1503	6.748
15:00 - 16:00	5	1503	3.394	5	1503	3.447	5	1503	6.841
16:00 - 17:00	5	1503	3.394	5	1503	3.447	5	1503	6.841
17:00 - 18:00	5	1503	3.048	5	1503	3.381	5	1503	6.429
18:00 - 19:00	5	1503	2.981	5	1503	2.915	5	1503	5.896
19:00 - 20:00	5	1503	1.358	5	1503	2.063	5	1503	3.421
20:00 - 21:00	3	1423	0.633	3	1423	0.867	3	1423	1.500
21:00 - 22:00	1	1407	0.142	1	1407	0.498	1	1407	0.640
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			36.787			36.918			73.705

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

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

Parameter summary

Trip rate parameter range selected:	1334 - 1900 (units: sqm)
Survey date date range:	01/01/06 - 27/11/12
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	2

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

LIST OF SITES relevant to selection parameters

1 OX-06-E-01 L. CHEF & BURGER K. OXFORDSHIRE
OXFORD ROAD

BICESTER
Edge of Town
Retail Zone
Total Gross floor area: 475 sqm
Survey date: THURSDAY 10/11/11 Survey Type: MANUAL

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/E - ROAD-SIDE FOOD (eg. Little Chef)
VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	475	3.368	1	475	2.526	1	475	5.894
08:00 - 09:00	1	475	4.421	1	475	4.000	1	475	8.421
09:00 - 10:00	1	475	3.789	1	475	3.368	1	475	7.157
10:00 - 11:00	1	475	2.105	1	475	1.895	1	475	4.000
11:00 - 12:00	1	475	1.684	1	475	1.895	1	475	3.579
12:00 - 13:00	1	475	9.684	1	475	7.789	1	475	17.473
13:00 - 14:00	1	475	4.421	1	475	5.684	1	475	10.105
14:00 - 15:00	1	475	4.842	1	475	7.368	1	475	12.210
15:00 - 16:00	1	475	3.158	1	475	3.368	1	475	6.526
16:00 - 17:00	1	475	5.053	1	475	3.158	1	475	8.211
17:00 - 18:00	1	475	5.053	1	475	5.263	1	475	10.316
18:00 - 19:00	1	475	3.579	1	475	4.000	1	475	7.579
19:00 - 20:00	1	475	2.105	1	475	2.947	1	475	5.052
20:00 - 21:00	1	475	2.105	1	475	2.316	1	475	4.421
21:00 - 22:00	1	475	0.211	1	475	0.211	1	475	0.422
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			55.578			55.788			111.366

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

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

Parameter summary

Trip rate parameter range selected:	475 - 475 (units: sqm)
Survey date date range:	10/11/11 - 10/11/11
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/E - ROAD-SIDE FOOD (eg. Little Chef)
TAXIS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	475	0.000	1	475	0.000	1	475	0.000
08:00 - 09:00	1	475	0.000	1	475	0.000	1	475	0.000
09:00 - 10:00	1	475	0.000	1	475	0.000	1	475	0.000
10:00 - 11:00	1	475	0.000	1	475	0.000	1	475	0.000
11:00 - 12:00	1	475	0.000	1	475	0.000	1	475	0.000
12:00 - 13:00	1	475	0.000	1	475	0.000	1	475	0.000
13:00 - 14:00	1	475	0.000	1	475	0.000	1	475	0.000
14:00 - 15:00	1	475	0.000	1	475	0.000	1	475	0.000
15:00 - 16:00	1	475	0.000	1	475	0.000	1	475	0.000
16:00 - 17:00	1	475	0.000	1	475	0.000	1	475	0.000
17:00 - 18:00	1	475	0.000	1	475	0.000	1	475	0.000
18:00 - 19:00	1	475	0.000	1	475	0.000	1	475	0.000
19:00 - 20:00	1	475	0.000	1	475	0.000	1	475	0.000
20:00 - 21:00	1	475	0.000	1	475	0.000	1	475	0.000
21:00 - 22:00	1	475	0.000	1	475	0.000	1	475	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

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

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

Parameter summary

Trip rate parameter range selected:	475 - 475 (units: sqm)
Survey date date range:	10/11/11 - 10/11/11
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/E - ROAD-SIDE FOOD (eg. Little Chef)
OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	475	0.211	1	475	0.211	1	475	0.422
08:00 - 09:00	1	475	0.000	1	475	0.000	1	475	0.000
09:00 - 10:00	1	475	0.000	1	475	0.000	1	475	0.000
10:00 - 11:00	1	475	0.000	1	475	0.000	1	475	0.000
11:00 - 12:00	1	475	0.000	1	475	0.000	1	475	0.000
12:00 - 13:00	1	475	0.211	1	475	0.211	1	475	0.422
13:00 - 14:00	1	475	0.000	1	475	0.000	1	475	0.000
14:00 - 15:00	1	475	0.211	1	475	0.211	1	475	0.422
15:00 - 16:00	1	475	0.000	1	475	0.000	1	475	0.000
16:00 - 17:00	1	475	0.000	1	475	0.000	1	475	0.000
17:00 - 18:00	1	475	0.000	1	475	0.000	1	475	0.000
18:00 - 19:00	1	475	0.000	1	475	0.000	1	475	0.000
19:00 - 20:00	1	475	0.000	1	475	0.000	1	475	0.000
20:00 - 21:00	1	475	0.000	1	475	0.000	1	475	0.000
21:00 - 22:00	1	475	0.000	1	475	0.000	1	475	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.633			0.633			1.266

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

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

Parameter summary

Trip rate parameter range selected:	475 - 475 (units: sqm)
Survey date date range:	10/11/11 - 10/11/11
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/E - ROAD-SIDE FOOD (eg. Little Chef)
PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	475	0.000	1	475	0.000	1	475	0.000
08:00 - 09:00	1	475	0.000	1	475	0.000	1	475	0.000
09:00 - 10:00	1	475	0.000	1	475	0.000	1	475	0.000
10:00 - 11:00	1	475	0.000	1	475	0.000	1	475	0.000
11:00 - 12:00	1	475	0.000	1	475	0.000	1	475	0.000
12:00 - 13:00	1	475	0.000	1	475	0.000	1	475	0.000
13:00 - 14:00	1	475	0.000	1	475	0.000	1	475	0.000
14:00 - 15:00	1	475	0.000	1	475	0.000	1	475	0.000
15:00 - 16:00	1	475	0.000	1	475	0.000	1	475	0.000
16:00 - 17:00	1	475	0.000	1	475	0.000	1	475	0.000
17:00 - 18:00	1	475	0.000	1	475	0.000	1	475	0.000
18:00 - 19:00	1	475	0.000	1	475	0.000	1	475	0.000
19:00 - 20:00	1	475	0.000	1	475	0.000	1	475	0.000
20:00 - 21:00	1	475	0.000	1	475	0.000	1	475	0.000
21:00 - 22:00	1	475	0.000	1	475	0.000	1	475	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

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

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

Parameter summary

Trip rate parameter range selected:	475 - 475 (units: sqm)
Survey date date range:	10/11/11 - 10/11/11
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/E - ROAD-SIDE FOOD (eg. Little Chef)
CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	475	0.000	1	475	0.000	1	475	0.000
08:00 - 09:00	1	475	0.000	1	475	0.000	1	475	0.000
09:00 - 10:00	1	475	0.000	1	475	0.000	1	475	0.000
10:00 - 11:00	1	475	0.000	1	475	0.000	1	475	0.000
11:00 - 12:00	1	475	0.000	1	475	0.000	1	475	0.000
12:00 - 13:00	1	475	0.000	1	475	0.000	1	475	0.000
13:00 - 14:00	1	475	0.000	1	475	0.000	1	475	0.000
14:00 - 15:00	1	475	0.000	1	475	0.000	1	475	0.000
15:00 - 16:00	1	475	0.000	1	475	0.000	1	475	0.000
16:00 - 17:00	1	475	0.000	1	475	0.000	1	475	0.000
17:00 - 18:00	1	475	0.000	1	475	0.000	1	475	0.000
18:00 - 19:00	1	475	0.000	1	475	0.000	1	475	0.000
19:00 - 20:00	1	475	0.000	1	475	0.000	1	475	0.000
20:00 - 21:00	1	475	0.000	1	475	0.000	1	475	0.000
21:00 - 22:00	1	475	0.000	1	475	0.000	1	475	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

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

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

Parameter summary

Trip rate parameter range selected:	475 - 475 (units: sqm)
Survey date date range:	10/11/11 - 10/11/11
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

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

Appendix D: Junction Assessment Outputs

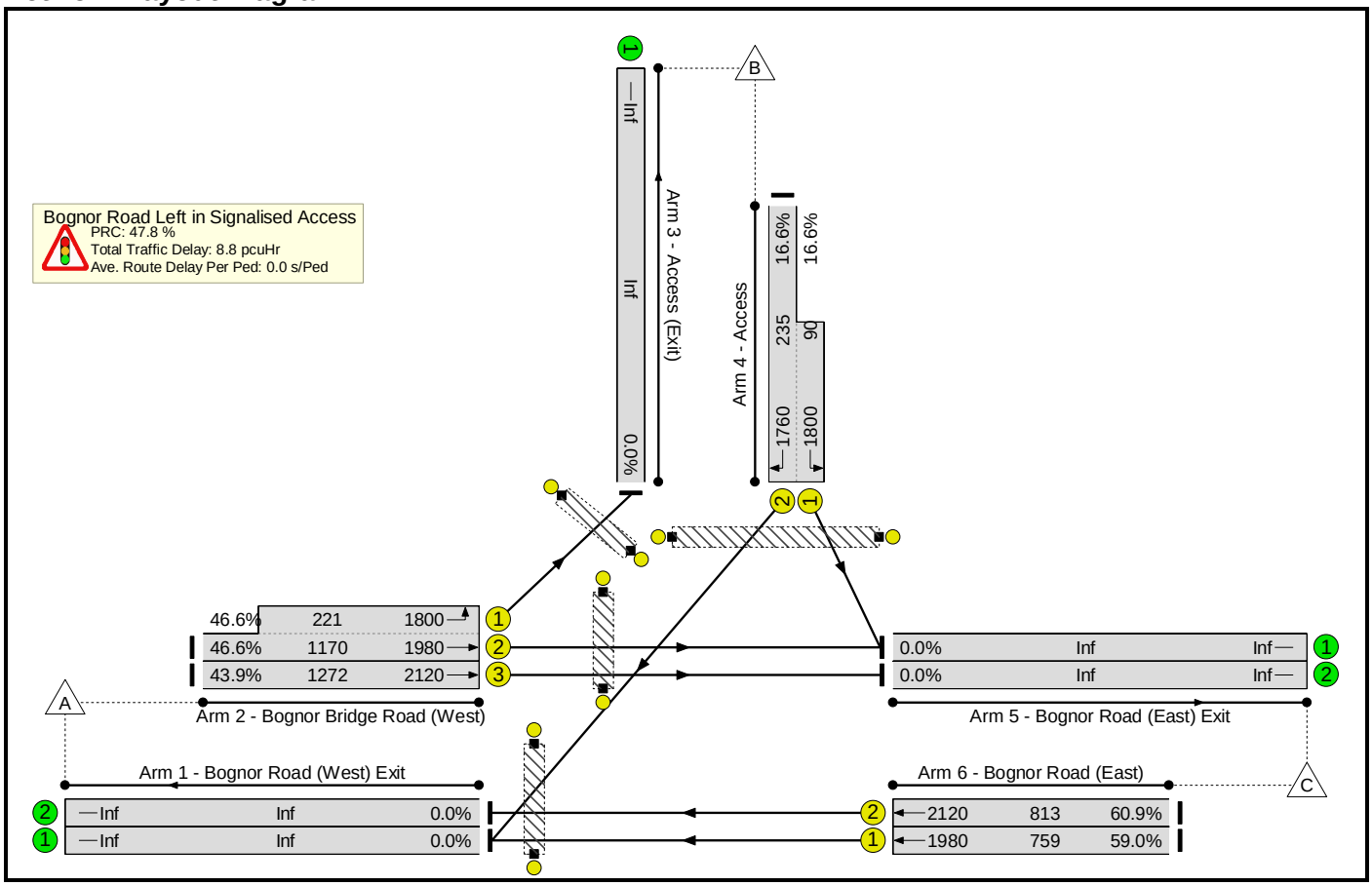
Basic Results Summary

User and Project Details

Project:	**Bognor Bridge Road, Chichester**
Title:	**Site Access LinSig**
File name:	Bognor Road_Left in Signalised Access.lsg3x
Company:	WSP

Scenario 1: '2031 Base + Development AM' (FG3: '2031 Base + Development AM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

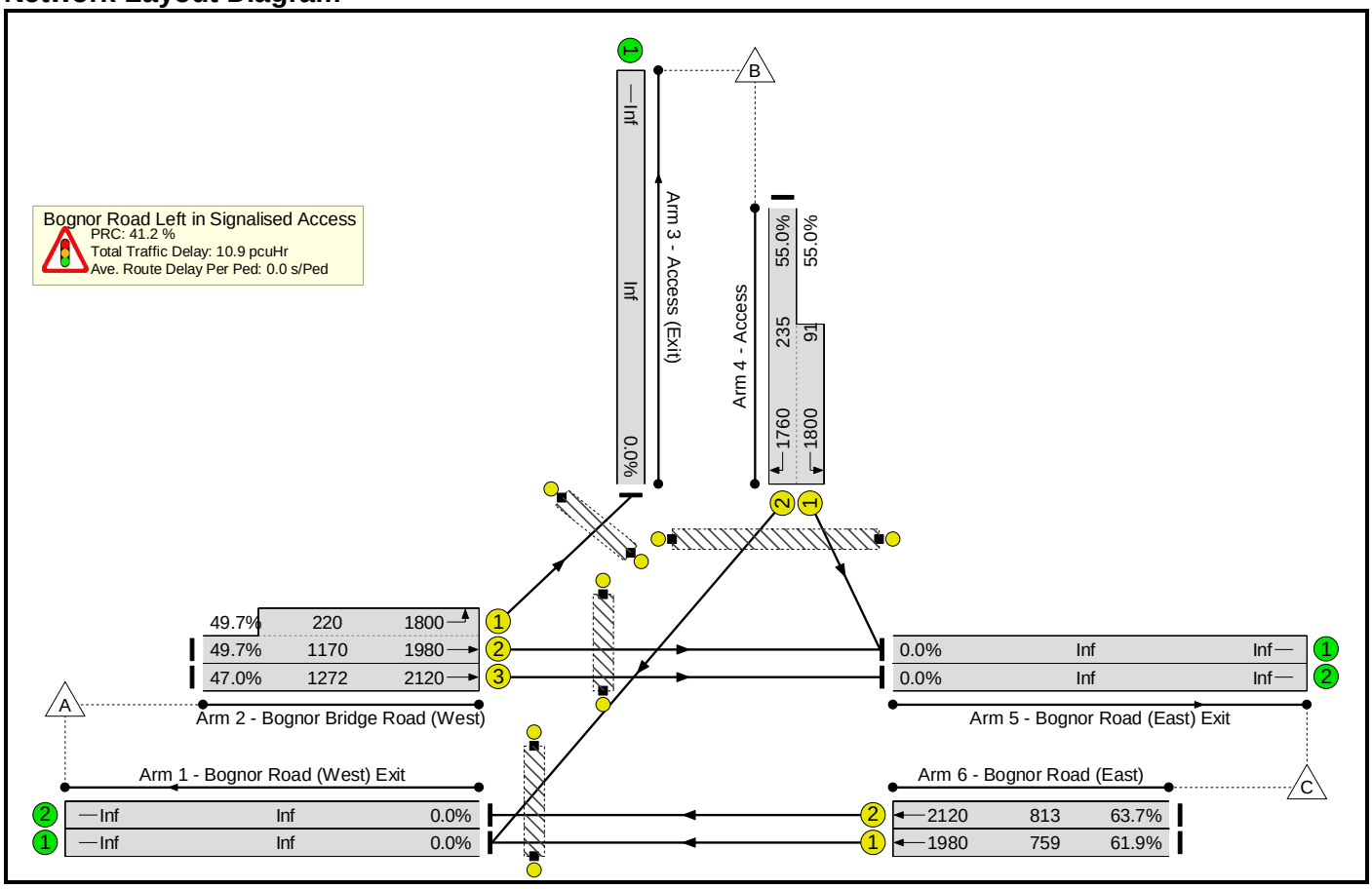
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Site Access LinSig	-	-	-		-	-	-	-	-	-	**60.9%**	**0**	**0**	**0**	**8.8**	-	-
Bognor Road Left in Signalised Access	-	-	-		-	-	-	-	-	-	**60.9%**	**0**	**0**	**0**	**8.8**	-	-
2/2+2/1	Bognor Bridge Road (West) Left Ahead	U	A D		1	35:37	-	648	1980:1800	1170+221	46.6 : 46.6%	-	-	-	1.6	8.7	5.4
2/3	Bognor Bridge Road (West) Ahead	U	A		1	35	-	559	2120	1272	43.9%	-	-	-	1.4	9.0	5.4
4/2+4/1	Access Right Left	U	C		1	7	-	54	1760:1800	235+90	16.6 : 16.6%	-	-	-	0.4	29.7	0.7
6/1	Bognor Road (East) Ahead	U	B		1	22	-	448	1980	759	59.0%	-	-	-	2.6	20.5	6.6
6/2	Bognor Road (East) Ahead	U	B		1	22	-	495	2120	813	60.9%	-	-	-	2.8	20.5	7.4
Ped Link: P1	Unnamed Ped Link	-	F		1	11	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	E		1	39	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	G		1	11	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	H		1	5	-	0	-	0	0.0%	-	-	-	-	-	-

C1 Stream: 1 PRC for Signalled Lanes (%): 47.8 Total Delay for Signalled Lanes (pcuHr): 8.79 Cycle Time (s): 60
PRC Over All Lanes (%): 47.8 Total Delay Over All Lanes(pcuHr): 8.79

Basic Results Summary

Scenario 2: '2031 Base + Development PM' (FG4: '2031 Base + Development PM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Site Access LinSig	-	-	-		-	-	-	-	-	-	**63.7%**	**0**	**0**	**0**	**10.9**	-	-
Bognor Road Left in Signalised Access	-	-	-		-	-	-	-	-	-	**63.7%**	**0**	**0**	**0**	**10.9**	-	-
2/2+2/1	Bognor Bridge Road (West) Left Ahead	U	A D		1	35:37	-	690	1980:1800	1170+220	49.7 : 49.7%	-	-	-	1.7	9.0	5.8
2/3	Bognor Bridge Road (West) Ahead	U	A		1	35	-	598	2120	1272	47.0%	-	-	-	1.6	9.4	5.9
4/2+4/1	Access Right Left	U	C		1	7	-	179	1760:1800	235+91	55.0 : 55.0%	-	-	-	1.8	36.2	2.6
6/1	Bognor Road (East) Ahead	U	B		1	22	-	470	1980	759	61.9%	-	-	-	2.8	21.2	7.1
6/2	Bognor Road (East) Ahead	U	B		1	22	-	518	2120	813	63.7%	-	-	-	3.0	21.2	7.8
Ped Link: P1	Unnamed Ped Link	-	F		1	11	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	E		1	39	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	G		1	11	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	H		1	5	-	0	-	0	0.0%	-	-	-	-	-	-

C1 Stream: 1 PRC for Signalled Lanes (%): 41.2 Total Delay for Signalled Lanes (pcuHr): 10.88 Cycle Time (s): 60
PRC Over All Lanes (%): 41.2 Total Delay Over All Lanes(pcuHr): 10.88

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: Bognor Roundabout.arc8
Path: S:\70003803 - Bognor Bridge Road, Chichester\D Design and Analysis\Development\ARCADY\Unequal Lane Usage (Entry Lane Analysis)
Report generation date: 11/11/2014 15:54:51

Summary of junction performance

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 [Entry Lane Simulation] - 2019 Baseline			
Arm 1	854.02	1358.23	N/A	F
Arm 2	0.91	3.82	N/A	A
Arm 3	0.00	0.00	N/A	A
Arm 4	345.67	733.98	N/A	F
Arm 5	2.14	12.99	N/A	B

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - 2019 Baseline, AM " model duration: 07:45 - 09:15
"D2 - 2019 Baseline, PM" model duration: 16:45 - 18:15
"D3 - 2019 Baseline + Development, AM" model duration: 07:45 - 09:15
"D4 - 2019 Baseline + Development, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 11/11/2014 15:54:51

File summary

Title	(untitled)
Location	
Site Number	
Date	21/10/2014
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UKRHM002
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	358562067	1231

(Default Analysis Set) - 2019 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Entry Lane Analysis	Arm 1 - Entry Lane Analysis	Arm 1: Queue at end of modelled period is greater than 10 PCU. Delay for these vehicles has NOT been included in calculations. You may want to increase the modelled period to take account of these vehicles.
Last Run	Entry Lane Analysis	Arm 4 - Entry Lane Analysis	Arm 4: Queue at end of modelled period is greater than 10 PCU. Delay for these vehicles has NOT been included in calculations. You may want to increase the modelled period to take account of these vehicles.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2019 Baseline, AM	2019 Baseline	AM		ONE HOUR	07:45	09:15	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	Bognor Bridge Road Roundabout	Roundabout	1,2,3,4,5			826.71	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A27 Southbound	
2	2	A259 Westbound	
3	3	Vinnetrow Road	
4	4	A27 Northbound	
5	5	A259 Eastbound	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00
4	0.00	99999.00
5	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	7.30	10.60	11.10	21.00	64.00	22.50	
2	9.20	10.10	1.80	11.00	64.00	28.50	
3	3.00	6.60	1.30	10.00	64.00	24.50	
4	7.50	10.80	9.20	22.00	64.00	23.50	
5	4.00	8.50	9.70	23.00	64.00	35.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.726	2801.558
2		(calculated)	(calculated)	0.708	2791.814
3		(calculated)	(calculated)	0.409	989.212
4		(calculated)	(calculated)	0.727	2811.969
5		(calculated)	(calculated)	0.538	1738.421

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

Entry Lane Analysis: Arm options

Arm	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00
3	Evenly split	10.00
4	Evenly split	10.00
5	Evenly split	10.00

Lanes

Arm	Lane Level	Lane	Has Limited Storage	Storage (PCU)
1	1	1	✓	3.00
1	1	2	✓	3.00
1	1	3	✓	3.00
1	2	1		Infinity
1	2	2		Infinity
2	1	1		Infinity
2	1	2		Infinity
3	1	1		Infinity
4	1	1	✓	3.00
4	1	2	✓	3.00
4	1	3	✓	3.00
4	2	1		Infinity
4	2	2		Infinity
5	1	1		Infinity
5	1	2		Infinity

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				1	2	3	4	5
1	1	1	1		✓			
1	1	1	2			✓	✓	
1	1	1	3	✓			✓	✓
1	1	2	1		✓	✓	✓	
1	1	2	2	✓			✓	✓
1	2	1	1	✓	✓	✓	✓	✓
1	2	1	2	✓	✓		✓	✓
1	3	1	1	✓	✓	✓	✓	✓
1	4	1	1					✓
1	4	1	2	✓				
1	4	1	3	✓	✓	✓	✓	
1	4	2	1	✓				✓
1	4	2	2	✓	✓	✓	✓	
1	5	1	1	✓	✓	✓	✓	
1	5	1	2	✓	✓		✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	2271.00	100.000
2	ONE HOUR	✓	732.00	100.000
3	ONE HOUR	✓	0.00	100.000
4	ONE HOUR	✓	1883.00	100.000
5	ONE HOUR	✓	537.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	6.000	107.000	28.000	1627.000	503.000
	2	13.000	0.000	0.000	324.000	395.000
	3	0.000	0.000	0.000	0.000	0.000
	4	1356.000	492.000	3.000	0.000	32.000
	5	6.000	314.000	32.000	185.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	0.00	0.05	0.01	0.72	0.22
	2	0.02	0.00	0.00	0.44	0.54
	3	0.20	0.20	0.20	0.20	0.20
	4	0.72	0.26	0.00	0.00	0.02
	5	0.01	0.58	0.06	0.34	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	1.056	1.056	1.056	1.056	1.056
	2	1.031	1.031	1.031	1.031	1.031
	3	1.000	1.000	1.000	1.000	1.000
	4	1.053	1.053	1.053	1.000	1.053
	5	1.012	1.012	1.012	1.012	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	5.6	5.6	5.6	5.6	5.6
	2	3.1	3.1	3.1	3.1	3.1
	3	0.0	0.0	0.0	0.0	0.0
	4	5.3	5.3	5.3	0.0	5.3
	5	1.2	1.2	1.2	1.2	0.0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS
1	1358.23	854.02	F
2	3.82	0.91	A
3	0.00	0.00	A
4	733.98	345.67	F
5	12.99	2.14	B

Main Results for each time segment

Main results: (07:45-08:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	1729.32	1568.93	766.10	45.35	60.658	F
2	547.12	546.78	1656.83	0.40	2.281	A
3	0.00	0.00	2156.24	0.00	0.000	A
4	1418.44	1413.90	650.83	9.08	18.548	C
5	405.66	403.17	1402.10	0.74	5.879	A

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	2046.15	1501.51	882.78	175.24	268.179	F
2	657.71	655.80	1625.27	0.55	2.937	A
3	0.00	0.00	2230.93	0.00	0.000	A
4	1692.49	1562.00	681.32	45.93	69.936	F
5	483.02	487.71	1553.32	1.23	8.987	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	2503.61	1475.80	959.95	431.01	752.829	F
2	807.27	807.56	1645.85	0.84	3.786	A
3	0.00	0.00	2396.44	0.00	0.000	A
4	2083.12	1552.05	750.98	180.58	271.852	F
5	588.00	586.63	1540.29	2.14	12.508	B

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	2510.54	1481.07	968.83	685.73	1307.299	F
2	806.29	804.68	1647.27	0.91	3.818	A
3	0.00	0.00	2395.37	0.00	0.000	A
4	2059.41	1545.27	750.20	315.45	586.671	F
5	589.61	590.54	1535.90	2.12	12.991	B

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	2041.56	1516.20	872.29	815.57	1358.226	F
2	646.20	644.83	1635.46	0.53	2.971	A
3	0.00	0.00	2229.12	0.00	0.000	A
4	1693.37	1592.83	668.73	345.67	733.977	F
5	480.34	482.88	1580.29	1.35	9.733	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	1712.15	1568.68	804.78	854.02	0.000	A
2	548.20	550.44	1658.34	0.39	2.480	A
3	0.00	0.00	2161.95	0.00	0.000	A
4	1413.32	1592.88	629.32	302.05	568.435	F
5	407.80	402.54	1579.02	1.04	8.113	A

Lane Results

Lanes: Main Results for each time segment

Main results: (07:45-08:00)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	75.80	75.80	748.57	0.101	0.05	2.340	A
1	1	2	740.10	741.07	748.57	0.989	2.89	12.569	B
1	1	3	753.02	753.12	748.57	1.006	2.95	13.009	B
1	2	1	1010.39	932.78			18.68	38.111	E
1	2	2	718.93	636.15			20.77	61.229	F
2	1	1	274.68	275.17	809.39	0.339	0.21	2.308	A
2	1	2	272.44	271.61	809.39	0.337	0.20	2.254	A
3	1	1	0.00	0.00	128.23	0.000	0.00	0.000	A
4	1	1	20.78	20.29	779.62	0.027	0.02	1.531	A
4	1	2	673.22	669.80	779.62	0.864	1.89	8.940	A
4	1	3	719.90	717.85	779.62	0.923	2.25	10.321	B
4	2	1	747.76	747.51			1.77	5.981	A
4	2	2	670.68	666.39			3.15	12.096	B
5	1	1	209.80	207.56	491.86	0.427	0.39	5.932	A
5	1	2	195.85	195.61	491.86	0.398	0.35	5.822	A

Main results: (08:00-08:15)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	76.73	77.85	720.35	0.107	0.06	2.804	A
1	1	2	712.05	711.46	720.35	0.988	2.98	14.669	B
1	1	3	712.73	712.63	720.35	0.989	3.00	14.901	B
1	2	1	1176.15	906.00			83.63	203.952	F
1	2	2	870.00	595.51			85.58	321.311	F
2	1	1	331.17	329.71	820.56	0.404	0.27	2.920	A
2	1	2	326.54	326.10	820.56	0.398	0.28	2.954	A
3	1	1	0.00	0.00	108.26	0.000	0.00	0.000	A
4	1	1	24.78	24.83	772.23	0.032	0.01	1.767	A
4	1	2	766.98	767.32	772.23	0.993	2.85	12.770	B
4	1	3	770.24	771.02	772.23	0.997	2.93	13.347	B
4	2	1	1010.93	944.78			18.51	42.593	E
4	2	2	681.56	617.22			21.63	76.827	F
5	1	1	245.46	247.56	451.17	0.544	0.65	9.153	A
5	1	2	237.56	240.15	451.17	0.527	0.58	8.813	A

Main results: (08:15-08:30)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	74.20	74.83	701.69	0.106	0.07	2.840	A
1	1	2	703.76	703.51	701.69	1.003	2.97	15.187	C
1	1	3	697.85	698.10	701.69	0.995	3.00	15.362	C
1	2	1	1398.78	886.68			211.62	601.763	F
1	2	2	1104.83	589.12			213.36	911.588	F
2	1	1	403.22	402.29	813.27	0.496	0.42	3.775	A
2	1	2	404.05	405.27	813.27	0.497	0.42	3.796	A
3	1	1	0.00	0.00	65.13	0.000	0.00	0.000	A
4	1	1	29.12	29.32	755.35	0.039	0.01	1.855	A
4	1	2	753.71	752.83	755.35	0.998	2.97	14.091	B
4	1	3	769.22	769.02	755.35	1.018	2.99	14.249	B
4	2	1	1205.95	940.54			85.96	202.762	F
4	2	2	877.17	611.51			88.65	334.764	F
5	1	1	301.32	299.27	454.67	0.663	1.10	12.666	B
5	1	2	286.68	287.37	454.67	0.631	1.04	12.345	B

Main results: (08:30-08:45)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	76.00	76.68	699.54	0.109	0.05	2.875	A
1	1	2	701.71	702.39	699.54	1.003	2.96	15.175	C
1	1	3	703.37	703.80	699.54	1.005	2.99	15.353	C
1	2	1	1403.41	887.12			339.03	1101.473	F
1	2	2	1107.12	593.95			340.70	1576.705	F
2	1	1	406.24	405.85	812.77	0.500	0.46	3.809	A
2	1	2	400.05	398.83	812.77	0.492	0.45	3.827	A
3	1	1	0.00	0.00	66.17	0.000	0.00	0.000	A
4	1	1	26.15	25.85	755.54	0.035	0.02	1.868	A
4	1	2	755.85	755.80	755.54	1.000	2.96	14.138	B
4	1	3	763.27	763.32	755.54	1.010	3.00	14.247	B
4	2	1	1192.44	941.07			153.42	459.141	F
4	2	2	866.98	604.20			156.05	730.938	F
5	1	1	298.78	298.54	455.85	0.655	1.10	13.138	B
5	1	2	290.83	292.00	455.85	0.638	1.02	12.840	B

Main results: (08:45-09:00)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	75.71	75.12	722.89	0.105	0.07	2.807	A
1	1	2	715.07	714.63	722.89	0.989	2.97	14.712	B
1	1	3	725.41	725.37	722.89	1.003	2.99	14.904	B
1	2	1	1165.76	904.24			403.82	1339.113	F
1	2	2	875.80	611.95			405.72	1634.302	F
2	1	1	326.49	324.39	816.95	0.400	0.29	2.972	A
2	1	2	319.71	320.44	816.95	0.391	0.25	2.971	A
3	1	1	0.00	0.00	108.96	0.000	0.00	0.000	A
4	1	1	26.54	27.07	775.28	0.034	0.01	1.713	A
4	1	2	782.29	781.85	775.28	1.009	2.97	13.802	B
4	1	3	784.00	784.20	775.28	1.011	2.99	13.933	B
4	2	1	1021.95	975.12			168.20	602.011	F
4	2	2	671.41	617.71			171.50	930.690	F
5	1	1	245.80	248.59	443.91	0.554	0.67	9.940	A
5	1	2	234.54	234.29	443.91	0.528	0.68	9.518	A

Main results: (09:00-09:15)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	77.27	76.98	739.22	0.105	0.07	2.532	A
1	1	2	751.85	751.61	739.22	1.017	2.97	14.354	B
1	1	3	739.56	739.51	739.22	1.000	2.99	14.413	B
1	2	1	1010.78	939.56			422.89	0.000	A
1	2	2	701.37	629.12			425.10	0.000	A
2	1	1	272.83	274.78	808.85	0.337	0.20	2.496	A
2	1	2	275.37	275.66	808.85	0.340	0.20	2.464	A
3	1	1	0.00	0.00	127.81	0.000	0.00	0.000	A
4	1	1	27.41	27.17	784.83	0.035	0.01	1.800	A
4	1	2	775.90	776.20	784.83	0.989	2.96	13.573	B
4	1	3	789.56	789.56	784.83	1.006	2.99	13.616	B
4	2	1	883.02	975.56			145.91	548.192	F
4	2	2	530.29	617.32			150.19	698.026	F
5	1	1	210.29	208.24	444.25	0.473	0.52	8.176	A
5	1	2	197.51	194.29	444.25	0.445	0.51	8.046	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

For sales and distribution information, program advice and maintenance, contact TRL:
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Filename: Bognor Roundabout.arc8
Path: S:\70003803 - Bognor Bridge Road, Chichester\D Design and Analysis\Development\ARCADY\Unequal Lane Usage (Entry Lane Analysis)
Report generation date: 11/11/2014 15:58:18

Summary of junction performance

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 [Entry Lane Simulation] - 2019 Baseline			
Arm 1	708.01	1461.07	N/A	F
Arm 2	1.01	4.32	N/A	A
Arm 3	0.00	0.00	N/A	A
Arm 4	233.48	449.33	N/A	F
Arm 5	3.33	20.48	N/A	C

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - 2019 Baseline, AM" model duration: 07:45 - 09:15
"D2 - 2019 Baseline, PM " model duration: 16:45 - 18:15
"D3 - 2019 Baseline + Development, AM" model duration: 07:45 - 09:15
"D4 - 2019 Baseline + Development, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 11/11/2014 15:58:17

File summary

Title	(untitled)
Location	
Site Number	
Date	21/10/2014
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UKRHM002
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	388904519	1602

(Default Analysis Set) - 2019 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Entry Lane Analysis	Arm 1 - Entry Lane Analysis	Arm 1: Queue at end of modelled period is greater than 10 PCU. Delay for these vehicles has NOT been included in calculations. You may want to increase the modelled period to take account of these vehicles.
Last Run	Entry Lane Analysis	Arm 4 - Entry Lane Analysis	Arm 4: Queue at end of modelled period is greater than 10 PCU. Delay for these vehicles has NOT been included in calculations. You may want to increase the modelled period to take account of these vehicles.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2019 Baseline, PM	2019 Baseline	PM		ONE HOUR	16:45	18:15	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	Bognor Bridge Road Roundabout	Roundabout	1,2,3,4,5			722.56	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A27 Southbound	
2	2	A259 Westbound	
3	3	Vinnetrow Road	
4	4	A27 Northbound	
5	5	A259 Eastbound	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00
4	0.00	99999.00
5	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	7.30	10.60	11.10	21.00	64.00	22.50	
2	9.20	10.10	1.80	11.00	64.00	28.50	
3	3.00	6.60	1.30	10.00	64.00	24.50	
4	7.50	10.80	9.20	22.00	64.00	23.50	
5	4.00	8.50	9.70	23.00	64.00	35.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.726	2801.558
2		(calculated)	(calculated)	0.708	2791.814
3		(calculated)	(calculated)	0.409	989.212
4		(calculated)	(calculated)	0.727	2811.969
5		(calculated)	(calculated)	0.538	1738.421

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

Entry Lane Analysis: Arm options

Arm	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00
3	Evenly split	10.00
4	Evenly split	10.00
5	Evenly split	10.00

Lanes

Arm	Lane Level	Lane	Has Limited Storage	Storage (PCU)
1	1	1	✓	3.00
1	1	2	✓	3.00
1	1	3	✓	3.00
1	2	1		Infinity
1	2	2		Infinity
2	1	1		Infinity
2	1	2		Infinity
3	1	1		Infinity
4	1	1	✓	3.00
4	1	2	✓	3.00
4	1	3	✓	3.00
4	2	1		Infinity
4	2	2		Infinity
5	1	1		Infinity
5	1	2		Infinity

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				1	2	3	4	5
1	1	1	1		✓			
1	1	1	2			✓	✓	
1	1	1	3	✓			✓	✓
1	1	2	1		✓	✓	✓	
1	1	2	2	✓			✓	✓
1	2	1	1	✓	✓	✓	✓	✓
1	2	1	2	✓	✓		✓	✓
1	3	1	1	✓	✓	✓	✓	✓
1	4	1	1					✓
1	4	1	2	✓				
1	4	1	3	✓	✓	✓	✓	
1	4	2	1	✓				✓
1	4	2	2	✓	✓	✓	✓	
1	5	1	1	✓	✓	✓	✓	
1	5	1	2	✓	✓		✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	1949.00	100.000
2	ONE HOUR	✓	755.00	100.000
3	ONE HOUR	✓	0.00	100.000
4	ONE HOUR	✓	1891.00	100.000
5	ONE HOUR	✓	533.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	7.000	10.000	187.000	1603.000	142.000
	2	16.000	0.000	0.000	513.000	226.000
	3	0.000	0.000	0.000	0.000	0.000
	4	1010.000	680.000	182.000	0.000	19.000
	5	11.000	275.000	152.000	95.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	0.00	0.01	0.10	0.82	0.07
	2	0.02	0.00	0.00	0.68	0.30
	3	0.20	0.20	0.20	0.20	0.20
	4	0.53	0.36	0.10	0.00	0.01
	5	0.02	0.52	0.29	0.18	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	1.056	1.056	1.056	1.056	1.056
	2	1.031	1.000	1.000	1.031	1.031
	3	1.000	1.000	1.000	1.000	1.000
	4	1.053	1.053	1.053	1.000	1.053
	5	1.012	1.012	1.012	1.012	1.012

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	5.6	5.6	5.6	5.6	5.6
	2	3.1	0.0	0.0	3.1	3.1
	3	0.0	0.0	0.0	0.0	0.0
	4	5.3	5.3	5.3	0.0	5.3
	5	1.2	1.2	1.2	1.2	1.2

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS
1	1461.07	708.01	F
2	4.32	1.01	A
3	0.00	0.00	A
4	449.33	233.48	F
5	20.48	3.33	C

Main Results for each time segment

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	1446.63	1346.48	1043.90	33.37	52.183	F
2	564.46	566.93	1667.30	0.39	2.420	A
3	0.00	0.00	1846.29	0.00	0.000	A
4	1424.87	1424.16	286.63	7.60	16.727	C
5	403.78	403.45	1423.48	0.83	6.584	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	1745.66	1313.15	1169.06	140.89	240.505	F
2	677.34	679.44	1682.73	0.61	3.207	A
3	0.00	0.00	1946.10	0.00	0.000	A
4	1707.64	1602.85	314.87	34.09	54.980	F
5	487.75	487.83	1602.88	1.55	10.916	B

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	2132.25	1303.15	1184.76	352.00	684.384	F
2	839.70	848.20	1700.52	1.01	4.250	A
3	0.00	0.00	2124.91	0.00	0.000	A
4	2091.46	1698.35	376.52	130.73	215.131	F
5	588.65	588.24	1697.94	3.25	18.941	C

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	2145.87	1316.06	1170.73	561.73	1248.727	F
2	834.00	827.82	1700.95	1.01	4.318	A
3	0.00	0.00	2117.61	0.00	0.000	A
4	2110.01	1702.26	372.78	226.31	449.330	F
5	587.41	584.15	1704.10	3.33	20.480	C

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	1760.42	1298.49	1161.25	669.34	1461.068	F
2	675.70	676.75	1660.10	0.64	3.227	A
3	0.00	0.00	1929.07	0.00	0.000	A
4	1685.62	1619.55	319.15	233.48	431.720	F
5	481.87	487.12	1623.00	1.58	13.242	B

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	1479.16	1308.23	1164.47	708.01	0.000	A
2	559.23	557.24	1652.75	0.44	2.549	A
3	0.00	0.00	1810.31	0.00	0.000	A
4	1429.32	1545.05	280.36	201.23	30.384	D
5	403.62	403.77	1548.68	0.95	8.375	A

Lane Results

Lanes: Main Results for each time segment

Main results: (16:45-17:00)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	6.29	6.14	681.39	0.009	0.00	1.891	A
1	1	2	671.12	670.52	681.39	0.985	2.87	13.652	B
1	1	3	669.06	669.06	681.39	0.982	2.87	13.540	B
1	2	1	715.17	667.72			13.84	39.047	E
1	2	2	731.46	678.76			13.78	37.909	E
2	1	1	282.58	284.27	805.68	0.351	0.18	2.439	A
2	1	2	281.87	282.66	805.68	0.350	0.21	2.402	A
3	1	1	0.00	0.00	236.84	0.000	0.00	0.000	A
4	1	1	14.12	13.78	867.87	0.016	0.01	1.191	A
4	1	2	604.34	601.57	867.87	0.696	1.00	5.547	A
4	1	3	805.69	805.69	867.87	0.928	2.25	9.449	A
4	2	1	655.69	655.09			0.24	1.193	A
4	2	2	769.18	769.06			4.11	15.186	C
5	1	1	232.85	234.04	486.11	0.479	0.50	7.178	A
5	1	2	170.94	169.40	486.11	0.352	0.33	5.771	A

Main results: (17:00-17:15)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	6.59	6.40	651.11	0.010	0.01	2.087	A
1	1	2	650.97	651.27	651.11	1.000	2.98	16.286	C
1	1	3	655.58	655.51	651.11	1.007	2.98	16.269	C
1	2	1	861.61	645.88			67.55	227.166	F
1	2	2	884.04	667.27			67.37	221.236	F
2	1	1	339.14	340.82	800.22	0.424	0.31	3.212	A
2	1	2	338.20	338.61	800.22	0.423	0.30	3.202	A
3	1	1	0.00	0.00	199.11	0.000	0.00	0.000	A
4	1	1	17.12	16.63	861.03	0.020	0.01	1.293	A
4	1	2	732.92	730.97	861.03	0.851	1.81	8.267	A
4	1	3	852.81	853.26	861.03	0.990	2.90	11.845	B
4	2	1	904.87	894.57			1.69	5.599	A
4	2	2	802.77	708.28			27.67	86.599	F
5	1	1	273.48	275.28	437.83	0.625	0.94	12.010	B
5	1	2	214.27	212.55	437.83	0.489	0.61	9.521	A

Main results: (17:15-17:30)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	6.07	6.14	647.32	0.009	0.00	2.433	A
1	1	2	650.19	650.30	647.32	1.004	2.98	16.596	C
1	1	3	646.89	646.85	647.32	0.999	2.99	16.586	C
1	2	1	1055.92	641.72			173.05	676.208	F
1	2	2	1076.33	661.42			172.97	659.799	F
2	1	1	418.69	423.11	793.92	0.527	0.52	4.268	A
2	1	2	421.01	425.09	793.92	0.530	0.49	4.232	A
3	1	1	0.00	0.00	137.08	0.000	0.00	0.000	A
4	1	1	19.96	19.74	846.09	0.024	0.01	1.306	A
4	1	2	832.36	830.86	846.09	0.984	2.73	11.300	B
4	1	3	846.03	846.14	846.09	1.000	2.99	12.599	B
4	2	1	1128.99	1088.73			15.39	33.405	D
4	2	2	962.47	609.63			109.62	404.606	F
5	1	1	319.59	316.55	412.24	0.775	1.94	20.670	C
5	1	2	269.06	271.69	412.24	0.653	1.32	16.907	C

Main results: (17:30-17:45)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	7.57	7.61	650.71	0.012	0.00	2.171	A
1	1	2	654.23	654.75	650.71	1.005	2.98	16.517	C
1	1	3	654.27	654.60	650.71	1.005	2.98	16.503	C
1	2	1	1059.80	646.96			277.92	1248.616	F
1	2	2	1086.07	669.11			277.85	1217.671	F
2	1	1	416.44	413.18	793.77	0.525	0.50	4.333	A
2	1	2	417.56	414.64	793.77	0.526	0.51	4.304	A
3	1	1	0.00	0.00	140.09	0.000	0.00	0.000	A
4	1	1	20.72	20.84	846.99	0.024	0.01	1.379	A
4	1	2	836.81	836.59	846.99	0.988	2.83	12.030	B
4	1	3	844.72	844.91	846.99	0.997	2.99	12.664	B
4	2	1	1144.38	1105.97			23.70	65.671	F
4	2	2	965.62	596.29			196.78	880.054	F
5	1	1	318.96	316.83	410.59	0.777	1.96	22.362	C
5	1	2	268.44	267.32	410.59	0.654	1.38	18.276	C

Main results: (17:45-18:00)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	6.26	6.45	653.00	0.010	0.00	2.291	A
1	1	2	646.81	647.30	653.00	0.991	2.98	16.318	C
1	1	3	645.42	646.10	653.00	0.988	2.98	16.272	C
1	2	1	869.01	637.81			331.79	1461.338	F
1	2	2	891.42	660.67			331.59	1441.931	F
2	1	1	337.78	339.28	808.23	0.418	0.32	3.236	A
2	1	2	337.93	337.48	808.23	0.418	0.32	3.219	A
3	1	1	0.00	0.00	205.93	0.000	0.00	0.000	A
4	1	1	16.49	16.53	859.99	0.019	0.01	1.307	A
4	1	2	752.12	755.08	859.99	0.875	1.95	10.235	B
4	1	3	850.94	850.76	859.99	0.989	2.97	12.409	B
4	2	1	910.01	935.72			4.02	35.635	E
4	2	2	775.62	683.84			224.53	1008.799	F
5	1	1	268.63	272.15	432.41	0.621	0.99	14.543	B
5	1	2	213.24	214.97	432.41	0.493	0.59	11.619	B

Main results: (18:00-18:15)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	6.18	6.22	652.23	0.009	0.01	2.311	A
1	1	2	643.44	643.55	652.23	0.987	2.98	16.311	C
1	1	3	658.61	659.10	652.23	1.010	2.98	16.240	C
1	2	1	728.81	643.17			351.09	0.000	A
1	2	2	750.36	665.06			350.95	0.000	A
2	1	1	278.30	276.69	810.83	0.343	0.22	2.552	A
2	1	2	280.92	280.55	810.83	0.346	0.22	2.547	A
3	1	1	0.00	0.00	250.33	0.000	0.00	0.000	A
4	1	1	13.79	13.68	869.39	0.016	0.00	1.131	A
4	1	2	660.56	662.10	869.39	0.760	1.26	7.027	A
4	1	3	870.69	871.33	869.39	1.002	2.95	12.178	B
4	2	1	777.11	776.25			0.56	3.996	A
4	2	2	652.20	768.79			196.45	676.005	F
5	1	1	227.37	228.46	452.41	0.503	0.59	9.183	A
5	1	2	176.25	175.32	452.41	0.390	0.35	7.303	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: Bognor Roundabout - Mitigation - 36.3m Flare.arc8
Path: S:\70003803 - Bognor Bridge Road, Chichester\D Design and Analysis\Development\ARCADY\Unequal Lane Usage (Entry Lane Analysis)
Report generation date: 11/11/2014 15:46:58

Summary of junction performance

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 [Entry Lane Simulation] - 2019 Baseline + Development			
Arm 1	362.11	639.59	N/A	F
Arm 2	2.08	8.58	N/A	A
Arm 3	0.00	0.00	N/A	A
Arm 4	425.71	882.91	N/A	F
Arm 5	2.26	12.52	N/A	B

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - 2019 Baseline, AM" model duration: 07:45 - 09:15
"D2 - 2019 Baseline, PM" model duration: 16:45 - 18:15
"D3 - 2019 Baseline + Development, AM " model duration: 07:45 - 09:15
"D4 - 2019 Baseline + Development, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 11/11/2014 15:46:58

File summary

Title	(untitled)
Location	
Site Number	
Date	21/10/2014
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UKRHM002
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	28842073	1423

(Default Analysis Set) - 2019 Baseline + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Entry Lane Analysis	Arm 1 - Entry Lane Analysis	Arm 1: Queue at end of modelled period is greater than 10 PCU. Delay for these vehicles has NOT been included in calculations. You may want to increase the modelled period to take account of these vehicles.
Last Run	Entry Lane Analysis	Arm 4 - Entry Lane Analysis	Arm 4: Queue at end of modelled period is greater than 10 PCU. Delay for these vehicles has NOT been included in calculations. You may want to increase the modelled period to take account of these vehicles.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2019 Baseline + Development, AM	2019 Baseline + Development	AM		ONE HOUR	07:45	09:15	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	Bognor Bridge Road Roundabout	Roundabout	1,2,3,4,5			570.62	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A27 Southbound	
2	2	A259 Westbound	
3	3	Vinnetrow Road	
4	4	A27 Northbound	
5	5	A259 Eastbound	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00
4	0.00	99999.00
5	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	8.00	14.10	36.30	9.50	64.00	21.50	
2	9.20	10.10	1.80	11.00	64.00	28.50	
3	3.00	6.60	1.30	10.00	64.00	24.50	
4	7.50	10.80	9.20	22.00	64.00	23.50	
5	4.00	8.50	9.70	23.00	64.00	35.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.835	3536.932
2		(calculated)	(calculated)	0.708	2791.814
3		(calculated)	(calculated)	0.409	989.212
4		(calculated)	(calculated)	0.727	2811.969
5		(calculated)	(calculated)	0.538	1738.421

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

Entry Lane Analysis: Arm options

Arm	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00
3	Evenly split	10.00
4	Evenly split	10.00
5	Evenly split	10.00

Lanes

Arm	Lane Level	Lane	Has Limited Storage	Storage (PCU)
1	1	1	✓	6.00
1	1	2	✓	6.00
1	1	3	✓	6.00
1	2	1		Infinity
1	2	2		Infinity
2	1	1		Infinity
2	1	2		Infinity
3	1	1		Infinity
4	1	1	✓	3.00
4	1	2	✓	3.00
4	1	3	✓	3.00
4	2	1		Infinity
4	2	2		Infinity
5	1	1		Infinity
5	1	2		Infinity

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				1	2	3	4	5
1	1	1	1		✓			
1	1	1	2			✓	✓	
1	1	1	3	✓			✓	✓
1	1	2	1		✓	✓	✓	
1	1	2	2	✓			✓	✓
1	2	1	1	✓	✓	✓	✓	✓
1	2	1	2	✓	✓		✓	✓
1	3	1	1	✓	✓	✓	✓	✓
1	4	1	1					✓
1	4	1	2	✓				
1	4	1	3	✓	✓	✓	✓	
1	4	2	1	✓				✓
1	4	2	2	✓	✓	✓	✓	
1	5	1	1	✓	✓	✓	✓	
1	5	1	2	✓	✓		✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	2275.00	100.000
2	ONE HOUR	✓	781.00	100.000
3	ONE HOUR	✓	0.00	100.000
4	ONE HOUR	✓	1895.00	100.000
5	ONE HOUR	✓	557.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	6.000	111.000	28.000	1627.000	503.000
	2	16.000	17.000	2.000	334.000	412.000
	3	0.000	0.000	0.000	0.000	0.000
	4	1356.000	504.000	3.000	0.000	32.000
	5	6.000	334.000	32.000	185.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	0.00	0.05	0.01	0.72	0.22
	2	0.02	0.02	0.00	0.43	0.53
	3	0.20	0.20	0.20	0.20	0.20
	4	0.72	0.27	0.00	0.00	0.02
	5	0.01	0.60	0.06	0.33	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	1.056	1.056	1.056	1.056	1.056
	2	1.029	1.029	1.029	1.029	1.029
	3	1.000	1.000	1.000	1.000	1.000
	4	1.053	1.053	1.053	1.000	1.053
	5	1.011	1.011	1.011	1.011	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	5.6	5.6	5.6	5.6	5.6
	2	2.9	2.9	2.9	2.9	2.9
	3	0.0	0.0	0.0	0.0	0.0
	4	5.3	5.3	5.3	0.0	5.3
	5	1.1	1.1	1.1	1.1	0.0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS
1	639.59	362.11	F
2	8.58	2.08	A
3	0.00	0.00	A
4	882.91	425.71	F
5	12.52	2.26	B

Main Results for each time segment

Main results: (07:45-08:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	1712.11	1714.60	810.55	6.43	11.840	B
2	590.34	592.19	1796.29	0.53	2.972	A
3	0.00	0.00	2340.63	0.00	0.000	A
4	1426.29	1432.41	718.31	10.90	21.593	C
5	417.55	414.98	1444.26	0.79	6.117	A

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	2044.73	1944.01	894.56	39.22	47.752	E
2	695.86	695.32	2042.11	1.10	5.375	A
3	0.00	0.00	2681.43	0.00	0.000	A
4	1691.14	1492.03	826.12	64.13	94.812	F
5	494.73	500.21	1504.98	1.33	9.146	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	2496.08	1912.66	995.70	189.82	219.529	F
2	857.22	855.57	2065.44	2.07	8.427	A
3	0.00	0.00	2856.08	0.00	0.000	A
4	2101.86	1471.18	892.36	218.90	355.370	F
5	625.02	622.74	1486.92	2.26	12.501	B

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	2503.67	1892.19	985.02	339.56	501.085	F
2	857.68	861.77	2040.13	2.08	8.577	A
3	0.00	0.00	2842.70	0.00	0.000	A
4	2094.89	1474.60	896.03	374.23	734.184	F
5	617.85	615.53	1488.44	2.13	12.521	B

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	2034.26	1952.41	879.07	362.11	639.586	F
2	704.81	704.26	2053.59	1.19	6.020	A
3	0.00	0.00	2701.01	0.00	0.000	A
4	1714.09	1501.10	833.25	425.71	882.908	F
5	505.91	499.54	1505.95	1.37	9.548	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	1722.41	2003.33	821.98	289.82	523.631	F
2	582.70	584.89	2069.07	0.73	4.807	A
3	0.00	0.00	2602.49	0.00	0.000	A
4	1423.04	1526.75	787.26	401.64	688.267	F
5	414.64	418.61	1532.03	0.88	7.608	A

Lane Results

Lanes: Main Results for each time segment

Main results: (07:45-08:00)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	80.21	80.00	953.48	0.084	0.04	1.186	A
1	1	2	790.08	789.41	953.48	0.829	2.27	9.527	A
1	1	3	844.30	841.69	953.48	0.885	2.85	11.108	B
1	2	1	830.89	831.94			0.48	1.438	A
1	2	2	881.22	882.66			0.79	2.343	A
2	1	1	296.79	297.38	760.02	0.391	0.26	2.959	A
2	1	2	293.54	294.81	760.02	0.386	0.27	2.985	A
3	1	1	0.00	0.00	77.65	0.000	0.00	0.000	A
4	1	1	23.92	23.84	763.27	0.031	0.02	1.762	A
4	1	2	681.73	684.60	763.27	0.893	1.98	9.497	A
4	1	3	726.75	730.84	763.27	0.952	2.35	10.841	B
4	2	1	770.93	773.16			2.41	7.724	A
4	2	2	655.36	659.24			4.14	15.497	C
5	1	1	214.43	212.70	480.52	0.446	0.41	6.246	A
5	1	2	203.12	202.28	480.52	0.423	0.38	5.981	A

Main results: (08:00-08:15)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	95.78	94.89	930.11	0.103	0.06	1.506	A
1	1	2	921.05	919.07	930.11	0.990	5.36	18.964	C
1	1	3	927.17	925.53	930.11	0.997	5.55	19.806	C
1	2	1	1134.51	1082.78			13.42	24.421	C
1	2	2	910.21	861.22			14.83	34.415	D
2	1	1	349.37	349.49	673.00	0.519	0.54	5.366	A
2	1	2	346.50	345.82	673.00	0.515	0.56	5.385	A
3	1	1	0.00	0.00	23.86	0.000	0.00	0.000	A
4	1	1	24.01	23.76	737.15	0.033	0.01	1.864	A
4	1	2	735.15	735.49	737.15	0.997	2.94	13.769	B
4	1	3	732.87	732.95	737.15	0.994	2.99	14.164	B
4	2	1	1013.12	921.05			27.45	60.498	F
4	2	2	678.02	570.97			30.74	110.047	F
5	1	1	251.65	253.50	464.18	0.542	0.69	9.263	A
5	1	2	243.08	246.71	464.18	0.524	0.64	9.023	A

Main results: (08:15-08:30)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	95.27	95.32	901.97	0.106	0.05	1.796	A
1	1	2	912.83	912.36	901.97	1.012	5.97	23.519	C
1	1	3	904.56	904.85	901.97	1.003	5.99	23.840	C
1	2	1	1406.20	1111.35			88.10	166.683	F
1	2	2	1089.87	801.31			89.71	235.054	F
2	1	1	430.42	429.28	664.74	0.648	1.05	8.457	A
2	1	2	426.79	426.29	664.74	0.642	1.02	8.397	A
3	1	1	0.00	0.00	10.82	0.000	0.00	0.000	A
4	1	1	26.20	26.37	721.09	0.036	0.02	2.065	A
4	1	2	726.96	726.46	721.09	1.008	2.97	14.803	B
4	1	3	718.02	718.14	721.09	0.996	2.99	14.907	B
4	2	1	1217.00	903.25			105.14	267.027	F
4	2	2	884.85	567.93			107.78	442.672	F
5	1	1	318.06	315.65	469.04	0.678	1.17	12.669	B
5	1	2	306.96	307.09	469.04	0.654	1.10	12.328	B

Main results: (08:30-08:45)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	91.05	91.35	904.94	0.101	0.04	1.765	A
1	1	2	897.72	898.02	904.94	0.992	5.96	23.740	C
1	1	3	903.42	903.42	904.94	0.998	5.99	23.819	C
1	2	1	1395.32	1092.87			162.96	409.705	F
1	2	2	1108.35	799.32			164.60	566.181	F
2	1	1	430.34	431.35	673.70	0.639	1.04	8.617	A
2	1	2	427.34	430.42	673.70	0.634	1.04	8.538	A
3	1	1	0.00	0.00	11.94	0.000	0.00	0.000	A
4	1	1	26.16	25.78	720.21	0.036	0.02	2.076	A
4	1	2	729.75	729.37	720.21	1.013	2.97	14.780	B
4	1	3	718.69	718.57	720.21	0.998	2.99	14.998	B
4	2	1	1215.15	906.03			182.80	574.090	F
4	2	2	879.75	568.57			185.45	920.696	F
5	1	1	315.65	314.30	468.63	0.674	1.09	12.693	B
5	1	2	302.19	301.22	468.63	0.645	1.04	12.344	B

Main results: (08:45-09:00)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	95.23	93.76	934.42	0.102	0.06	1.656	A
1	1	2	921.18	920.72	934.42	0.986	5.97	23.085	C
1	1	3	935.99	936.20	934.42	1.002	5.99	23.201	C
1	2	1	1164.60	1123.84			174.09	535.406	F
1	2	2	869.66	828.57			176.00	731.790	F
2	1	1	349.62	350.30	668.94	0.523	0.59	6.017	A
2	1	2	355.19	353.97	668.94	0.531	0.60	6.022	A
3	1	1	0.00	0.00	23.95	0.000	0.00	0.000	A
4	1	1	28.14	28.65	735.42	0.038	0.01	1.979	A
4	1	2	738.48	737.81	735.42	1.004	2.96	14.420	B
4	1	3	734.47	734.60	735.42	0.999	2.99	14.594	B
4	2	1	1024.05	919.75			208.26	756.914	F
4	2	2	690.04	581.35			211.48	1140.370	F
5	1	1	255.36	250.59	463.91	0.550	0.74	9.706	A
5	1	2	250.55	248.95	463.91	0.540	0.64	9.384	A

Main results: (09:00-09:15)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	98.31	97.72	950.30	0.103	0.05	1.552	A
1	1	2	946.75	946.67	950.30	0.996	5.97	22.437	C
1	1	3	958.27	958.27	950.30	1.008	5.99	22.483	C
1	2	1	1026.37	1164.39			137.78	475.476	F
1	2	2	696.03	838.95			140.04	598.813	F
2	1	1	292.28	292.53	663.46	0.441	0.39	4.800	A
2	1	2	290.42	292.36	663.46	0.438	0.35	4.815	A
3	1	1	0.00	0.00	31.81	0.000	0.00	0.000	A
4	1	1	23.16	23.04	746.56	0.031	0.01	1.917	A
4	1	2	747.47	747.13	746.56	1.001	2.96	14.183	B
4	1	3	756.12	756.08	746.56	1.013	2.99	14.281	B
4	2	1	883.88	936.03			195.79	679.260	F
4	2	2	539.16	590.72			199.89	787.617	F
5	1	1	214.26	217.13	456.90	0.469	0.44	7.715	A
5	1	2	200.38	201.48	456.90	0.439	0.44	7.496	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

For sales and distribution information, program advice and maintenance, contact TRL:
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Filename: Bognor Roundabout - Mitigation - 36.3m Flare.arc8
Path: S:\70003803 - Bognor Bridge Road, Chichester\D Design and Analysis\Development\ARCADY\Unequal Lane Usage (Entry Lane Analysis)
Report generation date: 11/11/2014 15:50:26

Summary of junction performance

There are warnings associated with this model run - see the 'Data Errors and Warnings' tables.

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 [Entry Lane Simulation] - 2019 Baseline + Development			
Arm 1	270.55	558.64	N/A	F
Arm 2	3.18	11.42	N/A	B
Arm 3	0.00	0.00	N/A	A
Arm 4	292.09	573.79	N/A	F
Arm 5	4.29	23.50	N/A	C

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - 2019 Baseline, AM" model duration: 07:45 - 09:15
"D2 - 2019 Baseline, PM" model duration: 16:45 - 18:15
"D3 - 2019 Baseline + Development, AM" model duration: 07:45 - 09:15
"D4 - 2019 Baseline + Development, PM " model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 11/11/2014 15:50:25

File summary

Title	(untitled)
Location	
Site Number	
Date	21/10/2014
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UKRHM002
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Entry Lane Analysis Options

Stop Criteria (%)	Random Seed	Results Refresh Speed (s)	Individual Vehicle Animation Number Of Trials	Time Step Size (s)	Last Run Random Seed	Last Run Number Of Trials
1.00	-1	3	1	10	2067270954	1464

(Default Analysis Set) - 2019 Baseline + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Entry Lane Analysis	A1 [Entry Lane Simulation]	This analysis set uses entry lane simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Entry Lane Analysis	Arm 1 - Entry Lane Analysis	Arm 1: Queue at end of modelled period is greater than 10 PCU. Delay for these vehicles has NOT been included in calculations. You may want to increase the modelled period to take account of these vehicles.
Last Run	Entry Lane Analysis	Arm 4 - Entry Lane Analysis	Arm 4: Queue at end of modelled period is greater than 10 PCU. Delay for these vehicles has NOT been included in calculations. You may want to increase the modelled period to take account of these vehicles.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	Entry Lane Simulation			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2019 Baseline + Development, PM	2019 Baseline + Development	PM		ONE HOUR	16:45	18:15	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
1	Bognor Bridge Road Roundabout	Roundabout	1,2,3,4,5			417.34	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	A27 Southbound	
2	2	A259 Westbound	
3	3	Vinnetrow Road	
4	4	A27 Northbound	
5	5	A259 Eastbound	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00
4	0.00	99999.00
5	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	8.00	14.10	36.30	9.50	64.00	21.50	
2	9.20	10.10	1.80	11.00	64.00	28.50	
3	3.00	6.60	1.30	10.00	64.00	24.50	
4	7.50	10.80	9.20	22.00	64.00	23.50	
5	4.00	8.50	9.70	23.00	64.00	35.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.835	3536.932
2		(calculated)	(calculated)	0.708	2791.814
3		(calculated)	(calculated)	0.409	989.212
4		(calculated)	(calculated)	0.727	2811.969
5		(calculated)	(calculated)	0.538	1738.421

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

Entry Lane Analysis: Arm options

Arm	Lane Capacity Source	Traffic Considering Secondary Lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00
3	Evenly split	10.00
4	Evenly split	10.00
5	Evenly split	10.00

Lanes

Arm	Lane Level	Lane	Has Limited Storage	Storage (PCU)
1	1	1	✓	6.00
1	1	2	✓	6.00
1	1	3	✓	6.00
1	2	1		Infinity
1	2	2		Infinity
2	1	1		Infinity
2	1	2		Infinity
3	1	1		Infinity
4	1	1	✓	3.00
4	1	2	✓	3.00
4	1	3	✓	3.00
4	2	1		Infinity
4	2	2		Infinity
5	1	1		Infinity
5	1	2		Infinity

Lane Movements

Junction	Arm	Lane Level	Lane	Arm				
				1	2	3	4	5
1	1	1	1		✓			
1	1	1	2			✓	✓	
1	1	1	3	✓			✓	✓
1	1	2	1		✓	✓	✓	
1	1	2	2	✓			✓	✓
1	2	1	1	✓	✓	✓	✓	✓
1	2	1	2	✓	✓		✓	✓
1	3	1	1	✓	✓	✓	✓	✓
1	4	1	1					✓
1	4	1	2	✓				
1	4	1	3	✓	✓	✓	✓	
1	4	2	1	✓				✓
1	4	2	2	✓	✓	✓	✓	
1	5	1	1	✓	✓	✓	✓	
1	5	1	2	✓	✓		✓	✓

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	1957.00	100.000
2	ONE HOUR	✓	864.00	100.000
3	ONE HOUR	✓	0.00	100.000
4	ONE HOUR	✓	1914.00	100.000
5	ONE HOUR	✓	570.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	7.000	18.000	187.000	1603.000	142.000
	2	25.000	30.000	5.000	538.000	266.000
	3	0.000	0.000	0.000	0.000	0.000
	4	1010.000	703.000	182.000	0.000	19.000
	5	11.000	312.000	152.000	95.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	0.00	0.01	0.10	0.82	0.07
	2	0.03	0.03	0.01	0.62	0.31
	3	0.20	0.20	0.20	0.20	0.20
	4	0.53	0.37	0.10	0.00	0.01
	5	0.02	0.55	0.27	0.17	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	1.056	1.056	1.056	1.056	1.056
	2	1.029	1.029	1.029	1.029	1.029
	3	1.000	1.000	1.000	1.000	1.000
	4	1.053	1.053	1.053	1.000	1.053
	5	1.011	1.011	1.011	1.011	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To				
		1	2	3	4	5
From	1	5.6	5.6	5.6	5.6	5.6
	2	2.9	2.9	2.9	2.9	2.9
	3	0.0	0.0	0.0	0.0	0.0
	4	5.3	5.3	5.3	0.0	5.3
	5	1.1	1.1	1.1	1.1	0.0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (PCU)	Max LOS
1	558.64	270.55	F
2	11.42	3.18	B
3	0.00	0.00	A
4	573.79	292.09	F
5	23.50	4.29	C

Main Results for each time segment

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	1472.93	1468.95	1099.23	5.71	11.579	B
2	641.09	642.12	1771.50	0.65	3.175	A
3	0.00	0.00	2022.73	0.00	0.000	A
4	1424.01	1422.49	350.12	9.73	20.107	C
5	425.99	428.49	1456.16	0.92	7.271	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	1760.63	1670.24	1198.85	31.68	45.138	E
2	782.17	778.32	2009.49	1.43	6.085	A
3	0.00	0.00	2359.52	0.00	0.000	A
4	1717.40	1597.20	413.89	45.35	73.499	F
5	504.65	508.13	1627.59	1.80	12.025	B

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	2152.00	1690.01	1216.94	148.37	195.071	F
2	956.02	955.28	2065.76	3.18	11.052	B
3	0.00	0.00	2571.47	0.00	0.000	A
4	2116.16	1644.77	481.89	161.43	284.304	F
5	630.10	627.97	1686.48	4.27	22.056	C

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	2172.47	1696.73	1225.26	263.76	437.645	F
2	946.10	953.85	2072.48	3.01	11.424	B
3	0.00	0.00	2573.36	0.00	0.000	A
4	2083.43	1665.69	488.24	273.29	573.791	F
5	629.12	620.30	1715.80	4.29	23.498	C

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	1758.41	1723.35	1186.38	270.55	558.641	F
2	779.02	785.91	2066.37	1.55	7.417	A
3	0.00	0.00	2414.56	0.00	0.000	A
4	1724.17	1628.45	424.76	292.09	427.432	F
5	520.23	519.54	1667.53	2.05	15.713	C

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	End Queue (PCU)	Delay (s)	LOS
1	1476.50	1692.06	1184.62	210.22	473.594	F
2	662.21	662.13	2011.78	0.97	5.200	A
3	0.00	0.00	2245.10	0.00	0.000	A
4	1449.68	1526.78	368.41	267.62	18.313	C
5	426.52	425.37	1559.51	1.11	9.277	A

Lane Results

Lanes: Main Results for each time segment

Main results: (16:45-17:00)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	14.52	14.52	873.17	0.017	0.00	1.143	A
1	1	2	722.71	720.53	873.17	0.828	2.42	10.302	B
1	1	3	731.73	731.32	873.17	0.838	2.32	10.150	B
1	2	1	741.33	739.93			0.49	1.411	A
1	2	2	731.61	729.02			0.48	1.386	A
2	1	1	323.50	323.21	768.80	0.421	0.33	3.214	A
2	1	2	317.59	318.91	768.80	0.413	0.32	3.136	A
3	1	1	0.00	0.00	172.24	0.000	0.00	0.000	A
4	1	1	15.30	14.93	852.49	0.018	0.01	1.271	A
4	1	2	612.96	612.84	852.49	0.719	1.05	6.023	A
4	1	3	794.23	795.95	852.49	0.932	2.37	10.087	B
4	2	1	671.16	670.21			0.33	1.469	A
4	2	2	752.85	752.28			5.97	20.314	C
5	1	1	240.08	240.16	477.31	0.503	0.58	7.956	A
5	1	2	185.91	188.33	477.31	0.389	0.34	6.374	A

Main results: (17:00-17:15)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	14.11	14.19	845.46	0.017	0.00	1.231	A
1	1	2	825.48	824.91	845.46	0.976	5.32	20.519	C
1	1	3	830.65	828.80	845.46	0.982	5.31	20.422	C
1	2	1	876.42	827.74			10.60	24.786	C
1	2	2	884.21	842.50			10.44	24.427	C
2	1	1	391.46	388.22	684.55	0.572	0.74	6.100	A
2	1	2	390.72	390.10	684.55	0.571	0.69	6.071	A
3	1	1	0.00	0.00	72.08	0.000	0.00	0.000	A
4	1	1	17.84	17.88	837.03	0.021	0.01	1.395	A
4	1	2	738.66	732.71	837.03	0.882	2.03	8.961	A
4	1	3	840.70	841.15	837.03	1.004	2.95	12.400	B
4	2	1	928.83	919.69			2.48	7.610	A
4	2	2	788.57	677.51			37.89	122.723	F
5	1	1	280.15	280.15	431.18	0.650	1.08	13.112	B
5	1	2	224.50	227.98	431.18	0.521	0.72	10.683	B

Main results: (17:15-17:30)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	16.77	16.36	840.43	0.020	0.01	1.321	A
1	1	2	835.86	836.27	840.43	0.995	5.98	25.492	D
1	1	3	837.38	837.62	840.43	0.996	5.98	25.441	D
1	2	1	1065.44	834.83			68.28	171.272	F
1	2	2	1086.56	855.17			68.12	168.324	F
2	1	1	477.29	480.49	664.63	0.718	1.55	11.012	B
2	1	2	478.73	474.79	664.63	0.720	1.62	11.091	B
3	1	1	0.00	0.00	35.38	0.000	0.00	0.000	A
4	1	1	20.10	20.01	820.56	0.024	0.01	1.416	A
4	1	2	807.97	805.96	820.56	0.985	2.84	12.052	B
4	1	3	816.71	816.46	820.56	0.995	2.99	13.080	B
4	2	1	1136.88	1072.04			21.53	45.635	E
4	2	2	979.28	572.73			134.06	534.552	F
5	1	1	331.37	331.74	415.33	0.798	2.42	23.861	C
5	1	2	298.73	296.23	415.33	0.719	1.85	20.012	C

Main results: (17:30-17:45)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	15.46	15.46	838.11	0.018	0.01	1.382	A
1	1	2	840.78	840.82	838.11	1.003	5.98	25.644	D
1	1	3	840.49	840.49	838.11	1.003	5.98	25.628	D
1	2	1	1079.71	841.07			125.96	415.291	F
1	2	2	1092.75	855.67			125.82	409.697	F
2	1	1	473.89	479.34	662.25	0.716	1.50	11.440	B
2	1	2	472.21	474.50	662.25	0.713	1.51	11.408	B
3	1	1	0.00	0.00	32.59	0.000	0.00	0.000	A
4	1	1	18.66	18.99	819.02	0.023	0.00	1.541	A
4	1	2	809.73	810.27	819.02	0.989	2.89	12.667	B
4	1	3	837.29	837.05	819.02	1.022	2.99	13.060	B
4	2	1	1120.72	1084.10			33.75	93.928	F
4	2	2	962.71	581.59			233.66	1104.076	F
5	1	1	336.25	328.59	407.44	0.825	2.49	25.320	D
5	1	2	292.86	291.72	407.44	0.719	1.80	21.438	C

Main results: (17:45-18:00)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	16.08	15.58	848.93	0.019	0.01	1.316	A
1	1	2	847.67	847.26	848.93	0.999	6.00	25.154	D
1	1	3	859.60	859.89	848.93	1.013	5.98	25.131	D
1	2	1	877.48	858.13			129.34	537.803	F
1	2	2	880.93	865.22			129.22	529.630	F
2	1	1	390.18	392.93	664.41	0.587	0.79	7.417	A
2	1	2	388.83	392.97	664.41	0.585	0.76	7.416	A
3	1	1	0.00	0.00	62.07	0.000	0.00	0.000	A
4	1	1	18.37	17.72	834.40	0.022	0.01	1.386	A
4	1	2	770.32	771.06	834.40	0.923	2.21	11.327	B
4	1	3	839.75	839.79	834.40	1.006	2.98	12.830	B
4	2	1	927.07	979.36			8.72	62.545	F
4	2	2	797.10	649.09			278.17	1229.565	F
5	1	1	283.80	283.76	420.43	0.675	1.21	17.048	C
5	1	2	236.43	235.78	420.43	0.562	0.84	14.123	B

Main results: (18:00-18:15)

Arm	Lane Level	Lane	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	1	1	15.05	15.26	849.42	0.018	0.01	1.375	A
1	1	2	846.56	846.89	849.42	0.997	5.97	25.181	D
1	1	3	830.44	830.94	849.42	0.978	5.97	25.167	D
1	2	1	732.30	839.67			99.19	454.090	F
1	2	2	744.20	852.39			99.08	448.213	F
2	1	1	331.58	330.80	683.74	0.485	0.51	5.196	A
2	1	2	330.64	331.33	683.74	0.484	0.47	5.205	A
3	1	1	0.00	0.00	101.49	0.000	0.00	0.000	A
4	1	1	13.70	13.66	848.05	0.016	0.01	1.306	A
4	1	2	660.08	658.77	848.05	0.778	1.35	7.798	A
4	1	3	853.00	853.12	848.05	1.006	2.96	12.470	B
4	2	1	776.72	782.09			0.71	9.149	A
4	2	2	672.96	744.69			262.60	703.843	F
5	1	1	238.44	237.54	449.50	0.530	0.67	10.176	B
5	1	2	188.08	187.83	449.50	0.418	0.44	8.136	A

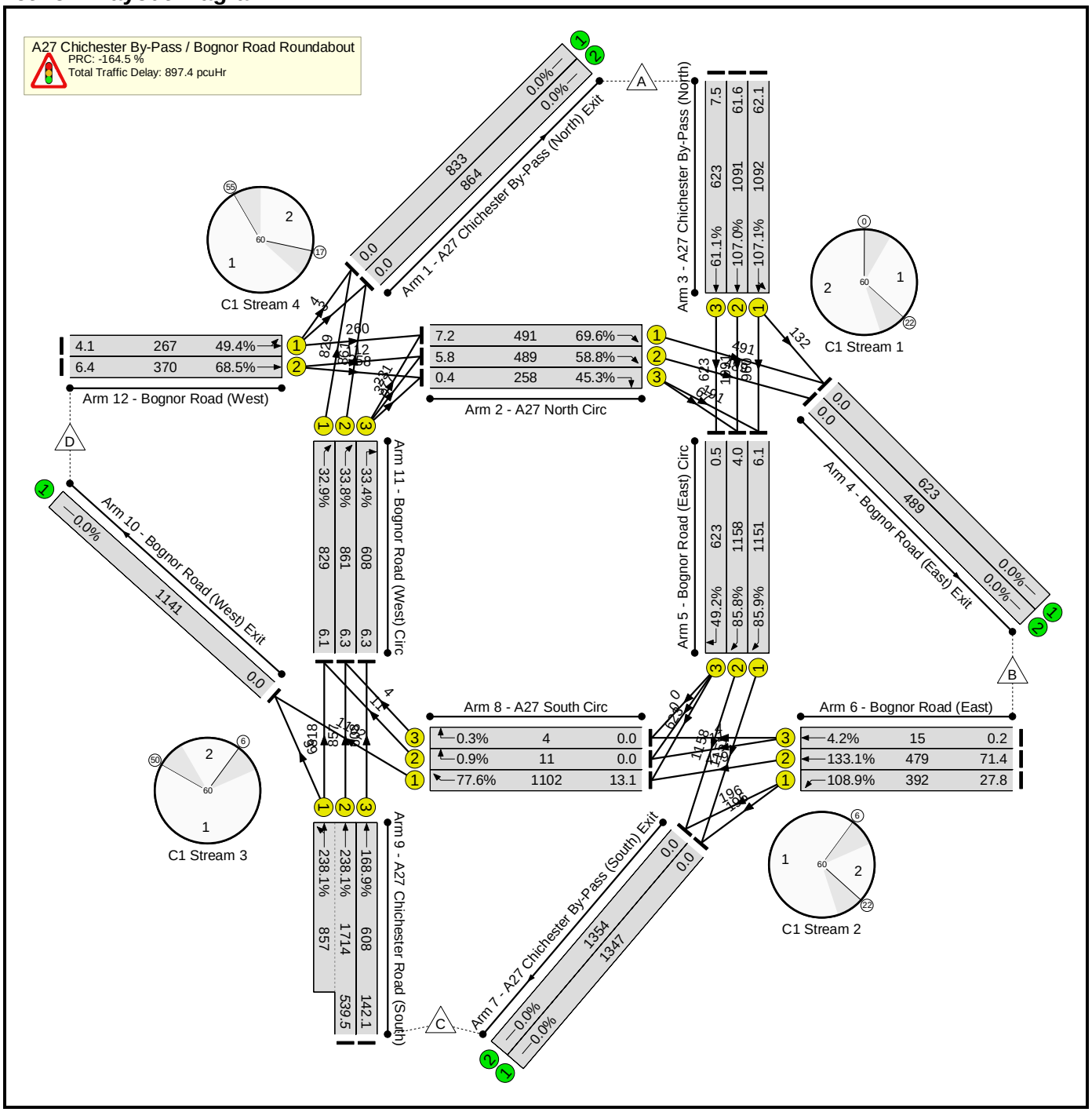
Basic Results Summary

User and Project Details

Project:	**Bognor Bridge Road, Chichester**
Title:	**A27 Chichester Bypass / Bognor Bridge Roundabout**
File name:	Atkins_A27 - Bognor Road Roundabout - Circulatory Optimised.lsg3x
Company:	WSP

Scenario 1: '2031 Base AM' (FG1: '2031 Base AM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: A27 Chichester Bypass / Bognor Bridge Roundabout	-	-	-		-	-	-	-	-	-	**238.1%**	**0**	**0**	**0**	**897.4**	-	-
A27 Chichester By-Pass / Bognor Road Roundabout	-	-	-		-	-	-	-	-	-	**238.1%**	**0**	**0**	**0**	**897.4**	-	-
2/1	A27 North Circ Right	U	A		1	17	-	491	1900	570	69.6%	-	-	-	2.7	24.4	7.2
2/2	A27 North Circ Right	U	A		1	17	-	489	1900	570	58.8%	-	-	-	3.0	32.4	5.8
2/3	A27 North Circ Right	U	A		1	17	-	258	1900	570	45.3%	-	-	-	0.4	5.8	0.4
3/1	A27 Chichester By-Pass (North) Left Ahead	U	B		1	33	-	1092	1800	1020	107.1%	-	-	-	49.1	161.8	62.1
3/2	A27 Chichester By-Pass (North) Ahead	U	B		1	33	-	1091	1800	1020	107.0%	-	-	-	48.6	160.3	61.6
3/3	A27 Chichester By-Pass (North) Ahead	U	B		1	33	-	623	1800	1020	61.1%	-	-	-	2.3	13.1	7.5
5/1	Bognor Road (East) Circ Ahead	U	C		1	39	-	1151	1900	1267	85.9%	-	-	-	3.6	11.9	6.1
5/2	Bognor Road (East) Circ Ahead	U	C		1	39	-	1158	1900	1267	85.8%	-	-	-	3.1	10.4	4.0
5/3	Bognor Road (East) Circ Right	U	C		1	39	-	623	1900	1267	49.2%	-	-	-	0.5	2.8	0.5
6/1	Bognor Road (East) Left	U	D		1	11	-	392	1800	360	108.9%	-	-	-	24.2	222.6	27.8

Basic Results Summary

6/2	Bognor Road (East) Ahead	U	D		1	11	-	479	1800	360	133.1%	-	-	-	68.0	511.0	71.4
6/3	Bognor Road (East) Ahead	U	D		1	11	-	15	1800	360	4.2%	-	-	-	0.1	24.8	0.2
8/1	A27 South Circ Ahead	U	E		1	39	-	1102	1900	1267	77.6%	-	-	-	3.3	12.0	13.1
8/2	A27 South Circ Right	U	E		1	39	-	11	1900	1267	0.9%	-	-	-	0.0	1.4	0.0
8/3	A27 South Circ Right	U	E		1	39	-	4	1900	1267	0.3%	-	-	-	0.0	1.4	0.0
9/2+9/1	A27 Chichester Road (South) Left Ahead	U	F		1	11	-	1714	1800:1800	360+360	238.1 : 238.1%	-	-	-	539.8	1133.8	539.5
9/3	A27 Chichester Road (South) Ahead	U	F		1	11	-	608	1800	360	168.9%	-	-	-	137.4	813.3	142.1
11/1	Bognor Road (West) Circ Right	U	G		1	33	-	829	1900	1077	32.9%	-	-	-	2.1	21.5	6.1
11/2	Bognor Road (West) Circ Right	U	G		1	33	-	861	1900	1077	33.8%	-	-	-	2.2	22.1	6.3
11/3	Bognor Road (West) Circ Right	U	G		1	33	-	608	1900	1077	33.4%	-	-	-	2.2	22.2	6.3
12/1	Bognor Road (West) Left Ahead	U	H		1	17	-	267	1800	540	49.4%	-	-	-	1.8	23.8	4.1
12/2	Bognor Road (West) Ahead	U	H		1	17	-	370	1800	540	68.5%	-	-	-	3.0	29.0	6.4

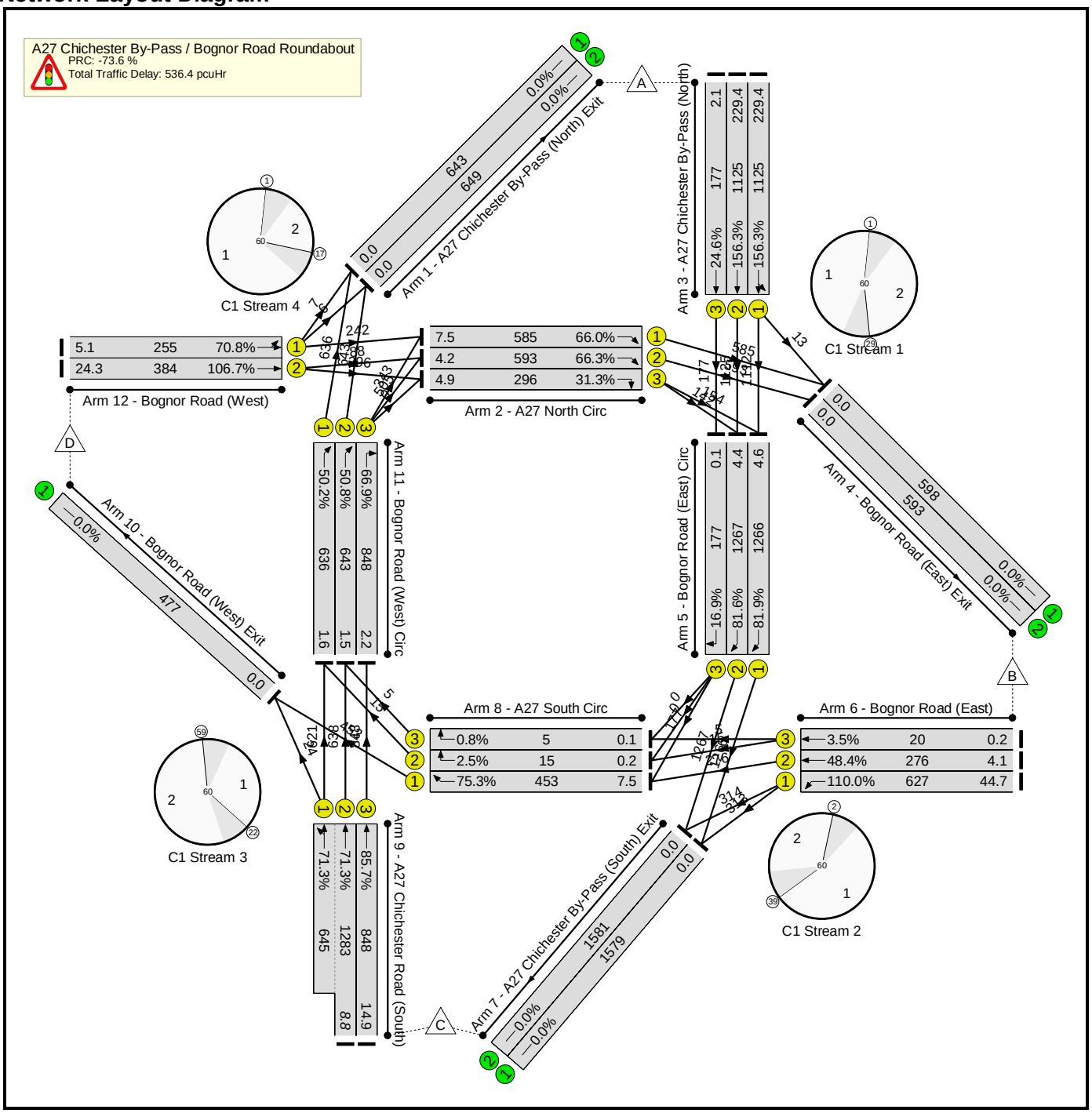
C1	Stream: 1 PRC for Signalled Lanes (%):	-19.0	Total Delay for Signalled Lanes (pcuHr):	106.05
C1	Stream: 2 PRC for Signalled Lanes (%):	-47.8	Total Delay for Signalled Lanes (pcuHr):	99.56
C1	Stream: 3 PRC for Signalled Lanes (%):	-164.5	Total Delay for Signalled Lanes (pcuHr):	680.48
C1	Stream: 4 PRC for Signalled Lanes (%):	31.4	Total Delay for Signalled Lanes (pcuHr):	11.31
	PRC Over All Lanes (%):	-164.5	Total Delay Over All Lanes(pcuHr):	897.40

Cycle Time (s):	60
Cycle Time (s):	60
Cycle Time (s):	60
Cycle Time (s):	60

Basic Results Summary

Scenario 2: '2031 Base PM' (FG2: '2031 Base PM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: A27 Chichester Bypass / Bognor Bridge Roundabout	-	-	-		-	-	-	-	-	-	**156.3%**	**0**	**0**	**0**	**536.4**	-	-
A27 Chichester By-Pass / Bognor Road Roundabout	-	-	-		-	-	-	-	-	-	**156.3%**	**0**	**0**	**0**	**536.4**	-	-
2/1	A27 North Circ Right	U	A		1	27	-	585	1900	887	66.0%	-	-	-	3.0	18.6	7.5
2/2	A27 North Circ Right	U	A		1	27	-	593	1900	887	66.3%	-	-	-	2.0	12.3	4.2
2/3	A27 North Circ Right	U	A		1	27	-	296	1900	887	31.3%	-	-	-	1.9	24.3	4.9
3/1	A27 Chichester By-Pass (North) Left Ahead	U	B		1	23	-	1125	1800	720	156.3%	-	-	-	220.8	706.6	229.4
3/2	A27 Chichester By-Pass (North) Ahead	U	B		1	23	-	1125	1800	720	156.3%	-	-	-	220.8	706.6	229.4
3/3	A27 Chichester By-Pass (North) Ahead	U	B		1	23	-	177	1800	720	24.6%	-	-	-	0.8	15.3	2.1
5/1	Bognor Road (East) Circ Ahead	U	C		1	32	-	1266	1900	1045	81.9%	-	-	-	3.2	13.5	4.6
5/2	Bognor Road (East) Circ Ahead	U	C		1	32	-	1267	1900	1045	81.6%	-	-	-	3.1	13.0	4.4
5/3	Bognor Road (East) Circ Right	U	C		1	32	-	177	1900	1045	16.9%	-	-	-	0.1	2.1	0.1
6/1	Bognor Road (East) Left	U	D		1	18	-	627	1800	570	110.0%	-	-	-	38.8	222.6	44.7

Basic Results Summary

6/2	Bognor Road (East) Ahead	U	D		1	18	-	276	1800	570	48.4%	-	-	-	1.7	22.7	4.1
6/3	Bognor Road (East) Ahead	U	D		1	18	-	20	1800	570	3.5%	-	-	-	0.1	17.6	0.2
8/1	A27 South Circ Ahead	U	E		1	18	-	453	1900	602	75.3%	-	-	-	3.4	26.8	7.5
8/2	A27 South Circ Right	U	E		1	18	-	15	1900	602	2.5%	-	-	-	0.1	12.6	0.2
8/3	A27 South Circ Right	U	E		1	18	-	5	1900	602	0.8%	-	-	-	0.0	12.5	0.1
9/2+9/1	A27 Chichester Road (South) Left Ahead	U	F		1	32	-	1283	1800:1800	895+905	71.3 : 71.3%	-	-	-	4.6	12.9	8.8
9/3	A27 Chichester Road (South) Ahead	U	F		1	32	-	848	1800	990	85.7%	-	-	-	5.6	23.7	14.9
11/1	Bognor Road (West) Circ Right	U	G		1	39	-	636	1900	1267	50.2%	-	-	-	0.8	4.6	1.6
11/2	Bognor Road (West) Circ Right	U	G		1	39	-	643	1900	1267	50.8%	-	-	-	0.8	4.5	1.5
11/3	Bognor Road (West) Circ Right	U	G		1	39	-	848	1900	1267	66.9%	-	-	-	1.4	5.8	2.2
12/1	Bognor Road (West) Left Ahead	U	H		1	11	-	255	1800	360	70.8%	-	-	-	2.8	39.1	5.1
12/2	Bognor Road (West) Ahead	U	H		1	11	-	384	1800	360	106.7%	-	-	-	20.8	194.6	24.3

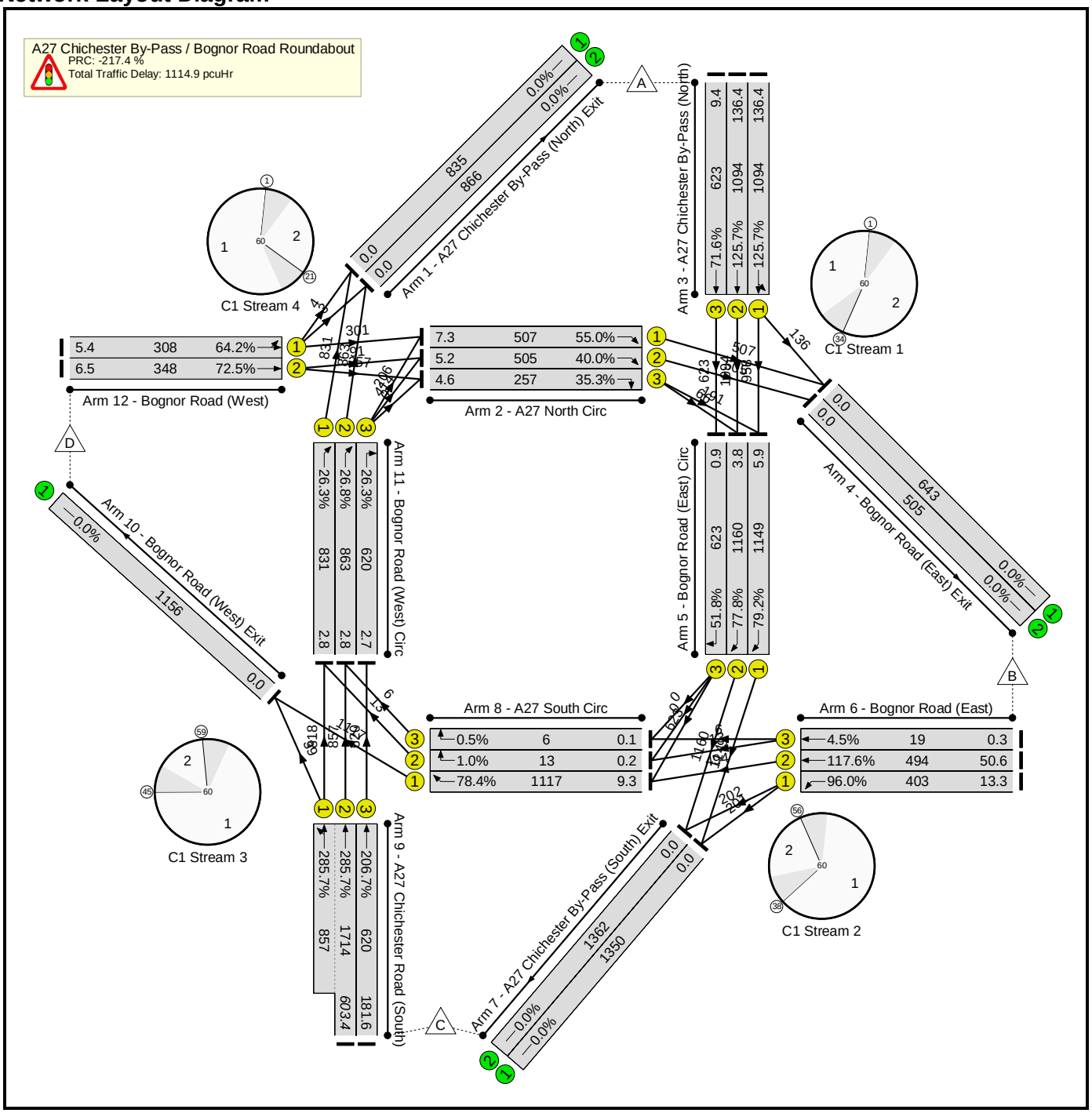
C1	Stream: 1 PRC for Signalled Lanes (%):	-73.6	Total Delay for Signalled Lanes (pcuHr):	449.28
C1	Stream: 2 PRC for Signalled Lanes (%):	-22.2	Total Delay for Signalled Lanes (pcuHr):	47.01
C1	Stream: 3 PRC for Signalled Lanes (%):	5.1	Total Delay for Signalled Lanes (pcuHr):	13.62
C1	Stream: 4 PRC for Signalled Lanes (%):	-18.5	Total Delay for Signalled Lanes (pcuHr):	26.53
	PRC Over All Lanes (%):	-73.6	Total Delay Over All Lanes(pcuHr):	536.43

Cycle Time (s):	60
Cycle Time (s):	60
Cycle Time (s):	60
Cycle Time (s):	60

Basic Results Summary

Scenario 3: '2031 Base + Development AM' (FG5: '2031 Base + Development AM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: A27 Chichester Bypass / Bognor Bridge Roundabout	-	-	-		-	-	-	-	-	-	**285.7%**	**0**	**0**	**0**	**1114.9**	-	-
A27 Chichester By-Pass / Bognor Road Roundabout	-	-	-		-	-	-	-	-	-	**285.7%**	**0**	**0**	**0**	**1114.9**	-	-
2/1	A27 North Circ Right	U	A		1	22	-	507	1900	728	55.0%	-	-	-	3.8	33.7	7.3
2/2	A27 North Circ Right	U	A		1	22	-	505	1900	728	40.0%	-	-	-	2.4	29.4	5.2
2/3	A27 North Circ Right	U	A		1	22	-	257	1900	728	35.3%	-	-	-	2.1	29.9	4.6
3/1	A27 Chichester By-Pass (North) Left Ahead	U	B		1	28	-	1094	1800	870	125.7%	-	-	-	125.2	412.0	136.4
3/2	A27 Chichester By-Pass (North) Ahead	U	B		1	28	-	1094	1800	870	125.7%	-	-	-	125.2	412.0	136.4
3/3	A27 Chichester By-Pass (North) Ahead	U	B		1	28	-	623	1800	870	71.6%	-	-	-	3.4	19.5	9.4
5/1	Bognor Road (East) Circ Ahead	U	C		1	37	-	1149	1900	1203	79.2%	-	-	-	3.1	11.6	5.9
5/2	Bognor Road (East) Circ Ahead	U	C		1	37	-	1160	1900	1203	77.8%	-	-	-	2.4	9.1	3.8
5/3	Bognor Road (East) Circ Right	U	C		1	37	-	623	1900	1203	51.8%	-	-	-	0.7	3.8	0.9
6/1	Bognor Road (East) Left	U	D		1	13	-	403	1800	420	96.0%	-	-	-	9.2	82.1	13.3

Basic Results Summary

6/2	Bognor Road (East) Ahead	U	D		1	13	-	494	1800	420	117.6%	-	-	-	45.7	333.3	50.6
6/3	Bognor Road (East) Ahead	U	D		1	13	-	19	1800	420	4.5%	-	-	-	0.1	22.5	0.3
8/1	A27 South Circ Ahead	U	E		1	41	-	1117	1900	1330	78.4%	-	-	-	3.4	11.8	9.3
8/2	A27 South Circ Right	U	E		1	41	-	13	1900	1330	1.0%	-	-	-	0.0	12.9	0.2
8/3	A27 South Circ Right	U	E		1	41	-	6	1900	1330	0.5%	-	-	-	0.0	12.8	0.1
9/2+9/1	A27 Chichester Road (South) Left Ahead	U	F		1	9	-	1714	1800:1800	300+300	285.7 : 285.7%	-	-	-	602.7	1265.8	603.4
9/3	A27 Chichester Road (South) Ahead	U	F		1	9	-	620	1800	300	206.7%	-	-	-	176.2	1023.4	181.6
11/1	Bognor Road (West) Circ Right	U	G		1	35	-	831	1900	1140	26.3%	-	-	-	1.2	14.3	2.8
11/2	Bognor Road (West) Circ Right	U	G		1	35	-	863	1900	1140	26.8%	-	-	-	1.2	14.2	2.8
11/3	Bognor Road (West) Circ Right	U	G		1	35	-	620	1900	1140	26.3%	-	-	-	1.2	14.1	2.7
12/1	Bognor Road (West) Left Ahead	U	H		1	15	-	308	1800	480	64.2%	-	-	-	2.6	29.8	5.4
12/2	Bognor Road (West) Ahead	U	H		1	15	-	348	1800	480	72.5%	-	-	-	3.2	33.4	6.5

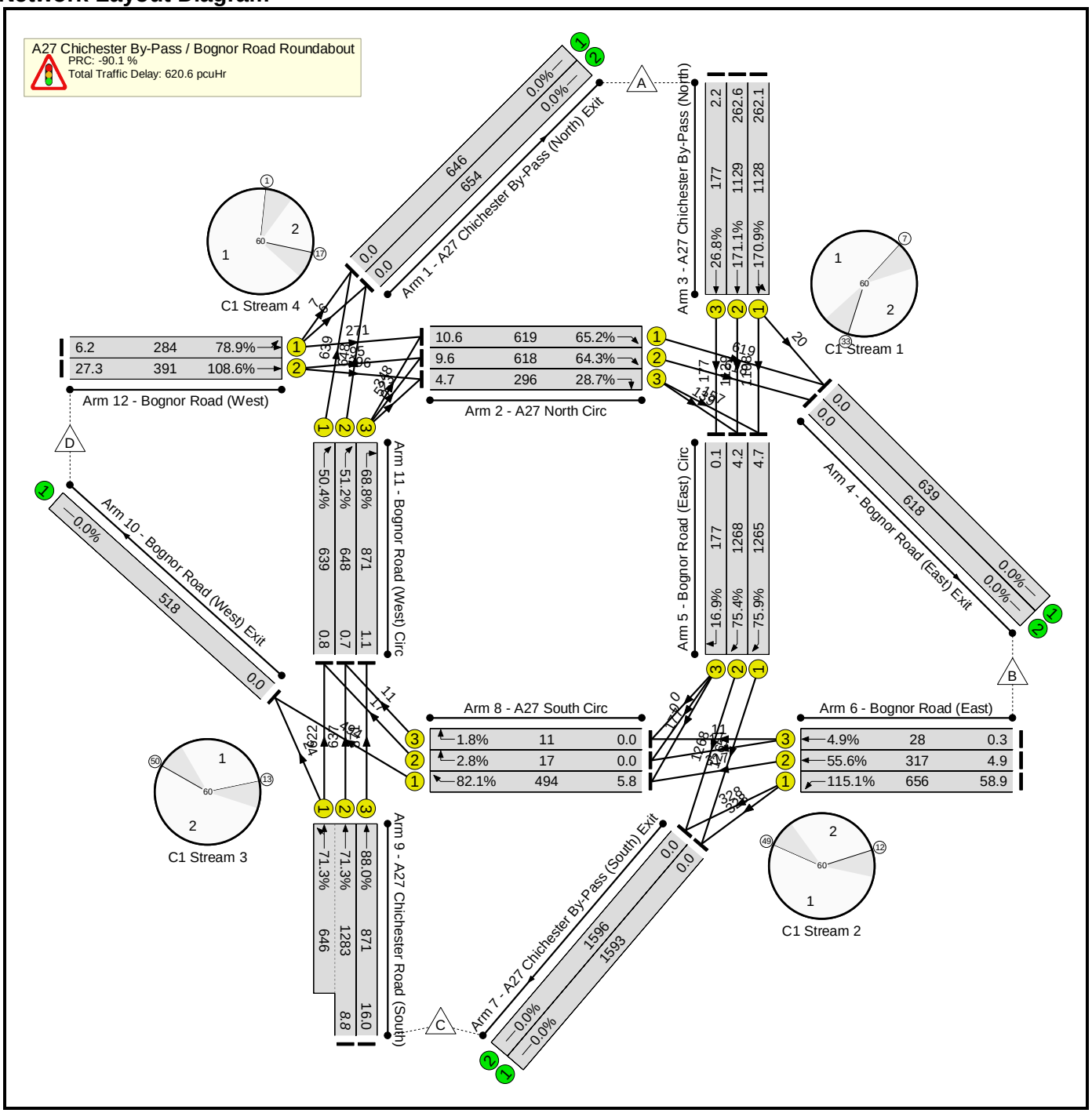
C1	Stream: 1 PRC for Signalled Lanes (%):	-39.7	Total Delay for Signalled Lanes (pcuHr):	262.03
C1	Stream: 2 PRC for Signalled Lanes (%):	-30.7	Total Delay for Signalled Lanes (pcuHr):	61.16
C1	Stream: 3 PRC for Signalled Lanes (%):	-217.4	Total Delay for Signalled Lanes (pcuHr):	782.37
C1	Stream: 4 PRC for Signalled Lanes (%):	24.1	Total Delay for Signalled Lanes (pcuHr):	9.36
	PRC Over All Lanes (%):	-217.4	Total Delay Over All Lanes(pcuHr):	1114.91

Cycle Time (s):	60
Cycle Time (s):	60
Cycle Time (s):	60
Cycle Time (s):	60

Basic Results Summary

Scenario 4: '2031 Base + Development PM' (FG6: '2031 Base + Development PM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: A27 Chichester Bypass / Bognor Bridge Roundabout	-	-	-		-	-	-	-	-	-	**171.1%**	**0**	**0**	**0**	**620.6**	-	-
A27 Chichester By-Pass / Bognor Road Roundabout	-	-	-		-	-	-	-	-	-	**171.1%**	**0**	**0**	**0**	**620.6**	-	-
2/1	A27 North Circ Right	U	A		1	29	-	619	1900	950	65.2%	-	-	-	3.7	21.3	10.6
2/2	A27 North Circ Right	U	A		1	29	-	618	1900	950	64.3%	-	-	-	2.1	12.4	9.6
2/3	A27 North Circ Right	U	A		1	29	-	296	1900	950	28.7%	-	-	-	2.1	28.0	4.7
3/1	A27 Chichester By-Pass (North) Left Ahead	U	B		1	21	-	1128	1800	660	170.9%	-	-	-	253.8	810.2	262.1
3/2	A27 Chichester By-Pass (North) Ahead	U	B		1	21	-	1129	1800	660	171.1%	-	-	-	254.4	811.2	262.6
3/3	A27 Chichester By-Pass (North) Ahead	U	B		1	21	-	177	1800	660	26.8%	-	-	-	0.8	17.1	2.2
5/1	Bognor Road (East) Circ Ahead	U	C		1	32	-	1265	1900	1045	75.9%	-	-	-	1.9	8.5	4.7
5/2	Bognor Road (East) Circ Ahead	U	C		1	32	-	1268	1900	1045	75.4%	-	-	-	1.8	8.2	4.2
5/3	Bognor Road (East) Circ Right	U	C		1	32	-	177	1900	1045	16.9%	-	-	-	0.1	2.1	0.1
6/1	Bognor Road (East) Left	U	D		1	18	-	656	1800	570	115.1%	-	-	-	53.0	290.9	58.9

Basic Results Summary

6/2	Bognor Road (East) Ahead	U	D		1	18	-	317	1800	570	55.6%	-	-	-	2.1	24.1	4.9
6/3	Bognor Road (East) Ahead	U	D		1	18	-	28	1800	570	4.9%	-	-	-	0.1	17.7	0.3
8/1	A27 South Circ Ahead	U	E		1	18	-	494	1900	602	82.1%	-	-	-	4.0	28.8	5.8
8/2	A27 South Circ Right	U	E		1	18	-	17	1900	602	2.8%	-	-	-	0.0	7.5	0.0
8/3	A27 South Circ Right	U	E		1	18	-	11	1900	602	1.8%	-	-	-	0.0	7.5	0.0
9/2+9/1	A27 Chichester Road (South) Left Ahead	U	F		1	32	-	1283	1800:1800	894+906	71.3 : 71.3%	-	-	-	4.6	12.9	8.8
9/3	A27 Chichester Road (South) Ahead	U	F		1	32	-	871	1800	990	88.0%	-	-	-	6.3	26.1	16.0
11/1	Bognor Road (West) Circ Right	U	G		1	39	-	639	1900	1267	50.4%	-	-	-	0.6	3.2	0.8
11/2	Bognor Road (West) Circ Right	U	G		1	39	-	648	1900	1267	51.2%	-	-	-	0.6	3.1	0.7
11/3	Bognor Road (West) Circ Right	U	G		1	39	-	871	1900	1267	68.8%	-	-	-	1.1	4.5	1.1
12/1	Bognor Road (West) Left Ahead	U	H		1	11	-	284	1800	360	78.9%	-	-	-	3.6	45.4	6.2
12/2	Bognor Road (West) Ahead	U	H		1	11	-	391	1800	360	108.6%	-	-	-	23.8	219.5	27.3

C1	Stream: 1 PRC for Signalled Lanes (%):	-90.1	Total Delay for Signalled Lanes (pcuHr):	516.96	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	-27.9	Total Delay for Signalled Lanes (pcuHr):	59.05	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	2.3	Total Delay for Signalled Lanes (pcuHr):	14.92	Cycle Time (s):	60
C1	Stream: 4 PRC for Signalled Lanes (%):	-20.7	Total Delay for Signalled Lanes (pcuHr):	29.64	Cycle Time (s):	60
	PRC Over All Lanes (%):	-90.1	Total Delay Over All Lanes(pcuHr):	620.57		

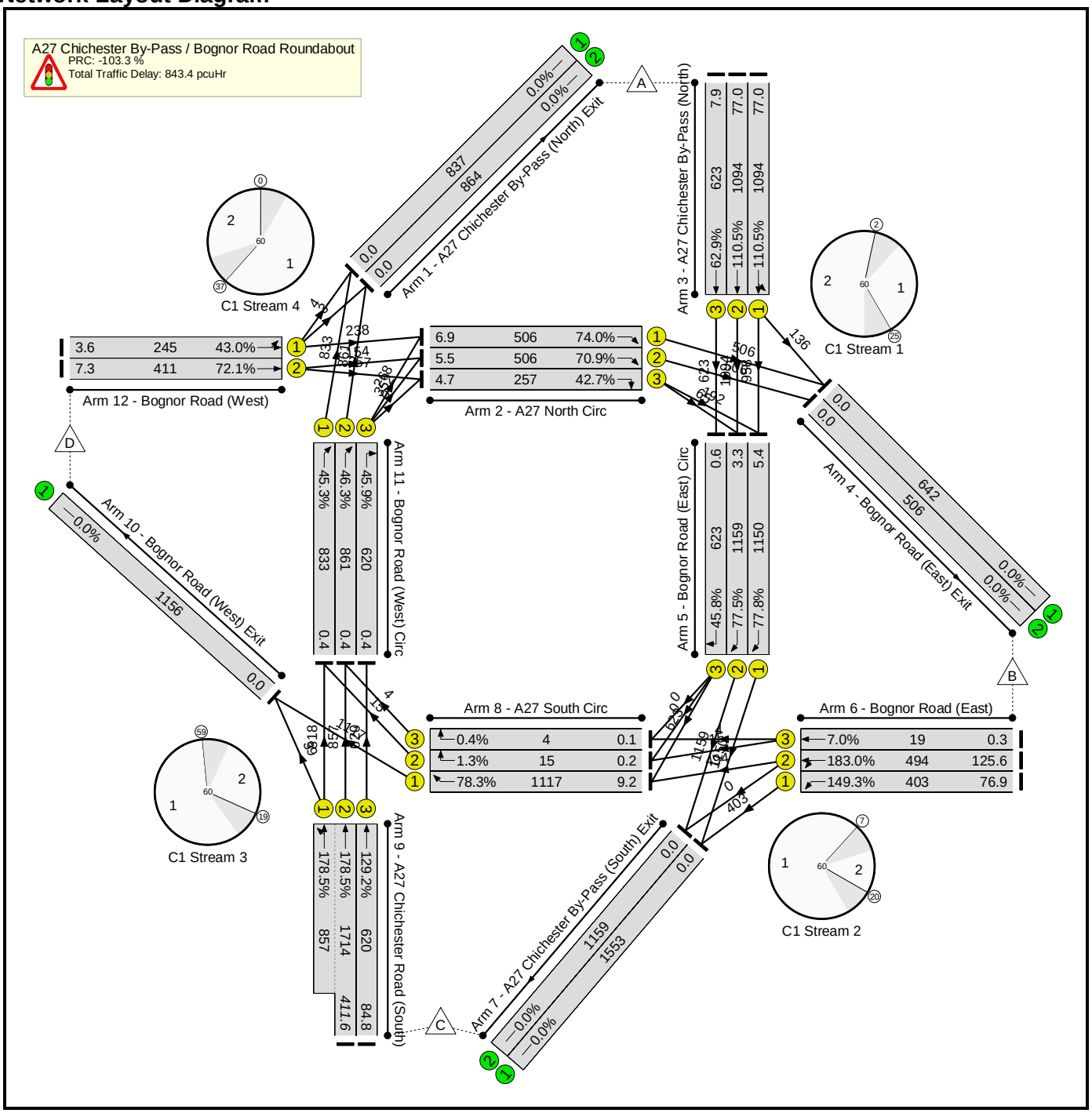
Basic Results Summary

User and Project Details

Project:	**Bognor Bridge Road, Chichester**
Title:	**A27 Chichester Bypass / Bognor Bridge Roundabout**
File name:	Atkins_A27 - Bognor Road Roundabout - Lane Allocation Changes and Circ optimisation.lsg3x
Company:	WSP

Scenario 1: '2031 Base + Development AM' (FG5: '2031 Base + Development AM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: A27 Chichester Bypass / Bognor Bridge Roundabout	-	-	-		-	-	-	-	-	-	**183.0%**	**0**	**0**	**0**	**843.4**	-	-
A27 Chichester By-Pass / Bognor Road Roundabout	-	-	-		-	-	-	-	-	-	**183.0%**	**0**	**0**	**0**	**843.4**	-	-
2/1	A27 North Circ Right	U	A		1	18	-	506	1900	602	74.0%	-	-	-	3.6	29.4	6.9
2/2	A27 North Circ Right	U	A		1	18	-	506	1900	602	70.9%	-	-	-	3.1	26.3	5.5
2/3	A27 North Circ Right	U	A		1	18	-	257	1900	602	42.7%	-	-	-	1.6	22.1	4.7
3/1	A27 Chichester By-Pass (North) Left Ahead	U	B		1	32	-	1094	1800	990	110.5%	-	-	-	64.7	213.0	77.0
3/2	A27 Chichester By-Pass (North) Ahead	U	B		1	32	-	1094	1800	990	110.5%	-	-	-	64.7	213.0	77.0
3/3	A27 Chichester By-Pass (North) Ahead	U	B		1	32	-	623	1800	990	62.9%	-	-	-	2.5	14.2	7.9
5/1	Bognor Road (East) Circ Ahead	U	C		1	42	-	1150	1900	1362	77.8%	-	-	-	2.5	8.4	5.4
5/2	Bognor Road (East) Circ Ahead	U	C		1	42	-	1159	1900	1362	77.5%	-	-	-	2.0	6.9	3.3
5/3	Bognor Road (East) Circ Right	U	C		1	42	-	623	1900	1362	45.8%	-	-	-	0.5	2.7	0.6
6/1	Bognor Road (East) Left	U	D		1	8	-	403	1800	270	149.3%	-	-	-	74.6	666.4	76.9

Basic Results Summary

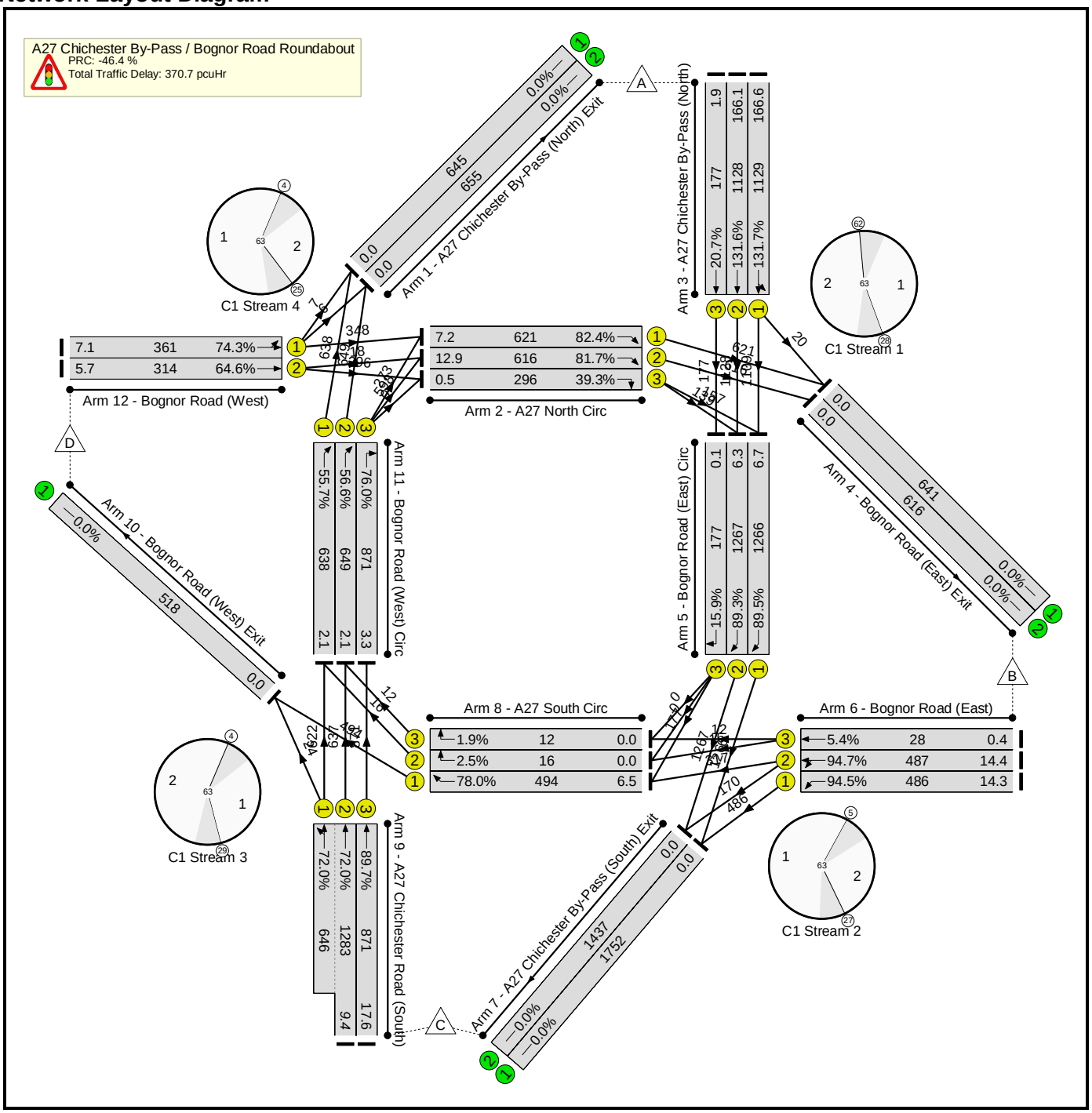
6/2	Bognor Road (East) Left Ahead	U	D		1	8	-	494	1800	270	183.0%	-	-	-	122.9	895.9	125.6
6/3	Bognor Road (East) Ahead	U	D		1	8	-	19	1800	270	7.0%	-	-	-	0.2	29.3	0.3
8/1	A27 South Circ Ahead	U	E		1	35	-	1117	1900	1140	78.3%	-	-	-	3.3	13.4	9.2
8/2	A27 South Circ Right	U	E		1	35	-	15	1900	1140	1.3%	-	-	-	0.0	5.2	0.2
8/3	A27 South Circ Right	U	E		1	35	-	4	1900	1140	0.4%	-	-	-	0.0	5.1	0.1
9/2+9/1	A27 Chichester Road (South) Left Ahead	U	F		1	15	-	1714	1800:1800	480+480	178.5 : 178.5%	-	-	-	410.9	863.1	411.6
9/3	A27 Chichester Road (South) Ahead	U	F		1	15	-	620	1800	480	129.2%	-	-	-	80.1	465.0	84.8
11/1	Bognor Road (West) Circ Right	U	G		1	32	-	833	1900	1045	45.3%	-	-	-	0.4	3.1	0.4
11/2	Bognor Road (West) Circ Right	U	G		1	32	-	861	1900	1045	46.3%	-	-	-	0.4	3.2	0.4
11/3	Bognor Road (West) Circ Right	U	G		1	32	-	620	1900	1045	45.9%	-	-	-	0.4	3.2	0.4
12/1	Bognor Road (West) Left Ahead	U	H		1	18	-	245	1800	570	43.0%	-	-	-	1.5	21.8	3.6
12/2	Bognor Road (West) Ahead	U	H		1	18	-	411	1800	570	72.1%	-	-	-	3.3	29.3	7.3

C1	Stream: 1 PRC for Signalled Lanes (%):	-22.8	Total Delay for Signalled Lanes (pcuHr):	140.25	Cycle Time (s): 60
C1	Stream: 2 PRC for Signalled Lanes (%):	-103.3	Total Delay for Signalled Lanes (pcuHr):	202.67	Cycle Time (s): 60
C1	Stream: 3 PRC for Signalled Lanes (%):	-98.4	Total Delay for Signalled Lanes (pcuHr):	494.35	Cycle Time (s): 60
C1	Stream: 4 PRC for Signalled Lanes (%):	24.8	Total Delay for Signalled Lanes (pcuHr):	6.09	Cycle Time (s): 60
	PRC Over All Lanes (%):	-103.3	Total Delay Over All Lanes(pcuHr):	843.36	

Basic Results Summary

Scenario 2: '2031 Base + Development PM' (FG6: '2031 Base + Development PM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: A27 Chichester Bypass / Bognor Bridge Roundabout	-	-	-		-	-	-	-	-	-	**131.7%**	**0**	**0**	**0**	**370.7**	-	-
A27 Chichester By-Pass / Bognor Road Roundabout	-	-	-		-	-	-	-	-	-	**131.7%**	**0**	**0**	**0**	**370.7**	-	-
2/1	A27 North Circ Right	U	A		1	24	-	621	1900	754	82.4%	-	-	-	3.5	20.4	7.2
2/2	A27 North Circ Right	U	A		1	24	-	616	1900	754	81.7%	-	-	-	5.5	32.3	12.9
2/3	A27 North Circ Right	U	A		1	24	-	296	1900	754	39.3%	-	-	-	0.4	5.1	0.5
3/1	A27 Chichester By-Pass (North) Left Ahead	U	B		1	29	-	1129	1800	857	131.7%	-	-	-	153.7	490.0	166.6
3/2	A27 Chichester By-Pass (North) Ahead	U	B		1	29	-	1128	1800	857	131.6%	-	-	-	153.1	488.8	166.1
3/3	A27 Chichester By-Pass (North) Ahead	U	B		1	29	-	177	1800	857	20.7%	-	-	-	0.6	12.2	1.9
5/1	Bognor Road (East) Circ Ahead	U	C		1	36	-	1266	1900	1116	89.5%	-	-	-	4.4	15.9	6.7
5/2	Bognor Road (East) Circ Ahead	U	C		1	36	-	1267	1900	1116	89.3%	-	-	-	4.3	15.4	6.3
5/3	Bognor Road (East) Circ Right	U	C		1	36	-	177	1900	1116	15.9%	-	-	-	0.1	1.9	0.1
6/1	Bognor Road (East) Left	U	D		1	17	-	486	1800	514	94.5%	-	-	-	9.0	66.6	14.3

Basic Results Summary

6/2	Bognor Road (East) Left Ahead	U	D		1	17	-	487	1800	514	94.7%	-	-	-	9.1	67.5	14.4
6/3	Bognor Road (East) Ahead	U	D		1	17	-	28	1800	514	5.4%	-	-	-	0.2	20.1	0.4
8/1	A27 South Circ Ahead	U	E		1	20	-	494	1900	633	78.0%	-	-	-	3.9	28.6	6.5
8/2	A27 South Circ Right	U	E		1	20	-	16	1900	633	2.5%	-	-	-	0.0	6.7	0.0
8/3	A27 South Circ Right	U	E		1	20	-	12	1900	633	1.9%	-	-	-	0.0	6.7	0.0
9/2+9/1	A27 Chichester Road (South) Left Ahead	U	F		1	33	-	1283	1800:1800	885+897	72.0 : 72.0%	-	-	-	5.0	14.0	9.4
9/3	A27 Chichester Road (South) Ahead	U	F		1	33	-	871	1800	971	89.7%	-	-	-	7.1	29.5	17.6
11/1	Bognor Road (West) Circ Right	U	G		1	37	-	638	1900	1146	55.7%	-	-	-	1.1	6.2	2.1
11/2	Bognor Road (West) Circ Right	U	G		1	37	-	649	1900	1146	56.6%	-	-	-	1.1	6.2	2.1
11/3	Bognor Road (West) Circ Right	U	G		1	37	-	871	1900	1146	76.0%	-	-	-	2.2	9.1	3.3
12/1	Bognor Road (West) Left Ahead	U	H		1	16	-	361	1800	486	74.3%	-	-	-	3.5	35.1	7.1
12/2	Bognor Road (West) Ahead	U	H		1	16	-	314	1800	486	64.6%	-	-	-	2.7	30.7	5.7

C1	Stream: 1 PRC for Signalled Lanes (%):	-46.4	Total Delay for Signalled Lanes (pcuHr):	316.89
C1	Stream: 2 PRC for Signalled Lanes (%):	-5.2	Total Delay for Signalled Lanes (pcuHr):	27.06
C1	Stream: 3 PRC for Signalled Lanes (%):	0.4	Total Delay for Signalled Lanes (pcuHr):	16.10
C1	Stream: 4 PRC for Signalled Lanes (%):	18.4	Total Delay for Signalled Lanes (pcuHr):	10.63
	PRC Over All Lanes (%):	-46.4	Total Delay Over All Lanes(pcuHr):	370.67

Cycle Time (s):	63
Cycle Time (s):	63
Cycle Time (s):	63
Cycle Time (s):	63

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Appendix 2

WSP March 2019 Technical Note 1

Transport supporting note 1

DATE:	22 March 2019	**CONFIDENTIALITY:**	Public
SUBJECT:	Traffic and highways assessment		
PROJECT:	Former Fuel and Distribution Depot site, Bognor Road, Chichester	**AUTHOR:**	Colin McKay
CHECKED:		**APPROVED:**	Colin McKay

THE PROPOSAL AND ACCESS

This Technical Note sets out an assessment of the transport and access implications of a proposal to develop the Former Fuel Depot site at Bognor Road, Chichester. It responds to pre-application responses from the highway authorities, which are discussed later.

The proposal is set out in the application documents submitted by the agent for the Applicant. It comprises:

- Premier Inn hotel (84 beds);
- Beefeater pub restaurant;
- B1(c)/B2/B8 employment/trade uses;
- Roadside A3 catering units;
- A3 Drive-thru unit; and
- Gym.

The Application has the planning application reference 19/00619/FUL.

Access to the site will be via the access shown in drawing 3803-SK-023 rev G (Appendix A). The access was consented as part of the previous planning application for the site ref. O/14/04284/OUT and is considered further below. The proposed access arrangements for this application are the same as those previously proposed and include the creation of an approximately 140m long access slip road off the A259 and the building of a signalised junction to allow cross carriageway movements as agreed with West Sussex County Council (WSCC). This 3-arm junction provides for all movements at the junction save for the right turn from the A259 into the site. Right turning movements were accommodated via u-turning movements at the A27/A259 Junction a short distance to the west.

The access proposals provide sufficient capacity for the land uses approved as part of the previous planning application. This technical note sets out that the traffic generation of the revised land uses is very close to or significantly less than that of the consented land uses. Therefore it is considered that the proposed access also has sufficient capacity for the revised land uses.

Capacity improvements at the A27/A259 Bognor Road roundabout were also agreed with Highways England as part of the consented development. It is proposed that these are also appropriate for the new application, again because the traffic generation of the respective land uses is close to or less than the consented development. These improvements are shown in Appendix B annexed to the pre-application consultation response from Highways England. Two options are given for improved southbound approaches to the existing and potential future layouts of the roundabout respectively.

As in the previous application, the new application takes account of the allocated waste facility on the site in terms of land budget and layout as well as in terms of traffic generation and junction capacity.

Pre-application Consultation has been carried out with Highways England and WSCC. Their respective responses are set out in Appendix B. Neither highway authority anticipates having any objection to the

Transport supporting note 1

DATE:	22 March 2019	**CONFIDENTIALITY:**	Public
SUBJECT:	Traffic and highways assessment		
PROJECT:	Former Fuel and Distribution Depot site, Bognor Road, Chichester	**AUTHOR:**	Colin McKay
CHECKED:		**APPROVED:**	Colin McKay

scheme given the information provided in the pre-application information provided to them by the Applicant. This technical note sets out the requested information on the proposals in terms of trip generation.

BACKGROUND

Planning Application ref. O/14/04284/OUT was granted consent on 6 July 2016. That application was for a mixed employment and retail development on the site, the major component being a discount food retail store.

Access to the site was proposed to be a traffic signalised junction on The A259 Bognor Road as shown in drawing 3803-SK-023 rev G (Appendix A) as set out above.

A full transport assessment was provided with the planning application, and subsequent discussions and further submissions clarified various elements including the trip generation, trip distribution and capacity assessments not only of the site access junction but of the various iterations of the medium and longer-term improvements proposed by Highways England at A27/A259 roundabout.

The site access junction was subject to road safety audit, NMU audit and departure submissions. It was also tested with the addition of a fourth arm as per the potential Vinnetrow Road Diversion, although no plans currently exist for implementing this scheme. The junction provides controlled pedestrian and cycle connections as well as new bus stops in laybys on the A259. West Sussex County Council (WSCC), the Highway Authority, has agreed terms of the S278 agreement and the detailed design plans have been drawn up by the developer and also agreed with WSCC. There are therefore no impediments to the implementation of the site access junction to serve the proposed development.

The A27 is a key route in the south coast highway network. Plans to improve the Chichester section were dropped by Highways England on 28 February 2017. The current position on the A27 is that WSCC has announced its preferred option is a new strategic northern bypass with free-flowing junctions with the existing A27. The alternative includes major works on all six junctions of the existing A27 to the south of Chichester. No funding is available for the scheme as yet although discussions continue with Highways England to seek inclusion of the scheme within the RIS2 (Road Investment Strategy 2) programme.

In the meantime, a number of improvements have been secured as part of development schemes elsewhere on the A27, particularly at Oving Crossroads (traffic signals) and at the Portfield Roundabout.

It is noted that a planning application has been made on land at Springfield Park immediately to the east of the Former Fuel Depot site (ref 18/01365/OUT). That planning application proposes a separate new signalised access onto the A259 Bognor Road. That access has been designed to take account of the consented access proposed as part of the consented Fuel Depot proposals and has been agreed with West Sussex County Council. There is therefore no impediment to the implementation of both accesses in highways terms.

Transport supporting note 1

DATE:	22 March 2019	**CONFIDENTIALITY:**	Public
SUBJECT:	Traffic and highways assessment		
PROJECT:	Former Fuel and Distribution Depot site, Bognor Road, Chichester	**AUTHOR:**	Colin McKay
CHECKED:		**APPROVED:**	Colin McKay

TRIP GENERATION

WSP have examined the trip generation of the proposed mix of uses on the site versus the trip generation of the consented development mix. This has been based on the agreed parameters and trip generation included in the Transport Assessment for the consented scheme, supplemented with new data taken from the industry-standard trip generation database TRICS.

The trip rates used in the consented scheme were agreed with the Authorities. They are therefore taken as read. The trip rates for the new application uses these same trip rates for the industrial estate elements, which includes not only the new B1(c)/B2/B8 and trade units on the site but an allowance for activity associated with the allocated waste facility, and for the roadside catering units.

The new trip rates for the gym, hotel, Beefeater and drive through unit have been derived from TRICS. The site selection and trip rate data is set out in Appendix C. The calculations based on these data sets have been summarised in the table below. This compares the trip generation of the new proposal with the consented scheme.

Table 1 – Trip Generation summary

No of Units	GFA[1]	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
		Arrivals	Departures	Two-way	Arrivals	Departures	Two-way
Industrial Estate	12,950	50	17	67	10	58	69
Costa Coffee/A3-5 units	349	15	14	29	18	18	36
Premier Inn	84	9	15	34	12	8	29
Beefeater	557.4	0	0	0	15	11	37
(Cross visitation)		-1	-1	-3	-3	-2	-7
A3 Drive-thru	227	9	9	18	13	13	26
Gym	930	8	6	13	15	7	22
Total	**15,013**	**90**	**59**	**159**	**80**	**114**	**212**
Original application		96	52	148	100	158	257
Difference from consented scheme		-6	8	11	-20	-43	-45

The removal of the discount food use reduces the PM peak traffic generation significantly and would be beneficial to the operation of the local and strategic road networks. Overall, the AM trip generation difference is *de minimus* compared with the consented scheme. The pre-application consultation responses from the highway authorities agree with this assessment.

In addition, a proportion of trips to these uses will be diverted trips from journeys already passing through the A27 and site access junctions. The calculations also ignore the potential trip generation from the site's extant use as a Fuel and Distribution Depot site. The trip generation also allows for a waste facility in line

with the Minerals and Waste Local Plan allocation for this use. This lends further weight to the view that the calculated increase in the AM peak is a worst case and is likely to imperceptible.

PARKING ASSESSMENT

An assessment of parking provision has been made based on the current parking standards[1] for these land uses. It should be noted that they are based on PPG 13 Transport, which was withdrawn in March 2012 when the NPPF was published. Maximum parking standards are no longer seen as effective and developments should be judged on their merits. In this case the parking provision versus the current parking standards has been shown for information purposes.

Although the total GFA is given in the table, for A3 uses, the standard applies only to the public areas of the units and thus a 50% factor has been applied to the A3 floor areas to take this into account.

The table below sets out the car parking standards and the provision made, as shown on the application plan.

Table 2 – Car Parking Summary

Standard	WSCC standard	Provided spaces
Hotel (84 rooms)	1/room = 84	111
Beefeater (557sqm GFA)	1/5 sqm public area* = 56	Combined with hotel
Roadside uses (576sqm GFA)	1/5 sqm public area* = 58	123
Gym (930sqm GFA)	1/22 sqm = 42	Combined with A3 uses
B1(c)/B2/B8 employment (7870sqm GFA)	1/40 sqm= 197**	197
Total	**437**	**431**

*Key: * parking standard applied to 50% of the GFA to represent public areas as per WSCC standard.*

*** based on standard for B2 as per WSCC standard.*

As can be seen from the above, the total number of spaces provided on the site for car parking is broadly in line with the standard, which is expected to be applied flexibly on a site by site basis depending on the

[1] Revised County Parking Standards and Transport Contributions Methodology Supplementary Planning Guidance adopted by West Sussex County Council November 2003

provision of public transport (Policy 39 of the Local Plan). The site is well served by public transport and bus stops have been included at the access to the site.

The parking spaces are not proposed to be segregated or allocated so visitors will have the flexibility to use all the available spaces. This reflects the expectation that there will be an element of cross-visitation between the non-employment uses on the site. Parking provision for the Hotel and Beefeater has been defined by the operator and is related to its experience at many other sites across the UK. In order to provide the flexibility required by the WSCC parking standard this case, parking for the road side uses and gym is provided in excess of the standard.

In addition, a worst-case scenario has been taken forward whereby the standard for B2 has been used; any B8 use would require a lower parking provision (1/100 sqm). Only 5% (393sqm) being used for B8 rather than B1(c)/B2 use would reduce the requirement to 431 spaces and thus the overall provision is likely to exceed the WSCC standard. Lorry parking for the site is in line with the WSCC standard of 1 space per 500sqm. Overall, 16 spaces would be required for the 7870 sqm of B1(c)/B2/B8/Trade on the application site and there is space on the application site for at least this number.

Adequate cycle, motor cycle and disabled parking is shown on the application plans in line with the WSCC standards. Electric vehicle charging spaces will also be provided across the site.

CONCLUSION

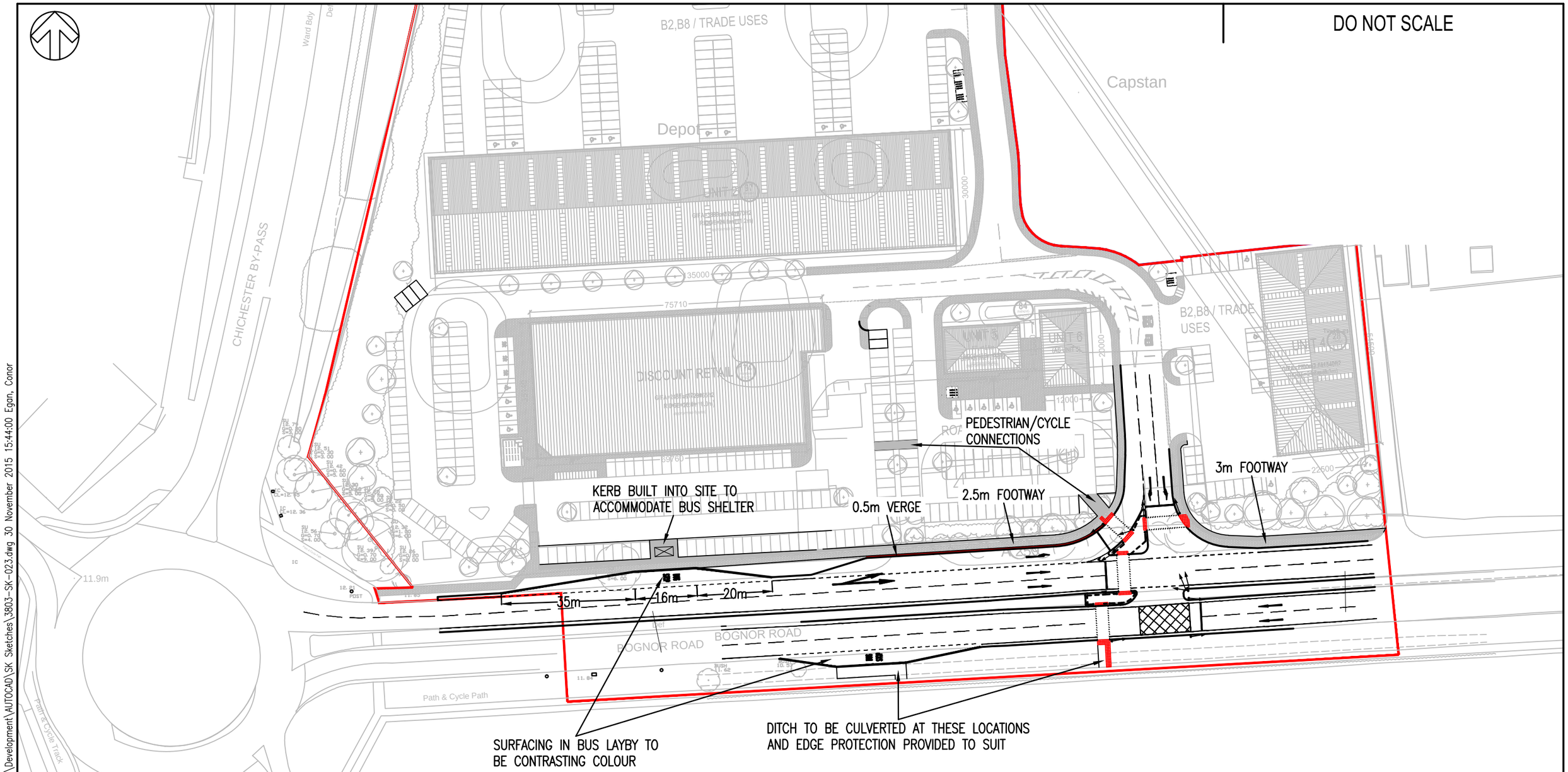
It is therefore considered that the proposed mix of uses in the new planning application proposals, along with implementation of the same package of access and A27 highway improvement measures previously agreed with West Sussex County Council and Highways England, will not result in a severe impact on the highway network, the impact being no worse than with the consented scheme.

The parking provision on the site is considered to be in line with the standards normally applied by WSCC, and will not lead to parking issues either on or off site.

Appendix A

SITE ACCESS

DO NOT SCALE



REV	DATE	BY	DESCRIPTION	CHK	APD
G	26/11/15	RJM	UPDATED TO REFLECT WSCC COMMENTS	CM	CM
F	12/11/15	NW	UPDATED TO REFLECT WSCC COMMENTS	CM	CM

DRAWING STATUS: FOR INFORMATION ONLY

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Tel: +44 (0)1256 318800 Fax: +44 (0)1256 318700
http://www.wspgroup.com

CLIENT: HANBURY PROPERTIES

ARCHITECT: ROBERTS LIMBRICK

PROJECT: BOGNOR BRIDGE ROAD, CHICHESTER

TITLE: SITE ACCESS ARRANGEMENT

SCALE @ A3:	CHECKED:	APPROVED:
1:1000	SA	SA
CAD FILE:	DESIGN-DRAWN:	DATE:
3803-SK-023.DWG	RJM	August 15
PROJECT No:	DRAWING No:	REV:
70003803	3803-SK-023	G

S:\70003803 - Bognor Bridge Road, Chichester\E Models and Drawings\Development\AUTOCAD\SK Sketches\3803-SK-023.dwg 30 November 2015 15:44:00 Egan, Conor

Appendix B

PRE-APPLICATION CONSULTATION RESPONSES FROM WSCC AND HIGHWAYS ENGLAND

WEST SUSSEX COUNTY COUNCIL **DATE:** 28/08/18
PRE-APPLICATION CONSULTATION

TO: Chichester District Council FAO Steve Harris
FROM: Steven Shaw
Steven.shaw@westsussex.gov.uk
SUBJECT: O/18/01964/PRELM
Premier Inn hotel, Beefeater pub/restaurant, roadside catering units and a gym.
Former Fuel Depot, Bognor Road, Chichester, West Sussex, PO20 1EJ

RECOMMENDATION:

Advice	x	Modification		More information	
Objection		No objection		Refusal	

The Highways Authority has been consulted for pre-application advice in regard to the proposed residential development at Former Fuel Depot, Bognor Road, Chichester, West Sussex, PO20 1EJ. We currently operate a scheme of charging for detailed highways and transport pre-application advice to enable this service to be provided to a consistent and high standard. Please find further information on our charging procedure at the link below:
https://www.westsussex.gov.uk/preapphighways

It is noted that the site currently has hybrid planning consent for a new vehicular access onto the A259 Bognor Road and a discount food retail unit (2431m^2) and outline consent for B2/B8/Trade uses (7820m^2) and 2 ancillary roadside catering units (420m^2).

Whilst the application documents do not make it explicitly clear the changes in use. It appears the discount food retail has been removed and replaced with a Hotel (Premier Inn) Restaurant (Beefeater) Gym and further roadside catering units including a drive through.

Basic trip generation has been provided within the supporting letter which shows that the changes in development would increase two way trips by 12 vehicles in the AM peak and reduce PM trips by 42. TRICs outputs should be provided to support this information. If the information is accurate it is felt the level of AM peak increase would be acceptable at the site access. Confirmation on the effects on the A27 Bognor Road roundabout should be confirmed with Highways England.

It should be noted that the adjoining site at Springfield Park is currently seeking planning permission. It is WSCC preference that a combined access strategy is developed to provide only a single vehicular access onto the A259.

The Highway Authority would require the following documents to be submitted as part of any future application:

- A site location plan scale (1:1250) with site boundary indicated
- Schedule of existing uses including planning history with reference numbers
- Description, including site layout plans, of the proposed development and schedule of uses
- Summary of reasons supporting the site access/highways works proposals, including plan (scale 1:250 or similar) with achievable visibility splays indicated

- Reference to supporting national, regional, and local planning documents and polices
- Parking strategy, including provision of parking for all modes of transport
- Proposed trip rates supported with TRICS outputs and site selection methodology

Steven Shaw
STRATEGIC PLANNING

Stephen Harris

From:	Franklin, Richard <Richard.Franklin@highwaysengland.co.uk>
Sent:	28 August 2018 09:39
To:	DCPlanning; Stephen Harris
Cc:	Planning SE; Bowie, David; Cleaver, Elizabeth
Subject:	FAO Steve Harris: Highways England response - O/18/01964/PRELM - Fuel Depot, Bognor Road
Attachments:	14_04284_OUT-HIGHWAYS_ENGLAND_02.03.16__ATTACHED_2_NO._PLANS_-2106498.pdf

For the attention of: Steve Harris

Application No: O/18/01964/PRELM

Site: Fuel Depot, Bognor Road, Chichester, West Sussex, PO20 1EJ.

Proposal: Premier Inn hotel, Beefeater pub/restaurant, roadside catering units and a gym.

Highways England reference: 82172

Dear Steve,

Thank you for your email of 8th August 2018 in relation to the pre-application referenced above.

Highways England has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the strategic road network (SRN). The SRN is a critical national asset and as such Highways England works to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity. We will therefore be concerned with proposals that have the potential to impact the safe and efficient operation of the SRN, in this case the A27.

Having examined the information provided, we note that the supporting letter contains a section on Highways on page 5 with a trip generation assessment concluding that the revised proposals would represent a small increase in AM trips and reduction in PM trips in comparison with the consented scheme (application reference O/14/04284/OUT). Having checked the figures, we would broadly agree with this, and thus if the revised proposals are taken forward to application, the associated impact would be similar and our previous response with associated conditions (see attached) would still be considered appropriate.

Finally, we note that the neighbouring site (Springfield Park) is also currently seeking planning permission with a separate access onto the A259 Bognor Road (application reference ONM/18/01365/OUT). Given that both sites are progressing along a similar timeframe, and that each access would impact on the A259 Bognor Road, which in turn would affect the A27 / A259 Bognor Road Roundabout, it would appear appropriate and be encouraging if both applicants could work together in order to deliver a combined access.

Should you have any queries regarding this response, please contact us at: PlanningSE@highwaysengland.co.uk.

Regards,

Sent on behalf of Elizabeth Cleaver, Assistant Spatial Planning Manager

Richard Franklin
Highways England Company Limited | Registered Office: Bridge House, 1 Walnut Tree Close, Guildford GU1 4LZ | Registered in England and Wales No. 9346363
Web: www.highwaysengland.co.uk

highways england

Developments Affecting Trunk Roads and Special Roads

Highways England Response & Formal Recommendation to an Application for Planning Permission

From: Simon Jones (Divisional Director),
Network Delivery and Development
Area 4
Highways England.

To: Chichester District Council

CC: transportplanning@dft.gsi.gov.uk
growthandplanning@highwaysengland.co.uk

Council's Reference: O/14/04284/OUT

Referring to the notification of a planning application dated 24th December 2014 referenced above, in connection with the Former Fuel Depot, Bognor Road, Chichester, West Sussex PO20 1EJ, outline application with some matters reserved to provide Hybrid outline application for re-development of the Fuel and Distribution Depot site. Outline permission is sought for B2/B8/Trade uses (7830m2) and 2 no. ancillary roadside catering units (420m2). Detailed permission is sought for a new vehicular access and discount food retail unit (2431m2) to the site, notice is hereby given that Highways England's formal recommendation is that we:

~~a) offer no objection;~~

b) recommend that conditions should be attached to any planning permission that may be granted (see Annex A – Highways England recommended Planning Conditions);

~~c) recommend that planning permission not be granted for a specified period (see Annex A – further assessment required);~~

~~d) recommend that the application be refused (see Annex A – Reasons for recommending Refusal).~~

Re Highways Act Section 175B: (Please delete as appropriate)

~~a) Highways England **consents** to access for any new connections to the Strategic Road Network as part of this application;***~~

~~b) Highways England **does not** consent to access for any new connections to the Strategic Road Network as part of this application~~

~~c) Not relevant as there is **no common boundary** between the planning site and the SRN.~~

d) Not relevant as **no new access** is being proposed along the common boundary between the planning site and the SRN

* Where we give consent (a), under Section 175B, this is applicable only to the particular planning application and its accompanying documents, including agreed junction designs.

This represents Highways England formal recommendation and is copied to the Department for Transport as per the terms of our Licence.

Should you disagree with this recommendation you must consult the Secretary of State for Transport, as per the Town and Country Planning (Development Affecting Trunk Roads) Direction 2015, via transportplanning@dft.gsi.gov.uk.

Signed by

Date: 17/11/15	**Signature:** [redacted]
Name: Peter Phillips	**Position:** Asset Manager
Highways England: Bridge House, 1 Walnut Tree Close, Guildford, GU1 4LZ	

Annex A Highways England recommended Planning Conditions

1) No part of the development hereby permitted shall be occupied until the completion of the improvements to the A27/A259 Bognor Road Roundabout shown on drawing number 3803-SK-028 Rev D 'Proposed Bognor Road Roundabout' (or such other scheme of works substantially to the same effect, as may be approved in writing by the local planning authority (who shall consult with Highways England)), including the transfer of any land required for the construction and maintenance of the improvement scheme.

   Reason: to ensure that the A27 Trunk Road continues to be an effective part of the national system of routes for through traffic in accordance with section 10 of the Highways Act 1980 and to satisfy the reasonable requirements of road safety

2) No part of the development hereby permitted shall be occupied until the applicant enters into a Section 278 agreement with Highways England for the costs of construction and maintenance (including any necessary transfer of lands) of the modifications to the Chichester Bypass Local Plan improvements (as required as part of the committed development in the adopted Local Plan) for the A27/A259 Bognor Road Roundabout. The required modifications to the A27/A259 Bognor Road Roundabout Local Plan improvements are shown on drawing number 3803-SK-018 Rev E 'Proposed Bognor Road Roundabout PB Scheme Mitigation' (or such other scheme of works substantially to the same effect, as may be approved in writing by the local planning authority (who shall consult with Highways England)).

   Reason: to ensure that the A27 Trunk Road continues to be an effective part of the national system of routes for through traffic in accordance with section 10 of the Highways Act 1980 and to satisfy the reasonable requirements of road safety

3) No part of the development hereby permitted shall be occupied until two Non Motorised Users Audits have been undertaken in accordance with HD 42/05 (during both the detailed design and construction stages), agreed in writing by the local planning authority (who shall consult with Highways England) and the recommendations from the agreed Non Motorised User Audits are implemented in full.

   Reason: To ensure the needs of Non-Motorised Users are duly considered and to satisfy the reasonable requirements of road safety.

4) No part of the development hereby permitted shall commence until a Construction Traffic Management Plan has been submitted and agreed in writing by the local planning authority (who shall consult the Highways England). Construction of the development shall then be carried out in accordance with the agreed Construction Traffic Management Plan.

Reason: To ensure that construction of the development does not result in avoidable congestion on the A27 Trunk Road, to ensure that the A27 Trunk Road continues to be an effective part of the national system of routes for through traffic in accordance with section 10 of the Highways Act 1980 and to satisfy the reasonable requirements of road safety.

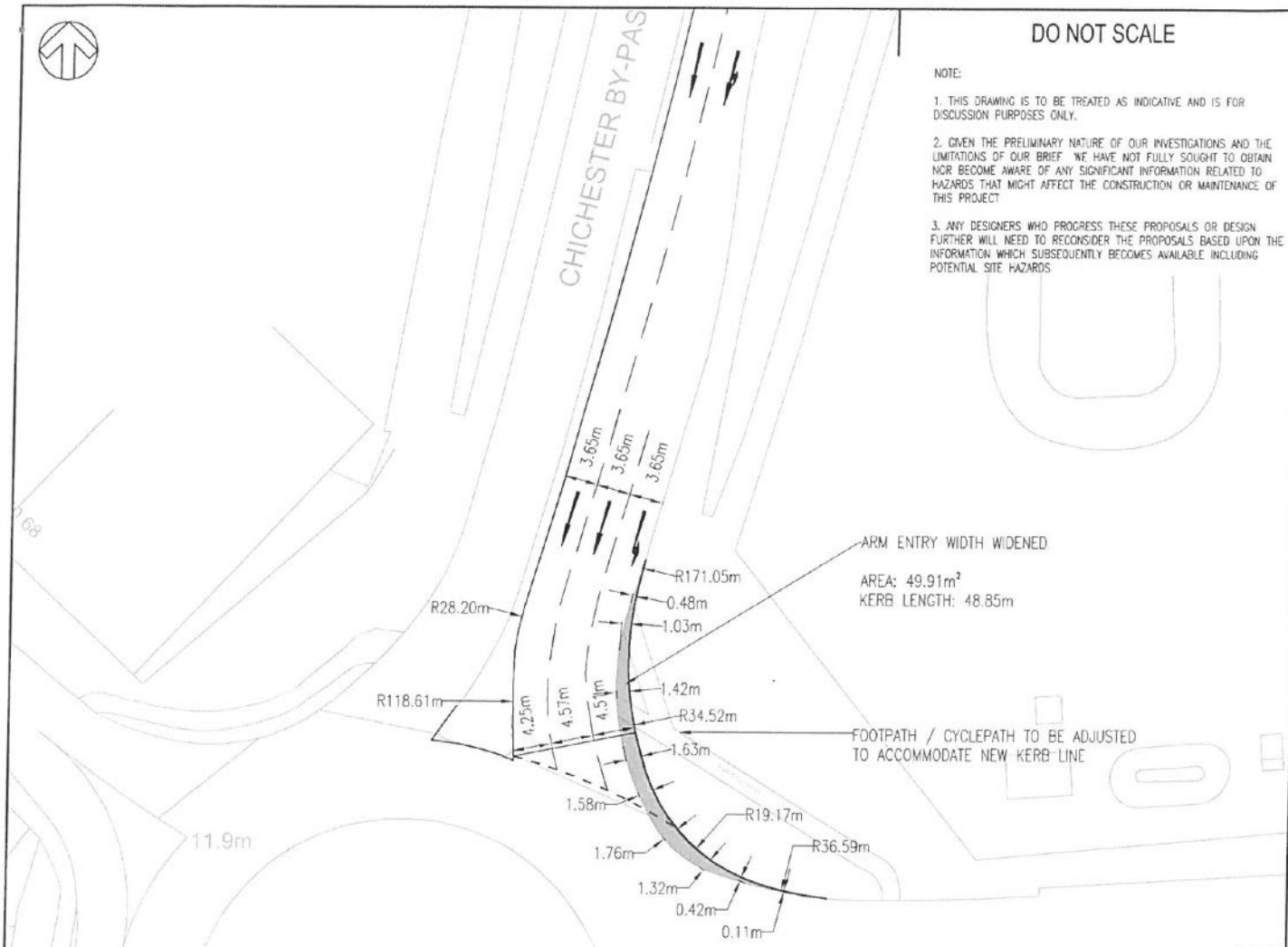
INFORMATIVE

This development involves work to the public highway that can only be undertaken within the scope of a legal Agreement between the applicant and the Secretary of State for Transport. Planning permission in itself does not permit these works. It is the applicant's responsibility to ensure that before commencement of any works to the public highway, any necessary Agreements under the Highways Act 1980 are also obtained. Advice on this matter can be obtained from the Asset Development Manager A27 West Sussex, Highways England, Bridge House, Walnut Tree Close, Guildford, Surrey GU1 4LZ Email info@highwaysengland.co.uk Tel 0300 123 5000

HIGHWAYS ENGLAND ("we") has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such works to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

This proposal includes elements that are outside of the adopted Chichester Local Plan and has an impact upon the A27 Chichester Bypass at the A27 / A259 Bognor Road roundabout. In order for Highways England to be satisfied that this proposal will not result in severe detriment to the capability of the SRN and does not threaten the deliverability of the Chichester Local Plan, we will require that this development provides funding to cover the construction and future maintenance of the additional works required to enhance the Local Plan improvement scheme for the A27 / A259 Bognor Road roundabout in order to accommodate the additional impact of the proposal which is not part of the Chichester Local Plan.

This response represents our formal recommendations with regard to the Former Fuel Depot, Bognor Road, Chichester, West Sussex, and has been prepared by Peter Phillips.



DO NOT SCALE

NOTE:

1. THIS DRAWING IS TO BE TREATED AS INDICATIVE AND IS FOR DISCUSSION PURPOSES ONLY.

2. GIVEN THE PRELIMINARY NATURE OF OUR INVESTIGATIONS AND THE LIMITATIONS OF OUR BRIEF WE HAVE NOT FULLY SOUGHT TO OBTAIN NOR BECOME AWARE OF ANY SIGNIFICANT INFORMATION RELATED TO HAZARDS THAT MIGHT AFFECT THE CONSTRUCTION OR MAINTENANCE OF THIS PROJECT

3. ANY DESIGNERS WHO PROGRESS THESE PROPOSALS OR DESIGN FURTHER WILL NEED TO RECONSIDER THE PROPOSALS BASED UPON THE INFORMATION WHICH SUBSEQUENTLY BECOMES AVAILABLE INCLUDING POTENTIAL SITE HAZARDS

REV	DATE	BY	DESCRIPTION	CHK	APD
D	13/10/15	CE	LANE WIDTHS/RADII ADDED	CM	CM
C	17/08/15	NW	ANNOTATIONS ADDED	CM	CM
B	05/08/15	NW	JUNCTION AMENDED	CM	CM
A	27/07/15	NW	FIRST ISSUE	SA	CM

SCALE @ A3: 1:500 | CHECKED: SA | APPROVED: CM

DRAWING STATUS: FOR INFORMATION ONLY

WSP | PARSONS BRINCKERHOFF
Mountbatten House, Basing View, Basingstoke, Hampshire RG21 4HJ
Tel: +44 (0)1256 318800 Fax: +44 (0)1256 318700
www.wspgroup.com www.pbworld.com

PROJECT: BOGNOR BRIDGE ROAD, CHICHESTER

TITLE: PROPOSED BOGNOR ROAD ROUNDABOUT

CLIENT: HANBURY PROPERTIES

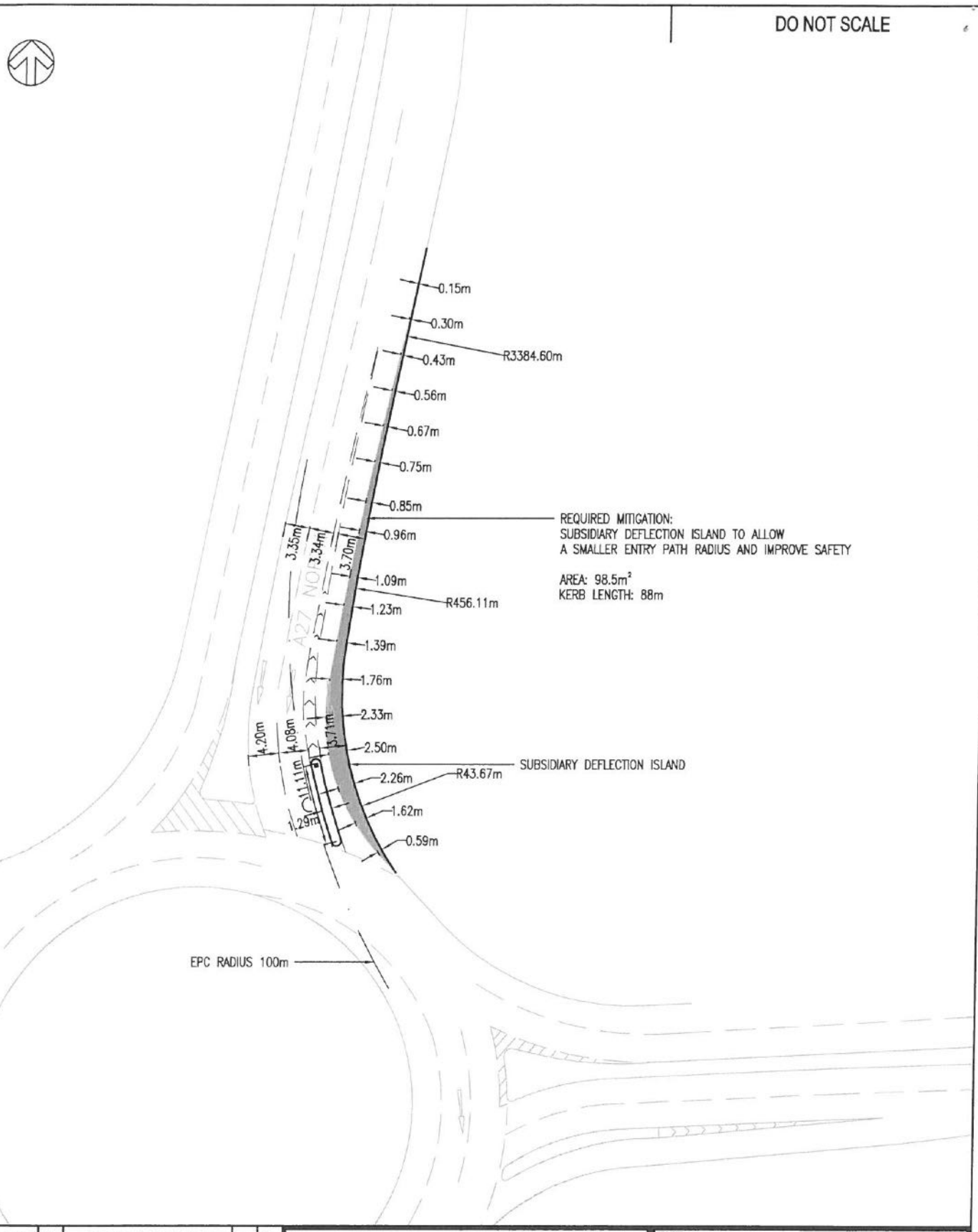
ARCHITECT: ROBERTS LIMBRICK

CAD FILE:	DESIGN DRWN:	DATE:
3803-SK-028.DWG	FI	July 15

PROJECT No:	DRAWING No:	REV:
7003803	3803-SK-028	D

S:\7003803 - Bognor Bridge Road, Chichester\E Models and Drawings\Development\AUTOCAD\SK Sketches\3803-SK-028.dwg 14/10/2015 11:05:01 Weale, Nicola

DO NOT SCALE



REV	DATE	BY	DESCRIPTION	CHK	APD
E	13/10/15	CE	LANE WIDTH/RADII ADDED	CM	CM
D	28/08/15	NW	ROAD MARKINGS UPDATED	CM	CM
C	21/04/15	NW	ENTRY PATH CURVATURE ADDED	SA	AL
B	17/04/15	LEW	ISLAND ADDED	SA	AL
A	14/04/15	JP	FIRST ISSUE	SA	AL

SCALE @ A3: 1:500 | CHECKED: SA | APPROVED: AL

DRAWING STATUS: FOR INFORMATION ONLY

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Tel: +44 (0)1256 318800 Fax: +44 (0)1256 318700
http://www.wspgroup.com

PROJECT: BOGNOR BRIDGE ROAD, CHICHESTER

TITLE: BOGNOR BRIDGE ROUNDABOUT
PB SCHEME MITIGATION

CLIENT	CAD FILE	DESIGN/DRAWN	DATE
HANBURY PROPERTIES	3803-SK-018.DWG	JP	April 15

ARCHITECT	PROJECT No:	DRAWING No:	REV:
ROBERTS LIMBRICK	70003803	3803-SK-018	E

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Appendix C

TRICS OUTPUT

Appendix C.1

PREMIER INN

Calculation Reference: AUDIT-100301-181219-1206

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : A - HOTELS
VEHICLES

Selected regions and areas:

01	GREATER LONDON		
	BE	BEXLEY	1 days
	GR	GREENWICH	1 days
	HD	HILLINGDON	1 days
	HO	HOUNSLOW	2 days
02	SOUTH EAST		
	BU	BUCKINGHAMSHIRE	1 days
03	SOUTH WEST		
	DV	DEVON	1 days
	GS	GLOUCESTERSHIRE	1 days
04	EAST ANGLIA		
	NF	NORFOLK	1 days
05	EAST MIDLANDS		
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	WM	WEST MIDLANDS	1 days

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

Secondary Filtering selection:

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

Parameter: Number of bedrooms
Actual Range: 56 to 178 (units:)
Range Selected by User: 15 to 289 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 09/11/15

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

Selected survey days:

Monday	2 days
Tuesday	1 days
Wednesday	4 days
Thursday	2 days
Friday	2 days

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

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	4
Suburban Area (PPS6 Out of Centre)	3
Edge of Town	3
Neighbourhood Centre (PPS6 Local Centre)	1

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

Selected Location Sub Categories:

Industrial Zone	1
Commercial Zone	1
Residential Zone	3
Retail Zone	1
Built-Up Zone	1
Village	1
Out of Town	1
No Sub Category	2

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

Secondary Filtering selection:

Use Class:

C1	11 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:

1,001 to 5,000	1 days
5,001 to 10,000	3 days
10,001 to 15,000	1 days
20,001 to 25,000	1 days
25,001 to 50,000	3 days
50,001 to 100,000	1 days
100,001 or More	1 days

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

Population within 5 miles:

25,001 to 50,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	2 days
250,001 to 500,000	2 days
500,001 or More	5 days

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

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	8 days

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

Travel Plan:

No	11 days

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

PTAL Rating:

No PTAL Present	6 days
1b Very poor	1 days
3 Moderate	1 days
4 Good	1 days
6a Excellent	2 days

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

LIST OF SITES relevant to selection parameters

1 BE-06-A-02 HOLIDAY INN BEXLEY
SOUTHWOLD ROAD
BEXLEY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of bedrooms: 107
Survey date: FRIDAY *29/11/13* *Survey Type: MANUAL*

2 BU-06-A-02 HOLIDAY INN BUCKINGHAMSHIRE
NEW ROAD
AYLESBURY
WESTON TURVILLE
Edge of Town
Out of Town
Total Number of bedrooms: 139
Survey date: WEDNESDAY *01/10/14* *Survey Type: MANUAL*

3 DV-06-A-03 FUTURE INN DEVON
WILLIAM PRANCE ROAD
PLYMOUTH

Edge of Town
Industrial Zone
Total Number of bedrooms: 110
Survey date: WEDNESDAY *18/07/12* *Survey Type: MANUAL*

4 GR-06-A-03 NOVOTEL GREENWICH
GREENWICH HIGH ROAD
GREENWICH

Edge of Town Centre
No Sub Category
Total Number of bedrooms: 151
Survey date: FRIDAY *22/11/13* *Survey Type: MANUAL*

5 GS-06-A-02 PREMIER INN GLOUCESTERSHIRE
GLOUCESTER ROAD
CHELTENHAM SPA
SAINT MARKS
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of bedrooms: 67
Survey date: THURSDAY *28/11/13* *Survey Type: MANUAL*

6 HD-06-A-02 NOVOTEL HILLINGDON
CHERRY LANE
WEST DRAYTON

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of bedrooms: 178
Survey date: TUESDAY *15/05/12* *Survey Type: MANUAL*

7 HO-06-A-01 DAYS HOTEL HOUNSLOW
LAMPTON ROAD
HOUNSLOW

Edge of Town Centre
Commercial Zone
Total Number of bedrooms: 96
Survey date: WEDNESDAY *16/06/10* *Survey Type: MANUAL*

8 HO-06-A-02 ETAP HOTEL HOUNSLOW
STAINES ROAD
HOUNSLOW

Edge of Town Centre
Retail Zone
Total Number of bedrooms: 148
Survey date: WEDNESDAY *16/06/10* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

9 NF-06-A-02 HOLIDAY INN NORFOLK
IPSWICH ROAD
NORWICH
HARFORD PARK
Edge of Town
No Sub Category
Total Number of bedrooms: 119
Survey date: THURSDAY *30/09/10* *Survey Type: MANUAL*

10 NT-06-A-02 PREMIER INN NOTTINGHAMSHIRE
LONDON ROAD
NOTTINGHAM

Edge of Town Centre
Built-Up Zone
Total Number of bedrooms: 87
Survey date: MONDAY *24/06/13* *Survey Type: MANUAL*

11 WM-06-A-05 HOTEL WEST MIDLANDS
BIRMINGHAM ROAD
BIRMINGHAM
HOPWOOD
Neighbourhood Centre (PPS6 Local Centre)
Village
Total Number of bedrooms: 56
Survey date: MONDAY *09/11/15* *Survey Type: MANUAL*

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
DS-06-A-02	Town Centre
EX-06-A-01	Town Centre
WL-06-A-02	Town Centre

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS
VEHICLES
Calculation factor: 1 BEDRMS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	107	0.047	1	107	0.168	1	107	0.215
07:00 - 08:00	11	114	0.060	11	114	0.141	11	114	0.201
08:00 - 09:00	11	114	0.110	11	114	0.175	11	114	0.285
09:00 - 10:00	11	114	0.130	11	114	0.092	11	114	0.222
10:00 - 11:00	11	114	0.093	11	114	0.084	11	114	0.177
11:00 - 12:00	11	114	0.081	11	114	0.095	11	114	0.176
12:00 - 13:00	11	114	0.081	11	114	0.066	11	114	0.147
13:00 - 14:00	11	114	0.083	11	114	0.102	11	114	0.185
14:00 - 15:00	11	114	0.064	11	114	0.095	11	114	0.159
15:00 - 16:00	11	114	0.098	11	114	0.119	11	114	0.217
16:00 - 17:00	11	114	0.107	11	114	0.099	11	114	0.206
17:00 - 18:00	11	114	0.144	11	114	0.092	11	114	0.236
18:00 - 19:00	11	114	0.149	11	114	0.100	11	114	0.249
19:00 - 20:00	11	114	0.151	11	114	0.091	11	114	0.242
20:00 - 21:00	11	114	0.084	11	114	0.056	11	114	0.140
21:00 - 22:00	11	114	0.070	11	114	0.069	11	114	0.139
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.552			1.644			3.196

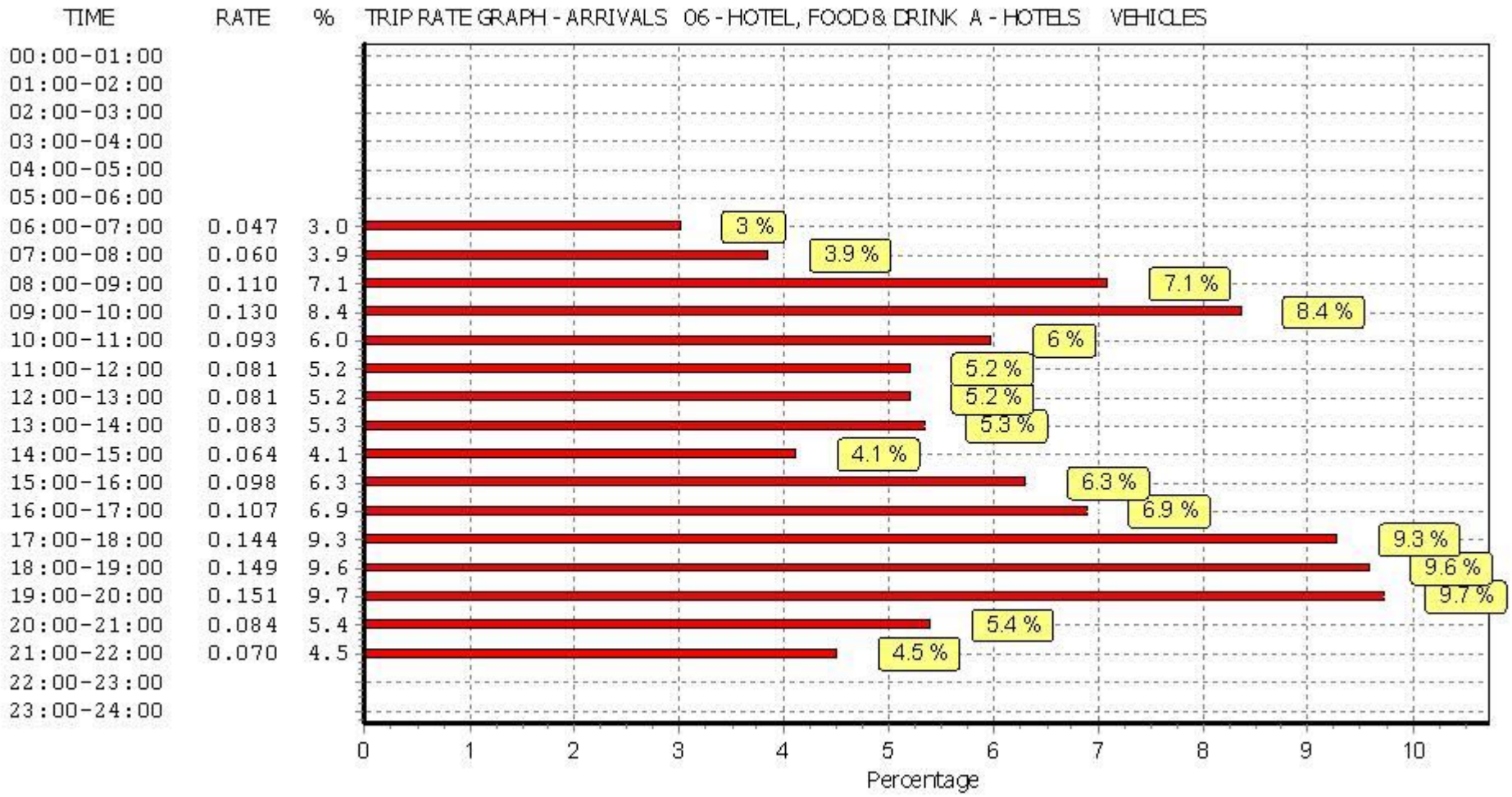
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

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

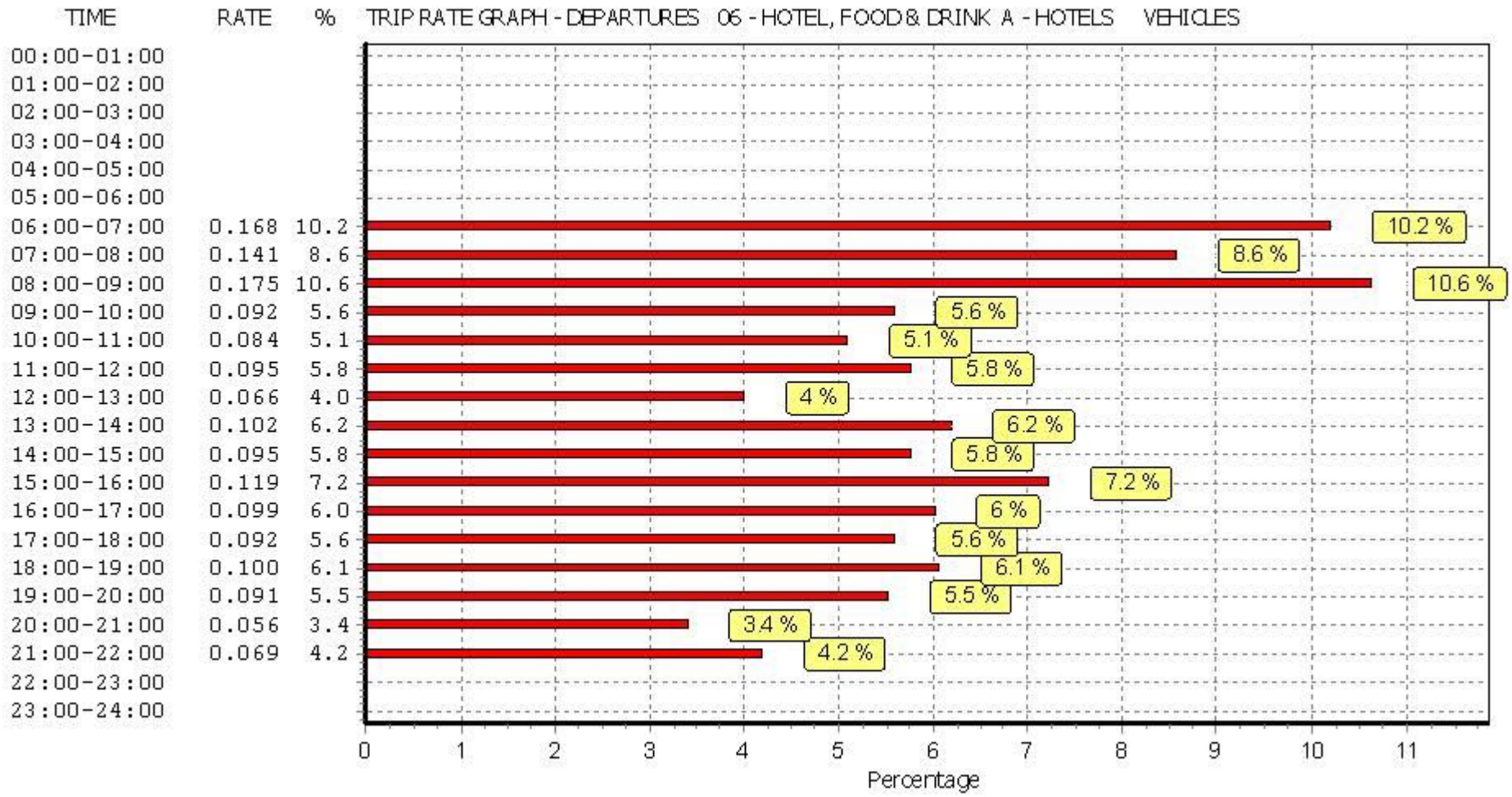
Parameter summary

Trip rate parameter range selected:	56 - 178 (units:)
Survey date date range:	01/01/10 - 09/11/15
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	3

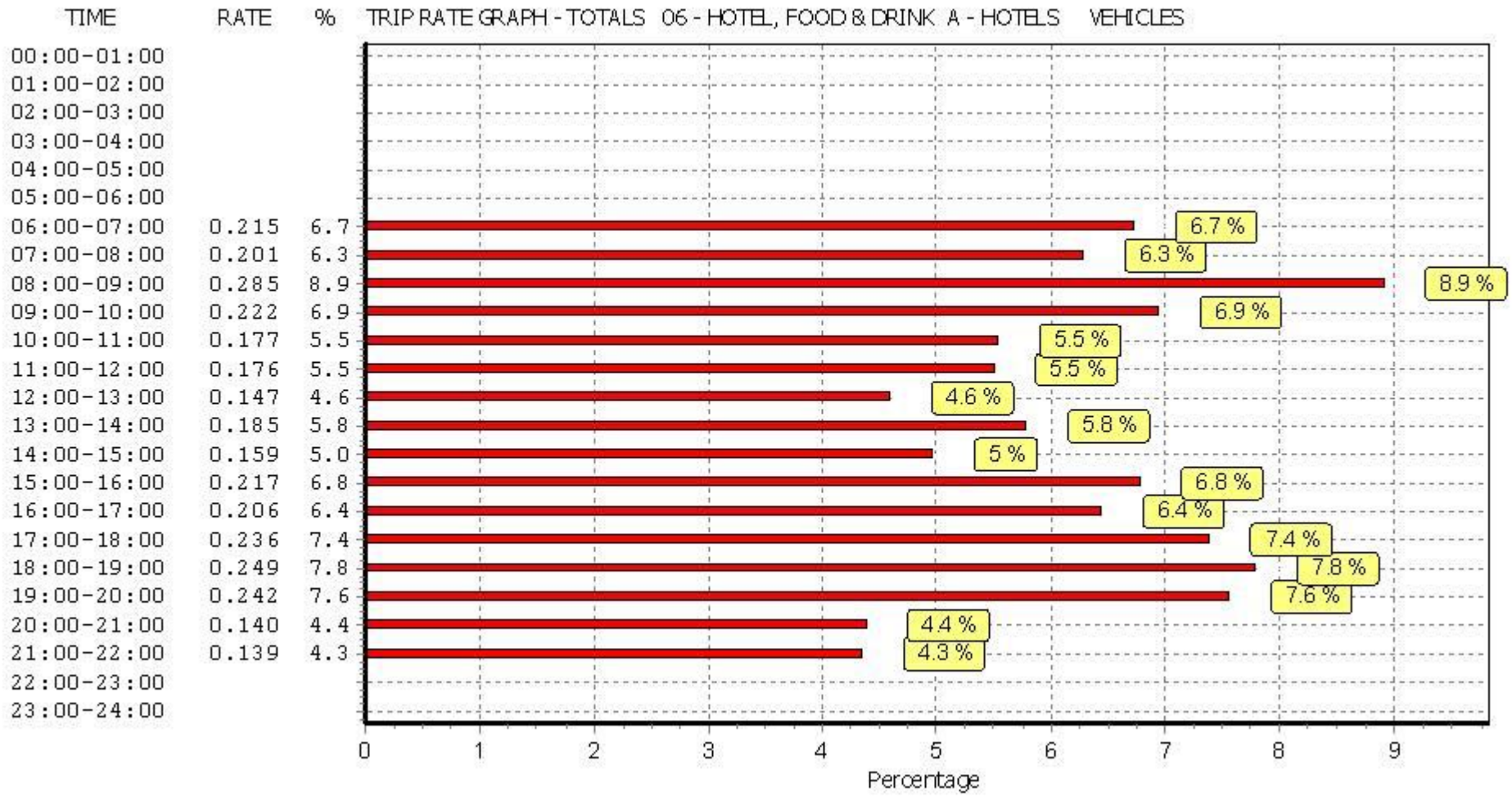
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Appendix C.2

BEEFEATER

Calculation Reference: AUDIT-100301-181219-1240

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : C - PUB/RESTAURANT
VEHICLES

Selected regions and areas:

01	GREATER LONDON		
	BN	BARNET	1 days
	EN	ENFIELD	1 days
	HD	HILLINGDON	1 days
	HK	HACKNEY	1 days
	IS	ISLINGTON	2 days
	WH	WANDSWORTH	1 days
02	SOUTH EAST		
	BF	BRACKNELL FOREST	1 days
	ES	EAST SUSSEX	1 days
	EX	ESSEX	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
	NR	NORTHAMPTONSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	ST	STAFFORDSHIRE	1 days
	WK	WARWICKSHIRE	1 days
	WM	WEST MIDLANDS	1 days
	WO	WORCESTERSHIRE	1 days

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

Secondary Filtering selection:

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

Parameter: Gross floor area
Actual Range: 200 to 875 (units: sqm)
Range Selected by User: 112 to 1400 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 10/10/17

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	6 days
Wednesday	3 days
Thursday	2 days
Friday	6 days

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

Selected survey types:

Manual count	18 days
Directional ATC Count	0 days

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

Selected Locations:

Town Centre	3
Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	2
Edge of Town	7
Neighbourhood Centre (PPS6 Local Centre)	4

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

Selected Location Sub Categories:

Industrial Zone	1
Commercial Zone	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:

A3	1 days
A4	17 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	1 days
5,001 to 10,000	1 days
10,001 to 15,000	4 days
15,001 to 20,000	3 days
25,001 to 50,000	3 days
50,001 to 100,000	4 days
100,001 or More	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	2 days
25,001 to 50,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	4 days
250,001 to 500,000	5 days
500,001 or More	5 days

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

Car ownership within 5 miles:

0.5 or Less	3 days
0.6 to 1.0	3 days
1.1 to 1.5	12 days

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

Travel Plan:

No	18 days

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

PTAL Rating:

No PTAL Present	11 days
1a (Low) Very poor	1 days
1b Very poor	1 days
2 Poor	1 days
6a Excellent	3 days
6b (High) Excellent	1 days

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

LIST OF SITES relevant to selection parameters

1 BF-06-C-01 HARVESTER BRACKNELL FOREST
BAGSHOT ROAD
BRACKNELL

Edge of Town Centre
Residential Zone
Total Gross floor area: 725 sqm
Survey date: FRIDAY *23/11/12* *Survey Type: MANUAL*

2 BN-06-C-01 PUB/RESTAURANT BARNET
BARNET ROAD
BARNET

Edge of Town
Residential Zone
Total Gross floor area: 724 sqm
Survey date: WEDNESDAY *06/11/13* *Survey Type: MANUAL*

3 EN-06-C-01 PUB/RESTAURANT ENFIELD
CATTLEGATE ROAD
ENFIELD

Neighbourhood Centre (PPS6 Local Centre)
Village
Total Gross floor area: 770 sqm
Survey date: TUESDAY *17/11/15* *Survey Type: MANUAL*

4 ES-06-C-02 PUB/RESTAURANT EAST SUSSEX
HOVE STREET
BRIGHTON
HOVE
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 460 sqm
Survey date: FRIDAY *22/09/17* *Survey Type: MANUAL*

5 EX-06-C-02 HARVESTER ESSEX
LONDON ROAD
COLCHESTER
STANWAY
Edge of Town
No Sub Category
Total Gross floor area: 450 sqm
Survey date: FRIDAY *08/11/13* *Survey Type: MANUAL*

6 HD-06-C-01 HARVESTER HILLINGDON
BURY STREET
RUISLIP

Edge of Town
Residential Zone
Total Gross floor area: 850 sqm
Survey date: THURSDAY *25/06/15* *Survey Type: MANUAL*

7 HK-06-C-01 PUB/RESTAURANT HACKNEY
COMMERCIAL STREET
SHOREDITCH

Neighbourhood Centre (PPS6 Local Centre)
Built-Up Zone
Total Gross floor area: 320 sqm
Survey date: TUESDAY *19/11/13* *Survey Type: MANUAL*

8 IS-06-C-01 PUB/RESTAURANT ISLINGTON
NEWINGTON GREEN RD
CANONBURY
NEWINGTON GREEN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 350 sqm
Survey date: MONDAY *22/09/14* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

9 IS-06-C-02 PUB/RESTAURANT ISLINGTON
GOSWELL ROAD
CLERKENWELL

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 320 sqm
Survey date: FRIDAY *30/09/16* *Survey Type: MANUAL*

10 LN-06-C-01 FLAMING GRILL LINCOLNSHIRE
CRUSADER ROAD
LINCOLN
NEW BOULTHAM
Edge of Town
Retail Zone
Total Gross floor area: 760 sqm
Survey date: TUESDAY *10/10/17* *Survey Type: MANUAL*

11 NR-06-C-01 PUB/RESTAURANT NORTHAMPTONSHIRE
BEDFORD ROAD
NORTHAMPTON
BRACKMILLS
Edge of Town
Commercial Zone
Total Gross floor area: 620 sqm
Survey date: FRIDAY *11/11/16* *Survey Type: MANUAL*

12 NT-06-C-03 HARVESTER NOTTINGHAMSHIRE
CLIFTON LANE
NOTTINGHAM
WILFORD
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 450 sqm
Survey date: TUESDAY *18/06/13* *Survey Type: MANUAL*

13 SF-06-C-02 PUB/RESTAURANT SUFFOLK
CLIFF ROAD
IPSWICH

Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 875 sqm
Survey date: FRIDAY *18/09/15* *Survey Type: MANUAL*

14 ST-06-C-01 HARVESTER STAFFORDSHIRE
STONE ROAD
STOKE-ON-TRENT
TRENTHAM
Edge of Town
Residential Zone
Total Gross floor area: 720 sqm
Survey date: WEDNESDAY *23/10/13* *Survey Type: MANUAL*

15 WH-06-C-01 PUB/RESTAURANT WANDSWORTH
WANDSWORTH HIGH ST
WANDSWORTH

Town Centre
High Street
Total Gross floor area: 400 sqm
Survey date: TUESDAY *26/11/13* *Survey Type: MANUAL*

16 WK-06-C-01 PUB/RESTAURANT WARWICKSHIRE
GREYFRIARS LANE
COVENTRY

Town Centre
Built-Up Zone
Total Gross floor area: 461 sqm
Survey date: THURSDAY *17/10/13* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

17 WM-06-C-02 PUB/RESTAURANT WEST MIDLANDS
PENNWOOD LANE
WOLVERHAMPTON
PENN COMMON
Edge of Town
Out of Town
Total Gross floor area: 200 sqm
Survey date: TUESDAY *22/11/16* *Survey Type: MANUAL*

18 WO-06-C-03 PUB/RESTAURANT WORCESTERSHIRE
THE TYTHING
WORCESTER

Town Centre
High Street
Total Gross floor area: 250 sqm
Survey date: WEDNESDAY *23/11/16* *Survey Type: MANUAL*

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
BR-06-C-01	Town Centre
CI-06-C-01	Town Centre
HG-06-C-01	Town Centre
LB-06-C-01	Town Centre

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/C - PUB/RESTAURANT
VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	850	0.471	1	850	0.118	1	850	0.589
08:00 - 09:00	1	850	0.000	1	850	0.118	1	850	0.118
09:00 - 10:00	1	850	0.588	1	850	0.353	1	850	0.941
10:00 - 11:00	17	552	0.501	17	552	0.426	17	552	0.927
11:00 - 12:00	17	552	1.193	17	552	0.501	17	552	1.694
12:00 - 13:00	18	539	2.504	18	539	0.917	18	539	3.421
13:00 - 14:00	18	539	2.009	18	539	1.927	18	539	3.936
14:00 - 15:00	18	539	1.092	18	539	2.184	18	539	3.276
15:00 - 16:00	18	539	0.721	18	539	1.329	18	539	2.050
16:00 - 17:00	18	539	1.659	18	539	0.938	18	539	2.597
17:00 - 18:00	18	539	2.638	18	539	1.556	18	539	4.194
18:00 - 19:00	18	539	2.823	18	539	2.061	18	539	4.884
19:00 - 20:00	18	539	2.772	18	539	2.463	18	539	5.235
20:00 - 21:00	18	539	1.793	18	539	2.391	18	539	4.184
21:00 - 22:00	18	539	0.670	18	539	1.958	18	539	2.628
22:00 - 23:00	18	539	0.505	18	539	1.896	18	539	2.401
23:00 - 24:00	17	534	0.154	17	534	0.616	17	534	0.770
Total Rates:			22.093			21.752			43.845

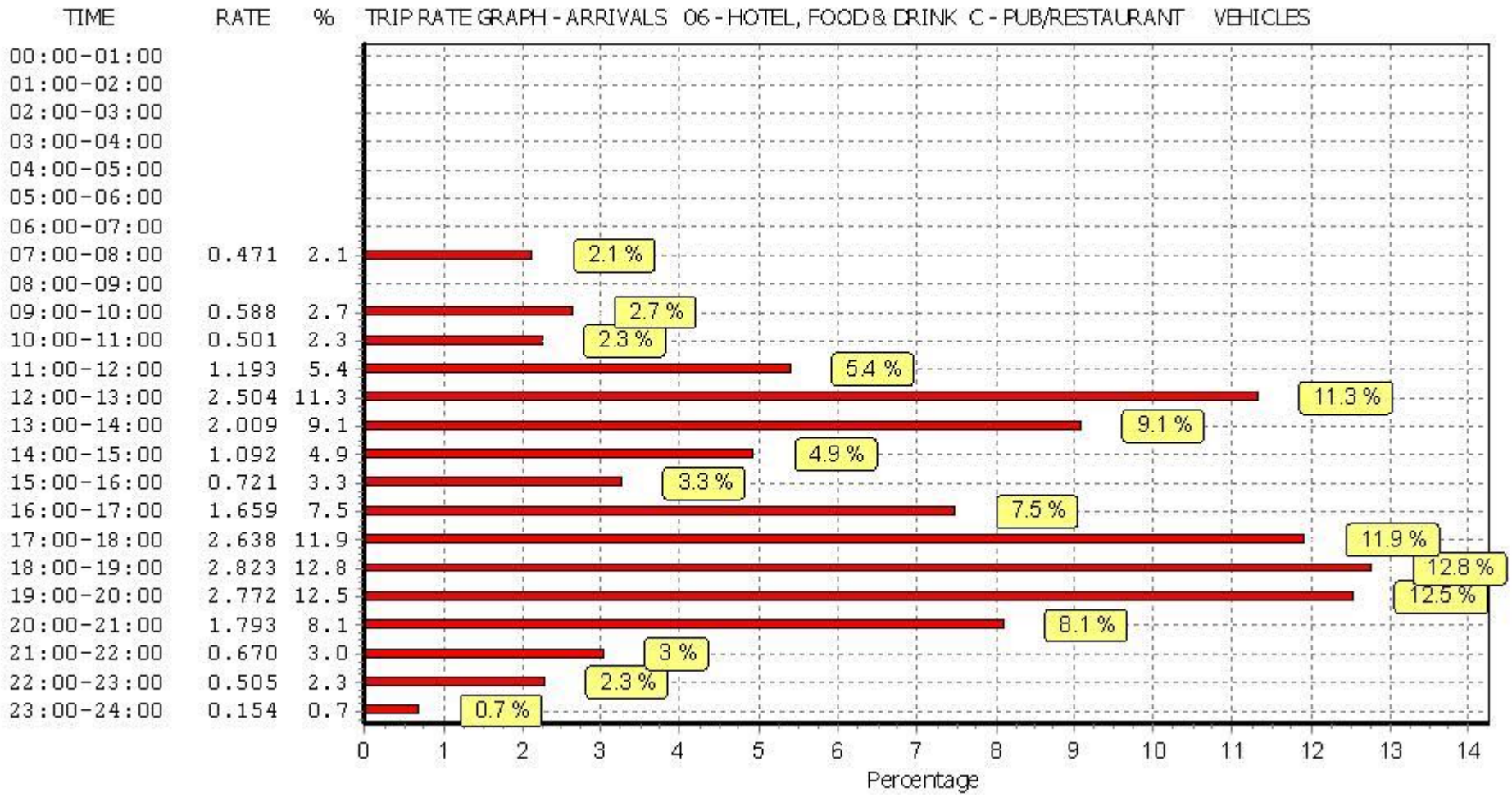
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

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

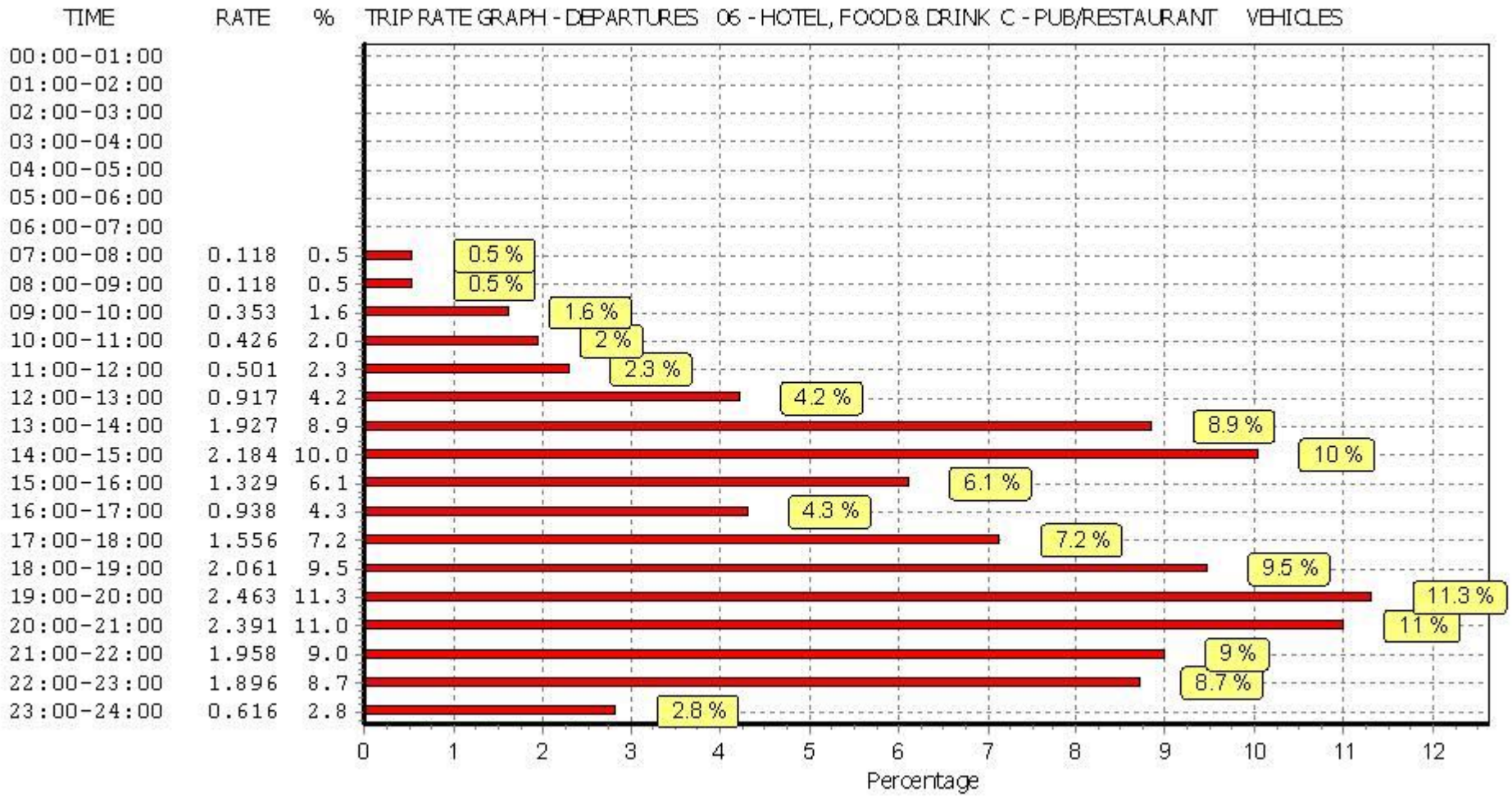
Parameter summary

Trip rate parameter range selected:	200 - 875 (units: sqm)
Survey date date range:	01/01/10 - 10/10/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	4

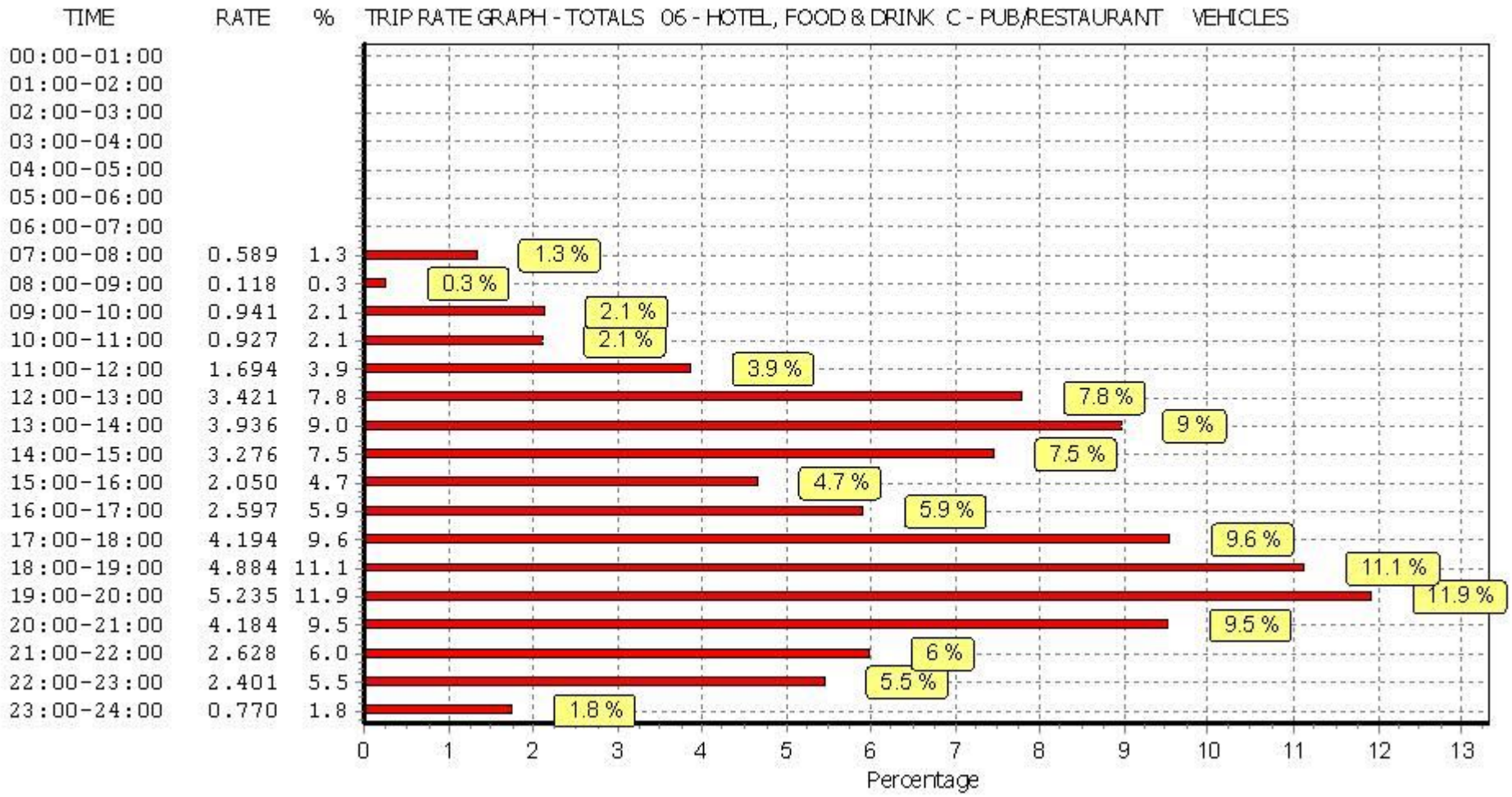
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Appendix C.3

DRIVE THRU

Calculation Reference: AUDIT-100301-180627-0633

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
Category : D - FAST FOOD - DRIVE THROUGH
VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	HC	HAMPSHIRE	1 days
	SO	SLOUGH	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days

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

Secondary 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: 435 to 480 (units: sqm)
Range Selected by User: 210 to 800 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 19/09/17

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:

Tuesday	1 days
Wednesday	2 days

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

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	1
Edge 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:

Residential Zone	2
Built-Up Zone	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:

A5	2 days
C3	1 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®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

5,001 to 10,000	1 days
15,001 to 20,000	1 days
20,001 to 25,000	1 days

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

Population within 5 miles:

75,001 to 100,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	1 days

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

Travel Plan:

No	3 days

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

PTAL Rating:

No PTAL Present	3 days

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

LIST OF SITES relevant to selection parameters

1 CA-06-D-02 MCDONALD'S CAMBRIDGESHIRE
NEWMARKET ROAD

CAMBRIDGE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 435 sqm
Survey date: TUESDAY *19/09/17* *Survey Type: MANUAL*

2 HC-06-D-02 BURGER KING HAMPSHIRE
WELLINGTON AVENUE

ALDERSHOT
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 465 sqm
Survey date: WEDNESDAY *20/10/10* *Survey Type: MANUAL*

3 SO-06-D-01 MCDONALD'S SLOUGH
WINDSOR ROAD

SLOUGH
Edge of Town
Residential Zone
Total Gross floor area: 480 sqm
Survey date: WEDNESDAY *21/11/12* *Survey Type: MANUAL*

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

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/D - FAST FOOD - DRIVE THROUGH
VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	1	480	0.417	1	480	0.000	1	480	0.417
06:00 - 07:00	1	480	1.042	1	480	0.833	1	480	1.875
07:00 - 08:00	2	458	2.623	2	458	2.404	2	458	5.027
08:00 - 09:00	3	460	3.333	3	460	2.681	3	460	6.014
09:00 - 10:00	3	460	2.754	3	460	2.826	3	460	5.580
10:00 - 11:00	3	460	5.000	3	460	4.130	3	460	9.130
11:00 - 12:00	3	460	7.319	3	460	6.812	3	460	14.131
12:00 - 13:00	3	460	10.725	3	460	10.580	3	460	21.305
13:00 - 14:00	3	460	9.493	3	460	10.942	3	460	20.435
14:00 - 15:00	3	460	5.797	3	460	6.667	3	460	12.464
15:00 - 16:00	3	460	4.783	3	460	4.710	3	460	9.493
16:00 - 17:00	3	460	7.174	3	460	6.377	3	460	13.551
17:00 - 18:00	3	460	6.957	3	460	7.029	3	460	13.986
18:00 - 19:00	3	460	8.986	3	460	8.913	3	460	17.899
19:00 - 20:00	3	460	7.319	3	460	8.188	3	460	15.507
20:00 - 21:00	3	460	4.565	3	460	4.493	3	460	9.058
21:00 - 22:00	3	460	3.333	3	460	3.768	3	460	7.101
22:00 - 23:00	2	473	1.799	2	473	1.799	2	473	3.598
23:00 - 24:00	2	473	0.212	2	473	1.058	2	473	1.270
Total Rates:			93.631			94.210			187.841

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

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

Parameter summary

Trip rate parameter range selected:	435 - 480 (units: sqm)
Survey date date range:	01/01/10 - 19/09/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

Appendix C.4

GYM

Calculation Reference: AUDIT-100301-181219-1229

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
Category : K - FITNESS CLUB (PRIVATE)
VEHICLES

Selected regions and areas:

01	GREATER LONDON		
	BT	BRENT	1 days
	EN	ENFIELD	1 days
	HG	HARINGEY	1 days
	IS	ISLINGTON	1 days
02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	1 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
	LE	LEICESTERSHIRE	1 days
	NR	NORTHAMPTONSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	WK	WARWICKSHIRE	1 days

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

Secondary 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: 550 to 8200 (units: sqm)
Range Selected by User: 204 to 13856 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 27/09/17

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:

Tuesday	4 days
Wednesday	4 days
Thursday	4 days

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

Selected survey types:

Manual count	12 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	5
Suburban Area (PPS6 Out of Centre)	3
Edge of Town	4

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

Selected Location Sub Categories:

Commercial Zone	2
Development Zone	1
Residential Zone	4
Built-Up Zone	4
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:

D2	12 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:

5,001 to 10,000	1 days
10,001 to 15,000	2 days
15,001 to 20,000	2 days
25,001 to 50,000	4 days
50,001 to 100,000	2 days
100,001 or More	1 days

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

Population within 5 miles:

50,001 to 75,000	1 days
75,001 to 100,000	1 days
125,001 to 250,000	1 days
250,001 to 500,000	4 days
500,001 or More	5 days

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

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	7 days
1.1 to 1.5	4 days

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

Travel Plan:

Yes	1 days
No	11 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
5 Very Good	1 days
6a Excellent	2 days
6b (High) Excellent	1 days

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

LIST OF SITES relevant to selection parameters

1 BT-07-K-01 LIFESTYLE FITNESS BRENT
EMPIRE WAY
WEMBLEY

Suburban Area (PPS6 Out of Centre)
Development Zone
Total Gross floor area: 1750 sqm
Survey date: WEDNESDAY 03/06/15 Survey Type: MANUAL

2 DS-07-K-03 LA FITNESS DERBYSHIRE
CARRINGTON STREET
DERBY
CASTLE WARD
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 4000 sqm
Survey date: THURSDAY 25/06/15 Survey Type: MANUAL

3 EN-07-K-01 FIT4LESS ENFIELD
OLD PARK AVENUE
ENFIELD

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 550 sqm
Survey date: TUESDAY 17/11/15 Survey Type: MANUAL

4 ES-07-K-02 CORAL FITNESS EAST SUSSEX
ORCHARD ROAD
BRIGHTON
HOVE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 1600 sqm
Survey date: WEDNESDAY 27/09/17 Survey Type: MANUAL

5 HC-07-K-01 VIRGIN ACTIVE HAMPSHIRE
BOTLEY ROAD
SOUTHAMPTON
WEST END
Edge of Town
No Sub Category
Total Gross floor area: 8000 sqm
Survey date: TUESDAY 24/11/15 Survey Type: MANUAL

6 HG-07-K-02 THE GYM HARINGEY
LORDSHIP LANE
WOOD GREEN

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 1440 sqm
Survey date: THURSDAY 18/09/14 Survey Type: MANUAL

7 IS-07-K-02 THE GYM ISLINGTON
GOSWELL ROAD
ANGEL

Edge of Town Centre
Built-Up Zone
Total Gross floor area: 1225 sqm
Survey date: TUESDAY 28/06/16 Survey Type: MANUAL

8 LE-07-K-01 DAVID LLOYD CLUB LEICESTERSHIRE
CARLTON PARK
LEICESTER
NARBOROUGH
Edge of Town
Residential Zone
Total Gross floor area: 8200 sqm
Survey date: TUESDAY 04/11/14 Survey Type: MANUAL

9 NR-07-K-01 PUMP GYM NORTHAMPTONSHIRE
GLADSTONE ROAD
NORTHAMPTON
KINGSFIELD BUS. CENTRE
Edge of Town
Commercial Zone
Total Gross floor area: 1333 sqm
Survey date: WEDNESDAY 23/11/16 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

10	NT-07-K-02 LONDON ROAD NOTTINGHAM	VIRGIN ACTIVE	NOTTINGHAMSHIRE
	Edge of Town Centre Commercial Zone Total Gross floor area: 6000 sqm *Survey date: THURSDAY 27/06/13*		*Survey Type: MANUAL*
11	SH-07-K-01 SUNDORNE ROAD SHREWSBURY	FITNESS, TENNIS & LEISURE	SHROPSHIRE
	Edge of Town Residential Zone Total Gross floor area: 4500 sqm *Survey date: WEDNESDAY 21/05/14*		*Survey Type: MANUAL*
12	WK-07-K-01 FAR GOSFORD STREET COVENTRY	STRENGTH & FITNESS GYM	WARWICKSHIRE
	Edge of Town Centre Built-Up Zone Total Gross floor area: 554 sqm *Survey date: THURSDAY 17/10/13*		*Survey Type: MANUAL*

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

Trip Rates for Key Periods		Trips per 100 sqm GFA	
Period	Inbound	Outbound	Total
0800-0900	0.817	0.616	1.433
1700-1800	1.571	0.789	2.360

TRIP RATE for Land Use 07 - LEISURE/K - FITNESS CLUB (PRIVATE)
VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	12	3263	0.807	12	3263	0.072	12	3263	0.879
07:00 - 08:00	12	3263	0.536	12	3263	0.577	12	3263	1.113
08:00 - 09:00	12	3263	0.817	12	3263	0.616	12	3263	1.433
09:00 - 10:00	12	3263	1.131	12	3263	0.485	12	3263	1.616
10:00 - 11:00	12	3263	0.919	12	3263	0.682	12	3263	1.601
11:00 - 12:00	12	3263	0.567	12	3263	0.988	12	3263	1.555
12:00 - 13:00	12	3263	0.511	12	3263	0.810	12	3263	1.321
13:00 - 14:00	12	3263	0.518	12	3263	0.631	12	3263	1.149
14:00 - 15:00	12	3263	0.559	12	3263	0.524	12	3263	1.083
15:00 - 16:00	12	3263	0.713	12	3263	0.687	12	3263	1.400
16:00 - 17:00	12	3263	1.060	12	3263	0.861	12	3263	1.921
17:00 - 18:00	12	3263	1.571	12	3263	0.789	12	3263	2.360
18:00 - 19:00	12	3263	1.469	12	3263	1.481	12	3263	2.950
19:00 - 20:00	12	3263	0.942	12	3263	1.517	12	3263	2.459
20:00 - 21:00	12	3263	0.488	12	3263	1.073	12	3263	1.561
21:00 - 22:00	12	3263	0.112	12	3263	0.639	12	3263	0.751
22:00 - 23:00	3	2717	0.037	3	2717	0.282	3	2717	0.319
23:00 - 24:00									
Total Rates:			12.757			12.714			25.471

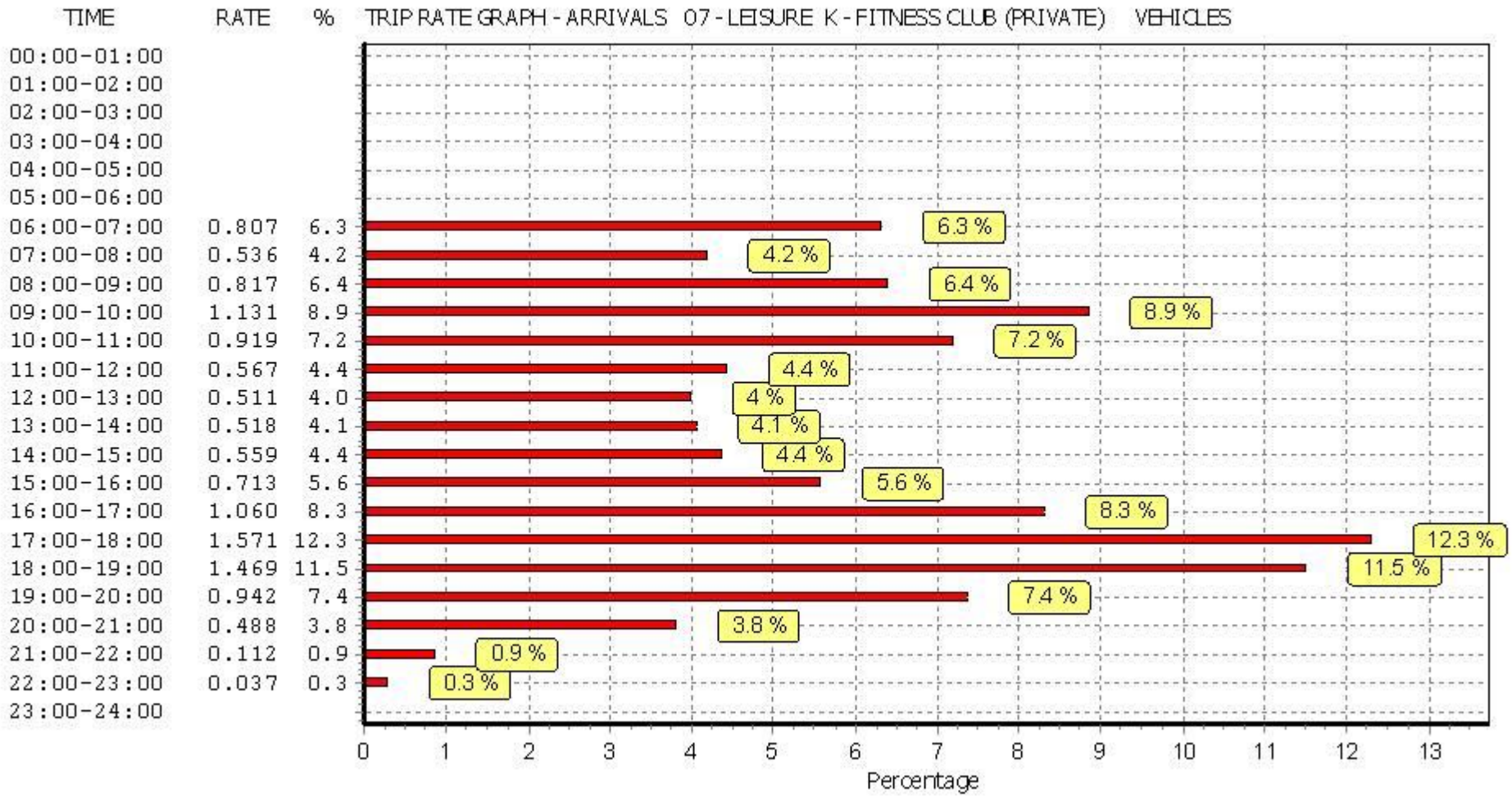
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

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

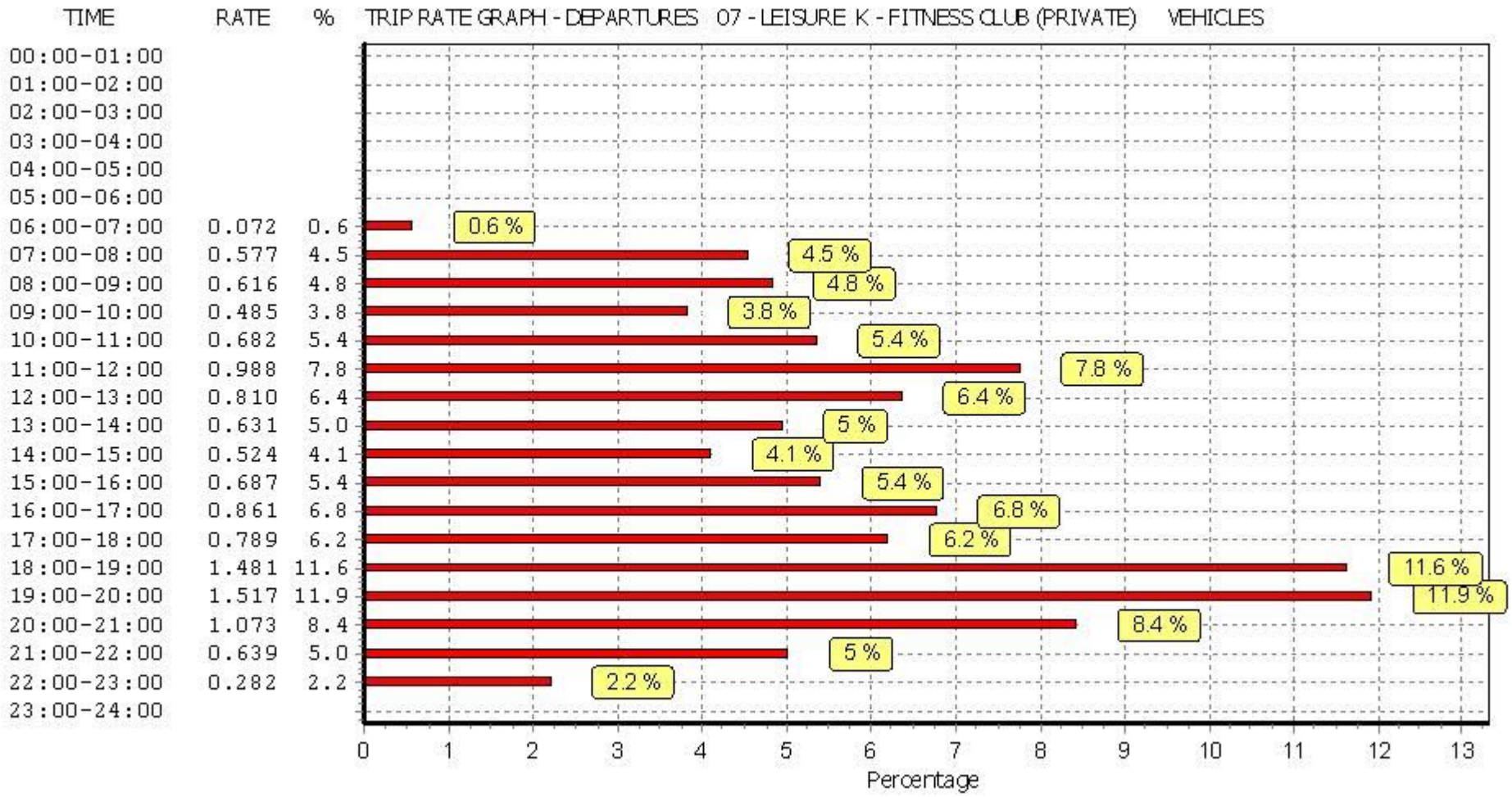
Parameter summary

Trip rate parameter range selected:	550 - 8200 (units: sqm)
Survey date date range:	01/01/10 - 27/09/17
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

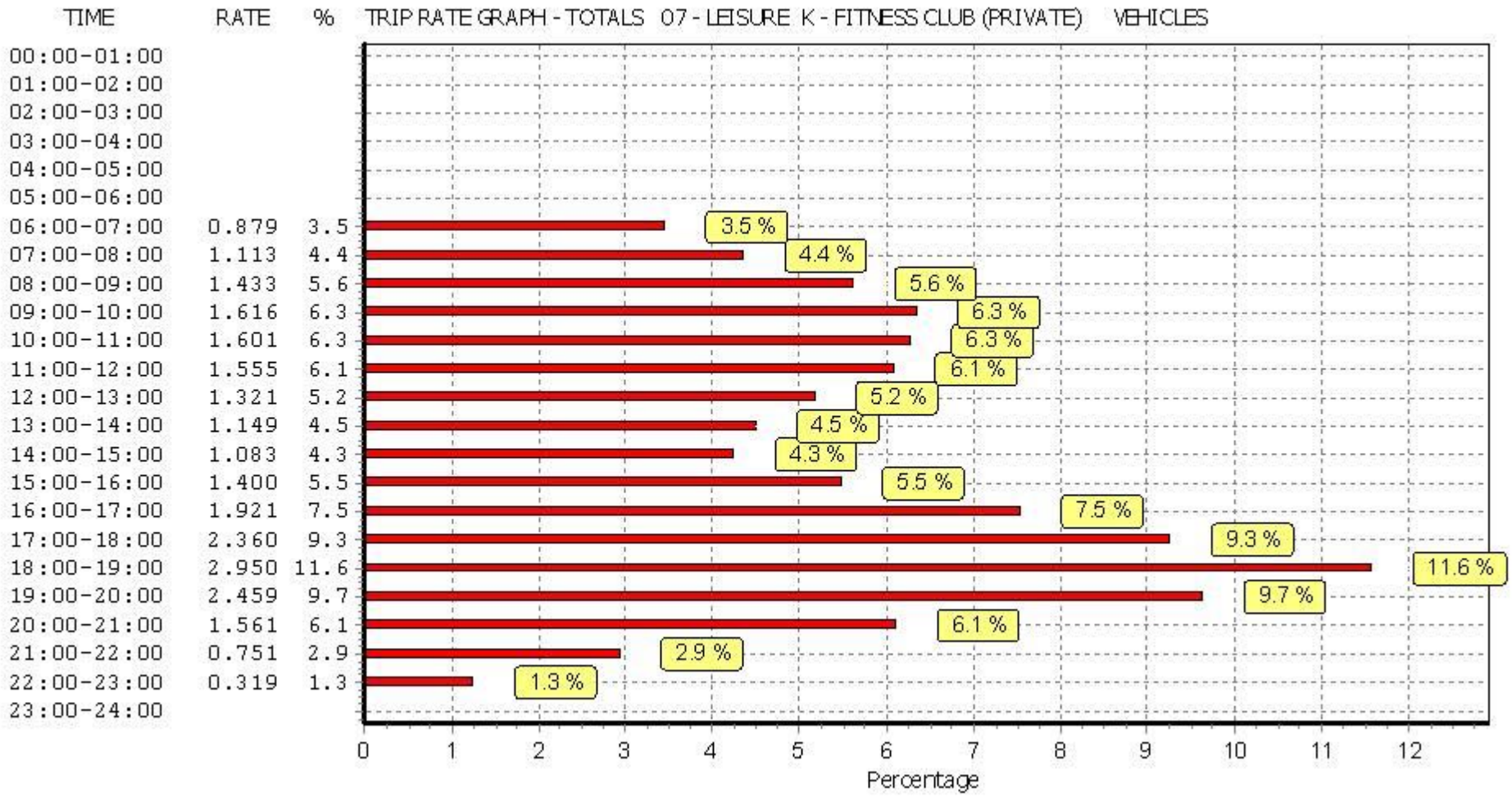
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Mountbatten House
Basing View
Basingstoke, Hampshire
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