EP UK Investments

South Humber Bank Energy Centre Development Consent Order

South Marsh Road, Stallingborough, DN41 8BZ

Appendix 9A: Transport Assessment

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended)

Applicant: EP Waste Management
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GLOSSARY

Abbreviation	Description
ATC	Automatic Traffic Count
HE	Highways England
LOS	Level of Service
MCC	Manual Classified Count
MW	Megawatt
NELC	North East Lincolnshire Council
PCU	Passenger Car Unit
PIA	Personal Injury Accident
RDF	Refuse Derived Fuel
RFC	Ratio of Flow to Capacity
SHBPS	South Humber Bank Power Station

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1.0 INTRODUCTION

Overview

1.1 This Transport Assessment (TA) has been prepared by AECOM on behalf of EP Waste Management Limited ('the Applicant') to support an application ('the Application') to be made to the Secretary of State seeking development consent for the construction and operation (including maintenance) of the proposed up to 95 Megawatt (MW) South Humber Bank Energy Centre ('the Proposed Development'), an energy from waste facility to be built on land located within the boundary of the South Humber Bank Power Station, South Marsh Road, Stallingborough, North East Lincolnshire. Planning permission for a 49.9 MW South Humber Bank Energy Centre ('the Consented Development') was previously granted by North East Lincolnshire Council (NELC) in April 2019 (Planning Ref: DM/1070/18/FUL).

1.2 The Proposed Development will generate electricity through the combustion of up to 753,500 tonnes per annum (tpa) of RDF (based on the lowest fuel net calorific value of 9 MJ/kg) generating up to 95 MW of electricity. This is the same maximum fuel throughput as was assessed for the Consented Development.

1.3 A scoping exercise was undertaken with NELC and Highways England (HE) via email to agree the parameters of the TA for the Consented Development. A copy of the scoping correspondence received from NELC and HE officers is included in Annex 1. This is still considered to be relevant because the traffic generation and proposed traffic routing for the Proposed Development will be the same as that for the Consented Development.

1.4 The structure of the TA is as follows:

- Section 2 provides a review of national and local planning policy;
- Section 3 provides a description of the Site location and existing highway conditions in the Site vicinity (where 'the Site' refers to the Application boundary);
- Section 4 provides a review of access to the Site by sustainable transport modes;
- Section 5 provides an analysis of personal injury accident data within the vicinity of the Site over a five year period;
- Section 6 provides a review of the Proposed Development;
- Section 7 provides a review of the estimated traffic to be generated by the Proposed Development and the local network assignment of this traffic;
- Section 8 outlines the growth factors to be applied to the baseline counts;
- Section 9 identifies the committed developments that have been taken account of as part of the assessment;
- Section 10 provides an assessment of the anticipated operational impact of the development on the immediate local highway network through a review of local link impact and junction capacity assessments;
- Section 11 assesses the anticipated construction impact of the Proposed Development on the immediate local highway network through a review of local link impact and junction capacity assessments; and
- Section 12 provides the TA conclusions.

2.0 POLICY CONTEXT

2.1 The following sections outline the relevant planning policies in respect of the Proposed Development.

National Policy Statements

National Policy Statement for Energy (NPS EN-1)

2.2 The National Policy Statement (NPS) EN-1 (Department for Energy and Climate Change (DECC), 2011a) was published in 2011. Section 5.13 outlines the planning policy for traffic and transport, including guidance on the carrying out of the relevant parts of the Environmental Impact Assessment (EIA) (which has been taken into account in producing this Preliminary Environmental Information (PEI) Report). The most relevant paragraphs for the transport assessment are 5.13.2 to 5.13.4 which state:

"5.13.2 The consideration and mitigation of transport impacts is an essential part of Government's wider policy objectives for sustainable development as set out in Section 2.2 of this NPS.

5.13.3 If a project is likely to have significant transport implications, the applicant's ES (see Section 4.2) should include a transport assessment, using the NATA/WebTAG139 methodology stipulated in Department for Transport guidance, or any successor to such methodology. Applicants should consult the Highways Agency and Highways Authorities as appropriate on the assessment and mitigation.

5.13.4 Where appropriate, the applicant should prepare a travel plan including demand management measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts."

2.3 In terms of the Secretary of State's decision making, Section 5.13 of the NPS states that the IPC (now Secretary of State) should ensure that the applicant has sought to mitigate the impacts on the surrounding road infrastructure that may occur as a result of a new energy NSIP. Where the proposed mitigation measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels, the Secretary of State should consider requirements to mitigate the adverse impacts on transport networks arising from the development and could include:

- demand management measures;
- water-borne or rail transport, where cost effective; and
- attaching conditions to a planning consent where there is likely to be substantial HGV traffic.

2.4 National Policy Statement for Energy (NPS EN-3)The National Policy Statement (NPS) EN-3 (Department for Energy and Climate Change (DECC), 2011a) was published in 2011. The most relevant paragraphs for the transport assessment are paragraphs 2.5.24 to 2.5.25 which state:

"2.5.24 Biomass of EfW generating stations are likely to generate considerable transport movements. For example, a biomass *or EfW plant that uses 500,000 tonnes of fuel per annum might require a large number of heavy goods vehicle (HGV) movements per day to import the fuel. There will also be residues which will need to be regularly transported off site.*

2.5.25 Government policy encourages multi-modal transport and the IPC should expect materials (fuel and residues) to be transported by water or rail routes where possible. Applicants should locate new biomass or waste combustion generating stations in the vicinity of existing transport routes wherever possible. Although there may in some instances be environmental advantages to rail or water transport, whether such methods are viable is likely to be determined by the economics of the scheme*. Road transport may be required to connect the site to the rail network, waterway or port. Therefore, any application should incorporate suitable access leading off from the main highway network. If the existing access is inadequate and the applicant has proposed new infrastructure, the IPC will need to be satisfied that the impacts of the new infrastructure are acceptable as set out in Section 5.13 of EN-1."*

National Planning Policy Framework

2.5 The National Planning Policy Framework (NPPF) (Department for Communities and Local Government (DCLG), 2019) sets out the Government's planning policies for England.

2.6 The NPPF states that the transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how to travel. The NPPF states that local authorities should support a pattern of development, which, where reasonable to do so, facilitates the use of sustainable modes of transport. Plans and decisions should ensure that developments that generate significant movements are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised.

2.7 The NPPF recommends that a Transport Statement (TS) or TA should support all developments that generate significant amounts of movement and that development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

North East Lincolnshire Local Plan 2013 – 2032 (adopted 2018)

2.8 The Local Plan was adopted by NELC in March 2018 and sets out the vision and objectives for the authority, allocates sites for housing, employment and other forms of development and sets out policies.

2.9 Key transport related policies relevant to the Proposed Development that form part of the Local Plan are as follows:

<u>Policy 36: Promoting Sustainable Transport</u>

2.10 The policy states that *"to reduce congestion, improve environmental quality and encourage more active and healthy lifestyles, the Council will support measures that promote more sustainable transport choices."* The policy states that where appropriate, policies should seek to:

- *focus development which generates significant movements in locations where the need to travel will be minimised;*
- *prioritise pedestrian and cycle access to and within the site;*
- *make appropriate provision for access to public transport and other alternative means of transport to the car, adopting a 400 m walk to bus stop standard;*
- *make suitable provision to accommodate the efficient delivery of goods and supplies; and*

- *make suitable provision for electric vehicle charging, car clubs and car sharing when considering car park provision.*

2.11 The policy goes on to state that "*planning permission will be granted where any development that is expected to have significant transport implications delivers necessary and cost effective mitigation measures to ensure that development has an acceptable impact on the network's functioning and safety*."

2.12 The policy also states that "*where appropriate, Transport Statements, Transport Assessments and/ or Travel Plans should be submitted with applications with the precise form being dependent on the scale and nature of development and agreed through early discussion with the Council"*.

Policy 38: Parking

2.13 The policy states that "*Development proposals that generate additional parking demand should ensure that appropriate vehicle, powered two-wheeler and cycle parking provision is made. The form and scale of off-street parking required will be assessed against the following:*

- *the accessibility of the development;*
- *the type, mix and use of the development;*
- *the availability and frequency of public transport services; and*
- *local car ownership levels*."

2.14 The policy states that developers should consider and incorporate measures to minimise parking provision without causing a detrimental impact to the functioning of the local highway network.

2.15 The policy goes on to state that at least 5% of parking bays should be allocated for people with mobility impairments.

North East Lincolnshire Local Transport Plan (2016 – 2032)

2.16 North East Lincolnshire's Local Transport Plan sets out a programme for a wide range of improvements to local transport over the period 2016 to 2032. The objectives of the plan include:

- enable sustainable growth through effective transport provision;
- improve journey times and reliability by reducing congestion;
- support regeneration and employment by connecting people to education, training and jobs;
- enable disadvantaged groups or people living in disadvantaged areas to connect with employment, healthcare, social and leisure opportunities;
- improve the health of individuals by encouraging and enabling more physically active travel;
- provide safe access and reduce the risk of loss, death or injury due to transport collisions or crime;
- improve the journey experience on the local transport network; and
- ensuring that transport contributes to environmental excellence, including managing air quality and reducing transport-related greenhouse gas emissions.

2.17 Major local highways and transport improvement schemes within the immediate area to the application Site include the South Humber Bank Link Road which received planning permission in September 2018.

3.0 EXISTING SITE CONDITIONS

Site Location

3.1 The Site for the Proposed Development is located off South Marsh Road, Stallingborough, North East Lincolnshire, approximately 5 km south-east of Immingham. The Site location is shown in Figure 3.1 below.

3.2 The Proposed Development will be located on vacant land to the east of the existing South Humber Bank Power Station (SHBPS). The Site and Main Development Area boundaries are shown in Annex 5, where the Site is defined by the proposed Application boundary (red line), which includes the majority of the SHBPS site and part of South Marsh Road, and the Main Development Area is the Proposed Development area within the Site.

3.3 South Marsh Road provides highway access to SHBPS and also to Synthomer (UK) Limited, the NEWLINCS Integrated Waste Management Facility and Environment Agency access to sections of the Humber Estuary flood defence, both located north of the Site.

Figure 3.1: Site Location

Existing Highway Network

<u>South Marsh Road</u>

3.4 South Marsh Road is a 6.75 m wide single carriageway road which is street lit and is subject to a 40 mph speed limit. As described above, the road provides access to SHBPS and a number of other industrial units. South Marsh Road meets Hobson Way at a large priority junction.

Hobson Way

3.5 Hobson Way is a 7.3 m wide single carriageway road which is street lit and is subject to a 40 mph speed limit. A pedestrian footway is provided along the western side of the carriageway between South Marsh Road and Kiln Lane. Hobson Way meets Kiln Lane at a four arm standard roundabout junction.

Kiln Lane

3.6 Kiln Lane is a 7.3 m wide single carriageway road which is street lit and is subject to a 40 mph speed limit. Kiln Lane provides access to a number of industrial units which are located along its frontage. Kiln Lane meets the A1173 at a standard four arm roundabout.

A1173

3.7 The A1173 is a 7.3 m wide single carriageway road and is subject to the 60 mph national speed limit for single carriageway roads providing access to Immingham and Immingham Docks. There are no footways along its length between the A1173 and the Kiln Lane roundabout. The A1173 continues towards the A180 forming a grade separated junction where it meets the A180. The junction is also known as the Stallingborough Interchange.

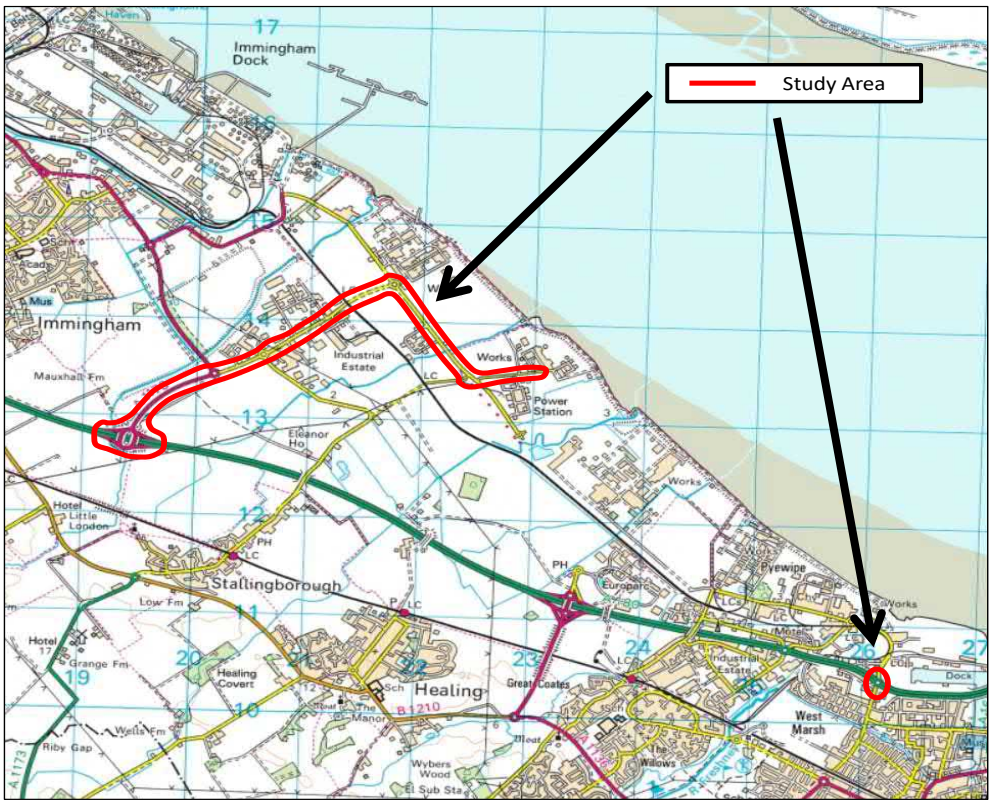
A180

3.8 The A180 is a dual carriageway providing access to Grimsby to the south-east and the M180 to the west. The A180 is subject to the 70 mph national speed limit for dual carriageways and is part of HE's core network.

Baseline Traffic Flows

3.9 The Study Area for assessment as agreed with NELC and HE during TA scoping for the Consented Development is shown in Figure 3.2 below. The Study Area is still considered appropriate for the Proposed Development TA.

Figure 3.2: Study Area



3.10 Baseline traffic flows for the immediate local highway network have been established through peak hour classified junction counts at the following locations as agreed with NELC and HE during TA scoping for the Consented Development. The traffic counts were undertaken to inform the TA for the Consented Development and remain valid for the purposes of the Proposed Development TA. These comprised:

- Manual Classified Count (MCC) 1: South Marsh Road/ Hobson Way;
- MCC 2: Hobson Way/ Laporte Road/ Kiln Lane;
- MCC 3: Kiln Lane/ North Moss Lane/ Trondheim Way;
- MCC 4: A1173/ Kiln Lane;
- MCC 5: A1173/ A180 Stallingborough Interchange; and
- MCC 6: A180/ Moody Lane/ Pyewipe Road (Westgate Roundabout).

3.11 MCCs 1, 2 and 4 were undertaken on Thursday 7th June 2018, MCC 5 was undertaken on Wednesday 5th July 2017, and MCCs 3 and 6 were undertaken on Thursday 11th October 2018. The raw traffic data is provided in Annex 2.

3.12 In order to establish the peak hours for assessment, the total flows arriving at each individual junction have been calculated as total vehicles. The total vehicle flows arriving at each of the six junctions across the network have then been combined in order to identify the base peak hours for assessment.

3.13 Table 3.1 below summarises the total flows into each junction and identifies the time period 07:00 – 08:00 as the weekday morning (AM) Peak hour and 16:00 – 17:00 as the afternoon (PM) Peak hour.

Table 3.1: Establishing the 2018 Baseline Weekday Peak Hours

Peak Hours	MCC 1	MCC 2	MCC 3	MCC 4	MCC 5	MCC 6	TOTAL
07:00 – 08:00	176	438	795	1,740	1,981	3,846	**8,976**
08:00 – 09:00	80	349	808	1,342	1,611	4,131	**8,321**
09:00 – 10:00	64	206	501	889	1,044	3,112	**5,816**
16:00 – 17:00	91	430	1,034	1,802	2,031	4,504	**9,892**
17:00 – 18:00	158	308	725	1,606	1,791	4,304	**8,892**
18:00 – 19:00	101	205	417	980	1,131	3,061	**5,895**

3.14 The 2018 baseline data for the identified AM and PM Peak hours at the key junctions is shown in Annex 3. The data is presented as follows:

- Total Vehicles;
- Heavy Goods Vehicles (HGV) (Over 3.5 tonnes including buses); and
- Passenger Car Units (PCU).

3.15 In addition, a series of Automatic Traffic Counts (ATCs) have been undertaken in June and September 2018 at the following locations within the Study Area:

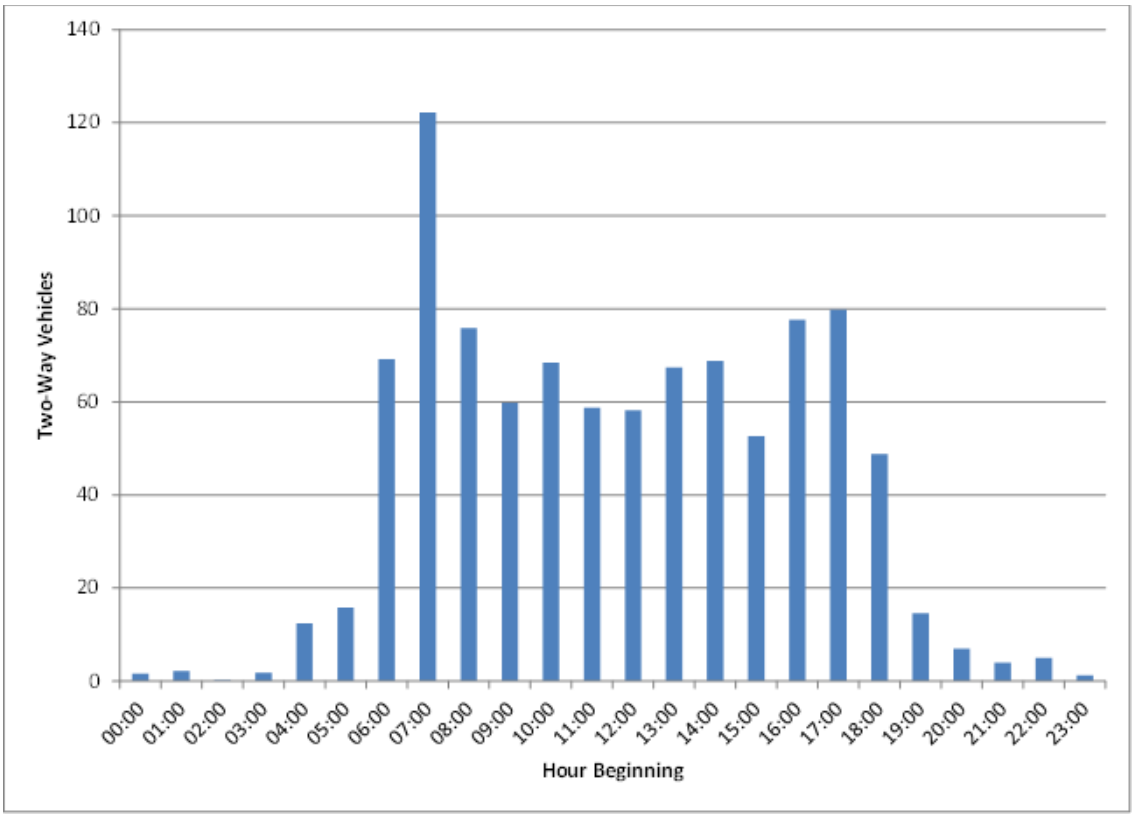
- South Marsh Road (East of Hobson Way);
- South Marsh Road (West of Hobson Way);
- Hobson Way (North of South Marsh Road);
- Kiln Lane (West of Hobson Way);
- A1173 (West of North Moss Lane);
- A1173 (North of A180); and
- A180 Westgate (East of Westgate Roundabout).

3.16 From this data, the following typical traffic flows are evident on each link:

<u>South Marsh Road (East of Hobson Way)</u>

- Average Weekday Morning Peak (two-way): 122 vehicles;
- Average Weekday Evening Peak (two-way): 80 vehicles; and
- Annual Average Weekday Traffic (two-way): 973 vehicles.

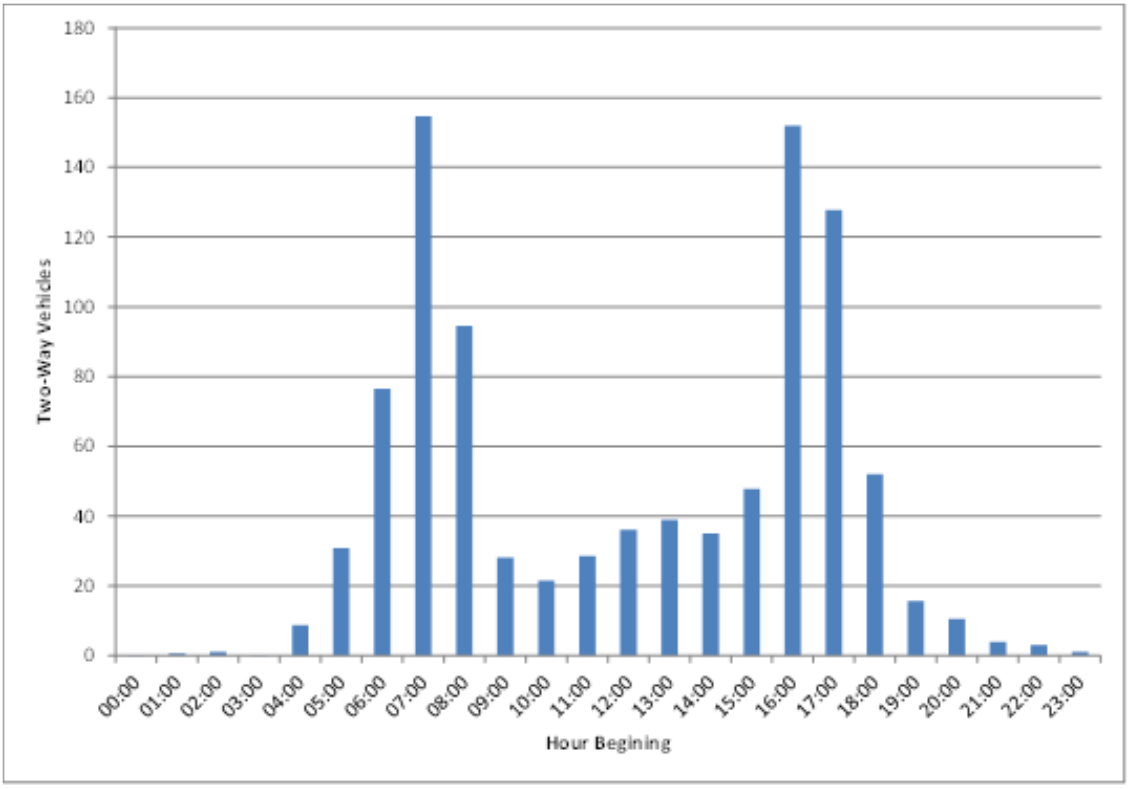
Figure 3.3: South Marsh Road (East of Hobson Way) Average Weekday Profile



South Marsh Road (West of Hobson Way)

- Average Weekday Morning Peak (two-way):155 vehicles;
- Average Weekday Evening Peak (two-way): 152 vehicles; and
- Annual Average Weekday Traffic (two-way): 970 vehicles.

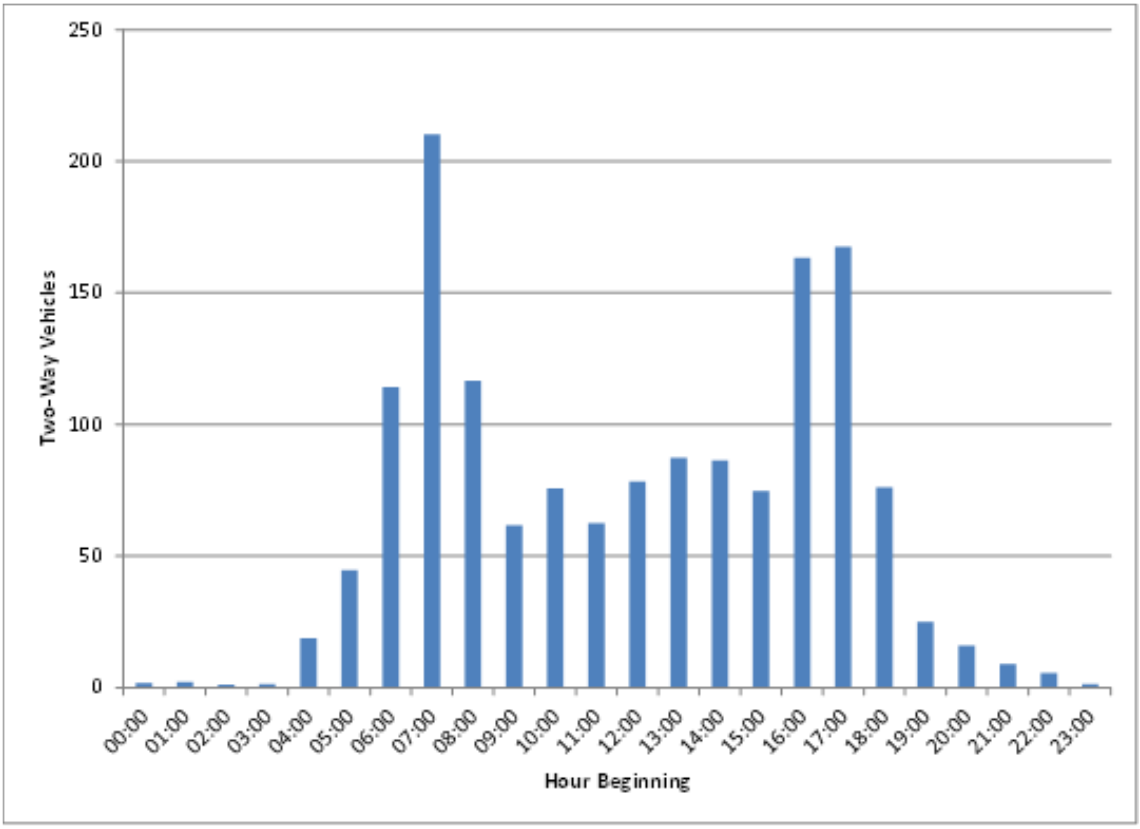
Figure 3.4: South Marsh Road (West of Hobson Way) Average Weekday Profile



Hobson Way (North of South Marsh Road)

- Average Weekday Morning Peak (two-way): 210 vehicles;
- Average Weekday Evening Peak (two-way): 168 vehicles; and
- Annual Average Weekday Traffic (two-way): 1,501 vehicles.

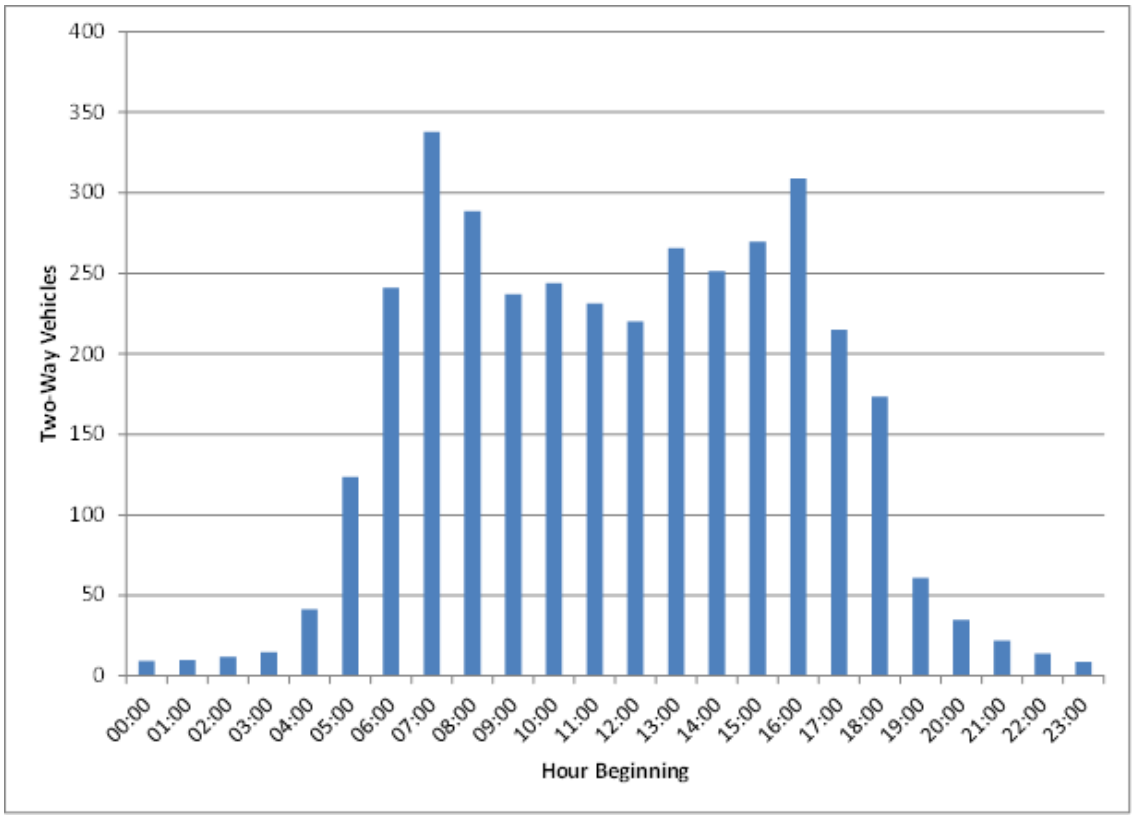
Figure 3.5: Hobson Way (North of South Marsh Rd) Average Weekday Profile



Kiln Lane (West of Hobson Way)

- Average Weekday Morning Peak (two-way): 338 vehicles;
- Average Weekday Evening Peak (two-way): 309 vehicles; and
- Annual Average Weekday Traffic (two-way): 3,635 vehicles.

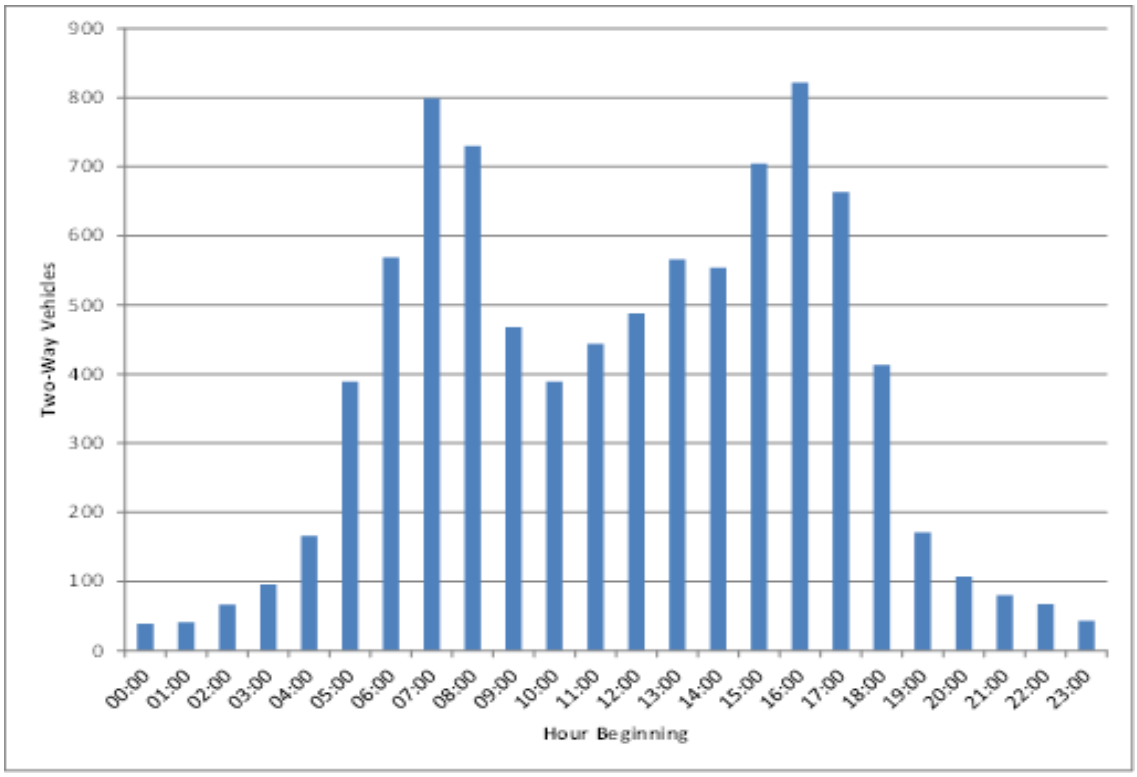
Figure 3.6: Kiln Lane Average Weekday Profile



A1173 (West of North Moss Lane)

- Average Weekday Morning Peak (two-way): 799 vehicles;
- Average Weekday Evening Peak (two-way): 822 vehicles; and
- Annual Average Weekday Traffic (two-way): 8,875 vehicles.

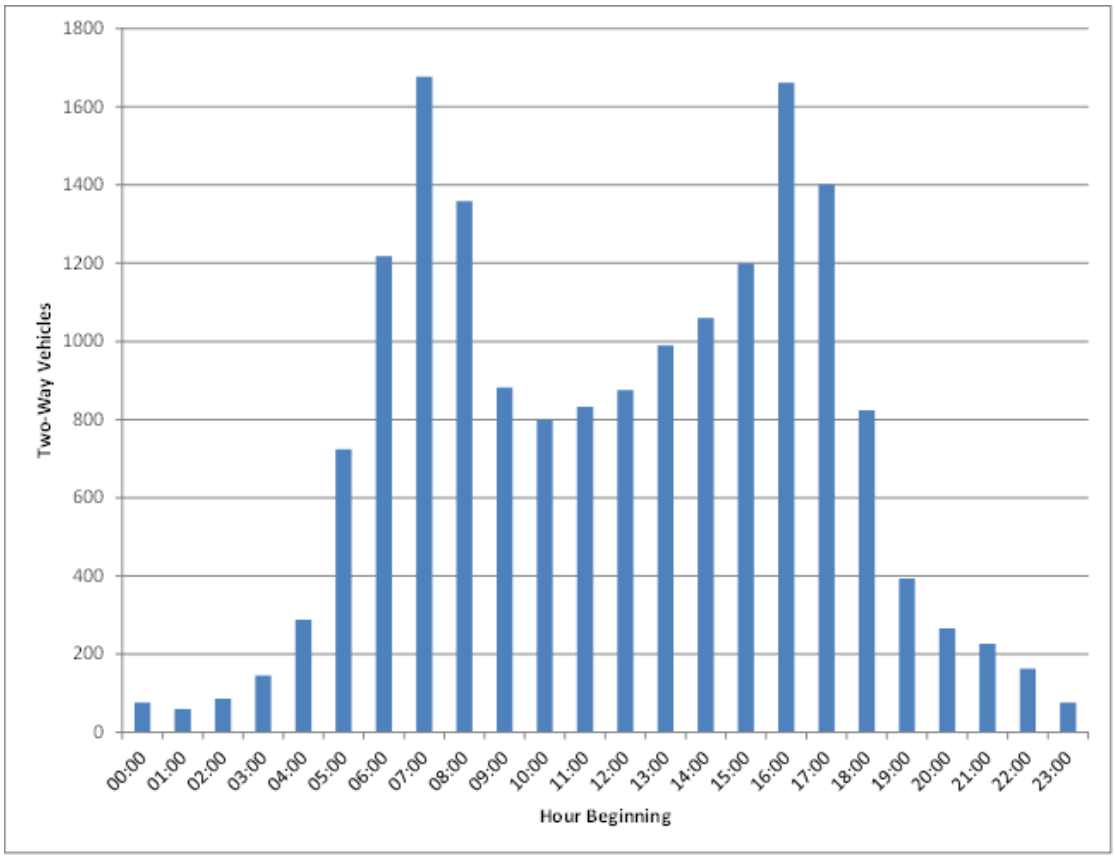
Figure 3.7: A1173 (West of North Moss Lane) Average Weekday Profile



A1173 (North of A180)

- Average Weekday Morning Peak (two-way): 1,677 vehicles;
- Average Weekday Evening Peak (two-way): 1,662 vehicles; and
- Annual Average Weekday Traffic (two-way): 17,281 vehicles.

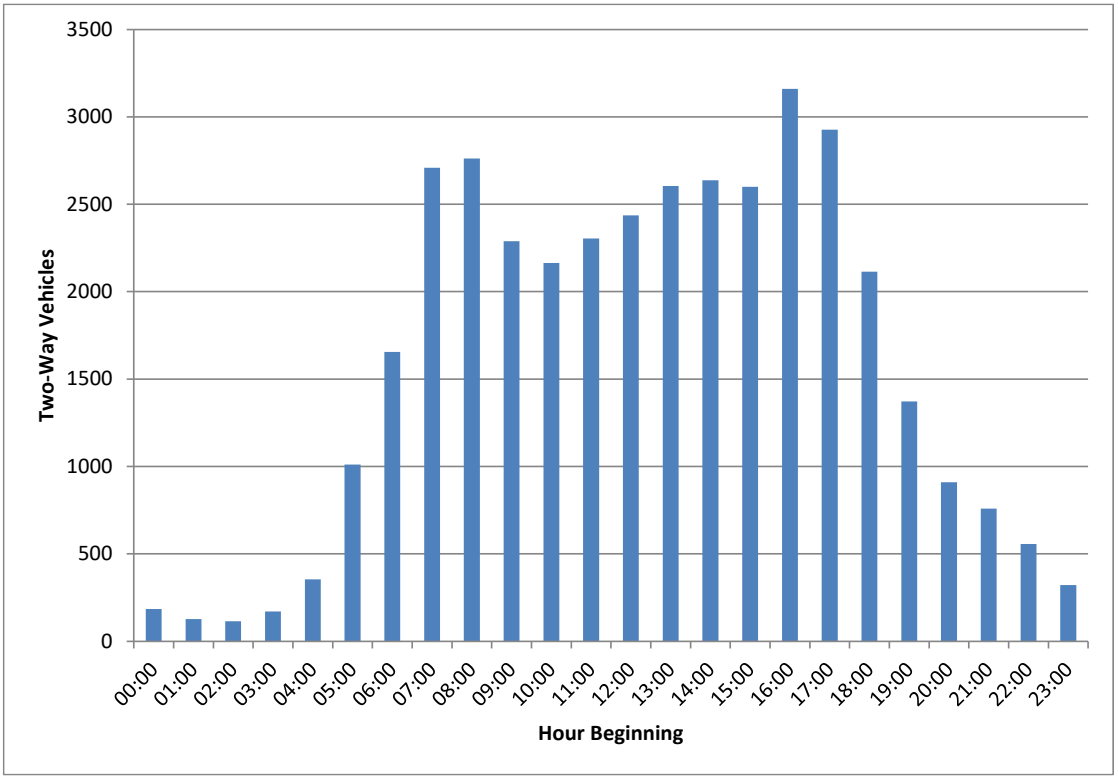
Figure 3.8: A1173 (North of A180) Average Weekday Profile



A180 Westgate (East of Westgate Roundabout)

- Average Weekday Morning Peak (two-way): 2,762 vehicles;
- Average Weekday Evening Peak (two-way): 3,160 vehicles; and
- Annual Average Weekday Traffic (two-way): 38,240 vehicles.

Figure 3.9: A180 Westgate (East of Westgate Roundabout) Average Weekday Profile



4.0 REVIEW OF ACCESS BY SUSTAINABLE TRANSPORT MODES

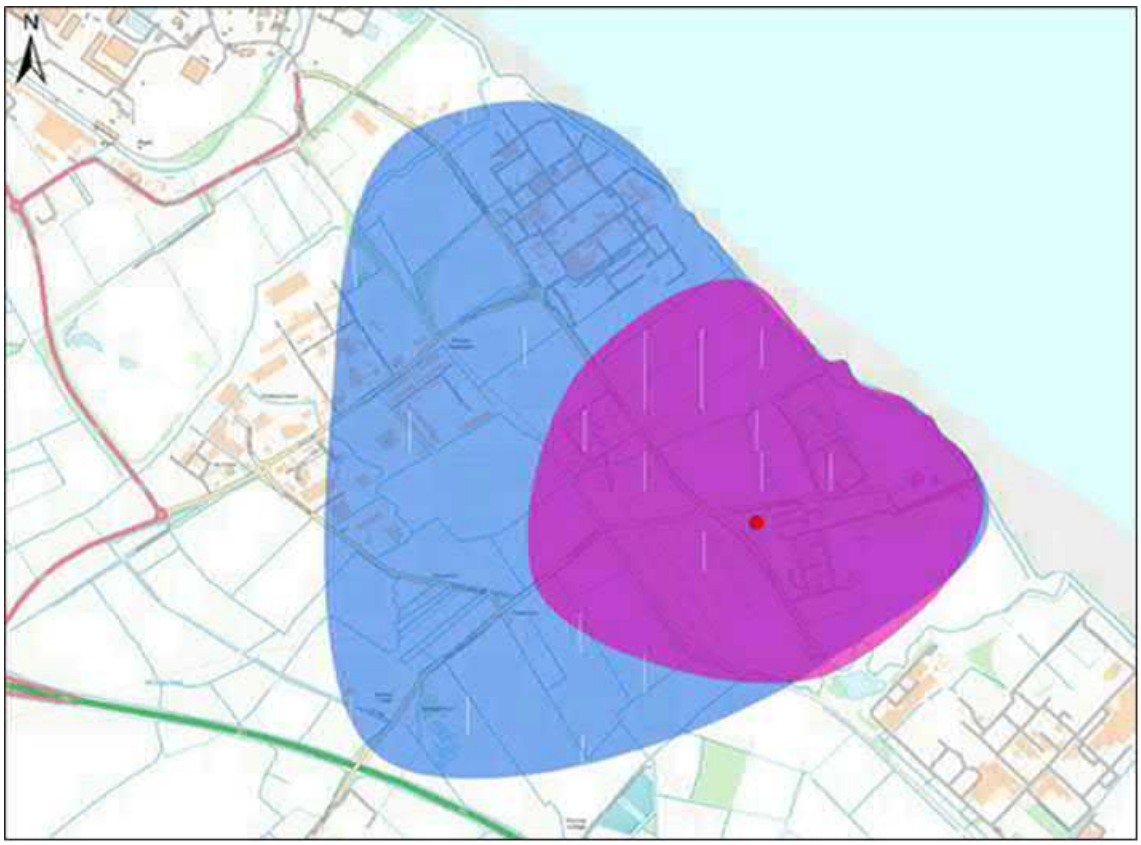
Overview

4.1 The Proposed Development is located in a remote semi-rural/ industrial area located some distance away from any major residential areas. Given its remote location and the proposed shift patterns to be worked by operational staff, opportunities to walk, cycle or use public transport to access the Site are likely to be limited. In any case, this section of the report considers the sustainable access modes available.

Walking

4.2 The Chartered Institution of Highways and Transportation (CIHT) document 'Providing for Journeys on Foot' (2000) suggests a maximum walking distance of 2 km. Figure 4.1 below shows a 1 km and 2 km walking catchment area from the Proposed Development.

Figure 4.1: 1 km/ 2 km Walking Catchment Area



4.3 Figure 4.1 shows that apart from some properties located off South Marsh Road to the north of the A180 there are no major residential areas within a 2 km walking distance of the Site. In terms of pedestrian facilities in the vicinity of the Site, a footway approximately 2 m wide is provided along the western kerbline of Hobson Way. No footways are provided on South Marsh Road.

4.4 It is not therefore anticipated that walking trips would likely represent a practical travel mode for staff or visitors.

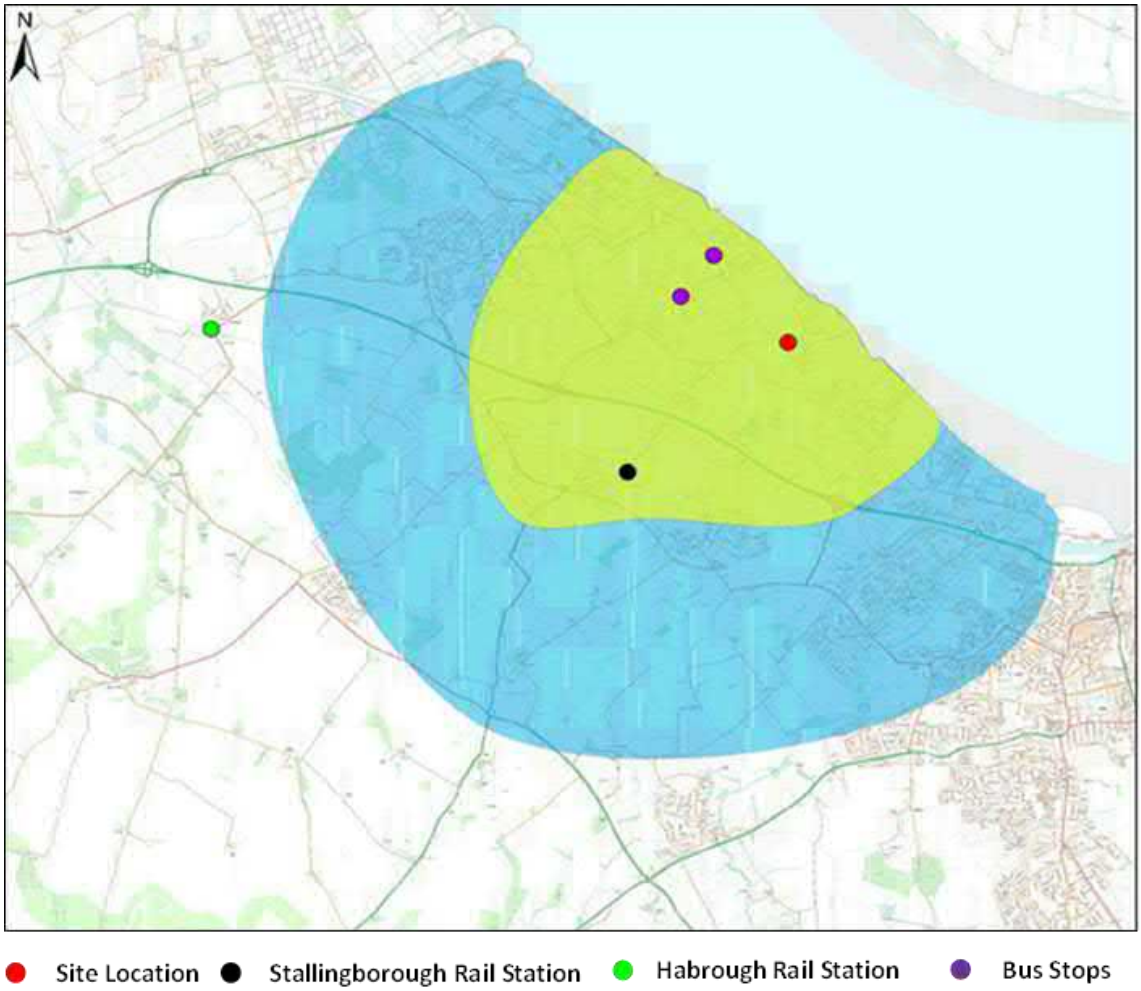
Cycling

4.5 Cycling is considered to be a viable alternative to that of the private car for journeys up to 8 km from the Site, providing a healthy and environmentally friendly form of transport.

4.6 In respect of acceptable cycle distances, 'Local Transport Note 2/08: Cycling Infrastructure Design', published by the Department for Transport states that many utility cycle trips are less than 3 miles (approximately 5 km), but for commuter journeys a distance of over 5 miles (approximately 8 km) is not uncommon.

4.7 Taking this into account, a plan illustrating the indicative 5 km and 8 km cycle catchment area from the Proposed Development is shown in Figure 4.2.

Figure 4.2: 5 km/ 8 km Cycling Catchment Area



4.8 Figure 4.2 shows Healing, Great Coates, Stallingborough, and Immingham are within an 8 km cycle distance of the Site.

4.9 Within the vicinity of the Site there are no dedicated traffic-free cycle routes. However, NELC does promote a leisure cycle route known as the Fishermen & Ships. This is a 12 km circular route which starts and finishes at Grimsby Leisure Centre and heads north-east to the coast before heading north to South Marsh Road and then routing west along South Marsh Road past the SHBPS to Stallingborough before heading south-east back along Great Coates Road.

4.10 Whilst the lack of dedicated traffic-free cycle routes is not considered to be an issue for experienced cyclists, the surrounding road network is regularly used by HGVs given its industrial nature and therefore may not represent an attractive option for less experienced cyclists.

Public Transport

4.11 The CIHT guidance document 'Planning for Public Transport in Developments' recommends that 400 m is the desirable walking distance to a bus stop from a new development. The nearest bus stop to the Site is located approximately 1.9 km to the north of the Site on Laporte Road. A further bus stop is located along Europa Way off Kiln Lane approximately 2 km from the Site.

4.12 These bus stops are served by the 5M bus service. The frequency of this service is shown in Table 4.1.

Table 4.1: Bus Service Frequency

SERVICE	ROUTE	FREQUENCY		
		Mon - Fri	Sat	SUN
5M	Immingham - Grimsby	06:49, 07:49, 16:15, 17:10	No Service	No Service

4.13 In summary these bus stops are located outside of the acceptable walking distance to a bus stop and given the low frequency of service represents an unattractive option for staff and visitors. In addition, there are no footways present on South Marsh Road between the junction with Hobson Way and the Site.

5.0 PERSONAL INJURY ACCIDENT DATA

Overview

5.1 Accident data has been taken into consideration in line with Planning Practice Guidance titled 'Travel plans, transport assessments and statements in decision taking' published in March 2014 which requires analysis of any road traffic incidents which have occurred within the most recent five year period within the locality of the Site.

5.2 Personal Injury Accident (PIA) data has been obtained from the Crashmap website (www.crashmap.co.uk) for the period 1st January 2014 to 31st December 2018 for the areas of consideration which includes the area incorporating the A180/A1173 interchange, A1173, Kiln Lane, Hobson Way and South Marsh Road and the area incorporating the A180 Westgate Roundabout. The accident study areas are shown in Figures 5.1 and 5.2.

Figure 5.1: Accident Study Area

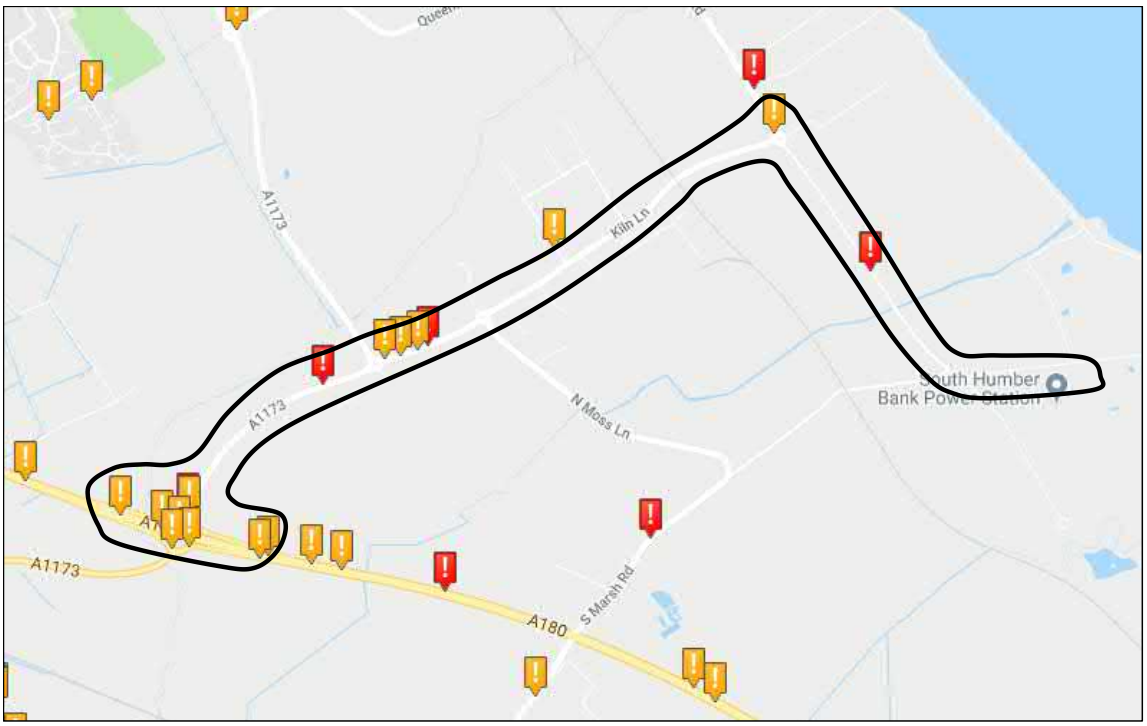
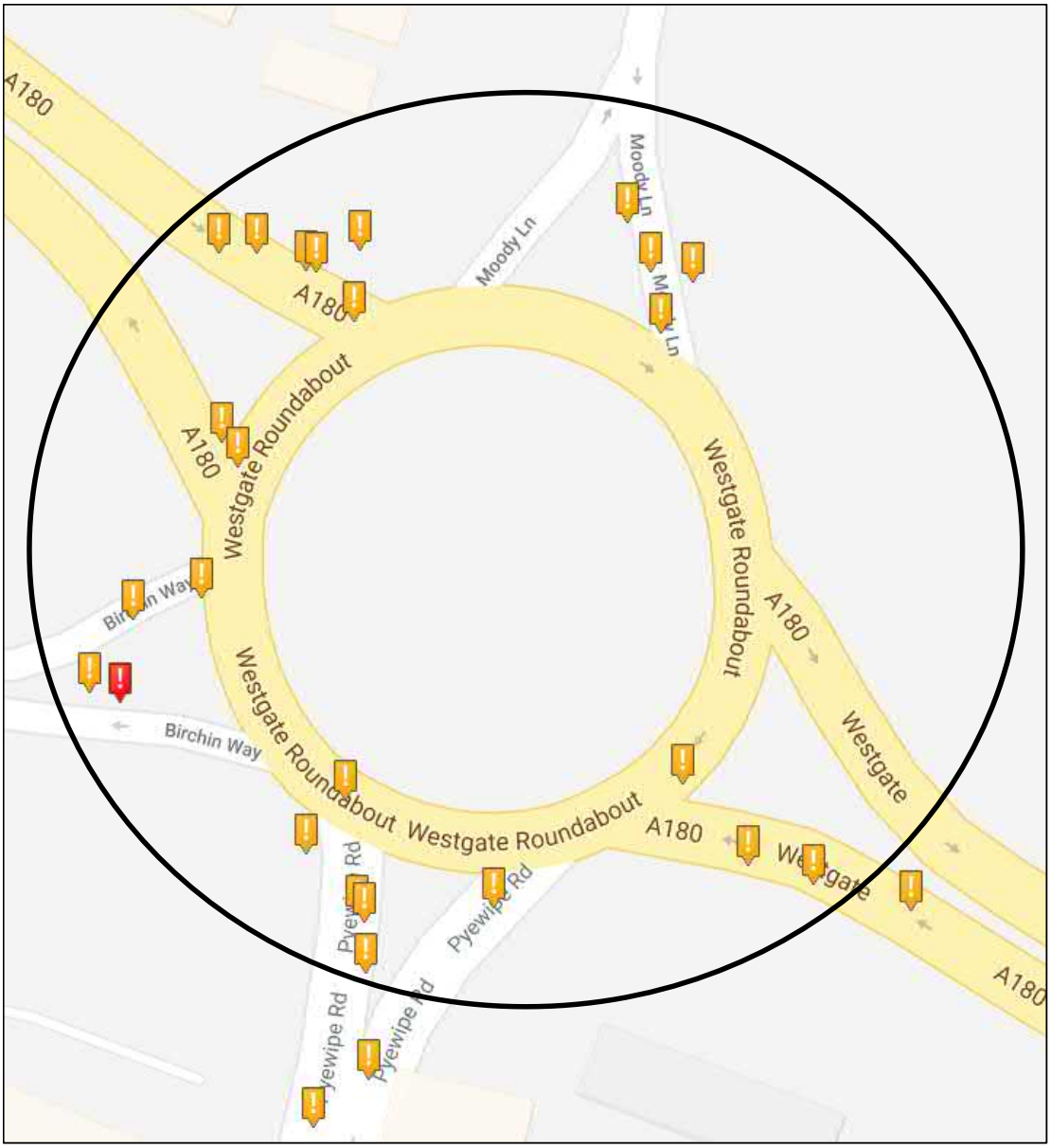


Figure 5.2: Westgate Roundabout Accident Study Area



5.3 The Accident Study Area shown in Figure 5.1 identified a total of 12 reported accidents over the past five years of which eight were classed as slight in severity and four serious severity. A breakdown of severity of the accidents over the study period has been provided in Table 5.1 below.

Table 5.1: Accident Summary

YEAR	TOTAL ACCIDENTS	SEVERITY		
		Slight	Serious	Fatal
2014	1	1	0	0
2015	5	3	2	0
2016	5	3	2	0
2017	1	1	0	0
2018	0	0	0	0
TOTAL	**12**	**8**	**4**	**0**

5.4 The accident study area shown in Figure 5.2 incorporating the A180 Westgate Roundabout identified a total of 25 reported accidents over the past five years of which 24 were classed as slight in severity and one serious severity. A breakdown of severity of the accidents over the study period has been provided in Table 5.2.

Table 5.2: A180 Westgate Roundabout Accident Summary

YEAR	TOTAL ACCIDENTS	SEVERITY		
		Slight	Serious	Fatal
2014	9	9	0	0
2015	6	6	0	0
2016	6	6	0	0
2017	4	3	1	0
2018	0	0	0	0
TOTAL	**25**	**24**	**1**	**0**

5.5 Further detailed analysis is provided below. Full accidents reports are provided within Annex 4.

A180/ A1173 Interchange

5.6 Over the five year study period a total of five accidents occurred, three located at the junction and two along the A180 northbound off slip approach.

5.7 Of the five accidents, four were of slight severity and one serious severity. Analysis of the accident reports have identified that the incidents were due to driver error due to lack of awareness of their surrounding and poor judgment as opposed to any physical alignments on the highway infrastructure. Details of the accidents are provided within Table 5.3 below.

Table 5.3: A180/ A1173 Interchange

LOCATION	DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
Gyratory (vicinity of A1173 South Approach)	15.05.15	Slight	2	Collision
A1173 (Northern Approach)	22.02.16	Serious	1	Collision
	06.08.16	Slight	2	Rear End Shunt
A180 Northbound Off-Slip	30.06.15	Slight	2	Rear End Shunt
	06.12.16	Slight	2	Rear End Shunt

A1173 Corridor

5.8 Over the five year study period one accident of serious severity occurred along the A1173 corridor approximately 200 m west from its junction with the Kiln Lane roundabout. Analysis of the incident report has identified that the incident was due to driver error due to lack of awareness of their surrounding and poor judgment as opposed to any physical alignments on the highway infrastructure. Details of the accident are provided within Table 5.4 below.

Table 5.4: A1173 Corridor

DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
16.10.15	Serious	2	Rear End Shunt

A1173/ Kiln Lane Roundabout

5.9 Over the five year study period one accident occurred at this junction which was classed as slight in severity. Analysis of the accident report has identified that the incident was due to driver error due to lack of awareness of their surrounding and poor judgment as opposed to any physical alignments on the highway infrastructure. Details of the accident are provided within Table 5.5 below.

Table 5.5: A1173/ Kiln Lane Roundabout

DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
25.07.14	Slight	2	Rear End Shunt

Kiln Lane Corridor

5.10 Over the five year study period a total of three accidents were recorded along the Kiln Lane corridor between its junctions with the A1173 to the west and Hobson Way/ Laporte Road to the east. Of the three accidents that were reported two were classified as slight in severity and one serious.

5.11 Analysis of the accident reports have identified that the accidents were due to driver error due to lack of awareness of their surrounding and poor judgment as opposed to any physical alignments on the highway infrastructure. Details of the accidents are provided within Table 5.6 below.

Table 5.6: Kiln Lane Corridor

DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
22.05.15	Serious	2	Collision – due to vehicle undertaking a U turn manoeuvre
29.12.15	Slight	2	Collision
21.04.16	Slight	3	Rear End Shunt

Kiln Lane/ Hobson Way/ Laporte Road Junction

5.12 Over the five year study period one accident was reported at the four arm roundabout, which was classed as slight in severity.

5.13 Analysis of the accident report has identified that the incident was due to driver error due to lack of awareness of their surrounding and poor judgment as opposed to any physical alignments on the highway infrastructure. Details of the accident are provided within Table 5.7 below.

Table 5.7: Kiln Lane/ Hobson Way/ Laporte Road Roundabout

DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
03.01.17	Slight	2	Collision – vehicle struck a bollard

Hobson Way Corridor

5.14 Over the study period one accident occurred along the Hobson Way corridor approximately 580 m south of the Kiln Lane roundabout and was classed as serious in severity.

5.15 Analysis of the accident report has identified that the accident was due to driver error as opposed to any physical alignments on the highway infrastructure. Details of the accident are provided within Table 5.8 below.

Table 5.8: Hobson Way Corridor

DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
14.07.16	Serious	1	Driver Loss of Control

5.16 Given the small number of accidents identified within the search area between the Site and the A180, it is considered there are no highway safety concerns in the vicinity of the Site.

A180 Westgate Roundabout

5.17 Over the five year study period, twenty-five accidents were recorded at this junction of which twenty-four were of slight severity and one was of serious severity. A breakdown of severity of the accidents over the study period has been provided in Table 5.2 and shows the yearly number of accidents occurring at the junction has reduced over the last five years.

5.18 Analysis of the accident reports have identified that the incidents were due to driver error due to lack of awareness of their surrounding and poor judgment as opposed to any physical alignments on the highway infrastructure. Details of the accidents are provided within Table 5.8 below.

Table 5.8: A180 Westgate Roundabout

LOCATION	DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
A180 Eastern Arm	18/06/16	Slight	2	Vehicle proceeding normally along the carriageway collides with a slowing/ stopping vehicle
	22/10/16	Slight	2	Rear end shunt with vehicle colliding into a slowing/ stopping vehicle. Light conditions are dark but street lighting is present and lit
	23/10/16	Slight	1	Motorbike (over 50cc and up to 125cc)

LOCATION	DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
				proceeding normally along the carriageway
	22/09/17	Slight	2	Two vehicles proceeding normally along the carriageway
A180 Western Arm	24/02/14	Slight	2	Goods vehicle (7.5 tonnes mgw and over) changing lanes to the right collides with nearside of vehicle proceeding normally along the carriageway
	14/04/14	Slight	2	Broadside (T-Bone) collision with two vehicles proceeding normally along the carriageway
	28/04/14	Slight	2	Broadside (T-Bone) collision with motorcycle (125cc-500cc) in the act of turning left collides with vehicle (offside) proceeding normally along the carriageway. Light conditions are dark but street lighting is present and lit
	22/10/14	Slight	2	Rear end shunt with two vehicles proceeding normally along the carriageway
	09/02/15	Slight	2	Broadside (T-Bone) collision with vehicle proceeding normally along the carriageway colliding with a pedal cycle
	20/03/15	Slight	2	Rear end shunt with goods vehicle (7.5 tonnes mgw and over) colliding with rear of a vehicle waiting to proceed normally but is held up. Road conditions: Wet or Damp
	13/07/16	Slight	2	Rear end shunt with vehicle slowing down or stopping colliding with

LOCATION	DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
				the rear of a vehicle moving off
Pyewipe Rd	11/02/14	Slight	2	Vehicle passing a stationary vehicle on its offside collides with vehicle waiting to turn right
	20/07/14	Slight	2	Rear end shunt with vehicle in the act of turning left and vehicle waiting to turn left
	28/10/14	Slight	2	Vehicle is waiting to proceed but is held up. Rear end shunt from vehicle proceeding normally
	10/11/15	Slight	2	Two motorcycles (over 50cc and up to 125cc; and over 500cc) proceeding normally along the carriageway. Light conditions are dark but street lighting is present and lit
	18/07/16	Slight	2	Rear end shunt with vehicle proceeding normally along the carriageway colliding with a slowing or stopping vehicle
	12/07/17	Slight	2	Collision between a van/ goods vehicle (3.5 tonnes mgw and under) proceeding normally and vehicle changing lane to the right
	18/09/17	Slight	1	Minibus (8-16 passenger seats) in the act of turning right collides with kerb and lamp post
Birchin Way	04/01/14	Slight	2	Collision between vehicle moving off (nearside) and vehicle proceeding normally along the carriageway (offside). Road surface is wet/ damp and light conditions are dark with

LOCATION	DATE OF INCIDENT	SEVERITY	NO. OF VEHICLES	CAUSATION
				street lighting present and lit
	02/08/15	Slight	2	Rear end shunt with vehicle proceeding normally along the carriageway colliding into vehicle moving off
	17/10/16	Slight	2	Vehicle is waiting to proceed but is held up. Rear end shunt from vehicle proceeding normally
	20/09/17	Serious	2	Collision between vehicle in the act of turning left and a pedal cycle proceeding normally along the carriageway. Light conditions are dark but street lighting is present and lit
Moody Lane	25/04/14	Slight	2	Rear end shunt with pedal cycle colliding into the rear of vehicle proceeding normally along the carriageway. Road condition: Wet or Damp
	20/07/15	Slight	2	Two vehicles in the act of turning right collide
	17/11/15	Slight	2	Rear end shunt with van/goods vehicle (3.5 tonnes mgw and under) moving off colliding into vehicle in the act of turning right

6.0 PROPOSED DEVELOPMENT

6.1 The Proposed Development comprises an energy from waste power station which will generate electricity through the controlled combustion of RDF and would have a gross electrical output of up to 95 MW.

6.2 The nominal design capacity of the facility is 616,500 tonnes per annum (tpa) of RDF based on a design net calorific value (NCV) of 11 MJ/kg and the expected plant annual running hours. The plant is capable of maintaining the maximum electrical output while combusting fuel in a range of NCVs between 9 and 14 MJ/kg. The maximum fuel throughput of the Proposed Development is theoretically 753,500 tpa if fuel with a NCV of 9 MJ/kg were only to be used based on the expected plant annual running hours.

6.3 To ensure a robust assessment, the TA considers the traffic associated with the lowest NCV fuel, which would equate to approximately 753,500 tpa.

6.4 Whilst the Development Consent Order (DCO) is being sought, the Applicant is likely to progress the Consented Development in accordance with the Planning Permission. Approximately a three year construction programme is anticipated for the Consented Development, with construction expected to commence in Quarter 1 (Q1) 2020. Following grant of a DCO for the Proposed Development (which would be anticipated around Q3 2021, approximately half way through the three year construction programme for the Consented Development), the additional works that would be required (in addition to those which benefit from the Planning Permission) would then be constructed, and the Proposed Development would commence operation in 2023.

6.5 Whilst this is the most likely construction programme scenario for the Proposed Development, two other potential construction programme scenarios are also being considered in order that a robust assessment of environmental effects is undertaken. The alternative scenarios relate to the potential for the Proposed Development to be constructed and operated pursuant to only the DCO and commencing either in Q3 2021 (when the DCO would be granted) or Q3 2026 (before the DCO would expire). In these two alternative scenarios the Proposed Development would commence operation in 2024 or 2029 respectively.

6.6 For the purposes of the TA (in terms of highway/ junction capacity) the worst case scenario would be the latest construction start date (2026) because baseline traffic flows would be higher. However, for the purposes of this PEI Report the earliest construction start date (Q1 2020) and the latest construction start date (Q3 2026) have both been assessed for completeness. If construction starts in Q1 2020, before the final Environmental Statement (ES) and TA are completed for the DCO application, the later construction scenario will be discounted.

6.7 The assessment scenarios are therefore:

- Construction – assuming for TA purposes that construction starts in either Q1 2020 or Q3 2026; and
- Opening (start of Operation) – assuming for TA purposes that operation commences in either Q1 2023 or Q3 2029.

6.8 During construction, the Proposed Development would require a maximum of around 750 workers per day at the peak of construction. Once operational, the Proposed Development would create around 56 new permanent full time jobs.

6.9 It is expected that each year the Proposed Development will be taken offline for approximately three weeks to allow for invasive maintenance activities such as internal inspection of the boiler. Approximately every five to six years the facility will be taken

offline for a major outage for substantial maintenance activities such as replacement sections of the boiler. Such a major outage is likely to last approximately five weeks where it could be expected that up to 200 staff could be on Site on any one day.

6.10 The activities involved in the decommissioning process for the Proposed Development are not yet known in detail, as it has a design life of approximately 30 years. There would be expected to be some traffic movements associated with the removal (and recycling, as appropriate) of material arising from demolition and potentially the import of materials for land restoration and re-instatement. However, vehicle numbers are not expected to be higher than those experienced during the construction or operational period.

Site Access and Car Parking

Vehicle Access

6.11 Access to the Proposed Development will be provided via a new access at the eastern end of the adopted section of South Marsh Road. A layout plan showing the proposed access is provided in Annex 5.

6.12 Incoming HGVs will enter the Site and proceed to the two incoming weighbridges. Should both weighbridges be occupied, a HGV holding area is to be provided accommodating up to six HGVs to prevent HGV stacking on the access road.

6.13 After weighing the HGVs will proceed to the tipping hall where they will be directed to a vacant tipping bay. On completion of the tipping operation, the vehicles will leave the tipping hall via a separate exit. A designated route for all vehicles on Site will reduce the risk of congestion and collisions.

6.14 The weight of outgoing vehicles will be recorded at the outgoing weighbridges as they leave the Site.

6.15 The layout also includes a separate lane to either side of the incoming and outgoing weighbridges for use by staff and visitor vehicles.

6.16 A Delivery and Servicing Plan demonstrating how deliveries and servicing will be managed is included within Annex 25.

Car Parking

6.17 It is proposed that 57 parking spaces will be provided on Site to accommodate proposed staffing levels at the Site. This level of car parking has been identified as being suitable to accommodate proposed staffing levels for the Proposed Development including a requirement for additional spaces during shift change over periods, visitor provision and a level of site flexibility. Review of anticipated staffing levels identifies a regular parking demand of up to 42 spaces during shift change periods (see Table 7.2 below). It is proposed that 5% of the total spaces will be disabled spaces in accordance with the Supplementary Planning Guidance Mobility and Parking Standards Adopted April 2004.

Proposed Site Operating Hours and Staffing Levels

Site Operation and Delivery Periods

6.18 The Proposed Development will operate twenty four hours a day, seven days a week, with occasional offline periods for maintenance.

6.19 Deliveries of consumables, and removal of bottom ash and flue gas treatment residues off Site are proposed to occur between the hours of 06:00 and 18:00. Fuel deliveries are proposed to take place 24 hours per day, seven days per week (including Bank Holidays but excluding Christmas Day, Boxing Day and New Year's Day). However, for the purposes of the TA, as a 'worst case' it is assumed that all deliveries (consumables and

fuel) and collections (bottom ash and flue gas treatment residues) will take place between 06:00 and 18:00.

6.20 Although the timings allow for deliveries every day of the week, it is likely that the majority of fuel deliveries will be Monday to Friday.

6.21 Rail transport of fuel is not considered to be feasible for the Proposed Development, given that fuel contracts have not yet been agreed and it is not known whether the suppliers will be rail connected, and the Site is well connected by road.

Proposed Staffing Levels

6.22 It is estimated that around 56 staff will be required on a shift basis to be spread over a 24 hour period. Site operation is likely to be undertaken via three 8 hr shifts (06:00 – 14:00, 14:00 – 22:00, and 22:00 – 06:00).

6.23 It is anticipated there will be a maximum of 14 staff per shift, with an additional 14 day/ management staff being employed at the Proposed Development.

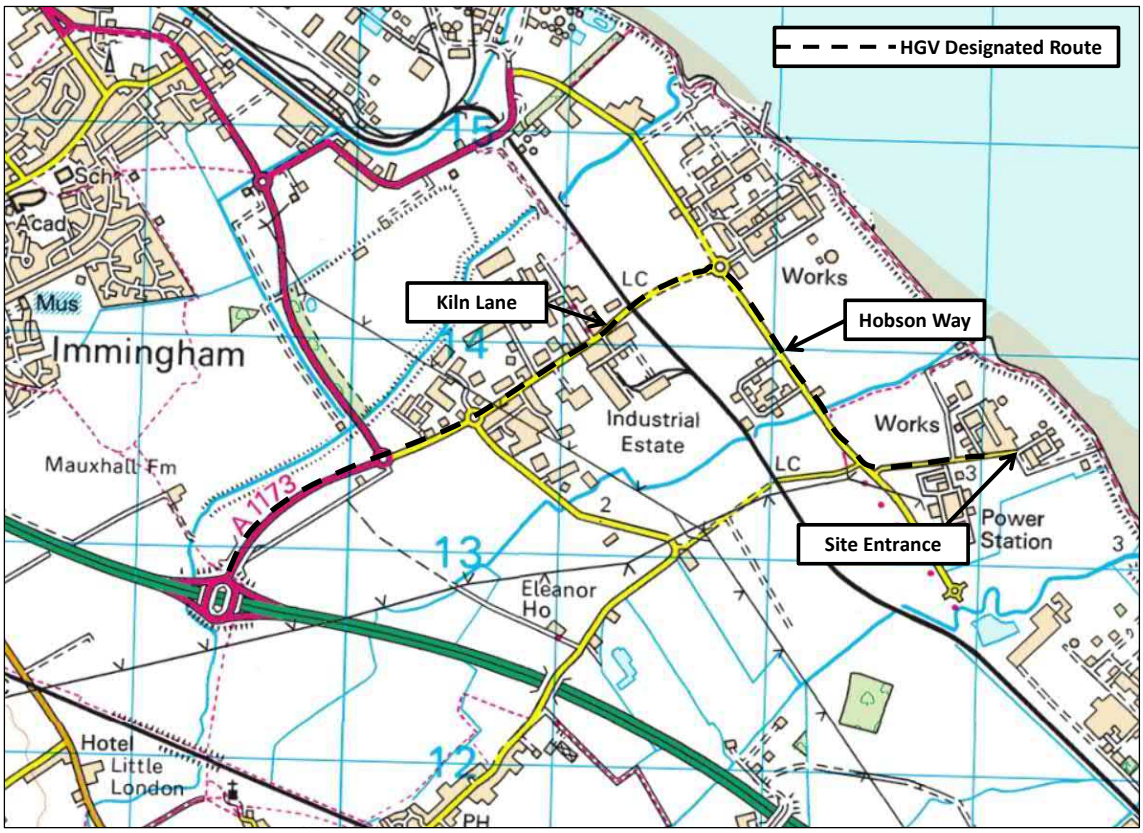
6.24 Staff will be encouraged to use sustainable modes of travel to access the Site where possible. A Framework Operational Travel Plan is included in Annex 6.

Operational HGV Routing

6.25 It is proposed that all operational HGV traffic to/ from the Proposed Development will be required to route to/ from the A180 via the A1173, Kiln Lane, Hobson Way and South Marsh Road (see Figure 6.1). This will be formalised by a routing agreement and will be rigorously enforced by the Proposed Development operator.

6.26 The Proposed Development operator will encourage the public to report any incidents regarding any breaches of the routing agreement to the Site Manager together with information on the location of the HGV, direction of travel and its number plate/ operator. This information will allow the Site Manager to take appropriate action to avoid any future incidents.

Figure 6.1: Designated Operational HGV Route



7.0 DEVELOPMENT TRIP GENERATION AND ASSIGNMENT

Operational HGV Traffic Levels

7.1 As set out in Section 6 above, deliveries of consumables, and removal of bottom ash and flue gas treatment residues off-site are proposed to occur between the hours of 06:00 and 18:00 and fuel deliveries are proposed to take place 24 hours per day, seven days per week (including Bank Holidays but excluding Christmas Day, Boxing Day and New Year's Day). However, for the purposes of the TA, as a 'worst case' it is assumed that all deliveries (consumables and fuel) and collections (bottom ash and flue gas treatment residues) will take place between 06:00 and 18:00.

7.2 Calculation of the number of average fuel deliveries per day is set out below and is likely be in the region of 202 HGVs per day based on deliveries occurring Monday to Friday (as a worst case scenario).

<u>Calculation of Fuel Deliveries</u>

- Fuel Tonnes per Annum: 753,500 tpa
- Average HGV Payload: 16 tonnes
- Fuel Deliveries per Year: 753,500 tpa/ 16 t = 47,094 Fuel Deliveries per Year
- Assuming all Deliveries occur Monday to Friday between 06:00 and 18:00 = 260 Delivery Days per Year, but allowing for outages this is expected to be reduced to c.233 Delivery Days per Year
- Fuel Deliveries per Day: 47,094/ 233 Days = 202 Average Fuel Deliveries per Day (one-way)
- Fuel Deliveries per Hour: 202 Deliveries per Day/ 12 Hours = 17 Average Fuel Deliveries per Hour (one-way).

7.3 To estimate the peak daily and hourly traffic flow, the following variables have been applied to ensure a robust assessment.

- Daily variation of fuel deliveries will occur due to sourcing and fuel suppliers. As an approximation, it is estimated that daily traffic flows might vary by +/- 20%. This imposes a 20% increase on the average daily flows.
- Hourly flows are difficult to control, depending on HGV drivers and loading times at other facilities. It is estimated that the hourly peak flow during a day is likely to be about twice that of the average hourly flow.

7.4 Based on the above variables, peak daily and hourly fuel deliveries are as follows:

- Daily Peak Fuel Deliveries: 242 HGVs (one-way); and
- Hourly Peak Fuel Deliveries: 34 HGVs (one-way).

7.5 In addition, there would be a maximum of 5 HGV consumable deliveries per day (5 in + 5 out) or 1 in 1 out during the hourly peak. There would also be HGV movements associated with bottom ash and flue gas treatment residues with a maximum of 65 HGVs per day (65 in + 65 out) or 9 in and 9 out during the hourly peak.

7.6 Total HGV movements at the Site would therefore be 312 in and 312 out per day and a maximum of 44 deliveries during the hourly peak.

Predicted Operational HGV Arrival/ Departure Profile

7.7 Deliveries of fuel are proposed to occur between the hours of 06:00 and 18:00. To arrive at a daily profile over the working day, weighbridge records for a similar energy from waste facility known as Ferrybridge Multifuel 1 operated by SSE, near Wakefield have been analysed for the month September 2016.

7.8 Table 7.1 provides the anticipated hourly profile of HGV movements at the Proposed Development and demonstrates that peak hour development HGV demand is predicted to occur during the period 06:00 – 07:00 when 87 HGV movements (in and out) could be expected to take place.

Table 7.1: Operational HGV Hourly Profile

HOUR BEGINNING	ARRIVALS	DEPARTURES	TOTAL
06:00	44	43	87
07:00	33	33	66
08:00	36	33	69
09:00	36	34	70
10:00	26	31	57
11:00	29	27	56
12:00	29	27	56
13:00	26	25	51
14:00	20	20	40
15:00	16	18	34
16:00	13	14	27
17:00	4	5	9
18:00	0	2	2
Total	**312**	**312**	**624**

Predicted Staff Traffic Demand

7.9 It is estimated that around 56 staff will be employed at the Proposed Development. Given the 24 hour operation of the facility a staff shift system will be in operation and is likely to be undertaken via three 8 hour shifts (06:00 – 14:00, 14:00 – 22:00, 22:00 – 06:00).

7.10 It is anticipated there will be a maximum of 14 staff per shift, with an additional 14 day/ management staff being employed at the Site.

7.11 Given the remote location of the Site and the nature of the shift system, it is anticipated that the majority of staff would travel to the Site by car. To ensure a robust assessment, vehicle occupancy of one staff member per vehicle has been applied. The anticipated arrival/ departure profile over the working day is shown in Table 7.2 below.

Table 7.2: Staff Arrival/ Departure

HOUR BEGINNING	ARRIVALS	DEPARTURES	CAR PARK OCCUPANCY
05:00	14		28
06:00		14	14
07:00	14		28
08:00			28
09:00			28
10:00			28
11:00			28
12:00			28
13:00	14		42
14:00		14	28
15:00			28
16:00			28
17:00		14	14
18:00			14
19:00			14
20:00			14
21:00	14		28
22:00		14	14
23:00			14
00:00			14

Predicted Total Traffic Demand

7.12 Combining the above staff car trip demand and the predicted operational HGV traffic levels, the overall daily vehicle demand to/ from the Proposed Development is set out in Table 7.3 below.

Table 7.3: Total Daily Operational Vehicle Traffic Profile

HOUR BEGINNING	STAFF ARRIVAL	STAFF DEPART	HGV ARRIVAL	HGV DEPART	TOTAL ARRIVAL	TOTAL DEPART
05:00	14	0	0	0	14	0
06:00	0	14	44	43	44	57
07:00	14	0	33	33	47	33
08:00	0	0	36	33	36	33
09:00	0	0	36	34	36	34
10:00	0	0	26	31	26	31
11:00	0	0	29	27	29	27
12:00	0	0	29	27	29	27
13:00	14	0	26	25	40	25
14:00	0	14	20	20	20	34
15:00	0	0	16	18	16	18
16:00	0	0	13	14	13	14
17:00	0	14	4	5	4	19
18:00	0	0	0	2	0	2
19:00	0	0	0	0	0	0
20:00	0	0	0	0	0	0
21:00	14	0	0	0	14	0
22:00	0	14	0	0	0	14
23:00	0	0	0	0	0	0
00:00	0	0	0	0	0	0
00:00 – 24:00	**56**	**56**	**312**	**312**	**368**	**368**

Assignment of Operational Development Traffic

Operational HGV Traffic Assignment

7.13 Operational HGV movements to/ from the Proposed Development will be to/ from the A180 via the A1173, Kiln Lane, Hobson Way and South Marsh Road. HGV assignment at the A180 Stallingborough Interchange has been undertaken on the basis of a 50/ 50 A180 eastbound/ A180 westbound split. The HGV assignment is provided in Annex 7.

7.14 The predicted level of operational HGVs during the AM (07:00 – 08:00) and PM (16:00 – 17:00) network peak hours is provided in Annex 8.

Staff Assignment

7.15 Staff trips have been assigned to the network based on the 2011 Journey to Work Census data (www.nomisweb.co.uk) and is based on those people who currently work within the super output area in which the Proposed Development is located. The staff assignment is provided in Annex 9.

7.16 The predicted level of operational staff vehicle movements during the AM (07:00 – 08:00) and PM (16:00 – 17:00) network peak hours is provided in Annex 10.

Combined Traffic Demand

7.17 The combined HGV and staff traffic demand for the AM (07:00 – 08:00) and PM (16:00 – 17:00) network peak hours is provided in Annex 11.

8.0 GROWTH FACTORS

8.1 The Proposed Development is anticipated to be fully operational at the earliest in 2023 and the latest in 2029 and this has therefore been identified as the assessment years for this TA. Following scoping discussions with HE for the Consented Development, a future operational year of 2030 has also been assessed.

8.2 Traffic growth factors for the North East Lincolnshire District have been obtained from TEMPRO Version 7.2 software. The use of TEMPRO software is generally recognised as the industry standard tool for determining traffic growth factors to apply to base flows in order to estimate future year traffic flows.

8.3 The TEMPRO software provides a local adjustment to the National Trip End Model to provide localised growth factors for geographical areas.

8.4 The local growth factors to be applied to the 2018 Base Flows for a principal road within a rural area are shown in Table 8.1.

Table 8.1: Total Daily Operational Vehicle Traffic Profile

ROAD TYPE	DATE RANGE	AM PEAK	PM PEAK
Principal	2018 - 2023	1.0686	1.0661
Principal	2018 - 2029	1.1262	1.1222
Principal	2018 - 2030	1.1339	1.1297

8.5 The above growth factors have been applied to the 2018 traffic flows to provide the future 2023, 2029 and 2030 AM and PM network peak flows (see Annex 12).

9.0 COMMITTED DEVELOPMENT

9.1.1 The following committed or likely developments have been identified and incorporated into the future baseline and future year assessment. The list of committed developments will remain under review until the TA and ES are finalised in early 2020.

North Beck Energy Centre (Ref: DM/0026/18/FUL)

9.2 A full planning application for the development of an energy recovery facility on land south of Queens Road, Immingham was granted in October 2018.

9.3 The planning application was supported by a TA and included an estimate of vehicle trips for the AM and PM peak periods. Assignment of development flows to the local road network are shown in Annex 13.

9.4 Table 9.1 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods and the 24 hour period.

Table 9.1: North Beck Energy Centre Trip Generation

	Car/ LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	24	0	7	3
16:00 – 17:00 PM Peak	1	9	0	0
00:00 – 24:00 24 Hour	49	49	126	126

Stallingborough Employment Site, Kiln Lane, Stallingborough (Ref: DM/0105/18/FUL)

9.5 A hybrid application seeking outline consent for the development of up to 120,176 sqm of B1 (Business), B2 (Industrial) and B8 (Storage and Distribution) and a full application for the creation of a new roundabout, new access roads, associated highway works, substations, pumping stations, drainage and landscaping was submitted in March 2018.

9.6 It is proposed that the development will be built out in three phases over a period of 14 years between 2018 and 2032:

- Phase 1A: 2018 – 2022
- Phase 1B: 2020 – 2024
- Phase 2: 2023 – 2032

9.7 For assessment purposes, it has been assumed that for 2023 opening year, all of Phase 1A is fully built out and 50% of Phase 1B. For the assessment years 2029 and 2030 it is assumed all of Phase 1A and Phase 1B is built out and 50% of Phase 2.

9.8 Tables 9.2 and 9.3 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods and the 24 hour period for the three assessment years. Assignment of development flows to the local road network for future years 2023, 2029 and 2030 are shown in Annex 13.

Table 9.2: Stallingborough Employment Site Trip Generation (2023)

	Car/ LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	97	33	9	15
16:00 – 17:00 PM Peak	38	95	18	12
00:00 – 24:00 24 Hour	772	772	257	257

Table 9.3: Stallingborough Employment Site Trip Generation (2029/ 2030)

	Car/ LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	148	52	18	31
16:00 – 17:00 PM Peak	63	153	39	25
00:00 – 24:00 24 Hour	1,206	1,206	539	539

End-of-life Tyre Pyrolysis Plant, Scandinavian Way, Stallingborough (Ref: DM/0333/17/FUL)

9.9 Full planning permission was granted in December 2017 to construct a waste tyre to energy pyrolysis plant at the disused Immingham Railfreight Terminal. The application was supported by a TS prepared by Distributed Energy Project Service (March 2017). This document identified that the facility would be expected to generate 20 two-way HGV trips over a 24 hour period. Assignment of development flows to the local road network for the AM and PM peak periods are shown in Annex 13.

9.10 Table 9.4 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods and the 24 hour period.

Table 9.4: End of life Tyre Pyrolysis Plant Trip Generation

	Car/ LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	5	0	2	2
16:00 – 17:00 PM Peak	0	5	2	2
00:00 – 24:00 24 Hour	5	5	20	20

Paragon/ Kia Development, Kiln Lane Stallingborough (Ref: DM/0147/16/FUL)

9.11 Full planning permission was granted in June 2016 for an extension to the established vehicle processing business run by Paragon to meet Kia's requirements. The development proposals would see the change of use of agricultural land to additional external vehicle storage. The planning application was supported by a TA. Assignment of development flows to the network for the AM and PM peak periods are shown in Annex 13.

9.12 Table 9.5 below summarises the estimated trip generation associated with the development for the AM and PM network peak periods and the 24 hour period.

Table 9.5: Paragon/ Kia Development Trip Generation

	Car/ LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	41	2	1	1
16:00 – 17:00 PM Peak	41	2	1	1
00:00 – 24:00 24 Hour	259	259	22	22

Renewable Power Facility, Kiln Lane (Ref: DM/0848/14/FUL)

9.13 Full planning permission was granted in April 2016 for the development of a renewable power facility for the production of electricity using pre-treated fuel feedstocks including tyres and carpets. The planning application was supported by a TS prepared by Les Henry Associates (July 2014). This document identified that up to one HGV trip per hour could be expected with a maximum of 10 HGVs per day. Assignment of development flows to the local road network for the AM and PM peak periods are shown in Annex 13.

9.14 Table 9.6 summarises the estimated trip generation associated with the development for the AM and PM network peak periods and the 24 hour period.

Table 9.6: Renewable Power Facility Trip Generation

	Car/ LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	16	0	1	1
16:00 – 17:00 PM Peak	0	16	1	1
00:00 – 24:00 24 Hour	16	16	10	10

9.15 It is noted that a more recent planning permission has been granted for the same site on Kiln Lane, but as the traffic generated by the earlier planning permission is greater than that reported for the later planning permission, the consented development has been included in this assessment.

Development of a Sustainable Transport Fuels Facility (Ref: DM/0664/19/FUL)

9.16 A full planning application for the development of a sustainable transport fuels facility on Hobson Way was submitted in August 2019 and is awaiting a planning decision. The planning application was supported by a TA prepared by Enzygo Ltd (July 2019).

9.17 Tables 9.7 and 9.8 summarise the estimated trip generation associated with the development for the AM and PM network peak periods and the 24 hour period for the three assessment years. Assignment of development flows to the local road network for future years 2023, 2029 and 2030 are shown in Annex 13.

Table 9.7: Sustainable Transport Fuels Facility Trip Generation (2023)

	Car/ LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	18	0	14	14
16:00 – 17:00 PM Peak	0	0	14	14
00:00 – 24:00 24 Hour	374	374	168	168

Table 9.8: Sustainable Transport Fuels Facility Trip Generation (2029/ 2030)

	Car/ LGV		HGV	
	Arr	**Dep**	**Arr**	**Dep**
07:00 – 08:00 AM Peak	18	0	14	14
16:00 – 17:00 PM Peak	0	0	14	14
00:00 – 24:00 24 Hour	74	74	168	168

Stallingborough Link Road (Ref: DM/0094/18/FUL)

9.18 A new Link Road with shared cycle/ footway provision connecting Moody Lane/ Woad Lane junction (to the south-east) to Hobson Way Roundabout (to the north-west) was approved in September 2018. The Link Road is currently under construction and is due to open in 2022. To account for the opening of the Link Road in 2022 and the re-distribution of traffic, sensitivity testing has been undertaken at key junctions within the study area (see Section 10).

Habitat Mitigation Area for Special Protection Area Birds, Land adjacent Poplar Farm, South Marsh Road, Stallingborough (Ref: DM/0099/18/FUL)

9.19 Full planning permission was granted in August 2018 to provide a quality habitat area for Special Protection Area birds with associated works including two water storage lagoons, shallow scrapes and ponds, bunding, a bird hide, footpaths, car parking, cattle and timber fencing, culverts and bridges. Construction was completed in early 2019. A review of the planning application documents shows no TS was submitted. However, any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Hornsea Project One Offshore Wind Farm, Keelby Road, Stallingborough (Ref: DM/1146/17/FUL)

9.20 A full planning application was submitted in April 2018 as part of the Hornsea Project One Offshore Wind Farm for additional land for temporary dewatering areas including creation of bunding around the lagoon and the installation of a separate settlement tank and pump.

A review of the planning application documents shows no TS has been submitted. However, any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Selvic Shipping Ltd, Netherlands Way, Stallingborough (Ref: DM/0449/17/FUL)

9.21 Full planning permission was granted in August 2017 for the installation of four CHP boilers. A review of the planning application documents shows no TS has been submitted. Any traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Block 3, Worldwide Way, Kiln Lane Trading Estate (Ref: DM/1050/16/FUL)

9.22 Full planning permission was granted in March 2017 for change of use of the site to allow business (Use Class B1) and/ or general industrial (Use Class B2) and/ or storage and distribution (Use Class B8) across the site and reconfiguration of car parking. A review of the Planning Statement submitted as part of the application reveals there will be no additional vehicle trips generated.

Construction of Access Road, Kiln Lane, Stallingborough (Ref: DM/0717/16/FUL)

9.23 Full planning permission was granted in October 2016 for the construction of an access road, electricity sub-station and foul water pumping compound, including installation of surface water drainage and service ducts. A review of the planning application documents shows no TS has been submitted. Any traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Great Coates Renewable Energy Centre, Park Way, Grimsby (Ref: DM/0195/17/FUL)

9.24 Full planning permission was granted in August 2017 for the construction of a renewable energy centre. The TS states the development would generate 60 two-way HGV movements per day and 40 two-way car trips. No information has been provided on the distribution of trips to the network however the report concludes that the trip generation is unlikely to give rise to any operational concern on the road network. The only potential shared route for this development traffic would be the A180 however any traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Temporary Construction Windfarm Compound, Grimsby Road, Laceby (Ref: DM/0153/17/FUL)

9.25 Full planning permission was granted in May 2017 for an additional area to be added to the temporary site construction compound to support the onshore cable installation and HDD for Hornsea Project One. A review of the planning application documents shows no TS has been submitted. Howeve,r any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Construction of 9 Lagoons, South Killingholme (Ref: PA/2018/155)

9.26 Full planning permission was granted in March 2018 for the construction of 9 lagoons for the storage of surface water associated with the dewatering of cable trenches for the Hornsea Project One Offshore Windfarm Project. A review of the planning application documents shows no TS has been submitted. However, any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

VPI Immingham Energy Park 'A', Rosper Road South Killingholme (Ref: PA/2018/918)

9.27 A full planning application was submitted in May 2018 for a gas fired power station and is awaiting a decision. A review of the TS prepared to support the application states that the development would create six operational roles generating an insignificant number of additional vehicular trips. However, any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

VPI Immingham OCGT (Ref: PA/SCO/2017/155)

9.28 A DCO application has been submitted for an OCGT power station at South Killingholme, Immingham. The facility will create up to 15 operational roles therefore generating an insignificant number of vehicle trips. Any development traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

River Humber Gas Pipeline Replacement Project (Ref: EN060004)

9.29 Development consent was granted in August 2016 for this project. However, the project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

A180 Port of Immingham Improvement (Ref: TWA 8/1/13)

9.30 Development consent was granted in February 2015 for this scheme. However, the project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2018 baseline flows.

Total Committed Development Flows

9.31 Total committed development flows assigned to the local network for the AM and PM Peak periods are shown in Annex 13.

10.0 TRAFFIC IMPACT ASSESSMENT

Link Flow Impact Assessment

10.1 The percentage impact of development traffic has been carried out on key links of the vehicle routing corridor to serve the Proposed Development. The links assessed include:

- South Marsh Road (East of Hobson Way);
- South Marsh Road (West of Hobson Way);
- Hobson Way (North of South Marsh Road);
- Kiln Lane (West of Hobson Way);
- A1173 (West of North Moss Lane);
- A1173 (North of A180); and
- A180 Westgate (East of Westgate Roundabout).

10.2 Table 10.1 below demonstrates the predicted changes to the future 2023, 2029 and 2030 Baseline (including committed development) two-way link flows following the addition of development traffic associated with the Proposed Development. The analysis is based on the increase in vehicles.

Table 10.1: Operational Link Impact Assessment

South Marsh Road (East of Hobson Way)

2023 YEAR OF OPENING	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	82	129	211	63.6%
16:00 – 17:00 PM Peak	27	76	103	35.5%
24 Hour	736	844	1,580	87.2%
2029 YEAR OF OPENING	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	82	137	219	59.9%
16:00 – 17:00 PM Peak	27	79	106	34.2%
24 Hour	736	891	1,627	82.6%
2030 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	82	137	219	59.9%
16:00 – 17:00 PM Peak	27	79	106	34.2%
24 Hour	736	898	1,634	82.0%

South Marsh Road (West of Hobson Way)

2023 YEAR OF OPENING	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	7	163	170	4.3%
16:00 – 17:00 PM Peak	0	171	171	0.0%
24 Hour	52	835	887	6.2%
2029 YEAR OF OPENING	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	7	173	180	4.0%
16:00 – 17:00 PM Peak	0	180	180	0.0%
24 Hour	52	881	933	5.9%
2030 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	7	173	180	4.0%
16:00 – 17:00 PM Peak	0	183	183	0.0%
24 Hour	52	887	939	5.9%

Hobson Way (North of South Marsh Road)

2023 YEAR OF OPENING	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	243	318	30.9%
16:00 – 17:00 PM Peak	27	220	247	12.3%
Weekday 24 Hour	685	1,952	2,637	35.1%
2029 YEAR OF OPENING	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	255	330	29.4%
16:00 – 17:00 PM Peak	27	229	256	11.8%
Weekday 24 Hour	685	1,725	2,410	39.7%
2030 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	257	332	29.2%
16:00 – 17:00 PM Peak	27	230	257	11.7%
24 Hour	685	1,734	2,419	39.5%

Kiln Lane (West of Hobson Way)

2023 YEAR OF OPENING	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	448	523	16.7%
16:00 – 17:00 PM Peak	27	387	414	7.0%
24 Hour	685	4,607	5,292	14.9%
2029 YEAR OF OPENING	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	469	544	16.0%
16:00 – 17:00 PM Peak	27	403	430	6.7%
24 Hour	685	4,476	5,161	15.3%
2030 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	472	547	15.9%
16:00 – 17:00 PM Peak	27	406	433	6.7%
24 Hour	685	4,498	5,183	15.2%

A1173 (West of North Moss Lane)

2023 YEAR OF OPENING	DEV TRIPS	BASELINE FLOWS	BASELINE + DEV FLOWS	% INCREASE
07:00 – 08:00 AM Peak	75	833	908	9.0%
16:00 – 17:00 PM Peak	27	931	958	2.9%
24 Hour	685	10,988	11,673	6.2%
2029 YEAR OF OPENING	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	878	953	8.5%
16:00 – 17:00 PM Peak	27	980	1,007	2.8%
24 Hour	685	11,331	12,016	6.0%
2030 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	884	959	8.5%
16:00 – 17:00 PM Peak	27	987	1,014	2.7%
24 Hour	685	11,402	12,087	6.0%

A1173 (North of A180)

2023 YEAR OF OPENING	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	1,923	1,998	3.9%
16:00 – 17:00 PM Peak	27	1,985	2,012	1.4%
24 Hour	685	18,150	18,835	3.8%
2029 YEAR OF OPENING	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	2,089	2,164	3.6%
16:00 – 17:00 PM Peak	27	2,174	2,201	1.2%
24 Hour	685	19,826	20,511	3.5%
2030 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	75	2,103	2,178	3.6%
16:00 – 17:00 PM Peak	27	2,189	2,216	1.2%
24 Hour	685	19,938	20,623	3.4%

A180 Westgate (East of Westgate Roundabout)

2023 YEAR OF OPENING	DEV TRIPS	BASELINE FLOWS	BASELINE + DEV FLOWS	% INCREASE
07:00 – 08:00 AM Peak	27	2,952	2,979	0.9%
16:00 – 17:00 PM Peak	10	3,458	3,468	0.3%
24 Hour	246	42,067	42,313	0.6%
2029 YEAR OF OPENING	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	27	3,136	3,163	0.9%
16:00 – 17:00 PM Peak	10	3,671	3,681	0.3%
24 Hour	246	44,853	45,099	0.5%
2030 FUTURE OPERATION	**DEV TRIPS**	**BASELINE FLOWS**	**BASELINE + DEV FLOWS**	**% INCREASE**
07:00 – 08:00 AM Peak	27	3,158	3,185	0.9%
16:00 – 17:00 PM Peak	10	3,695	3,705	0.3%
24 Hour	246	45,151	45,397	0.5%

10.3 The generally accepted threshold of materiality is 10% on un-congested networks. The above tables show the greatest impact of operational traffic is on immediate routes in close proximity to the Site including South Marsh Road and Hobson Way. At these locations, base flows are relatively low thus the calculated percentage impact appears high.

Junction Capacity Assessment

10.4 This section describes the junction capacity assessments carried out at selected junctions within the Study Area in order to determine the level of impact during operation. The selected key junctions include:

- Hobson Way/ South Marsh Road (East of Hobson Way) T-Junction;
- Hobson Way/ South Marsh Road (West of Hobson Way) T-Junction;
- Laporte Road/ Kiln Lane/ Hobson Way Roundabout;
- Kiln Lane/ North Moss Lane/ Trondheim Way Roundabout;
- A1173/ Kiln Lane Roundabout;
- A1173/ SHIIP Access;
- A180 Stallingborough Interchange; and
- A180/ Moody Lane/ Pyewipe Road (Westgate Roundabout).

10.5 All junctions have been modelled using the TRL Software package Junctions 9. The results generated indicate the maximum Ratio of Flow to Capacity (RFC) value on each arm and the maximum queue generated. RFC values below 0.85 indicate the junction is operating without any issues. Values between 0.85 and 1.0 indicate the junction is operating above its design capacity but still operating within its theoretical capacity. RFC values in excess of 1.0 represent congested conditions and the junction begins to fail.

10.6 The modelling has been undertaken based on passenger car unit values (pcus) in order to best reflect any operational effects associated with HGV traffic.

10.7 Junction capacity assessments have been undertaken for the following scenarios shown below. Junction modelling has not also been undertaken for the 2029 assessment year scenario as baseline flows would be lower than the 2030 assessment year scenario and therefore does not represent the worst case in terms of junction capacity assessment.

- 2018 Base;
- 2023 Base + Committed Development;
- 2023 Base + Committed + Development;
- 2030 Base + Committed Development; and
- 2030 Base + Committed + Development.

Hobson Way/ South Marsh Road (East of Hobson Way) T-Junction

2018 Base Scenario

10.8 The modelling outputs suggest that the existing junction operates well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.08 being forecast on South Marsh Road arm during the PM Peak as summarised in Table 10.2 below. The full outputs of these assessments are attached as Annex 14.

Table 10.2: 2018 Base Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.02	0.0
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.08	0.1
Hobson Way (Right Turn)	0.00	0.0

2023 Base + Committed Development Scenario

10.9 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.09 being forecast on South

Marsh Road arm during the PM Peak as summarised in Table 10.3 below. The full outputs of these assessments are attached as Annex 14.

Table 10.3: 2023 Base + Committed Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.03	0.0
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.09	0.1
Hobson Way (Right Turn)	0.00	0.0

2023 Base + Committed + Development Scenario

10.10 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.13 being forecast on South Marsh Road arm as summarised in Table 10.4 below. The full outputs of these assessments are attached as Annex 14.

Table 10.4: 2023 Base + Committed + Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.13	0.2
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.13	0.2
Hobson Way (Right Turn)	0.00	0.0

2030 Base + Committed Development Scenario

10.11 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.10 being forecast on South Marsh Road arm during the PM Peak as summarised in Table 10.5 below. The full outputs of these assessments are attached as Annex 14.

Table 10.5: 2030 Base + Committed Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.03	0.0
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.10	0.1
Hobson Way (Right Turn)	0.00	0.0

2030 Base + Committed + Development Scenario

10.12 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.14 being forecast on South Marsh Road arm as summarised in Table 10.6 below. The full outputs of these assessments are attached as Annex 14.

Table 10.6: 2030 Base + Committed + Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.13	0.2
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.14	0.2
Hobson Way (Right Turn)	0.00	0.0

Sensitivity Testing Scenario with Link Road

10.13 It is noted that an application for a new Link Road to the south of the Proposed Development connecting Hobson Way with Moody Lane was approved in September 2018 and is currently under construction. The proposed Link Road is due to open in 2022.

10.14 As a sensitivity test, future traffic flows associated with the Link Road have been obtained from Appendix D of the South Humber Bank Link Road TA prepared by Atkins in January 2018 for a future year of 2026. Flows generated by the Proposed Development have been added and the modelling outputs are shown in Table 10.7 below.

Table 10.7: 2026 Base + Committed + Link Road + Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.19	0.2
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.15	0.2
Hobson Way (Right Turn)	0.00	0.0

10.15 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.19 being forecast on South Marsh Road arm during the AM Peak. The full outputs of these assessments are attached as Annex 14.

Hobson Way/ South Marsh Road (West of Hobson Way) T-Junction

2018 Base Scenario

10.16 The modelling outputs suggest that the existing junction operates well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.16 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 10.8 below. The full outputs of these assessments are attached in Annex 15.

Table 10.8: 2018 Base Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.11	0.1
South Marsh Road (Right Turn)	0.10	0.1
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0

South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.16	0.2

2023 Base + Committed Development Scenario

10.17 The modelling outputs suggest that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.17 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 10.9 below. The full outputs of these assessments are attached in Annex 15.

Table 10.9: 2023 Base + Committed Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.12	0.1
South Marsh Road (Right Turn)	0.11	0.1
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.17	0.2

2023 Base + Committed + Development Scenario

10.18 The modelling outputs suggest that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.17 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 10.10 below. The full outputs of these assessments are attached in Annex 15.

Table 10.10: 2023 Base + Committed + Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.13	0.1
South Marsh Road (Right Turn)	0.13	0.1
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.17	0.2

2030 Base + Committed Development Scenario

10.19 The modelling outputs suggest outputs that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.18 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 10.11 below. The full outputs of these assessments are attached in Annex 15.

Table 10.11: 2030 Base + Committed Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.13	0.2
South Marsh Road (Right Turn)	0.12	0.1
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.18	0.2

2030 Base + Committed + Development Scenario

10.20 The modelling outputs suggest that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.18 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 10.12 below. The full outputs of these assessments are attached in Annex 15.

Table 10.12: 2030 Base + Committed + Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.14	0.2
South Marsh Road (Right Turn)	0.13	0.2
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.18	0.2

Sensitivity Testing Scenario with Link Road

10.21 Construction of the link road started in 2019 and is due to be completed in 2022. As a sensitivity test, future traffic flows associated with the Link Road have been obtained from Appendix D of the South Humber Bank Link Road TA prepared by Atkins in January 2018 for a future year of 2026. Flows generated by the Proposed Development have been added and the modelling outputs are shown in Table 10.13 below.

Table 10.13: 2026 Base + Committed + Link Road + Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.22	0.3
South Marsh Road (Right Turn)	0.14	0.2
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.01	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.24	0.3

10.22 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.24 being forecast on the right turn lane from Hobson Way during the PM Peak. The full outputs of these assessments are attached as Annex 15.

Laporte Road/ Hobson Way/ Kiln Lane Roundabout

2018 Base Scenario

10.23 The modelling outputs suggest that the existing junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.19 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 10.14 below. The full outputs of these assessments are attached as Annex 16.

Table 10.14: 2018 Base Modelling Outputs (Laporte Rd/ Kiln Ln/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.04	0.0
Kiln Lane EB Approach	0.16	0.2
Laporte Road SB Approach	0.04	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.03	0.0
Kiln Lane EB Approach	0.05	0.1
Laporte Road SB Approach	0.19	0.3
Unnamed Access	0.00	0.0

2023 Base + Committed Development Scenario

10.24 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.22 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 10.15 below. The full outputs of these assessments are attached as Annex 16.

Table 10.15: 2023 Base + Committed Development Modelling Outputs (Laporte Rd/ Kiln Lane/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.06	0.1
Kiln Lane EB Approach	0.19	0.3
Laporte Road SB Approach	0.07	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.04	0.0
Kiln Lane EB Approach	0.06	0.1
Laporte Road SB Approach	0.22	0.3
Unnamed Access	0.00	0.0

2023 Base + Committed + Development Scenario

10.25 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.22 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 10.16 below. The full outputs of these assessments are attached as Annex 16.

Table 10.16: 2023 Base + Committed + Development Modelling Outputs (Laporte Rd/ Kiln Lane/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.08	0.1
Kiln Lane EB Approach	0.23	0.4
Laporte Road SB Approach	0.08	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.05	0.1
Kiln Lane EB Approach	0.08	0.1
Laporte Road SB Approach	0.22	0.3
Unnamed Access	0.00	0.0

2030 Base + Committed Development Scenario

10.26 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.23 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 10.17 below. The full outputs of these assessments are attached as Annex 16.

Table 10.17: 2030 Base + Committed Development Modelling Outputs (Laporte Rd/ Kiln Lane/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.06	0.1
Kiln Lane EB Approach	0.20	0.3
Laporte Road SB Approach	0.08	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.04	0.1
Kiln Lane EB Approach	0.07	0.1
Laporte Road SB Approach	0.23	0.3
Unnamed Access	0.00	0.0

2030 Base + Committed + Development Scenario

10.27 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.24 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 10.18 below. The full outputs of these assessments are attached as Annex 16.

Table 10.18: 2030 Base + Committed + Development Modelling Outputs (Laporte Rd/ Kiln Lane/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.09	0.1
Kiln Lane EB Approach	0.24	0.4
Laporte Road SB Approach	0.08	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.05	0.1
Kiln Lane EB Approach	0.08	0.1
Laporte Road SB Approach	0.24	0.3
Unnamed Access	0.00	0.0

Sensitivity Testing Scenario with Link Road

10.28 Construction of the link road started in 2019 and is due to be completed in 2022. As a sensitivity test, future traffic flows associated with the Link Road have been obtained from Appendix D of the South Humber Bank Link Road TA prepared by Atkins in January 2018 for a future year of 2026. Flows generated by the Proposed Development have been added and the modelling outputs are shown in Table 10.19 below.

Table 10.19: 2026 Base + Committed + Link Road + Development Modelling

Outputs (Laporte Rd/ Kiln Lane/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.35	0.5
Kiln Lane EB Approach	0.40	0.7
Laporte Road SB Approach	0.14	0.2
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.18	0.3
Kiln Lane EB Approach	0.10	0.2
Laporte Road SB Approach	0.43	0.8
Unnamed Access	0.01	0.0

10.29 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.43 being forecast on the Laporte Road arm during the PM Peak. The full outputs of these assessments are attached as Annex 16.

Kiln Lane/ North Moss Lane/ Trondheim Way Roundabout

2018 Base Scenario

10.30 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.43 being forecast on the Kiln Lane arm during the PM Peak. The full outputs of these assessments are attached as Annex 17.

Table 10.20: 2018 Base Modelling Outputs (Kiln Lane/ North Moss Lane/ Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.12	0.2
North Moss Lane	0.09	0.1
A1173	0.37	0.6
Trondheim Way	0.03	0.0
PM Peak (16:00 – 17:00)		
Kiln Lane	0.43	0.8
North Moss Lane	0.07	0.1
A1173	0.23	0.4
Trondheim Way	0.05	0.1

2023 Base + Committed Development Scenario

10.31 The modelling outputs suggest that the junction operates within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.49 being forecast on the Kiln Lane arm during the PM Peak generating a maximum queue of 1.1 pcu as summarised in Table 10.21 below. The full outputs of these assessments are attached as Annex 17.

Table 10.21: 2023 Base + Committed Development Modelling Outputs (Kiln Lane/ North Moss Lane/ Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.15	0.3
North Moss Lane	0.10	0.1
A1173	0.44	0.9
Trondheim Way	0.03	0.1
PM Peak (16:00 – 17:00)		
Kiln Lane	0.49	1.1
North Moss Lane	0.08	0.1
A1173	0.27	0.5
Trondheim Way	0.05	0.1

2023 Base + Committed + Development Scenario

10.32 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.51 being forecast on the Kiln Lane arm during the PM Peak generating a maximum queue of 1.2 pcus as summarised in Table 10.22 below. The full outputs of these assessments are attached as Annex 17.

Table 10.22: 2023 Base + Committed + Development Modelling Outputs (Kiln Lane/ North Moss Lane/ Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.20	0.4
North Moss Lane	0.10	0.1
A1173	0.49	1.1
Trondheim Way	0.03	0.1
PM Peak (16:00 – 17:00)		
Kiln Lane	0.51	1.2
North Moss Lane	0.09	0.1
A1173	0.29	0.6
Trondheim Way	0.06	0.1

2030 Base + Committed Development Scenario

10.33 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.53 being forecast on the Kiln Lane arm during the PM Peak generating a maximum queue of 1.2 pcus as summarised in Table 10.23 below. The full outputs of these assessments are attached as Annex 17.

Table 10.23: 2030 Base + Committed Development Modelling Outputs (Kiln Lane/ North Moss Lane/ Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.16	0.3
North Moss Lane	0.11	0.1
A1173	0.47	1.0
Trondheim Way	0.04	0.1
PM Peak (16:00 – 17:00)		
Kiln Lane	0.53	1.2
North Moss Lane	0.10	0.1
A1173	0.29	0.6
Trondheim Way	0.06	0.1

2030 Base + Committed + Development Scenario

10.34 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.55 being forecast on the Kiln Lane arm during the PM Peak generating a maximum queue of 1.3 pcus as summarised in Table 10.24 below. The full outputs of these assessments are attached as Annex 17.

Table 10.24: 2030 Base + Committed + Development Modelling Outputs (Kiln Lane/ North Moss Lane/ Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.21	0.4
North Moss Lane	0.11	0.1
A1173	0.52	1.3
Trondheim Way	0.04	0.1
PM Peak (16:00 – 17:00)		
Kiln Lane	0.55	1.3
North Moss Lane	0.10	0.1
A1173	0.31	0.6
Trondheim Way	0.06	0.1

Sensitivity Testing Scenario with Link Road

10.35 This junction was not tested as part of the TA for the South Humber Bank Link Road prepared by Atkins in January 2018. However, given that the new Link Road would result in a reduction of trips travelling along the A1173 and Kiln Lane, this would only further improve the capacity at the Kiln Lane/ North Moss Lane/ Trondheim Way Roundabout.

A1173/ Kiln Lane Roundabout

2018 Base Scenario

10.36 The modelling outputs suggest that the existing junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.67 being forecast on the A1173 southbound approach arm during the PM Peak as summarised in Table 10.25 below. The full outputs of these assessments are attached as Annex 18.

Table 10.25: 2018 Base Modelling Outputs (A1173/ Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.86	6.0
A1173 SB Approach	0.45	1.0
Kiln Lane WB Approach	0.22	0.4
PM Peak (16:00 – 17:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.33	0.6
A1173 SB Approach	0.82	4.3
Kiln Lane WB Approach	0.72	2.7

2023 Base + Committed Development Scenario

10.37 It is noted that as part of the Stallingborough Employment Site development, a number of improvements to the roundabout are proposed including:

- an improved southern arm onto the roundabout and formalise the site access arrangement;
- marginal widening of the A1173 northern arm into the roundabout to increase the flare length on the approach whilst maintaining a two-lane entry; and
- marginal widening of the A1173 western arm into the roundabout to increase the flare length on the approach whilst maintaining a two-lane entry.

10.38 This junction has therefore been modelled with these improvements in place for the remaining scenarios.

10.39 The modelling outputs suggest that the junction operates within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.84 being forecast on the A1173 eastbound approach arm during the AM Peak generating a maximum queue of 5.4 pcus as summarised in Table 10.26 below. The full outputs of these assessments are attached as Annex 18.

Table 10.26: 2023 Base + Committed Development Modelling Outputs (A1173/ Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.84	5.2
A1173 SB Approach	0.46	1.0
Kiln Lane WB Approach	0.18	0.3
PM Peak (16:00 – 17:00)		
Unnamed Access	0.01	0.0
A1173 EB Approach	0.33	0.6
A1173 SB Approach	0.80	4.1
Kiln Lane WB Approach	0.53	1.3

2023 Base + Committed + Development Scenario

10.40 The modelling outputs suggest that the junction operates within its theoretical capacity during both the AM and PM peak periods, with a maximum RFC of 0.87 being forecast on the A1173 eastbound approach during the AM Peak generating a maximum queue of 6.9 pcus as summarised in Table 10.27 below. The full outputs of these assessments are attached as Annex 18.

Table 10.27: 2023 Base + Committed + Development Modelling Outputs (A1173/ Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.87	6.9
A1173 SB Approach	0.48	1.1
Kiln Lane WB Approach	0.21	0.4
PM Peak (16:00 – 17:00)		
Unnamed Access	0.01	0.0
A1173 EB Approach	0.34	0.6
A1173 SB Approach	0.81	4.3
Kiln Lane WB Approach	0.55	1.4

2030 Base + Committed Development Scenario

10.41 The modelling outputs suggest that the junction operates within its theoretical capacity during both the AM and PM peak periods, with a maximum RFC of 0.90 being forecast on the A1173 eastbound approach during the AM Peak generating a maximum queue of 8.8 pcus as summarised in Table 10.28 below. The full outputs of these assessments are attached as Annex 18.

Table 10.28: 2030 Base + Committed Development Modelling Outputs (A1173/ Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.03	0.0
A1173 EB Approach	0.90	8.8
A1173 SB Approach	0.51	1.2
Kiln Lane WB Approach	0.20	0.3
PM Peak (16:00 – 17:00)		
Unnamed Access	0.16	0.3
A1173 EB Approach	0.36	0.7
A1173 SB Approach	0.88	6.6
Kiln Lane WB Approach	0.59	1.6

2030 Base + Committed + Development Scenario

10.42 The modelling outputs suggest that the junction operates within its theoretical capacity during both the AM and PM peak periods, with a maximum RFC of 0.94 being forecast on the A1173 eastbound approach during the AM Peak generating a maximum queue of 12.8 pcus as summarised in Table 10.29 below. The full outputs of these assessments are attached as Annex 18.

Table 10.29: 2030 Base + Committed + Development Modelling Outputs (A1173/ Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.03	0.0
A1173 EB Approach	0.94	12.8
A1173 SB Approach	0.53	1.3
Kiln Lane WB Approach	0.23	0.4
PM Peak (16:00 – 17:00)		
Unnamed Access	0.17	0.3
A1173 EB Approach	0.37	0.8
A1173 SB Approach	0.89	6.9
Kiln Lane WB Approach	0.61	1.8

Sensitivity Testing Scenario with Link Road

10.43 As a sensitivity test, future traffic flows associated with the Link Road have been obtained from Appendix D of the South Humber Bank Link Road TA prepared by Atkins in January 2018 for a future year of 2026. Flows generated by the Proposed Development have been added and the modelling outputs are shown in Table 10.30 below.

Table 10.30: 2026 Base + Committed + Link Road + Development Modelling Outputs (A1173/ Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.02	0.0
A1173 EB Approach	0.72	2.5
A1173 SB Approach	0.42	0.7
Kiln Lane WB Approach	0.12	0.1
PM Peak (16:00 – 17:00)		
Unnamed Access	0.06	0.1
A1173 EB Approach	0.28	0.4
A1173 SB Approach	0.66	1.9
Kiln Lane WB Approach	0.28	0.4

10.44 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.72 being forecast on the A1173 EB Approach arm during the AM Peak. This improvement in junction performance is due to the redistribution of traffic associated with the Link Road with a reduction in flows on the A1173. The full outputs of these assessments are attached as Annex 18.

A1173/ SHIIP Site Access

2023 Base + Committed Development Scenario

10.45 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.63 being forecast on the A1173 (EB Approach) arm during the AM Peak. The full outputs of these assessments are attached as Annex 19.

Table 10.31: 2023 Base + Committed Development Modelling Outputs (A1173/ SHIIP Access)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Site Access South	0.03	0.0
A1173 (EB Approach)	0.63	1.9
Site Access North	0.04	0.1
A1173 (WB Approach)	0.21	0.3
PM Peak (16:00 – 17:00)		
Site Access South	0.12	0.1
A1173 (EB Approach)	0.23	0.4
Site Access North	0.03	0.0
A1173 (WB Approach)	0.55	1.3

2023 Base + Committed + Development Scenario

10.46 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.66 being forecast on the A1173 (EB Approach) arm during the AM Peak. The full outputs of these assessments are attached as Annex 19.

Table 10.32: 2023 Base + Committed + Development Modelling Outputs (A1173/ SHIIP Access)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Site Access South	0.03	0.0
A1173 (EB Approach)	0.66	2.2
Site Access North	0.04	0.1
A1173 (WB Approach)	0.23	0.4
PM Peak (16:00 – 17:00)		
Site Access South	0.12	0.1
A1173 (EB Approach)	0.24	0.4
Site Access North	0.03	0.0
A1173 (WB Approach)	0.56	1.4

2030 Base + Committed Development Scenario

10.47 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.69 being forecast on the A1173 (EB Approach) arm during the AM Peak. The full outputs of these assessments are attached as Annex 19.

Table 10.33: 2030 Base + Committed Development Modelling Outputs (A1173/ SHIIP Access)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Site Access South	0.06	0.1
A1173 (EB Approach)	0.69	2.4
Site Access North	0.05	0.1
A1173 (WB Approach)	0.23	0.4
PM Peak (16:00 – 17:00)		
Site Access South	0.23	0.3
A1173 (EB Approach)	0.28	0.5
Site Access North	0.03	0.0
A1173 (WB Approach)	0.61	1.7

2030 Base + Committed + Development Scenario

10.48 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.72 being forecast on the A1173 (EB Approach) arm during the AM Peak. The full outputs of these assessments are attached as Annex 19.

Table 10.34: 2030 Base + Committed + Development Modelling Outputs (A1173/ SHIIP Access)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Site Access South	0.06	0.1
A1173 (EB Approach)	0.72	2.8
Site Access North	0.06	0.1
A1173 (WB Approach)	0.26	0.5
PM Peak (16:00 – 17:00)		
Site Access South	0.24	0.3
A1173 (EB Approach)	0.29	0.5
Site Access North	0.03	0.0
A1173 (WB Approach)	0.62	1.7

Sensitivity Testing Scenario with Link Road

10.49 This junction was not tested as part of the TA for the South Humber Bank Link Road prepared by Atkins in January 2018. However, given that the new Link Road would result in a reduction of trips travelling along the A1173, this would only further improve the capacity at the junction.

A180/ A1173 Stallingborough Interchange

10.50 This junction has been modelled using the 'Lane Simulation' mode within Junctions 9 and allows lane specific movements for each approach to be considered resulting in Level of Service (LOS) based on delay and queue. The transportation LOS system uses the letters A through F, with the definitions below being typical:

- A = Free flow
- B = Reasonably free flow
- C = Stable flow
- D = Approaching unstable flow
- E = Unstable flow
- F = Forced or breakdown flow

2018 Base Scenario

10.51 The modelling outputs suggest the existing junction operates within free flow conditions (LOS = A) during the AM and PM peak periods as summarised in Table 10.35 below. The full outputs of these assessments are attached as Annex 20.

Table 10.35: 2018 Base Modelling Outputs (A1173/ A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	A	0.6
A180 EB Off-Slip	A	0.5
A1173 SB Approach	A	0.4
A180 WB Off-Slip	A	2.9
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.3
A180 EB Off-Slip	A	0.3
A1173 SB Approach	A	2.1
A180 WB Off-Slip	A	0.6

2023 Base + Committed Development Scenario

10.52 It is noted that as part of the Stallingborough Employment Site development, it is proposed to marginally widen the northern arm (A1173) into the roundabout to increase the flare length on the approach whilst maintaining a two lane entry. The junction has therefore been modelled with this improvement in place for the remaining scenarios.

10.53 The modelling outputs suggest the junction will operate within free flow conditions (LOS = A) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in stable flow conditions (LOS = C) during the AM Peak generating a queue of 6.6 pcus as summarised in Table 10.36 below. The full outputs of these assessments are attached as Annex 20.

Table 10.36: 2023 Base + Committed Development Modelling Outputs (A1173/ A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	B	0.9
A180 EB Off-Slip	A	0.7
A1173 SB Approach	A	0.4
A180 WB Off-Slip	C	6.6
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.3
A180 EB Off-Slip	A	0.4
A1173 SB Approach	A	2.2
A180 WB Off-Slip	A	0.6

2023 Base + Committed + Development Scenario

10.54 The modelling outputs suggest the junction will operate within free flow/ reasonably free flow conditions (LOS = A, LOS = B) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in stable flow conditions (LOS = C) during the AM Peak generating a queue of 8.5 pcus as summarised in Table 10.37 below. The full outputs of these assessments are attached as Annex 20.

Table 10.37: 2023 Base + Committed + Development Modelling Outputs (A1173/ A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	B	1.0
A180 EB Off-Slip	A	0.8
A1173 SB Approach	A	0.6
A180 WB Off-Slip	C	8.5
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.3
A180 EB Off-Slip	A	0.5
A1173 SB Approach	A	2.6
A180 WB Off-Slip	A	0.6

2030 Base + Committed Development Scenario

10.55 The modelling outputs suggest the junction will operate within free flow/ reasonably free flow conditions (LOS = A, LOS = B) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in approaching unstable flow conditions (LOS = D) during the AM Peak generating a queue of 13.4 pcus as summarised in Table 10.38 below. The full outputs of these assessments are attached as Annex 20.

Table 10.38: 2030 Base + Committed Development Modelling Outputs (A1173/ A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	B	1.2
A180 EB Off-Slip	A	0.9
A1173 SB Approach	A	0.5
A180 WB Off-Slip	D	13.4
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.4
A180 EB Off-Slip	A	0.5
A1173 SB Approach	A	3.6
A180 WB Off-Slip	A	0.7

2030 Base + Committed + Development Scenario

10.56 The modelling outputs suggest the junction will operate within free flow/ reasonably free flow conditions (LOS = A, LOS = B) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in approaching unstable flow conditions (LOS = E) during the AM Peak generating a queue of 18.3 pcus as summarised in Table 10.39 below. The full outputs of these assessments are attached as Annex 20.

Table 10.39: 2030 Base + Committed + Development Modelling Outputs (A1173/ A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	C	1.8
A180 EB Off-Slip	A	0.9
A1173 SB Approach	A	0.6
A180 WB Off-Slip	E	18.3
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.4
A180 EB Off-Slip	A	0.5
A1173 SB Approach	A	3.2
A180 WB Off-Slip	A	0.8

Sensitivity Testing Scenario with Link Road

10.57 As a sensitivity test, future traffic flows associated with the Link Road have been obtained from Appendix D of the South Humber Bank Link Road TA prepared by Atkins in January 2018 for a future year of 2026. Flows generated by the Proposed Development have been added and the modelling outputs are shown in Table 10.40 below.

Table 10.40: 2026 Base + Committed + Link Road + Development Modelling Outputs (A1173/ A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	C	3.2
A180 EB Off-Slip	A	0.2
A1173 SB Approach	A	0.3
A180 WB Off-Slip	A	1.7
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	1.4
A180 EB Off-Slip	A	0.2
A1173 SB Approach	A	1.0
A180 WB Off-Slip	A	0.6

10.58 The modelling outputs suggest the junction will operate well within free flow conditions on all arms during the AM and PM peak periods apart from the A1173 NB Approach which would operate within stable flow conditions during the AM Peak generating a queue of 3.2 pcus. This improvement in junction performance is due to the redistribution of traffic associated with the Link Road with a reduction in flows on the A1173 and the A180 to the south of the junction. The full outputs of these assessments are attached as Annex 20.

A180/ Moody Lane/ Pyewipe Road (Westgate Roundabout)

2018 Base Scenario

10.59 The modelling outputs suggest the junction already operates above its theoretical capacity on the A180 Eastern arm during the AM Peak with a queue of 44.1 PCUs and the A180 Western arm and Moody Lane during the PM peak with queues of 200.0 PCUs and 19.3 PCUs respectively. However it should be noted that with RFC values exceeding 1.0, the junction model can become unstable resulting in spurious queue lengths being generated. By 2023 and 2030, the junction would continue to operate above theoretical capacity largely due to the increase in background traffic flows. The full 2018 modelling outputs are attached as Annex 21.

Table 10.41: 2018 Base Modelling Outputs (A180 Westgate Roundabout)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A180 East	1.02	44.1
Pyewipe Rd	0.87	5.8
Birchin Way	0.85	4.0
A180 West	0.70	2.6
Moody Lane	0.32	0.6
PM Peak (16:00 – 17:00)		
A180 East	0.75	3.1
Pyewipe Rd	0.57	1.3
Birchin Way	0.63	1.7
A180 West	1.19	200.0
Moody Lane	1.07	19.3

10.60 The performance of this junction is already acknowledged in the Local Transport Plan which seeks to address congestion associated with peak hour traffic at this junction.

10.61 To understand the impact development traffic has on this junction, Tables 10.42 to 10.45 summarise the AM and PM forecast development flows as a proportion of the modelled flows at Westgate Roundabout for the future years 2023 and 2030 (i.e. when the Proposed Development is forecast to be fully operational). Figures 10.1 to 10.4 illustrate the information graphically.

Table 10.42:2023 AM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	1,326	205	1,995	688	156	4,370
Committed	29	2	68	20	2	121
Development	34	0	28	9	2	73
Total Flows	1,389	207	2,091	717	160	4,564
Development Flow as % of Total	*2.44%*	*0.0%*	*1.34%*	*1.26%*	*1.25%*	*1.60%*

Figure 10.1: 2023 AM Assessed Traffic Flows at Westgate Roundabout

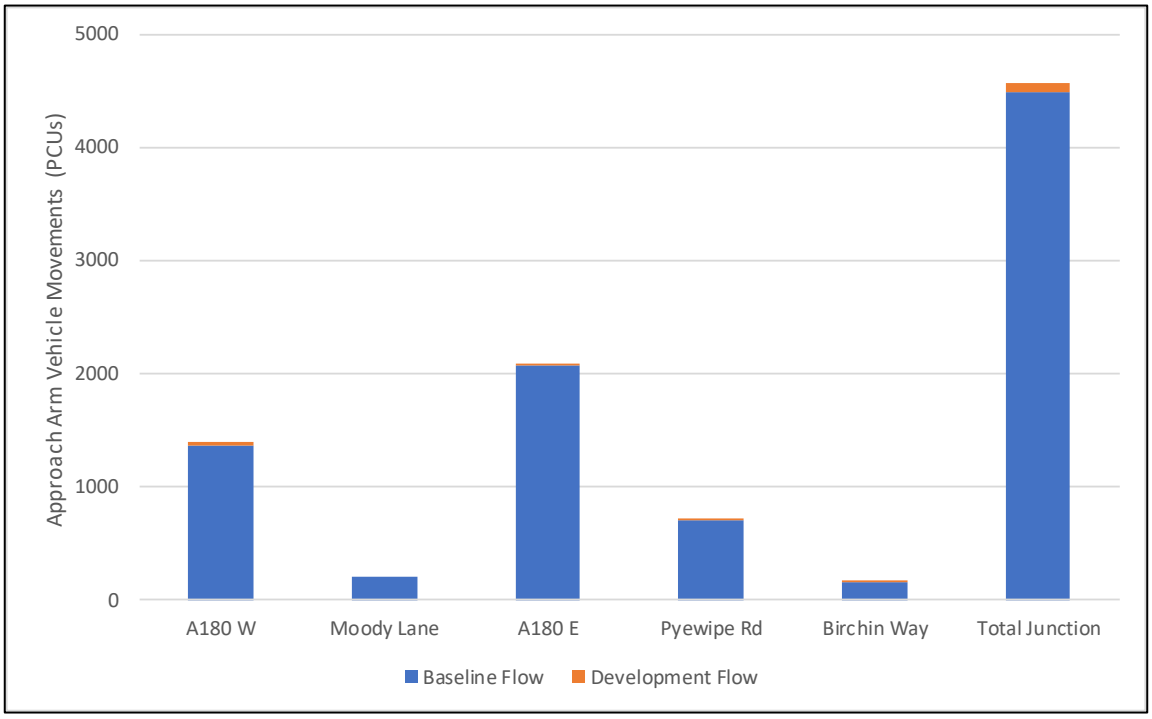


Table 10.43: 2023 PM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	2,273	319	1,393	667	312	4,964
Committed	76	0	20	7	2	105
Development	14	0	10	4	0	28
Total Flows	2,363	319	1,423	678	314	5,097
Development Flow as % of Total	*0.60%*	*0.0%*	*0.70%*	*0.59%*	*0.0%*	*0.54%*

Figure 10.2: 2023 PM Assessed Traffic Flows at Westgate Roundabout

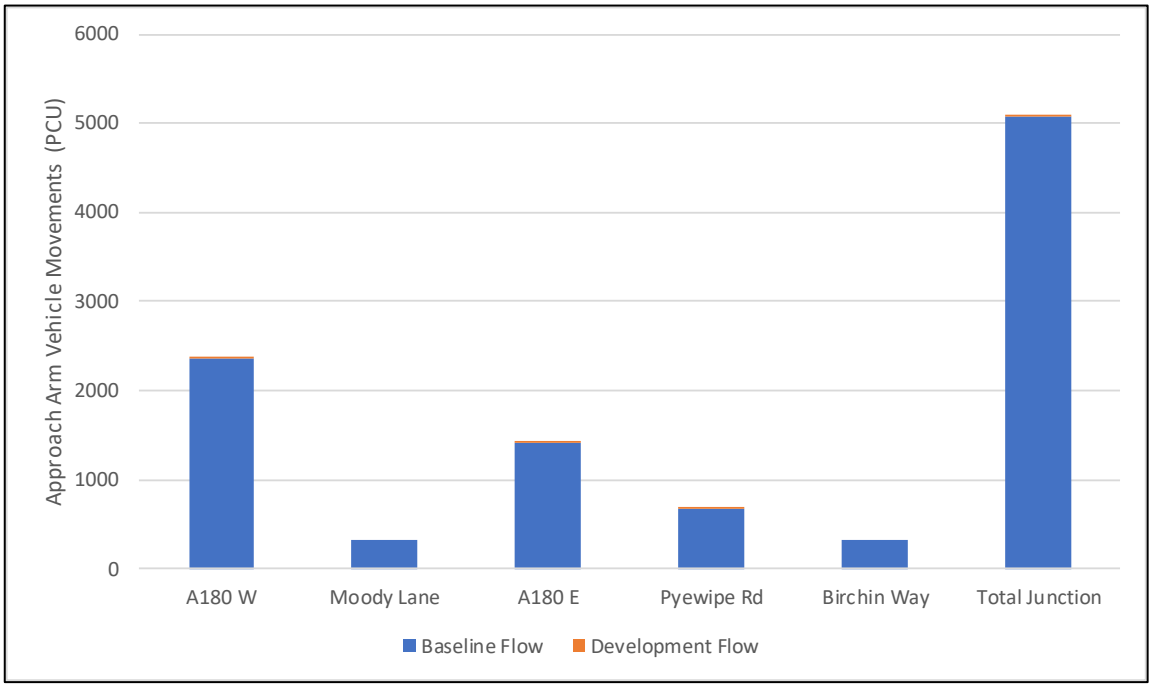


Table 10.44: 2030 AM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	1,407	218	2,117	730	166	4,638
Committed	42	2	89	26	3	162
Development	34	0	28	9	2	73
Total Flows	1,483	220	2,234	765	171	4,873
Development Flow as % of Total	*2.29%*	*0.0%*	*1.25%*	*1.18%*	*1.16%*	*1.50%*

Figure 10.3: 2030 AM Assessed Traffic Flows at Westgate Roundabout

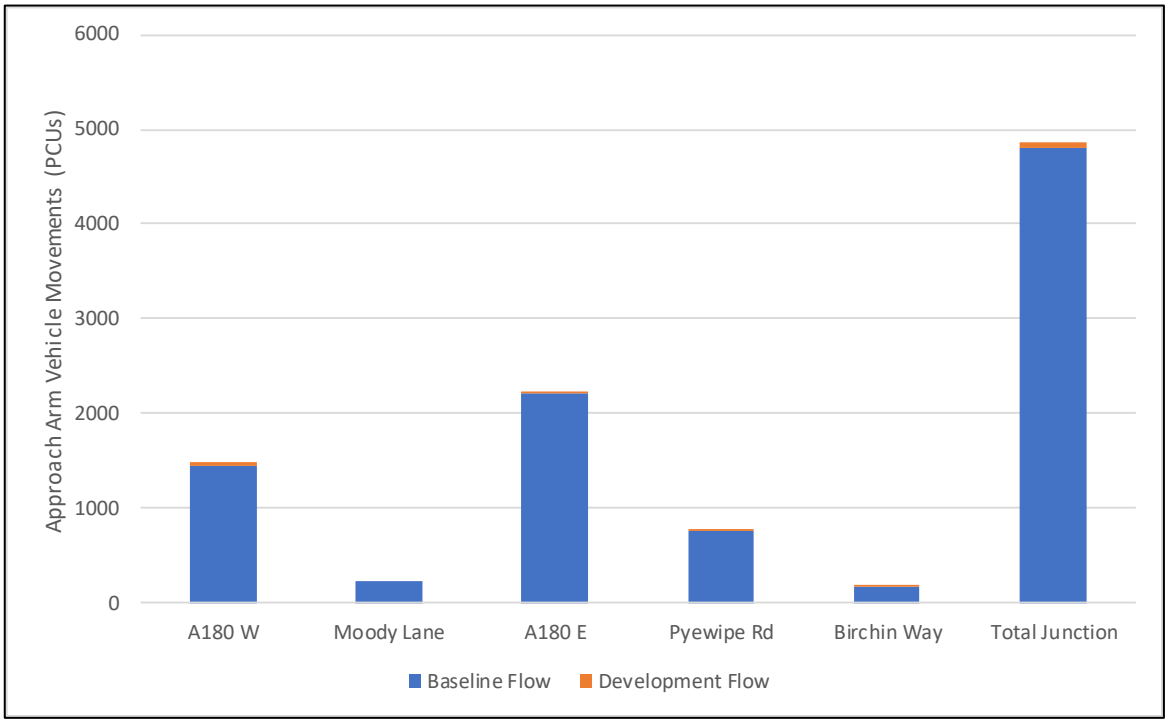
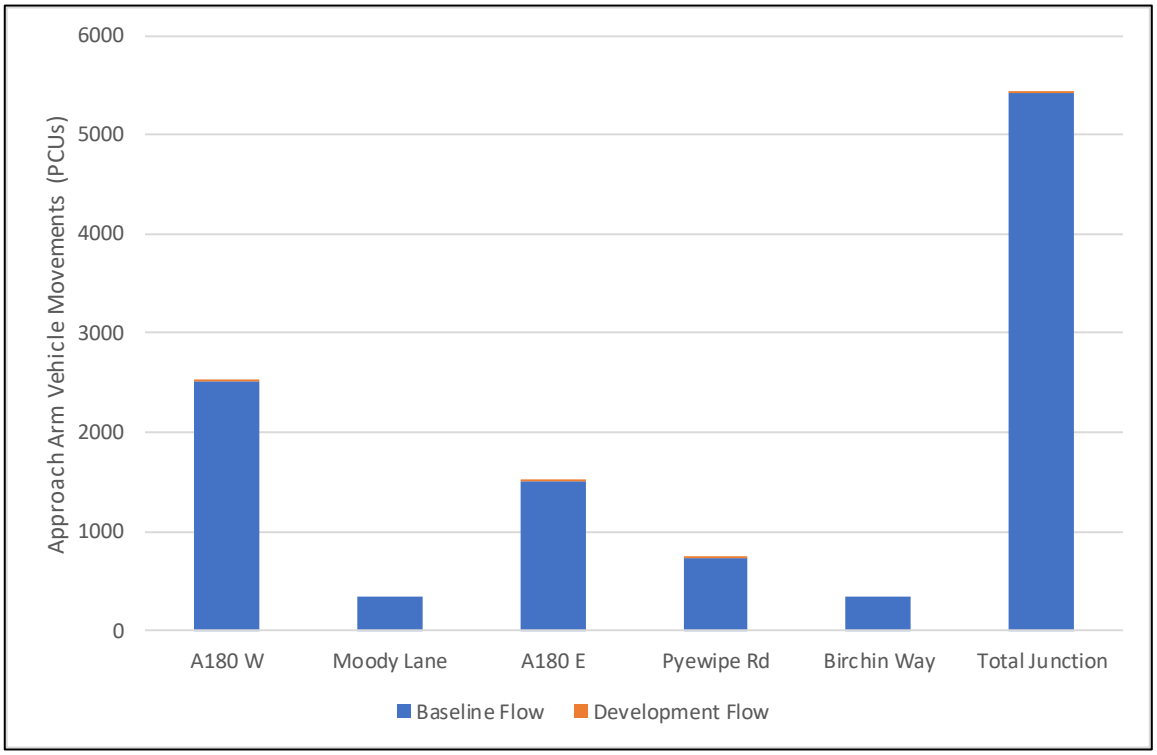


Table 10.45:2030 PM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	2,409	338	1,477	707	331	5,262
Committed	110	1	31	12	3	157
Development	14	0	10	4	0	28
Total Flows	2,533	339	1,518	723	334	5,447
Development Flow as % of Total	*0.55%*	*0.0%*	*0.65%*	*0.55%*	*0.0%*	*0.51%*

Figure 10.4: 2028 PM Assessed Traffic Flows at Westgate Roundabout



10.62 The analysis above shows the development traffic as a percentage of total traffic at this location is likely to be in the order of 1.5% - 1.6% in the AM Peak hour and 0.5% during the PM Peak hour in future years.

10.63 Considering the small percentage that development flows are adding to the junction, it is reasonable to consider that mitigation at this junction would be disproportionate to the marginal impact on the junction's performance. Therefore, no mitigation is proposed at this junction.

11.0 CONSTRUCTION TRAFFIC IMPACTS

Introduction

11.1.1 Construction of the Proposed Development is due to start in Q1 2020 with the construction programme lasting around 36 months and the peak construction period anticipated to be in 2021. However, should construction not start in early 2020, the worst case scenario in terms of traffic would be construction starting in 2026 with the peak construction period anticipated to be 2027.

11.2 It is proposed that all construction worker vehicles and HGVs will access the Site from South Marsh Road via two access points on South Marsh Road to the east of the South Humber Bank Power Station entrance.

Construction Generation

11.3 The estimated profile of workforce over the construction period for the Proposed Development is shown below in Table 11.1 and reveals the peak workforce is forecast to occur in the period around Q1 2021 or Q3 2027 when up to around 750 workers are expected on Site.

Table 11.1: Profile of Daily Workforce throughout Construction

YEAR OF CONSTRUCTION	DAILY WORKFORCE
Q1 2020 or Q3 2026	80
Q2 2020 or Q4 2026	170
Q3 2020 or Q1 2027	295
Q4 2020 or Q2 2027	590
Q1 2021 or Q3 2027	750
Q2 2021 or Q4 2027	750
Q3 2021 or Q1 2028	750
Q4 2021 or Q2 2028	750
Q1 2022 or Q3 2028	530
Q2 2022 or Q4 2028	360
Q3 2022 or Q1 2029	225
Q4 2022 or Q2 2029	140

11.4 In relation to traffic generation associated with construction workers, an average occupancy of two workers per vehicle has been applied. This occupancy rate has been accepted by transport stakeholders on other recent power station construction projects including Eggborough CCGT and Knottingley CCGT and is therefore considered robust. A Construction Worker Travel Plan aimed at identifying measures and establishing procedures to ensure the vehicle occupancy rates used in assessment are achieved will be implemented by the appointed contractor. A Framework Construction Travel Plan has been prepared and is included as Annex 26.

11.5 When this occupancy rate is applied to the workforce associated with construction of the Proposed Development at the peak of construction (Q1 2021 or Q3 2027), this equates to 375 daily one-way car movements per day.

11.6 The volume of construction HGVs on the network is predicted to be at its maximum of around 412 two-way daily vehicle movements (206 in and 206 out) at the start of the construction period (around Q1 2020 or Q3 2026), associated with the potential cut and fill of the top layer of ground within the Main Development Area for geotechnical purposes. During the remainder of the construction period HGV movements will vary between 18 and 116 daily two-way movements as shown in Table 11.2.

Table 11.2: Profile of Daily HGVs throughout Construction

YEAR OF CONSTRUCTION	DAILY HGVS (TWO-WAY)
Q1 2020 or Q3 2026	412
Q2 2020 or Q4 2026	80
Q3 2020 or Q1 2027	94
Q4 2020 or Q2 2027	108
Q1 2021 or Q3 2027	116
Q2 2021 or Q4 2027	70
Q3 2021 or Q1 2028	64
Q4 2021 or Q2 2028	52
Q1 2022 or Q3 2028	34
Q2 2022 or Q4 2028	18
Q3 2022 or Q1 2029	32
Q4 2022 or Q2 2029	26

11.7 Combining construction workforce vehicle movements with construction HGV movements over the entire construction programme shows the overall peak of construction to occur in around Q1 2021 or Q3 2027 when 116 two-way HGV movements per day are anticipated.

11.8 The total two-way construction vehicle traffic expected over the 36 month construction period is illustrated in Annex 22.

Daily Vehicle Profile during the Peak Month

11.9 Working hours on major construction sites tend to be long due to the pressures of timescales and available light. Therefore, the arrival and departure of workers' vehicles tend to be spread over the peak periods rather than all falling in the traditional network peak hours.

11.10 Based on a traffic count undertaken at the site entrance of a current energy from waste plant construction project at Ferrybridge, near Wakefield (known as Ferrybridge Multifuel 2) and operated by SSE, a profile of arrivals and departures over the working day has been produced. Table 11.3 below sets out the percentage of daily inbound and outbound

trips on an hour-by-hour basis and calculates the totals for the peak of construction (around Q1 2021 or Q3 2027).

Table 11.3: Daily Vehicle Profile during Peak of Construction

HOUR BEGINNING	% OF DAILY INBOUND	% OF DAILY OUTBOUND	ARRIVALS	DEPARTURES
06:00	42%	0%	158	0
07:00	37%	0%	138	0
08:00	12%	0%	45	0
09:00	9%	0%	34	0
[redacted]				
16:00	0%	22%	0	82
17:00	0%	26%	0	98
18:00	0%	47%	0	176
19:00	0%	5%	0	19
Total	**100%**	**100%**	**375**	**375**

11.11 The daily profile of HGV movement over the day is based on experience from other power sector construction projects and assumes HGVs will be spread evenly over the day. Based on deliveries taking place between 07:00 and 19:00, this equates to 5 HGV arrivals and departures per hour.

Abnormal Loads

11.12 During the construction phase a number of abnormal load deliveries to the Site are expected.

11.13 The contractor will work with the relevant authorities and stakeholders to secure appropriate approvals for the transportation of abnormal loads on the strategic and local road network. Specific mitigation measures that would be investigated to deliver abnormal loads to the Site could include the temporary removal of street furniture (i.e. pedestrian islands, signage) and avoiding peak traffic periods for the delivery of abnormal loads.

Trip Distribution and Assignment

11.14 The distribution of construction workforce traffic to the network has been based on the population of towns and cities within a 45 minute drive time of the Site and the shortest/ quickest route to the Site. Table 11.4 shows the workforce distribution and the number of workers this equates to at the peak of construction (around Q1 2021 or Q3 2027).

Table 11.4: Daily Vehicle Profile during Peak of Construction

DISTRICT	POPULATION (2011 CENSUS)	PERCENTAGE DISTRIBUTION	NO. OF PERMANENT RESIDENT WORKERS (PEAK MONTH OF CONSTRUCTION)
Gainsborough	27,117	6%	45
Grimsby	88,243	18%	135
Hull	284,321	58%	435
Immingham	10,750	2%	15
Scunthorpe	79,977	16%	120

11.15 The assignment of the construction workforce to the network is shown in Annex 23.

11.16 All HGV construction traffic will access/ depart the Site via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. At the junction of the A180, it is assumed that 50% would arrive/ depart to the east and 50% arrive/ depart to the west. The routing of HGVs between the construction site and the A180 will be controlled through the implementation of a HGV routing plan included as a measure within the Construction Traffic Management Plan (CTMP) which will be prepared by the appointed contractor. A Framework CTMP which identifies the measures to control the routing and impact that HGVs will have on the local road network has been prepared and is included as Annex 27.

11.17 The combined HGV and workforce traffic demand for the AM (07:00 – 08:00) and PM (16:00 – 17:00) network peak hours is provided in Annex 24.

Junction Capacity Assessment

11.18 In order to determine the level of impact during the peak of construction, junction capacity assessments have been carried out at key junctions within the Study Area (see Figure 3.2).

11.19 Based on the construction demand profile included in Annex 22, peak of construction is expected to occur in 2021 (earliest construction scenario) or 2027 (latest construction scenario) and would be characterised by staff travel associated with 750 workers based on Site and up to 116 daily HGV movements (58 in/ 58 out).

11.20 Junction capacity assessments have been undertaken at the following junctions:

- Hobson Way/ South Marsh Road (East of Hobson Way) T-Junction;
- Hobson Way/ South Marsh Road (West of Hobson Way) T-Junction;
- Laporte Road/ Kiln Lane/ Hobson Way Roundabout;
- Kiln Lane/ North Moss Lane/ Hobson Way Roundabout;
- A1173/ Kiln Lane Roundabout;
- A1173/ SHIIP Site Access;
- A180 Stallingborough Interchange; and
- A180/ Moody Lane/ Pyewipe Road (Westgate Roundabout).

11.21 The scenarios tested included:

- 2021 Base + Committed Development;
- 2021 Base + Committed + Peak of Construction;
- 2027 Base + Committed Development; and
- 2027 Base + Committed + Peak of Construction.

11.22 The modelling has been undertaken based on passenger car unit values (pcus) in order to best reflect any construction effects associated with HGV traffic.

Hobson Way/ South Marsh Road (East of Hobson Way) T-Junction

2021 Base + Committed Development Scenario

11.23 The modelling outputs suggest that the existing junction operates well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.09 being forecast on South Marsh Road arm during the PM Peak as summarised in Table 11.5 below. The full outputs of these assessments are attached as Annex 14.

Table 11.5: 2021 Base + Committed Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.03	0.0
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.09	0.1
Hobson Way (Right Turn)	0.00	0.0

2021 Base + Committed + Peak of Construction Scenario

11.24 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.22 being forecast on South Marsh Road arm during the PM Peak as summarised in Table 11.6 below. The full outputs of these assessments are attached as Annex 14.

Table 11.6: 2021 Base + Committed + Peak of Construction Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.04	0.1
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.22	0.3
Hobson Way (Right Turn)	0.00	0.0

2027 Base + Committed Development Scenario

11.25 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.09 being forecast on South Marsh Road arm during the PM Peak as summarised in Table 11.7 below. The full outputs of these assessments are attached as Annex 14.

Table 11.7: 2027 Base + Committed Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.03	0.0
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.09	0.1
Hobson Way (Right Turn)	0.00	0.0

2027 Base + Committed + Peak of Construction Scenario

11.26 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.23 being forecast on South Marsh Road arm during the PM Peak as summarised in Table 11.8 below. The full outputs of these assessments are attached as Annex 14.

Table 11.8: 2027 Base + Committed + Peak of Construction Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.04	0.1
Hobson Way (Right Turn)	0.00	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.23	0.3
Hobson Way (Right Turn)	0.00	0.0

<u>Hobson Way/ South Marsh Road (West of Hobson Way) T-Junction</u>

2021 Base + Committed Development Scenario

11.27 The modelling outputs suggest that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.16 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 11.9 below. The full outputs of these assessments are attached in Annex 15.

Table 11.9: 2021 Base + Committed Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.12	0.1
South Marsh Road (Right Turn)	0.11	0.1
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.16	0.2

2021 Base + Committed + Peak of Construction Scenario

11.28 The modelling outputs suggest that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.17 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 11.10 below. The full outputs of these assessments are attached in Annex 15.

Table 11.10: 2021 Base + Committed + Peak of Construction Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.12	0.1
South Marsh Road (Right Turn)	0.13	0.2
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.17	0.2

2027 Base + Committed Development Scenario

11.29 The modelling outputs suggest that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.17 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 11.11 below. The full outputs of these assessments are attached in Annex 15.

Table 11.11: 2027 Base + Committed Development Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.13	0.1
South Marsh Road (Right Turn)	0.12	0.1
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.17	0.2

2027 Base + Committed + Peak of Construction Scenario

11.30 The modelling outputs suggest that the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.18 being forecast on the right turn lane from Hobson Way during the PM Peak as summarised in Table 11.12 below. The full outputs of these assessments are attached in Annex 15.

Table 11.12: 2027 Base + Committed + Peak of Construction Modelling Outputs (South Marsh Road/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
South Marsh Road (Left Turn)	0.13	0.2
South Marsh Road (Right Turn)	0.14	0.2
Hobson Way (Right Turn)	0.01	0.0
PM Peak (16:00 – 17:00)		
South Marsh Road (Left Turn)	0.00	0.0
South Marsh Road (Right Turn)	0.01	0.0
Hobson Way (Right Turn)	0.18	0.2

Laporte Road/ Hobson Way/ Kiln Lane Roundabout

2021 Base + Committed Development Scenario

11.31 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.22 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 11.13 below. The full outputs of these assessments are attached as Annex 16.

Table 11.13: 2021 Base + Committed Development Modelling Outputs (Laporte Rd/ Kiln Lane/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.05	0.1
Kiln Lane EB Approach	0.18	0.3
Laporte Road SB Approach	0.07	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.04	0.0
Kiln Lane EB Approach	0.06	0.1
Laporte Road SB Approach	0.22	0.3
Unnamed Access	0.00	0.0

2021 Base + Committed + Peak of Construction Scenario

11.32 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.25 being forecast on the Kiln Lane arm during the AM Peak as summarised in Table 11.14 below. The full outputs of these assessments are attached as Annex 16.

Table 11.14: 2021 Base + Committed + Peak of Construction Modelling Outputs (Laporte Rd/ Kiln Lane/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.06	0.1
Kiln Lane EB Approach	0.25	0.4
Laporte Road SB Approach	0.08	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.08	0.1
Kiln Lane EB Approach	0.07	0.1
Laporte Road SB Approach	0.22	0.3
Unnamed Access	0.00	0.0

2027 Base + Committed Development Scenario

11.33 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.23 being forecast on the Laporte Road arm during the PM Peak as summarised in Table 11.15 below. The full outputs of these assessments are attached as Annex 16.

Table 11.15: 2027 Base + Committed Development Modelling Outputs (Laporte Rd/ Kiln Lane/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.06	0.1
Kiln Lane EB Approach	0.20	0.3
Laporte Road SB Approach	0.08	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.04	0.0
Kiln Lane EB Approach	0.07	0.1
Laporte Road SB Approach	0.23	0.3
Unnamed Access	0.00	0.0

2027 Base + Committed + Peak of Construction Scenario

11.34 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.27 being forecast on the Kiln Lane arm during the AM Peak as summarised in Table 11.16 below. The full outputs of these assessments are attached as Annex 16.

Table 11.16: 2027 Base + Committed + Peak of Construction Modelling Outputs (Laporte Rd/ Kiln Lane/ Hobson Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Hobson Way NB Approach	0.06	0.1
Kiln Lane EB Approach	0.27	0.4
Laporte Road SB Approach	0.08	0.1
Unnamed Access	0.00	0.0
PM Peak (16:00 – 17:00)		
Hobson Way NB Approach	0.08	0.1
Kiln Lane EB Approach	0.07	0.1
Laporte Road SB Approach	0.23	0.3
Unnamed Access	0.00	0.0

Kiln Lane/ North Moss Lane/ Trondheim Way Roundabout

2021 Base + Committed Development Scenario

11.35 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.48 being forecast on the Kiln Lane arm during the PM Peak as summarised in Table 11.17 below. The full outputs of these assessments are attached as Annex 17.

Table 11.17: 2021 Base + Committed Development Modelling Outputs (Kiln Lane/ North Moss Lane/ Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.15	0.3
North Moss Lane	0.09	0.1
A1173	0.42	0.8
Trondheim Way	0.03	0.1
PM Peak (16:00 – 17:00)		
Kiln Lane	0.48	1.0
North Moss Lane	0.08	0.1
A1173	0.26	0.5
Trondheim Way	0.05	0.1

2021 Base + Committed + Peak of Construction Scenario

11.36 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.54 being forecast on the Kiln Lane arm during the PM Peak as summarised in Table 11.18 below. The full outputs of these assessments are attached as Annex 17.

Table 11.18: 2021 Base + Committed + Development Modelling Outputs (Kiln Lane/ North Moss Lane/ Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.15	0.3
North Moss Lane	0.09	0.1
A1173	0.50	1.1
Trondheim Way	0.03	0.1
PM Peak (16:00 – 17:00)		
Kiln Lane	0.54	1.3
North Moss Lane	0.08	0.1
A1173	0.27	0.5
Trondheim Way	0.05	0.1

2027 Base + Committed Development Scenario

11.37 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.51 being forecast on the Kiln Lane arm during the PM Peak as summarised in Table 11.19 below. The full outputs of these assessments are attached as Annex 17.

Table 11.19: 2027 Base + Committed Development Modelling Outputs (Kiln Lane/ North Moss Lane/ Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.16	0.3
North Moss Lane	0.11	0.1
A1173	0.46	1.0
Trondheim Way	0.03	0.1
PM Peak (16:00 – 17:00)		
Kiln Lane	0.51	1.2
North Moss Lane	0.09	0.1
A1173	0.28	0.5
Trondheim Way	0.06	0.1

2027 Base + Committed + Peak of Construction Scenario

11.38 The modelling outputs suggest that the junction operates well within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.57 being forecast on the Kiln Lane arm during the PM Peak as summarised in Table 11.20 below. The full outputs of these assessments are attached as Annex 17.

Table 11.20: 2027 Base + Committed + Development Modelling Outputs (Kiln Lane/ North Moss Lane/ Trondheim Way)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Kiln Lane	0.16	0.3
North Moss Lane	0.11	0.1
A1173	0.55	1.3
Trondheim Way	0.04	0.1
PM Peak (16:00 – 17:00)		
Kiln Lane	0.57	1.5
North Moss Lane	0.10	0.1
A1173	0.29	0.6
Trondheim Way	0.05	0.1

A1173/ Kiln Lane Roundabout

2021 Base + Committed Development Scenario

11.39 It is noted that as part of the Stallingborough Employment Site development, a number of improvements to the roundabout are proposed including:

- an improved southern arm onto the roundabout and formalise the site access arrangement;
- marginal widening of the A1173 northern arm into the roundabout to increase the flare length on the approach whilst maintaining a two-lane entry; and
- marginal widening of the A1173 western arm into the roundabout to increase the flare length on the approach whilst maintaining a two-lane entry.

11.40 This junction has therefore been modelled with these improvements in place for the remaining scenarios.

11.41 The modelling outputs suggest that the junction operates within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.87 being forecast on the A1173 eastbound approach arm during the AM Peak generating a maximum queue of 6.5 pcus as summarised in Table 11.21 below. The full outputs of these assessments are attached as Annex 18.

Table 11.21: 2021 Base + Committed Development Modelling Outputs (A1173/ Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.87	6.5
A1173 SB Approach	0.44	0.9
Kiln Lane WB Approach	0.17	0.3
PM Peak (16:00 – 17:00)		
Unnamed Access	0.01	0.0
A1173 EB Approach	0.31	0.6
A1173 SB Approach	0.79	3.7
Kiln Lane WB Approach	0.52	1.2

2021 Base + Committed + Peak of Construction Scenario

11.42 The modelling outputs suggest that the junction operates within its theoretical capacity during both the AM and PM peak periods, with a maximum RFC of 0.94 being forecast on the A1173 eastbound approach during the AM Peak generating a maximum queue of 11.9 pcus as summarised in Table 11.22 below. The full outputs of these assessments are attached as Annex 18.

Table 11.22: 2021 Base + Committed + Peak of Construction Modelling Outputs (A1173/ Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.00	0.0
A1173 EB Approach	0.94	11.9
A1173 SB Approach	0.47	1.0
Kiln Lane WB Approach	0.18	0.3
PM Peak (16:00 – 17:00)		
Unnamed Access	0.01	0.0
A1173 EB Approach	0.32	0.6
A1173 SB Approach	0.79	3.8
Kiln Lane WB Approach	0.57	1.5

2027 Base + Committed Development Scenario

11.43 The modelling outputs suggest that the junction operates within its design capacity during both the AM and PM peak periods, with a maximum RFC of 0.89 being forecast on the A1173 eastbound approach arm during the AM Peak generating a maximum queue of 7.5 pcus as summarised in Table 11.23 below. The full outputs of these assessments are attached as Annex 18.

Table 11.23: 2027 Base + Committed Development Modelling Outputs (A1173/ Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.03	0.1
A1173 EB Approach	0.89	7.5
A1173 SB Approach	0.49	1.1
Kiln Lane WB Approach	0.19	0.3
PM Peak (16:00 – 17:00)		
Unnamed Access	0.17	0.3
A1173 EB Approach	0.36	0.7
A1173 SB Approach	0.86	5.7
Kiln Lane WB Approach	0.58	1.5

2027 Base + Committed + Peak of Construction Scenario

11.44 The modelling outputs suggest that the junction operates within its theoretical capacity during both the AM and PM peak periods, with a maximum RFC of 0.95 being forecast on the A1173 eastbound approach during the AM Peak generating a maximum queue of 14.6 pcus as summarised in Table 11.24 below. The full outputs of these assessments are attached as Annex 18.

Table 11.24: 2027 Base + Committed + Peak of Construction Modelling Outputs (A1173/ Kiln Lane)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Unnamed Access	0.03	0.1
A1173 EB Approach	0.95	14.6
A1173 SB Approach	0.53	1.3
Kiln Lane WB Approach	0.20	0.4
PM Peak (16:00 – 17:00)		
Unnamed Access	0.20	0.4
A1173 EB Approach	0.36	0.7
A1173 SB Approach	0.86	5.9
Kiln Lane WB Approach	0.64	2.0

A1173/ SHIIP Site Access

2021 Base + Committed Development Scenario

11.45 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.64 being forecast on the A1173 (EB Approach) arm during the AM Peak. The full outputs of these assessments are attached as Annex 19.

Table 11.25: 2021 Base + Committed Development Modelling Outputs (A1173/ SHIIP Access)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Site Access South	0.01	0.0
A1173 (EB Approach)	0.64	1.9
Site Access North	0.04	0.1
A1173 (WB Approach)	0.20	0.3
PM Peak (16:00 – 17:00)		
Site Access South	0.03	0.0
A1173 (EB Approach)	0.22	0.4
Site Access North	0.01	0.0
A1173 (WB Approach)	0.54	1.2

2021 Base + Committed + Development Scenario

11.46 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.69 being forecast on the A1173 (EB Approach) arm during the AM Peak. The full outputs of these assessments are attached as Annex 19.

Table 11.26: 2021 Base + Committed + Development Modelling Outputs (A1173/ SHIIP Access)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Site Access South	0.01	0.0
A1173 (EB Approach)	0.69	2.4
Site Access North	0.04	0.1
A1173 (WB Approach)	0.20	0.3
PM Peak (16:00 – 17:00)		
Site Access South	0.04	0.0
A1173 (EB Approach)	0.23	0.4
Site Access North	0.01	0.0
A1173 (WB Approach)	0.57	1.4

2027 Base + Committed Development Scenario

11.47 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.68 being forecast on the A1173 (EB Approach) arm during the AM Peak. The full outputs of these assessments are attached as Annex 19.

Table 11.27: 2027 Base + Committed Development Modelling Outputs (A1173/ SHIIP Access)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Site Access South	0.06	0.1
A1173 (EB Approach)	0.68	2.3
Site Access North	0.05	0.1
A1173 (WB Approach)	0.23	0.4
PM Peak (16:00 – 17:00)		
Site Access South	0.23	0.3
A1173 (EB Approach)	0.28	0.5
Site Access North	0.03	0.0
A1173 (WB Approach)	0.61	1.7

2027 Base + Committed + Development Scenario

11.48 The modelling outputs suggest the junction will operate well within capacity during both the AM and PM peak periods, with a maximum RFC of 0.73 being forecast on the A1173 (EB Approach) arm during the AM Peak. The full outputs of these assessments are attached as Annex 19.

Table 11.28: 2027 Base + Committed + Development Modelling Outputs (A1173/ SHIIP Access)

ARM	RFC	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
Site Access South	0.06	0.1
A1173 (EB Approach)	0.73	2.9
Site Access North	0.06	0.1
A1173 (WB Approach)	0.23	0.4
PM Peak (16:00 – 17:00)		
Site Access South	0.25	0.4
A1173 (EB Approach)	0.28	0.5
Site Access North	0.03	0.0
A1173 (WB Approach)	0.64	1.9

A180/ A1173 Stallingborough Interchange

2021 Base + Committed Development Scenario

11.49 It is noted that as part of the Stallingborough Employment Site development, it is proposed to marginally widen the northern arm (A1173) into the roundabout to increase the flare length on the approach whilst maintaining a two lane entry. The junction has therefore been modelled with this improvement in place for the remaining scenarios.

11.50 The modelling outputs suggest the junction will operate within free flow conditions (LOS = A) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in stable flow conditions (LOS = C) during the AM Peak generating a queue of 8.8 pcus as summarised in Table 11.29 below. The full outputs of these assessments are attached as Annex 20.

Table 11.29: 2021 Base + Committed Development Modelling Outputs (A1173/ A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	B	0.9
A180 EB Off-Slip	A	0.7
A1173 SB Approach	A	0.4
A180 WB Off-Slip	C	8.8
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.4
A180 EB Off-Slip	A	0.4
A1173 SB Approach	A	1.8
A180 WB Off-Slip	A	0.6

2021 Base + Committed + Peak of Construction Scenario

11.51 The modelling outputs suggest the junction will operate within free flow conditions (LOS = A) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in stable flow conditions (LOS = C) during the AM Peak generating a queue of 9.4 pcus as summarised in Table 11.30 below. The full outputs of these assessments are attached as Annex 20.

Table 11.30: 2021 Base + Committed + Peak of Construction Modelling Outputs (A1173/ A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	B	0.9
A180 EB Off-Slip	A	1.0
A1173 SB Approach	A	0.4
A180 WB Off-Slip	C	9.4
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.4
A180 EB Off-Slip	A	0.5
A1173 SB Approach	A	2.2
A180 WB Off-Slip	A	0.6

2027 Base + Committed Development Scenario

11.52 The modelling outputs suggest the junction will operate within free flow conditions (LOS = A) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in approaching unstable flow conditions (LOS = D) during the AM Peak generating a queue of 11.9 pcus as summarised in Table 11.31 below. The full outputs of these assessments are attached as Annex 20.

Table 11.31: 2027 Base + Committed Development Modelling Outputs (A1173/ A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	B	1.1
A180 EB Off-Slip	A	0.9
A1173 SB Approach	A	0.6
A180 WB Off-Slip	D	11.9
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.3
A180 EB Off-Slip	A	0.6
A1173 SB Approach	A	3.0
A180 WB Off-Slip	A	0.7

2027 Base + Committed + Peak of Construction Scenario

11.53 The modelling outputs suggest the junction will operate within free flow conditions (LOS = A) during the AM and PM peak periods on all arms apart from A180 Westbound Off-Slip which would operate in approaching stable flow conditions (LOS = D) during the AM Peak generating a queue of 12.0 pcus as summarised in Table 11.32 below. The full outputs of these assessments are attached as Annex 20.

Table 11.32: 2027 Base + Committed + Peak of Construction Modelling Outputs (A1173/ A180)

ARM	LOS	MAX QUEUE (PCU)
AM Peak (07:00 – 08:00)		
A1173 NB Approach	B	1.0
A180 EB Off-Slip	A	1.0
A1173 SB Approach	A	0.4
A180 WB Off-Slip	D	12.0
PM Peak (16:00 – 17:00)		
A1173 NB Approach	A	0.5
A180 EB Off-Slip	A	0.6
A1173 SB Approach	A	3.5
A180 WB Off-Slip	A	0.7

A180/ Moody Lane/ Pyewipe Road (Westgate Roundabout)

11.54 Analysis shown in Table 10.41 of this report shows that the junction currently operates above its theoretical capacity on the A180 Eastern arm during the AM Peak and the A180 Western arm and Moody Lane arm during the PM peak. By 2021 and 2027, the junction would continue to operate above theoretical capacity largely due to the increase in background traffic flows. The full outputs of these assessments are attached as Annex 20.

11.55 To understand the impact development traffic has on this junction, Tables 11.33 to 11.36 summarise the AM and PM forecast development flows as a proportion of the modelled flows at Westgate Roundabout for the peak of construction years 2021 or 2027. Figures 11.1 to 11.4 illustrate the information graphically.

Table 11.33: 2021 AM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	1,293	200	1,945	671	151	4,260
Committed	18	3	106	30	4	161
Development	5	0	16	5	1	27
Total Flows	1,316	203	2,067	706	156	4,448
Development Flow as % of Total	*0.38%*	*0.0%*	*0.77%*	*0.71%*	*0.64%*	*0.61%*

Figure 11.1: 2021 AM Assessed Traffic Flows at Westgate Roundabout

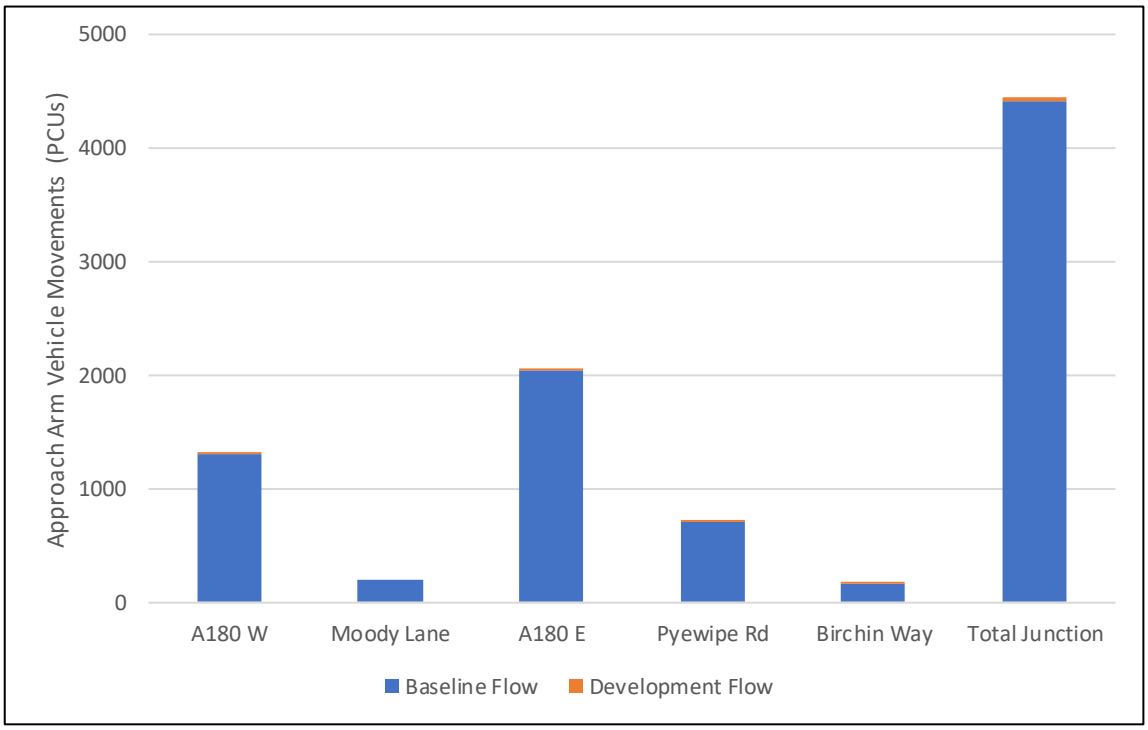


Table 11.34: 2021 PM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	2,217	311	1,359	651	305	4,843
Committed	53	0	11	5	0	69
Development	15	0	4	2	0	21
Total Flows	2,285	311	1,374	658	305	4,933
Development Flow as % of Total	*0.66%*	*0.0%*	*0.29%*	*0.30%*	*0.0%*	*0.43%*

Figure 11.2: 2021 PM Assessed Traffic Flows at Westgate Roundabout

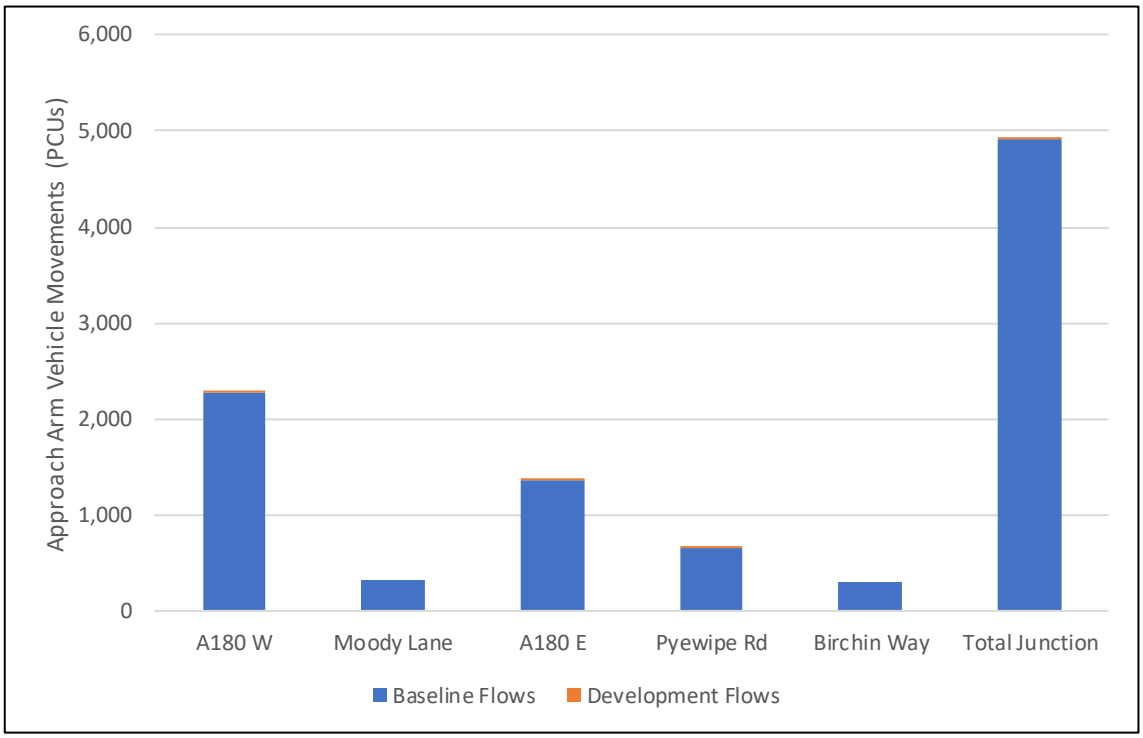


Table 11.35: 2027 AM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	1,378	214	2,074	715	163	4,544
Committed	42	2	89	26	3	162
Development	6	0	16	5	1	28
Total Flows	1,426	216	2,179	746	167	4,734
Development Flow as % of Total	*0.42%*	*0.0%*	*0.73%*	*0.67%*	*0.60%*	*0.59%*

Figure 11.3: 2027 AM Assessed Traffic Flows at Westgate Roundabout

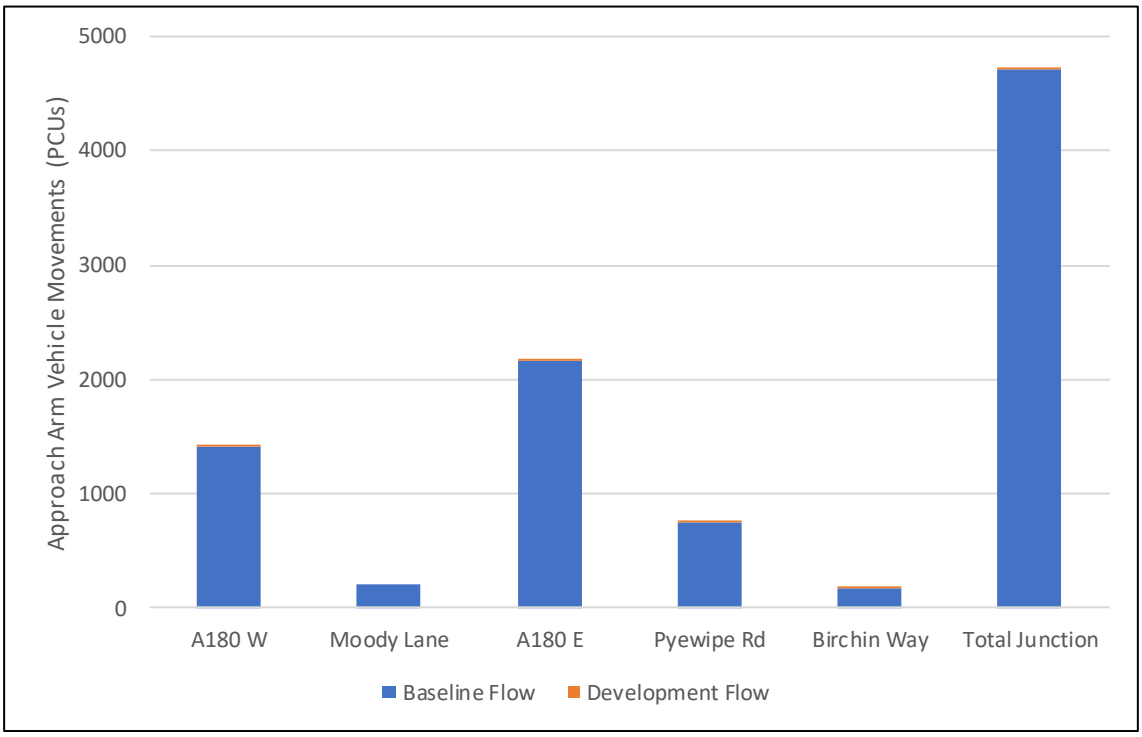
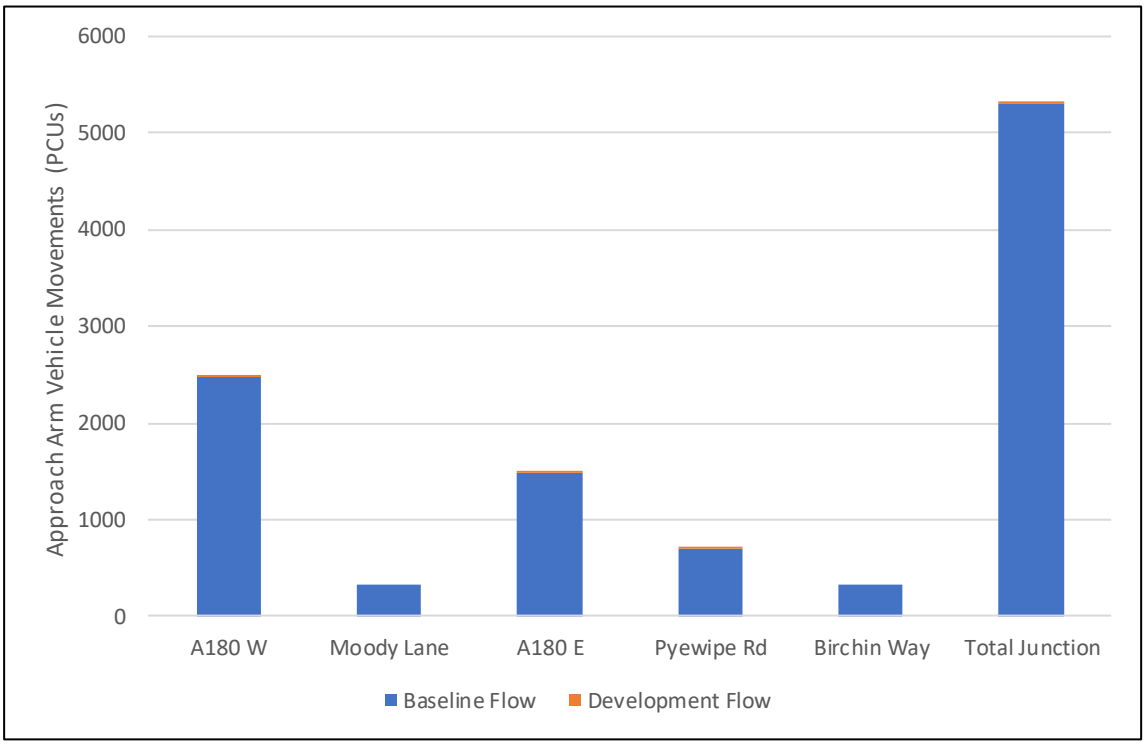


Table 11.36: 2027 PM Assessed Traffic Flows at Westgate Roundabout

APPROACH FLOWS (PCUS)	A180 W	MOODY LANE	A180 E	PYEWIPE RD	BIRCHIN WAY	TOTAL JUNCTION
Background	2,361	331	1,448	692	326	5,158
Committed	110	1	31	12	3	157
Development	15	0	4	2	0	21
Total Flows	2,486	332	1,483	706	329	5,336
Development Flow as % of Total	*0.60%*	*0.0%*	*0.27%*	*0.28%*	*0.0%*	*0.39%*

Figure 11.4: 2027 PM Assessed Traffic Flows at Westgate Roundabout



11.56 The analysis above shows the construction traffic as a percentage of total traffic at this location is likely to be in the order of 0.6% in the AM Peak hour and 0.4% during the PM Peak hour at the peak of construction.

11.57 Considering the small percentage that construction flows are adding to the junction and the temporary nature of construction, it is reasonable to consider that mitigation at this junction would be disproportionate to the marginal impact on the junction's performance. Therefore, no mitigation is proposed at this junction.

12.0 SUMMARY AND CONCLUSION

12.1 This TA has been prepared by AECOM on behalf of EP Waste Management Limited to inform consultation on a proposed DCO application for the construction and operation (including maintenance) of the Proposed Development, an up to 95 MW energy from waste power station adjacent to South Humber Bank Power Station.

12.2 Baseline traffic flows for the immediate local highway network have been established through the collection of link and junction count data. Review of this data identified the network peak hours to be 07:00 to 08:00 and 16:00 to 17:00.

12.3 Review of personal injury accident data for the Study Area which includes South Marsh Road, Hobson Way, Kiln Lane and the A1173 shows a limited number of accidents over the five year study period. As such it is considered that there are no demonstrable highway safety concerns on the local road network.

12.4 Operational access to the Proposed Development will be taken via a new access at the eastern end of the adopted section of South Marsh Road. This access will cater for all vehicle movements to and from the Proposed Development.

12.5 It is proposed that 57 parking spaces will be provided on Site. This level of parking has been identified as being suitable to accommodate the proposed staffing levels at the Site and a level of visitor provision.

12.6 Once operational, the Proposed Development is estimated to generate a maximum of 368 one-way vehicle trips per day. This equates to a total two-way traffic flow of 736 vehicles. Of the total two-way flow, 624 would be HGV (312 inbound and 312 outbound) and 112 would be staff movements (56 inbound and 56 outbound).

12.7 It is proposed that operational HGV traffic to/ from the Proposed Development will be required to use a designated HGV route to the Site with all HGVs routing to/ from the A180 via the A1173, Kiln Lane, Hobson Way and South Marsh Road.

12.8 To assess the impact of the Proposed Development in a future year, growth rates for the North East Lincolnshire district have been obtained from TEMPRO software. The use of TEMPRO software is generally recognised as the industry standard tool for determining traffic growth factors to apply to base flows in order to estimate future year traffic flows.

12.9 Committed developments have been identified in the North East Lincolnshire area and incorporated into future year analysis.

12.10 Junction Capacity Assessments have been undertaken at eight key junctions within the study area. The modelling results show that seven junctions would operate within capacity without the need to undertake any off Site highway improvement works. The assessment results for the A180 Westgate Roundabout show the junction to be already operating above its theoretical capacity in 2018. However, considering the small percentage that development flows will add to the junction, it is reasonable to consider that mitigation at this junction would be disproportionate to the marginal impact on the junction's performance. Therefore, no mitigation is proposed at this junction.

12.11 To mitigate the impact of operational traffic, an Operational Travel Plan and Delivery Servicing Plan will be implemented.

12.12 Construction of the Proposed Development will represent a temporary increase in traffic over the 36 month construction programme. Peak HGV movements are expected to occur at the start of construction when around 412 two-way movements are anticipated. This is associated with the potential cut and fill of the top layer of ground within the Main Development Area for geotechnical purposes. However, the overall peak of construction which has been used as the basis for assessment is due to occur in around Q1 2021 (in

the earliest construction scenario) or Q3 2027 (in the latest construction scenario) and could result in the requirement for up to 750 staff to be based at the Site and 116 two-way HGV movements. Capacity testing of eight key junctions within the Study Area identifies that seven of the junctions would operate within capacity without the need to undertake any off Site highway improvement works. As described above in relation to the operational assessment, the A180 Westgate Roundabout junction is already operating above its theoretical capacity, but given the small percentage that construction traffic flows will add to the junction, it is reasonable to consider that mitigation at this junction would be disproportionate to the marginal impact on the junction's performance. Therefore, no mitigation is proposed at this junction.

12.13 To mitigate the impact of construction traffic, a Construction Worker Travel Plan and Construction Traffic Management Plan will be implemented.

12.14 On this basis, it is not considered that the Proposed Development will have a material impact in terms of highway capacity or safety and that the Proposed Development represents acceptable development in highways and transport terms.

12.15 It is noted that the construction and operational traffic impacts of the Proposed Development are the same as the construction and operational traffic impacts of the previously Consented Development.

13.0 REFERENCES

Chartered Institute of Highways and Transportation (2000) *Providing for Journeys on Foot*

Chartered Institute of Highways and Transportation (1999) *Planning for Public Transport in Developments*

Department for Communities and Local Government (2019) *National Planning Policy Framework*

Department for Energy and Climate Change (2011a) *Overarching National Policy Statement for Energy EN-1*

Department for Energy and Climate Change (2011b) *National Policy Statement for Renewable Energy EN-3*

Department for Transport (2008) *Local Transport Note 2/08 Cycle Infrastructure Design*

North East Lincolnshire Council (2016) *North East Lincolnshire Local Transport Plan 2016-2032*

North East Lincolnshire Council (2018) *North East Lincolnshire Local Plan, adopted March 2018*

Planning Practice Guidance (2014)

14.0 ANNEXES

ANNEX 1: SCOPING CORRESPONDENCE FROM KEY STAKEHOLDERS

Scott, Jonathan (Leeds)

From: Geoghegan, Simon <Simon.Geoghegan@highwaysengland.co.uk>
Sent: 04 September 2018 13:56
To: Scott, Jonathan (Leeds)
Subject: South Humber Bank Energy Centre, South Marsh Road, Stallingborough: Scoping of Transport Assessment

Jonathan

Thank you for your email of August 13th 2018.

My consultant has reviewed your proposals for the scoping and comments as follows:

Highways England welcome the additional information provided, which will form the basis of the Transport Assessment to be submitted in support of the development proposals. In broad terms, the information provided is satisfactory. However, there are a couple of points which require addressing before the scope can be finalised:

- As per the CH2M Note (AE.18.37.01 TM001), the assessment years should be Circular 02/13 compliant,
  and a 2028 assessment year should be provided for completeness; and
- Committed development information should be provided through liaison with the LPA and not Highways England.

Please contact me again if I can provide further assistance.

Simon Geoghegan, Asset Manager, ADT(N)
Highways England | Lateral | 8 City Walk | Leeds | LS11 9AT
Tel: +44 (0) 300 4702420 | **Mobile**: personal
Web: http://www.highways.gov.uk
GTN: 0300 470 2420

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Scott, Jonathan (Leeds)

From:	Scott, Jonathan (Leeds)
Sent:	13 August 2018 10:32
To:	'simon.geoghegan@highways.gsi.gov.uk'
Cc:	Firth, Peter
Subject:	South Humber Bank Energy Centre, South Marsh Road, Stallingborough: Scoping of Transport Assessment
Attachments:	Appendix 1.pdf

Dear Simon,

AECOM have been appointed by EP SHB Ltd regarding the proposed South Humber Bank Energy Centre which will be located to the east of the existing South Humber Bank Power Station located off South Marsh Road, Stallingborough. Thank you for your initial comments on the EIA Scoping Report (letter dated 27th July 2018, Ref: TA 227 134) in which you broadly accept the scope of the Transport Assessment.

I am now writing to set out a more detailed scope of the Transport Assessment and would be grateful if you could review the information provided and confirm that the proposed scope is acceptable.

Proposed Development

The Proposed Development comprises an Energy from Waste Facility for the generation of electricity by combustion of refuse derived fuel (RDF). The annual fuel throughput will vary depending on the net calorific value (NCV) of fuel which could range from 8 to 14MJ/kg, but the Transport Assessment will consider the traffic associated with the lowest NCV fuel, which would equate to approximately 701,500 tonnes per annum (tpa). The Proposed Development site will be located to the east of EP SHB's existing South Humber Bank Power Station on vacant land which is within the ownership of EP SHB Ltd. Subject to being granted planning consent, it is anticipated that construction would commence in 2019 and last approximately 3 years with the development opening in 2022.

All fuel will be imported via road. HGV access to the Proposed Development is proposed via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. The proposed South Humber Bank Link Road to the south of the Proposed Development Site which is due to open mid 2020 will not change the proposed HGV access routing.

It is proposed that the Proposed Development will operate 24 hours a day. Fuel would be delivered to the site between 6am and 6pm 7 days a week. Although the timings allow for deliveries every day of the week, it is likely that the majority of fuel deliveries will be Monday to Friday.

Daily Traffic Generation – Construction

The peak of construction is anticipated to occur in 2020 with 750 construction workers expected on-site. Assuming an occupancy rate of 2 per vehicle which has been accepted on other recent power station construction projects including Eggborough CCGT and Knottingley CCGT, this equates to 375 daily one-way car movements per day. HGVs at the peak of construction are anticipated to be 58 one-way movements per day. The profile of traffic during construction is attached as Appendix 1.

Construction hours are anticipated to be 07:00 – 19:00.

Construction Distribution and Assignment

In terms of construction worker trips, the distribution will be based on the population of towns and cities within a 45 minute drive time of the site and the shortest / quickest route to the Site.

HGV access to the Proposed Development is proposed via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. At the junction of the A180, HGV assignment will be undertaken on the basis of a 50 / 50 A180 eastbound / A180 westbound split.

Daily Traffic Generation - Operation

The calculation of the number of Average Fuel Deliveries per Day is set out below and would likely be in the region of 188 HGVs per day based on deliveries occurring Monday to Friday.

- Fuel Tonnes per Annum: 701,500tpa
- Average HGV Payload: 16 tonnes
- Fuel Deliveries per Year: 701,500tpa / 16t = 43,844 Fuel Deliveries per Year
- Assuming all Deliveries occur Monday to Friday between 6am and 6pm = 260 Delivery Days per Year, but allowing for outages this is expected to be reduced to c.233 Delivery Days per Year
- Fuel Deliveries per Day: 43,844 / 233 Days = 188 Average Fuel Deliveries per Day (one-way)
- Fuel Deliveries per Hour: 188 Deliveries per Day / 12 Hours = 16 Average Fuel Deliveries per Hour (one-way).

To estimate the peak daily and hourly traffic flow, the following variables have been applied to ensure a robust assessment.

- Daily variation of fuel deliveries will occur due to sourcing and fuel suppliers. As an approximation, it is estimated that daily traffic flows might vary by +/- 20%. This imposes a 20% increase on the average daily flows.
- Hourly flows are difficult to control, depending on HGV drivers and loading times at other facilities. It is estimated that the hourly peak flow during a day is likely to be about twice that of the average hourly flow.

Based on the above variables, peak daily and hourly Fuel Deliveries are as follows:

- Daily Peak Fuel Deliveries: 226 HGVs (one-way);
- Hourly Peak Fuel Deliveries: 32 HGVs (one-way).

In addition, there would be a maximum of 5 HGV consumable deliveries per day (5 in + 5 out) or 1 in 1 out during the hourly peak. There would also be HGV movements associated with bottom ash and APC residues with a maximum of 61 HGVs per day (61 in + 61 out) or 9 in and 9 out during the hourly peak.

Total HGV movements at the site would therefore be 292 in and 292 out per day and a maximum of 42 in and 42 out in any one hour.

It is estimated that around 56 staff will be required on a shift basis to be spread over a 24 hour period. Site operation is likely to be undertaken via three 8hr shifts (00:00 – 08:00, 08:00 – 16:00, 16:00 – 00:00). Assuming a vehicle occupancy of 1 per vehicle this equates to 56 vehicle arrivals per day (56 in + 56 out).

Operational Assignment

Staff trips will be assigned to the network based on Journey to Work Census data.

HGV access to the Proposed Development is proposed via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. At the junction of the A180, HGV assignment will be undertaken on the basis of a 50 / 50 A180 eastbound / A180 westbound split.

Identification of Peak Hours for Assessment

Peak Hour Junction Counts between the hours of (07:00 – 10:00 and 16:00 – 19:00) have been obtained for the following junctions:

- South Marsh Road / Hobson Way: June 2018 Count
- Laporte Road / Hobson Way / Kiln Lane: June 2018 Count
- A1173 / Kiln Lane: June 2018 Count
- A180 / A1173: July 2017 Count

Total flows into each junction will be calculated to determine the AM and PM Peak Hours for Assessment.

Junction Capacity Assessment

Junction modelling will be undertaken for the identified AM and PM Peak hours for the junction listed above.

The following scenarios will be tested:

- 2018 Base;
- 2020 Base + Committed Development;
- 2020 Base + Committed + Peak of Construction;
- 2022 Base + Committed Development;
- 2022 Base + Committed + Operation.

Committed Development

Highways England are asked to provide a list of committed developments to be included in the baseline flows.

South Humber Link Road

An application for a new South Humber Bank Link Road to the south of the Site connecting Hobson Way with Moody Lane was submitted in March 2018 and is pending determination. The proposed Link Road is due to open in mid-2020. According to the South Humber Bank Link Road Transport Assessment prepared by Atkins in January 2018 the Link Road will result in a redistribution of trips to / from the areas at either end of the Proposed Link Road as shown in Figures 1 and 2.

Figure 1

Figure 2

The proposed net change in traffic flows as a result of the proposed Link Road is set out in Table 1 below.

Link	AM Peak	PM Peak
Hobson Way	+ 740	+ 615
Kiln Lane (West of Hobson Way)	+ 287	+ 296
Kiln Lane (East of A1173)	- 464	- 469
A1173	- 519	- 357

Table 1 above shows that opening of the proposed Link Road would result in increased flows on Hobson Way and Kiln Lane (between Hobson Way and North Moss Lane) and a reduction in flows travelling on Kiln Lane (between North Moss Lane and the A1173), the A1173 and the A180 / A1173 junction.

The effect of the proposed Link Road on the Proposed Development would be additional road capacity at the A180 / A1173 interchange, the A1173 and Kiln Lane to the east of the A1173. Whilst the proposed Link Road would result in reduced capacity on Hobson Way and Kiln Lane (west of Hobson Way), junction modelling undertaken at the Kiln Lane / Laporte Road / Hobson Way roundabout as part of the South Humber Bank Link Road Transport Assessment for the future scenario 2026 with Committed Development and Proposed Link Road shows a maximum Ratio of Flow to Capacity (RFC) of 0.43

Given the above, it is not considered that any junction modelling with the South Humber Bank Link Road in place is considered necessary to support the planning application for the Proposed Development.

We trust that this approach is acceptable and would be grateful if you could confirm.

Kind Regards,
Jonathan

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Scott, Jonathan (Leeds)

From: Rachel Gennery (Engie) <Rachel.Gennery@Nelincs.gov.uk>
Sent: 19 September 2018 16:26
To: Scott, Jonathan (Leeds)
Cc: Lara Hattle (Engie); Cheryl Jarvis (Engie); Mark Gibbons (Engie); Firth, Peter
Subject: South Humber Bank Energy Centre: Transport Assessment Scoping

Importance: High

Hi Jonathan,

Apologies for the delay in my response. Please find my comments on the scoping report below. I have given overall comments but I have also addressed individual items contained within your email.

We would expect the Transport Assessment to be structured in the following way and include, but not be limited to:

1. Executive Summary
2. Introduction
3. Policy Context
    a. Revised NPPF
    b. Newly Adopted Local Plan
    c. Local Transport Plan
    d. Site Specific Policies and Allocations

4. Background/Existing Situation/Baseline Data –
    a. including access by public transport, walking and cycling
    b. review of local road network
    c. review of personal injury accident data (not using Crashmap unless it is the detailed description)

5. Description of Proposed Development – including
    a. details of staff shift patterns,
    b. parking provision (car, disabled, motorcycle, electric vehicle charging points, cycle parking etc. broken down for all users e.g. staff and visitors)

6. Details of Construction
    a. Timeframe (scoping note states 2019-2022 3 year timeframe)
    b. Expected vehicle types (including any abnormal loads and how these will be managed)
    c. Frequency of deliveries for each phase of construction
    d. Location of staff parking during construction
    e. Location of construction storage areas

7. Multi Modal Trip Generation
    a. Operational trip generation based on TRICS data and census data
    b. Distribution and assignment of trips (Car and HGV – staff and operational deliveries etc.)

8. Impacts
    a. Junction capacity analysis at the following junctions:
        i. South Marsh Road / Hobson Way – staggered crossroads
        ii. Laporte Road / Hobson Way / Kiln Lane - roundabout
        iii. A1173 / Kiln Lane – roundabout
        iv. Kiln Lane/North Moss Lane/Trondheim Way - roundabout
        v. A180 / A1173

vi. A180 / Moody Lane / Pyewipe Road (Westgate roundabout)

b. Peak hour allocation – this should be based on survey data (*it should be noted that due to port activities that peak hours have previously identified as 0600-0700 and 0500-0600)
c. Calculations of background traffic growth (TEMPRO adjusted growth factors)
d. Committed Development to include:
   i. South Humber Bank Link Road (SHBLR) – this should be included for operational traffic as it will be open by the time your site is operational. It should not be included when looking at construction traffic as we would expect that the construction of the link road will occur concurrently with the construction of the proposed Energy Centre.
   ii. SHIIP (including access roundabout)
   iii. A1173 / Kiln Lane Roundabout (improvements via ABLE UK planning app)
e. Consideration of Kings Road / Pelham Road AQMA roundabout
f. Consideration of diverted flows due to A18 closure

9. Proposed Mitigation and Residual Impacts

10. Summary and Conclusions

- A Travel Plan will be required to be submitted as part of the planning application. This can be in draft form with a condition to agree details. You should contact our Business Travel Planning Officer for further information on what should be included within the Travel Plan (Eve.Jenkins@nelincs.gov.uk). A Draft should be submitted as part of the planning application submission.

- Due to the number of construction workers required at the site we would also request a Construction Travel Plan to deal with how staff are going to travel to the site during the construction phases.

- A Construction Management Plan will be required to detail how traffic will be managed during the construction phase. A Draft should be submitted as part of the planning application submission.

- A Delivery and Servicing Plan will be required to demonstrate how deliveries and servicing will be managed. This should include (but not be limited to) details of banksmen requirements, scheduling to ensure that vehicles are not left waiting on the highway, time restrictions etc. A Draft should be submitted as part of the planning application submission.

I have provided additional commentary on your scoping notes in the email below in green.

If you have any queries please do let me know.

Kind regards,

Rachel

Rachel Gennery | Senior Highways & Transport Planner | ENGIE
☎ +44 (0)14 7232 4466 | +44 (0) 7733122071 |
✉ ENGIE, New Oxford House, George Street, Grimsby, North East Lincolnshire, DN31 1HB
www.engie.com/en / www.nelincs.gov.uk | rachel.gennery@nelincs.gov.uk

North East Lincolnshire Council and ENGIE, working in partnership to deliver a stronger economy and stronger communities.

From: Scott, Jonathan (Leeds)
Sent: 29 August 2018 13:27
To: Rachel Gennery (Engie)
Cc: Lara Hattle (Engie) ; Firth, Peter
Subject: RE: South Humber Bank Energy Centre: Transport Assessment Scoping

Rachel,

AECOM have been appointed by EP SHB Limited to prepare the Transport Assessment to support the planning application for the Proposed South Humber Bank Energy Centre near Stallingborough.

We have prepared a detailed transport scoping note in order to agree with you the parameters of the Transport Assessment. This was forwarded to you on 22nd August by your colleague Cheryl Jarvis (see below email chain).

I trust that the approach adopted for the Transport Assessment is acceptable and would be grateful if you could confirm. Alternatively if you prefer to discuss the scoping note over the phone, I would be happy to give you a call.

Kind Regards,
Jonathan

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From: Cheryl Jarvis (Engie) <Cheryl.Jarvis@nelincs.gov.uk>
Sent: 22 August 2018 14:54
To: Rachel Gennery (Engie) <Rachel.Gennery@Nelincs.gov.uk>
Cc: Lara Hattle (Engie) <Lara.Hattle@nelincs.gov.uk>; Colin Turnbull <colin.turnbull@dwdllp.com>; 'ian.campbell@aecom.com' <ian.campbell@aecom.com>
Subject: FW: South Humber Bank Energy Centre: Transport Assessment Scoping

Hi Rachel,

See below and attached from Colin.

Colin, if I could be kept in the loop that would be great thanks.

Kind Regards

Cheryl Jarvis MSc| Principal Town Planner | **ENGIE**
☎ +44 (0)1472 324253 |
✉ ENGIE, Origin 2, Origin Way, Europarc, Grimsby, DN37 9TZ

www.engie.com/en cheryl.jarvis@nelincs.gov.uk

Please note – We are moving Offices shortly. From Wednesday 15th August to 20th August, please phone to make an appointment to see a member of our team. From Monday 20th August we will be in our new offices at New Oxford House, George Street, Grimsby, North East Lincolnshire, DN31 1HB.

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From: Colin Turnbull [mailto:colin.turnbull@dwdllp.com]
Sent: 22 August 2018 14:39
To: Cheryl Jarvis (Engie)
Cc: Campbell, Ian
Subject: FW: South Humber Bank Energy Centre: Transport Assessment Scoping

Cheryl

Please could I ask for the below to be sent to your highways colleagues? Alternatively we are content to speak with them directly. In either case please let us know whether you wish to be kept in the loop with the associated technical discussions.

Kind regards

Colin

From: Campbell, Ian
Sent: 22 August 2018 10:56
To: Colin Turnbull (colin.turnbull@dwdllp.com)
Cc: Geoff Bullock (geoff.bullock@dwdllp.com); Cobb, Kirsty; Kearns, Laura; Lowe, Richard; Scott, Jonathan (Leeds)
Subject: FW: South Humber Bank Energy Centre: Transport Assessment Scoping

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AECOM have been appointed by EP SHB Ltd regarding the proposed South Humber Bank Energy Centre which will be located to the east of the existing South Humber Bank Power Station located off South Marsh Road, Stallingborough. You may have seen the EIA Scoping Report which was submitted in July which provides an overview of the Proposed Development. NELC Planning ref DM/0575/18/SCO. As set out paragraph 6.49 in the Scoping Report, I am writing to set out the detail of the proposed scope of the Transport Assessment and would be grateful if this can be forwarded to NELC Highways and Highways England so that that they can review the information provided and confirm that the proposed scope is acceptable and ensure their specific requirements can be accommodated within the TA.

Proposed Development

The Proposed Development comprises an Energy from Waste Facility for the generation of electricity by combustion of refuse derived fuel (RDF). The annual fuel throughput will vary depending on the net calorific value (NCV) of fuel which could range from 9 to 14MJ/kg, but the Transport Assessment will consider the traffic associated with the lowest NCV fuel, which would equate to a maximum of around 300 HGV movements per day. The Proposed Development site will be located to the east of EP SHB's existing South Humber Bank Power Station on vacant land which is within the ownership of EP SHB Ltd. Subject to being granted planning consent, it is anticipated that construction would commence in 2019 and last approximately 3 years with the development opening in 2022.

All fuel will be imported via road. HGV access to the Proposed Development is proposed via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. The proposed South Humber Bank Link Road to the south of the Proposed Development Site which is due to open mid 2020 will not change the proposed HGV access routing. Accepted.

It is proposed that the Proposed Development will operate 24 hours a day. Fuel would be delivered to the site between 6am and 6pm 7 days a week. Although the timings allow for deliveries every day of the week, it is likely that the majority of fuel deliveries will be Monday to Friday. Accepted

Daily Traffic Generation – Construction

The peak of construction is anticipated to occur in 2020 with 750 construction workers expected on-site. Assuming an occupancy rate of 2 per vehicle which has been accepted on other recent power station construction projects

including Eggborough CCGT and Knottingley CCGT, this equates to 375 daily one-way car movements per day. HGVs at the peak of construction are anticipated to be 58 one-way movements per day. The profile of traffic during construction is attached as Appendix 1.

Construction hours are anticipated to be 07:00 – 19:00. See comments above on provision of a Construction Management Plan, Construction Travel Plan and additional details within the TA on how construction will be routed and managed.

Construction Distribution and Assignment

In terms of construction worker trips, the distribution will be based on the population of towns and cities within a 45 minute drive time of the site and the shortest / quickest route to the Site.

HGV access to the Proposed Development is proposed via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. At the junction of the A180, HGV assignment will be undertaken on the basis of a 50 / 50 A180 eastbound / A180 westbound split. – Is a 50/50 split realistic? What evidence has this been based on or is this assumed? Can you not provide a more detailed split with a justification based on expected locations of where materials will be coming from?

See additional comments above on provision of a Construction Management Plan, Construction Travel Plan and additional details within the TA on how construction will be routed and managed.

Daily Traffic Generation - Operation

To estimate the peak daily and hourly traffic flow, the following variables have been applied to ensure a robust assessment.

- Daily variation of fuel deliveries will occur due to sourcing and fuel suppliers. As an approximation, it is estimated that daily traffic flows might vary by +/- 20%. This imposes a 20% increase on the average daily flows.
- Hourly flows are difficult to control, depending on HGV drivers and loading times at other facilities. It is estimated that the hourly peak flow during a day is likely to be about twice that of the average hourly flow.

Based on the above variables, peak daily and hourly Fuel Deliveries are as follows:

- Daily Peak Fuel Deliveries: 242 HGVs (one-way);
- Hourly Peak Fuel Deliveries: 34 HGVs (one-way).

In addition, there would be a maximum of 5 HGV consumable deliveries per day (5 in + 5 out) or 1 in 1 out during the hourly peak. There would also be HGV movements associated with bottom ash and APC residues with a maximum of 65 HGVs per day (65 in + 65 out) or 9 in and 9 out during the hourly peak.

Total HGV movements at the site would therefore be 312 in and 312 out per day and a maximum of 44 deliveries in any one hour.

It is estimated that around 56 staff will be required on a shift basis to be spread over a 24 hour period. Site operation is likely to be undertaken via three 8hr shifts (00:00 – 08:00, 08:00 – 16:00, 16:00 – 00:00). Assuming a vehicle occupancy of 1 per vehicle this equates to 56 vehicle arrivals per day (56 in + 56 out).

It is understood that this site will generate a significant number of HGV movements. The routeing of these movements and the suitability of the proposed routes will need to be carefully justified. Swept path analysis showing HGVs manoeuvring the route to the site should be provided.

Operational Assignment

Staff trips will be assigned to the network based on Journey to Work Census data. Accepted.

HGV access to the Proposed Development is proposed via the A180, the A1173, Kiln Lane, Hobson Way and South Marsh Road. At the junction of the A180, HGV assignment will be undertaken on the basis of a 50 / 50 A180 eastbound / A180 westbound split. Is a 50/50 split realistic? What evidence has this been based on or is this assumed? Can you not provide a more detailed split with a justification based on expected locations of where materials will be coming from?

Identification of Peak Hours for Assessment

Peak Hour Junction Counts between the hours of (07:00 – 10:00 and 16:00 – 19:00) have been obtained for the following junctions:

- South Marsh Road / Hobson Way: June 2018 Count
- Laporte Road / Hobson Way / Kiln Lane: June 2018 Count
- A1173 / Kiln Lane: June 2018 Count
- A180 / A1173: July 2017 Count

Total flows into each junction will be calculated to determine the AM and PM Peak Hours for Assessment.

See list of junctions required for junction capacity analysis.

Junction Capacity Assessment

Junction modelling will be undertaken for the identified AM and PM Peak hours for the junction listed above.

The following scenarios will be tested:

- 2018 Base;
- 2020 Base + Committed Development;
- 2020 Base + Committed + Peak of Construction;
- 2022 Base + Committed Development;
- 2022 Base + Committed + Operation.

Agreed.

Committed Development

North East Lincolnshire Council are asked to provide a list of committed developments to be included in the baseline flows.#

See comments above.

South Humber Link Road

An application for a new South Humber Bank Link Road to the south of the Site connecting Hobson Way with Moody Lane was submitted in March 2018 and is pending determination. The proposed Link Road is due to open in mid-2020. According to the South Humber Bank Link Road Transport Assessment prepared by Atkins in January 2018 the Link Road will result in a redistribution of trips to / from the areas at either end of the Proposed Link Road as shown in Figures 1 and 2.

Figure 1

Figure 2

The proposed net change in traffic flows as a result of the proposed Link Road is set out in Table 1 below.

Link	AM Peak	PM Peak
Hobson Way	+ 740	+ 615
Kiln Lane (West of Hobson Way)	+ 287	+ 296
Kiln Lane (East of A1173)	- 464	- 469
A1173	- 519	- 357

Table 1 above shows that opening of the proposed Link Road would result in increased flows on Hobson Way and Kiln Lane (between Hobson Way and North Moss Lane) and a reduction in flows travelling on Kiln Lane (between North Moss Lane and the A1173), the A1173 and the A180 / A1173 junction.

The effect of the proposed Link Road on the Proposed Development would be additional road capacity at the A180 / A1173 interchange, the A1173 and Kiln Lane to the east of the A1173. Whilst the proposed Link Road would result in reduced capacity on Hobson Way and Kiln Lane (west of Hobson Way), junction modelling undertaken at the Kiln Lane / Laporte Road / Hobson Way roundabout as part of the South Humber Bank Link Road Transport Assessment for the future scenario 2026 with Committed Development and Proposed Link Road shows a maximum Ratio of Flow to Capacity (RFC) of 0.43

Given the above, it is not considered that any junction modelling with the South Humber Bank Link Road in place is considered necessary to support the planning application for the Proposed Development.

For accuracy and completeness this should be included for operational traffic as it will be open by the time your site is operational. It should not be included when looking at construction traffic as we would expect that the construction of the link road will occur concurrently with the construction of the proposed Energy Centre.

We trust that this approach is acceptable and would be grateful if you could confirm.

Kind Regards,
Jonathan

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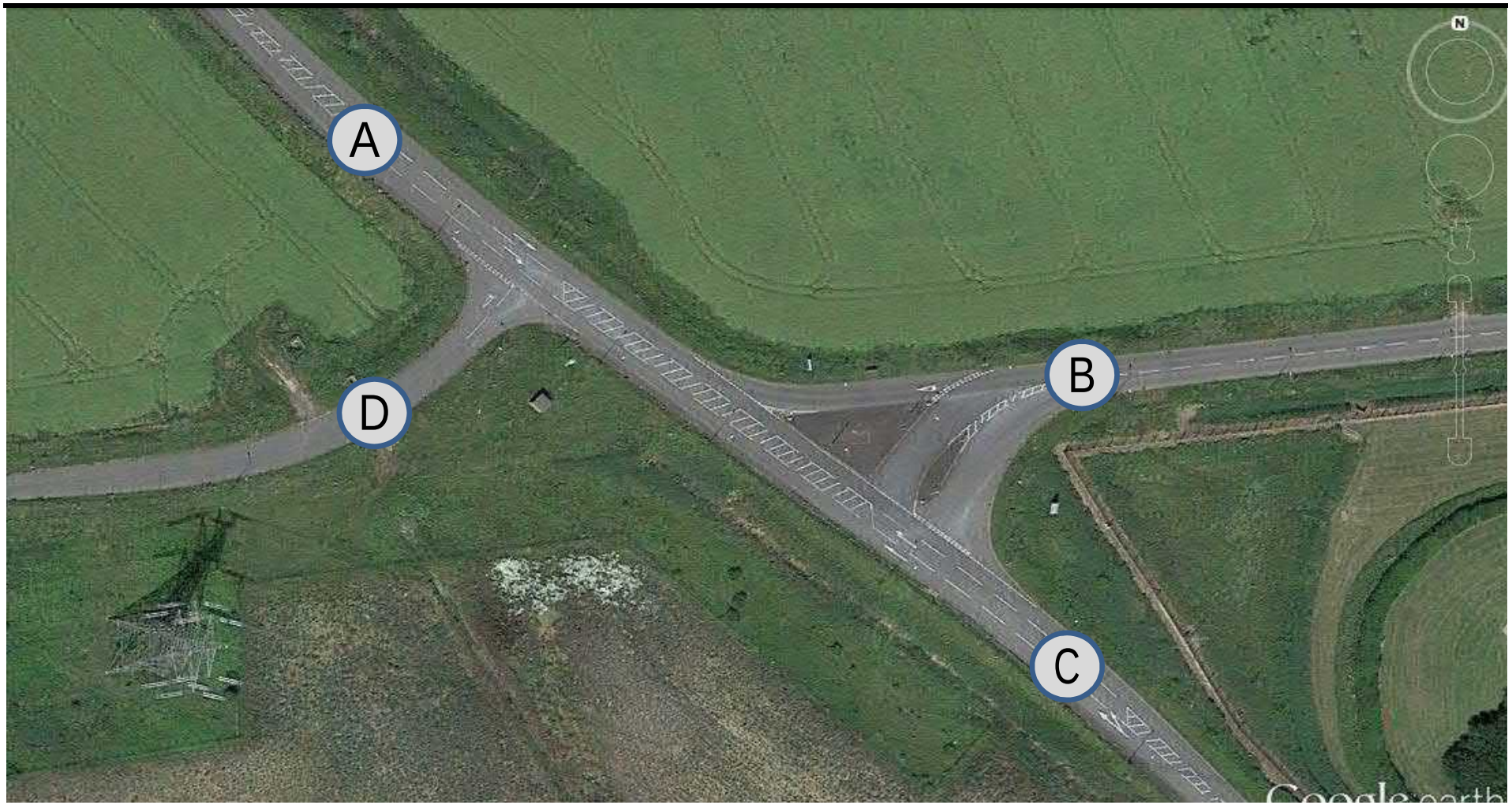
ANNEX 2: RAW TRAFFIC COUNT DATA

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Hobson Way / S Marsh Road



Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Hobson Way / S Marsh Road
Date: 07 June 2018, Thursday

Time	A - A										A - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
	1	1	1.5	2.3	2	2	0.4	0.2												
07:00									0	0	15								15	15
07:15									0	0	7		1	1					9	10.8
07:30									0	0	10	4	1						15	15.5
07:45									0	0	14	4							18	18
H/Total	0	0	0	0	0	0	0	0	0	0	46	8	2	1	0	0	0	0	57	59.3
08:00									0	0	4	1	1						6	6.5
08:15									0	0	6	4		1					11	12.3
08:30									0	0	6								6	6
08:45									0	0	4	1	2	1					8	10.3
H/Total	0	0	0	0	0	0	0	0	0	0	20	6	3	2	0	0	0	0	31	35.1
09:00									0	0	3	1		1					5	6.3
09:15									0	0	4								4	4
09:30									0	0	2	1	6	1					10	14.3
09:45									0	0			3	3					6	11.4
H/Total	0	0	0	0	0	0	0	0	0	0	9	2	9	5	0	0	0	0	25	36
Total	0	0	0	0	0	0	0	0	0	0	75	16	14	8	0	0	0	0	113	130.4

Time	A - A										A - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0		1		1				1	3	3.5
16:15									0	0		1		2					3	5.6
16:30									0	0				2					2	4.6
16:45									0	0								1	1	0.2
H/Total	0	0	0	0	0	0	0	0	0	0	0	2	0	5	0	0	0	2	9	13.9
17:00									0	0									0	0
17:15									0	0		1							1	1
17:30									0	0	2							1	3	2.2
17:45									0	0	1							1	2	1.2
H/Total	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	2	6	4.4
18:00									0	0	7								7	7
18:15									0	0	2			1					3	4.3
18:30									0	0	3							1	4	3.2
18:45									0	0	3	1							4	4
H/Total	0	0	0	0	0	0	0	0	0	0	15	1	0	1	0	0	0	1	18	18.5
Total	0	0	0	0	0	0	0	0	0	0	18	4	0	6	0	0	0	5	33	36.8

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	9								9	9	3								3	3
07:15	7								7	7		1							1	1
07:30	10	1							11	11									0	0
07:45	7								7	7	1								1	1
H/Total	33	1	0	0	0	0	0	0	34	34	4	1	0	0	0	0	0	0	5	5
08:00									0	0									0	0
08:15	3	1							4	4	2								2	2
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	3	1	0	0	0	0	0	0	4	4	2	0	0	0	0	0	0	0	2	2
09:00									0	0									0	0
09:15									0	0		1						1	2	1.2
09:30	2								2	2	1								1	1
09:45									0	0	1	1							2	2
H/Total	2	0	0	0	0	0	0	0	2	2	2	2	0	0	0	0	0	1	5	4.2
Total	38	2	0	0	0	0	0	0	40	40	8	3	0	0	0	0	0	1	12	11.2

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	20	4						1	25	24.2
16:15									0	0	28	4							32	32
16:30	1								1	1	36	3						1	40	39.2
16:45	4								4	4	18							1	19	18.2
H/Total	5	0	0	0	0	0	0	0	5	5	102	11	0	0	0	0	0	3	116	113.6
17:00	1			1					2	3.3	32	1						1	34	33.2
17:15	2		1	1					4	5.8	22	1						2	25	23.4
17:30	5	1							6	6	9								9	9
17:45	3			2					5	7.6	10							1	11	10.2
H/Total	11	1	1	4	0	0	0	0	17	22.7	73	2	0	0	0	0	0	4	79	75.8
18:00	2	2							4	4	6						1		7	6.4
18:15	2								2	2	1								1	1
18:30				1					1	2.3	4						1		5	4.4
18:45				1					1	2.3	2								2	2
H/Total	4	2	0	2	0	0	0	0	8	10.6	13	0	0	0	0	0	2	0	15	13.8
Total	20	3	1	6	0	0	0	0	30	38.3	188	13	0	0	0	0	2	7	210	203.2

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Hobson Way / S Marsh Road
Date: 07 June 2018, Thursday

Time	B - A										B - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	1								1	1									0	0
07:15	3							1	4	3.2									0	0
07:30								6	6	1.2									0	0
07:45	2	1	1	2				1	7	9.3									0	0
H/Total	6	1	1	2	0	0	0	8	18	14.7	0	0	0	0	0	0	0	0	0	0
08:00				1				1	2	2.5									0	0
08:15	1		1						2	2.5									0	0
08:30	1	1		1				1	4	4.5									0	0
08:45		1	1	1					3	4.8									0	0
H/Total	2	2	2	3	0	0	0	2	11	14.3	0	0	0	0	0	0	0	0	0	0
09:00	1	1	1	1				1	5	6									0	0
09:15	1								1	1									0	0
09:30	3	1	1						5	5.5									0	0
09:45	1	3	2						6	7									0	0
H/Total	6	5	4	1	0	0	0	1	17	19.5	0	0	0	0	0	0	0	0	0	0
Total	14	8	7	6	0	0	0	11	46	48.5	0	0	0	0	0	0	0	0	0	0

Time	B - A										B - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	5	1							6	6									0	0
16:15	3	1		2					6	8.6									0	0
16:30	7	2							9	9									0	0
16:45	4								4	4									0	0
H/Total	19	4	0	2	0	0	0	0	25	27.6	0	0	0	0	0	0	0	0	0	0
17:00	7								7	7									0	0
17:15	1								1	1									0	0
17:30		2		2				1	5	6.8									0	0
17:45	16	2		1					19	20.3									0	0
H/Total	24	4	0	3	0	0	0	1	32	35.1	0	0	0	0	0	0	0	0	0	0
18:00	6	4						2	12	10.4									0	0
18:15	2								2	2									0	0
18:30	3								3	3									0	0
18:45	4		1						5	5.5									0	0
H/Total	15	4	1	0	0	0	0	2	22	20.9	0	0	0	0	0	0	0	0	0	0
Total	58	12	1	5	0	0	0	3	79	83.6	0	0	0	0	0	0	0	0	0	0

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
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Site No: 1
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Date: 07 June 2018, Thursday

Time	B - C										B - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0	1								1	1
07:15									0	0	1								1	1
07:30									0	0								1	1	0.2
07:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	3	2.2
08:00									0	0									0	0
08:15	1								1	1	2								2	2
08:30									0	0									0	0
08:45									0	0				1					1	2.3
H/Total	1	0	0	0	0	0	0	0	1	1	2	0	0	1	0	0	0	0	3	4.3
09:00									0	0									0	0
09:15	1								1	1									0	0
09:30			1						1	1.5		1							1	1
09:45									0	0	1	1							2	2
H/Total	1	0	1	0	0	0	0	0	2	2.5	1	2	0	0	0	0	0	0	3	3
Total	2	0	1	0	0	0	0	0	3	3.5	5	2	0	1	0	0	0	1	9	9.5

Time	B - C										B - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	7	1						1	9	8.2
16:15									0	0	5	3						3	11	8.6
16:30			1						1	1.5	10	1							11	11
16:45									0	0	3						1		4	3.4
H/Total	0	0	1	0	0	0	0	0	1	1.5	25	5	0	0	0	0	1	4	35	31.2
17:00									0	0	4								4	4
17:15									0	0	5								5	5
17:30									0	0	3	1							4	4
17:45									0	0	12	1				1		1	15	15.2
H/Total	0	0	0	0	0	0	0	0	0	0	24	2	0	0	0	1	0	1	28	28.2
18:00		1							1	1	3	2							5	5
18:15									0	0	2								2	2
18:30									0	0	1								1	1
18:45									0	0	2								2	2
H/Total	0	1	0	0	0	0	0	0	1	1	8	2	0	0	0	0	0	0	10	10
Total	0	1	1	0	0	0	0	0	2	2.5	57	9	0	0	0	1	1	5	73	69.4

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	1		2						3	4									0	0
07:15									0	0									0	0
07:30									0	0									0	0
07:45	1								1	1									0	0
H/Total	2	0	2	0	0	0	0	0	4	5	0	0	0	0	0	0	0	0	0	0
08:00									0	0	1								1	1
08:15									0	0	1								1	1
08:30									0	0		1							1	1
08:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3	3
09:00									0	0									0	0
09:15									0	0	1								1	1
09:30									0	0									0	0
09:45	1		1						2	2.5	1								1	1
H/Total	1	0	1	0	0	0	0	0	2	2.5	2	0	0	0	0	0	0	0	2	2
Total	3	0	3	0	0	0	0	0	6	7.5	4	1	0	0	0	0	0	0	5	5

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0									0	0
16:15	1		1						2	2.5									0	0
16:30	2								2	2									0	0
16:45	6								6	6									0	0
H/Total	9	0	1	0	0	0	0	0	10	10.5	0	0	0	0	0	0	0	0	0	0
17:00	1								1	1									0	0
17:15	3		1						4	4.5									0	0
17:30	1								1	1									0	0
17:45	39			2			1		42	44									0	0
H/Total	44	0	1	2	0	0	1	0	48	50.5	0	0	0	0	0	0	0	0	0	0
18:00	15	1							16	16									0	0
18:15	1								1	1									0	0
18:30	3								3	3									0	0
18:45	1								1	1									0	0
H/Total	20	1	0	0	0	0	0	0	21	21	0	0	0	0	0	0	0	0	0	0
Total	73	1	2	2	0	0	1	0	79	82	0	0	0	0	0	0	0	0	0	0

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0									0	0
07:15									0	0									0	0
07:30									0	0									0	0
07:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00									0	0									0	0
08:15									0	0	2								2	2
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2
09:00									0	0									0	0
09:15									0	0									0	0
09:30									0	0									0	0
09:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	1								1	1
16:15									0	0									0	0
16:30									0	0		1							1	1
16:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	2
17:00									0	0									0	0
17:15									0	0			1						1	1.5
17:30									0	0	1	3							4	4
17:45									0	0	9							1	10	9.2
H/Total	0	0	0	0	0	0	0	0	0	0	10	3	1	0	0	0	0	1	15	14.7
18:00									0	0	10								10	10
18:15									0	0	3								3	3
18:30									0	0	1								1	1
18:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	14	14
Total	0	0	0	0	0	0	0	0	0	0	25	4	1	0	0	0	0	1	31	30.7

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	D - A										D - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	11	2						2	15	13.4	4	2							6	6
07:15	12	1						3	16	13.6	8			1		1		1	11	12.5
07:30	27								27	27	6	1						1	8	7.2
07:45	22	3						2	27	25.4	11	6					1		18	17.4
H/Total	72	6	0	0	0	0	0	7	85	79.4	29	9	0	1	0	1	1	2	43	43.1
08:00	17							1	18	17.2	5	1						1	7	6.2
08:15	19							1	20	19.2	6	1		1					8	9.3
08:30	21	2							23	23	6								6	6
08:45	9							1	10	9.2	3								3	3
H/Total	66	2	0	0	0	0	0	3	71	68.6	20	2	0	1	0	0	0	1	24	24.5
09:00	7								7	7	1								1	1
09:15	3								3	3	2								2	2
09:30	2	1							3	3	2	1							3	3
09:45									0	0	1								1	1
H/Total	12	1	0	0	0	0	0	0	13	13	6	1	0	0	0	0	0	0	7	7
Total	150	9	0	0	0	0	0	10	169	161	55	12	0	2	0	1	1	3	74	74.6

Time	D - A										D - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00		1							1	1									0	0
16:15	1	1							2	2									0	0
16:30							1		1	0.4			1						1	1.5
16:45									0	0									0	0
H/Total	1	2	0	0	0	0	1	0	4	3.4	0	0	1	0	0	0	0	0	1	1.5
17:00	1								1	1								1	1	0.2
17:15	2								2	2								1	1	0.2
17:30	1								1	1	1								1	1
17:45	1								1	1	2						1	2	5	2.8
H/Total	5	0	0	0	0	0	0	0	5	5	3	0	0	0	0	0	1	4	8	4.2
18:00							1	1	2	0.6	4								4	4
18:15	3								3	3									0	0
18:30	2								2	2									0	0
18:45	1								1	1									0	0
H/Total	6	0	0	0	0	0	1	1	8	6.6	4	0	0	0	0	0	0	0	4	4
Total	12	2	0	0	0	0	2	1	17	15	7	0	1	0	0	0	1	4	13	9.7

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	D - C										D - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	4							1	5	4.2									0	0
07:15	5	1							6	6									0	0
07:30	3								3	3									0	0
07:45	3								3	3									0	0
H/Total	15	1	0	0	0	0	0	1	17	16.2	0	0	0	0	0	0	0	0	0	0
08:00		1							1	1									0	0
08:15									0	0									0	0
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
09:00	2								2	2									0	0
09:15	1								1	1									0	0
09:30									0	0									0	0
09:45	1								1	1									0	0
H/Total	4	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0
Total	19	2	0	0	0	0	0	1	22	21.2	0	0	0	0	0	0	0	0	0	0

Time	D - C										D - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0									0	0
16:15		1							1	1									0	0
16:30	1								1	1									0	0
16:45	1								1	1									0	0
H/Total	2	1	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0
17:00	2								2	2									0	0
17:15	1								1	1									0	0
17:30									0	0									0	0
17:45	1								1	1									0	0
H/Total	4	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0
18:00	2								2	2									0	0
18:15	1								1	1									0	0
18:30									0	0									0	0
18:45									0	0									0	0
H/Total	3	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0
Total	9	1	0	0	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Hobson Way / S Marsh Road
Date: 07 June 2018, Thursday

Time	From A										To A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	27	0	0	0	0	0	0	0	27	27	13	2	2	0	0	0	0	2	19	18.4
07:15	14	1	1	1	0	0	0	0	17	18.8	15	1	0	0	0	0	0	4	20	16.8
07:30	20	5	1	0	0	0	0	0	26	26.5	27	0	0	0	0	0	0	6	33	28.2
07:45	22	4	0	0	0	0	0	0	26	26	25	4	1	2	0	0	0	3	35	35.7
H/Total	83	10	2	1	0	0	0	0	96	98.3	80	7	3	2	0	0	0	15	107	99.1
08:00	4	1	1	0	0	0	0	0	6	6.5	17	0	0	1	0	0	0	2	20	19.7
08:15	11	5	0	1	0	0	0	0	17	18.3	20	0	1	0	0	0	0	1	22	21.7
08:30	6	0	0	0	0	0	0	0	6	6	22	3	0	1	0	0	0	1	27	27.5
08:45	4	1	2	1	0	0	0	0	8	10.3	9	1	1	1	0	0	0	1	13	14
H/Total	25	7	3	2	0	0	0	0	37	41.1	68	4	2	3	0	0	0	5	82	82.9
09:00	3	1	0	1	0	0	0	0	5	6.3	8	1	1	1	0	0	0	1	12	13
09:15	4	1	0	0	0	0	0	1	6	5.2	4	0	0	0	0	0	0	0	4	4
09:30	5	1	6	1	0	0	0	0	13	17.3	5	2	1	0	0	0	0	0	8	8.5
09:45	1	1	3	3	0	0	0	0	8	13.4	2	3	3	0	0	0	0	0	8	9.5
H/Total	13	4	9	5	0	0	0	1	32	42.2	19	6	5	1	0	0	0	1	32	35
Total	121	21	14	8	0	0	0	1	165	181.6	167	17	10	6	0	0	0	21	221	217

Time	From A										To A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	20	5	0	1	0	0	0	2	28	27.7	5	2	0	0	0	0	0	0	7	7
16:15	28	5	0	2	0	0	0	0	35	37.6	5	2	1	2	0	0	0	0	10	13.1
16:30	37	3	0	2	0	0	0	1	43	44.8	9	2	0	0	0	0	1	0	12	11.4
16:45	22	0	0	0	0	0	0	2	24	22.4	10	0	0	0	0	0	0	0	10	10
H/Total	107	13	0	5	0	0	0	5	130	132.5	29	6	1	2	0	0	1	0	39	41.5
17:00	33	1	0	1	0	0	0	1	36	36.5	9	0	0	0	0	0	0	0	9	9
17:15	24	2	1	1	0	0	0	2	30	30.2	6	0	1	0	0	0	0	0	7	7.5
17:30	16	1	0	0	0	0	0	1	18	17.2	2	2	0	2	0	0	0	1	7	8.8
17:45	14	0	0	2	0	0	0	2	18	19	56	2	0	3	0	0	1	0	62	65.3
H/Total	87	4	1	4	0	0	0	6	102	102.9	73	4	1	5	0	0	1	1	85	90.6
18:00	15	2	0	0	0	0	1	0	18	17.4	21	5	0	0	0	0	1	3	30	27
18:15	5	0	0	1	0	0	0	0	6	7.3	6	0	0	0	0	0	0	0	6	6
18:30	7	0	0	1	0	0	1	1	10	9.9	8	0	0	0	0	0	0	0	8	8
18:45	5	1	0	1	0	0	0	0	7	8.3	6	0	1	0	0	0	0	0	7	7.5
H/Total	32	3	0	3	0	0	2	1	41	42.9	41	5	1	0	0	0	1	3	51	48.5
Total	226	20	1	12	0	0	2	12	273	278.3	143	15	3	7	0	0	3	4	175	180.6

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Hobson Way / S Marsh Road
Date: 07 June 2018, Thursday

Time	From B										To B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	2	0	0	0	0	0	0	0	2	2	19	2	0	0	0	0	0	0	21	21
07:15	4	0	0	0	0	0	0	1	5	4.2	15	0	1	2	0	1	0	1	20	23.3
07:30	0	0	0	0	0	0	0	7	7	1.4	16	5	1	0	0	0	0	1	23	22.7
07:45	2	1	1	2	0	0	0	1	7	9.3	25	10	0	0	0	0	1	0	36	35.4
H/Total	8	1	1	2	0	0	0	9	21	16.9	75	17	2	2	0	1	1	2	100	102.4
08:00	0	0	0	1	0	0	0	1	2	2.5	10	2	1	0	0	0	0	1	14	13.7
08:15	4	0	1	0	0	0	0	0	5	5.5	13	5	0	2	0	0	0	0	20	22.6
08:30	1	1	0	1	0	0	0	1	4	4.5	12	1	0	0	0	0	0	0	13	13
08:45	0	1	1	2	0	0	0	0	4	7.1	7	1	2	1	0	0	0	0	11	13.3
H/Total	5	2	2	4	0	0	0	2	15	19.6	42	9	3	3	0	0	0	1	58	62.6
09:00	1	1	1	1	0	0	0	1	5	6	4	1	0	1	0	0	0	0	6	7.3
09:15	2	0	0	0	0	0	0	0	2	2	7	0	0	0	0	0	0	0	7	7
09:30	3	2	2	0	0	0	0	0	7	8	4	2	6	1	0	0	0	0	13	17.3
09:45	2	4	2	0	0	0	0	0	8	9	2	0	3	3	0	0	0	0	8	13.4
H/Total	8	7	5	1	0	0	0	1	22	25	17	3	9	5	0	0	0	0	34	45
Total	21	10	8	7	0	0	0	12	58	61.5	134	29	14	10	0	1	1	3	192	210

Time	From B										To B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	12	2	0	0	0	0	0	1	15	14.2	0	1	0	1	0	0	0	1	3	3.5
16:15	8	4	0	2	0	0	0	3	17	17.2	0	1	0	2	0	0	0	0	3	5.6
16:30	17	3	1	0	0	0	0	0	21	21.5	0	0	1	2	0	0	0	0	3	6.1
16:45	7	0	0	0	0	0	1	0	8	7.4	0	0	0	0	0	0	0	1	1	0.2
H/Total	44	9	1	2	0	0	1	4	61	60.3	0	2	1	5	0	0	0	2	10	15.4
17:00	11	0	0	0	0	0	0	0	11	11	0	0	0	0	0	0	0	1	1	0.2
17:15	6	0	0	0	0	0	0	0	6	6	0	1	0	0	0	0	0	1	2	1.2
17:30	3	3	0	2	0	0	0	1	9	10.8	3	0	0	0	0	0	0	1	4	3.2
17:45	28	3	0	1	0	1	0	1	34	35.5	3	0	0	0	0	0	1	3	7	4
H/Total	48	6	0	3	0	1	0	2	60	63.3	6	1	0	0	0	0	1	6	14	8.6
18:00	9	7	0	0	0	0	0	2	18	16.4	11	0	0	0	0	0	0	0	11	11
18:15	4	0	0	0	0	0	0	0	4	4	2	0	0	1	0	0	0	0	3	4.3
18:30	4	0	0	0	0	0	0	0	4	4	3	0	0	0	0	0	0	1	4	3.2
18:45	6	0	1	0	0	0	0	0	7	7.5	3	1	0	0	0	0	0	0	4	4
H/Total	23	7	1	0	0	0	0	2	33	31.9	19	1	0	1	0	0	0	1	22	22.5
Total	115	22	2	5	0	1	1	8	154	155.5	25	4	1	6	0	0	1	9	46	46.5

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Hobson Way / S Marsh Road
Date: 07 June 2018, Thursday

Time	From C										To C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	1	0	2	0	0	0	0	0	3	4	13	0	0	0	0	0	0	1	14	13.2
07:15	0	0	0	0	0	0	0	0	0	0	12	1	0	0	0	0	0	0	13	13
07:30	0	0	0	0	0	0	0	0	0	0	13	1	0	0	0	0	0	0	14	14
07:45	1	0	0	0	0	0	0	0	1	1	10	0	0	0	0	0	0	0	10	10
H/Total	2	0	2	0	0	0	0	0	4	5	48	2	0	0	0	0	0	1	51	50.2
08:00	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	1
08:15	3	0	0	0	0	0	0	0	3	3	4	1	0	0	0	0	0	0	5	5
08:30	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/Total	4	1	0	0	0	0	0	0	5	5	4	2	0	0	0	0	0	0	6	6
09:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2
09:15	1	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	2	2
09:30	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3	3.5
09:45	2	0	1	0	0	0	0	0	3	3.5	1	0	0	0	0	0	0	0	1	1
H/Total	3	0	1	0	0	0	0	0	4	4.5	7	0	1	0	0	0	0	0	8	8.5
Total	9	1	3	0	0	0	0	0	13	14.5	59	4	1	0	0	0	0	1	65	64.7

Time	From C										To C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
16:15	1	0	1	0	0	0	0	0	2	2.5	0	1	0	0	0	0	0	0	1	1
16:30	2	1	0	0	0	0	0	0	3	3	2	0	1	0	0	0	0	0	3	3.5
16:45	6	0	0	0	0	0	0	0	6	6	5	0	0	0	0	0	0	0	5	5
H/Total	10	1	1	0	0	0	0	0	12	12.5	7	1	1	0	0	0	0	0	9	9.5
17:00	1	0	0	0	0	0	0	0	1	1	3	0	0	1	0	0	0	0	4	5.3
17:15	3	0	2	0	0	0	0	0	5	6	3	0	1	1	0	0	0	0	5	6.8
17:30	2	3	0	0	0	0	0	0	5	5	5	1	0	0	0	0	0	0	6	6
17:45	48	0	0	2	0	0	1	1	52	53.2	4	0	0	2	0	0	0	0	6	8.6
H/Total	54	3	2	2	0	0	1	1	63	65.2	15	1	1	4	0	0	0	0	21	26.7
18:00	25	1	0	0	0	0	0	0	26	26	4	3	0	0	0	0	0	0	7	7
18:15	4	0	0	0	0	0	0	0	4	4	3	0	0	0	0	0	0	0	3	3
18:30	4	0	0	0	0	0	0	0	4	4	0	0	0	1	0	0	0	0	1	2.3
18:45	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	2.3
H/Total	34	1	0	0	0	0	0	0	35	35	7	3	0	2	0	0	0	0	12	14.6
Total	98	5	3	2	0	0	1	1	110	112.7	29	5	2	6	0	0	0	0	42	50.8

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Hobson Way / S Marsh Road
Date: 07 June 2018, Thursday

Time	From D										To D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	19	4	0	0	0	0	0	3	26	23.6	4	0	0	0	0	0	0	0	4	4
07:15	25	2	0	1	0	1	0	4	33	32.1	1	1	0	0	0	0	0	0	2	2
07:30	36	1	0	0	0	0	0	1	38	37.2	0	0	0	0	0	0	0	1	1	0.2
07:45	36	9	0	0	0	0	1	2	48	45.8	1	0	0	0	0	0	0	0	1	1
H/Total	116	16	0	1	0	1	1	10	145	138.7	6	1	0	0	0	0	0	1	8	7.2
08:00	22	2	0	0	0	0	0	2	26	24.4	0	0	0	0	0	0	0	0	0	0
08:15	25	1	0	1	0	0	0	1	28	28.5	6	0	0	0	0	0	0	0	6	6
08:30	27	2	0	0	0	0	0	0	29	29	0	0	0	0	0	0	0	0	0	0
08:45	12	0	0	0	0	0	0	1	13	12.2	0	0	0	1	0	0	0	0	1	2.3
H/Total	86	5	0	1	0	0	0	4	96	94.1	6	0	0	1	0	0	0	0	7	8.3
09:00	10	0	0	0	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0
09:15	6	0	0	0	0	0	0	0	6	6	0	1	0	0	0	0	0	1	2	1.2
09:30	4	2	0	0	0	0	0	0	6	6	1	1	0	0	0	0	0	0	2	2
09:45	2	0	0	0	0	0	0	0	2	2	2	2	0	0	0	0	0	0	4	4
H/Total	22	2	0	0	0	0	0	0	24	24	3	4	0	0	0	0	0	1	8	7.2
Total	224	23	0	2	0	1	1	14	265	256.8	15	5	0	1	0	0	0	2	23	22.7

Time	From D										To D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	0	1	0	0	0	0	0	0	1	1	28	5	0	0	0	0	0	2	35	33.4
16:15	1	2	0	0	0	0	0	0	3	3	33	7	0	0	0	0	0	3	43	40.6
16:30	1	0	1	0	0	0	1	0	3	2.9	46	5	0	0	0	0	0	1	52	51.2
16:45	1	0	0	0	0	0	0	0	1	1	21	0	0	0	0	0	1	1	23	21.6
H/Total	3	3	1	0	0	0	1	0	8	7.9	128	17	0	0	0	0	1	7	153	146.8
17:00	3	0	0	0	0	0	0	1	4	3.2	36	1	0	0	0	0	0	1	38	37.2
17:15	3	0	0	0	0	0	0	1	4	3.2	27	1	1	0	0	0	0	2	31	29.9
17:30	2	0	0	0	0	0	0	0	2	2	13	4	0	0	0	0	0	0	17	17
17:45	4	0	0	0	0	0	1	2	7	4.8	31	1	0	0	0	1	0	3	36	34.6
H/Total	12	0	0	0	0	0	1	4	17	13.2	107	7	1	0	0	1	0	6	122	118.7
18:00	6	0	0	0	0	0	1	1	8	6.6	19	2	0	0	0	0	1	0	22	21.4
18:15	4	0	0	0	0	0	0	0	4	4	6	0	0	0	0	0	0	0	6	6
18:30	2	0	0	0	0	0	0	0	2	2	6	0	0	0	0	0	1	0	7	6.4
18:45	1	0	0	0	0	0	0	0	1	1	4	0	0	0	0	0	0	0	4	4
H/Total	13	0	0	0	0	0	1	1	15	13.6	35	2	0	0	0	0	2	0	39	37.8
Total	28	3	1	0	0	0	3	5	40	34.7	270	26	1	0	0	1	3	13	314	303.3

Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Hobson Way / S Marsh Road**
Date: **07 June 2018, Thursday**

Time	Whole Junction									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	49	4	2	0	0	0	0	3	58	56.6
07:15	43	3	1	2	0	1	0	5	55	55.1
07:30	56	6	1	0	0	0	0	8	71	65.1
07:45	61	14	1	2	0	0	1	3	82	82.1
H/Total	209	27	5	4	0	1	1	19	266	258.9
08:00	27	3	1	1	0	0	0	3	35	34.4
08:15	43	6	1	2	0	0	0	1	53	55.3
08:30	34	4	0	1	0	0	0	1	40	40.5
08:45	16	2	3	3	0	0	0	1	25	29.6
H/Total	120	15	5	7	0	0	0	6	153	159.8
09:00	14	2	1	2	0	0	0	1	20	22.3
09:15	13	1	0	0	0	0	0	1	15	14.2
09:30	12	5	8	1	0	0	0	0	26	31.3
09:45	7	5	6	3	0	0	0	0	21	27.9
H/Total	46	13	15	6	0	0	0	2	82	95.7
Total	375	55	25	17	0	1	1	27	501	514.4

Peak Hours		Totals
07:00	08:00	266
07:15	08:15	243
07:30	08:30	241
07:45	08:45	210

08:00	09:00	153
08:15	09:15	138
08:30	09:30	100
08:45	09:45	86

09:00	10:00	82

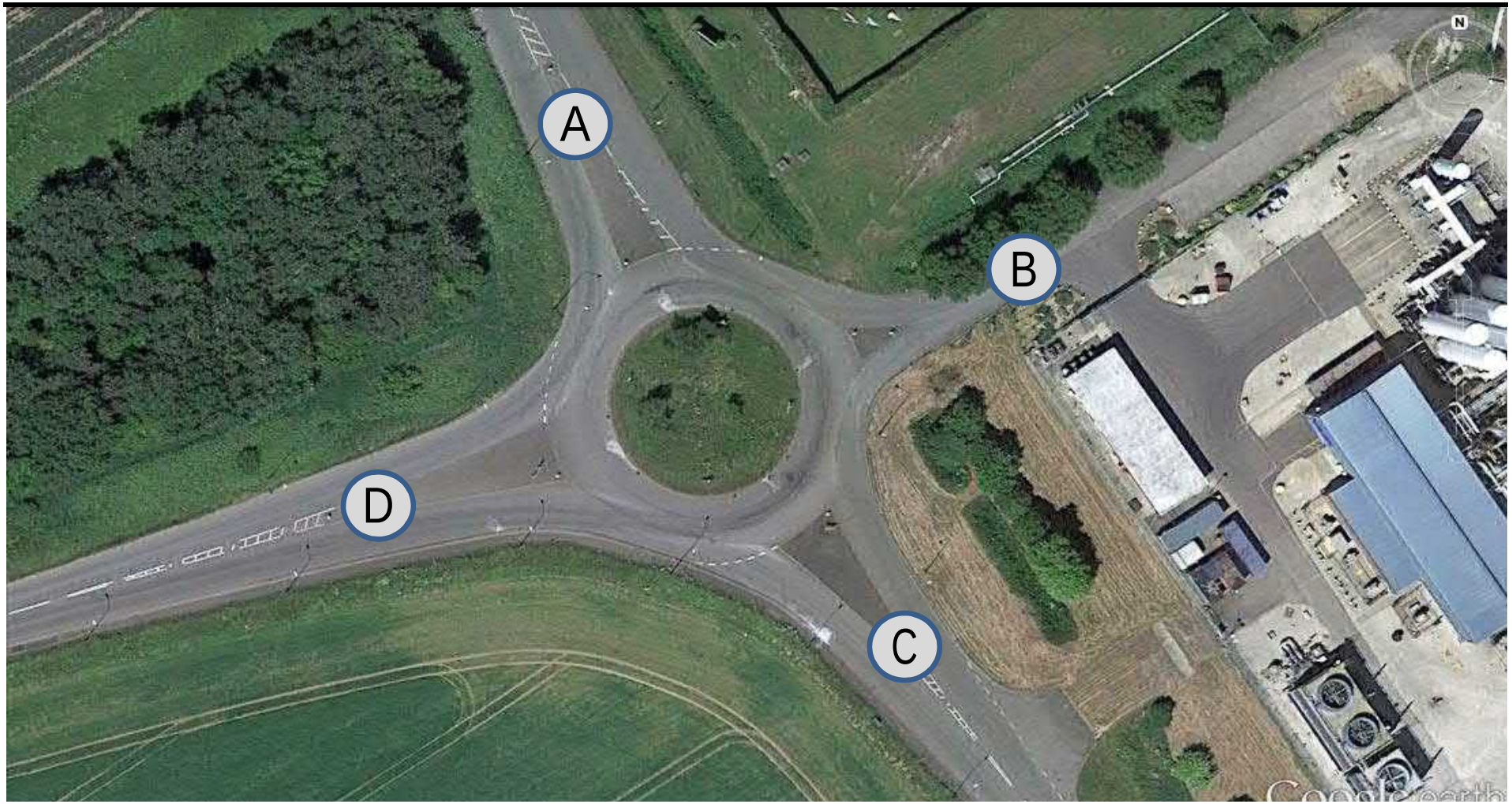
Time	Whole Junction									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	33	8	0	1	0	0	0	3	45	43.9
16:15	38	11	1	4	0	0	0	3	57	60.3
16:30	57	7	2	2	0	0	1	1	70	72.2
16:45	36	0	0	0	0	0	1	2	39	36.8
H/Total	164	26	3	7	0	0	2	9	211	213.2
17:00	48	1	0	1	0	0	0	2	52	51.7
17:15	36	2	3	1	0	0	0	3	45	45.4
17:30	23	7	0	2	0	0	0	2	34	35
17:45	94	3	0	5	0	1	2	6	111	112.5
H/Total	201	13	3	9	0	1	2	13	242	244.6
18:00	55	10	0	0	0	0	2	3	70	66.4
18:15	17	0	0	1	0	0	0	0	18	19.3
18:30	17	0	0	1	0	0	1	1	20	19.9
18:45	13	1	1	1	0	0	0	0	16	17.8
H/Total	102	11	1	3	0	0	3	4	124	123.4
Total	467	50	7	19	0	1	7	26	577	581.2

Peak Hours		Totals
16:00	17:00	211
16:15	17:15	218
16:30	17:30	206
16:45	17:45	170

17:00	18:00	242
17:15	18:15	260
17:30	18:30	233
17:45	18:45	219

18:00	19:00	124

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane



Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

	1	1	1.5	2.3	2	2	0.4	0.2												
Time	A - A										A - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0									0	0
07:15									0	0									0	0
07:30									0	0									0	0
07:45									0	0		1							1	1
H/Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
08:00									0	0									0	0
08:15									0	0									0	0
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00									0	0									0	0
09:15									0	0									0	0
09:30									0	0									0	0
09:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1

Time	A - A										A - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0									0	0
16:15									0	0									0	0
16:30									0	0									0	0
16:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00									0	0									0	0
17:15									0	0									0	0
17:30									0	0									0	0
17:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00									0	0									0	0
18:15									0	0									0	0
18:30									0	0									0	0
18:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	5								5	5	11	3	1	2					17	20.1
07:15									0	0	3			2					5	7.6
07:30	3	1							4	4	6	1		5					12	18.5
07:45	5	1							6	6	5	1	1	4					11	16.7
H/Total	13	2	0	0	0	0	0	0	15	15	25	5	2	13	0	0	0	0	45	62.9
08:00		1	1						2	2.5	11	2	1	5					19	26
08:15	3	2		1					6	7.3	16	4		3					23	26.9
08:30	1								1	1	17	3	2	6					28	36.8
08:45									0	0	17	2		5					24	30.5
H/Total	4	3	1	1	0	0	0	0	9	10.8	61	11	3	19	0	0	0	0	94	120.2
09:00									0	0	21	1	1	6					29	37.3
09:15		1						1	2	1.2	3	2	2	1					8	10.3
09:30	3	2							5	5	8	2		3		1			14	18.9
09:45	1								1	1	3	2		4					9	14.2
H/Total	4	3	0	0	0	0	0	1	8	7.2	35	7	3	14	0	1	0	0	60	80.7
Total	21	8	1	1	0	0	0	1	32	33	121	23	8	46	0	1	0	0	199	263.8

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	19	4						3	26	23.6	26	4	2	12					44	60.6
16:15	26	4							30	30	39	8	2	8			2		59	69.2
16:30	34	3		1				2	40	39.7	43	3	3	6			1		56	64.7
16:45	17							1	18	17.2	22		5	4					31	38.7
H/Total	96	11	0	1	0	0	0	6	114	110.5	130	15	12	30	0	0	3	0	190	233.2
17:00	29	1						1	31	30.2	25	1					1		27	26.4
17:15	21	1		1				2	25	24.7	18	3	1	8					30	40.9
17:30	7							1	8	7.2	14	1	3	8					26	37.9
17:45	9			1				1	11	11.5	10		1	4					15	20.7
H/Total	66	2	0	2	0	0	0	5	75	73.6	67	5	5	20	0	0	1	0	98	125.9
18:00	7						1		8	7.4	10	1	2	3			1		17	21.3
18:15	2								2	2	5	1		3					9	12.9
18:30	3						1		4	3.4	21	1		1					23	24.3
18:45	2								2	2	6	1	1						8	8.5
H/Total	14	0	0	0	0	0	2	0	16	14.8	42	4	3	7	0	0	1	0	57	67
Total	176	13	0	3	0	0	2	11	205	198.9	239	24	20	57	0	0	5	0	345	426.1

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

Time	B - A										B - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0									0	0
07:15									0	0									0	0
07:30									0	0									0	0
07:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00		1							1	1									0	0
08:15									0	0									0	0
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
09:00									0	0									0	0
09:15									0	0									0	0
09:30									0	0									0	0
09:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0

Time	B - A										B - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0									0	0
16:15									0	0									0	0
16:30									0	0									0	0
16:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00									0	0									0	0
17:15									0	0									0	0
17:30									0	0									0	0
17:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00									0	0									0	0
18:15									0	0									0	0
18:30									0	0									0	0
18:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

Time	B - C										B - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0									0	0
07:15									0	0									0	0
07:30									0	0	1								1	1
07:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
08:00									0	0									0	0
08:15									0	0									0	0
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00									0	0									0	0
09:15									0	0									0	0
09:30									0	0									0	0
09:45									0	0	1								1	1
H/Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2

Time	B - C										B - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	1								1	1
16:15									0	0	1								1	1
16:30		1							1	1									0	0
16:45									0	0									0	0
H/Total	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	2	2
17:00									0	0									0	0
17:15									0	0									0	0
17:30									0	0									0	0
17:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00									0	0									0	0
18:15									0	0									0	0
18:30									0	0									0	0
18:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	2	2

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	11	2		1					14	15.3									0	0
07:15	12	1						3	16	13.6									0	0
07:30	25						1	2	28	25.8									0	0
07:45	17	3						2	22	20.4									0	0
H/Total	65	6	0	1	0	0	1	7	80	75.1	0	0	0	0	0	0	0	0	0	0
08:00	18								18	18									0	0
08:15	17							2	19	17.4									0	0
08:30	19	2							21	21									0	0
08:45	7							1	8	7.2									0	0
H/Total	61	2	0	0	0	0	0	3	66	63.6	0	0	0	0	0	0	0	0	0	0
09:00	6			1					7	8.3									0	0
09:15			1						1	1.5									0	0
09:30	6	1							7	7									0	0
09:45	2	2	1						5	5.5									0	0
H/Total	14	3	2	1	0	0	0	0	20	22.3	0	0	0	0	0	0	0	0	0	0
Total	140	11	2	2	0	0	1	10	166	161	0	0	0	0	0	0	0	0	0	0

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	1	1							2	2		1							1	1
16:15	2			1					3	4.3									0	0
16:30	1	1					1		3	2.4									0	0
16:45	2								2	2									0	0
H/Total	6	2	0	1	0	0	1	0	10	10.7	0	1	0	0	0	0	0	0	1	1
17:00	2			1					3	4.3									0	0
17:15	2								2	2									0	0
17:30	1								1	1									0	0
17:45	5			1					6	7.3									0	0
H/Total	10	0	0	2	0	0	0	0	12	14.6	0	0	0	0	0	0	0	0	0	0
18:00	1						1	3	5	2									0	0
18:15	4								4	4									0	0
18:30	2								2	2									0	0
18:45	1								1	1									0	0
H/Total	8	0	0	0	0	0	1	3	12	9	0	0	0	0	0	0	0	0	0	0
Total	24	2	0	3	0	0	2	3	34	34.3	0	1	0	0	0	0	0	0	1	1

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0	1	1	2					1	5	5.2
07:15									0	0	3			1					4	5.3
07:30									0	0								2	2	0.4
07:45									0	0	2	2	1	2					7	10.1
H/Total	0	0	0	0	0	0	0	0	0	0	6	3	3	3	0	0	0	3	18	21
08:00									0	0				1					1	2.3
08:15									0	0									0	0
08:30									0	0	3	1	1	1				1	7	8
08:45									0	0		1	1	1					3	4.8
H/Total	0	0	0	0	0	0	0	0	0	0	3	2	2	3	0	0	0	1	11	15.1
09:00									0	0	1	1	2						4	5
09:15									0	0	1	2							3	3
09:30									0	0	3	1	1	1					6	7.8
09:45									0	0			2						2	3
H/Total	0	0	0	0	0	0	0	0	0	0	5	4	5	1	0	0	0	0	15	18.8
Total	0	0	0	0	0	0	0	0	0	0	14	9	10	7	0	0	0	4	44	54.9

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	5	3					1		9	8.4
16:15									0	0	5	1	1	1					8	9.8
16:30									0	0	8	1	1						10	10.5
16:45									0	0	15								15	15
H/Total	0	0	0	0	0	0	0	0	0	0	33	5	2	1	0	0	1	0	42	43.7
17:00									0	0	10			2					12	14.6
17:15									0	0	4		1						5	5.5
17:30	1								1	1	1	2		1					4	5.3
17:45									0	0	48	3	1	4			1	1	58	62.3
H/Total	1	0	0	0	0	0	0	0	1	1	63	5	2	7	0	0	1	1	79	87.7
18:00									0	0	21	5							26	26
18:15									0	0	3								3	3
18:30									0	0	4								4	4
18:45									0	0	8		1						9	9.5
H/Total	0	0	0	0	0	0	0	0	0	0	36	5	1	0	0	0	0	0	42	42.5
Total	1	0	0	0	0	0	0	0	1	1	132	15	5	8	0	0	2	1	163	173.9

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

Time	D - A										D - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	21	8		1			1		31	31.7	1								1	1
07:15	33	4	2	9	1		2		51	63.5	2								2	2
07:30	40	7		6					53	60.8									0	0
07:45	37	3	2	6	1				49	58.8									0	0
H/Total	131	22	4	22	2	0	3	0	184	214.8	3	0	0	0	0	0	0	0	3	3
08:00	25	7	3	4			1		40	46.1	1								1	1
08:15	25	7	1	3		1			37	42.4	1			1					2	3.3
08:30	16	5	3	3					27	32.4									0	0
08:45	13	4	1	5					23	30									0	0
H/Total	79	23	8	15	0	1	1	0	127	150.9	2	0	0	1	0	0	0	0	3	4.3
09:00	5	4	5	3		1			18	25.4				1					1	2.3
09:15	10	2	3	6					21	30.3									0	0
09:30	9	4	2	2					17	20.6									0	0
09:45	2	3		7					12	21.1									0	0
H/Total	26	13	10	18	0	1	0	0	68	97.4	0	0	0	1	0	0	0	0	1	2.3
Total	236	58	22	55	2	2	4	0	379	463.1	5	0	0	2	0	0	0	0	7	9.6

Time	D - A										D - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	11	3		5					19	25.5									0	0
16:15	1	3	1	5	1				11	19									0	0
16:30	7	1	4	3					15	20.9									0	0
16:45	3	2		2					7	9.6									0	0
H/Total	22	9	5	15	1	0	0	0	52	75	0	0	0	0	0	0	0	0	0	0
17:00	3			3					6	9.9									0	0
17:15	1	2	1	2	1				7	11.1									0	0
17:30	3		2	1					6	8.3									0	0
17:45	3			1					4	5.3									0	0
H/Total	10	2	3	7	1	0	0	0	23	34.6	0	0	0	0	0	0	0	0	0	0
18:00	5	1	1	1					8	9.8									0	0
18:15	16	3		1			1		21	21.7									0	0
18:30	14	2	1	1			1		19	20.2									0	0
18:45	6			1					7	8.3									0	0
H/Total	41	6	2	4	0	0	2	0	55	60	0	0	0	0	0	0	0	0	0	0
Total	73	17	10	26	2	0	2	0	130	169.6	0	0	0	0	0	0	0	0	0	0

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

Time	D - C										D - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	19	1							20	20									0	0
07:15	17		1	1					19	20.8		1							1	1
07:30	16	4	2						22	23	2								2	2
07:45	19	5		1					25	26.3	2								2	2
H/Total	71	10	3	2	0	0	0	0	86	90.1	4	1	0	0	0	0	0	0	5	5
08:00	6								6	6									0	0
08:15	6	5	1						12	12.5									0	0
08:30	9		1						10	10.5	1								1	1
08:45	4	1	1	2					8	11.1		1							1	1
H/Total	25	6	3	2	0	0	0	0	36	40.1	1	1	0	0	0	0	0	0	2	2
09:00	3	4		1					8	9.3									0	0
09:15	6								6	6									0	0
09:30	3		7	1					11	15.8									0	0
09:45			3	4					7	13.7				1					1	2.3
H/Total	12	4	10	6	0	0	0	0	32	44.8	0	0	0	1	0	0	0	0	1	2.3
Total	108	20	16	10	0	0	0	0	154	175	5	2	0	1	0	0	0	0	8	9.3

Time	D - C										D - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	1	3		1					5	6.3									0	0
16:15	2			2					4	6.6									0	0
16:30	1		1	1					3	4.8									0	0
16:45	4			1					5	6.3		1							1	1
H/Total	8	3	1	5	0	0	0	0	17	24	0	1	0	0	0	0	0	0	1	1
17:00	2	1	1	2					6	9.1									0	0
17:15	1								1	1									0	0
17:30	6	1		1					8	9.3									0	0
17:45	4			1					5	6.3									0	0
H/Total	13	2	1	4	0	0	0	0	20	25.7	0	0	0	0	0	0	0	0	0	0
18:00	8	2							10	10									0	0
18:15	3			1					4	5.3									0	0
18:30	4			1					5	6.3									0	0
18:45	2	1		1					4	5.3									0	0
H/Total	17	3	0	3	0	0	0	0	23	26.9	0	0	0	0	0	0	0	0	0	0
Total	38	8	2	12	0	0	0	0	60	76.6	0	1	0	0	0	0	0	0	1	1

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

Time	From A										To A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	16	3	1	2	0	0	0	0	22	25.1	32	10	0	2	0	0	1	0	45	47
07:15	3	0	0	2	0	0	0	0	5	7.6	45	5	2	9	1	0	2	3	67	77.1
07:30	9	2	0	5	0	0	0	0	16	22.5	65	7	0	6	0	0	1	2	81	86.6
07:45	10	3	1	4	0	0	0	0	18	23.7	54	6	2	6	1	0	0	2	71	79.2
H/Total	38	8	2	13	0	0	0	0	61	78.9	196	28	4	23	2	0	4	7	264	289.9
08:00	11	3	2	5	0	0	0	0	21	28.5	43	8	3	4	0	0	1	0	59	65.1
08:15	19	6	0	4	0	0	0	0	29	34.2	42	7	1	3	0	1	0	2	56	59.8
08:30	18	3	2	6	0	0	0	0	29	37.8	35	7	3	3	0	0	0	0	48	53.4
08:45	17	2	0	5	0	0	0	0	24	30.5	20	4	1	5	0	0	0	1	31	37.2
H/Total	65	14	4	20	0	0	0	0	103	131	140	26	8	15	0	1	1	3	194	215.5
09:00	21	1	1	6	0	0	0	0	29	37.3	11	4	5	4	0	1	0	0	25	33.7
09:15	3	3	2	1	0	0	0	1	10	11.5	10	2	4	6	0	0	0	0	22	31.8
09:30	11	4	0	3	0	1	0	0	19	23.9	15	5	2	2	0	0	0	0	24	27.6
09:45	4	2	0	4	0	0	0	0	10	15.2	4	5	1	7	0	0	0	0	17	26.6
H/Total	39	10	3	14	0	1	0	1	68	87.9	40	16	12	19	0	1	0	0	88	119.7
Total	142	32	9	47	0	1	0	1	232	297.8	376	70	24	57	2	2	5	10	546	625.1

Time	From A										To A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	45	8	2	12	0	0	0	3	70	84.2	12	4	0	5	0	0	0	0	21	27.5
16:15	65	12	2	8	0	0	2	0	89	99.2	3	3	1	6	1	0	0	0	14	23.3
16:30	77	6	3	7	0	0	1	2	96	104.4	8	2	4	3	0	0	1	0	18	23.3
16:45	39	0	5	4	0	0	0	1	49	55.9	5	2	0	2	0	0	0	0	9	11.6
H/Total	226	26	12	31	0	0	3	6	304	343.7	28	11	5	16	1	0	1	0	62	85.7
17:00	54	2	0	0	0	0	1	1	58	56.6	5	0	0	4	0	0	0	0	9	14.2
17:15	39	4	1	9	0	0	0	2	55	65.6	3	2	1	2	1	0	0	0	9	13.1
17:30	21	1	3	8	0	0	0	1	34	45.1	4	0	2	1	0	0	0	0	7	9.3
17:45	19	0	1	5	0	0	0	1	26	32.2	8	0	0	2	0	0	0	0	10	12.6
H/Total	133	7	5	22	0	0	1	5	173	199.5	20	2	3	9	1	0	0	0	35	49.2
18:00	17	1	2	3	0	0	2	0	25	28.7	6	1	1	1	0	0	1	3	13	11.8
18:15	7	1	0	3	0	0	0	0	11	14.9	20	3	0	1	0	0	1	0	25	25.7
18:30	24	1	0	1	0	0	1	0	27	27.7	16	2	1	1	0	0	1	0	21	22.2
18:45	8	1	1	0	0	0	0	0	10	10.5	7	0	0	1	0	0	0	0	8	9.3
H/Total	56	4	3	7	0	0	3	0	73	81.8	49	6	2	4	0	0	3	3	67	69
Total	415	37	20	60	0	0	7	11	550	625	97	19	10	29	2	0	4	3	164	203.9

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

Time	From B										To B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
07:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2
07:30	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
H/Total	1	0	0	0	0	0	0	0	1	1	3	1	0	0	0	0	0	0	4	4
08:00	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	1
08:15	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	3.3
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/Total	0	1	0	0	0	0	0	0	1	1	2	0	0	1	0	0	0	0	3	4.3
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2.3
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
H/Total	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	2.3
Total	2	1	0	0	0	0	0	0	3	3	5	1	0	2	0	0	0	0	8	10.6

Time	From B										To B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	1
16:15	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
16:30	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/Total	2	1	0	0	0	0	0	0	3	3	0	1	0	0	0	0	0	0	1	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	1	0	0	0	0	0	0	3	3	0	1	0	0	0	0	0	0	1	1

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

Time	From C										To C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	12	3	2	1	0	0	0	1	19	20.5	24	1	0	0	0	0	0	0	25	25
07:15	15	1	0	1	0	0	0	3	20	18.9	17	0	1	1	0	0	0	0	19	20.8
07:30	25	0	0	0	0	0	1	4	30	26.2	19	5	2	0	0	0	0	0	26	27
07:45	19	5	1	2	0	0	0	2	29	30.5	24	6	0	1	0	0	0	0	31	32.3
H/Total	71	9	3	4	0	0	1	10	98	96.1	84	12	3	2	0	0	0	0	101	105.1
08:00	18	0	0	1	0	0	0	0	19	20.3	6	1	1	0	0	0	0	0	8	8.5
08:15	17	0	0	0	0	0	0	2	19	17.4	9	7	1	1	0	0	0	0	18	19.8
08:30	22	3	1	1	0	0	0	1	28	29	10	0	1	0	0	0	0	0	11	11.5
08:45	7	1	1	1	0	0	0	1	11	12	4	1	1	2	0	0	0	0	8	11.1
H/Total	64	4	2	3	0	0	0	4	77	78.7	29	9	4	3	0	0	0	0	45	50.9
09:00	7	1	2	1	0	0	0	0	11	13.3	3	4	0	1	0	0	0	0	8	9.3
09:15	1	2	1	0	0	0	0	0	4	4.5	6	1	0	0	0	0	0	1	8	7.2
09:30	9	2	1	1	0	0	0	0	13	14.8	6	2	7	1	0	0	0	0	16	20.8
09:45	2	2	3	0	0	0	0	0	7	8.5	1	0	3	4	0	0	0	0	8	14.7
H/Total	19	7	7	2	0	0	0	0	35	41.1	16	7	10	6	0	0	0	1	40	52
Total	154	20	12	9	0	0	1	14	210	215.9	129	28	17	11	0	0	0	1	186	208

Time	From C										To C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	6	5	0	0	0	0	1	0	12	11.4	20	7	0	1	0	0	0	3	31	29.9
16:15	7	1	1	2	0	0	0	0	11	14.1	28	4	0	2	0	0	0	0	34	36.6
16:30	9	2	1	0	0	0	1	0	13	12.9	35	4	1	2	0	0	0	2	44	45.5
16:45	17	0	0	0	0	0	0	0	17	17	21	0	0	1	0	0	0	1	23	23.5
H/Total	39	8	2	2	0	0	2	0	53	55.4	104	15	1	6	0	0	0	6	132	135.5
17:00	12	0	0	3	0	0	0	0	15	18.9	31	2	1	2	0	0	0	1	37	39.3
17:15	6	0	1	0	0	0	0	0	7	7.5	22	1	0	1	0	0	0	2	26	25.7
17:30	3	2	0	1	0	0	0	0	6	7.3	14	1	0	1	0	0	0	1	17	17.5
17:45	53	3	1	5	0	0	1	1	64	69.6	13	0	0	2	0	0	0	1	16	17.8
H/Total	74	5	2	9	0	0	1	1	92	103.3	80	4	1	6	0	0	0	5	96	100.3
18:00	22	5	0	0	0	0	1	3	31	28	15	2	0	0	0	0	1	0	18	17.4
18:15	7	0	0	0	0	0	0	0	7	7	5	0	0	1	0	0	0	0	6	7.3
18:30	6	0	0	0	0	0	0	0	6	6	7	0	0	1	0	0	1	0	9	9.7
18:45	9	0	1	0	0	0	0	0	10	10.5	4	1	0	1	0	0	0	0	6	7.3
H/Total	44	5	1	0	0	0	1	3	54	51.5	31	3	0	3	0	0	2	0	39	41.7
Total	157	18	5	11	0	0	4	4	199	210.2	215	22	2	15	0	0	2	11	267	277.5

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

Time	From D										To D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	41	9	0	1	0	0	1	0	52	52.7	12	4	3	2	0	0	0	1	22	25.3
07:15	52	5	3	10	1	0	2	0	73	87.3	6	1	0	3	0	0	0	0	10	13.9
07:30	58	11	2	6	0	0	0	0	77	85.8	9	1	0	5	0	0	0	2	17	21.9
07:45	58	8	2	7	1	0	0	0	76	87.1	9	3	2	6	0	0	0	0	20	28.8
H/Total	209	33	7	24	2	0	3	0	278	312.9	36	9	5	16	0	0	0	3	69	89.9
08:00	32	7	3	4	0	0	1	0	47	53.1	11	2	1	6	0	0	0	0	20	28.3
08:15	32	12	2	4	0	1	0	0	51	58.2	16	4	0	3	0	0	0	0	23	26.9
08:30	26	5	4	3	0	0	0	0	38	43.9	21	4	3	7	0	0	0	1	36	45.8
08:45	17	6	2	7	0	0	0	0	32	42.1	17	4	1	6	0	0	0	0	28	36.3
H/Total	107	30	11	18	0	1	1	0	168	197.3	65	14	5	22	0	0	0	1	107	137.3
09:00	8	8	5	5	0	1	0	0	27	37	22	2	3	6	0	0	0	0	33	42.3
09:15	16	2	3	6	0	0	0	0	27	36.3	4	4	2	1	0	0	0	0	11	13.3
09:30	12	4	9	3	0	0	0	0	28	36.4	11	3	1	4	0	1	0	0	20	26.7
09:45	2	3	3	12	0	0	0	0	20	37.1	4	2	2	5	0	0	0	0	13	20.5
H/Total	38	17	20	26	0	1	0	0	102	146.8	41	11	8	16	0	1	0	0	77	102.8
Total	354	80	38	68	2	2	4	0	548	657	142	34	18	54	0	1	0	4	253	330

Time	From D										To D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	12	6	0	6	0	0	0	0	24	31.8	32	7	2	12	0	0	1	0	54	70
16:15	3	3	1	7	1	0	0	0	15	25.6	45	9	3	9	0	0	2	0	68	80
16:30	8	1	5	4	0	0	0	0	18	25.7	51	4	4	6	0	0	1	0	66	75.2
16:45	7	3	0	3	0	0	0	0	13	16.9	37	1	5	4	0	0	0	0	47	54.7
H/Total	30	13	6	20	1	0	0	0	70	100	165	21	14	31	0	0	4	0	235	279.9
17:00	5	1	1	5	0	0	0	0	12	19	35	1	0	2	0	0	1	0	39	41
17:15	2	2	1	2	1	0	0	0	8	12.1	22	3	2	8	0	0	0	0	35	46.4
17:30	9	1	2	2	0	0	0	0	14	17.6	15	3	3	9	0	0	0	0	30	43.2
17:45	7	0	0	2	0	0	0	0	9	11.6	58	3	2	8	0	0	1	1	73	83
H/Total	23	4	4	11	1	0	0	0	43	60.3	130	10	7	27	0	0	2	1	177	213.6
18:00	13	3	1	1	0	0	0	0	18	19.8	31	6	2	3	0	0	1	0	43	47.3
18:15	19	3	0	2	0	0	1	0	25	27	8	1	0	3	0	0	0	0	12	15.9
18:30	18	2	1	2	0	0	1	0	24	26.5	25	1	0	1	0	0	0	0	27	28.3
18:45	8	1	0	2	0	0	0	0	11	13.6	14	1	2	0	0	0	0	0	17	18
H/Total	58	9	2	7	0	0	2	0	78	86.9	78	9	4	7	0	0	1	0	99	109.5
Total	111	26	12	38	2	0	2	0	191	247.2	373	40	25	65	0	0	7	1	511	603

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Laporte Road / Hobson Way / Kiln Lane
Date: 07 June 2018, Thursday

Time	Whole Junction									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	69	15	3	4	0	0	1	1	93	98.3
07:15	70	6	3	13	1	0	2	3	98	113.8
07:30	93	13	2	11	0	0	1	4	124	135.5
07:45	87	16	4	13	1	0	0	2	123	141.3
H/Total	319	50	12	41	2	0	4	10	438	488.9
08:00	61	11	5	10	0	0	1	0	88	102.9
08:15	68	18	2	8	0	1	0	2	99	109.8
08:30	66	11	7	10	0	0	0	1	95	110.7
08:45	41	9	3	13	0	0	0	1	67	84.6
H/Total	236	49	17	41	0	1	1	4	349	408
09:00	36	10	8	12	0	1	0	0	67	87.6
09:15	20	7	6	7	0	0	0	1	41	52.3
09:30	32	10	10	7	0	1	0	0	60	75.1
09:45	9	7	6	16	0	0	0	0	38	61.8
H/Total	97	34	30	42	0	2	0	1	206	276.8
Total	652	133	59	124	2	3	5	15	993	1173.7

Peak Hours		Totals
07:00	08:00	438
07:15	08:15	433
07:30	08:30	434
07:45	08:45	405

08:00	09:00	349
08:15	09:15	328
08:30	09:30	270
08:45	09:45	235

09:00	10:00	206

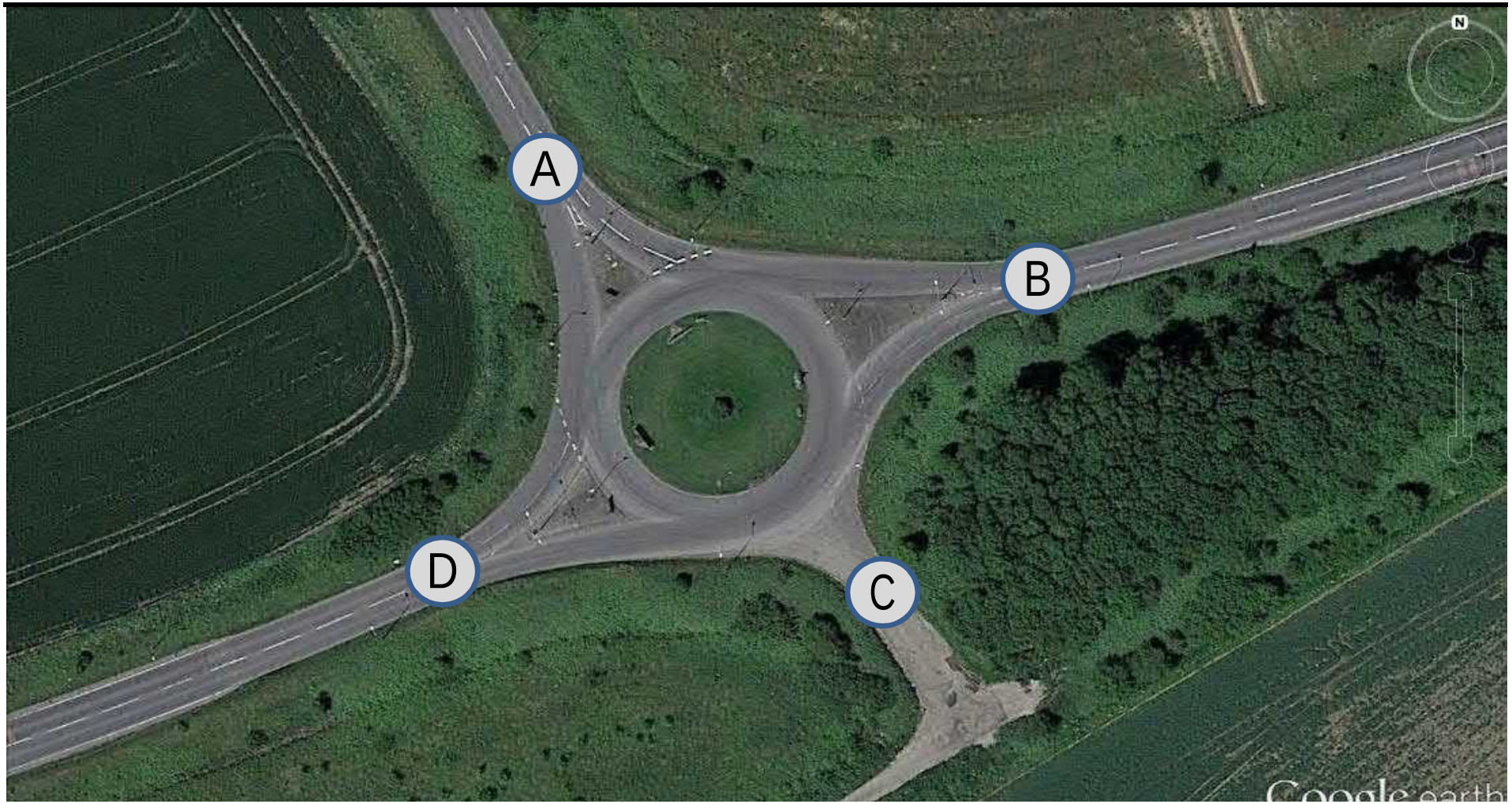
Time	Whole Junction									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	64	19	2	18	0	0	1	3	107	128.4
16:15	76	16	4	17	1	0	2	0	116	139.9
16:30	94	10	9	11	0	0	2	2	128	144
16:45	63	3	5	7	0	0	0	1	79	89.8
H/Total	297	48	20	53	1	0	5	6	430	502.1
17:00	71	3	1	8	0	0	1	1	85	94.5
17:15	47	6	3	11	1	0	0	2	70	85.2
17:30	33	4	5	11	0	0	0	1	54	70
17:45	79	3	2	12	0	0	1	2	99	113.4
H/Total	230	16	11	42	1	0	2	6	308	363.1
18:00	52	9	3	4	0	0	3	3	74	76.5
18:15	33	4	0	5	0	0	1	0	43	48.9
18:30	48	3	1	3	0	0	2	0	57	60.2
18:45	25	2	2	2	0	0	0	0	31	34.6
H/Total	158	18	6	14	0	0	6	3	205	220.2
Total	685	82	37	109	2	0	13	15	943	1085.4

Peak Hours		Totals
16:00	17:00	430
16:15	17:15	408
16:30	17:30	362
16:45	17:45	288

17:00	18:00	308
17:15	18:15	297
17:30	18:30	270
17:45	18:45	273

18:00	19:00	205

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane



Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane
Date: 07 June 2018, Thursday

Time	A - A										A - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
	1	1	1.5	2.3	2	2	0.4	0.2												
07:00									0	0	8			2				1	11	12.8
07:15									0	0	10		3	3				2	18	21.8
07:30									0	0	9	1	1	3					14	18.4
07:45									0	0	30	8	3	2				1	44	47.3
H/Total	0	0	0	0	0	0	0	0	0	0	57	9	7	10	0	0	0	4	87	100.3
08:00									0	0	6	2		1			1		10	10.7
08:15									0	0	19	3	4	5		1			32	41.5
08:30									0	0	9	1	3	1					14	16.8
08:45									0	0	11	4	2	1					18	20.3
H/Total	0	0	0	0	0	0	0	0	0	0	45	10	9	8	0	1	1	0	74	89.3
09:00									0	0	18	6	1	2					27	30.1
09:15									0	0	9	3	3	1					16	18.8
09:30									0	0	6		3	4					13	19.7
09:45									0	0	4	3	1	4					12	17.7
H/Total	0	0	0	0	0	0	0	0	0	0	37	12	8	11	0	0	0	0	68	86.3
Total	0	0	0	0	0	0	0	0	0	0	139	31	24	29	0	1	1	4	229	275.9

Time	A - A										A - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	17	4	3	4				1	29	34.9
16:15									0	0	7	3	6	9	1				26	41.7
16:30		1							1	1	13	4	4	8					29	41.4
16:45									0	0	10	2	11	3					26	35.4
H/Total	0	1	0	0	0	0	0	0	1	1	47	13	24	24	1	0	0	1	110	153.4
17:00									0	0	9	3	6	7				1	26	37.3
17:15									0	0	12	2	8	7	1		1		31	44.5
17:30									0	0	13	2	4	5				1	25	32.7
17:45									0	0	9	2	5	5			1		22	30.4
H/Total	0	0	0	0	0	0	0	0	0	0	43	9	23	24	1	0	2	2	104	144.9
18:00									0	0	5	2	4	4					15	22.2
18:15									0	0	4		4	3					11	16.9
18:30									0	0	6		1	1					8	9.8
18:45									0	0	2		3	2					7	11.1
H/Total	0	0	0	0	0	0	0	0	0	0	17	2	12	10	0	0	0	0	41	60
Total	0	1	0	0	0	0	0	0	1	1	107	24	59	58	2	0	2	3	255	358.3

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane
Date: 07 June 2018, Thursday

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0	24	2	1	4		1			32	38.7
07:15									0	0	27	5	2	10					44	58
07:30									0	0	42	3	3	14					62	81.7
07:45		1							1	1	40	10	4	10		2			66	83
H/Total	0	1	0	0	0	0	0	0	1	1	133	20	10	38	0	3	0	0	204	261.4
08:00									0	0	38	6	3	16					63	85.3
08:15									0	0	33	8	2	6					49	57.8
08:30									0	0	36	4	5	12			1		58	75.5
08:45									0	0	30	9	4	10			1		54	68.4
H/Total	0	0	0	0	0	0	0	0	0	0	137	27	14	44	0	0	2	0	224	287
09:00									0	0	31	6	4	15					56	77.5
09:15									0	0	26	7	5	8					46	58.9
09:30									0	0	29	7	1	10					47	60.5
09:45									0	0	29	7	2	8					46	57.4
H/Total	0	0	0	0	0	0	0	0	0	0	115	27	12	41	0	0	0	0	195	254.3
Total	0	1	0	0	0	0	0	0	1	1	385	74	36	123	0	3	2	0	623	802.7

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	186	38	2	6		1	2		235	243.6
16:15									0	0	85	17	2	4			2		110	115
16:30									0	0	176	22		9		1	6		214	223.1
16:45									0	0	127	22	1	5		1		1	157	164.2
H/Total	0	0	0	0	0	0	0	0	0	0	574	99	5	24	0	3	10	1	716	745.9
17:00									0	0	201	13	2	4			4		224	227.8
17:15									0	0	121	5	2	7			2		137	145.9
17:30									0	0	112	13	2	10					137	151
17:45									0	0	75	12	2	6			1		96	104.2
H/Total	0	0	0	0	0	0	0	0	0	0	509	43	8	27	0	0	7	0	594	628.9
18:00									0	0	82	14		4		2	1		103	109.6
18:15									0	0	66	7	2	4		2	1		82	89.6
18:30									0	0	54	5		3					62	65.9
18:45									0	0	53	6		3			1		63	66.3
H/Total	0	0	0	0	0	0	0	0	0	0	255	32	2	14	0	4	3	0	310	331.4
Total	0	0	0	0	0	0	0	0	0	0	1338	174	15	65	0	7	20	1	1620	1706.2

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane
Date: 07 June 2018, Thursday

Time	B - A										B - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	6	2	8	2					18	24.6									0	0
07:15	2		3	1					6	8.8									0	0
07:30	7	2	2	1					12	14.3									0	0
07:45	10	3	2	2					17	20.6									0	0
H/Total	25	7	15	6	0	0	0	0	53	68.3	0	0	0	0	0	0	0	0	0	0
08:00	8	4	6	1			1		20	23.7									0	0
08:15	7	2	2	1		1			13	16.3									0	0
08:30	8	4	3	2					17	21.1									0	0
08:45	6		4	5					15	23.5									0	0
H/Total	29	10	15	9	0	1	1	0	65	84.6	0	0	0	0	0	0	0	0	0	0
09:00	3	5	2	2					12	15.6									0	0
09:15	9	2		1					12	13.3									0	0
09:30	4	5	1	7					17	26.6									0	0
09:45	4	3	2	2					11	14.6									0	0
H/Total	20	15	5	12	0	0	0	0	52	70.1	0	0	0	0	0	0	0	0	0	0
Total	74	32	35	27	0	1	1	0	170	223	0	0	0	0	0	0	0	0	0	0

Time	B - A										B - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	11	7	2	3				1	24	28.1									0	0
16:15	14	10	3	3					30	35.4									0	0
16:30	16	8	1	5				3	33	37.6									0	0
16:45	9	2	2	2					15	18.6									0	0
H/Total	50	27	8	13	0	0	0	4	102	119.7	0	0	0	0	0	0	0	0	0	0
17:00	19	1	2	1					23	25.3									0	0
17:15	13	3	2	7				1	26	35.3									0	0
17:30	10	2	2	3				1	18	22.1									0	0
17:45	12	2	1	3				1	19	22.6									0	0
H/Total	54	8	7	14	0	0	0	3	86	105.3	0	0	0	0	0	0	0	0	0	0
18:00	17	6	1				1		25	24.9									0	0
18:15	12		1	2				1	16	18.3									0	0
18:30	9	1	3	1					14	16.8									0	0
18:45	6	1	1	1					9	10.8									0	0
H/Total	44	8	6	4	0	0	1	1	64	70.8	0	0	0	0	0	0	0	0	0	0
Total	148	43	21	31	0	0	1	8	252	295.8	0	0	0	0	0	0	0	0	0	0

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane
Date: 07 June 2018, Thursday

Time	B - C										B - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0	19	7	2	12					40	56.6
07:15									0	0	10	8	5	7					30	41.6
07:30									0	0	12	4	3	8					27	38.9
07:45									0	0	16	7	7	7					37	49.6
H/Total	0	0	0	0	0	0	0	0	0	0	57	26	17	34	0	0	0	0	134	186.7
08:00									0	0	19	9	6	9					43	57.7
08:15									0	0	10	11	7	8					36	49.9
08:30									0	0	12	9	8	10					39	56
08:45									0	0	15	9	5	15					44	66
H/Total	0	0	0	0	0	0	0	0	0	0	56	38	26	42	0	0	0	0	162	229.6
09:00									0	0	16	8	7	8					39	52.9
09:15									0	0	7	8	5	9					29	43.2
09:30	2								2	2	14	11	5	5					35	44
09:45									0	0	6	14	4	5					29	37.5
H/Total	2	0	0	0	0	0	0	0	2	2	43	41	21	27	0	0	0	0	132	177.6
Total	2	0	0	0	0	0	0	0	2	2	156	105	64	103	0	0	0	0	428	593.9

Time	B - C										B - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	98	20	2	13		1	1		135	153.3
16:15									0	0	81	19	6	5	1		1		113	122.9
16:30									0	0	107	14	4	9			3		137	148.9
16:45									0	0	88	12	2	7			1		110	119.5
H/Total	0	0	0	0	0	0	0	0	0	0	374	65	14	34	1	1	6	0	495	544.6
17:00									0	0	103	7		8			2		120	129.2
17:15									0	0	56	8	3	9					76	89.2
17:30									0	0	50	18	5	8			1		82	94.3
17:45									0	0	91	6	2	5			2		106	112.3
H/Total	0	0	0	0	0	0	0	0	0	0	300	39	10	30	0	0	5	0	384	425
18:00									0	0	80	10	1				2		93	92.3
18:15									0	0	30	3		5			1		39	44.9
18:30									0	0	47	2	1	5					55	62
18:45									0	0	33	1	1	4		1			40	46.7
H/Total	0	0	0	0	0	0	0	0	0	0	190	16	3	14	0	1	3	0	227	245.9
Total	0	0	0	0	0	0	0	0	0	0	864	120	27	78	1	2	14	0	1106	1215.5

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane
Date: 07 June 2018, Thursday

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0									0	0
07:15									0	0									0	0
07:30									0	0									0	0
07:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00									0	0									0	0
08:15									0	0									0	0
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00									0	0									0	0
09:15									0	0									0	0
09:30									0	0									0	0
09:45	1								1	1	1								1	1
H/Total	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	1
Total	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	1

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0									0	0
16:15									0	0									0	0
16:30									0	0									0	0
16:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00									0	0									0	0
17:15		1							1	1									0	0
17:30									0	0									0	0
17:45									0	0									0	0
H/Total	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
18:00									0	0									0	0
18:15									0	0									0	0
18:30									0	0									0	0
18:45	1								1	1									0	0
H/Total	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Total	1	1	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane
Date: 07 June 2018, Thursday

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0									0	0
07:15									0	0									0	0
07:30									0	0									0	0
07:45									0	0		1							1	1
H/Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
08:00									0	0									0	0
08:15									0	0									0	0
08:30									0	0									0	0
08:45									0	0	1								1	1
H/Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
09:00									0	0									0	0
09:15									0	0									0	0
09:30									0	0									0	0
09:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	2

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0									0	0
16:15									0	0									0	0
16:30									0	0	1								1	1
16:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
17:00									0	0	1								1	1
17:15									0	0									0	0
17:30									0	0									0	0
17:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
18:00									0	0									0	0
18:15									0	0									0	0
18:30									0	0		1							1	1
18:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3	3

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane
Date: 07 June 2018, Thursday

Time	D - A										D - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	124	25		5	1	1	1		157	164.9	80	25	3	7			3		118	126.8
07:15	158	31	3	8				1	201	212.1	90	14	3	13	1		1		122	140.8
07:30	153	24	3	3			3		186	189.6	122	19	1	13		1	1		157	174.8
07:45	132	20	2	8			1		163	173.8	116	23	4	8	1		2		154	166.2
H/Total	567	100	8	24	1	1	5	1	707	740.4	408	81	11	41	2	1	7	0	551	608.6
08:00	77	20	6	12		1	1	1	118	136.2	67	18	4	10	1		1		101	116.4
08:15	77	23	3	6		1	1		111	120.7	96	23	6	7					132	144.1
08:30	70	15	2	9					96	108.7	62	7	2	7			1		79	88.5
08:45	79	14	2	6		3			104	115.8	48	11	5	9		1			74	89.2
H/Total	303	72	13	33	0	5	2	1	429	481.4	273	59	17	33	1	1	2	0	386	438.2
09:00	44	8	2	15	1	1			71	93.5	32	11	4	11					58	74.3
09:15	33	8	6	8					55	68.4	32	11	3	8					54	65.9
09:30	38	10	1	6					55	63.3	16	14	10	9					49	65.7
09:45	33	11	4	7					55	66.1	19	4	8	9					40	55.7
H/Total	148	37	13	36	1	1	0	0	236	291.3	99	40	25	37	0	0	0	0	201	261.6
Total	1018	209	34	93	2	7	7	2	1372	1513.1	780	180	53	111	3	2	9	0	1138	1308.4

Time	D - A										D - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	37	9	2	5					53	60.5	24	12	2	17					55	78.1
16:15	31	7	2	7		1			48	59.1	22	6	6	8	1				43	57.4
16:30	39	7	1	8		1	2	1	59	68.9	14	7	2	9					32	44.7
16:45	40	9		9		1	2		61	72.5	9	4	2	11					26	41.3
H/Total	147	32	5	29	0	3	4	1	221	261	69	29	12	45	1	0	0	0	156	221.5
17:00	55	7	3	9			2	1	77	88.2	19	6	5	9					39	53.2
17:15	69	3	1	4			1		78	83.1	17	4	6	12					39	57.6
17:30	60	7	1	5		1	2		76	82.8	21	1	5	12					39	57.1
17:45	50	4	2	4		1	2		63	69	16	1	2	6					25	33.8
H/Total	234	21	7	22	0	2	7	1	294	323.1	73	12	18	39	0	0	0	0	142	201.7
18:00	42	3	1	6		1	4		57	63.9	25	4		8			2		39	48.2
18:15	64	4	3	2					73	77.1	22	4	1	10			2		39	51.3
18:30	52	3		1					56	57.3	18	2	3	2		1	1		27	31.5
18:45	25		1	2					28	31.1	9	3		5					17	23.5
H/Total	183	10	5	11	0	1	4	0	214	229.4	74	13	4	25	0	1	5	0	122	154.5
Total	564	63	17	62	0	6	15	2	729	813.5	216	54	34	109	1	1	5	0	420	577.7

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane
Date: 07 June 2018, Thursday

Time	D - C										D - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0	1								1	1
07:15									0	0									0	0
07:30									0	0	1								1	1
07:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2
08:00									0	0									0	0
08:15									0	0									0	0
08:30									0	0									0	0
08:45									0	0	1								1	1
H/Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
09:00									0	0									0	0
09:15									0	0									0	0
09:30									0	0									0	0
09:45									0	0		1							1	1
H/Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	4	4

Time	D - C										D - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0									0	0
16:15									0	0									0	0
16:30									0	0									0	0
16:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00									0	0									0	0
17:15									0	0									0	0
17:30									0	0									0	0
17:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00									0	0									0	0
18:15									0	0									0	0
18:30									0	0									0	0
18:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane
Date: 07 June 2018, Thursday

Time	From A										To A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	32	2	1	6	0	1	0	1	43	51.5	130	27	8	7	1	1	1	0	175	189.5
07:15	37	5	5	13	0	0	0	2	62	79.8	160	31	6	9	0	0	0	1	207	220.9
07:30	51	4	4	17	0	0	0	0	76	100.1	160	26	5	4	0	0	3	0	198	203.9
07:45	70	19	7	12	0	2	0	1	111	131.3	142	23	4	10	0	0	1	0	180	194.4
H/Total	190	30	17	48	0	3	0	4	292	362.7	592	107	23	30	1	1	5	1	760	808.7
08:00	44	8	3	17	0	0	1	0	73	96	85	24	12	13	0	1	2	1	138	159.9
08:15	52	11	6	11	0	1	0	0	81	99.3	84	25	5	7	0	2	1	0	124	137
08:30	45	5	8	13	0	0	1	0	72	92.3	78	19	5	11	0	0	0	0	113	129.8
08:45	41	13	6	11	0	0	1	0	72	88.7	85	14	6	11	0	3	0	0	119	139.3
H/Total	182	37	23	52	0	1	3	0	298	376.3	332	82	28	42	0	6	3	1	494	566
09:00	49	12	5	17	0	0	0	0	83	107.6	47	13	4	17	1	1	0	0	83	109.1
09:15	35	10	8	9	0	0	0	0	62	77.7	42	10	6	9	0	0	0	0	67	81.7
09:30	35	7	4	14	0	0	0	0	60	80.2	42	15	2	13	0	0	0	0	72	89.9
09:45	33	10	3	12	0	0	0	0	58	75.1	38	14	6	9	0	0	0	0	67	81.7
H/Total	152	39	20	52	0	0	0	0	263	340.6	169	52	18	48	1	1	0	0	289	362.4
Total	524	106	60	152	0	4	3	4	853	1079.6	1093	241	69	120	2	8	8	2	1543	1737.1

Time	From A										To A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	203	42	5	10	0	1	2	1	264	278.5	48	16	4	8	0	0	0	1	77	88.6
16:15	92	20	8	13	1	0	2	0	136	156.7	45	17	5	10	0	1	0	0	78	94.5
16:30	189	27	4	17	0	1	6	0	244	265.5	55	16	2	13	0	1	2	4	93	107.5
16:45	137	24	12	8	0	1	0	1	183	199.6	49	11	2	11	0	1	2	0	76	91.1
H/Total	621	113	29	48	1	3	10	2	827	900.3	197	60	13	42	0	3	4	5	324	381.7
17:00	210	16	8	11	0	0	4	1	250	265.1	74	8	5	10	0	0	2	1	100	113.5
17:15	133	7	10	14	1	0	3	0	168	190.4	82	7	3	11	0	0	1	1	105	119.4
17:30	125	15	6	15	0	0	0	1	162	183.7	70	9	3	8	0	1	2	1	94	104.9
17:45	84	14	7	11	0	0	2	0	118	134.6	62	6	3	7	0	1	2	1	82	91.6
H/Total	552	52	31	51	1	0	9	2	698	773.8	288	30	14	36	0	2	7	4	381	429.4
18:00	87	16	4	8	0	2	1	0	118	131.8	59	9	2	6	0	1	5	0	82	88.8
18:15	70	7	6	7	0	2	1	0	93	106.5	76	4	4	4	0	0	0	1	89	95.4
18:30	60	5	1	4	0	0	0	0	70	75.7	61	4	3	2	0	0	0	0	70	74.1
18:45	55	6	3	5	0	0	1	0	70	77.4	32	1	2	3	0	0	0	0	38	42.9
H/Total	272	34	14	24	0	4	3	0	351	391.4	228	18	11	15	0	1	5	1	279	301.2
Total	1445	199	74	123	2	7	22	4	1876	2065.5	713	108	38	93	0	6	16	10	984	1112.3

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane
Date: 07 June 2018, Thursday

Time	From B										To B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	25	9	10	14	0	0	0	0	58	81.2	88	25	3	9	0	0	3	1	129	139.6
07:15	12	8	8	8	0	0	0	0	36	50.4	100	14	6	16	1	0	1	2	140	162.6
07:30	19	6	5	9	0	0	0	0	39	53.2	131	20	2	16	0	1	1	0	171	193.2
07:45	26	10	9	9	0	0	0	0	54	70.2	146	31	7	10	1	0	2	1	198	213.5
H/Total	82	33	32	40	0	0	0	0	187	255	465	90	18	51	2	1	7	4	638	708.9
08:00	27	13	12	10	0	0	1	0	63	81.4	73	20	4	11	1	0	2	0	111	127.1
08:15	17	13	9	9	0	1	0	0	49	66.2	115	26	10	12	0	1	0	0	164	185.6
08:30	20	13	11	12	0	0	0	0	56	77.1	71	8	5	8	0	0	1	0	93	105.3
08:45	21	9	9	20	0	0	0	0	59	89.5	59	15	7	10	0	1	0	0	92	109.5
H/Total	85	48	41	51	0	1	1	0	227	314.2	318	69	26	41	1	2	3	0	460	527.5
09:00	19	13	9	10	0	0	0	0	51	68.5	50	17	5	13	0	0	0	0	85	104.4
09:15	16	10	5	10	0	0	0	0	41	56.5	41	14	6	9	0	0	0	0	70	84.7
09:30	20	16	6	12	0	0	0	0	54	72.6	22	14	13	13	0	0	0	0	62	85.4
09:45	10	17	6	7	0	0	0	0	40	52.1	24	7	9	13	0	0	0	0	53	74.4
H/Total	65	56	26	39	0	0	0	0	186	249.7	137	52	33	48	0	0	0	0	270	348.9
Total	232	137	99	130	0	1	1	0	600	818.9	920	211	77	140	3	3	10	4	1368	1585.3

Time	From B										To B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	109	27	4	16	0	1	1	1	159	181.4	41	16	5	21	0	0	0	1	84	113
16:15	95	29	9	8	1	0	1	0	143	158.3	29	9	12	17	2	0	0	0	69	99.1
16:30	123	22	5	14	0	0	3	3	170	186.5	27	11	6	17	0	0	0	0	61	86.1
16:45	97	14	4	9	0	0	1	0	125	138.1	19	6	13	14	0	0	0	0	52	76.7
H/Total	424	92	22	47	1	1	6	4	597	664.3	116	42	36	69	2	0	0	1	266	374.9
17:00	122	8	2	9	0	0	2	0	143	154.5	28	9	11	16	0	0	0	1	65	90.5
17:15	69	11	5	16	0	0	0	1	102	124.5	29	6	14	19	1	0	1	0	70	102.1
17:30	60	20	7	11	0	0	1	1	100	116.4	34	3	9	17	0	0	0	1	64	89.8
17:45	103	8	3	8	0	0	2	1	125	134.9	25	3	7	11	0	0	1	0	47	64.2
H/Total	354	47	17	44	0	0	5	3	470	530.3	116	21	41	63	1	0	2	2	246	346.6
18:00	97	16	2	0	0	0	3	0	118	117.2	30	6	4	12	0	0	2	0	54	70.4
18:15	42	3	1	7	0	0	1	1	55	63.2	26	4	5	13	0	0	2	0	50	68.2
18:30	56	3	4	6	0	0	0	0	69	78.8	24	2	4	3	0	1	1	0	35	41.3
18:45	39	2	2	5	0	1	0	0	49	57.5	11	3	3	7	0	0	0	0	24	34.6
H/Total	234	24	9	18	0	1	4	1	291	316.7	91	15	16	35	0	1	5	0	163	214.5
Total	1012	163	48	109	1	2	15	8	1358	1511.3	323	78	93	167	3	1	7	3	675	936

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane
Date: 07 June 2018, Thursday

Time	From C										To C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	1
H/Total	0	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	1
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
H/Total	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2
09:45	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
H/Total	2	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0	0	2	2
Total	3	1	0	0	0	0	0	0	4	4	2	1	0	0	0	0	0	0	3	3

Time	From C										To C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/Total	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
17:00	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
17:15	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/Total	1	1	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
18:45	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
H/Total	1	1	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
Total	3	2	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0

Project Number: TSP13850
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 3
Location: A1173 / Kiln Lane
Date: 07 June 2018, Thursday

Time	From D										To D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	205	50	3	12	1	1	4	0	276	292.7	44	9	3	16	0	1	0	0	73	96.3
07:15	248	45	6	21	1	0	1	1	323	352.9	37	13	7	17	0	0	0	0	74	99.6
07:30	276	43	4	16	0	1	4	0	344	365.4	55	7	6	22	0	0	0	0	90	121.6
07:45	248	43	6	16	1	0	3	0	317	340	56	18	11	17	0	2	0	0	104	133.6
H/Total	977	181	19	65	3	2	12	1	1260	1351	192	47	27	72	0	3	0	0	341	451.1
08:00	144	38	10	22	1	1	2	1	219	252.6	57	15	9	25	0	0	0	0	106	143
08:15	173	46	9	13	0	1	1	0	243	264.8	43	19	9	14	0	0	0	0	85	107.7
08:30	132	22	4	16	0	0	1	0	175	197.2	48	13	13	22	0	0	1	0	97	131.5
08:45	128	25	7	15	0	4	0	0	179	206	47	18	9	25	0	0	1	0	100	136.4
H/Total	577	131	30	66	1	6	4	1	816	920.6	195	65	40	86	0	0	2	0	388	518.6
09:00	76	19	6	26	1	1	0	0	129	167.8	47	14	11	23	0	0	0	0	95	130.4
09:15	65	19	9	16	0	0	0	0	109	134.3	33	15	10	17	0	0	0	0	75	102.1
09:30	54	24	11	15	0	0	0	0	104	129	43	18	6	15	0	0	0	0	82	104.5
09:45	52	16	12	16	0	0	0	0	96	122.8	35	22	6	13	0	0	0	0	76	95.9
H/Total	247	78	38	73	1	1	0	0	438	553.9	158	69	33	68	0	0	0	0	328	432.9
Total	1801	390	87	204	5	9	16	2	2514	2825.5	545	181	100	226	0	3	2	0	1057	1402.6

Time	From D										To D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	61	21	4	22	0	0	0	0	108	138.6	284	58	4	19	0	2	3	0	370	396.9
16:15	53	13	8	15	1	1	0	0	91	116.5	166	36	8	9	1	0	3	0	223	237.9
16:30	53	14	3	17	0	1	2	1	91	113.6	284	36	4	18	0	1	9	0	352	373
16:45	49	13	2	20	0	1	2	0	87	113.8	215	34	3	12	0	1	1	1	267	283.7
H/Total	216	61	17	74	1	3	4	1	377	482.5	949	164	19	58	1	4	16	1	1212	1291.5
17:00	74	13	8	18	0	0	2	1	116	141.4	305	20	2	12	0	0	6	0	345	358
17:15	86	7	7	16	0	0	1	0	117	140.7	177	13	5	16	0	0	2	0	213	235.1
17:30	81	8	6	17	0	1	2	0	115	139.9	162	31	7	18	0	0	1	0	219	245.3
17:45	66	5	4	10	0	1	2	0	88	102.8	166	18	4	11	0	0	3	0	202	216.5
H/Total	307	33	25	61	0	2	7	1	436	524.8	810	82	18	57	0	0	12	0	979	1054.9
18:00	67	7	1	14	0	1	6	0	96	112.1	162	24	1	4	0	2	3	0	196	201.9
18:15	86	8	4	12	0	0	2	0	112	128.4	96	10	2	9	0	2	2	0	121	134.5
18:30	70	5	3	3	0	1	1	0	83	88.8	101	8	1	8	0	0	0	0	118	128.9
18:45	34	3	1	7	0	0	0	0	45	54.6	86	7	1	7	0	1	1	0	103	113
H/Total	257	23	9	36	0	2	9	0	336	383.9	445	49	5	28	0	5	6	0	538	578.3
Total	780	117	51	171	1	7	20	2	1149	1391.2	2204	295	42	143	1	9	34	1	2729	2924.7

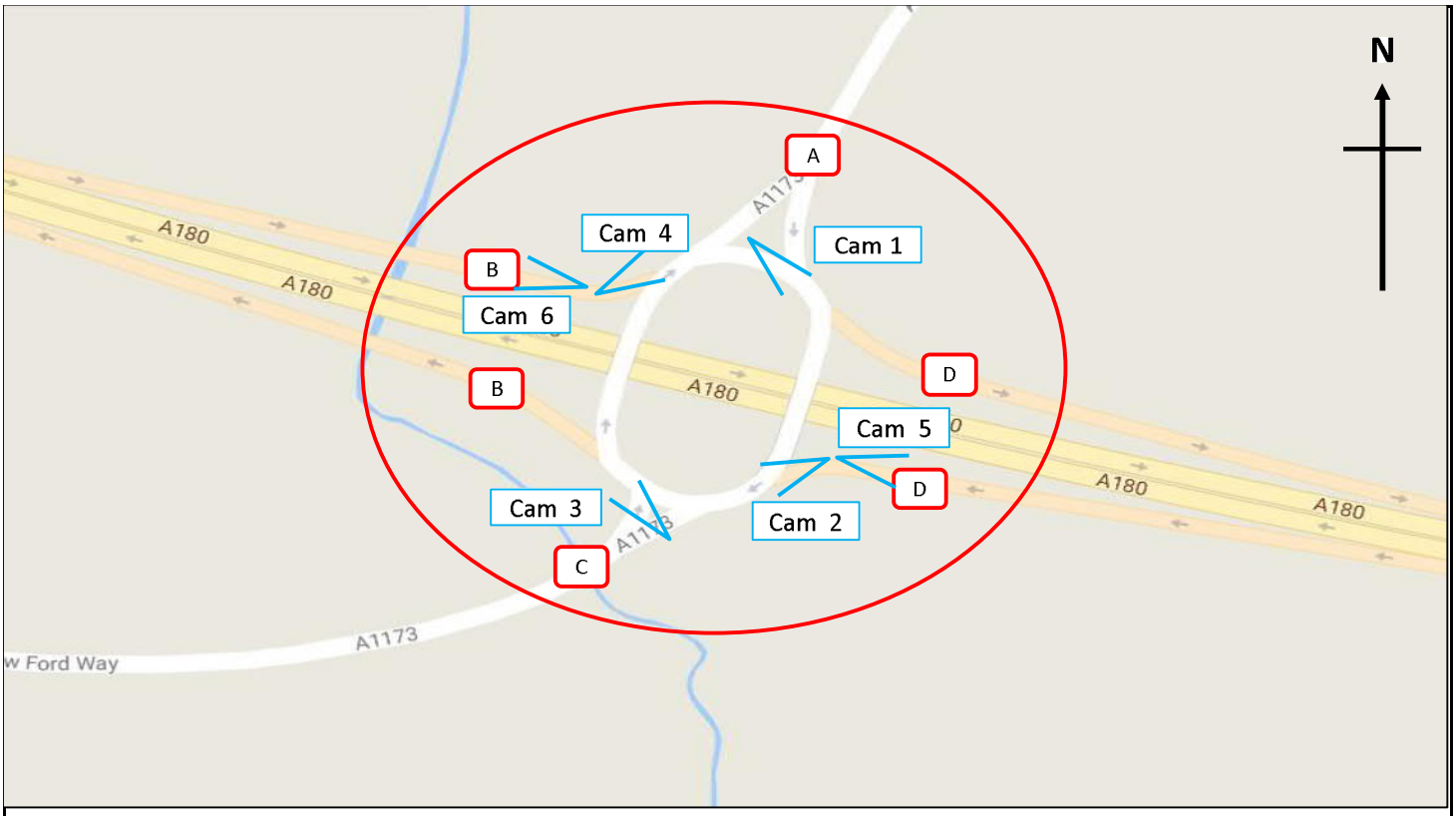
Project Number: **TSP13850**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **3**
Location: **A1173 / Kiln Lane**
Date: **07 June 2018, Thursday**

Time	Whole Junction									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	262	61	14	32	1	2	4	1	377	425.4
07:15	297	58	19	42	1	0	1	3	421	483.1
07:30	346	53	13	42	0	1	4	0	459	518.7
07:45	344	73	22	37	1	2	3	1	483	542.5
H/Total	1249	245	68	153	3	5	12	5	1740	1969.7
08:00	215	59	25	49	1	1	4	1	355	430
08:15	242	70	24	33	0	3	1	0	373	430.3
08:30	197	40	23	41	0	0	2	0	303	366.6
08:45	191	47	22	46	0	4	1	0	311	385.2
H/Total	845	216	94	169	1	8	8	1	1342	1612.1
09:00	144	44	20	53	1	1	0	0	263	343.9
09:15	116	39	22	35	0	0	0	0	212	268.5
09:30	109	47	21	41	0	0	0	0	218	281.8
09:45	97	43	21	35	0	0	0	0	196	252
H/Total	466	173	84	164	1	1	0	0	889	1146.2
Total	2560	634	246	486	5	14	20	6	3971	4728

Peak Hours		Totals
07:00	08:00	1740
07:15	08:15	1718
07:30	08:30	1670
07:45	08:45	1514
08:00	09:00	1342
08:15	09:15	1250
08:30	09:30	1089
08:45	09:45	1004
09:00	10:00	889

Time	Whole Junction									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	373	90	13	48	0	2	3	2	531	598.5
16:15	240	62	25	36	3	1	3	0	370	431.5
16:30	366	63	12	48	0	2	11	4	506	566.6
16:45	283	51	18	37	0	2	3	1	395	451.5
H/Total	1262	266	68	169	3	7	20	7	1802	2048.1
17:00	407	37	18	38	0	0	8	2	510	562
17:15	288	26	22	46	1	0	4	1	388	456.6
17:30	266	43	19	43	0	1	3	2	377	440
17:45	253	27	14	29	0	1	6	1	331	372.3
H/Total	1214	133	73	156	1	2	21	6	1606	1830.9
18:00	251	39	7	22	0	3	10	0	332	361.1
18:15	198	18	11	26	0	2	4	1	260	298.1
18:30	186	14	8	13	0	1	1	0	223	244.3
18:45	129	11	6	17	0	1	1	0	165	190.5
H/Total	764	82	32	78	0	7	16	1	980	1094
Total	3240	481	173	403	4	16	57	14	4388	4973

Peak Hours		Totals
16:00	17:00	1802
16:15	17:15	1781
16:30	17:30	1799
16:45	17:45	1670
17:00	18:00	1606
17:15	18:15	1428
17:30	18:30	1300
17:45	18:45	1146
18:00	19:00	980



NDC	**Site / Location:**	Site 5, A180 / A1173 / Matthew Ford Way	**Project No:**	7614	**Drawing No:**	7614-05	**Drawn By:**	EA
	Survey Date:	Wednesday 5th July 2017	**Project Name:**	Stallingborough				
	Survey Times:	07:00 to 10:00 & 16:00 to 19:00	**Drawing Title:**	Site Layout and Observed Movements				

SITE: 5 DATE: 05/07/2017

LOCATION: A180 / A1173 / Matthew Ford Way DAY: Wednesday

	A to D								A to C							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	33	5	1	6	0	1	0	46	4	1	4	0	0	0	0	9
07:15	29	2	1	2	0	0	0	34	1	0	1	3	0	0	0	5
07:30	32	6	4	1	0	0	0	43	1	0	1	2	0	0	0	4
07:45	48	3	4	4	1	0	0	60	5	1	0	3	0	0	0	9
H/TOT	142	16	10	13	1	1	0	183	11	2	6	8	0	0	0	27
08:00	48	7	8	11	0	0	0	74	4	2	2	4	0	0	0	12
08:15	46	11	6	6	0	0	0	69	1	0	0	1	0	0	0	2
08:30	34	10	5	6	0	0	0	55	3	3	4	4	0	0	0	14
08:45	42	14	3	5	0	0	0	64	2	0	1	5	0	0	0	8
H/TOT	170	42	22	28	0	0	0	262	10	5	7	14	0	0	0	36
09:00	41	18	4	6	2	0	0	71	2	0	0	1	0	0	0	3
09:15	24	9	10	2	0	0	0	45	2	2	0	2	0	0	0	6
09:30	32	18	7	3	0	0	0	60	4	0	1	3	0	0	0	8
09:45	35	15	12	5	0	0	0	67	0	0	0	1	0	0	0	1
H/TOT	132	60	33	16	2	0	0	243	8	2	1	7	0	0	0	18
P/TOT	444	118	65	57	3	1	0	688	29	9	14	29	0	0	0	81

	A to D								A to C							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	206	27	11	5	1	2	0	252	19	2	0	1	0	0	0	22
16:15	136	40	4	3	2	0	1	186	21	2	0	3	0	0	0	26
16:30	239	25	7	3	0	6	0	280	22	3	0	2	0	0	0	27
16:45	179	27	4	1	0	4	0	215	27	3	0	4	0	0	0	34
H/TOT	760	119	26	12	3	12	1	933	89	10	0	10	0	0	0	109
17:00	215	25	3	6	0	1	0	250	36	3	3	3	0	1	1	47
17:15	122	7	1	5	0	2	0	137	30	2	1	1	0	0	0	34
17:30	136	19	2	3	0	2	0	162	23	6	1	4	0	0	0	34
17:45	100	16	6	2	0	2	0	126	14	2	0	1	0	0	0	17
H/TOT	573	67	12	16	0	7	0	675	103	13	5	9	0	1	1	132
18:00	141	18	1	2	2	0	0	164	13	4	1	1	0	0	0	19
18:15	70	8	5	3	0	1	0	87	10	0	0	0	0	0	0	10
18:30	84	10	0	1	0	1	0	96	4	1	0	2	0	0	0	7
18:45	69	7	1	2	0	1	0	80	1	1	0	0	0	1	0	3
H/TOT	364	43	7	8	2	3	0	427	28	6	1	3	0	1	0	39
P/TOT	1697	229	45	36	5	22	1	2035	220	29	6	22	0	2	1	280

SITE: 5 DATE: 05/07/2017

LOCATION: A180 / A1173 / Matthew Ford Way DAY: Wednesday

	A to B								A to A							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	2	2	3	13	0	0	0	20	0	0	0	0	0	0	0	0
07:15	11	0	3	11	0	0	0	25	0	0	0	0	0	0	0	0
07:30	2	1	3	17	0	0	0	23	0	0	0	0	0	0	0	0
07:45	5	1	5	15	0	0	0	26	0	0	0	0	0	0	0	0
H/TOT	20	4	14	56	0	0	0	94	0	0	0	0	0	0	0	0
08:00	3	2	0	15	0	0	0	20	0	0	0	0	0	0	0	0
08:15	6	2	3	12	0	0	0	23	1	0	0	0	0	0	0	1
08:30	13	1	2	11	0	0	0	27	0	0	1	0	0	0	0	1
08:45	3	9	4	16	0	0	0	32	1	0	0	0	0	0	0	1
H/TOT	25	14	9	54	0	0	0	102	2	0	1	0	0	0	0	3
09:00	5	2	1	15	0	0	0	23	0	0	0	0	0	0	0	0
09:15	4	3	2	17	0	0	0	26	0	0	0	0	0	0	0	0
09:30	4	3	0	13	0	0	0	20	0	0	0	0	0	0	0	0
09:45	3	3	5	20	0	0	0	31	0	0	0	0	0	0	0	0
H/TOT	16	11	8	65	0	0	0	100	0	0	0	0	0	0	0	0
P/TOT	61	29	31	175	0	0	0	296	2	0	1	0	0	0	0	3

	A to B								A to A							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	34	11	2	17	0	0	0	64	0	0	0	0	0	0	0	0
16:15	27	11	3	9	0	2	0	52	0	0	0	0	0	0	0	0
16:30	50	6	0	8	0	0	0	64	0	0	0	0	0	0	0	0
16:45	33	5	3	9	0	0	0	50	0	0	0	0	0	0	0	0
H/TOT	144	33	8	43	0	2	0	230	0	0	0	0	0	0	0	0
17:00	25	5	2	5	0	0	0	37	0	0	0	0	0	0	0	0
17:15	30	5	2	11	0	1	0	49	0	0	0	0	0	0	0	0
17:30	23	5	1	11	0	0	0	40	0	0	0	0	0	0	0	0
17:45	34	2	0	5	1	2	0	44	0	0	0	0	0	0	0	0
H/TOT	112	17	5	32	1	3	0	170	0	0	0	0	0	0	0	0
18:00	25	2	1	3	0	0	0	31	0	0	0	0	0	0	0	0
18:15	13	0	0	7	0	0	0	20	0	0	0	0	0	0	0	0
18:30	6	1	2	5	0	0	0	14	0	0	0	0	0	0	0	0
18:45	3	2	0	11	0	0	0	16	0	0	0	0	0	0	0	0
H/TOT	47	5	3	26	0	0	0	81	0	0	0	0	0	0	0	0
P/TOT	303	55	16	101	1	5	0	481	0	0	0	0	0	0	0	0

SITE: 5 DATE: 05/07/2017

LOCATION: A180 / A1173 / Matthew Ford Way DAY: Wednesday

	B to A								B to D							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	31	7	2	11	0	0	0	51	0	0	0	0	0	0	0	0
07:15	38	12	2	15	0	1	0	68	0	0	0	0	0	0	0	0
07:30	39	12	1	14	0	0	0	66	1	0	0	0	0	0	0	1
07:45	50	10	1	13	0	0	0	74	0	0	0	0	0	0	0	0
H/TOT	158	41	6	53	0	1	0	259	1	0	0	0	0	0	0	1
08:00	28	8	3	9	0	0	0	48	1	0	0	0	0	0	0	1
08:15	27	7	2	6	0	1	0	43	0	0	0	0	0	0	0	0
08:30	28	7	1	11	0	0	0	47	0	0	0	0	0	0	0	0
08:45	26	2	2	15	0	0	0	45	0	0	0	0	0	0	0	0
H/TOT	109	24	8	41	0	1	0	183	1	0	0	0	0	0	0	1
09:00	13	8	2	13	1	0	0	37	0	0	0	0	0	0	0	0
09:15	11	7	3	17	2	0	0	40	0	0	0	0	0	0	0	0
09:30	8	4	1	14	0	0	0	27	0	0	0	0	0	0	0	0
09:45	10	12	2	27	0	0	0	51	0	0	0	0	0	0	0	0
H/TOT	42	31	8	71	3	0	0	155	0	0	0	0	0	0	0	0
P/TOT	309	96	22	165	3	2	0	597	2	0	0	0	0	0	0	2

	B to A								B to D							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	3	3	2	12	0	0	0	20	0	0	0	0	0	0	0	0
16:15	1	0	1	22	0	0	0	24	0	0	0	0	0	0	0	0
16:30	8	0	2	9	0	0	0	19	0	0	0	0	0	0	0	0
16:45	5	2	0	11	0	0	0	18	0	0	0	0	0	0	0	0
H/TOT	17	5	5	54	0	0	0	81	0	0	0	0	0	0	0	0
17:00	6	2	2	9	0	0	0	19	1	0	0	0	0	0	0	1
17:15	10	1	1	12	0	0	0	24	1	0	0	0	0	0	0	1
17:30	10	0	3	3	0	0	0	16	0	0	0	0	0	0	0	0
17:45	7	0	1	6	0	0	0	14	0	0	0	1	0	0	0	1
H/TOT	33	3	7	30	0	0	0	73	2	0	0	1	0	0	0	3
18:00	7	0	0	13	0	0	0	20	0	0	0	0	0	0	0	0
18:15	8	2	0	7	0	0	0	17	0	0	0	0	0	0	0	0
18:30	9	0	1	6	0	0	0	16	0	0	0	0	0	0	0	0
18:45	3	1	2	2	0	0	0	8	0	0	0	0	0	0	0	0
H/TOT	27	3	3	28	0	0	0	61	0	0	0	0	0	0	0	0
P/TOT	77	11	15	112	0	0	0	215	2	0	0	1	0	0	0	3

SITE: 5 DATE: 05/07/2017

LOCATION: A180 / A1173 / Matthew Ford Way DAY: Wednesday

	B to C								B to B							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
07:15	2	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0
07:30	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
07:45	2	1	1	1	0	0	0	5	0	0	0	0	0	0	0	0
H/TOT	7	1	1	3	0	0	0	12	0	0	0	0	0	0	0	0
08:00	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
08:15	2	1	0	2	0	0	0	5	0	0	0	0	0	0	0	0
08:30	0	0	1	0	0	0	0	1	2	0	0	0	0	0	0	2
08:45	2	0	0	0	0	1	0	3	1	0	1	0	0	0	0	2
H/TOT	6	1	1	2	0	1	0	11	3	0	1	0	0	0	0	4
09:00	1	0	0	0	0	1	0	2	0	0	1	0	0	0	0	1
09:15	2	2	0	0	0	0	0	4	0	0	0	0	0	0	0	0
09:30	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	1
09:45	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	6
H/TOT	3	2	1	0	0	1	0	7	1	3	4	0	0	0	0	8
P/TOT	16	4	3	5	0	2	0	30	4	3	5	0	0	0	0	12

	B to C								B to B							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	9	4	1	0	0	1	0	15	0	0	0	0	0	0	0	0
16:15	9	4	1	0	0	0	0	14	0	0	0	0	0	0	0	0
16:30	10	3	0	0	0	0	0	13	0	0	0	0	0	0	0	0
16:45	15	2	0	0	0	0	0	17	0	1	0	0	0	0	0	1
H/TOT	43	13	2	0	0	1	0	59	0	1	0	0	0	0	0	1
17:00	16	2	0	1	0	0	0	19	0	0	0	0	0	0	0	0
17:15	14	0	0	2	0	0	0	16	1	0	0	2	0	0	0	3
17:30	12	1	0	0	0	0	0	13	0	0	0	0	0	0	0	0
17:45	12	0	1	0	0	0	0	13	0	0	0	2	0	0	0	2
H/TOT	54	3	1	3	0	0	0	61	1	0	0	4	0	0	0	5
18:00	6	2	0	1	0	0	0	9	0	0	0	0	0	0	0	0
18:15	9	0	0	0	0	0	0	9	2	0	0	0	0	0	0	2
18:30	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0
18:45	6	0	0	0	0	1	0	7	0	0	0	0	0	0	0	0
H/TOT	29	2	0	1	0	1	0	33	2	0	0	0	0	0	0	2
P/TOT	126	18	3	4	0	2	0	153	3	1	0	4	0	0	0	8

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LOCATION: A180 / A1173 / Matthew Ford Way DAY: Wednesday

	C to B								C to A							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	13	4	0	0	0	0	0	17	17	3	1	1	0	0	0	22
07:15	12	3	0	0	0	0	0	15	13	4	0	2	0	2	0	21
07:30	16	2	0	1	0	0	0	19	27	7	1	4	0	0	0	39
07:45	19	3	1	0	0	0	0	23	28	4	0	0	0	0	0	32
H/TOT	60	12	1	1	0	0	0	74	85	18	2	7	0	2	0	114
08:00	14	3	0	0	0	1	0	18	21	1	0	5	0	0	0	27
08:15	9	3	1	0	0	0	0	13	33	2	1	1	0	1	1	39
08:30	7	1	0	0	0	0	0	8	23	1	1	2	0	0	0	27
08:45	7	0	0	0	0	0	0	7	21	2	2	3	0	0	0	28
H/TOT	37	7	1	0	0	1	0	46	98	6	4	11	0	1	1	121
09:00	6	0	0	0	0	0	0	6	4	0	1	2	1	0	0	8
09:15	4	0	0	0	0	0	0	4	5	0	0	3	0	0	0	8
09:30	4	1	1	1	0	0	0	7	6	2	1	2	0	0	0	11
09:45	5	2	1	1	0	0	0	9	7	1	1	4	0	0	0	13
H/TOT	19	3	2	2	0	0	0	26	22	3	3	11	1	0	0	40
P/TOT	116	22	4	3	0	1	0	146	205	27	9	29	1	3	1	275

	C to B								C to A							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	3	1	0	0	0	0	0	4	4	0	1	3	0	1	0	9
16:15	2	0	0	0	0	0	0	2	7	0	0	5	0	0	0	12
16:30	2	0	0	0	0	0	0	2	6	1	4	4	0	0	0	15
16:45	2	1	0	0	0	0	0	3	4	1	1	1	0	0	0	7
H/TOT	9	2	0	0	0	0	0	11	21	2	6	13	0	1	0	43
17:00	5	0	0	0	0	0	0	5	1	0	1	2	0	0	0	4
17:15	8	1	0	0	0	1	0	10	2	1	1	0	0	0	0	4
17:30	5	1	0	0	0	0	0	6	4	0	0	0	0	0	0	4
17:45	5	0	0	0	0	1	0	6	4	0	1	2	0	0	0	7
H/TOT	23	2	0	0	0	2	0	27	11	1	3	4	0	0	0	19
18:00	4	1	0	0	0	0	0	5	2	1	0	2	0	1	0	6
18:15	4	0	0	0	0	0	0	4	7	2	1	1	0	0	0	11
18:30	5	1	1	0	0	0	0	7	3	1	0	1	0	0	0	5
18:45	0	0	0	0	0	0	0	0	4	0	0	2	0	0	0	6
H/TOT	13	2	1	0	0	0	0	16	16	4	1	6	0	1	0	28
P/TOT	45	6	1	0	0	2	0	54	48	7	10	23	0	2	0	90

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	C to D								C to C							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	18	4	1	0	0	0	0	23	0	0	0	0	0	0	0	0
07:15	26	2	0	0	0	0	0	28	0	0	0	0	0	0	0	0
07:30	31	8	2	0	0	1	0	42	0	0	0	0	0	0	0	0
07:45	49	8	2	0	0	1	0	60	0	0	0	0	0	0	0	0
H/TOT	124	22	5	0	0	2	0	153	0	0	0	0	0	0	0	0
08:00	52	4	0	0	0	0	0	56	0	0	0	0	0	0	0	0
08:15	46	5	2	0	0	0	0	53	0	0	0	0	0	0	0	0
08:30	41	4	0	0	0	0	0	45	0	0	0	0	0	0	0	0
08:45	30	4	0	0	0	0	0	34	0	0	0	0	0	0	0	0
H/TOT	169	17	2	0	0	0	0	188	0	0	0	0	0	0	0	0
09:00	32	1	1	1	0	0	0	35	0	0	0	0	0	0	0	0
09:15	32	1	0	0	0	0	0	33	0	0	0	0	0	0	0	0
09:30	15	5	1	0	1	1	0	23	0	0	0	0	0	0	0	0
09:45	18	1	0	0	0	0	0	19	0	0	0	0	0	0	0	0
H/TOT	97	8	2	1	1	1	0	110	0	0	0	0	0	0	0	0
P/TOT	390	47	9	1	1	3	0	451	0	0	0	0	0	0	0	0

	C to D								C to C							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	13	7	2	0	1	0	0	23	1	0	0	0	0	0	0	1
16:15	17	1	0	0	1	0	0	19	0	0	0	0	0	0	0	0
16:30	24	2	0	0	0	0	0	26	1	0	0	0	0	0	0	1
16:45	20	2	1	0	0	0	0	23	0	0	0	0	0	0	0	0
H/TOT	74	12	3	0	2	0	0	91	2	0	0	0	0	0	0	2
17:00	20	3	1	0	0	0	0	24	0	0	0	0	0	0	0	0
17:15	16	2	0	0	0	0	0	18	0	0	0	0	0	0	0	0
17:30	26	3	2	0	0	0	0	31	0	0	0	0	0	0	0	0
17:45	27	1	0	0	0	0	0	28	0	0	0	0	0	0	0	0
H/TOT	89	9	3	0	0	0	0	101	0	0	0	0	0	0	0	0
18:00	21	2	0	0	1	0	0	24	0	0	0	0	0	0	0	0
18:15	16	3	0	1	0	1	0	21	0	0	0	0	0	0	0	0
18:30	19	0	0	0	1	1	0	21	0	0	0	0	0	0	0	0
18:45	14	2	1	0	0	0	0	17	0	0	0	0	0	0	0	0
H/TOT	70	7	1	1	2	2	0	83	0	0	0	0	0	0	0	0
P/TOT	233	28	7	1	4	2	0	275	2	0	0	0	0	0	0	2

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	D to C								D to B							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	10	1	1	0	0	0	0	12	0	0	0	0	0	0	0	0
07:15	9	4	2	0	1	2	0	18	0	0	0	0	0	0	0	0
07:30	13	1	2	0	1	0	0	17	0	0	0	0	0	0	0	0
07:45	16	2	1	0	2	0	0	21	0	0	0	0	0	0	0	0
H/TOT	48	8	6	0	4	2	0	68	0	0	0	0	0	0	0	0
08:00	18	0	0	0	1	0	0	19	0	0	0	0	0	0	0	0
08:15	18	1	1	0	0	0	0	20	0	0	0	0	0	0	0	0
08:30	17	3	1	0	0	0	0	21	1	0	0	0	0	0	0	1
08:45	8	5	0	0	1	0	0	14	0	0	0	0	0	0	0	0
H/TOT	61	9	2	0	2	0	0	74	1	0	0	0	0	0	0	1
09:00	15	4	0	0	0	0	0	19	0	0	0	0	0	0	0	0
09:15	11	4	0	0	0	1	0	16	0	0	0	0	0	0	0	0
09:30	5	5	2	0	0	0	0	12	0	0	0	0	0	0	0	0
09:45	13	1	0	1	0	0	0	15	0	0	0	0	0	0	0	0
H/TOT	44	14	2	1	0	1	0	62	0	0	0	0	0	0	0	0
P/TOT	153	31	10	1	6	3	0	204	1	0	0	0	0	0	0	1

	D to C								D to B							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	33	4	1	0	0	0	0	38	0	0	0	0	0	0	0	0
16:15	39	8	0	0	0	0	0	47	0	0	1	0	0	0	0	1
16:30	37	9	2	1	0	0	0	49	0	0	0	0	0	0	0	0
16:45	39	5	1	0	0	1	0	46	0	0	0	0	0	0	0	0
H/TOT	148	26	4	1	0	1	0	180	0	0	1	0	0	0	0	1
17:00	75	7	0	0	0	1	0	83	0	0	0	0	0	0	0	0
17:15	67	2	0	0	0	2	0	71	0	0	0	0	0	0	0	0
17:30	32	2	0	0	0	1	0	35	2	0	0	1	0	0	0	3
17:45	40	2	1	0	0	0	0	43	0	0	0	0	0	0	0	0
H/TOT	214	13	1	0	0	4	0	232	2	0	0	1	0	0	0	3
18:00	34	3	0	0	0	1	0	38	0	0	0	0	0	0	0	0
18:15	26	1	0	0	0	1	0	28	1	0	0	0	0	0	0	1
18:30	31	1	1	0	0	0	0	33	0	0	0	0	0	0	0	0
18:45	27	3	0	0	0	0	0	30	1	0	0	0	0	0	0	1
H/TOT	118	8	1	0	0	2	0	129	2	0	0	0	0	0	0	2
P/TOT	480	47	6	1	0	7	0	541	4	0	1	1	0	0	0	6

SITE: 5 DATE: 05/07/2017

LOCATION: A180 / A1173 / Matthew Ford Way DAY: Wednesday

	D to A								D to D							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	183	30	5	1	0	3	0	222	0	0	0	0	0	0	0	0
07:15	224	38	4	4	2	5	0	277	0	0	0	0	0	0	0	0
07:30	225	27	1	2	0	4	0	259	0	0	0	0	0	0	0	0
07:45	164	30	5	6	2	3	0	210	0	0	0	0	0	0	0	0
H/TOT	796	125	15	13	4	15	0	968	0	0	0	0	0	0	0	0
08:00	114	31	8	7	1	1	0	162	0	0	0	0	0	0	0	0
08:15	117	24	8	5	1	0	0	155	0	1	0	0	0	0	0	1
08:30	94	14	6	7	2	0	0	123	0	0	0	0	0	0	0	0
08:45	90	12	6	6	1	0	0	115	1	0	0	0	0	0	0	1
H/TOT	415	81	28	25	5	1	0	555	1	1	0	0	0	0	0	2
09:00	46	10	2	4	1	1	0	64	0	0	0	0	0	0	0	0
09:15	38	14	8	6	0	1	0	67	1	0	0	0	0	0	0	1
09:30	40	20	4	2	0	1	0	67	0	0	0	0	0	0	0	0
09:45	33	17	7	3	0	1	0	61	0	0	0	0	0	0	0	0
H/TOT	157	61	21	15	1	4	0	259	1	0	0	0	0	0	0	1
P/TOT	1368	267	64	53	10	20	0	1782	2	1	0	0	0	0	0	3

	D to A								D to D							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	52	10	4	9	0	0	0	75	0	0	0	0	0	0	0	0
16:15	49	4	3	1	0	2	0	59	0	0	0	0	0	0	0	0
16:30	56	8	1	7	1	0	0	73	0	0	0	0	0	0	0	0
16:45	38	8	5	4	0	0	0	55	1	0	0	0	0	0	0	1
H/TOT	195	30	13	21	1	2	0	262	1	0	0	0	0	0	0	1
17:00	68	10	1	4	0	1	0	84	0	0	1	0	0	0	0	1
17:15	61	4	6	2	0	1	0	74	0	0	0	0	0	0	0	0
17:30	43	3	0	4	0	1	0	51	1	0	0	0	0	0	0	1
17:45	48	1	3	2	0	1	0	55	0	0	0	0	0	0	0	0
H/TOT	220	18	10	12	0	4	0	264	1	0	1	0	0	0	0	2
18:00	61	10	1	1	0	1	0	74	0	0	0	0	0	0	0	0
18:15	52	4	0	1	0	2	0	59	0	0	1	0	0	0	0	1
18:30	43	1	4	0	0	1	0	49	0	0	0	0	0	0	0	0
18:45	21	5	1	3	1	1	0	32	0	0	0	0	0	0	0	0
H/TOT	177	20	6	5	1	5	0	214	0	0	1	0	0	0	0	1
P/TOT	592	68	29	38	2	11	0	740	2	0	2	0	0	0	0	4

SITE: 5 DATE: 05/07/2017

LOCATION: A180 / A1173 / Matthew Ford Way DAY: Wednesday

	TO ARM A								FROM ARM A							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	231	40	8	13	0	3	0	295	39	8	8	19	0	1	0	75
07:15	275	54	6	21	2	8	0	366	41	2	5	16	0	0	0	64
07:30	291	46	3	20	0	4	0	364	35	7	8	20	0	0	0	70
07:45	242	44	6	19	2	3	0	316	58	5	9	22	1	0	0	95
H/TOT	1039	184	23	73	4	18	0	1341	173	22	30	77	1	1	0	304
08:00	163	40	11	21	1	1	0	237	55	11	10	30	0	0	0	106
08:15	178	33	11	12	1	2	1	238	54	13	9	19	0	0	0	95
08:30	145	22	9	20	2	0	0	198	50	14	12	21	0	0	0	97
08:45	138	16	10	24	1	0	0	189	48	23	8	26	0	0	0	105
H/TOT	624	111	41	77	5	3	1	862	207	61	39	96	0	0	0	403
09:00	63	18	5	19	3	1	0	109	48	20	5	22	2	0	0	97
09:15	54	21	11	26	2	1	0	115	30	14	12	21	0	0	0	77
09:30	54	26	6	18	0	1	0	105	40	21	8	19	0	0	0	88
09:45	50	30	10	34	0	1	0	125	38	18	17	26	0	0	0	99
H/TOT	221	95	32	97	5	4	0	454	156	73	42	88	2	0	0	361
P/TOT	1884	390	96	247	14	25	1	2657	536	156	111	261	3	1	0	1068

	TO ARM A								FROM ARM A							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	59	13	7	24	0	1	0	104	259	40	13	23	1	2	0	338
16:15	57	4	4	28	0	2	0	95	184	53	7	15	2	2	1	264
16:30	70	9	7	20	1	0	0	107	311	34	7	13	0	6	0	371
16:45	47	11	6	16	0	0	0	80	239	35	7	14	0	4	0	299
H/TOT	233	37	24	88	1	3	0	386	993	162	34	65	3	14	1	1272
17:00	75	12	4	15	0	1	0	107	276	33	8	14	0	2	1	334
17:15	73	6	8	14	0	1	0	102	182	14	4	17	0	3	0	220
17:30	57	3	3	7	0	1	0	71	182	30	4	18	0	2	0	236
17:45	59	1	5	10	0	1	0	76	148	20	6	8	1	4	0	187
H/TOT	264	22	20	46	0	4	0	356	788	97	22	57	1	11	1	977
18:00	70	11	1	16	0	2	0	100	179	24	3	6	2	0	0	214
18:15	67	8	1	9	0	2	0	87	93	8	5	10	0	1	0	117
18:30	55	2	5	7	0	1	0	70	94	12	2	8	0	1	0	117
18:45	28	6	3	7	1	1	0	46	73	10	1	13	0	2	0	99
H/TOT	220	27	10	39	1	6	0	303	439	54	11	37	2	4	0	547
P/TOT	717	86	54	173	2	13	0	1045	2220	313	67	159	6	29	2	2796

SITE: 5 DATE: 05/07/2017

LOCATION: A180 / A1173 / Matthew Ford Way DAY: Wednesday

	TO ARM B								FROM ARM B							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	15	6	3	13	0	0	0	37	31	7	2	12	0	0	0	52
07:15	23	3	3	11	0	0	0	40	40	12	2	16	0	1	0	71
07:30	18	3	3	18	0	0	0	42	43	12	1	14	0	0	0	70
07:45	24	4	6	15	0	0	0	49	52	11	2	14	0	0	0	79
H/TOT	80	16	15	57	0	0	0	168	166	42	7	56	0	1	0	272
08:00	17	5	0	15	0	1	0	38	31	8	3	9	0	0	0	51
08:15	15	5	4	12	0	0	0	36	29	8	2	8	0	1	0	48
08:30	23	2	2	11	0	0	0	38	30	7	2	11	0	0	0	50
08:45	11	9	5	16	0	0	0	41	29	2	3	15	0	1	0	50
H/TOT	66	21	11	54	0	1	0	153	119	25	10	43	0	2	0	199
09:00	11	2	2	15	0	0	0	30	14	8	3	13	1	1	0	40
09:15	8	3	2	17	0	0	0	30	13	9	3	17	2	0	0	44
09:30	8	5	1	14	0	0	0	28	8	5	2	14	0	0	0	29
09:45	9	7	9	21	0	0	0	46	11	14	5	27	0	0	0	57
H/TOT	36	17	14	67	0	0	0	134	46	36	13	71	3	1	0	170
P/TOT	182	54	40	178	0	1	0	455	331	103	30	170	3	4	0	641

	TO ARM B								FROM ARM B							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	37	12	2	17	0	0	0	68	12	7	3	12	0	1	0	35
16:15	29	11	4	9	0	2	0	55	10	4	2	22	0	0	0	38
16:30	52	6	0	8	0	0	0	66	18	3	2	9	0	0	0	32
16:45	35	7	3	9	0	0	0	54	20	5	0	11	0	0	0	36
H/TOT	153	36	9	43	0	2	0	243	60	19	7	54	0	1	0	141
17:00	30	5	2	5	0	0	0	42	23	4	2	10	0	0	0	39
17:15	39	6	2	13	0	2	0	62	26	1	1	16	0	0	0	44
17:30	30	6	1	12	0	0	0	49	22	1	3	3	0	0	0	29
17:45	39	2	0	7	1	3	0	52	19	0	2	9	0	0	0	30
H/TOT	138	19	5	37	1	5	0	205	90	6	8	38	0	0	0	142
18:00	29	3	1	3	0	0	0	36	13	2	0	14	0	0	0	29
18:15	20	0	0	7	0	0	0	27	19	2	0	7	0	0	0	28
18:30	11	2	3	5	0	0	0	21	17	0	1	6	0	0	0	24
18:45	4	2	0	11	0	0	0	17	9	1	2	2	0	1	0	15
H/TOT	64	7	4	26	0	0	0	101	58	5	3	29	0	1	0	96
P/TOT	355	62	18	106	1	7	0	549	208	30	18	121	0	2	0	379

SITE: 5 DATE: 05/07/2017

LOCATION: A180 / A1173 / Matthew Ford Way DAY: Wednesday

	TO ARM C								FROM ARM C							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	14	2	5	1	0	0	0	22	48	11	2	1	0	0	0	62
07:15	12	4	3	4	1	2	0	26	51	9	0	2	0	2	0	64
07:30	17	1	3	2	1	0	0	24	74	17	3	5	0	1	0	100
07:45	23	4	2	4	2	0	0	35	96	15	3	0	0	1	0	115
H/TOT	66	11	13	11	4	2	0	107	269	52	8	8	0	4	0	341
08:00	24	2	2	4	1	0	0	33	87	8	0	5	0	1	0	101
08:15	21	2	1	3	0	0	0	27	88	10	4	1	0	1	1	105
08:30	20	6	6	4	0	0	0	36	71	6	1	2	0	0	0	80
08:45	12	5	1	5	1	1	0	25	58	6	2	3	0	0	0	69
H/TOT	77	15	10	16	2	1	0	121	304	30	7	11	0	2	1	355
09:00	18	4	0	1	0	1	0	24	42	1	2	3	1	0	0	49
09:15	15	8	0	2	0	1	0	26	41	1	0	3	0	0	0	45
09:30	9	5	4	3	0	0	0	21	25	8	3	3	1	1	0	41
09:45	13	1	0	2	0	0	0	16	30	4	2	5	0	0	0	41
H/TOT	55	18	4	8	0	2	0	87	138	14	7	14	2	1	0	176
P/TOT	198	44	27	35	6	5	0	315	711	96	22	33	2	7	1	872

	TO ARM C								FROM ARM C							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	62	10	2	1	0	1	0	76	21	8	3	3	1	1	0	37
16:15	69	14	1	3	0	0	0	87	26	1	0	5	1	0	0	33
16:30	70	15	2	3	0	0	0	90	33	3	4	4	0	0	0	44
16:45	81	10	1	4	0	1	0	97	26	4	2	1	0	0	0	33
H/TOT	282	49	6	11	0	2	0	350	106	16	9	13	2	1	0	147
17:00	127	12	3	4	0	2	1	149	26	3	2	2	0	0	0	33
17:15	111	4	1	3	0	2	0	121	26	4	1	0	0	1	0	32
17:30	67	9	1	4	0	1	0	82	35	4	2	0	0	0	0	41
17:45	66	4	2	1	0	0	0	73	36	1	1	2	0	1	0	41
H/TOT	371	29	7	12	0	5	1	425	123	12	6	4	0	2	0	147
18:00	53	9	1	2	0	1	0	66	27	4	0	2	1	1	0	35
18:15	45	1	0	0	0	1	0	47	27	5	1	2	0	1	0	36
18:30	43	2	1	2	0	0	0	48	27	2	1	1	1	1	0	33
18:45	34	4	0	0	0	2	0	40	18	2	1	2	0	0	0	23
H/TOT	175	16	2	4	0	4	0	201	99	13	3	7	2	3	0	127
P/TOT	828	94	15	27	0	11	1	976	328	41	18	24	4	6	0	421

SITE: 5 DATE: 05/07/2017

LOCATION: A180 / A1173 / Matthew Ford Way DAY: Wednesday

	TO ARM D								FROM ARM D							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	51	9	2	6	0	1	0	69	193	31	6	1	0	3	0	234
07:15	55	4	1	2	0	0	0	62	233	42	6	4	3	7	0	295
07:30	64	14	6	1	0	1	0	86	238	28	3	2	1	4	0	276
07:45	97	11	6	4	1	1	0	120	180	32	6	6	4	3	0	231
H/TOT	267	38	15	13	1	3	0	337	844	133	21	13	8	17	0	1036
08:00	101	11	8	11	0	0	0	131	132	31	8	7	2	1	0	181
08:15	92	17	8	6	0	0	0	123	135	26	9	5	1	0	0	176
08:30	75	14	5	6	0	0	0	100	112	17	7	7	2	0	0	145
08:45	73	18	3	5	0	0	0	99	99	17	6	6	2	0	0	130
H/TOT	341	60	24	28	0	0	0	453	478	91	30	25	7	1	0	632
09:00	73	19	5	7	2	0	0	106	61	14	2	4	1	1	0	83
09:15	57	10	10	2	0	0	0	79	50	18	8	6	0	2	0	84
09:30	47	23	8	3	1	1	0	83	45	25	6	2	0	1	0	79
09:45	53	16	12	5	0	0	0	86	46	18	7	4	0	1	0	76
H/TOT	230	68	35	17	3	1	0	354	202	75	23	16	1	5	0	322
P/TOT	838	166	74	58	4	4	0	1144	1524	299	74	54	16	23	0	1990

	TO ARM D								FROM ARM D							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	219	34	13	5	2	2	0	275	85	14	5	9	0	0	0	113
16:15	153	41	4	3	3	0	1	205	88	12	4	1	0	2	0	107
16:30	263	27	7	3	0	6	0	306	93	17	3	8	1	0	0	122
16:45	200	29	5	1	0	4	0	239	78	13	6	4	0	1	0	102
H/TOT	835	131	29	12	5	12	1	1025	344	56	18	22	1	3	0	444
17:00	236	28	5	6	0	1	0	276	143	17	2	4	0	2	0	168
17:15	139	9	1	5	0	2	0	156	128	6	6	2	0	3	0	145
17:30	163	22	4	3	0	2	0	194	78	5	0	5	0	2	0	90
17:45	127	17	6	3	0	2	0	155	88	3	4	2	0	1	0	98
H/TOT	665	76	16	17	0	7	0	781	437	31	12	13	0	8	0	501
18:00	162	20	1	2	3	0	0	188	95	13	1	1	0	2	0	112
18:15	86	11	6	4	0	2	0	109	79	5	1	1	0	3	0	89
18:30	103	10	0	1	1	2	0	117	74	2	5	0	0	1	0	82
18:45	83	9	2	2	0	1	0	97	49	8	1	3	1	1	0	63
H/TOT	434	50	9	9	4	5	0	511	297	28	8	5	1	7	0	346
P/TOT	1934	257	54	38	9	24	1	2317	1078	115	38	40	2	18	0	1291

SITE: 5

DATE: 05/07/2017

LOCATION: A180 / A1173 / Matthew Ford Way

DAY: Wednesday

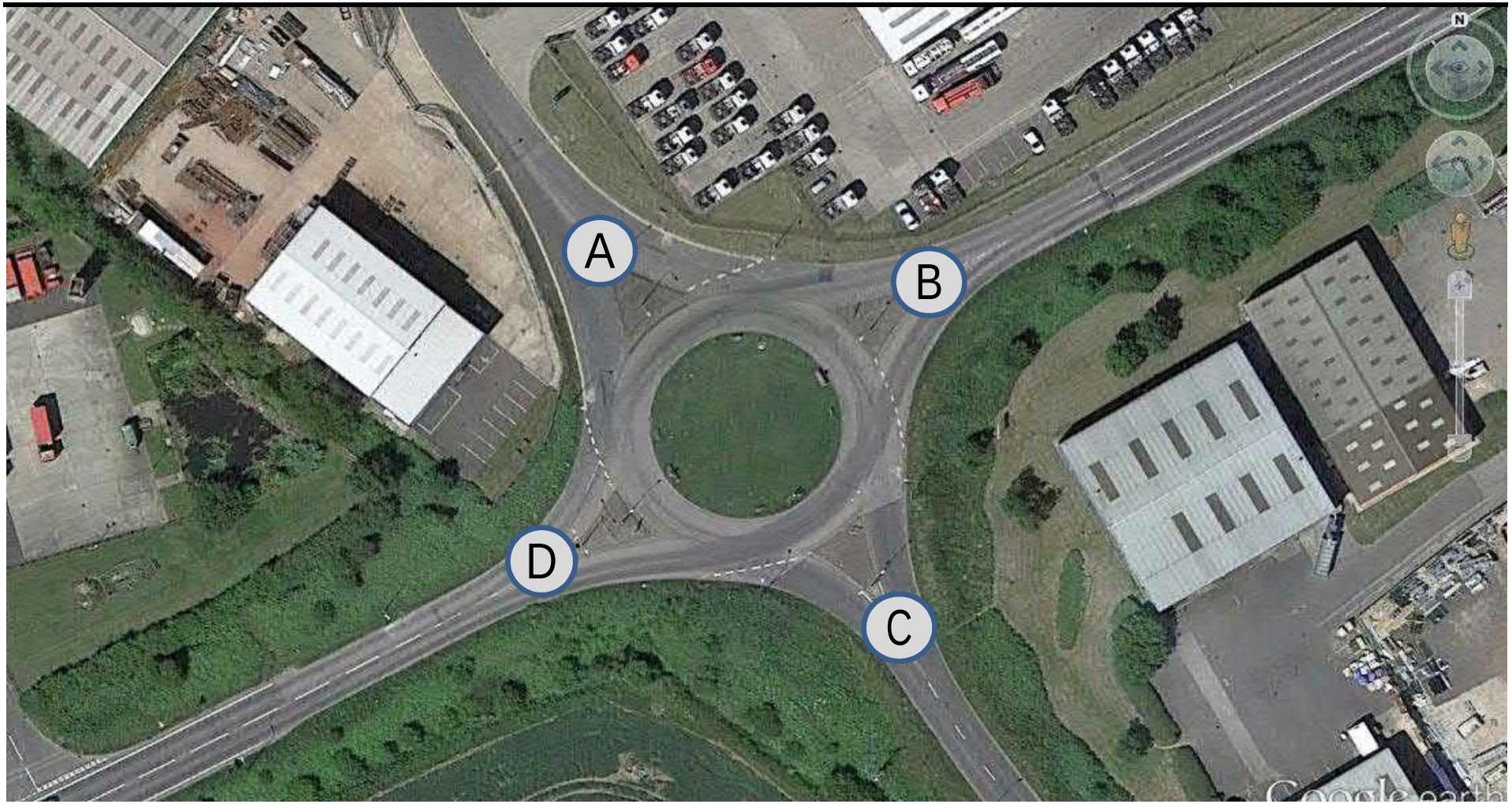
TIME	JUNCTION TOTAL CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	311	57	18	33	0	4	0	423
07:15	365	65	13	38	3	10	0	494
07:30	390	64	15	41	1	5	0	516
07:45	386	63	20	42	5	4	0	520
H/TOT	1452	249	66	154	9	23	0	1953
08:00	305	58	21	51	2	2	0	439
08:15	306	57	24	33	1	2	1	424
08:30	263	44	22	41	2	0	0	372
08:45	234	48	19	50	2	1	0	354
H/TOT	1108	207	86	175	7	5	1	1589
09:00	165	43	12	42	5	2	0	269
09:15	134	42	23	47	2	2	0	250
09:30	118	59	19	38	1	2	0	237
09:45	125	54	31	62	0	1	0	273
H/TOT	542	198	85	189	8	7	0	1029
P/TOT	3102	654	237	518	24	35	1	4571

PEAK HOUR CALCULATION	TOT
07:00 to 08:00	1953
07:15 to 08:15	1969
07:30 to 08:30	1899
07:45 to 08:45	1755
08:00 to 09:00	1589
08:15 to 09:15	1419
08:30 to 09:30	1245
08:45 to 09:45	1110
09:00 to 10:00	1029
PEAK VALUE	1969

TIME	JUNCTION TOTAL CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	377	69	24	47	2	4	0	523
16:15	308	70	13	43	3	4	1	442
16:30	455	57	16	34	1	6	0	569
16:45	363	57	15	30	0	5	0	470
H/TOT	1503	253	68	154	6	19	1	2004
17:00	468	57	14	30	0	4	1	574
17:15	362	25	12	35	0	7	0	441
17:30	317	40	9	26	0	4	0	396
17:45	291	24	13	21	1	6	0	356
H/TOT	1438	146	48	112	1	21	1	1767
18:00	314	43	4	23	3	3	0	390
18:15	218	20	7	20	0	5	0	270
18:30	212	16	9	15	1	3	0	256
18:45	149	21	5	20	1	4	0	200
H/TOT	893	100	25	78	5	15	0	1116
P/TOT	3834	499	141	344	12	55	2	4887

PEAK HOUR CALCULATION	TOT
16:00 to 17:00	2004
16:15 to 17:15	2055
16:30 to 17:30	2054
16:45 to 17:45	1881
17:00 to 18:00	1767
17:15 to 18:15	1583
17:30 to 18:30	1412
17:45 to 18:45	1272
18:00 to 19:00	1116
PEAK VALUE	2055

Project Number: TSP13999
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Trondheim Way /Kiln Lane/N Moss Lane



Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Trondheim Way /Kiln Lane/N Moss Lane**
Date: **18 October 2018, Thursday**

	1	1	1.5	2.3	2	2	0.4	0.2												
Time	**A - A**										**A - B**									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	**TOTAL**	**TOTAL (PCU)**	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	**TOTAL**	**TOTAL (PCU)**
07:00									0	0	2			3					5	8.9
07:15		1							1	1									0	0
07:30									0	0									0	0
07:45									0	0	1								1	1
H/Total	0	1	0	0	0	0	0	0	1	1	3	0	0	3	0	0	0	0	6	9.9
08:00									0	0				3					3	6.9
08:15									0	0				2					2	4.6
08:30									0	0			3	1					4	6.8
08:45				1					1	2.3		1	1	2					4	7.1
H/Total	0	0	0	1	0	0	0	0	1	2.3	0	1	4	8	0	0	0	0	13	25.4
09:00									0	0				3					3	6.9
09:15									0	0	1	1	2	1					5	7.3
09:30									0	0	1		1	1					3	4.8
09:45									0	0		1		1					2	3.3
H/Total	0	0	0	0	0	0	0	0	0	0	2	2	3	6	0	0	0	0	13	22.3
Total	0	1	0	1	0	0	0	0	2	3.3	5	3	7	17	0	0	0	0	32	57.6

Time	**A - A**										**A - B**									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	**TOTAL**	**TOTAL (PCU)**	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	**TOTAL**	**TOTAL (PCU)**
16:00									0	0			1						1	1.5
16:15									0	0	1								1	1
16:30									0	0		1		1					2	3.3
16:45									0	0			1						1	1.5
H/Total	0	0	0	0	0	0	0	0	0	0	1	1	2	1	0	0	0	0	5	7.3
17:00									0	0									0	0
17:15									0	0	2								2	2
17:30									0	0				2					2	4.6
17:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	4	6.6
18:00									0	0				1					1	2.3
18:15									0	0	1								1	1
18:30									0	0	1								1	1
18:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	3	4.3
Total	0	0	0	0	0	0	0	0	0	0	5	1	2	4	0	0	0	0	12	18.2

Project Number: TSP13999
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Trondheim Way /Kiln Lane/N Moss Lane
Date: 18 October 2018, Thursday

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0		1		5					6	12.5
07:15									0	0		1	3	2					6	10.1
07:30	3								3	3	1		1	1					3	4.8
07:45									0	0			1						1	1.5
H/Total	3	0	0	0	0	0	0	0	3	3	1	2	5	8	0	0	0	0	16	28.9
08:00									0	0		1	1	2					4	7.1
08:15									0	0		1	1	1					3	4.8
08:30									0	0	1		3	1		2			7	11.8
08:45									0	0	1		1	2					4	7.1
H/Total	0	0	0	0	0	0	0	0	0	0	2	2	6	6	0	2	0	0	18	30.8
09:00									0	0		2	4	3					9	14.9
09:15	2								2	2		1		1					2	3.3
09:30									0	0	1	1	1						3	3.5
09:45									0	0	2			1					3	4.3
H/Total	2	0	0	0	0	0	0	0	2	2	3	4	5	5	0	0	0	0	17	26
Total	5	0	0	0	0	0	0	0	5	5	6	8	16	19	0	2	0	0	51	85.7

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	2		1						3	3.5	4	2	5	3					14	20.4
16:15	1		1						2	2.5	15		1				1		17	16.9
16:30	3	1						1	5	4.2	5	2	1	1					9	10.8
16:45	5								5	5	9	2		1			1		13	13.7
H/Total	11	1	2	0	0	0	0	1	15	15.2	33	6	7	5	0	0	2	0	53	61.8
17:00	2								2	2	10	1		1					12	13.3
17:15	4	1							5	5	11		1	3				1	16	19.6
17:30	1								1	1	18								18	18
17:45	4	2	1						7	7.5	10			1					11	12.3
H/Total	11	3	1	0	0	0	0	0	15	15.5	49	1	1	5	0	0	0	1	57	63.2
18:00	1								1	1	6	1	1						8	8.5
18:15									0	0	4			1					5	6.3
18:30									0	0	5	1		1					7	8.3
18:45	1								1	1	8	1	1	2					12	15.1
H/Total	2	0	0	0	0	0	0	0	2	2	23	3	2	4	0	0	0	0	32	38.2
Total	24	4	3	0	0	0	0	1	32	32.7	105	10	10	14	0	0	2	1	142	163.2

Project Number: TSP13999
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Trondheim Way /Kiln Lane/N Moss Lane
Date: 18 October 2018, Thursday

Time	B - A										B - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0									0	0
07:15				1					1	2.3									0	0
07:30									0	0									0	0
07:45									0	0									0	0
H/Total	0	0	0	1	0	0	0	0	1	2.3	0	0	0	0	0	0	0	0	0	0
08:00									0	0									0	0
08:15									0	0				1					1	2.3
08:30									0	0									0	0
08:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2.3
09:00		1	1						2	2.5		1							1	1
09:15			1						1	1.5									0	0
09:30			1	1					2	3.8									0	0
09:45	1	2							3	3									0	0
H/Total	1	3	3	1	0	0	0	0	8	10.8	0	1	0	0	0	0	0	0	1	1
Total	1	3	3	2	0	0	0	0	9	13.1	0	1	0	1	0	0	0	0	2	3.3

Time	B - A										B - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00			1	1					2	3.8									0	0
16:15	3	2							5	5									0	0
16:30	2	1	1						4	4.5									0	0
16:45									0	0									0	0
H/Total	5	3	2	1	0	0	0	0	11	13.3	0	0	0	0	0	0	0	0	0	0
17:00	1	2		2					5	7.6									0	0
17:15	1								1	1									0	0
17:30		1		1					2	3.3									0	0
17:45									0	0									0	0
H/Total	2	3	0	3	0	0	0	0	8	11.9	0	0	0	0	0	0	0	0	0	0
18:00	1			1					2	3.3									0	0
18:15									0	0									0	0
18:30	1		1						2	2.5									0	0
18:45		1							1	1									0	0
H/Total	2	1	1	1	0	0	0	0	5	6.8	0	0	0	0	0	0	0	0	0	0
Total	9	7	3	5	0	0	0	0	24	32	0	0	0	0	0	0	0	0	0	0

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Trondheim Way /Kiln Lane/N Moss Lane**
Date: **18 October 2018, Thursday**

Time	B - C										B - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00			1	2					3	6.1	14	2	5	10					31	46.5
07:15	2								2	2	6	6	3	7					22	32.6
07:30	3			2					5	7.6	5	3	6	10					24	40
07:45	3								3	3	7	6	5	6			2		26	35.1
H/Total	8	0	1	4	0	0	0	0	13	18.7	32	17	19	33	0	0	2	0	103	154.2
08:00	2	1		1					4	5.3	10	13	10	12					45	65.6
08:15									0	0	8	10	4	14					36	56.2
08:30	2	1							3	3	5	7	4	9					25	38.7
08:45	6	4		1					11	12.3	7	8	7	11					33	50.8
H/Total	10	6	0	2	0	0	0	0	18	20.6	30	38	25	46	0	0	0	0	139	211.3
09:00	1		1						2	2.5	7	13	6	7					33	45.1
09:15	4	1							5	5	4	11	4	6					25	34.8
09:30	3	2							5	5	6	8	5	15		1			35	58
09:45	6	2		1					9	10.3	11	11	8	5					35	45.5
H/Total	14	5	1	1	0	0	0	0	21	22.8	28	43	23	33	0	1	0	0	128	183.4
Total	32	11	2	7	0	0	0	0	52	62.1	90	98	67	112	0	1	2	0	370	548.9

Time	B - C										B - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	38	7							45	45	79	12	3	9					103	116.2
16:15	11	1		3					15	18.9	64	12	3	7			1		87	97
16:30	37	9				1			47	48	131	9	4	5			2		151	158.3
16:45	17	3		1			1		22	22.7	55	10	4	7			1	1	78	87.7
H/Total	103	20	0	4	0	1	1	0	129	134.6	329	43	14	28	0	0	4	1	419	459.2
17:00	21	3						1	25	24.2	88	13	4	11				1	117	132.5
17:15	9	3					1		13	12.4	44	14	2	9			1		70	82.1
17:30	8	4	1						13	13.5	67	7	2	5					81	88.5
17:45	5								5	5	45	3	5	5					58	67
H/Total	43	10	1	0	0	0	1	1	56	55.1	244	37	13	30	0	0	1	1	326	370.1
18:00	5								5	5	54	3	4	6					67	76.8
18:15	3	1	1						5	5.5	31	2	2	3			1		39	43.3
18:30	2								2	2	36	5		4					45	50.2
18:45	2								2	2	21	3	1	2			1		28	30.5
H/Total	12	1	1	0	0	0	0	0	14	14.5	142	13	7	15	0	0	2	0	179	200.8
Total	158	31	2	4	0	1	2	1	199	204.2	715	93	34	73	0	0	7	2	924	1030.1

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Trondheim Way /Kiln Lane/N Moss Lane**
Date: **18 October 2018, Thursday**

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	1								1	1	5		1						6	6.5
07:15		1	1						2	2.5	16		2				1		19	19.4
07:30	2								2	2	12	1					1	1	15	13.6
07:45	6	1					1		8	7.4	14	3		1					18	19.3
H/Total	9	2	1	0	0	0	1	0	13	12.9	47	4	3	1	0	0	2	1	58	58.8
08:00	2								2	2	7	2							9	9
08:15	3								3	3	7	4	3						14	15.5
08:30	2								2	2	13	1	1						15	15.5
08:45									0	0	10								10	10
H/Total	7	0	0	0	0	0	0	0	7	7	37	7	4	0	0	0	0	0	48	50
09:00		1							1	1	5		1						6	6.5
09:15									0	0	2	2							4	4
09:30	2								2	2	4	2		1					7	8.3
09:45									0	0	1	2							3	3
H/Total	2	1	0	0	0	0	0	0	3	3	12	6	1	1	0	0	0	0	20	21.8
Total	18	3	1	0	0	0	1	0	23	22.9	96	17	8	2	0	0	2	1	126	130.6

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	1								1	1	1	2	1	1					5	6.8
16:15	1								1	1	1		1						2	2.5
16:30	2		1						3	3.5			2						2	3
16:45									0	0			1						1	1.5
H/Total	4	0	1	0	0	0	0	0	5	5.5	2	2	5	1	0	0	0	0	10	13.8
17:00									0	0									0	0
17:15									0	0				1					1	2.3
17:30									0	0		1							1	1
17:45									0	0	1								1	1
H/Total	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	3	4.3
18:00									0	0	1								1	1
18:15									0	0	1								1	1
18:30									0	0									0	0
18:45									0	0									0	0
H/Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	2
Total	4	0	1	0	0	0	0	0	5	5.5	5	3	5	2	0	0	0	0	15	20.1

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Trondheim Way /Kiln Lane/N Moss Lane**
Date: **18 October 2018, Thursday**

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0	3		1	1					5	6.8
07:15									0	0	10	1		3					14	17.9
07:30									0	0	12			1					13	14.3
07:45									0	0	17	2		2			1		22	24
H/Total	0	0	0	0	0	0	0	0	0	0	42	3	1	7	0	0	1	0	54	63
08:00									0	0	10	1	1	2					14	17.1
08:15									0	0	15	1	2	1					19	21.3
08:30									0	0	14	2	1	1					18	19.8
08:45									0	0	12	2							14	14
H/Total	0	0	0	0	0	0	0	0	0	0	51	6	4	4	0	0	0	0	65	72.2
09:00									0	0	5	1		1					7	8.3
09:15									0	0	4	1		1					6	7.3
09:30									0	0	11	2		3					16	19.9
09:45									0	0	2	3	1						6	6.5
H/Total	0	0	0	0	0	0	0	0	0	0	22	7	1	5	0	0	0	0	35	42
Total	0	0	0	0	0	0	0	0	0	0	115	16	6	16	0	0	1	0	154	177.2

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	1	2							3	3	12	2	1	1					16	17.8
16:15									0	0	10		1	3					14	18.4
16:30									0	0	9	1	1	3					14	18.4
16:45									0	0	9	2	2	1					14	16.3
H/Total	1	2	0	0	0	0	0	0	3	3	40	5	5	8	0	0	0	0	58	70.9
17:00									0	0	13	1							14	14
17:15									0	0	9	1	1	3					14	18.4
17:30									0	0	5	1	2						8	9
17:45									0	0	16			2			1		19	21
H/Total	0	0	0	0	0	0	0	0	0	0	43	3	3	5	0	0	1	0	55	62.4
18:00									0	0	8			2					10	12.6
18:15									0	0	4	1							5	5
18:30									0	0	5			1					6	7.3
18:45									0	0	7	1		1					9	10.3
H/Total	0	0	0	0	0	0	0	0	0	0	24	2	0	4	0	0	0	0	30	35.2
Total	1	2	0	0	0	0	0	0	3	3	107	10	8	17	0	0	1	0	143	168.5

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Trondheim Way /Kiln Lane/N Moss Lane**
Date: **18 October 2018, Thursday**

Time	D - A										D - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	13		1	2					16	19.1	65	13	3	6					87	96.3
07:15	7						1		8	7.4	69	16		7	1		2		95	103.9
07:30	7		1					1	9	8.7	92	4	4	10			1		111	125.4
07:45	6	1	1	1					9	10.8	103	19	4	9	1		1	1	138	151.3
H/Total	33	1	3	3	0	0	1	1	42	46	329	52	11	32	2	0	4	1	431	476.9
08:00	6	1	3	3					13	18.4	78	13	5	14			1		111	131.1
08:15	9	1	1	2	1			1	15	18.3	72	17	3	4		1			97	104.7
08:30	10	1		3					14	17.9	61	20	7	10					98	114.5
08:45	3	1		2					6	8.6	56	13	4	8					81	93.4
H/Total	28	4	4	10	1	0	0	1	48	63.2	267	63	19	36	0	1	1	0	387	443.7
09:00	2	1		2					5	7.6	25	9	4	5		1			44	53.5
09:15	1	3	1						5	5.5	28	13	3	9					53	66.2
09:30	4	2		1					7	8.3	21	18	4	5		1		1	50	58.7
09:45	9	1	1	3					14	18.4	16	15	7	6					44	55.3
H/Total	16	7	2	6	0	0	0	0	31	39.8	90	55	18	25	0	2	0	1	191	233.7
Total	77	12	9	19	1	0	1	2	121	149	686	170	48	93	2	3	5	2	1009	1154.3

Time	D - A										D - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00			1	4					5	10.7	20	10	6	11			3		50	65.5
16:15	2		2	3					7	11.9	13	11	5	11	1				41	58.8
16:30	2		2	3					7	11.9	10	5	2	6			1		24	32.2
16:45			2	4					6	12.2	15	7	4	13				1	40	58.1
H/Total	4	0	7	14	0	0	0	0	25	46.7	58	33	17	41	1	0	4	1	155	214.6
17:00	1	1	2	4					8	14.2	10	3	5	11					29	45.8
17:15	1		2	3					6	10.9	9			4	1				14	20.2
17:30	2	1		1					4	5.3	12	4	2	10					28	42
17:45			1	4					5	10.7	21	2	3	11			1		38	53.2
H/Total	4	2	5	12	0	0	0	0	23	41.1	52	9	10	36	1	0	1	0	109	161.2
18:00	3	2	2	3					10	14.9	28	2	3	8					41	52.9
18:15		1	1	1					3	4.8	19	1	3	9					32	45.2
18:30	2	1		1					4	5.3	4	2	2	4					12	18.2
18:45	2		1						3	3.5	10		3	5					18	26
H/Total	7	4	4	5	0	0	0	0	20	28.5	61	5	11	26	0	0	0	0	103	142.3
Total	15	6	16	31	0	0	0	0	68	116.3	171	47	38	103	2	0	5	1	367	518.1

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Trondheim Way /Kiln Lane/N Moss Lane**
Date: **18 October 2018, Thursday**

Time	D - C										D - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	5	1	1						7	7.5									0	0
07:15	8	1							9	9									0	0
07:30	10	1		1					12	13.3	5	1							6	6
07:45	14	3		1					18	19.3	2								2	2
H/Total	37	6	1	2	0	0	0	0	46	49.1	7	1	0	0	0	0	0	0	8	8
08:00	13	1	2	1	1				18	21.3	1								1	1
08:15	11	3		1	1				16	18.3									0	0
08:30	12	3	1	2					18	21.1	1								1	1
08:45	6		1	2					9	12.1									0	0
H/Total	42	7	4	6	2	0	0	0	61	72.8	2	0	0	0	0	0	0	0	2	2
09:00	3			1					4	5.3	1								1	1
09:15	7		1	1					9	10.8									0	0
09:30	5	1		1					7	8.3	1								1	1
09:45	6	1	1	1					9	10.8									0	0
H/Total	21	2	2	4	0	0	0	0	29	35.2	2	0	0	0	0	0	0	0	2	2
Total	100	15	7	12	2	0	0	0	136	157.1	11	1	0	0	0	0	0	0	12	12

Time	D - C										D - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	32	1	1	3			4	1	42	43.2	31	2							33	33
16:15	11		2	2					15	18.6	9						1		10	9.4
16:30	15	3	2	2				1	23	25.8	5			1					6	7.3
16:45	13	1		2			1		17	19									0	0
H/Total	71	5	5	9	0	0	5	2	97	106.6	45	2	0	1	0	0	1	0	49	49.7
17:00	18	1	1	1					21	22.8	1								1	1
17:15	8	3	1	2				1	15	17.3									0	0
17:30	13	1	1	1					16	17.8									0	0
17:45	13	2	1						16	16.5									0	0
H/Total	52	7	4	4	0	0	0	1	68	74.4	1	0	0	0	0	0	0	0	1	1
18:00	8	1		2				1	12	13.8									0	0
18:15	2			1					3	4.3									0	0
18:30	5	2	1	1					9	10.8	1								1	1
18:45	2								2	2									0	0
H/Total	17	3	1	4	0	0	0	1	26	30.9	1	0	0	0	0	0	0	0	1	1
Total	140	15	10	17	0	0	5	4	191	211.9	47	2	0	1	0	0	1	0	51	51.7

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Trondheim Way /Kiln Lane/N Moss Lane**
Date: **18 October 2018, Thursday**

Time	From A										To A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	2	1	0	8	0	0	0	0	11	21.4	14	0	1	2	0	0	0	0	17	20.1
07:15	0	2	3	2	0	0	0	0	7	11.1	7	2	1	1	0	0	1	0	12	13.2
07:30	4	0	1	1	0	0	0	0	6	7.8	9	0	1	0	0	0	0	1	11	10.7
07:45	1	0	1	0	0	0	0	0	2	2.5	12	2	1	1	0	0	1	0	17	18.2
H/Total	7	3	5	11	0	0	0	0	26	42.8	42	4	4	4	0	0	2	1	57	62.2
08:00	0	1	1	5	0	0	0	0	7	14	8	1	3	3	0	0	0	0	15	20.4
08:15	0	1	1	3	0	0	0	0	5	9.4	12	1	1	2	1	0	0	1	18	21.3
08:30	1	0	6	2	0	2	0	0	11	18.6	12	1	0	3	0	0	0	0	16	19.9
08:45	1	1	2	5	0	0	0	0	9	16.5	3	1	0	3	0	0	0	0	7	10.9
H/Total	2	3	10	15	0	2	0	0	32	58.5	35	4	4	11	1	0	0	1	56	72.5
09:00	0	2	4	6	0	0	0	0	12	21.8	2	3	1	2	0	0	0	0	8	11.1
09:15	3	2	2	2	0	0	0	0	9	12.6	1	3	2	0	0	0	0	0	6	7
09:30	2	1	2	1	0	0	0	0	6	8.3	6	2	1	2	0	0	0	0	11	14.1
09:45	2	1	0	2	0	0	0	0	5	7.6	10	3	1	3	0	0	0	0	17	21.4
H/Total	7	6	8	11	0	0	0	0	32	50.3	19	11	5	7	0	0	0	0	42	53.6
Total	16	12	23	37	0	2	0	0	90	151.6	96	19	13	22	1	0	2	2	155	188.3

Time	From A										To A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	6	2	7	3	0	0	0	0	18	25.4	1	0	2	5	0	0	0	0	8	15.5
16:15	17	0	2	0	0	0	1	0	20	20.4	6	2	2	3	0	0	0	0	13	17.9
16:30	8	4	1	2	0	0	0	1	16	18.3	6	1	4	3	0	0	0	0	14	19.9
16:45	14	2	1	1	0	0	1	0	19	20.2	0	0	2	4	0	0	0	0	6	12.2
H/Total	45	8	11	6	0	0	2	1	73	84.3	13	3	10	15	0	0	0	0	41	65.5
17:00	12	1	0	1	0	0	0	0	14	15.3	2	3	2	6	0	0	0	0	13	21.8
17:15	17	1	1	3	0	0	0	1	23	26.6	2	0	2	3	0	0	0	0	7	11.9
17:30	19	0	0	2	0	0	0	0	21	23.6	2	2	0	2	0	0	0	0	6	8.6
17:45	14	2	1	1	0	0	0	0	18	19.8	0	0	1	4	0	0	0	0	5	10.7
H/Total	62	4	2	7	0	0	0	1	76	85.3	6	5	5	15	0	0	0	0	31	53
18:00	7	1	1	1	0	0	0	0	10	11.8	4	2	2	4	0	0	0	0	12	18.2
18:15	5	0	0	1	0	0	0	0	6	7.3	0	1	1	1	0	0	0	0	3	4.8
18:30	6	1	0	1	0	0	0	0	8	9.3	3	1	1	1	0	0	0	0	6	7.8
18:45	9	1	1	2	0	0	0	0	13	16.1	2	1	1	0	0	0	0	0	4	4.5
H/Total	27	3	2	5	0	0	0	0	37	44.5	9	5	5	6	0	0	0	0	25	35.3
Total	134	15	15	18	0	0	2	2	186	214.1	28	13	20	36	0	0	0	0	97	153.8

Project Number: TSP13999
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Trondheim Way /Kiln Lane/N Moss Lane
Date: 18 October 2018, Thursday

Time	From B										To B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	14	2	6	12	0	0	0	0	34	52.6	72	13	4	9	0	0	0	0	98	111.7
07:15	8	6	3	8	0	0	0	0	25	36.9	85	16	2	7	1	0	3	0	114	123.3
07:30	8	3	6	12	0	0	0	0	29	47.6	104	5	4	10	0	0	2	1	126	139
07:45	10	6	5	6	0	0	2	0	29	38.1	118	22	4	10	1	0	1	1	157	171.6
H/Total	40	17	20	38	0	0	2	0	117	175.2	379	56	14	36	2	0	6	2	495	545.6
08:00	12	14	10	13	0	0	0	0	49	70.9	85	15	5	17	0	0	1	0	123	147
08:15	8	10	4	15	0	0	0	0	37	58.5	79	21	6	7	0	1	0	0	114	127.1
08:30	7	8	4	9	0	0	0	0	28	41.7	74	21	11	11	0	0	0	0	117	136.8
08:45	13	12	7	12	0	0	0	0	44	63.1	66	14	5	10	0	0	0	0	95	110.5
H/Total	40	44	25	49	0	0	0	0	158	234.2	304	71	27	45	0	1	1	0	449	521.4
09:00	8	15	8	7	0	0	0	0	38	51.1	30	10	5	8	0	1	0	0	54	67.9
09:15	8	12	5	6	0	0	0	0	31	41.3	31	16	5	10	0	0	0	0	62	77.5
09:30	9	10	6	16	0	1	0	0	42	66.8	26	20	5	7	0	1	0	1	60	71.8
09:45	18	15	8	6	0	0	0	0	47	58.8	17	18	7	7	0	0	0	0	49	61.6
H/Total	43	52	27	35	0	1	0	0	158	218	104	64	22	32	0	2	0	1	225	278.8
Total	123	113	72	122	0	1	2	0	433	627.4	787	191	63	113	2	3	7	3	1169	1345.8

Time	From B										To B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	117	19	4	10	0	0	0	0	150	165	21	12	8	12	0	0	3	0	56	73.8
16:15	78	15	3	10	0	0	1	0	107	120.9	15	11	6	11	1	0	0	0	44	62.3
16:30	170	19	5	5	0	1	2	0	202	210.8	10	6	4	7	0	0	1	0	28	38.5
16:45	72	13	4	8	0	0	2	1	100	110.4	15	7	6	13	0	0	0	1	42	61.1
H/Total	437	66	16	33	0	1	5	1	559	607.1	61	36	24	43	1	0	4	1	170	235.7
17:00	110	18	4	13	0	0	0	2	147	164.3	10	3	5	11	0	0	0	0	29	45.8
17:15	54	17	2	9	0	0	2	0	84	95.5	11	0	0	5	1	0	0	0	17	24.5
17:30	75	12	3	6	0	0	0	0	96	105.3	12	5	2	12	0	0	0	0	31	47.6
17:45	50	3	5	5	0	0	0	0	63	72	22	2	3	11	0	0	1	0	39	54.2
H/Total	289	50	14	33	0	0	2	2	390	437.1	55	10	10	39	1	0	1	0	116	172.1
18:00	60	3	4	7	0	0	0	0	74	85.1	29	2	3	9	0	0	0	0	43	56.2
18:15	34	3	3	3	0	0	1	0	44	48.8	21	1	3	9	0	0	0	0	34	47.2
18:30	39	5	1	4	0	0	0	0	49	54.7	5	2	2	4	0	0	0	0	13	19.2
18:45	23	4	1	2	0	0	1	0	31	33.5	10	0	3	5	0	0	0	0	18	26
H/Total	156	15	9	16	0	0	2	0	198	222.1	65	5	11	27	0	0	0	0	108	148.6
Total	882	131	39	82	0	1	9	3	1147	1266.3	181	51	45	109	2	0	5	1	394	556.4

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Trondheim Way /Kiln Lane/N Moss Lane**
Date: **18 October 2018, Thursday**

Time	From C										To C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	9	0	2	1	0	0	0	0	12	14.3	5	1	2	2	0	0	0	0	10	13.6
07:15	26	2	3	3	0	0	1	0	35	39.8	10	1	0	0	0	0	0	0	11	11
07:30	26	1	0	1	0	0	1	1	30	29.9	16	1	0	3	0	0	0	0	20	23.9
07:45	37	6	0	3	0	0	2	0	48	50.7	17	3	0	1	0	0	0	0	21	22.3
H/Total	98	9	5	8	0	0	4	1	125	134.7	48	6	2	6	0	0	0	0	62	70.8
08:00	19	3	1	2	0	0	0	0	25	28.1	15	2	2	2	1	0	0	0	22	26.6
08:15	25	5	5	1	0	0	0	0	36	39.8	11	3	0	1	1	0	0	0	16	18.3
08:30	29	3	2	1	0	0	0	0	35	37.3	14	4	1	2	0	0	0	0	21	24.1
08:45	22	2	0	0	0	0	0	0	24	24	12	4	1	3	0	0	0	0	20	24.4
H/Total	95	13	8	4	0	0	0	0	120	129.2	52	13	4	8	2	0	0	0	79	93.4
09:00	10	2	1	1	0	0	0	0	14	15.8	4	0	1	1	0	0	0	0	6	7.8
09:15	6	3	0	1	0	0	0	0	10	11.3	13	1	1	1	0	0	0	0	16	17.8
09:30	17	4	0	4	0	0	0	0	25	30.2	8	3	0	1	0	0	0	0	12	13.3
09:45	3	5	1	0	0	0	0	0	9	9.5	12	3	1	2	0	0	0	0	18	21.1
H/Total	36	14	2	6	0	0	0	0	58	66.8	37	7	3	5	0	0	0	0	52	60
Total	229	36	15	18	0	0	4	1	303	330.7	137	26	9	19	2	0	0	0	193	224.2

Time	From C										To C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	15	6	2	2	0	0	0	0	25	28.6	73	10	2	3	0	0	4	1	93	94.7
16:15	12	0	2	3	0	0	0	0	17	21.9	23	1	3	5	0	0	0	0	32	40
16:30	11	1	4	3	0	0	0	0	19	24.9	55	13	2	2	0	1	0	2	75	78
16:45	9	2	3	1	0	0	0	0	15	17.8	35	4	0	3	0	0	2	0	44	46.7
H/Total	47	9	11	9	0	0	0	0	76	93.2	186	28	7	13	0	1	6	3	244	259.4
17:00	13	1	0	0	0	0	0	0	14	14	41	4	1	1	0	0	0	1	48	49
17:15	9	1	1	4	0	0	0	0	15	20.7	21	7	1	2	0	0	1	1	33	34.7
17:30	5	2	2	0	0	0	0	0	9	10	22	5	2	1	0	0	0	0	30	32.3
17:45	17	0	0	2	0	0	1	0	20	22	22	4	2	0	0	0	0	0	28	29
H/Total	44	4	3	6	0	0	1	0	58	66.7	106	20	6	4	0	0	1	2	139	145
18:00	9	0	0	2	0	0	0	0	11	13.6	14	1	0	2	0	0	0	1	18	19.8
18:15	5	1	0	0	0	0	0	0	6	6	5	1	1	1	0	0	0	0	8	9.8
18:30	5	0	0	1	0	0	0	0	6	7.3	7	2	1	1	0	0	0	0	11	12.8
18:45	7	1	0	1	0	0	0	0	9	10.3	5	0	0	0	0	0	0	0	5	5
H/Total	26	2	0	4	0	0	0	0	32	37.2	31	4	2	4	0	0	0	1	42	47.4
Total	117	15	14	19	0	0	1	0	166	197.1	323	52	15	21	0	1	7	6	425	451.8

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **1**
Location: **Trondheim Way /Kiln Lane/N Moss Lane**
Date: **18 October 2018, Thursday**

Time	From D										To D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	83	14	5	8	0	0	0	0	110	122.9	17	3	6	16	0	0	0	0	42	65.8
07:15	84	17	0	7	1	0	3	0	112	120.3	16	8	6	12	0	0	0	0	42	60.6
07:30	114	6	5	11	0	0	1	1	138	153.4	23	4	7	12	0	0	0	0	46	65.1
07:45	125	23	5	11	1	0	1	1	167	183.4	26	8	6	8	0	0	3	0	51	62.6
H/Total	406	60	15	37	2	0	5	2	527	580	82	23	25	48	0	0	3	0	181	254.1
08:00	98	15	10	18	1	0	1	0	143	171.8	21	15	12	16	0	0	0	0	64	90.8
08:15	92	21	4	7	2	1	0	1	128	141.3	23	12	7	16	0	0	0	0	58	82.3
08:30	84	24	8	15	0	0	0	0	131	154.5	21	9	8	11	0	2	0	0	51	71.3
08:45	65	14	5	12	0	0	0	0	96	114.1	20	10	8	13	0	0	0	0	51	71.9
H/Total	339	74	27	52	3	1	1	1	498	581.7	85	46	35	56	0	2	0	0	224	316.3
09:00	31	10	4	8	0	1	0	0	54	67.4	13	16	10	11	0	0	0	0	50	69.3
09:15	36	16	5	10	0	0	0	0	67	82.5	8	13	4	8	0	0	0	0	33	45.4
09:30	31	21	4	7	0	1	0	1	65	76.3	19	11	6	18	0	1	0	0	55	82.4
09:45	31	17	9	10	0	0	0	0	67	84.5	15	14	9	6	0	0	0	0	44	56.3
H/Total	129	64	22	35	0	2	0	1	253	310.7	55	54	29	43	0	1	0	0	182	253.4
Total	874	198	64	124	5	3	6	4	1278	1472.4	222	123	89	147	0	3	3	0	587	823.8

Time	From D										To D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	83	13	8	18	0	0	7	1	130	152.4	126	18	9	13	0	0	0	0	166	187.4
16:15	35	11	9	16	1	0	1	0	73	98.7	98	12	5	10	0	0	3	0	128	141.7
16:30	32	8	6	12	0	0	1	1	60	77.2	150	12	6	10	0	0	2	0	180	194.8
16:45	28	8	6	19	0	0	1	1	63	89.3	73	14	6	9	0	0	2	1	105	117.7
H/Total	178	40	29	65	1	0	10	3	326	417.6	447	56	26	42	0	0	7	1	579	641.6
17:00	30	5	8	16	0	0	0	0	59	83.8	112	15	4	12	0	0	0	1	144	160.8
17:15	18	3	3	9	1	0	0	1	35	48.4	64	15	4	15	0	0	1	1	100	120.1
17:30	27	6	3	12	0	0	0	0	48	65.1	90	8	4	5	0	0	0	0	107	115.5
17:45	34	4	5	15	0	0	1	0	59	80.4	71	3	5	8	0	0	1	0	88	100.3
H/Total	109	18	19	52	1	0	1	1	201	277.7	337	41	17	40	0	0	2	2	439	496.7
18:00	39	5	5	13	0	0	0	1	63	81.6	68	4	5	8	0	0	0	0	85	97.9
18:15	21	2	4	11	0	0	0	0	38	54.3	39	3	2	4	0	0	1	0	49	54.6
18:30	12	5	3	6	0	0	0	0	26	35.3	47	6	0	6	0	0	0	0	59	66.8
18:45	14	0	4	5	0	0	0	0	23	31.5	36	5	2	5	0	0	1	0	49	55.9
H/Total	86	12	16	35	0	0	0	1	150	202.7	190	18	9	23	0	0	2	0	242	275.2
Total	373	70	64	152	2	0	11	5	677	898	974	115	52	105	0	0	11	3	1260	1413.5

Project Number: TSP13999
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 1
Location: Trondheim Way /Kiln Lane/N Moss Lane
Date: 18 October 2018, Thursday

Time	Whole Junction									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	108	17	13	29	0	0	0	0	167	211.2
07:15	118	27	9	20	1	0	4	0	179	208.1
07:30	152	10	12	25	0	0	2	2	203	238.7
07:45	173	35	11	20	1	0	5	1	246	274.7
H/Total	551	89	45	94	2	0	11	3	795	932.7
08:00	129	33	22	38	1	0	1	0	224	284.8
08:15	125	37	14	26	2	1	0	1	206	249
08:30	121	35	20	27	0	2	0	0	205	252.1
08:45	101	29	14	29	0	0	0	0	173	217.7
H/Total	476	134	70	120	3	3	1	1	808	1003.6
09:00	49	29	17	22	0	1	0	0	118	156.1
09:15	53	33	12	19	0	0	0	0	117	147.7
09:30	59	36	12	28	0	2	0	1	138	181.6
09:45	54	38	18	18	0	0	0	0	128	160.4
H/Total	215	136	59	87	0	3	0	1	501	645.8
Total	1242	359	174	301	5	6	12	5	2104	2582.1

Peak Hours		Totals
07:00	08:00	795
07:15	08:15	852
07:30	08:30	879
07:45	08:45	881

08:00	09:00	808
08:15	09:15	702
08:30	09:30	613
08:45	09:45	546

09:00	10:00	501

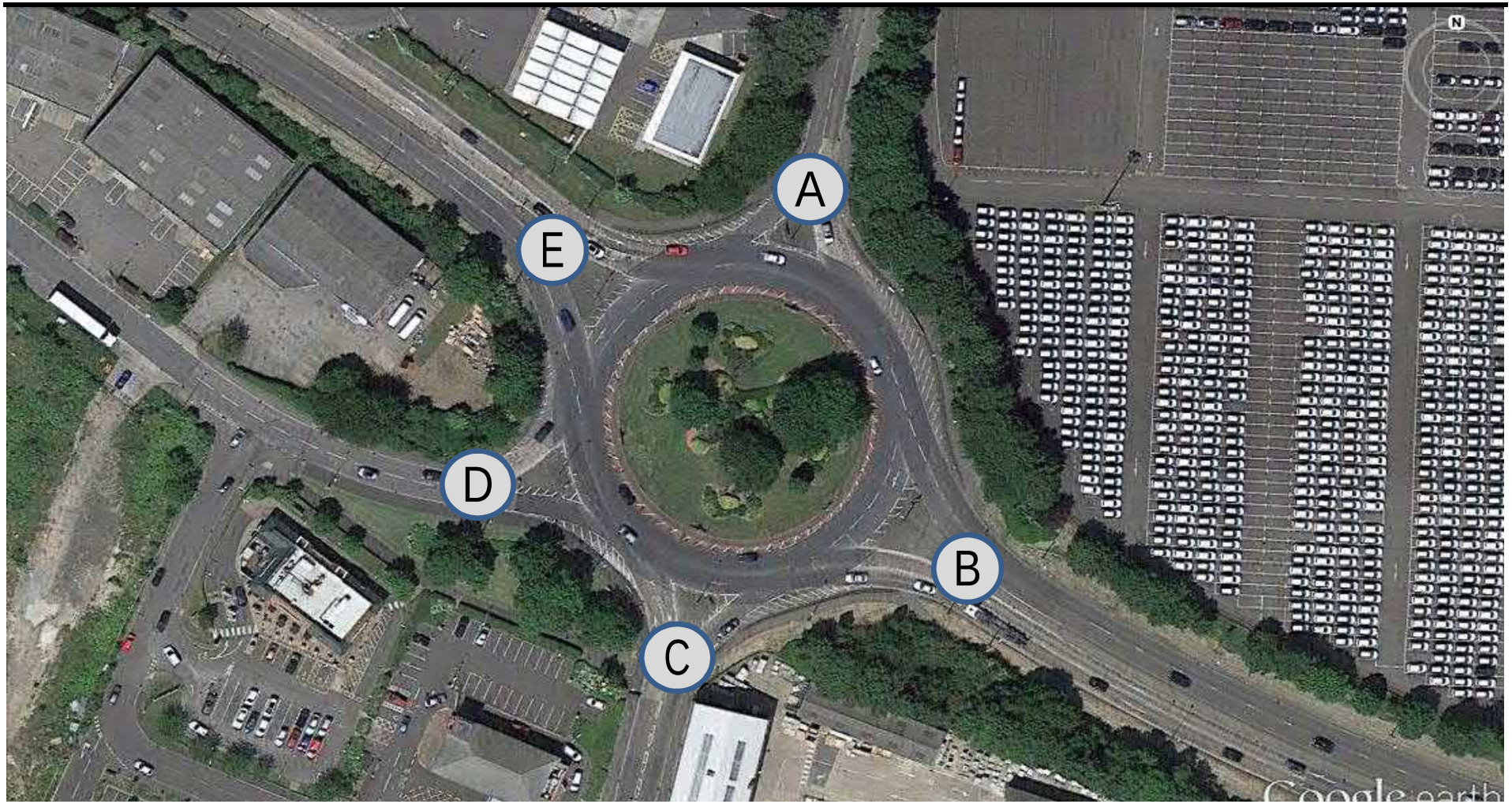
Time	Whole Junction									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	221	40	21	33	0	0	7	1	323	371.4
16:15	142	26	16	29	1	0	3	0	217	261.9
16:30	221	32	16	22	0	1	3	2	297	331.2
16:45	123	25	14	29	0	0	4	2	197	237.7
H/Total	707	123	67	113	1	1	17	5	1034	1202.2
17:00	165	25	12	30	0	0	0	2	234	277.4
17:15	98	22	7	25	1	0	2	2	157	191.2
17:30	126	20	8	20	0	0	0	0	174	204
17:45	115	9	11	23	0	0	2	0	160	194.2
H/Total	504	76	38	98	1	0	4	4	725	866.8
18:00	115	9	10	23	0	0	0	1	158	192.1
18:15	65	6	7	15	0	0	1	0	94	116.4
18:30	62	11	4	12	0	0	0	0	89	106.6
18:45	53	6	6	10	0	0	1	0	76	91.4
H/Total	295	32	27	60	0	0	2	1	417	506.5
Total	1506	231	132	271	2	1	23	10	2176	2575.5

Peak Hours		Totals
16:00	17:00	1034
16:15	17:15	945
16:30	17:30	885
16:45	17:45	762

17:00	18:00	725
17:15	18:15	649
17:30	18:30	586
17:45	18:45	501

18:00	19:00	417

Project Number: TSP13999
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180



Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	A - A										A - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
	1	1	1.5	2.3	2	2	0.4	0.2												
07:00	1								1	1	31	3	3			1			38	40.5
07:15									0	0	8	2	4	2		1			17	22.6
07:30	1								1	1	9			2					11	13.6
07:45									0	0	7	3							10	10
H/Total	2	0	0	0	0	0	0	0	2	2	55	8	7	4	0	2	0	0	76	86.7
08:00									0	0	6	1	2	1			2		12	13.1
08:15									0	0	6	11	3				1		21	21.9
08:30									0	0	13	3	1	2		1			20	24.1
08:45	1								1	1	10	4	3	2					19	23.1
H/Total	1	0	0	0	0	0	0	0	1	1	35	19	9	5	0	1	3	0	72	82.2
09:00									0	0	16	7	3	2					28	32.1
09:15									0	0	12	10	3	2					27	31.1
09:30				1					1	2.3	11	7	4						22	24
09:45									0	0	12	8	2	1		1			24	27.3
H/Total	0	0	0	1	0	0	0	0	1	2.3	51	32	12	5	0	1	0	0	101	114.5
Total	3	0	0	1	0	0	0	0	4	5.3	141	59	28	14	0	4	3	0	249	283.4

Time	A - A										A - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	24	5	1						30	30.5
16:15									0	0	42	7					3	1	53	50.4
16:30									0	0	40	5					3		48	46.2
16:45									0	0	48	4		1					53	54.3
H/Total	0	0	0	0	0	0	0	0	0	0	154	21	1	1	0	0	6	1	184	181.4
17:00									0	0	52	7		1			1	3	64	62.3
17:15									0	0	38	3	1						42	42.5
17:30									0	0	39	3					1		43	42.4
17:45									0	0	21	1						2	24	22.4
H/Total	0	0	0	0	0	0	0	0	0	0	150	14	1	1	0	0	2	5	173	169.6
18:00									0	0	26							2	28	26.4
18:15									0	0	21								21	21
18:30									0	0	17	1						1	19	18.2
18:45									0	0	24							2	26	24.4
H/Total	0	0	0	0	0	0	0	0	0	0	88	1	0	0	0	0	0	5	94	90
Total	0	0	0	0	0	0	0	0	0	0	392	36	2	2	0	0	8	11	451	441

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	16		1						17	17.5	2								2	2
07:15	1	1		1					3	4.3	1								1	1
07:30			1	1			1		3	4.2			1						1	1.5
07:45	1	1							2	2	2	1							3	3
H/Total	18	2	2	2	0	0	1	0	25	28	5	1	1	0	0	0	0	0	7	7.5
08:00	4	2							6	6									0	0
08:15	1	3							4	4		1							1	1
08:30	4								4	4	1	2							3	3
08:45	5	2	2	1					10	12.3	1	1	1						3	3.5
H/Total	14	7	2	1	0	0	0	0	24	26.3	2	4	1	0	0	0	0	0	7	7.5
09:00	5	1	1						7	7.5	1		1	1					3	4.8
09:15	5		2						7	8	2								2	2
09:30	4	1		1					6	7.3	2	2							4	4
09:45	7	1	1	1					10	11.8		3	1						4	4.5
H/Total	21	3	4	2	0	0	0	0	30	34.6	5	5	2	1	0	0	0	0	13	15.3
Total	53	12	8	5	0	0	1	0	79	88.9	12	10	4	1	0	0	0	0	27	30.3

Time	A - C										A - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	15	4							19	19									0	0
16:15	12	2	1						15	15.5									0	0
16:30	16	1							17	17		1							1	1
16:45	7	2				1			10	11		1		2					3	5.6
H/Total	50	9	1	0	0	1	0	0	61	62.5	0	2	0	2	0	0	0	0	4	6.6
17:00	15			1					16	17.3	2								2	2
17:15	10	2							12	12	1								1	1
17:30	14					1			15	16		1					1		2	1.4
17:45	13								13	13									0	0
H/Total	52	2	0	1	0	1	0	0	56	58.3	3	1	0	0	0	0	1	0	5	4.4
18:00	7	1							8	8		2							2	2
18:15	12	2							14	14									0	0
18:30	9	2							11	11				2					2	4.6
18:45	10	1							11	11				1					1	2.3
H/Total	38	6	0	0	0	0	0	0	44	44	0	2	0	3	0	0	0	0	5	8.9
Total	140	17	1	1	0	2	0	0	161	164.8	3	5	0	5	0	0	1	0	14	19.9

Project Number: TSP13999
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180
Date: 18 October 2018, Thursday

Time	A - E										B - A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	4	3	1	1					9	10.8	33	4		1			1		39	39.7
07:15	3	1	1	5					10	17	36	4		1			3		44	43.5
07:30	12	3		4					19	24.2	49	6	1	1			2		59	59.6
07:45	7	1		4					12	17.2	66	5	1				1		73	72.9
H/Total	26	8	2	14	0	0	0	0	50	69.2	184	19	2	3	0	0	7	0	215	215.7
08:00	11	2	1	3					17	21.4	53	15	2				1		71	71.4
08:15	7	3		3					13	16.9	39	7		2					48	50.6
08:30	7	4		7					18	27.1	13	7	2	1					23	25.3
08:45	8	2	1	3					14	18.4	12	7	5						24	26.5
H/Total	33	11	2	16	0	0	0	0	62	83.8	117	36	9	3	0	0	1	0	166	173.8
09:00	8	2		7					17	26.1	11	3	2						16	17
09:15	5	1		2					8	10.6	15	6	1	2					24	27.1
09:30	10	2							12	12	15	6	3			1			25	27.5
09:45	9	3		2					14	16.6	10	8	3	1					22	24.8
H/Total	32	8	0	11	0	0	0	0	51	65.3	51	23	9	3	0	1	0	0	87	96.4
Total	91	27	4	41	0	0	0	0	163	218.3	352	78	20	9	0	1	8	0	468	485.9

Time	A - E										B - A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	9	1		3					13	16.9	12	1							13	13
16:15	8	2	1	1			1		13	14.2	15	3		2					20	22.6
16:30	6	1		1					8	9.3	6	1							7	7
16:45	3	1	1	1					6	7.8	5	1	1						7	7.5
H/Total	26	5	2	6	0	0	1	0	40	48.2	38	6	1	2	0	0	0	0	47	50.1
17:00	3			1					4	5.3	5								5	5
17:15	3			4					7	12.2	8	1					1		10	9.4
17:30	5			1					6	7.3	6								6	6
17:45	6			7					13	22.1	8	4							12	12
H/Total	17	0	0	13	0	0	0	0	30	46.9	27	5	0	0	0	0	1	0	33	32.4
18:00	5	2		3					10	13.9	15	1	1						17	17.5
18:15	7	1	1	5					14	21	12	2							14	14
18:30	3			2					5	7.6	25								25	25
18:45	5			4					9	14.2	3								3	3
H/Total	20	3	1	14	0	0	0	0	38	56.7	55	3	1	0	0	0	0	0	59	59.5
Total	63	8	3	33	0	0	1	0	108	151.8	120	14	2	2	0	0	1	0	139	142

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	B - B										B - C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	1								1	1	7	3	1					1	12	11.7
07:15	1								1	1	13	3							16	16
07:30									0	0	7	3							10	10
07:45									0	0	3	1							4	4
H/Total	2	0	0	0	0	0	0	0	2	2	30	10	1	0	0	0	0	1	42	41.7
08:00									0	0	14	3	2						19	20
08:15	1								1	1	24	5							29	29
08:30									0	0	13	7							20	20
08:45	2								2	2	29	6	1	1			1		38	39.2
H/Total	3	0	0	0	0	0	0	0	3	3	80	21	3	1	0	0	1	0	106	108.2
09:00									0	0	28	7	1			2	1		39	40.9
09:15									0	0	23	6	1						30	30.5
09:30	1								1	1	37	6	1				1		45	44.9
09:45							1		1	0.4	31	4	1						36	36.5
H/Total	1	0	0	0	0	0	1	0	2	1.4	119	23	4	0	0	2	2	0	150	152.8
Total	6	0	0	0	0	0	1	0	7	6.4	229	54	8	1	0	2	3	1	298	302.7

Time	B - B										B - C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	1								1	1	47	1	1						49	49.5
16:15									0	0	41	3	1						45	45.5
16:30									0	0	47	3	1						51	51.5
16:45	1								1	1	34	1							35	35
H/Total	2	0	0	0	0	0	0	0	2	2	169	8	3	0	0	0	0	0	180	181.5
17:00									0	0	47	3				1			51	52
17:15									0	0	32	3		1			1		37	37.7
17:30	2								2	2	35	1							36	36
17:45	1								1	1	42	5					1		48	47.4
H/Total	3	0	0	0	0	0	0	0	3	3	156	12	0	1	0	1	2	0	172	173.1
18:00	1								1	1	50	9							59	59
18:15									0	0	30	3							33	33
18:30									0	0	44	5					1		50	49.4
18:45	3								3	3	47	1							48	48
H/Total	4	0	0	0	0	0	0	0	4	4	171	18	0	0	0	0	1	0	190	189.4
Total	9	0	0	0	0	0	0	0	9	9	496	38	3	1	0	1	3	0	542	544

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	B - D										B - E									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	5	4		1					10	11.3	260	45	4	4	1	1	2		317	325
07:15	15	6	1						22	22.5	274	37	6	7			2		326	336.9
07:30	16	7							23	23	388	58	13	8			2		469	484.7
07:45	18	5	2						25	26	278	62	10	8		2	4		364	379
H/Total	54	22	3	1	0	0	0	0	80	82.8	1200	202	33	27	1	3	10	0	1476	1525.6
08:00	12	8	2						22	23	263	45	4	7		1	1		321	332.5
08:15	11	3	2						16	17	232	45	16	5	1	1	2	1	303	317.5
08:30	9	7	2	1					19	21.3	158	38	11	10		1			218	237.5
08:45	13	7	4						24	26	145	36	15	7			1		204	220
H/Total	45	25	10	1	0	0	0	0	81	87.3	798	164	46	29	1	3	4	1	1046	1107.5
09:00	12	6	1	2					21	24.1	105	43	10	9		3	1		171	190.1
09:15	11	10							21	21	110	36	12	9		2			169	188.7
09:30	15	9	1	2					27	30.1	96	30	10	9		2			147	165.7
09:45	12	6		1					19	20.3	99	32	11	6					148	161.3
H/Total	50	31	2	5	0	0	0	0	88	95.5	410	141	43	33	0	7	1	0	635	705.8
Total	149	78	15	7	0	0	0	0	249	265.6	2408	507	122	89	2	13	15	1	3157	3338.9

Time	B - D										B - E									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	7	5							12	12	165	33	9	5		1			213	225
16:15	10	6							16	16	179	34	2	10		1	2		228	241.8
16:30	20	3		1					24	25.3	196	33	11	11		4	4		259	280.4
16:45	23	3					2		28	26.8	192	32	4	4		4	1		237	247.6
H/Total	60	17	0	1	0	0	2	0	80	80.1	732	132	26	30	0	10	7	0	937	994.8
17:00	7								7	7	199	23	2	8		1			233	245.4
17:15	5								5	5	170	14	1	1		2			188	191.8
17:30	21	1		1					23	24.3	221	32	3	3			1		260	264.8
17:45	7	2							9	9	176	20	1	10		1	4		212	224.1
H/Total	40	3	0	1	0	0	0	0	44	45.3	766	89	7	22	0	4	5	0	893	926.1
18:00	20	2							22	22	146	14	5	2			1		168	172.5
18:15	10								10	10	137	13	2	2		1	1		156	160
18:30	19	1							20	20	111	11		3			1		126	129.3
18:45	14								14	14	90	9	2	2			3		106	107.8
H/Total	63	3	0	0	0	0	0	0	66	66	484	47	9	9	0	1	6	0	556	569.6
Total	163	23	0	2	0	0	2	0	190	191.4	1982	268	42	61	0	15	18	0	2386	2490.5

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	19	3							22	22	3	3							6	6
07:15	16	2					1		19	18.4	9	1							10	10
07:30	32	5					1		38	37.4	14	3							17	17
07:45	17	4							21	21	12	2	1						15	15.5
H/Total	84	14	0	0	0	0	2	0	100	98.8	38	9	1	0	0	0	0	0	48	48.5
08:00	27	7		1					35	36.3	14	3							17	17
08:15	30	2	1						33	33.5	32	4							36	36
08:30	15	3							18	18	38	2	1	1	1				43	45.8
08:45	15	4	1						20	20.5	45	6				1			52	53
H/Total	87	16	2	1	0	0	0	0	106	108.3	129	15	1	1	1	1	0	0	148	151.8
09:00	13	4	1			1			19	20.5	50	10							60	60
09:15	9		1	1					11	12.8	28	5				1			34	35
09:30	10	4	1	1					16	17.8	36	8	1	1	1		1		48	50.2
09:45	11	1	2						14	15	31	4							35	35
H/Total	43	9	5	2	0	1	0	0	60	66.1	145	27	1	1	1	1	1	0	177	180.2
Total	214	39	7	3	0	1	2	0	266	273.2	312	51	3	2	2	2	1	0	373	380.5

Time	C - A										C - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	6		1						7	7.5	24	2					1		27	26.4
16:15	5		2						7	8	36	2							38	38
16:30	7	1				1			9	10	36	5	1						42	42.5
16:45	3								3	3	30	5							35	35
H/Total	21	1	3	0	0	1	0	0	26	28.5	126	14	1	0	0	0	1	0	142	141.9
17:00	6	1							7	7	28	2							30	30
17:15	2								2	2	25	3							28	28
17:30	3	1					1		5	4.4	29	4							33	33
17:45	3								3	3	39	2							41	41
H/Total	14	2	0	0	0	0	1	0	17	16.4	121	11	0	0	0	0	0	0	132	132
18:00	7						1		8	7.4	33	4	1						38	38.5
18:15	5	1					1		7	6.4	23	2							25	25
18:30	12								12	12	32	2	1				1		36	35.9
18:45	7								7	7	43	3							46	46
H/Total	31	1	0	0	0	0	2	0	34	32.8	131	11	2	0	0	0	1	0	145	145.4
Total	66	4	3	0	0	1	3	0	77	77.7	378	36	3	0	0	0	2	0	419	419.3

Project Number: **TSP13999**
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Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0	8	4							12	12
07:15									0	0	12	5							17	17
07:30									0	0	11	4	1						16	16.5
07:45									0	0	10	7							17	17
H/Total	0	0	0	0	0	0	0	0	0	0	41	20	1	0	0	0	0	0	62	62.5
08:00									0	0	20	8							28	28
08:15									0	0	20	2							22	22
08:30									0	0	10	8	1						19	19.5
08:45									0	0	13	6					1		20	19.4
H/Total	0	0	0	0	0	0	0	0	0	0	63	24	1	0	0	0	1	0	89	88.9
09:00									0	0	22	3							25	25
09:15		1							1	1	20	3	1						24	24.5
09:30									0	0	14	4	1	1					20	21.8
09:45									0	0	22	3	1						26	26.5
H/Total	0	1	0	0	0	0	0	0	1	1	78	13	3	1	0	0	0	0	95	97.8
Total	0	1	0	0	0	0	0	0	1	1	182	57	5	1	0	0	1	0	246	249.2

Time	C - C										C - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	20	2							22	22
16:15	1								1	1	16	4	2						22	23
16:30									0	0	25	4							29	29
16:45									0	0	20	3							23	23
H/Total	1	0	0	0	0	0	0	0	1	1	81	13	2	0	0	0	0	0	96	97
17:00									0	0	20	5							25	25
17:15									0	0	13	5							18	18
17:30									0	0	17	2							19	19
17:45	1								1	1	22	1							23	23
H/Total	1	0	0	0	0	0	0	0	1	1	72	13	0	0	0	0	0	0	85	85
18:00									0	0	20	1							21	21
18:15									0	0	23	1							24	24
18:30									0	0	23	2							25	25
18:45									0	0	23	1					1		25	24.4
H/Total	0	0	0	0	0	0	0	0	0	0	89	5	0	0	0	0	1	0	95	94.4
Total	2	0	0	0	0	0	0	0	2	2	242	31	2	0	0	0	1	0	276	276.4

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	C - E										D - A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	92	25	2				4		123	121.6	2								2	2
07:15	87	12	1		1		1		102	102.9		1							1	1
07:30	73	17	3						93	94.5	2	1							3	3
07:45	83	22	1	1	1	1	3		112	114	1								1	1
H/Total	335	76	7	1	2	1	8	0	430	433	5	2	0	0	0	0	0	0	7	7
08:00	89	21		1	2	1			114	118.3	1								1	1
08:15	93	21		1		1			116	118.3	1	1							2	2
08:30	55	19	5			1			80	83.5									0	0
08:45	60	15	1	1	1	1			79	82.8	1		1	1					3	4.8
H/Total	297	76	6	3	3	4	0	0	389	402.9	3	1	1	1	0	0	0	0	6	7.8
09:00	54	24	7	1				1	87	91	1								1	1
09:15	40	9	3		1	1			54	57.5	2	1	2						5	6
09:30	51	20	1			2	2		76	77.3	4	2		2					8	10.6
09:45	42	23	5	1		1			72	76.8	3								3	3
H/Total	187	76	16	2	1	4	2	1	289	302.6	10	3	2	2	0	0	0	0	17	20.6
Total	819	228	29	6	6	9	10	1	1108	1138.5	18	6	3	3	0	0	0	0	30	35.4

Time	C - E										D - A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	58	12	3			2	3		78	79.7	2								2	2
16:15	73	12		1	1	2	1		90	93.7	1								1	1
16:30	78	9	2			1			90	92	1	1							2	2
16:45	74	8	2		1	3			88	93									0	0
H/Total	283	41	7	1	2	8	4	0	346	358.4	4	1	0	0	0	0	0	0	5	5
17:00	111	10	1			1			123	124.5	1	1							2	2
17:15	104	14			1	1			120	122	1								1	1
17:30	93	8	2		1				104	106	1								1	1
17:45	89	3	1						93	93.5	4								4	4
H/Total	397	35	4	0	2	2	0	0	440	446	7	1	0	0	0	0	0	0	8	8
18:00	76	5	1	1		1			84	86.8	1								1	1
18:15	50	5		2		2			59	63.6									0	0
18:30	53	2						1	56	55.2									0	0
18:45	46	3				1			50	51									0	0
H/Total	225	15	1	3	0	4	0	1	249	256.6	1	0	0	0	0	0	0	0	1	1
Total	905	91	12	4	4	14	4	1	1035	1061	12	2	0	0	0	0	0	0	14	14

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	D - B										D - C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	4								4	4									0	0
07:15	2	2	2	1					7	9.3	6	4							10	10
07:30	3	2							5	5	3	2							5	5
07:45	8	4		1					13	14.3	6	9	1						16	16.5
H/Total	17	8	2	2	0	0	0	0	29	32.6	15	15	1	0	0	0	0	0	31	31.5
08:00	2	8	2						12	13	4	6							10	10
08:15	6	3	1	1					11	12.8	4	1	1						6	6.5
08:30	5	6	2						13	14	12	5							17	17
08:45	6	12	2	1					21	23.3	7	6							13	13
H/Total	19	29	7	2	0	0	0	0	57	63.1	27	18	1	0	0	0	0	0	46	46.5
09:00	5	4	3						12	13.5	16	7				1			24	25
09:15	8	9	1	1					19	20.8	10	6							16	16
09:30	15	7	1	1					24	25.8	8	6							14	14
09:45	11	8	2						21	22	20	4	1						25	25.5
H/Total	39	28	7	2	0	0	0	0	76	82.1	54	23	1	0	0	1	0	0	79	80.5
Total	75	65	16	6	0	0	0	0	162	177.8	96	56	3	0	0	1	0	0	156	158.5

Time	D - B										D - C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	17	6							23	23	24	4							28	28
16:15	15	3	1				1		20	19.9	16	3							19	19
16:30	23	4					1		28	27.4	14	2					1		17	16.4
16:45	16	4							20	20	19	7							26	26
H/Total	71	17	1	0	0	0	2	0	91	90.3	73	16	0	0	0	0	1	0	90	89.4
17:00	25	3	2						30	31	23	4							27	27
17:15	15	4							19	19	14	1							15	15
17:30	17	2					1		20	19.4	12	1		1					14	15.3
17:45	11	5							16	16	19	1							20	20
H/Total	68	14	2	0	0	0	1	0	85	85.4	68	7	0	1	0	0	0	0	76	77.3
18:00	9	2							11	11	23	2		1					26	27.3
18:15	13	3							16	16	20	1							21	21
18:30	12								12	12	18	1							19	19
18:45	18	1							19	19	22								22	22
H/Total	52	6	0	0	0	0	0	0	58	58	83	4	0	1	0	0	0	0	88	89.3
Total	191	37	3	0	0	0	3	0	234	233.7	224	27	0	2	0	0	1	0	254	256

Project Number: **TSP13999**
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Date: **18 October 2018, Thursday**

Time	D - D										D - E									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00									0	0	13	3		3					19	22.9
07:15									0	0	14	7							21	21
07:30									0	0	13	3							16	16
07:45									0	0	6	3	2	1					12	14.3
H/Total	0	0	0	0	0	0	0	0	0	0	46	16	2	4	0	0	0	0	68	74.2
08:00									0	0	13	8	2						23	24
08:15									0	0	13	11	4	1					29	32.3
08:30									0	0	13	12	3						28	29.5
08:45									0	0	13	11	3	2					29	33.1
H/Total	0	0	0	0	0	0	0	0	0	0	52	42	12	3	0	0	0	0	109	118.9
09:00									0	0	14	4	1	2					21	24.1
09:15									0	0	13	8	2	1					24	26.3
09:30									0	0	14	9	1	2					26	29.1
09:45									0	0	10	7	3	1					21	23.8
H/Total	0	0	0	0	0	0	0	0	0	0	51	28	7	6	0	0	0	0	92	103.3
Total	0	0	0	0	0	0	0	0	0	0	149	86	21	13	0	0	0	0	269	296.4

Time	D - D										D - E									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00									0	0	19	8	2						29	30
16:15									0	0	14	7	1	1					23	24.8
16:30									0	0	19	5		1					25	26.3
16:45									0	0	18	7		1			1		27	27.7
H/Total	0	0	0	0	0	0	0	0	0	0	70	27	3	3	0	0	1	0	104	108.8
17:00									0	0	15	4							19	19
17:15									0	0	24	1	1						26	26.5
17:30									0	0	7	5					1		13	12.4
17:45									0	0	16								16	16
H/Total	0	0	0	0	0	0	0	0	0	0	62	10	1	0	0	0	1	0	74	73.9
18:00									0	0	19	3	1						23	23.5
18:15									0	0	12	1		1					14	15.3
18:30									0	0	11	1							12	12
18:45									0	0	14	3							17	17
H/Total	0	0	0	0	0	0	0	0	0	0	56	8	1	1	0	0	0	0	66	67.8
Total	0	0	0	0	0	0	0	0	0	0	188	45	5	4	0	0	2	0	244	250.5

Project Number: **TSP13999**
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Site No: **2**
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Date: **18 October 2018, Thursday**

Time	E - A										E - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	1		1	5					7	14	76	27	21	8		2			134	156.9
07:15	1			8					9	19.4	91	36	12	13		3	1		156	181.3
07:30	4			5			1		10	15.9	120	40	13	10		3	1		187	208.9
07:45	2		1	5					8	15	176	36	16	15		1	2		246	273.3
H/Total	8	0	2	23	0	0	1	0	34	64.3	463	139	62	46	0	9	4	0	723	820.4
08:00	1			1					2	3.3	200	39	10	4		1			254	265.2
08:15									0	0	193	43	9	10	1	1	1		258	276.9
08:30				1					1	2.3	232	49	11	7	1	2	1		303	320
08:45	4	1		2					7	9.6	174	51	21	4		3			253	271.7
H/Total	5	1	0	4	0	0	0	0	10	15.2	799	182	51	25	2	7	2	0	1068	1133.8
09:00	5		1	1					7	8.8	169	33	5	9			1		217	230.6
09:15				6					6	13.8	109	35	18	3			1		166	178.3
09:30				1					1	2.3	110	33	15	8					166	183.9
09:45	1	2		2					5	7.6	123	29	10	8		1	3		174	188.6
H/Total	6	2	1	10	0	0	0	0	19	32.5	511	130	48	28	0	1	5	0	723	781.4
Total	19	3	3	37	0	0	1	0	63	112	1773	451	161	99	2	17	11	0	2514	2735.6

Time	E - A										E - B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00		1		3					4	7.9	287	42	2	9	1	3	4		348	362.3
16:15				5					5	11.5	301	52	2	2		1	3	1	362	364
16:30	1								1	1	321	57	6	12		3	2		401	421.4
16:45	1	1		1					3	4.3	332	64	4	4			1		405	411.6
H/Total	2	2	0	9	0	0	0	0	13	24.7	1241	215	14	27	1	7	10	1	1516	1559.3
17:00	1								1	1	352	61	4	3	1		4	2	427	429.9
17:15									0	0	329	42	3	6	1	1	3		385	394.5
17:30				1					1	2.3	339	48	6	7	1		2		403	414.9
17:45									0	0	245	35	2	1				1	284	285.5
H/Total	1	0	0	1	0	0	0	0	2	3.3	1265	186	15	17	3	1	9	3	1499	1524.8
18:00				4					4	9.2	274	28	2	2			4	1	311	311.4
18:15	3								3	3	170	22	2	5		2	1		202	210.9
18:30		1							1	1	196	13	2	3	1		1		216	221.3
18:45				1					1	2.3	158	20	1	2			2		183	184.9
H/Total	3	1	0	5	0	0	0	0	9	15.5	798	83	7	12	1	2	8	1	912	928.5
Total	6	3	0	15	0	0	0	0	24	43.5	3304	484	36	56	5	10	27	5	3927	4012.6

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	E - C										E - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	23	10	8	1		2			44	51.3	8	10							18	18
07:15	39	9	2	1		2			53	57.3	8	12		1					21	22.3
07:30	41	20	1		1	2			65	68.5	14	9	1						24	24.5
07:45	70	13	1			1			85	86.5	8	11	3	2			1		25	28.5
H/Total	173	52	12	2	1	7	0	0	247	263.6	38	42	4	3	0	0	1	0	88	93.3
08:00	97	19	1			1			118	119.5	5	8	3	1					17	19.8
08:15	90	14	5	2		3			114	122.1	9	12	2	4					27	33.2
08:30	86	20	5	1		1			113	117.8	12	7		3					22	25.9
08:45	80	15	5	1					101	104.8	8	10	3						21	22.5
H/Total	353	68	16	4	0	5	0	0	446	464.2	34	37	8	8	0	0	0	0	87	101.4
09:00	73	12	1	2	1	1			90	95.1	9	6	3	1					19	21.8
09:15	38	15	6	1			1		61	64.7	9	3	1						13	13.5
09:30	41	9	2						52	53	6	4	2	1					13	15.3
09:45	54	7	2	2	1	1	1		68	73	5	3	1	1					10	11.8
H/Total	206	43	11	5	2	2	2	0	271	285.8	29	16	7	3	0	0	0	0	55	62.4
Total	732	163	39	11	3	14	2	0	964	1013.6	101	95	19	14	0	0	1	0	230	257.1

Time	E - C										E - D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	96	28	1	2	1	3	2		133	138.9	7	1	1				1		10	9.9
16:15	111	17	2			1	1		132	133.4	7	2	2				1		12	12.4
16:30	87	6		1	1	1	5		101	101.3	8	7		1					16	17.3
16:45	99	16	1	1		1			118	120.8	10	4							14	14
H/Total	393	67	4	4	2	6	8	0	484	494.4	32	14	3	1	0	0	2	0	52	53.6
17:00	105	12							117	117	5	2							7	7
17:15	89	22			1	1			113	115	6			2					8	10.6
17:30	103	15			1				119	120	7	1	1	1					10	11.8
17:45	76	9		1		1	1		88	89.7	8	2		2					12	14.6
H/Total	373	58	0	1	2	2	1	0	437	441.7	26	5	1	5	0	0	0	0	37	44
18:00	79	6							85	85	5	2							7	7
18:15	68	5			1				74	75	9	1		1					11	12.3
18:30	60	9					1		70	69.4	10	1		1					12	13.3
18:45	72	5	1						78	78.5	8	1				1			10	11
H/Total	279	25	1	0	1	0	1	0	307	307.9	32	5	0	2	0	1	0	0	40	43.6
Total	1045	150	5	5	5	8	10	0	1228	1244	90	24	4	8	0	1	2	0	129	141.2

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	E - E									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	3								3	3
07:15	1								1	1
07:30									0	0
07:45									0	0
H/Total	4	0	0	0	0	0	0	0	4	4
08:00									0	0
08:15									0	0
08:30		1							1	1
08:45		1							1	1
H/Total	0	2	0	0	0	0	0	0	2	2
09:00									0	0
09:15									0	0
09:30									0	0
09:45									0	0
H/Total	0	0	0	0	0	0	0	0	0	0
Total	4	2	0	0	0	0	0	0	6	6

Time	E - E									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	2								2	2
16:15	1								1	1
16:30									0	0
16:45									0	0
H/Total	3	0	0	0	0	0	0	0	3	3
17:00		1	1						2	2.5
17:15									0	0
17:30									0	0
17:45									0	0
H/Total	0	1	1	0	0	0	0	0	2	2.5
18:00	1								1	1
18:15									0	0
18:30									0	0
18:45									0	0
H/Total	1	0	0	0	0	0	0	0	1	1
Total	4	1	1	0	0	0	0	0	6	6.5

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	From A										To A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	54	6	5	1	0	1	0	0	67	71.8	56	7	1	6	0	0	1	0	71	78.7
07:15	13	4	5	8	0	1	0	0	31	44.9	53	7	0	9	0	0	4	0	73	82.3
07:30	22	3	2	7	0	0	1	0	35	44.5	88	12	1	6	0	0	4	0	111	116.9
07:45	17	6	0	4	0	0	0	0	27	32.2	86	9	2	5	0	0	1	0	103	109.9
H/Total	106	19	12	20	0	2	1	0	160	193.4	283	35	4	26	0	0	10	0	358	387.8
08:00	21	5	3	4	0	0	2	0	35	40.5	82	22	2	2	0	0	1	0	109	112
08:15	14	18	3	3	0	0	1	0	39	43.8	70	10	1	2	0	0	0	0	83	86.1
08:30	25	9	1	9	0	1	0	0	45	58.2	28	10	2	2	0	0	0	0	42	45.6
08:45	25	9	7	6	0	0	0	0	47	58.3	33	12	7	3	0	0	0	0	55	62.4
H/Total	85	41	14	22	0	1	3	0	166	200.8	213	54	12	9	0	0	1	0	289	306.1
09:00	30	10	5	10	0	0	0	0	55	70.5	30	7	4	1	0	1	0	0	43	47.3
09:15	24	11	5	4	0	0	0	0	44	51.7	26	7	4	9	0	0	0	0	46	59.7
09:30	27	12	4	2	0	0	0	0	45	49.6	29	12	4	5	0	1	0	0	51	60.5
09:45	28	15	4	4	0	1	0	0	52	60.2	25	11	5	3	0	0	0	0	44	50.4
H/Total	109	48	18	20	0	1	0	0	196	232	110	37	17	18	0	2	0	0	184	217.9
Total	300	108	44	62	0	4	4	0	522	626.2	606	126	33	53	0	2	11	0	831	911.8

Time	From A										To A									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	48	10	1	3	0	0	0	0	62	66.4	20	2	1	3	0	0	0	0	26	30.4
16:15	62	11	2	1	0	0	4	1	81	80.1	21	3	2	7	0	0	0	0	33	43.1
16:30	62	8	0	1	0	0	3	0	74	73.5	15	3	0	0	0	1	0	0	19	20
16:45	58	8	1	4	0	1	0	0	72	78.7	9	2	1	1	0	0	0	0	13	14.8
H/Total	230	37	4	9	0	1	7	1	289	298.7	65	10	4	11	0	1	0	0	91	108.3
17:00	72	7	0	3	0	0	1	3	86	86.9	13	2	0	0	0	0	0	0	15	15
17:15	52	5	1	4	0	0	0	0	62	67.7	11	1	0	0	0	0	1	0	13	12.4
17:30	58	4	0	1	0	1	2	0	66	67.1	10	1	0	1	0	0	1	0	13	13.7
17:45	40	1	0	7	0	0	0	2	50	57.5	15	4	0	0	0	0	0	0	19	19
H/Total	222	17	1	15	0	1	3	5	264	279.2	49	8	0	1	0	0	2	0	60	60.1
18:00	38	5	0	3	0	0	0	2	48	50.3	23	1	1	4	0	0	1	0	30	35.1
18:15	40	3	1	5	0	0	0	0	49	56	20	3	0	0	0	0	1	0	24	23.4
18:30	29	3	0	4	0	0	0	1	37	41.4	37	1	0	0	0	0	0	0	38	38
18:45	39	1	0	5	0	0	0	2	47	51.9	10	0	0	1	0	0	0	0	11	12.3
H/Total	146	12	1	17	0	0	0	5	181	199.6	90	5	1	5	0	0	2	0	103	108.8
Total	598	66	6	41	0	2	10	11	734	777.5	204	23	5	17	0	1	4	0	254	277.2

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	From B										To B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	306	56	5	6	1	1	3	1	379	388.7	115	33	24	8	0	3	0	0	183	208.4
07:15	339	50	7	8	0	0	5	0	409	419.9	111	41	18	16	0	4	1	0	191	224.2
07:30	460	74	14	9	0	0	4	0	561	577.3	146	45	13	12	0	3	1	0	220	244.5
07:45	365	73	13	8	0	2	5	0	466	481.9	203	45	17	16	0	1	2	0	284	313.1
H/Total	1470	253	39	31	1	3	17	1	1815	1867.8	575	164	72	52	0	11	4	0	878	990.2
08:00	342	71	10	7	0	1	2	0	433	446.9	222	51	14	5	0	1	2	0	295	308.3
08:15	307	60	18	7	1	1	2	1	397	415.1	238	61	13	11	1	1	2	0	327	348.6
08:30	193	59	15	12	0	1	0	0	280	304.1	288	60	15	10	2	3	1	0	379	403.9
08:45	201	56	25	8	0	0	2	0	292	313.7	237	73	26	7	0	4	0	0	347	373.1
H/Total	1043	246	68	34	1	3	6	1	1402	1479.8	985	245	68	33	3	9	5	0	1348	1433.9
09:00	156	59	14	11	0	5	2	0	247	272.1	240	54	11	11	0	0	1	0	317	336.2
09:15	159	58	14	11	0	2	0	0	244	267.3	157	59	22	6	0	1	1	0	246	265.2
09:30	164	51	15	11	0	3	1	0	245	269.2	173	55	21	10	1	0	1	0	261	284.9
09:45	152	50	15	8	0	0	1	0	226	243.3	177	49	14	9	0	2	4	0	255	273.3
H/Total	631	218	58	41	0	10	4	0	962	1051.9	747	217	68	36	1	3	7	0	1079	1159.6
Total	3144	717	165	106	2	16	27	2	4179	4399.5	2307	626	208	121	4	23	16	0	3305	3583.7

Time	From B										To B									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	232	40	10	5	0	1	0	0	288	300.5	353	55	3	9	1	3	5	0	429	443.2
16:15	245	46	3	12	0	1	2	0	309	325.9	394	64	3	2	0	1	7	2	473	472.3
16:30	269	40	12	12	0	4	4	0	341	364.2	420	71	7	12	0	3	6	0	519	537.5
16:45	255	37	5	4	0	4	3	0	308	317.9	427	77	4	5	0	0	1	0	514	521.9
H/Total	1001	163	30	33	0	10	9	0	1246	1308.5	1594	267	17	28	1	7	19	2	1935	1974.9
17:00	258	26	2	8	0	2	0	0	296	309.4	457	73	6	4	1	0	5	5	551	553.2
17:15	215	18	1	2	0	2	2	0	240	243.9	407	52	4	6	1	1	3	0	474	484
17:30	285	34	3	4	0	0	1	0	327	333.1	426	57	6	7	1	0	4	0	501	511.7
17:45	234	31	1	10	0	1	5	0	282	293.5	317	43	2	1	0	0	0	3	366	365.9
H/Total	992	109	7	24	0	5	8	0	1145	1179.9	1607	225	18	18	3	1	12	8	1892	1914.8
18:00	232	26	6	2	0	0	1	0	267	272	343	34	3	2	0	0	4	3	389	388.3
18:15	189	18	2	2	0	1	1	0	213	217	227	27	2	5	0	2	1	0	264	272.9
18:30	199	17	0	3	0	0	2	0	221	223.7	257	16	3	3	1	0	2	1	283	287.4
18:45	157	10	2	2	0	0	3	0	174	175.8	246	24	1	2	0	0	2	2	277	277.3
H/Total	777	71	10	9	0	1	7	0	875	888.5	1073	101	9	12	1	2	9	6	1213	1225.9
Total	2770	343	47	66	0	16	24	0	3266	3376.9	4274	593	44	58	5	10	40	16	5040	5115.6

Project Number: TSP13999
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180
Date: 18 October 2018, Thursday

Time	From C										To C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	122	35	2	0	0	0	4	0	163	161.6	46	13	10	1	0	2	0	1	73	80.5
07:15	124	20	1	0	1	0	2	0	148	148.3	59	17	2	2	0	2	0	0	82	87.6
07:30	130	29	4	0	0	0	1	0	164	165.4	51	25	2	1	1	2	1	0	83	87.7
07:45	122	35	2	1	1	1	3	0	165	167.5	80	24	2	0	0	1	0	0	107	109
H/Total	498	119	9	1	2	1	10	0	640	642.8	236	79	16	4	1	7	1	1	345	364.8
08:00	150	39	0	2	2	1	0	0	194	199.6	119	30	3	0	0	1	0	0	153	155.5
08:15	175	29	1	1	0	1	0	0	207	209.8	119	23	6	2	0	3	0	0	153	161.6
08:30	118	32	7	1	1	1	0	0	160	166.8	115	32	5	1	0	1	0	0	154	158.8
08:45	133	31	2	1	1	2	1	0	171	175.7	121	29	8	3	0	0	1	0	162	169.3
H/Total	576	131	10	5	4	5	1	0	732	751.9	474	114	22	6	0	5	1	0	622	645.2
09:00	139	41	8	1	0	1	0	1	191	196.5	122	27	3	2	1	4	1	0	160	168.5
09:15	97	18	5	1	1	2	0	0	124	130.8	76	28	9	1	0	0	1	0	115	120.2
09:30	111	36	4	3	1	2	3	0	160	167.1	90	22	3	1	0	0	1	0	117	119.2
09:45	106	31	8	1	0	1	0	0	147	153.3	112	16	5	3	1	1	1	0	139	146.8
H/Total	453	126	25	6	2	6	3	1	622	647.7	400	93	20	7	2	5	4	0	531	554.7
Total	1527	376	44	12	8	12	14	1	1994	2042.4	1110	286	58	17	3	17	6	1	1498	1564.7

Time	From C										To C									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	108	16	4	0	0	2	4	0	134	135.6	182	37	2	2	1	3	2	0	229	235.4
16:15	131	18	4	1	1	2	1	0	158	163.7	181	25	4	0	0	1	1	0	212	214.4
16:30	146	19	3	0	0	2	0	0	170	173.5	164	12	1	1	1	1	6	0	186	186.2
16:45	127	16	2	0	1	3	0	0	149	154	159	26	1	1	0	2	0	0	189	192.8
H/Total	512	69	13	1	2	9	5	0	611	626.8	686	100	8	4	2	7	9	0	816	828.8
17:00	165	18	1	0	0	1	0	0	185	186.5	190	19	0	1	0	1	0	0	211	213.3
17:15	144	22	0	0	1	1	0	0	168	170	145	28	0	1	1	1	1	0	177	179.7
17:30	142	15	2	0	1	0	1	0	161	162.4	164	17	0	1	1	1	0	0	184	187.3
17:45	154	6	1	0	0	0	0	0	161	161.5	151	15	0	1	0	1	2	0	170	171.1
H/Total	605	61	4	0	2	2	1	0	675	680.4	650	79	0	4	2	4	3	0	742	751.4
18:00	136	10	2	1	0	1	1	0	151	153.7	159	18	0	1	0	0	0	0	178	179.3
18:15	101	9	0	2	0	2	1	0	115	119	130	11	0	0	1	0	0	0	142	143
18:30	120	6	1	0	0	0	1	1	129	128.1	131	17	0	0	0	0	2	0	150	148.8
18:45	119	7	0	0	0	1	1	0	128	128.4	151	7	1	0	0	0	0	0	159	159.5
H/Total	476	32	3	3	0	4	4	1	523	529.2	571	53	1	1	1	0	2	0	629	630.6
Total	1593	162	20	4	4	15	10	1	1809	1836.4	1907	232	9	9	5	11	14	0	2187	2210.8

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	From D										To D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	19	3	0	3	0	0	0	0	25	28.9	23	18	0	1	0	0	0	0	42	43.3
07:15	22	14	2	1	0	0	0	0	39	41.3	36	23	1	1	0	0	0	0	61	62.8
07:30	21	8	0	0	0	0	0	0	29	29	41	20	3	0	0	0	0	0	64	65.5
07:45	21	16	3	2	0	0	0	0	42	46.1	38	24	5	2	0	0	1	0	70	74.5
H/Total	83	41	5	6	0	0	0	0	135	145.3	138	85	9	4	0	0	1	0	237	246.1
08:00	20	22	4	0	0	0	0	0	46	48	37	24	5	1	0	0	0	0	67	70.8
08:15	24	16	6	2	0	0	0	0	48	53.6	40	18	4	4	0	0	0	0	66	73.2
08:30	30	23	5	0	0	0	0	0	58	60.5	32	24	3	4	0	0	0	0	63	69.7
08:45	27	29	6	4	0	0	0	0	66	74.2	35	24	8	0	0	0	1	0	68	71.4
H/Total	101	90	21	6	0	0	0	0	218	236.3	144	90	20	9	0	0	1	0	264	285.1
09:00	36	15	4	2	0	1	0	0	58	63.6	44	15	5	4	0	0	0	0	68	75.7
09:15	33	24	5	2	0	0	0	0	64	69.1	42	16	2	0	0	0	0	0	60	61
09:30	41	24	2	5	0	0	0	0	72	79.5	37	19	4	4	0	0	0	0	64	71.2
09:45	44	19	6	1	0	0	0	0	70	74.3	39	15	3	2	0	0	0	0	59	63.1
H/Total	154	82	17	10	0	1	0	0	264	286.5	162	65	14	10	0	0	0	0	251	271
Total	338	213	43	22	0	1	0	0	617	668.1	444	240	43	23	0	0	2	0	752	802.2

Time	From D										To D									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	62	18	2	0	0	0	0	0	82	83	34	8	1	0	0	0	1	0	44	43.9
16:15	46	13	2	1	0	0	1	0	63	64.7	33	12	4	0	0	0	1	0	50	51.4
16:30	57	12	0	1	0	0	2	0	72	72.1	53	15	0	2	0	0	0	0	70	72.6
16:45	53	18	0	1	0	0	1	0	73	73.7	53	11	0	2	0	0	2	0	68	69.4
H/Total	218	61	4	3	0	0	4	0	290	293.5	173	46	5	4	0	0	4	0	232	237.3
17:00	64	12	2	0	0	0	0	0	78	79	34	7	0	0	0	0	0	0	41	41
17:15	54	6	1	0	0	0	0	0	61	61.5	25	5	0	2	0	0	0	0	32	34.6
17:30	37	8	0	1	0	0	2	0	48	48.1	45	5	1	2	0	0	1	0	54	56.5
17:45	50	6	0	0	0	0	0	0	56	56	37	5	0	2	0	0	0	0	44	46.6
H/Total	205	32	3	1	0	0	2	0	243	244.6	141	22	1	6	0	0	1	0	171	178.7
18:00	52	7	1	1	0	0	0	0	61	62.8	45	7	0	0	0	0	0	0	52	52
18:15	45	5	0	1	0	0	0	0	51	52.3	42	2	0	1	0	0	0	0	45	46.3
18:30	41	2	0	0	0	0	0	0	43	43	52	4	0	3	0	0	0	0	59	62.9
18:45	54	4	0	0	0	0	0	0	58	58	45	2	0	1	0	1	1	0	50	51.7
H/Total	192	18	1	2	0	0	0	0	213	216.1	184	15	0	5	0	1	1	0	206	212.9
Total	615	111	8	6	0	0	6	0	746	754.2	498	83	6	15	0	1	6	0	609	628.9

Project Number: **TSP13999**
Project Name: **Immingham, North East Lincolnshire**
Survey Type: **Manual Classified Turning Count**
Site No: **2**
Location: **Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180**
Date: **18 October 2018, Thursday**

Time	From E										To E									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	111	47	30	14	0	4	0	0	206	243.2	372	76	7	8	1	1	6	0	471	483.3
07:15	140	57	14	23	0	5	1	0	240	281.3	379	57	8	12	1	0	3	0	460	478.8
07:30	179	69	15	15	1	5	2	0	286	317.8	486	81	16	12	0	0	2	0	597	619.4
07:45	256	60	21	22	0	2	3	0	364	403.3	374	88	13	14	1	3	7	0	500	524.5
H/Total	686	233	80	74	1	16	6	0	1096	1245.6	1611	302	44	46	3	4	18	0	2028	2106
08:00	303	66	14	6	0	2	0	0	391	407.8	376	76	7	11	2	2	1	0	475	496.2
08:15	292	69	16	16	1	4	1	0	399	432.2	345	80	20	10	1	2	2	1	461	485
08:30	330	77	16	12	1	3	1	0	440	467	233	74	19	17	0	2	0	0	345	378.6
08:45	266	78	29	7	0	3	0	0	383	409.6	226	65	20	13	1	1	1	0	327	355.3
H/Total	1191	290	75	41	2	12	2	0	1613	1716.6	1180	295	66	51	4	7	4	1	1608	1715.1
09:00	256	51	10	13	1	1	1	0	333	356.3	181	73	18	19	0	3	1	1	296	331.3
09:15	156	53	25	10	0	0	2	0	246	270.3	168	54	17	12	1	3	0	0	255	283.1
09:30	157	46	19	10	0	0	0	0	232	254.5	171	61	12	11	0	4	2	0	261	284.1
09:45	183	41	13	13	1	2	4	0	257	281	160	65	19	10	0	1	0	0	255	278.5
H/Total	752	191	67	46	2	3	7	0	1068	1162.1	680	253	66	52	1	11	3	1	1067	1177
Total	2629	714	222	161	5	31	15	0	3777	4124.3	3471	850	176	149	8	22	25	2	4703	4998.1

Time	From E										To E									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	392	72	4	14	2	6	7	0	497	521	253	54	14	8	0	3	3	0	335	353.6
16:15	420	71	6	7	0	2	5	1	512	522.3	275	55	4	13	1	3	4	0	355	375.5
16:30	417	70	6	14	1	4	7	0	519	541	299	48	13	13	0	5	4	0	382	408
16:45	442	85	5	6	0	1	1	0	540	550.7	287	48	7	6	1	7	2	0	358	376.1
H/Total	1671	298	21	41	3	13	20	1	2068	2135	1114	205	38	40	2	18	13	0	1430	1513.2
17:00	463	76	5	3	1	0	4	2	554	557.4	328	38	4	9	0	2	0	0	381	396.7
17:15	424	64	3	8	2	2	3	0	506	520.1	301	29	2	5	1	3	0	0	341	352.5
17:30	449	64	7	9	2	0	2	0	533	549	326	45	5	4	1	0	2	0	383	390.5
17:45	329	46	2	4	0	1	1	1	384	389.8	287	23	2	17	0	1	4	0	334	355.7
H/Total	1665	250	17	24	5	3	10	3	1977	2016.3	1242	135	13	35	2	6	6	0	1439	1495.4
18:00	359	36	2	6	0	0	4	1	408	413.6	247	24	7	6	0	1	1	0	286	297.7
18:15	250	28	2	6	1	2	1	0	290	301.2	206	20	3	10	0	3	1	0	243	259.9
18:30	266	24	2	4	1	0	2	0	299	305	178	14	0	5	0	0	1	1	199	204.1
18:45	238	26	2	3	0	1	2	0	272	276.7	155	15	2	6	0	1	3	0	182	190
H/Total	1113	114	8	19	2	3	9	1	1269	1296.5	786	73	12	27	0	5	6	1	910	951.7
Total	4449	662	46	84	10	19	39	5	5314	5447.8	3142	413	63	102	4	29	25	1	3779	3960.3

Project Number: TSP13999
Project Name: Immingham, North East Lincolnshire
Survey Type: Manual Classified Turning Count
Site No: 2
Location: Moody Lane /Westgate/Pyewipe Road/Birchin Way/A180
Date: 18 October 2018, Thursday

Time	Whole Junction									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
07:00	612	147	42	24	1	6	7	1	840	894.2
07:15	638	145	29	40	1	6	8	0	867	935.7
07:30	812	183	35	31	1	5	8	0	1075	1134
07:45	781	190	39	37	1	5	11	0	1064	1131
H/Total	2843	665	145	132	4	22	34	1	3846	4094.9
08:00	836	203	31	19	2	4	4	0	1099	1142.8
08:15	812	192	44	29	2	6	4	1	1090	1154.5
08:30	696	200	44	34	2	6	1	0	983	1056.6
08:45	652	203	69	26	1	5	3	0	959	1031.5
H/Total	2996	798	188	108	7	21	12	1	4131	4385.4
09:00	617	176	41	37	1	8	3	1	884	959
09:15	469	164	54	28	1	4	2	0	722	789.2
09:30	500	169	44	31	1	5	4	0	754	819.9
09:45	513	156	46	27	1	4	5	0	752	812.1
H/Total	2099	665	185	123	4	21	14	1	3112	3380.2
Total	7938	2128	518	363	15	64	60	3	11089	11861

Peak Hours		Totals
07:00	08:00	3846
07:15	08:15	4105
07:30	08:30	4328
07:45	08:45	4236

08:00	09:00	4131
08:15	09:15	3916
08:30	09:30	3548
08:45	09:45	3319

09:00	10:00	3112

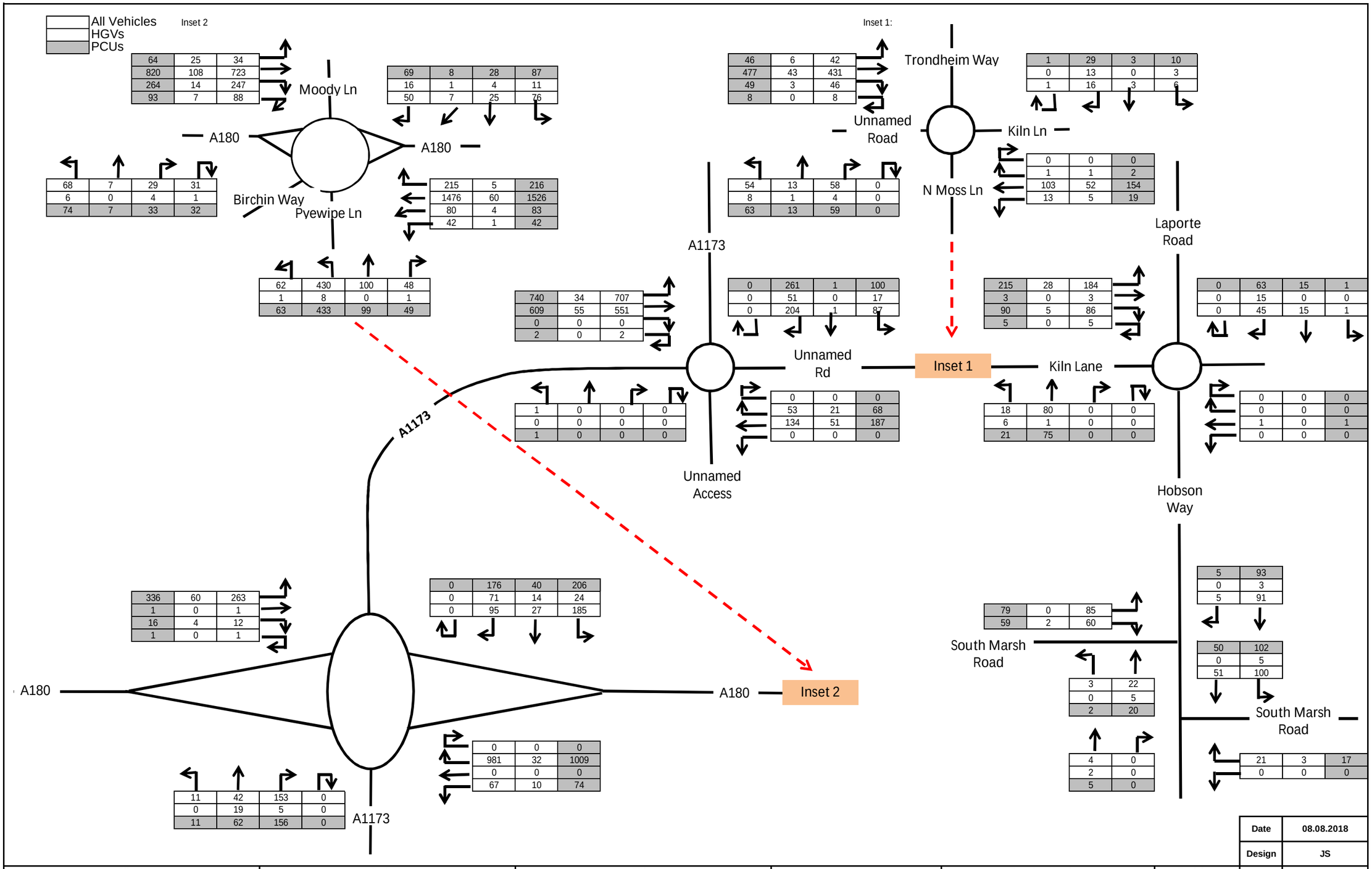
Time	Whole Junction									
	CAR	LGV	OGV 1	OGV 2	BUS	COACH	MCY	PCY	TOTAL	TOTAL (PCU)
16:00	842	156	21	22	2	9	11	0	1063	1106.5
16:15	904	159	17	22	1	5	13	2	1123	1156.7
16:30	951	149	21	28	1	10	16	0	1176	1224.3
16:45	935	164	13	15	1	9	5	0	1142	1175
H/Total	3632	628	72	87	5	33	45	2	4504	4662.5
17:00	1022	139	10	14	1	3	5	5	1199	1219.2
17:15	889	115	6	14	3	5	5	0	1037	1063.2
17:30	971	125	12	15	3	1	8	0	1135	1159.7
17:45	807	90	4	21	0	2	6	3	933	958.3
H/Total	3689	469	32	64	7	11	24	8	4304	4400.4
18:00	817	84	11	13	0	1	6	3	935	952.4
18:15	625	63	5	16	1	5	3	0	718	745.5
18:30	655	52	3	11	1	0	5	2	729	741.2
18:45	607	48	4	10	0	2	6	2	679	690.8
H/Total	2704	247	23	50	2	8	20	7	3061	3129.9
Total	10025	1344	127	201	14	52	89	17	11869	12193

Peak Hours		Totals
16:00	17:00	4504
16:15	17:15	4640
16:30	17:30	4554
16:45	17:45	4513

17:00	18:00	4304
17:15	18:15	4040
17:30	18:30	3721
17:45	18:45	3315

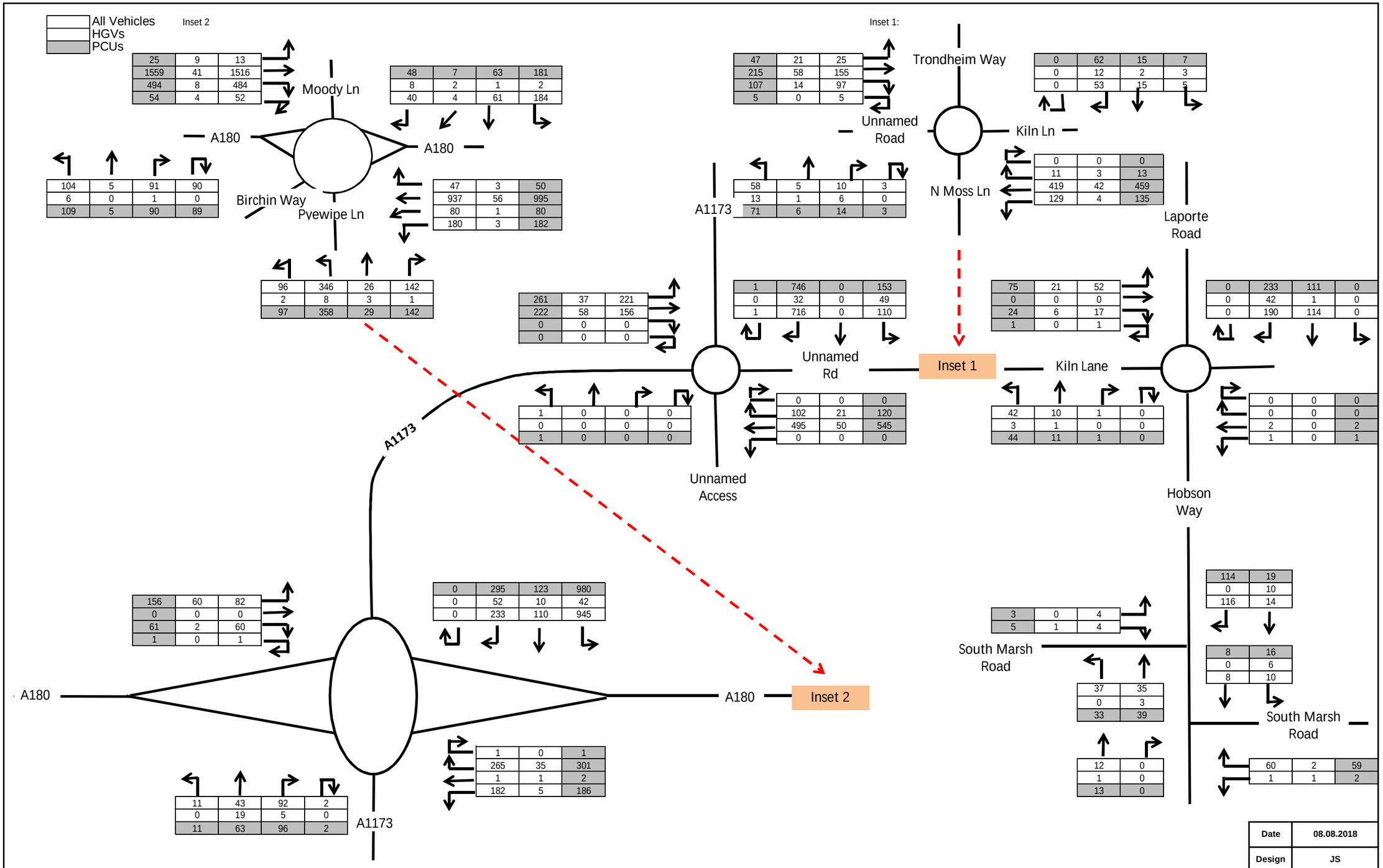
18:00	19:00	3061

ANNEX 3: 2018 NETWORK PEAK HOUR BASE FLOWS



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	2018 Base Flows - AM Peak (07:00 - 08:00)	AECOM	Annex 3	A
				File:	



Date	08.08.2018		
Design	JS		
Checked	PF		
Appr'd	PF		

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	2018 Base Flows - PM Peak (16:00 - 17:00)	AECOM	Annex 3	A
				File:	

ANNEX 4: ACCIDENT DATA

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Crash Date:	Friday, May 15, 2015	**Time of Crash:**	4:10:00 PM	**Crash Reference:**	**2015160A01961**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	2
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	1
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	519370 412680
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	60				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	Other object in carriageway				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Tuesday, June 30, 2015	**Time of Crash:**	7:00:00 AM	**Crash Reference:**	**2015160A02251**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	519440 412687
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	10	Male	56 - 65	Vehicle is slowing down or stopping	Front	Commuting to/from work	None	None
2	Car (excluding private hire)	5	Male	56 - 65	Vehicle is waiting to turn right	Back	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Tuesday, December 06, 2016	**Time of Crash:**	8:39:00 AM	**Crash Reference:**	**2016160153716**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	5
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	519716 412649
Weather Description:	Fog or mist - if hazard				
Road Surface Description:	Wet or Damp				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	Involvement with previous accident				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Slip Road				
Junction Control:	Not Applicable				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	10	Female	56 - 65	Vehicle is slowing down or stopping	Front	Journey as part of work	Parked vehicle	None
2	Car (excluding private hire)	2	Female	66 - 75	Vehicle is slowing down or stopping	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	56 - 65	Unknown or other	Unknown or other
1	3	Slight	Vehicle or pillion passenger	Male	46 - 55	Unknown or other	Unknown or other
1	4	Slight	Vehicle or pillion passenger	Male	36 - 45	Unknown or other	Unknown or other
1	5	Slight	Vehicle or pillion passenger	Female	46 - 55	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Female	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Monday, February 22, 2016	**Time of Crash:**	11:03:00 PM	**Crash Reference:**	**2016160055469**

Highest Injury Severity:	Serious	**Road Number:**	A1173	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	1
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	519431 412820
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	60				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	13	Male	66 - 75	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	Kerb	Lamp post

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	66 - 75	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	8	Male	16 - 20	Vehicle is in the act of turning right	Front	Other	Other object	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other
1	2	Slight	Vehicle or pillion passenger	Female	26 - 35	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Tuesday, January 03, 2017	**Time of Crash:**	2:20:00 PM	**Crash Reference:**	**2017160143202**

Highest Injury Severity:	Slight	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	521706 414376
Weather Description:	Fine without high winds				
Road Surface Description:	Frost or Ice				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	Central refuge - no other controls				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Male	16-24	Vehicle is in the act of turning left	Unknown	Other	Bollard/Refuge	None
2	Car (excluding private hire)	-1	Male	45-54	Vehicle proceeding normally along the carriageway, not on a bend	Unknown	Journey as part of work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	45-54	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Thursday, July 14, 2016	**Time of Crash:**	8:32:00 PM	**Crash Reference:**	**2016160086971**

Highest Injury Severity:	Serious	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	1
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	522104 413840
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	40				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 500cc	6	Male	46 - 55	Vehicle is moving off	Nearside	Commuting to/from work	None	None

Casualties

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

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Friday, July 25, 2014	**Time of Crash:**	7:47:00 AM	**Crash Reference:**	**2014160A02631**

Highest Injury Severity:	Slight	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	520188 413448
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 50cc and up to 125cc	2	Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Back	Journey as part of work	None	None
2	Car (excluding private hire)	7	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Front	Journey as part of work	None	None

Casualties

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

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Tuesday, December 29, 2015	**Time of Crash:**	10:38:00 AM	**Crash Reference:**	**2015160A04611**

Highest Injury Severity:	Slight	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	520255 413461
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	40				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	3	Male	Over 75	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None
2	Van or goods vehicle 3.5 tonnes mgw and under	3	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Journey as part of work	None	Other permanent object

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	Over 75	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Thursday, April 21, 2016	**Time of Crash:**	4:11:00 PM	**Crash Reference:**	**2016160061145**

Highest Injury Severity:	Slight	**Road Number:**	U0	**Number of Casualties:**	2
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	3
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	520321 413486
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	40				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	1	Male	26 - 35	Vehicle is waiting to proceed normally but is held up	Did not impact	Commuting to/from work	None	None
2	Car (excluding private hire)	14	Female	36 - 45	Vehicle is slowing down or stopping	Back	Other	None	None
3	Car (excluding private hire)	-1	Male	16 - 20	Vehicle is slowing down or stopping	Front	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	2	Slight	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other
3	1	Slight	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Friday, May 22, 2015	**Time of Crash:**	5:58:00 PM	**Crash Reference:**	**2015160A01551**

Highest Injury Severity:	Serious	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	520359 413502
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	40				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Using private drive or entrance				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	4	Male	21 - 25	Vehicle is performing a U turn	Offside	Other	None	None
2	Car (excluding private hire)	12	Female	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Serious	Driver or rider	Female	56 - 65	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Friday, October 16, 2015	**Time of Crash:**	6:46:00 AM	**Crash Reference:**	**2015160A03851**

Highest Injury Severity:	Serious	**Road Number:**	A1173	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	519952 413339
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	60				
Light Conditions:	Darkness: no street lighting				
Carriageway Hazards:	Any animal in carriageway (except ridden horse)				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle 50cc and under	6	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Commuting to/from work	None	None
2	Car (excluding private hire)	9	Male	46 - 55	Vehicle is slowing down or stopping	Back	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Saturday, June 18, 2016	**Time of Crash:**	6:42:00 PM	**Crash Reference:**	**2016160084011**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	3
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526172 410361
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	50				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	3	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None
2	Car (excluding private hire)	3	Female	21 - 25	Vehicle is slowing down or stopping	Offside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other
1	2	Slight	Vehicle or pillion passenger	Male	26 - 35	Unknown or other	Unknown or other
1	3	Slight	Vehicle or pillion passenger	Female	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Saturday, October 22, 2016	**Time of Crash:**	7:00:00 PM	**Crash Reference:**	**2016160118942**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	2
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526164 410363
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Unknown	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)	15	Female	16 - 20	Vehicle is slowing down or stopping	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	16 - 20	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Female	11 - 15	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Sunday, October 23, 2016	**Time of Crash:**	5:19:00 PM	**Crash Reference:**	**2016160128066**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	1
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526184 410358
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	50				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 50cc and up to 125cc	2	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Friday, September 22, 2017	**Time of Crash:**	11:00:00 AM	**Crash Reference:**	**2017160222809**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526156 410370
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	40				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Male	16-24	Vehicle proceeding normally along the carriageway, not on a bend	Unknown	Other	None	None
2	Car (excluding private hire)	-1	Male	25-34	Vehicle proceeding normally along the carriageway, not on a bend	Unknown	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	16-24	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Monday, February 24, 2014	**Time of Crash:**	10:38:00 AM	**Crash Reference:**	**2014160A00551**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526095 410437
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	50				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Goods vehicle 7.5 tonnes mgw and over	-1	Male	26 - 35	Vehicle is changing lane to the right (including slip road)	Offside	Journey as part of work	None	None
2	Car (excluding private hire)	16	Female	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

Casualties

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

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Monday, April 14, 2014	**Time of Crash:**	8:00:00 AM	**Crash Reference:**	**2014160A01191**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	2
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526096 410414
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Monday, April 28, 2014	**Time of Crash:**	9:16:00 PM	**Crash Reference:**	**2014160A01261**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526098 410411
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 125cc and up to 500cc	1	Male	21 - 25	Vehicle is in the act of turning left	Front	Commuting to/from work	None	None
2	Car (excluding private hire)	10	Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None

Casualties

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

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	24	Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None
2	Car (excluding private hire)	-1	Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other
2	2	Slight	Driver or rider	Male	21 - 25	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Wednesday, October 22, 2014	**Time of Crash:**	2:00:00 PM	**Crash Reference:**	**2014160A04381**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526107 410435
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	4	Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)	11	Female	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Monday, February 09, 2015	**Time of Crash:**	11:27:00 AM	**Crash Reference:**	**2015160A01311**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526114 410428
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	50				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	13	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Pedal cycle	-1	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

Casualties

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

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Friday, March 20, 2015	**Time of Crash:**	8:50:00 AM	**Crash Reference:**	**2015160A00701**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526108 410434
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Goods vehicle 7.5 tonnes mgw and over	1	Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Front	Journey as part of work	None	None
2	Car (excluding private hire)	2	Male	26 - 35	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Vehicle or pillion passenger	Male	26 - 35	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Wednesday, July 13, 2016	**Time of Crash:**	9:10:00 AM	**Crash Reference:**	**2016160086679**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526102 410436
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	50				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	14	Male	16 - 20	Vehicle is slowing down or stopping	Front	Commuting to/from work	None	None
2	Car (excluding private hire)	7	Female	36 - 45	Vehicle is moving off	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Saturday, January 04, 2014	**Time of Crash:**	6:30:00 PM	**Crash Reference:**	**2014160A00021**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526094 410395
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	10	Male	36 - 45	Vehicle is moving off	Nearside	Other	None	None
2	Car (excluding private hire)	9	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Vehicle or pillion passenger	Male	6 - 10	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Sunday, August 02, 2015	**Time of Crash:**	4:15:00 PM	**Crash Reference:**	**2015160A04631**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526088 410391
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Male	26 - 35	Vehicle is moving off	Back	Other	None	None
2	Car (excluding private hire)	9	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Monday, October 17, 2016	**Time of Crash:**	1:30:00 PM	**Crash Reference:**	**2016160117536**

Highest Injury Severity:	Slight	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526083 410382
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	10	Female	21 - 25	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None
2	Taxi/Private hire car	-1	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Journey as part of work	None	None

Casualties

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

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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2017 data is provisional and is subject to change

Crash Date:	Wednesday, September 20, 2017	**Time of Crash:**	7:50:00 PM	**Crash Reference:**	**2017160224197**
Highest Injury Severity:	Serious	**Road Number:**	A180	**Number of Casualties:**	2
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526087 410378
Weather Description:	Fine with high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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2017 data is provisional and is subject to change

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Male	25-34	Vehicle is in the act of turning left	Unknown	Other	None	None
2	Pedal cycle	-1	Male	5-15	Vehicle proceeding normally along the carriageway, not on a bend	Unknown	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Vehicle or pillion passenger	Male	5-15	Unknown or other	Unknown or other
2	3	Serious	Driver or rider	Male	5-15	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Friday, April 25, 2014	**Time of Crash:**	7:00:00 AM	**Crash Reference:**	**2014160A01361**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526153 410435
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Unknown	Unknown	Vehicle proceeding normally along the carriageway, not on a bend	Back	Other	None	None
2	Pedal cycle	-1	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Front	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Monday, July 20, 2015	**Time of Crash:**	2:43:00 PM	**Crash Reference:**	**2015160A02221**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	2
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526150 410435
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	8	Male	56 - 65	Vehicle is in the act of turning right	Offside	Other	None	None
2	Car (excluding private hire)	-1	Female	36 - 45	Vehicle is in the act of turning right	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Male	0 - 5	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Tuesday, November 17, 2015	**Time of Crash:**	9:39:00 AM	**Crash Reference:**	**2015160A04501**

Highest Injury Severity:	Slight	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526147 410441
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Van or goods vehicle 3.5 tonnes mgw and under	1	Male	46 - 55	Vehicle is moving off	Front	Journey as part of work	None	None
2	Car (excluding private hire)	2	Male	21 - 25	Vehicle is in the act of turning right	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Vehicle or pillion passenger	Male	46 - 55	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Tuesday, February 11, 2014	**Time of Crash:**	1:25:00 PM	**Crash Reference:**	**2014160A00931**

Highest Injury Severity:	Slight	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526116 410337
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	12	Female	26 - 35	Vehicle is waiting to turn right	Offside	Other	None	None
2	Car (excluding private hire)	4	Male	36 - 45	Vehicle is passing a stationary vehicle on its offside	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	26 - 35	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Sunday, July 20, 2014	**Time of Crash:**	5:13:00 PM	**Crash Reference:**	**2014160A02801**

Highest Injury Severity:	Slight	**Road Number:**	U0	**Number of Casualties:**	2
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526114 410357
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	12	Male	26 - 35	Vehicle is waiting to turn left	Front	Journey as part of work	None	None
2	Car (excluding private hire)	4	Male	26 - 35	Vehicle is in the act of turning left	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Male	21 - 25	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Tuesday, October 28, 2014	**Time of Crash:**	7:45:00 PM	**Crash Reference:**	**2014160A05471**

Highest Injury Severity:	Slight	**Road Number:**	U0	**Number of Casualties:**	3
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526115 410356
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	11	Female	26 - 35	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None
2	Car (excluding private hire)	18	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Female	16 - 20	Unknown or other	Unknown or other
2	3	Slight	Vehicle or pillion passenger	Male	16 - 20	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Tuesday, November 10, 2015	**Time of Crash:**	9:30:00 PM	**Crash Reference:**	**2015160A03871**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	2
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526133 410357
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 500cc	-1	Male	16 - 20	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None
2	Motorcycle over 50cc and up to 125cc	-1	Male	16 - 20	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other
2	2	Slight	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Crash Date:	Monday, July 18, 2016	**Time of Crash:**	4:00:00 PM	**Crash Reference:**	**2016160090859**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	2
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526110 410363
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)	17	Male	36 - 45	Vehicle is slowing down or stopping	Back	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Male	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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2017 data is provisional and is subject to change

Crash Date:	Wednesday, July 12, 2017	**Time of Crash:**	6:15:00 PM	**Crash Reference:**	**2017160200361**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	1
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	2
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526115 410367
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	50				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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2017 data is provisional and is subject to change

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Male	55-64	Vehicle is changing lane to the right (including slip road)	Unknown	Commuting to/from work	None	None
2	Van or goods vehicle 3.5 tonnes mgw and under	-1	Male	45-54	Vehicle proceeding normally along the carriageway, not on a bend	Unknown	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	55-64	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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2017 data is provisional and is subject to change

Crash Date:	Monday, September 18, 2017	**Time of Crash:**	9:00:00 AM	**Crash Reference:**	**2017160220951**

Highest Injury Severity:	Slight	**Road Number:**	A180	**Number of Casualties:**	4
Highway Authority:	North East Lincolnshire			**Number of Vehicles:**	1
Local Authority:	North East Lincolnshire			**OS Grid Reference:**	526118 410346
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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2017 data is provisional and is subject to change

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Minibus (8 - 16 passenger seats)	-1	Male	25-34	Vehicle is in the act of turning right	Unknown	Journey as part of work	Kerb	Lamp post

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Vehicle or pillion passenger	Male	5-15	Unknown or other	Unknown or other
1	2	Slight	Vehicle or pillion passenger	Male	5-15	Unknown or other	Unknown or other
1	4	Slight	Vehicle or pillion passenger	Male	5-15	Unknown or other	Unknown or other
1	5	Slight	Vehicle or pillion passenger	Male	5-15	Unknown or other	Unknown or other

For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

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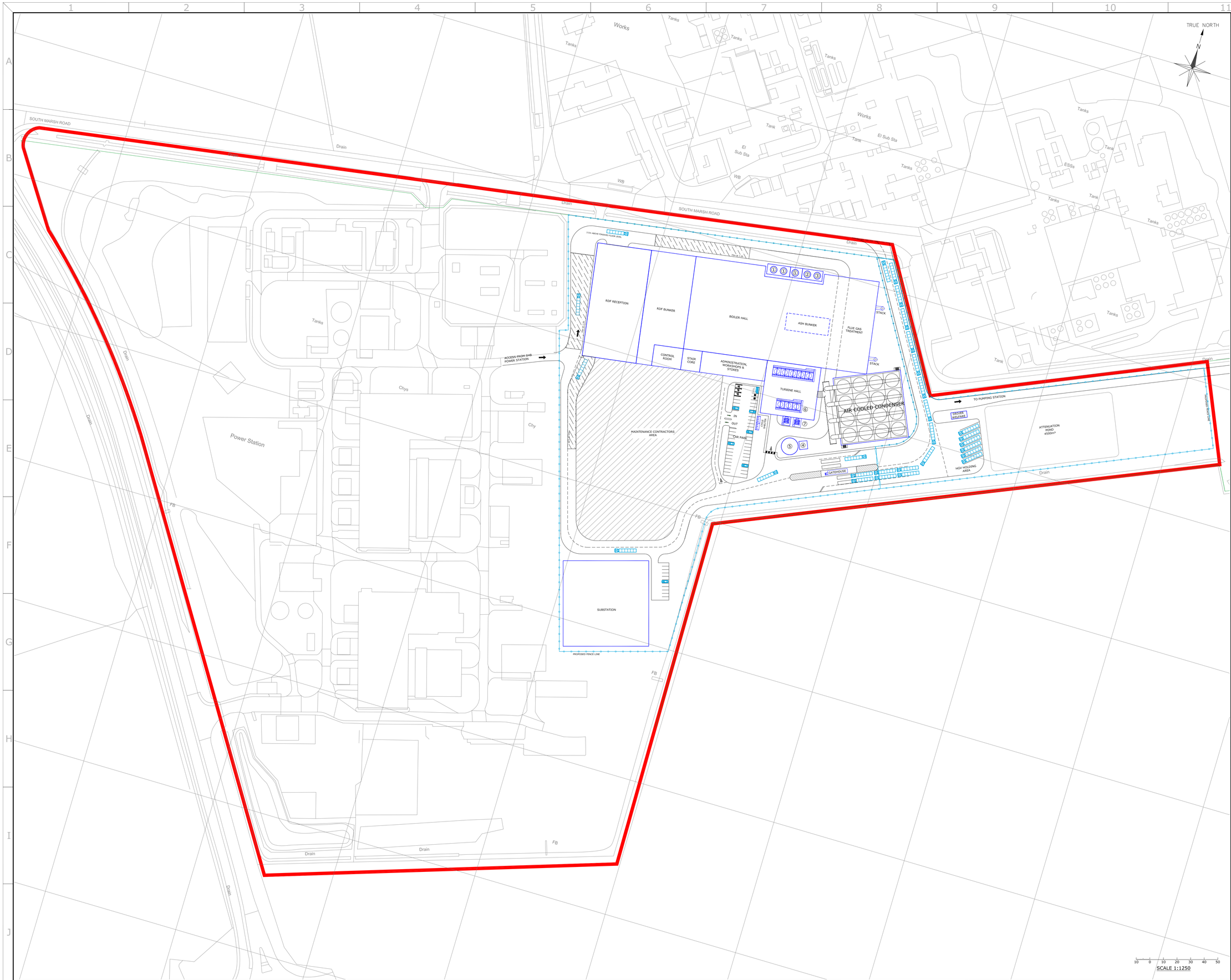
ANNEX 5: PROPOSED ACCESS LAYOUT



ALL INFORMATION ON THIS DRAWING IS INDICATIVE ONLY, AND MAY BE SUBJECT TO FURTHER DESIGN DEVELOPMENT.

DO NOT SCALE

NOTES:

LEGEND

1. REAGENT SILOS
2. AMMONIA TANK
3. FUEL OIL TANK
4. FIRE WATER PUMP HOUSE
5. FIRE WATER TANK
6. CLOSED CIRCUIT COOLING WATER FANS
7. GENERATOR TRANSFORMERS

KEY

- PLANNING APPLICATION BOUNDARY
- FENCELINE
- GATES

REV.	DETAILS OF REVISION	DRAWN	CHKD	APR	DATE
R3	PRELIMINARY	AO	MSS		09.10.19
R2	PRELIMINARY	AO	MSS		20.08.19
R1	PRELIMINARY	DTW	MSS		11.07.19

FICHTNER
CONSULTING ENGINEERS LIMITED

Kingsgate, Wellington Road North,
Stockport, Cheshire, SK4 1LW, UK
Tel: 0161 476 0032
Website: www.fichtner.co.uk

CLIENT: EP UK INVESTMENTS LTD

SITE: SOUTH HUMBER BANK

PROJECT: SOUTH HUMBER BANK ENERGY CENTRE

TITLE: DCO SITE PLAN

DRAWING STATUS:	FOR INFORMATION	
DRAWN BY:	DTW	DATE: 11.07.19
CHECKED BY:	MSS	DATE: 11.07.19
APPROVED BY:		DATE:
FILENAME:	S2522-0610-0001-R3 DW DCO Site Plan	
OFFICE OF ISSUE:	STOCKPORT	
SHEET SIZE:	A1	SCALE: 1:1250

DRAWING No.: S2522-0610-0001 Sheet 1 of 1

REVISION: R3

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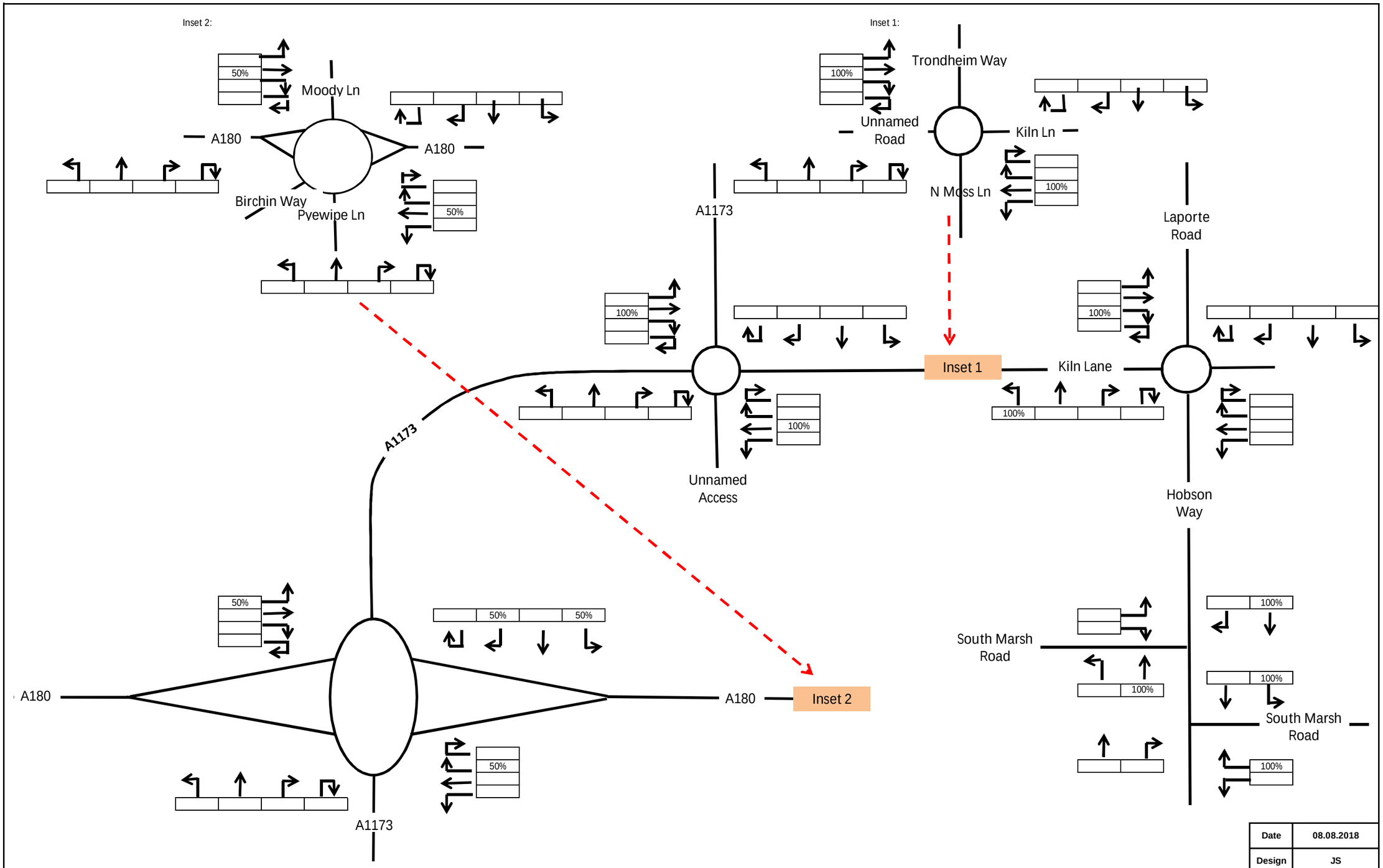
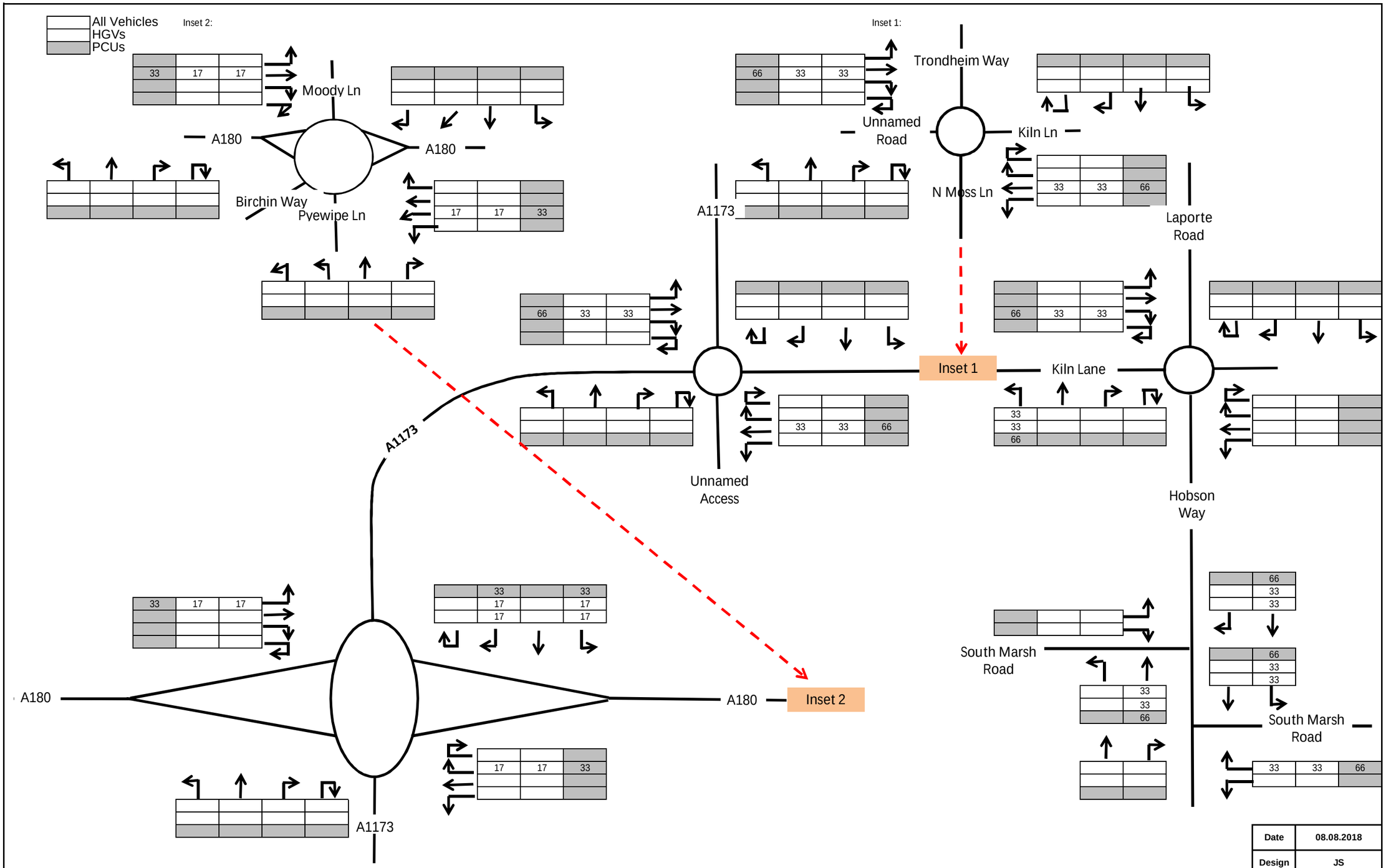
ANNEX 6: FRAMEWORK OPERATIONAL TRAVEL PLAN

ANNEX 7: OPERATIONAL HGV ASSIGNMENT



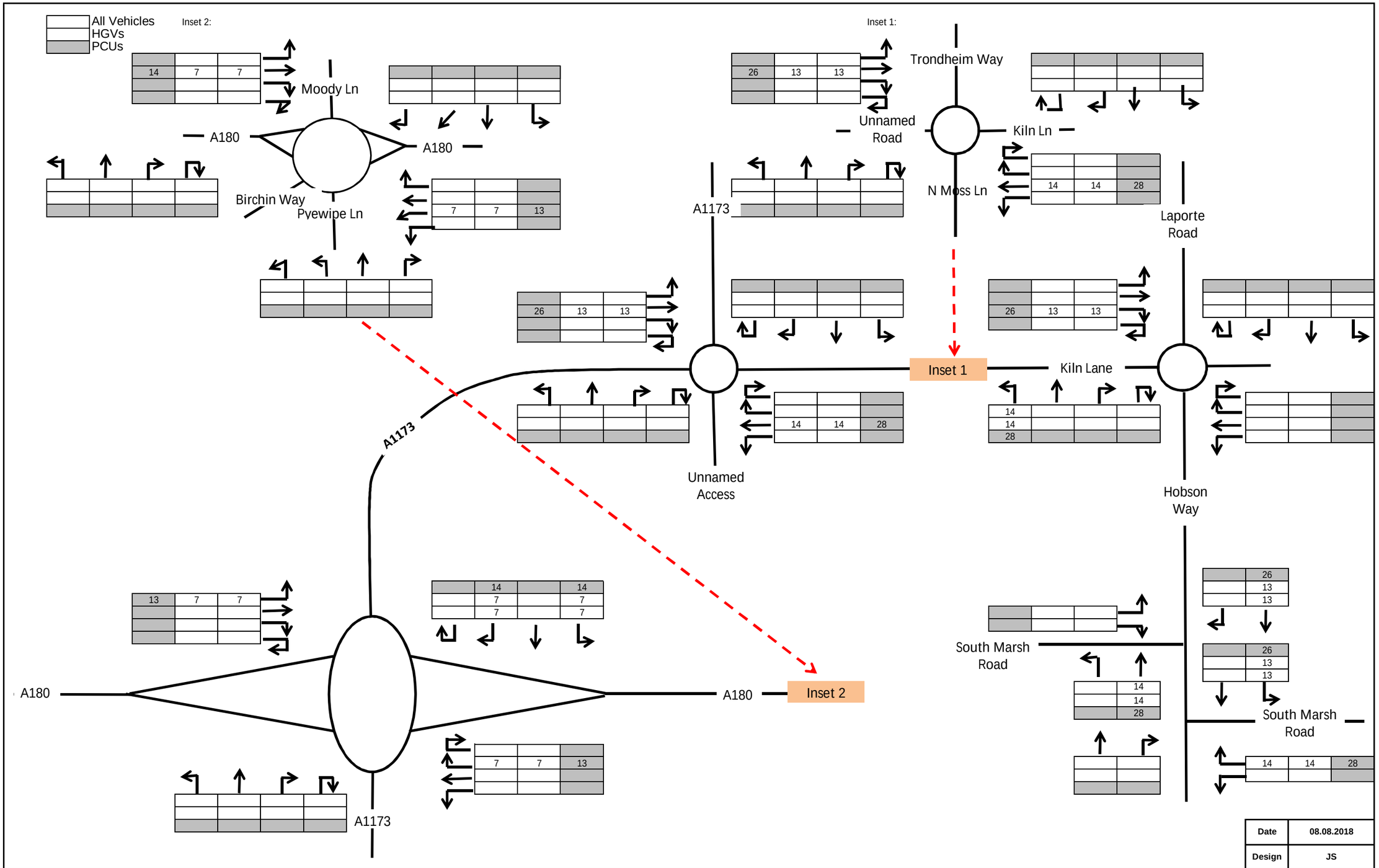
Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
						Design	JS
EP SHB	South Humber Bank Energy Centre	HGV Assignment	AECOM	Annex 7	A	Checked	PF
				File:		Appr'd	PF

ANNEX 8: OPERATIONAL HGV DEVELOPMENT FLOWS DURING NETWORK PEAK HOURS



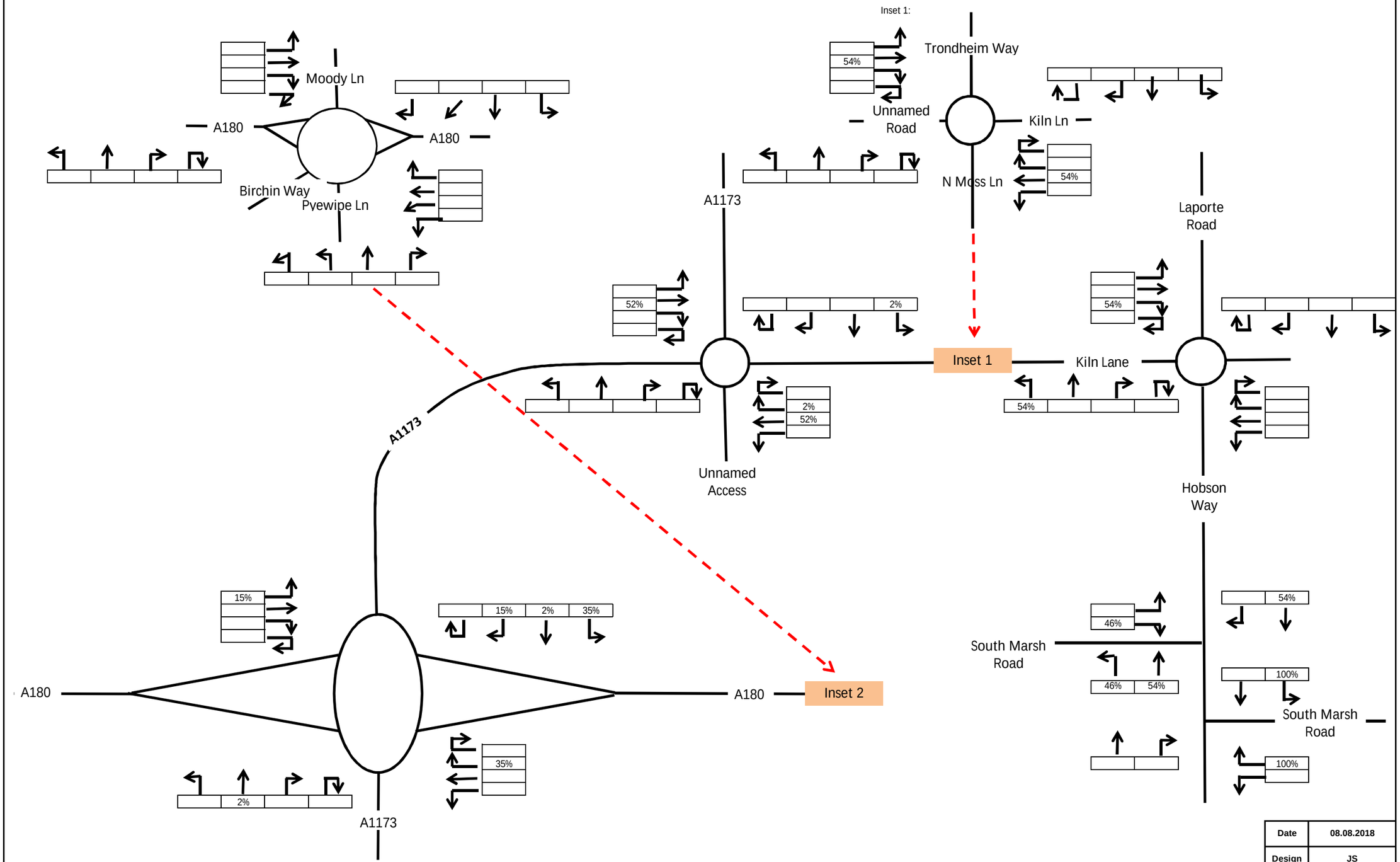
Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	HGV Development Flows - AM Peak (07:00 - 08:00)	AECOM	Annex 8	A
				File:	



Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
EP SHB	South Humber Bank Energy Centre	HGV Development Flows - PM Peak (16:00 - 17:00)	AECOM	Annex 8	A	Design	JS
						Checked	PF
						Appr'd	PF
				File:			

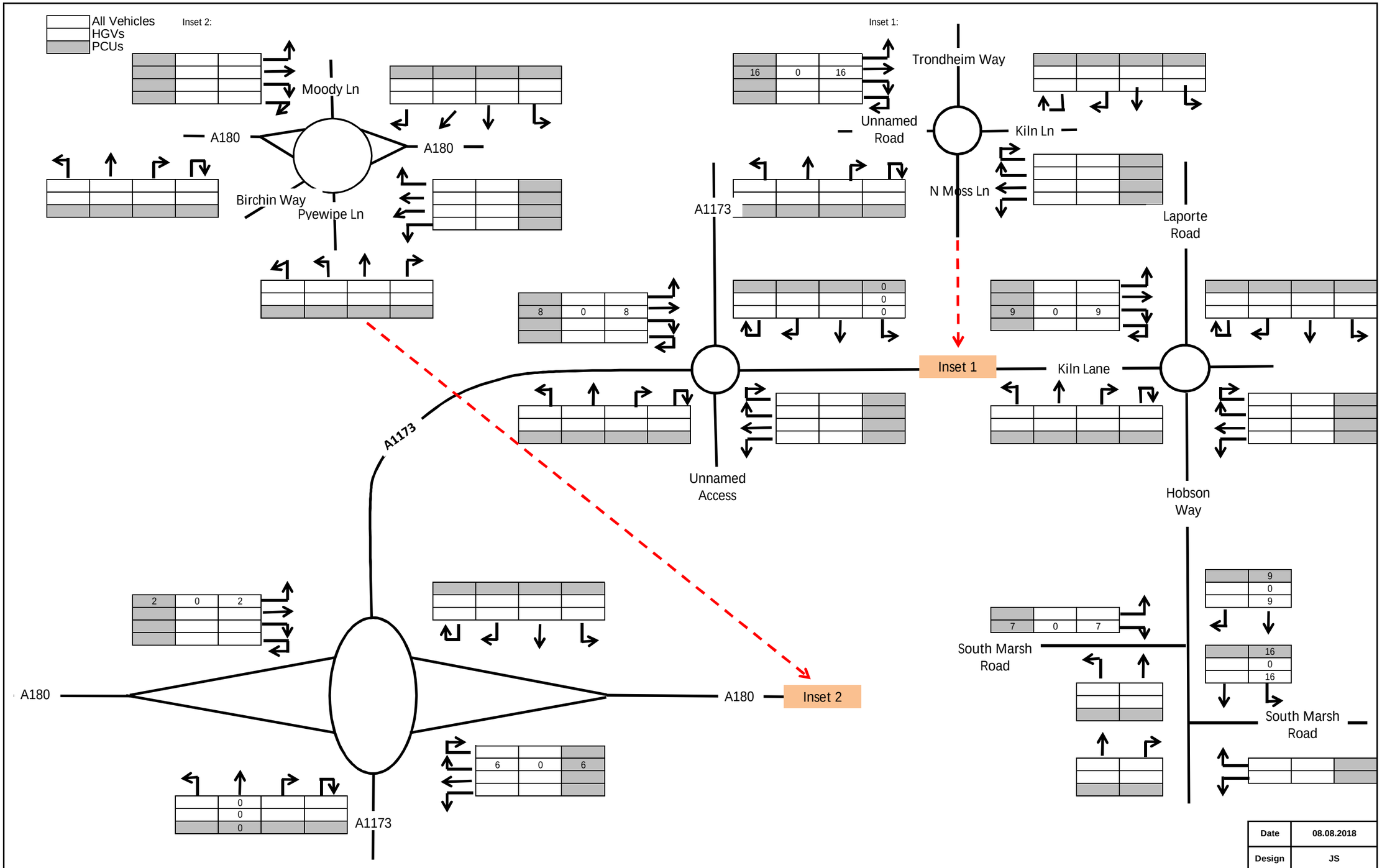
ANNEX 9: OPERATIONAL STAFF ASSIGNMENT



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Staff Vehicle Assignment	AECOM	Annex 9	A
				File:	

ANNEX 10: OPERATIONAL STAFF DEVELOPMENT FLOWS DURING NETWORK PEAK HOURS



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
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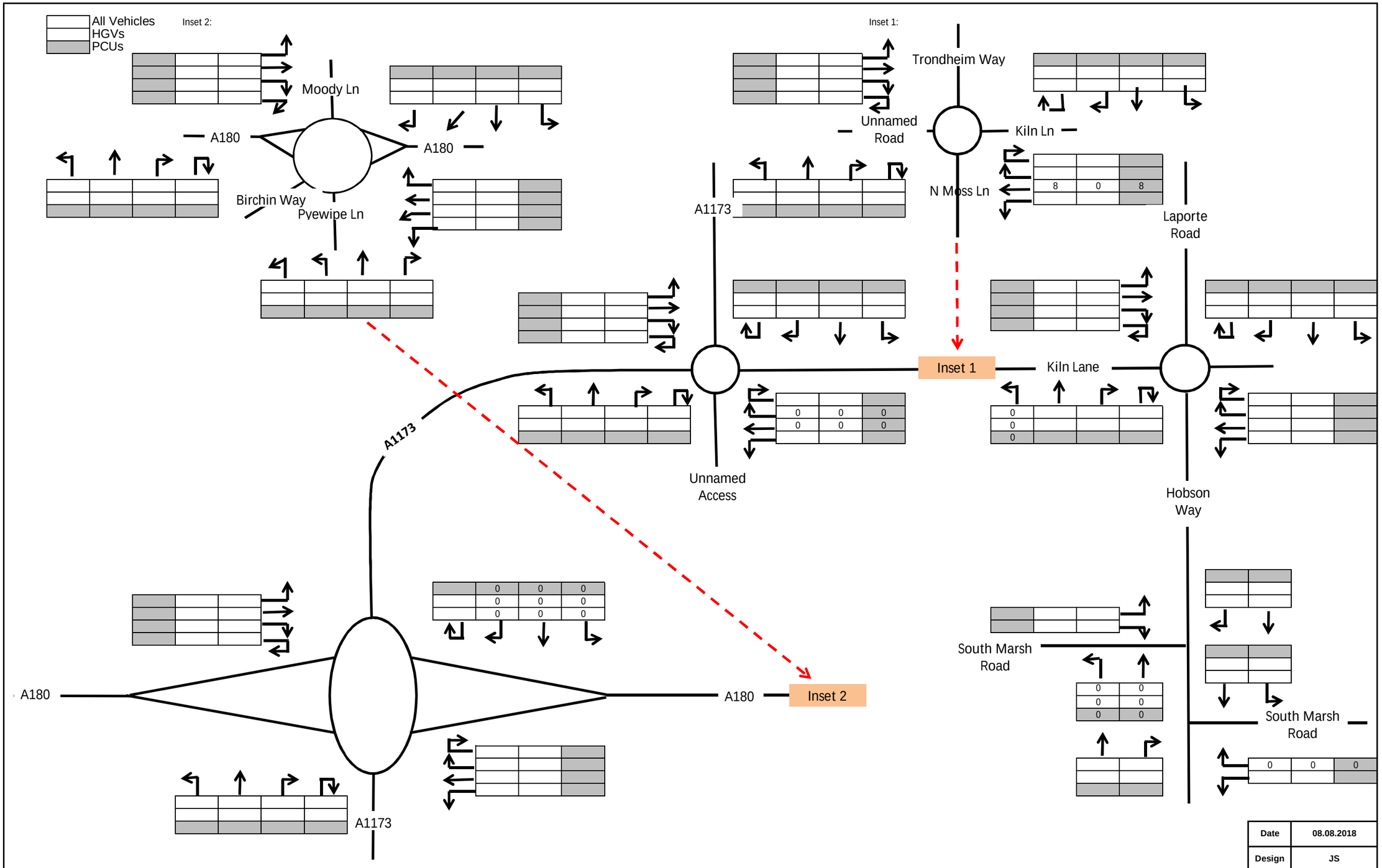
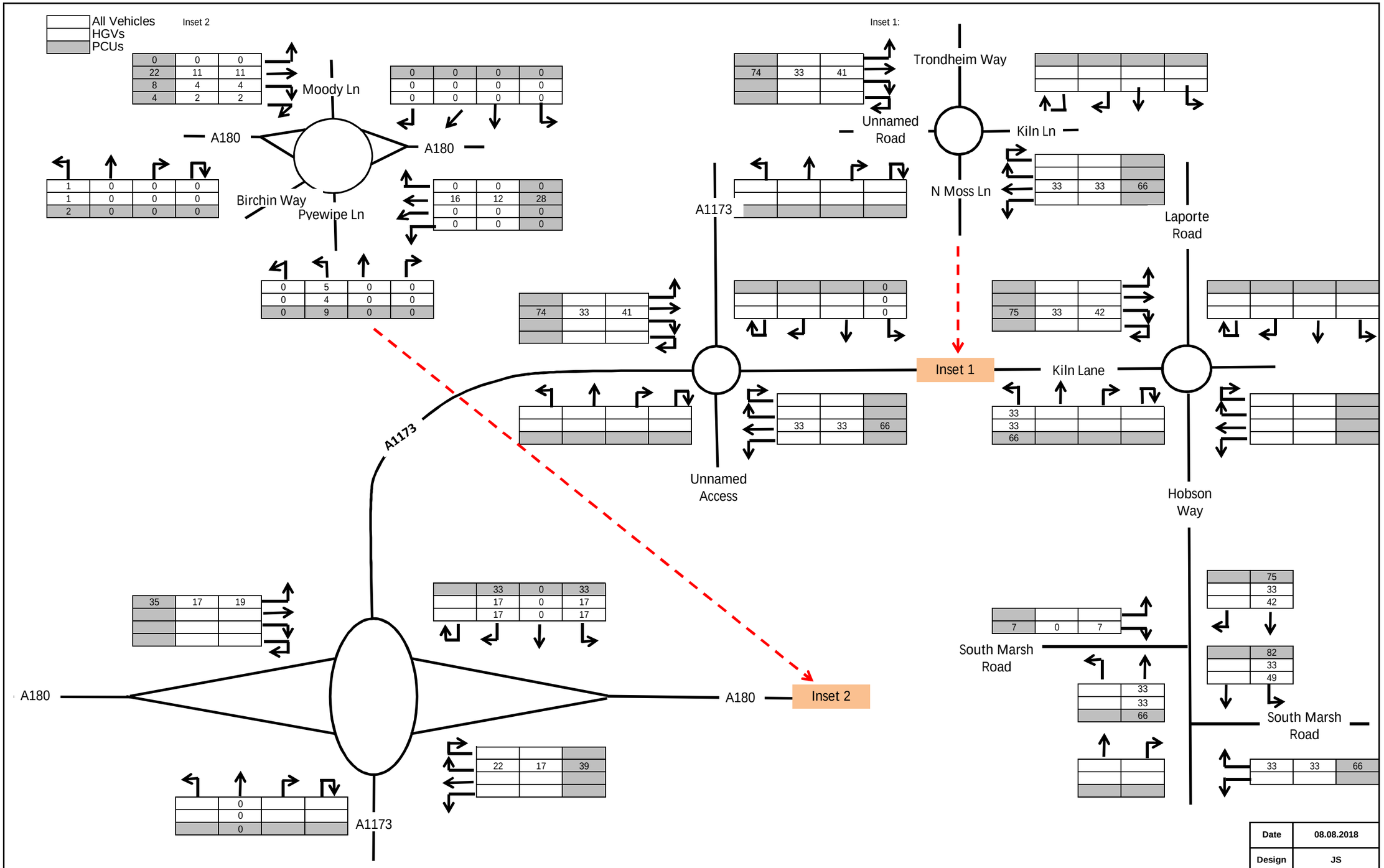
				File:	



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Staff Development Flows - PM Peak (16:00 - 17:00)	AECOM	Annex 10	A
				File:	

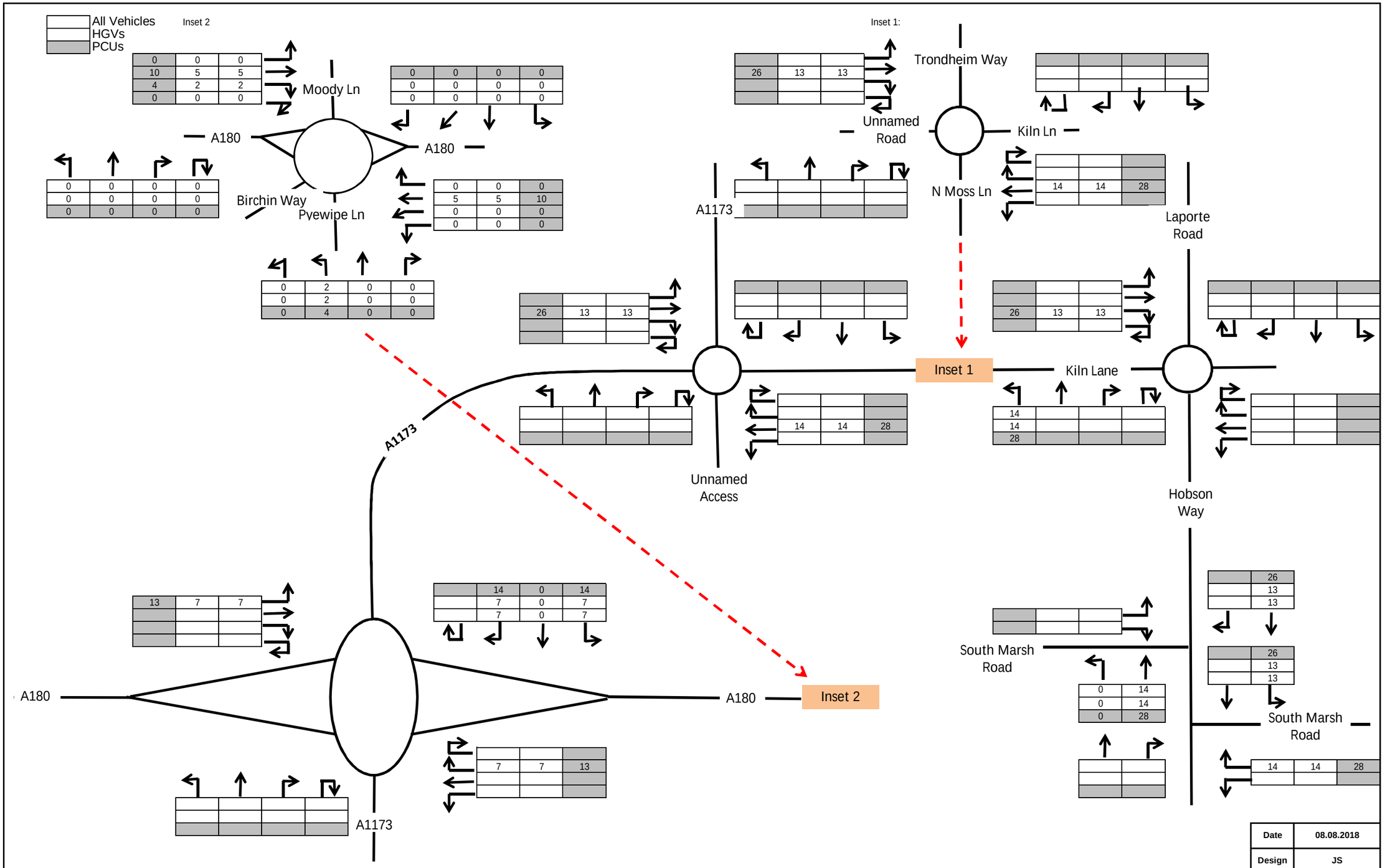
ANNEX 11: TOTAL OPERATIONAL DEVELOPMENT FLOWS DURING NETWORK PEAK HOURS



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

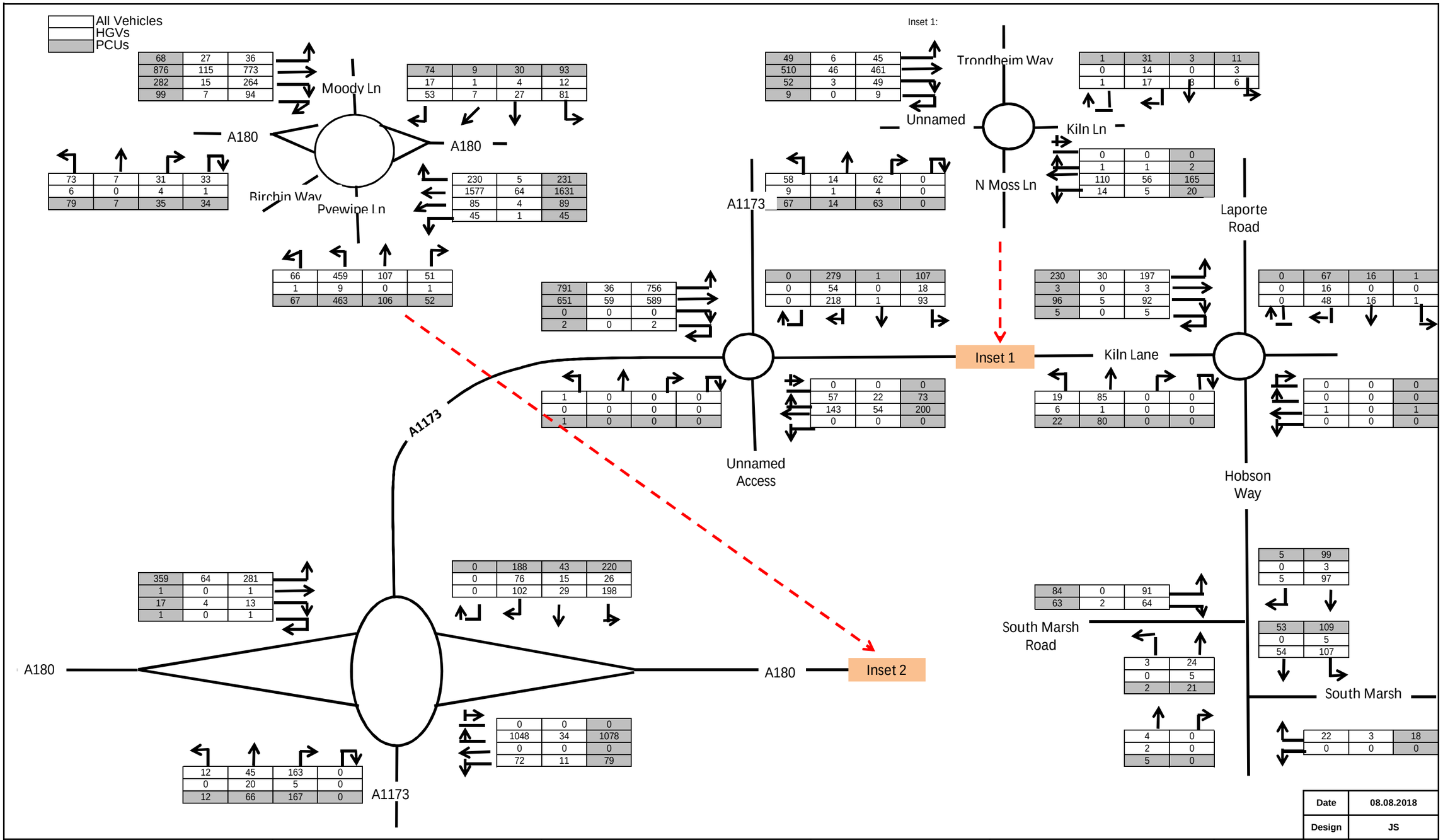
Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Total Development Flows - AM Peak (07:00 - 08:00)	AECOM	Annex 11	A

File:



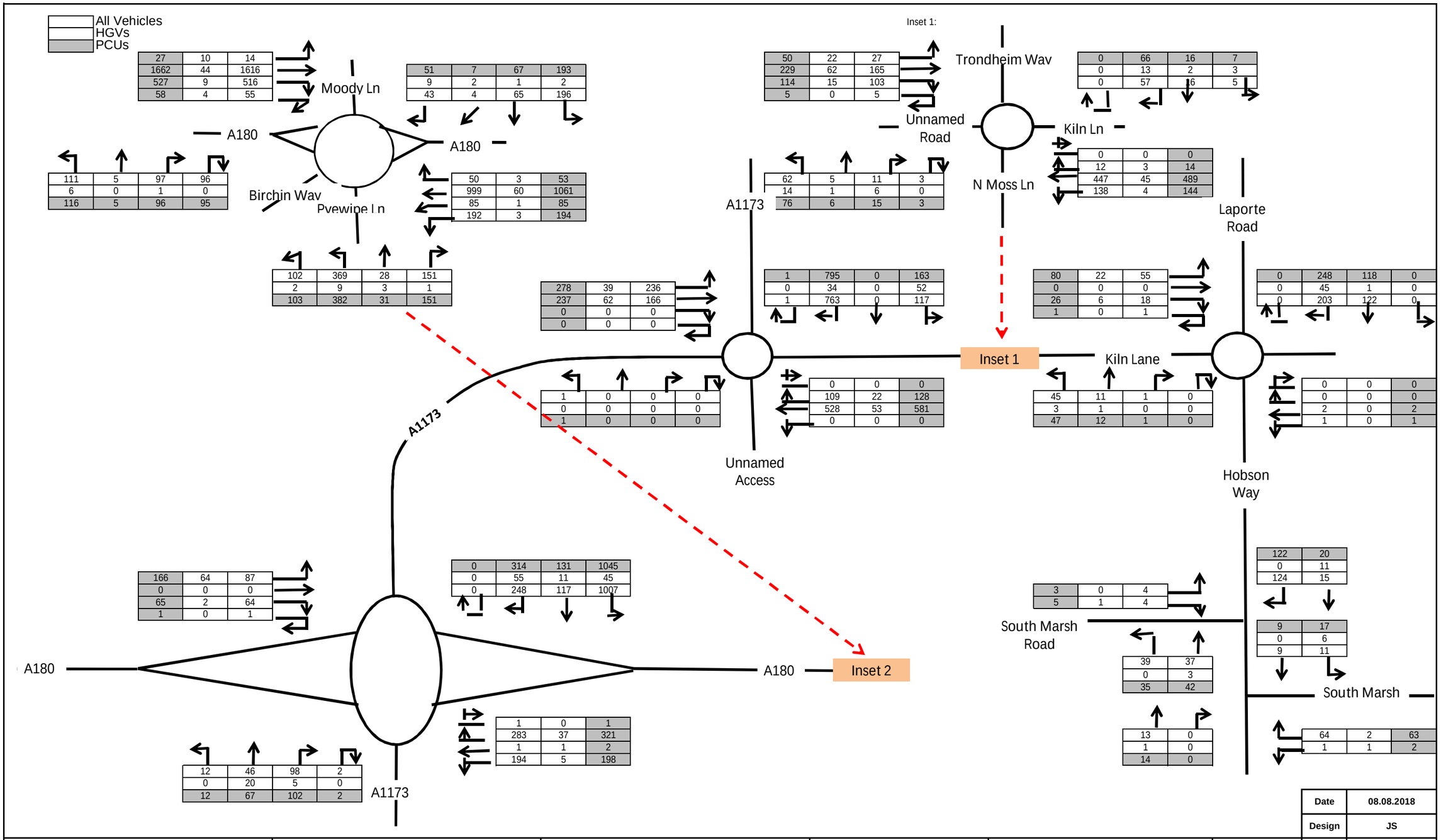
Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
EP SHB	South Humber Bank Energy Centre	Total Development Flows - PM Peak (16:00 - 17:00)	AECOM	Annex 11	A	Design	JS
						Checked	PF
						Appr'd	PF
				File:			

ANNEX 12: FUTURE 2023, 2029 AND 2030 NETWORK PEAK HOUR BASE FLOWS



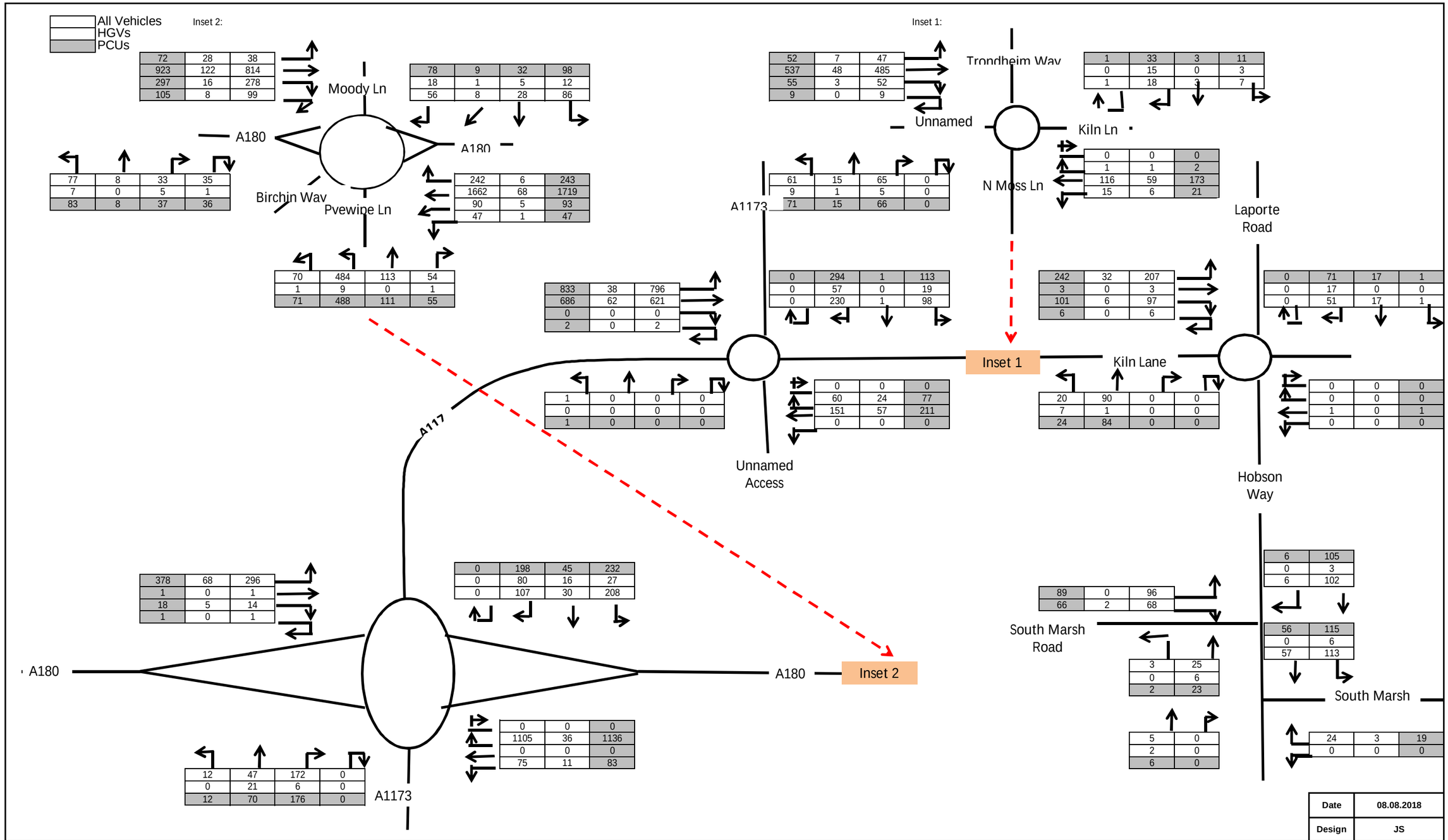
Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	2023 Base Flows - AM Peak (07:00 - 08:00)	AECOM	Annex 12	A
				File:	



Date	08.08.2018		
Design	JS		
Checked	PF		
Appr'd	PF		

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	2023 Base Flows - PM Peak (16:00 - 17:00)	AECOM	Annex 12	A
				File:	



Inset 2		
72	28	38
923	122	814
297	16	278
105	8	99

78	9	32	98
18	1	5	12
56	8	28	86

77	8	33	35
7	0	5	1
83	8	37	36

242	6	243
1662	68	1719
90	5	93
47	1	47

70	484	113	54
1	9	0	1
71	488	111	55

833	38	796
686	62	621
0	0	0
2	0	2

1	0	0	0
0	0	0	0
1	0	0	0

0	0	0
60	24	77
151	57	211
0	0	0

378	68	296	
1	0	1	
18	5	14	
1	0	1	

0	198	45	232
0	80	16	27
0	107	30	208

0	0	0
1105	36	1136
0	0	0
75	11	83

12	47	172	0
0	21	6	0
12	70	176	0

Inset 1			
52	7	47	
537	48	485	
55	3	52	
9	0	9	

1	33	3	11
0	15	0	3
1	18	3	7

61	15	65	0
9	1	5	0
71	15	66	0

0	0	0
1	1	2
116	59	173
15	6	21

0	294	1	113
0	57	0	19
0	230	1	98

242	32	207	
3	0	3	
101	6	97	
6	0	6	

0	71	17	1
0	17	0	0
0	51	17	1

20	90	0	0
7	1	0	0
24	84	0	0

0	0	0
0	0	0
1	0	1
0	0	0

89	0	96
66	2	68

3	25
0	6
2	23

5	0
2	0
6	0

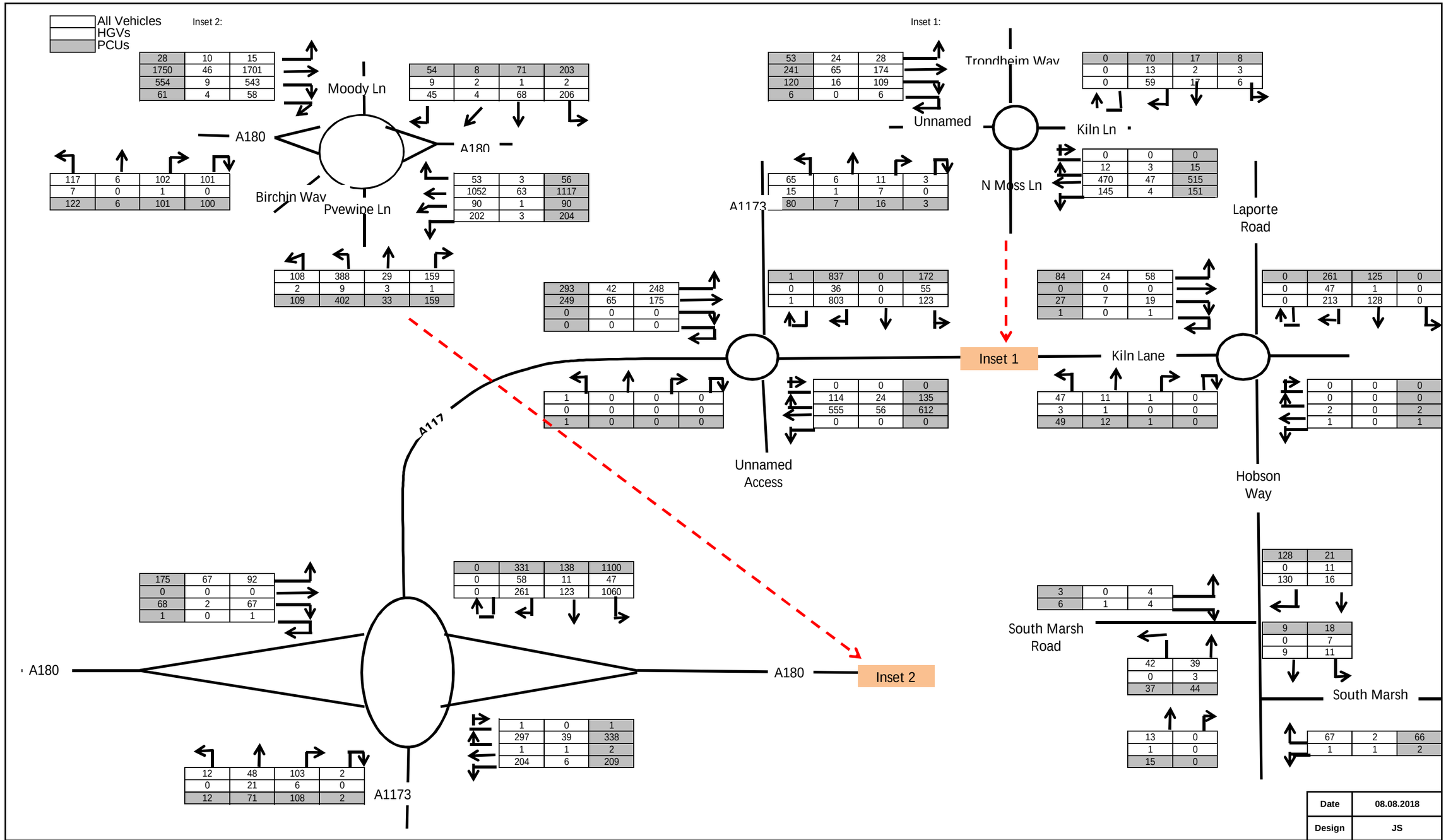
6	105
0	3
6	102

56	115
0	6
57	113

24	3	19
0	0	0

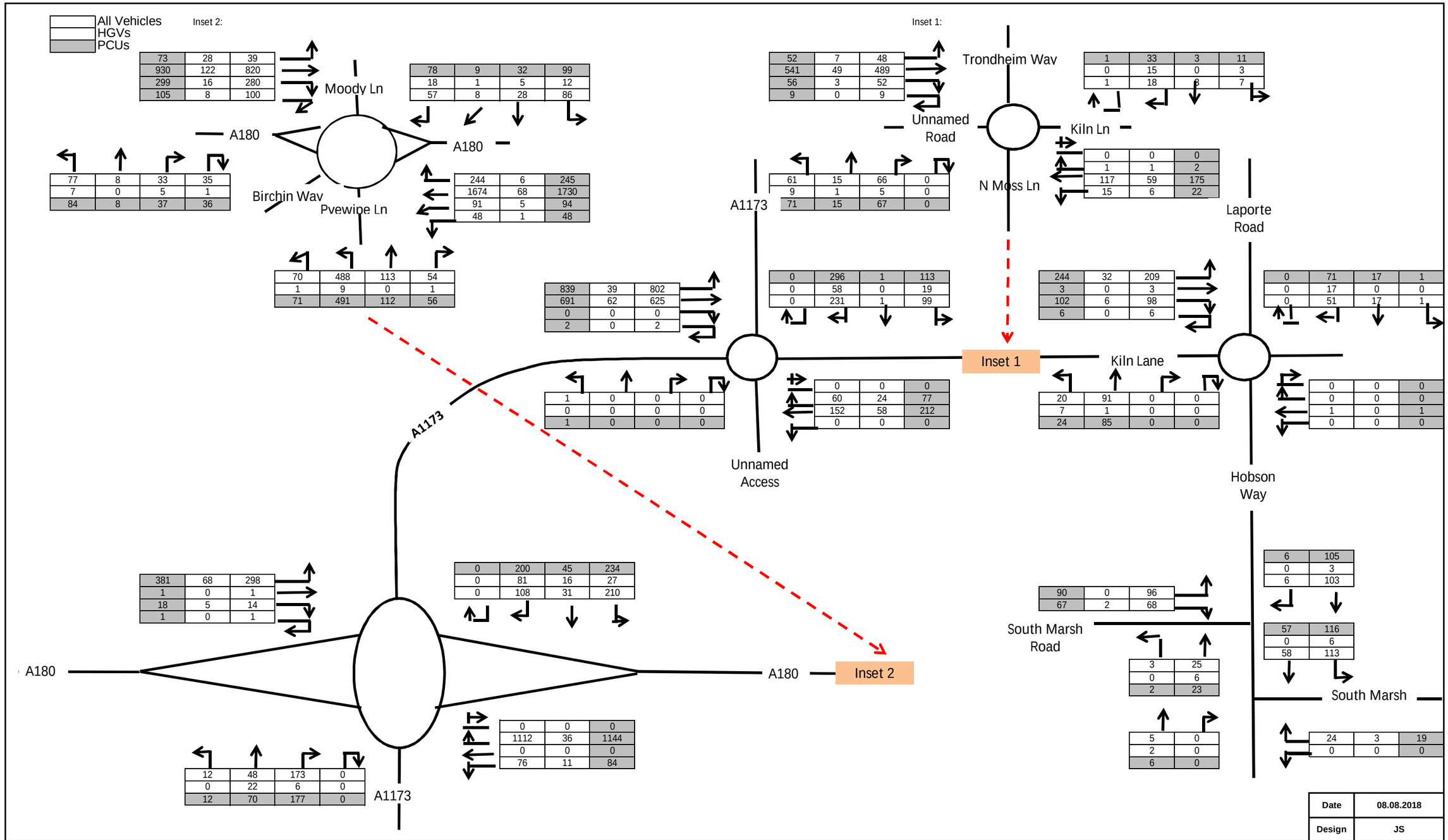
Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	2029 Base Flows - AM Peak (07:00 - 08:00)	AECOM	Annex 12	A
				File:	



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	2029 Base Flows - PM Peak (16:00 - 17:00)	AECOM	Annex 12	A
				File:	



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
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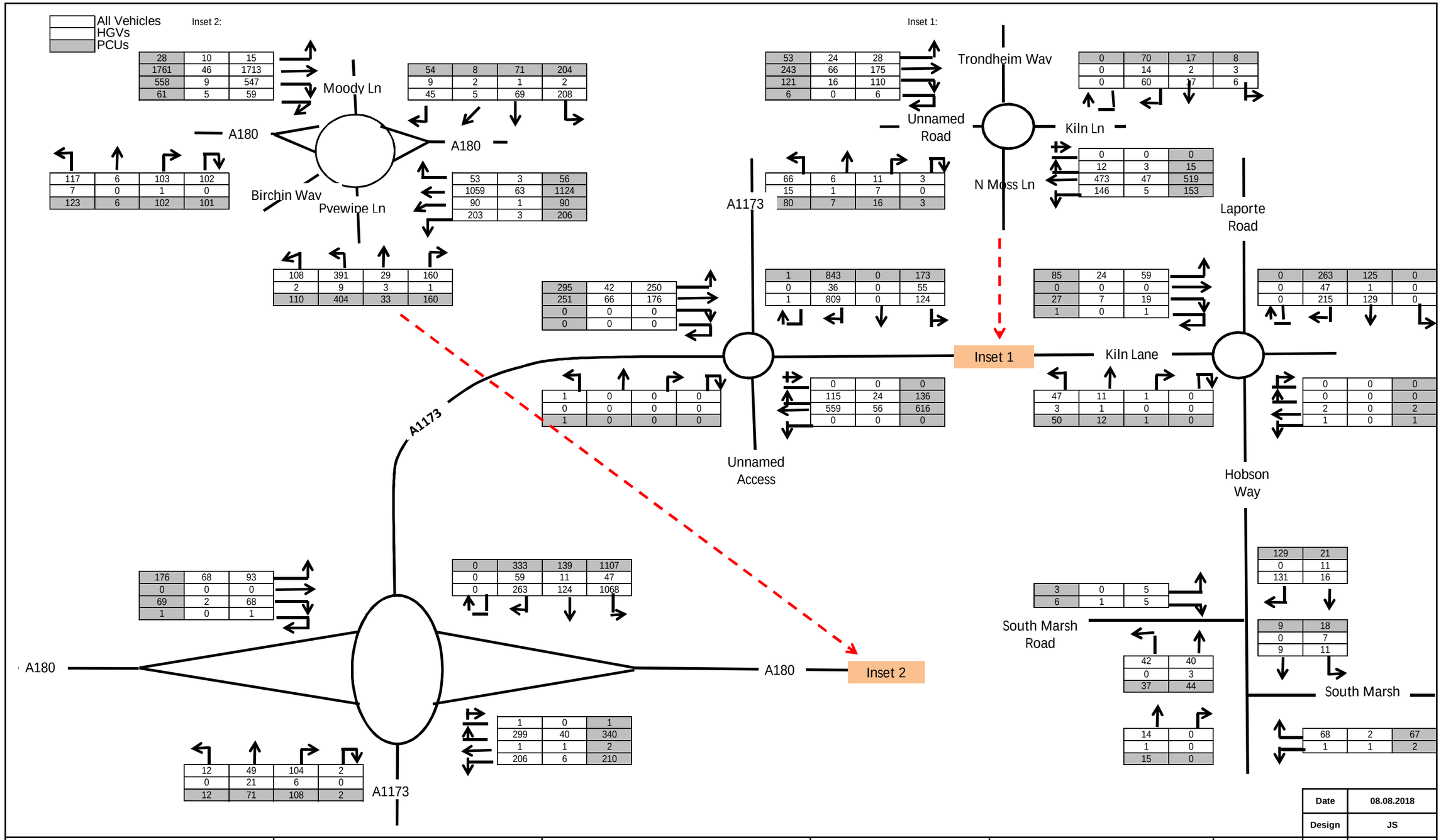
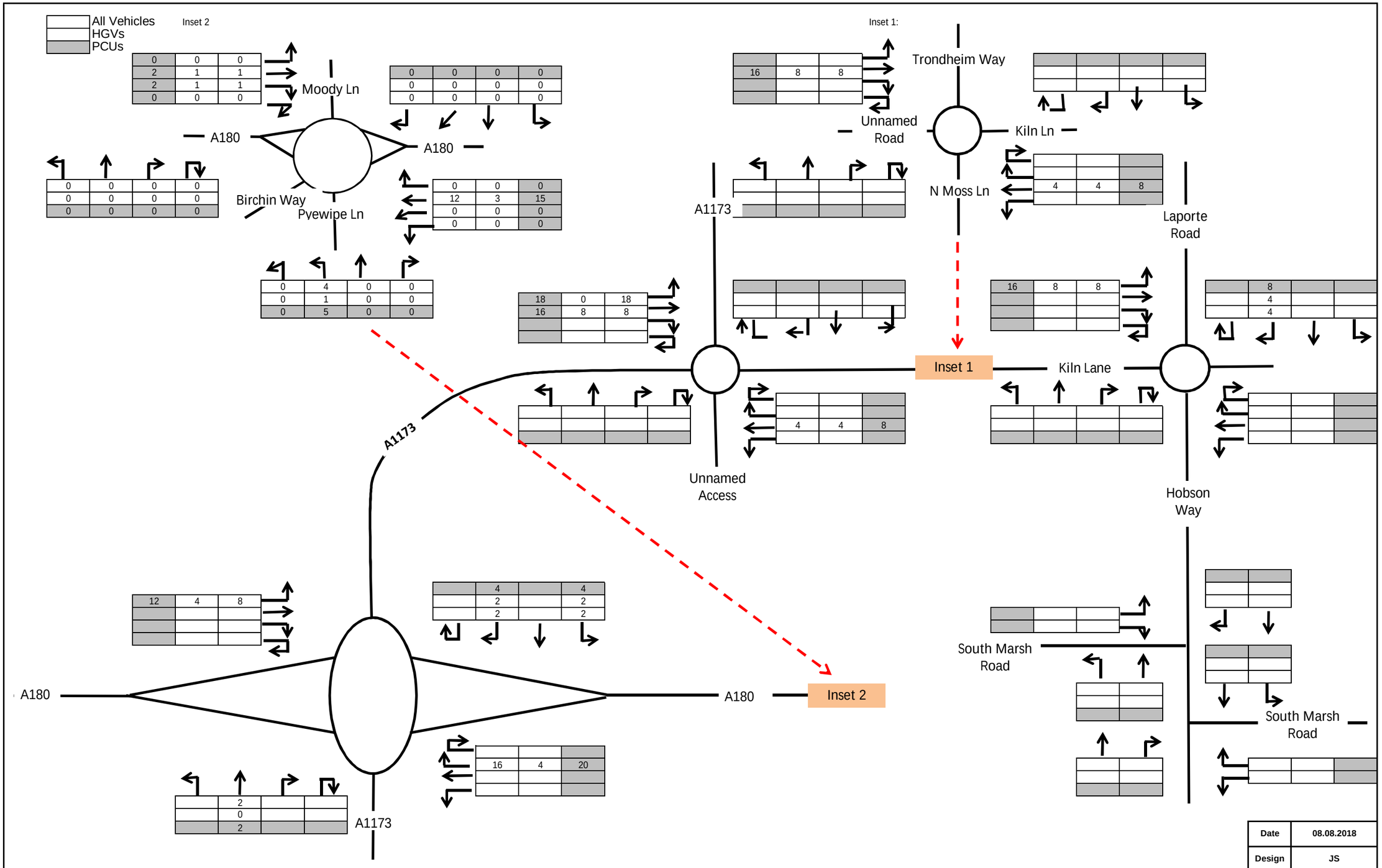
				File:	



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	2030 Base Flows - PM Peak (16:00 - 17:00)	AECOM	Annex 12	A
				File:	

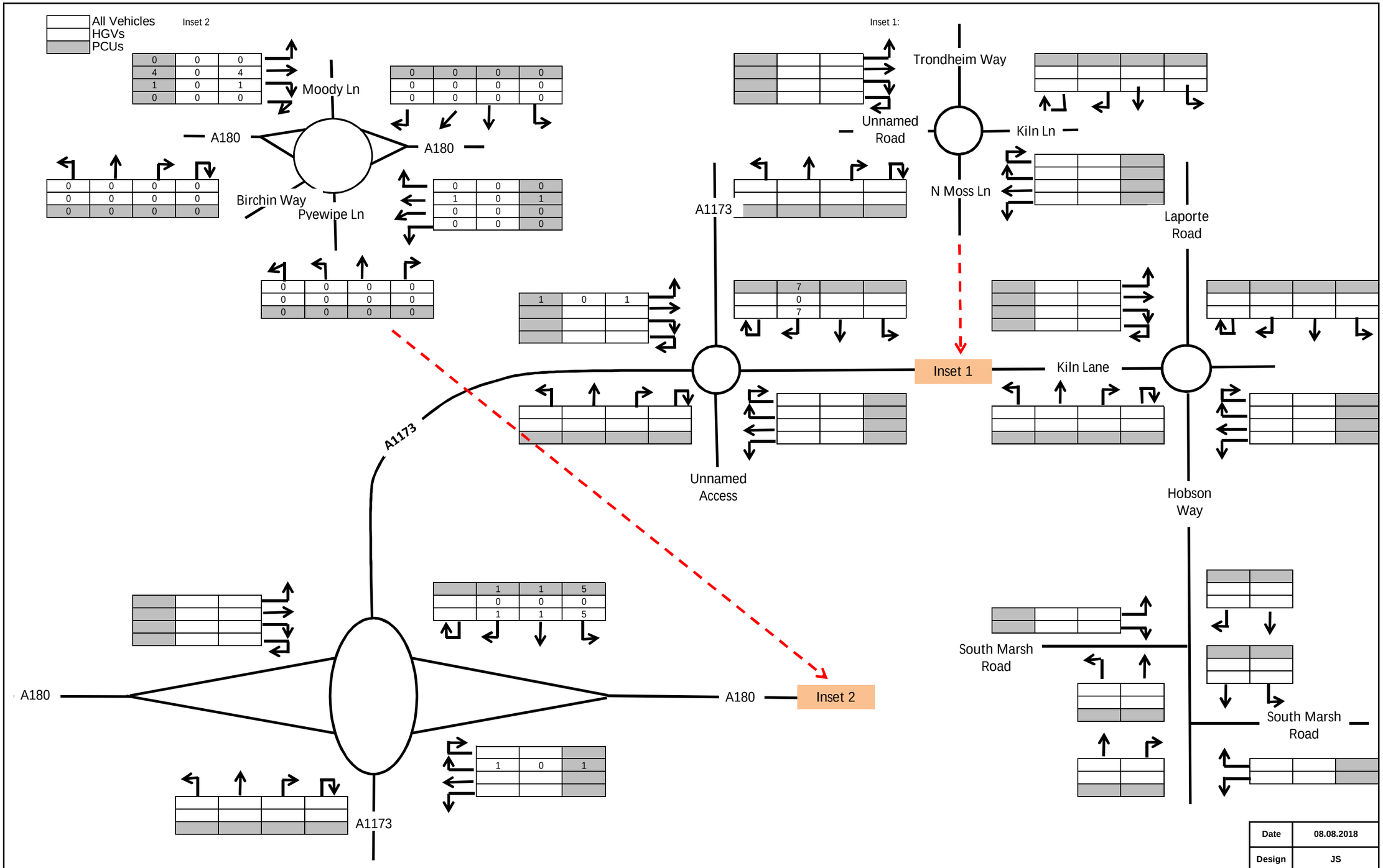
ANNEX 13: COMMITTED DEVELOPMENT FLOWS



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Committed Development: North Beck Energy Centre - AM Peak (07:00 - 08:00)	AECOM	Annex 13	A

File:



Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
EP SHB	South Humber Bank Energy Centre	Committed Development: North Beck Energy Centre - PM Peak (16:00 - 17:00)	AECOM	Annex 13	A	Design	JS
						Checked	PF
						Appr'd	PF
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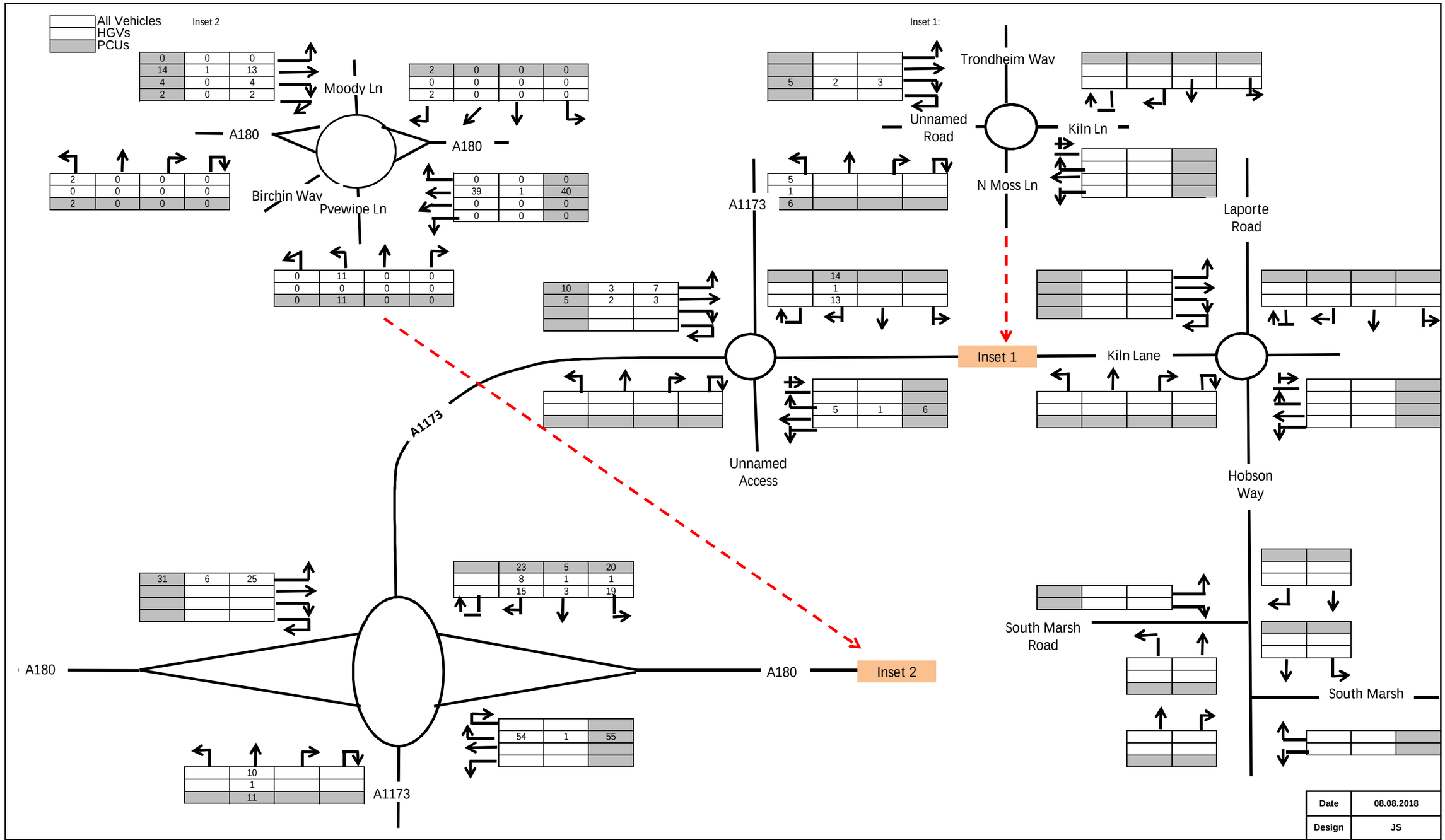
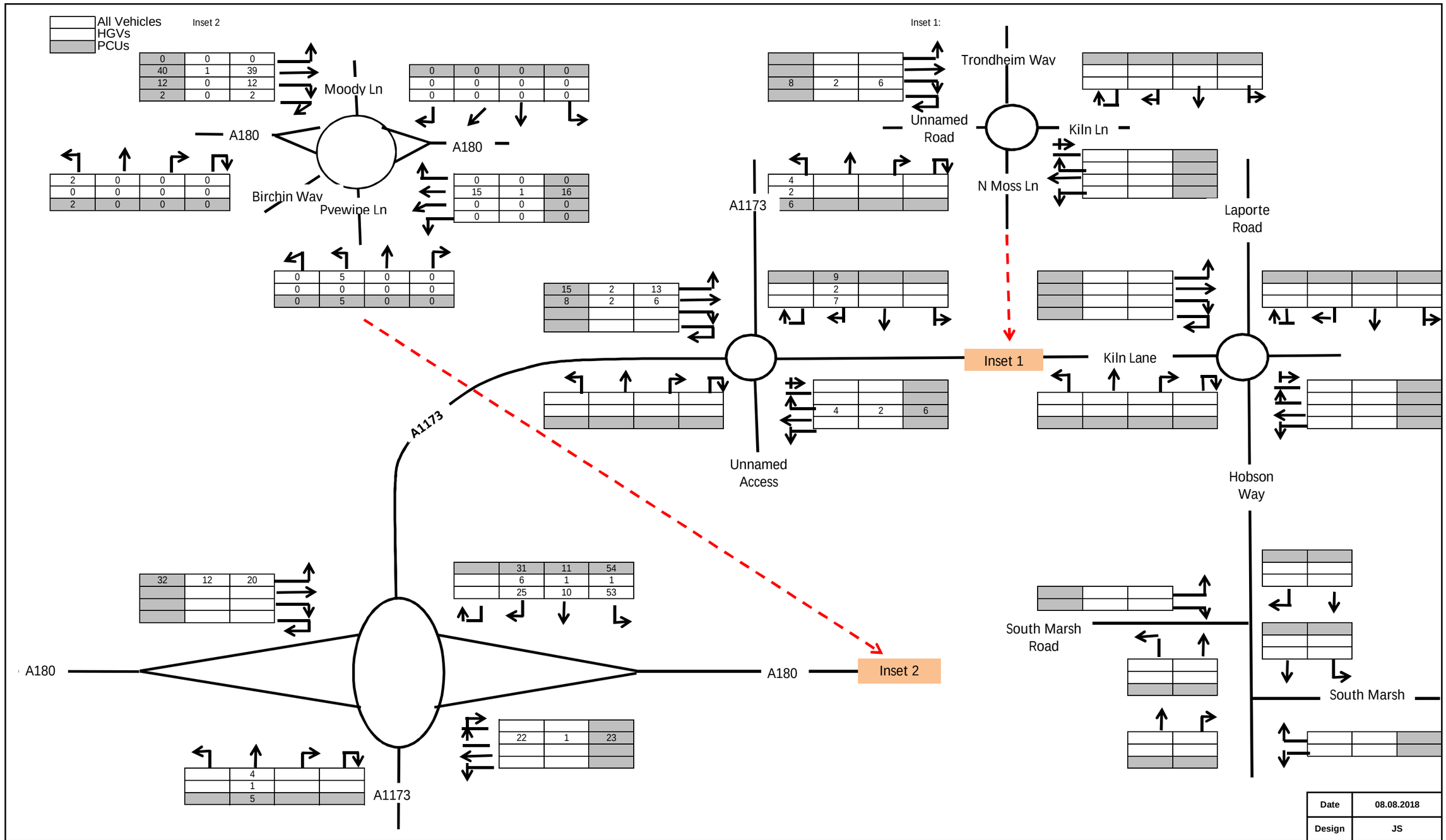


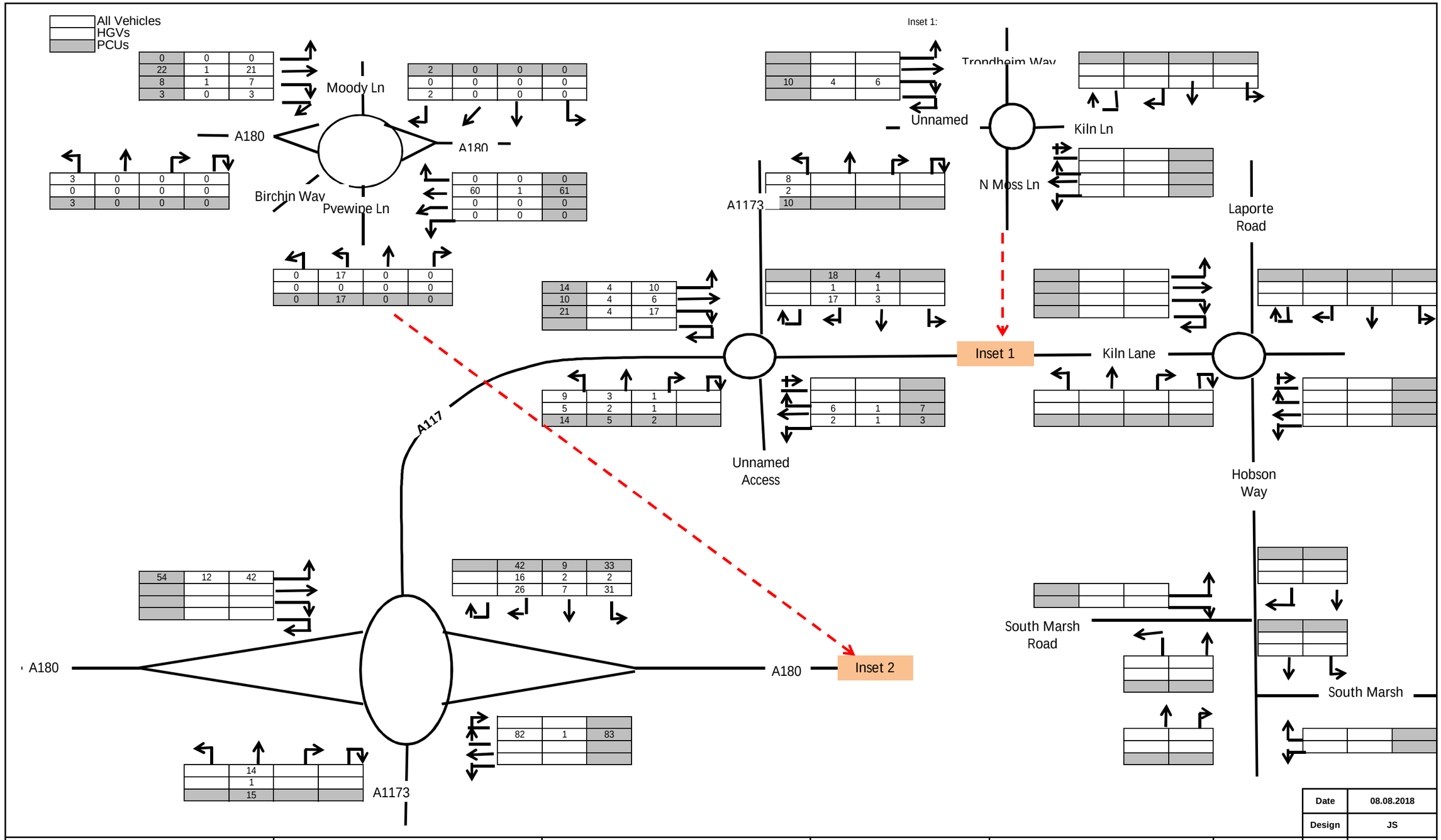
Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Committed Development: Stallingborough Employment Site - 2023 AM Peak (07:00 - 08:00)	AECOM	Annex 13	A
				File:	

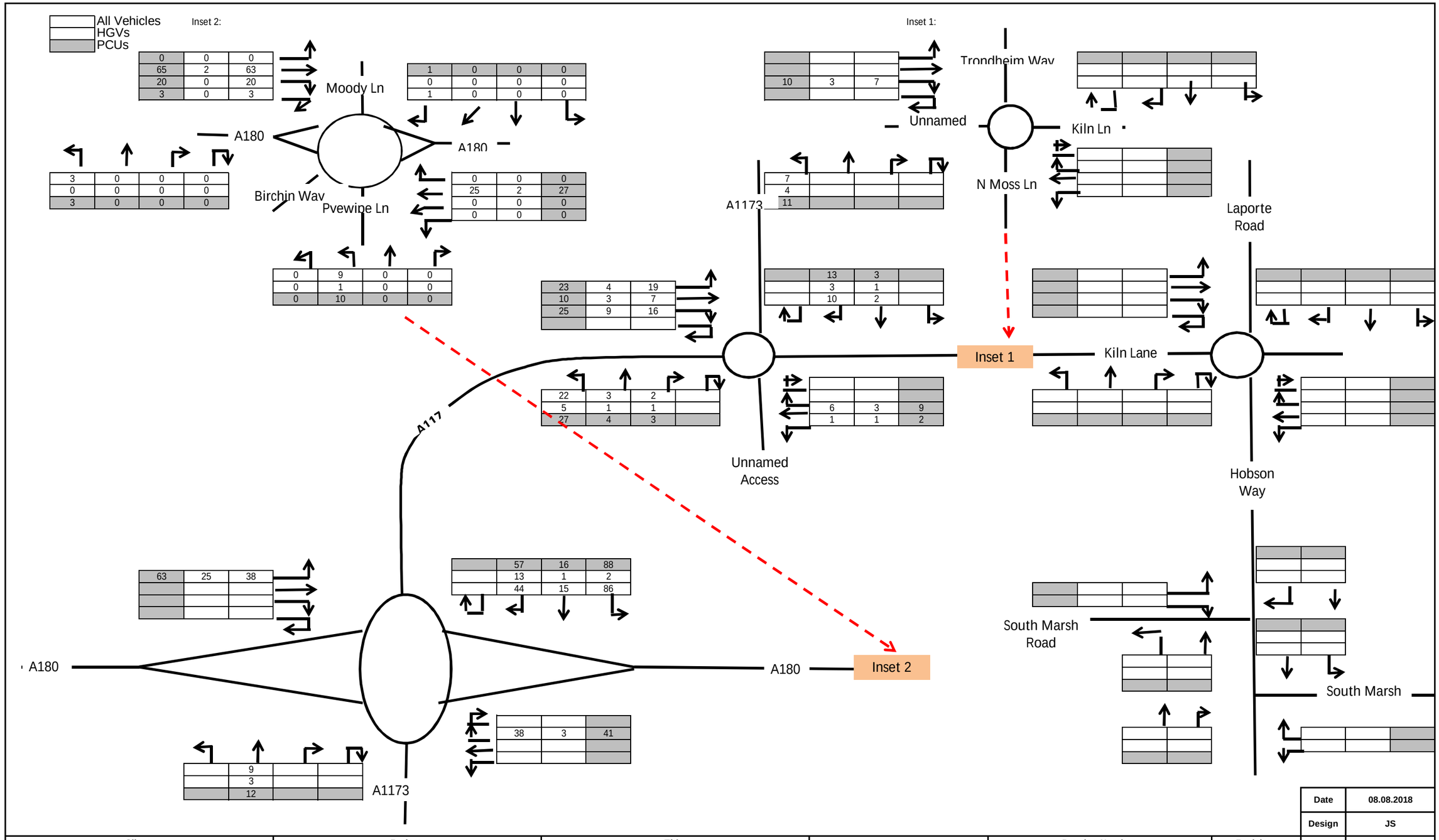


Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

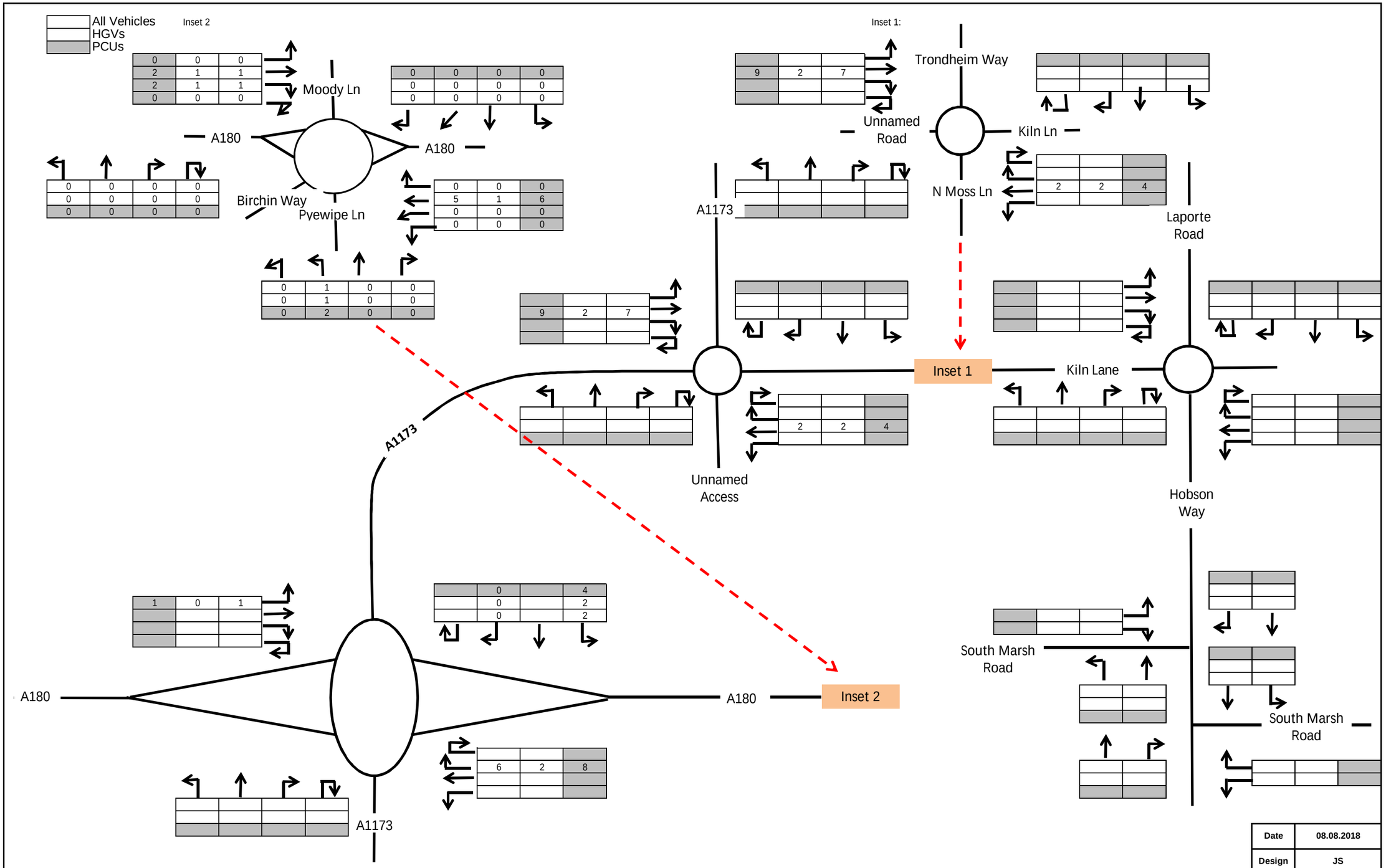
Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Committed Development: Stallingborough Employment Site - 2023 PM Peak (16:00 - 17:00)	AECOM	Annex 13	A
				File:	



Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
EP SHB	South Humber Bank Energy Centre	Committed Development: Stallingborough Employment Site - 2029/2030 AM Peak (07:00 - 08:00)	AECOM	Annex 13	A	Design	JS
						Checked	PF
						Appr'd	PF
				File:			



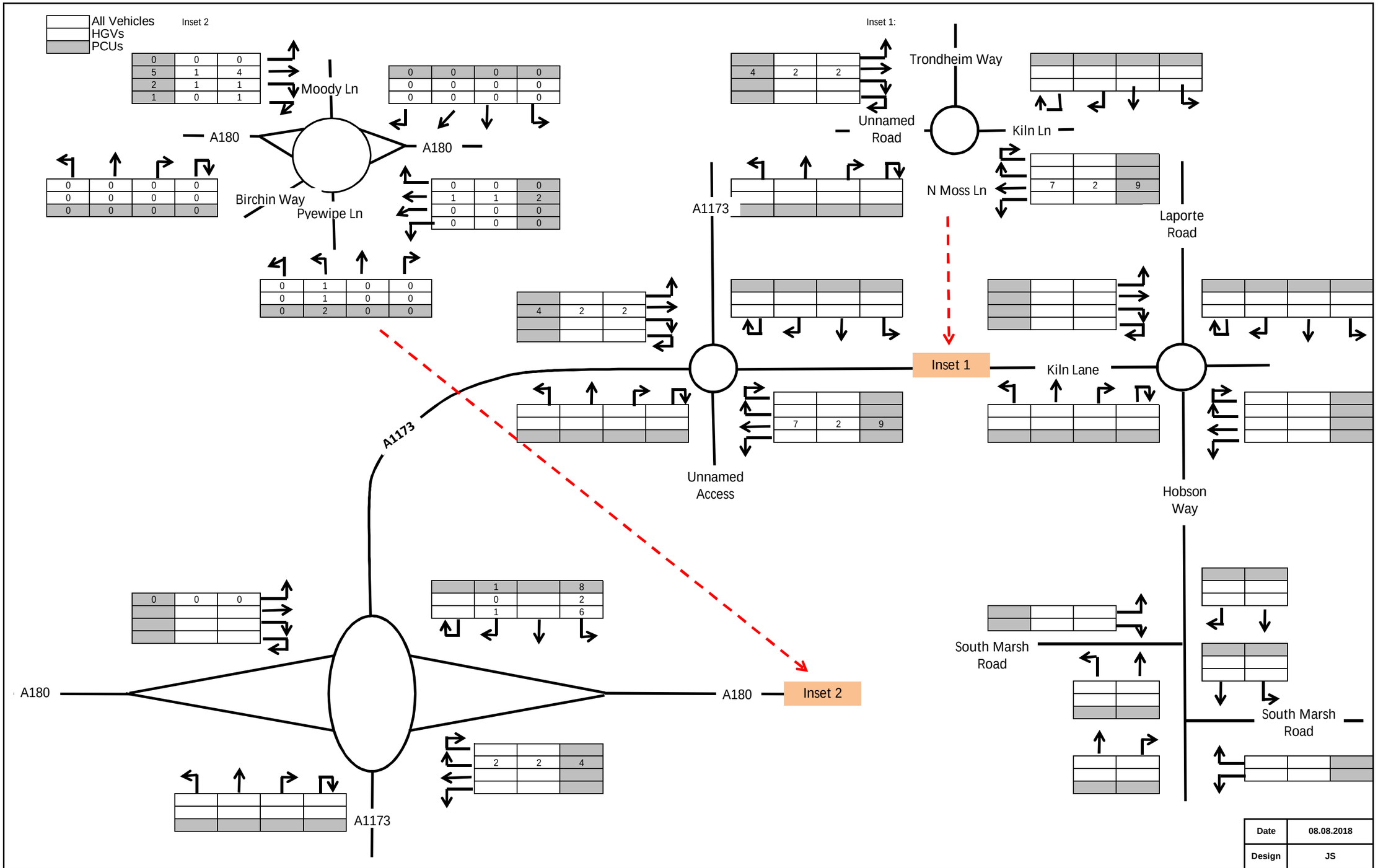
Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
						Design	JS
EP SHB	South Humber Bank Energy Centre	Committed Development: Stallingborough Employment Site - 2029/2030 PM Peak (16:00 - 17:00)	AECOM	Annex 13	A	Checked	PF
				File:		Appr'd	PF



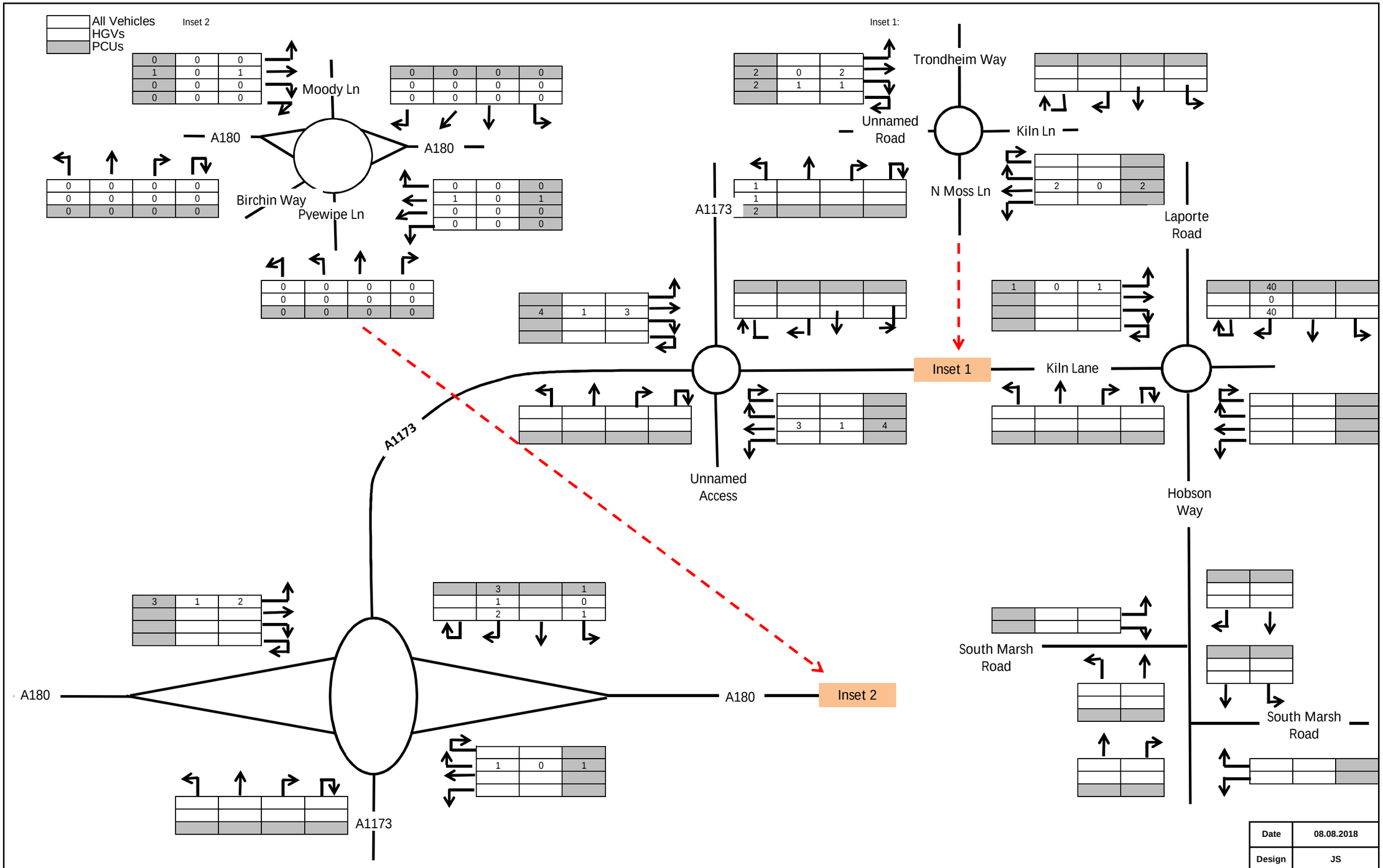
Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Committed Development: Tyre Pyrolysis Plant - AM Peak (07:00 - 08:00)	AECOM	Annex 13	A

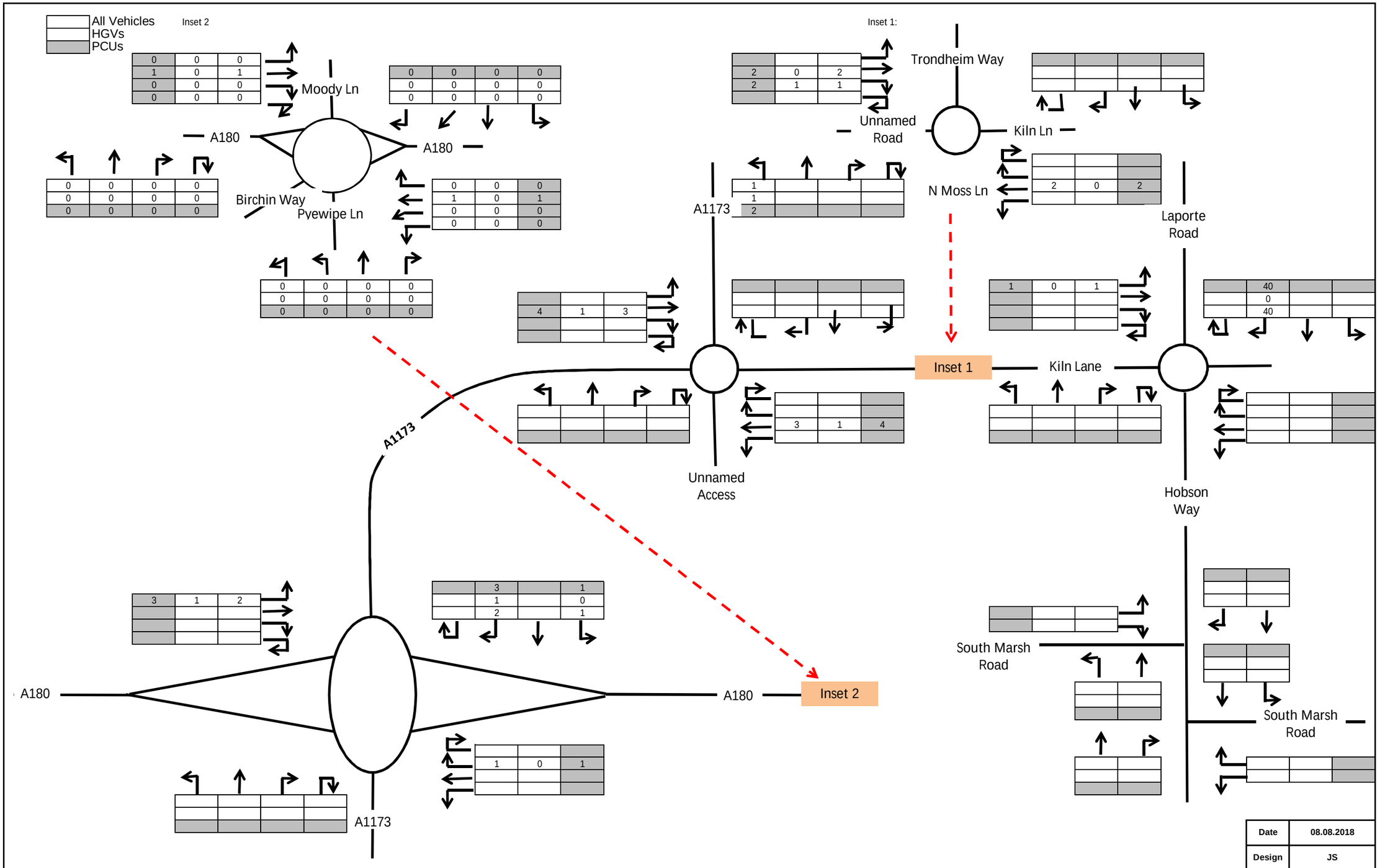
File:



Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
						Design	JS
EP SHB	South Humber Bank Energy Centre	Committed Development: Tyre Pyrolysis Plant - PM Peak (16:00 - 17:00)	AECOM	Annex 13	A	Checked	PF
				File:		Appr'd	PF



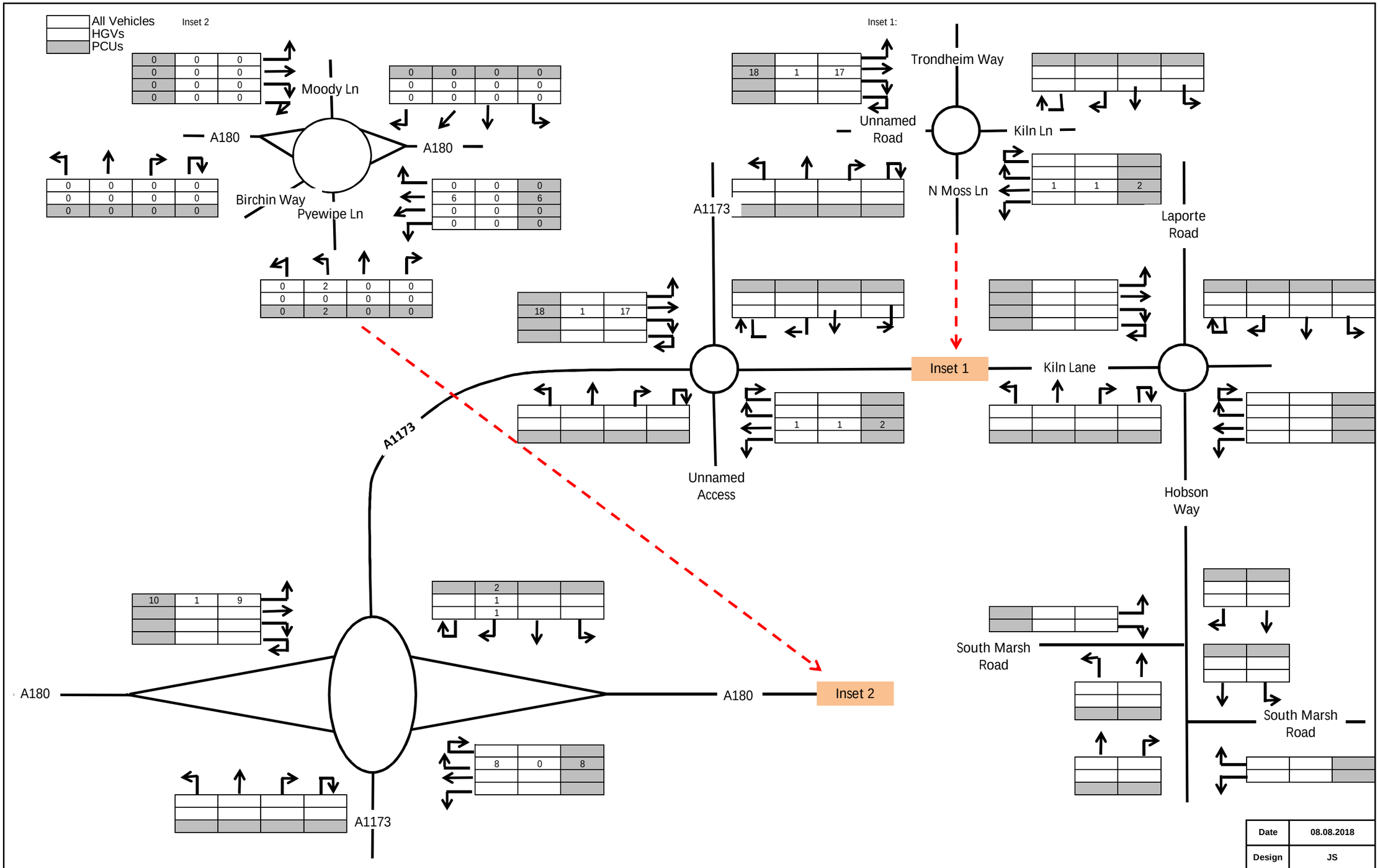
Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
						Design	JS
EP SHB	South Humber Bank Energy Centre	Committed Development: Paragon / Kia Development - AM Peak (07:00 - 08:00)	AECOM	Annex 13	A	Checked	PF
						Appr'd	PF
				File:			



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

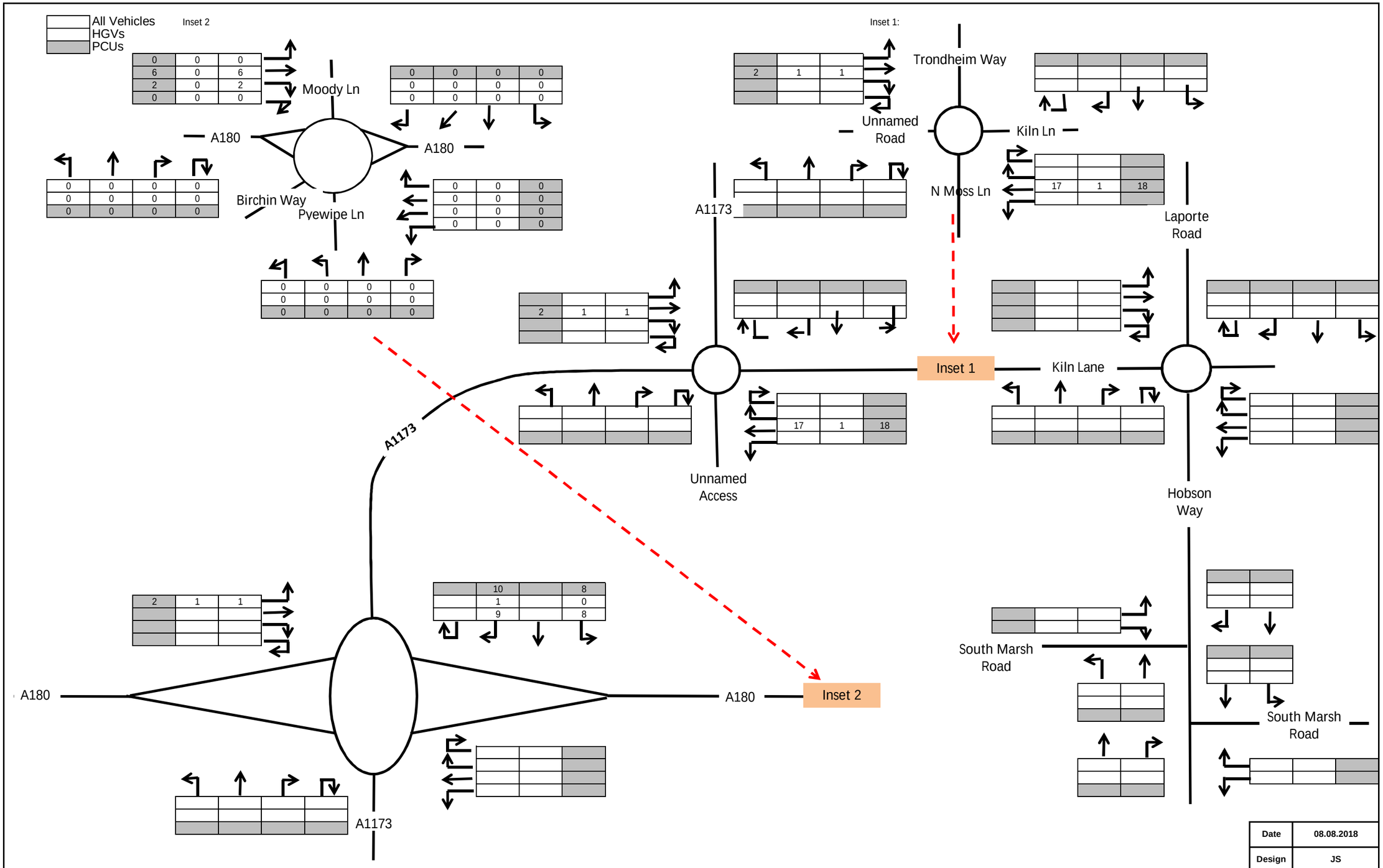
Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Committed Development: Paragon / Kia Development - PM Peak (16:00 - 17:00)	AECOM	Annex 13	A

File:



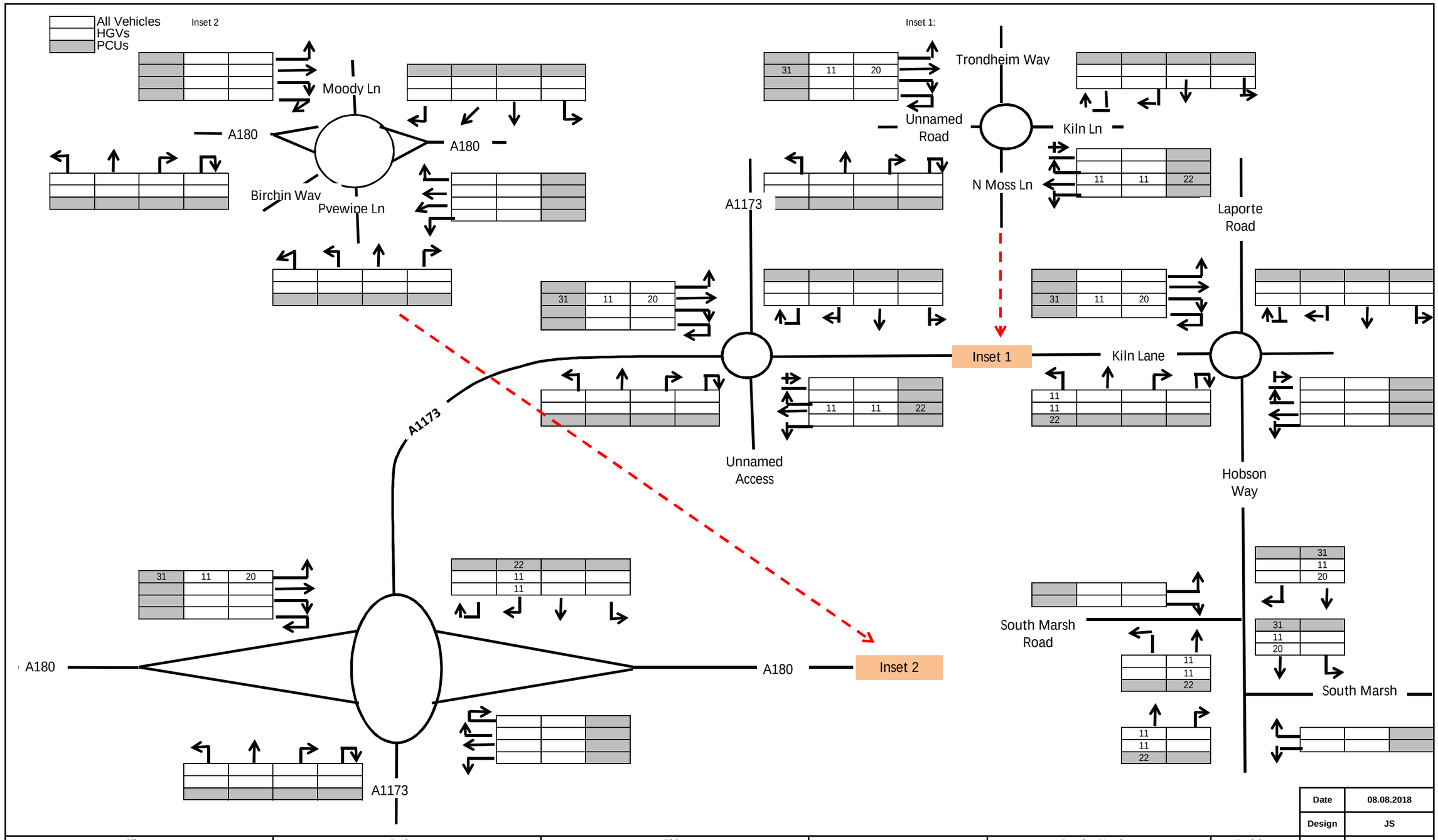
Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Committed Development: Renewable Power Facility - AM Peak (07:00 - 08:00)	AECOM	Annex 13	A
				File:	

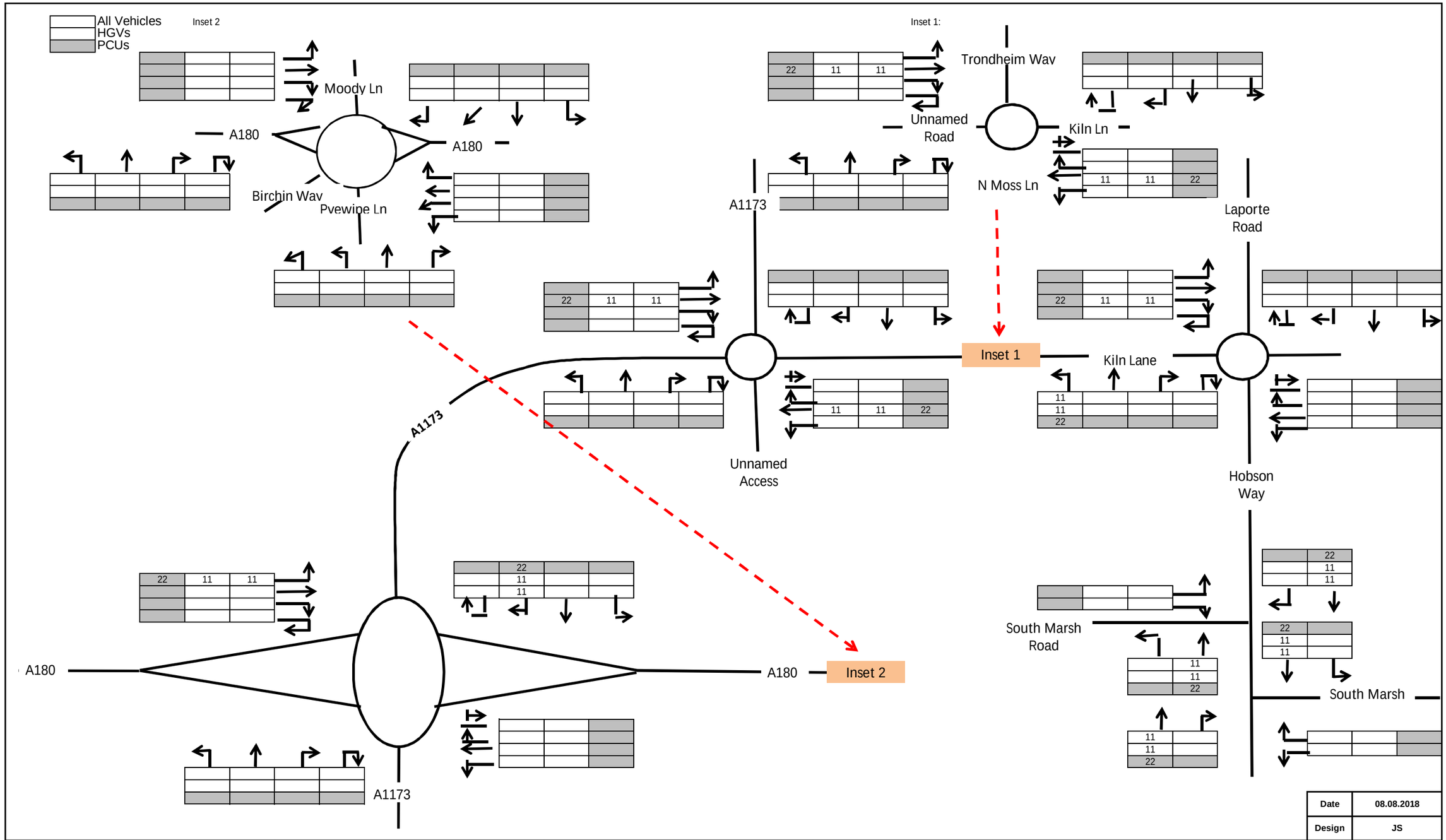


Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

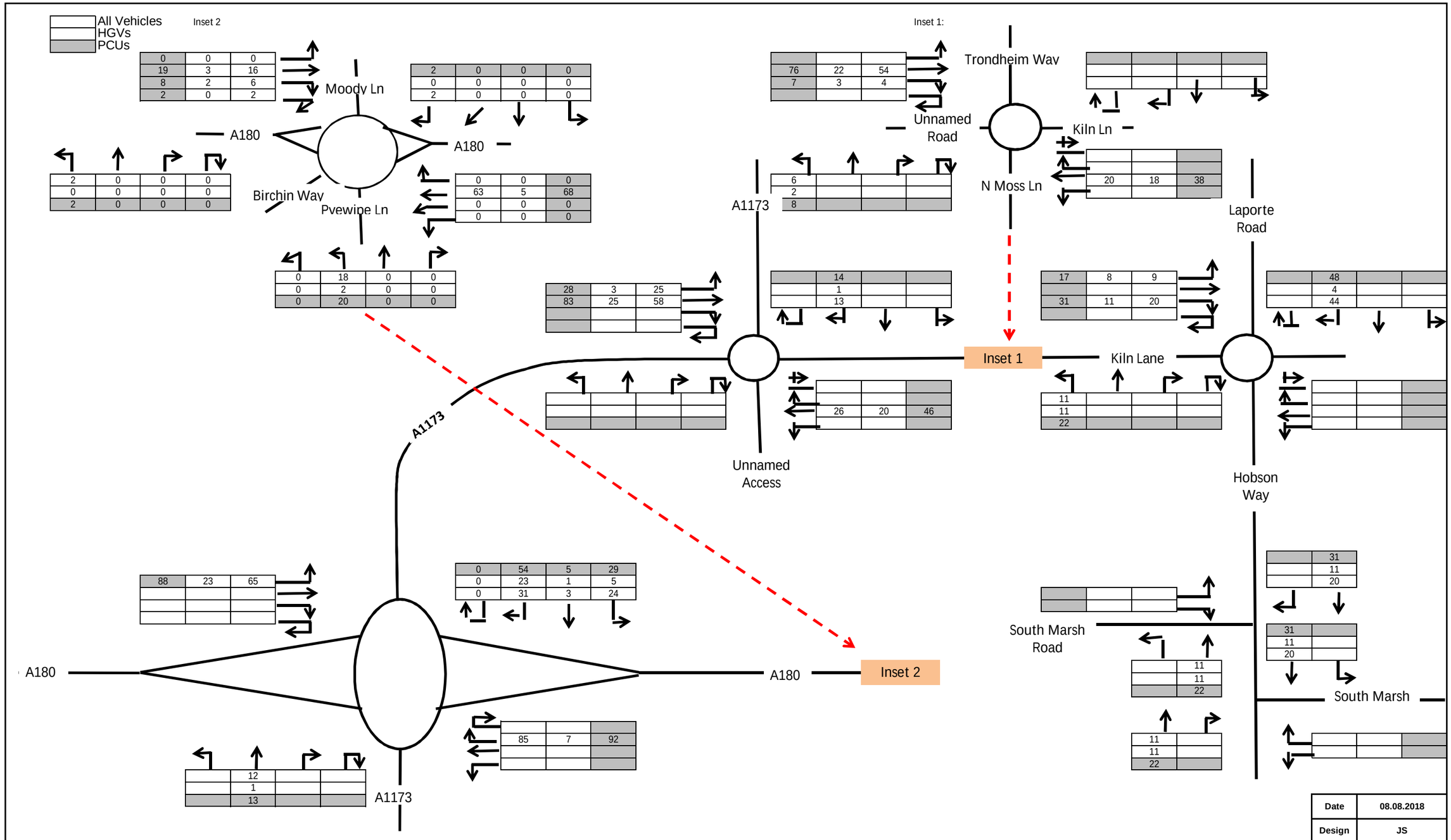
Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Committed Development: Renewable Power Facility - PM Peak (16:00 - 17:00)	AECOM	Annex 13	A
				File:	



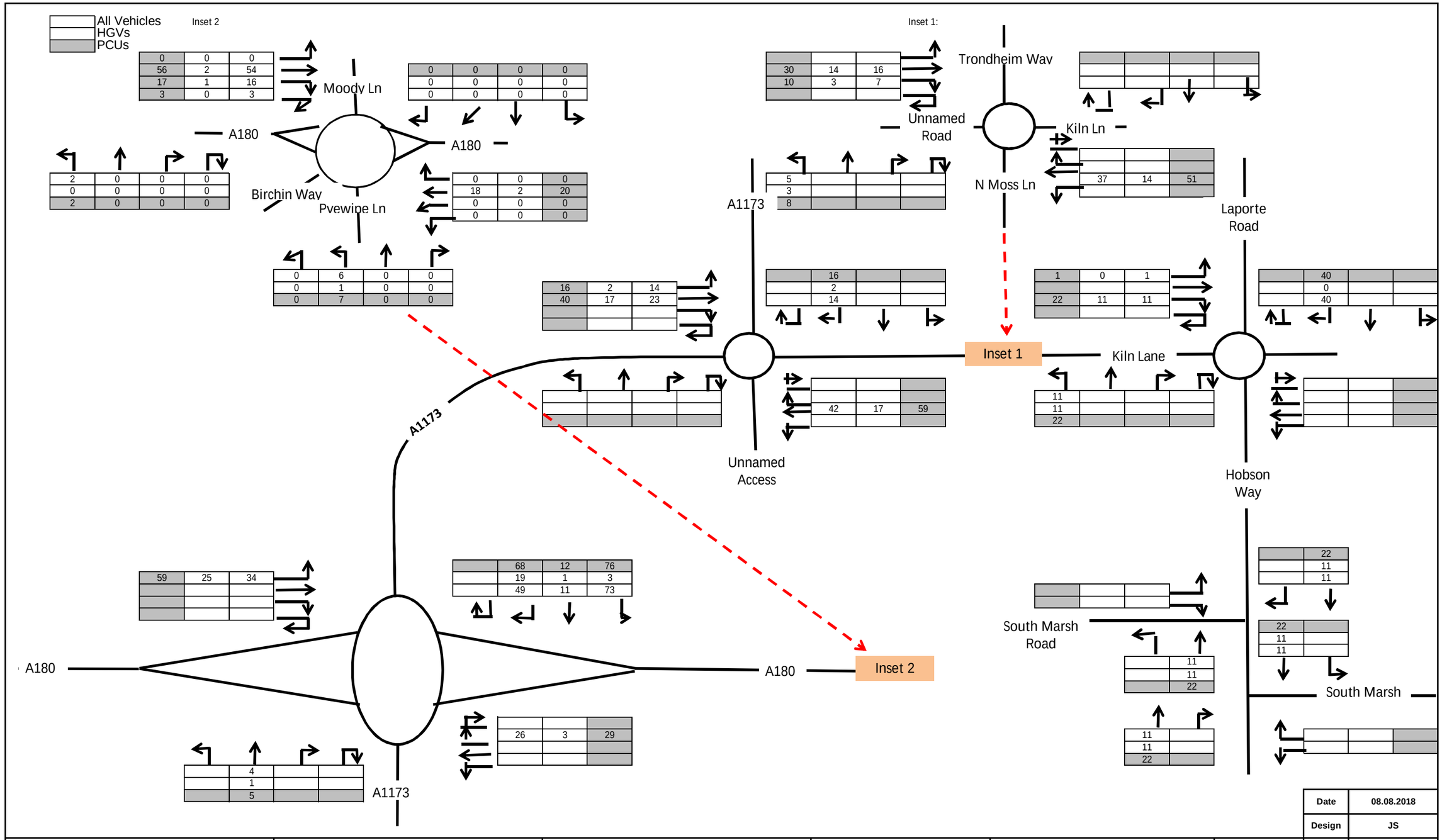
Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
						Design	JS
EP SHB	South Humber Bank Energy Centre	Committed Development: Sustainable Transport Fuel Plant - AM Peak (07:00 - 08:00)	AECOM	Annex 13	A	Checked	PF
				File:		Appr'd	PF



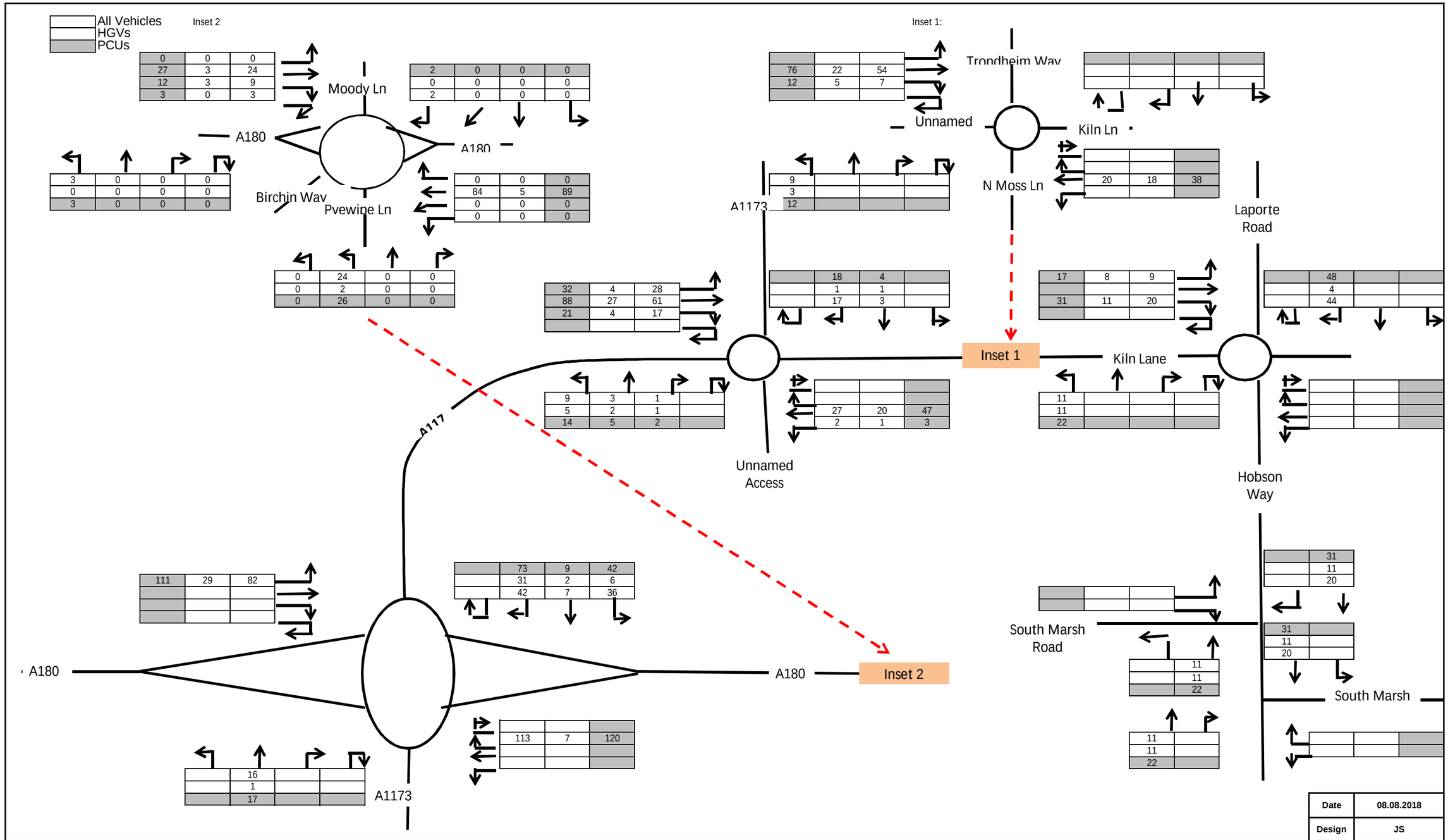
Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
						Design	JS
EP SHB	South Humber Bank Energy Centre	Committed Development: Sustainable Transport Fuel Plant - PM Peak (16:00 - 17:00)	AECOM	Annex 13	A	Checked	PF
				File:		Appr'd	PF



Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
EP SHB	South Humber Bank Energy Centre	Total Committed Development Flows 2023 AM Peak (07:00 - 08:00)	AECOM	Annex 13	A	Design	JS
						Checked	PF
				File:		Appr'd	PF

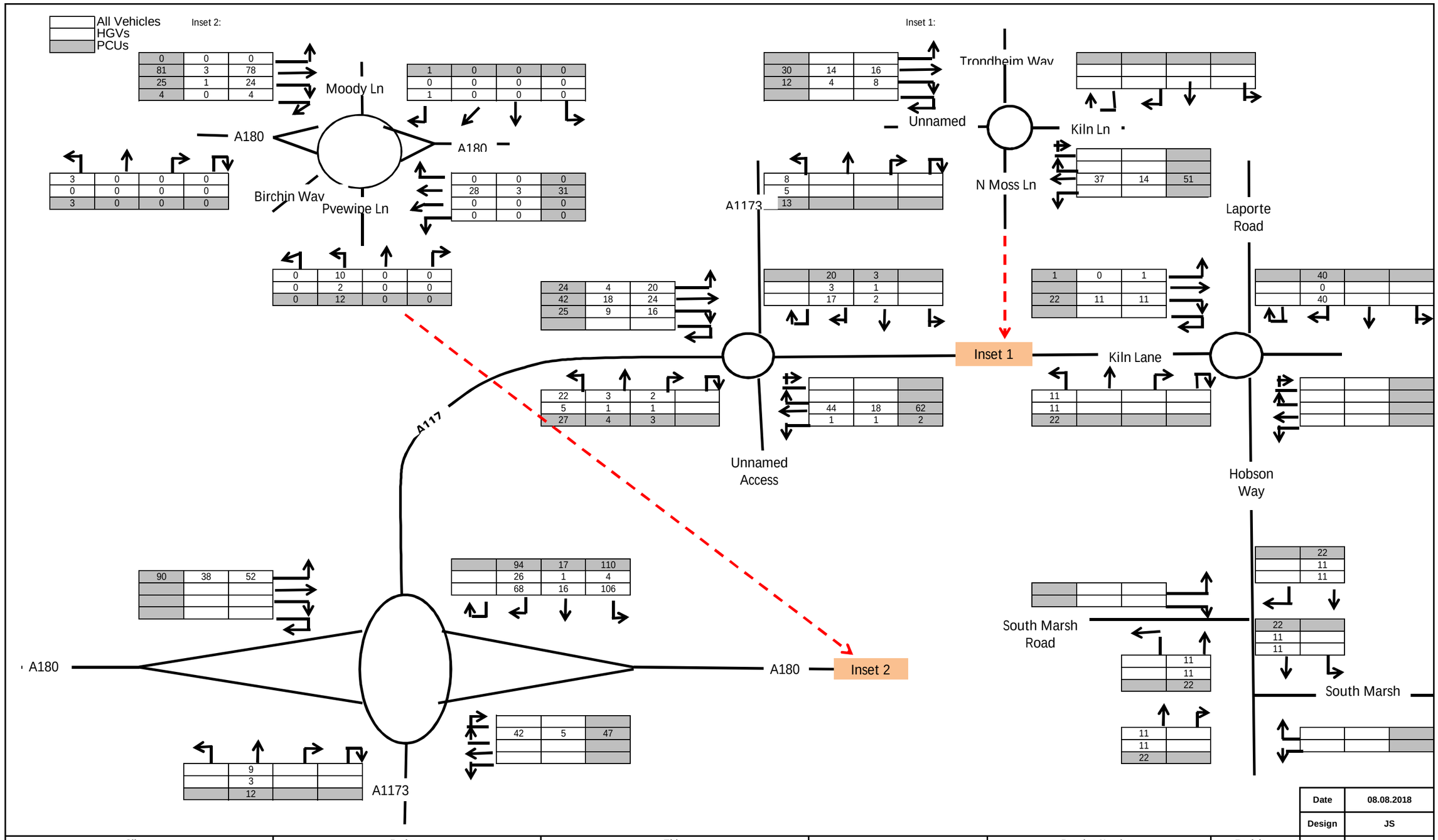


Client:	Project:	Title:		Drawing Number:	Revision:		
EP SHB	South Humber Bank Energy Centre	Total Committed Development Flows 2023 PM Peak (16:00 - 17:00)	AECOM	Annex 13	A	Date	08.08.2018
						Design	JS
						Checked	PF
				File:		Appr'd	PF



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Total Committed Development Flows 2029/2030 AM Peak (07:00 - 08:00)	AECOM	Annex 13	A
				File:	



Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
EP SHB	South Humber Bank Energy Centre	Total Committed Development Flows 2029/2030 PM Peak (16:00 - 17:00)	AECOM	Annex 13	A	Design	JS
						Checked	PF
				File:		Appr'd	PF

ANNEX 14: HOBSON WAY/ SOUTH MARSH ROAD (EAST) MODELLING OUTPUTS

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []
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Filename: OPERATION - HOBSON WAY NB RT.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\PICADY\1.0_Hobson Way RT
Report generation date: 15/10/2019 15:06:38

»Do Minimum - OPERATION - Base 2018, AM
»Do Minimum - OPERATION - Base 2018, PM
»Do Minimum - OPERATION - Base + Committed 2023, AM
»Do Minimum - OPERATION - Base + Committed 2023, PM
»Do Minimum - OPERATION - Base + Committed + Development 2023, AM
»Do Minimum - OPERATION - Base + Committed + Development 2023, PM
»Do Minimum - OPERATION - Base + Committed 2030, AM
»Do Minimum - OPERATION - Base + Committed 2030, PM
»Do Minimum - OPERATION - Base + Committed + Development 2030, AM
»Do Minimum - OPERATION - Base + Committed + Development 2030, PM
»Do Minimum - OPERATION WITH LINK ROAD - Base + Committed + Development 2026, AM
»Do Minimum - OPERATION WITH LINK ROAD - Base + Committed + Development 2026, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Do Minimum - OPERATION - Base 2018							
Stream B-C	0.0	0.00	0.00	A	0.0	8.45	0.00	A
Stream B-A	0.0	5.61	0.02	A	0.1	5.24	0.08	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	Do Minimum - OPERATION - Base + Committed 2023							
Stream B-C	0.0	0.00	0.00	A	0.0	8.54	0.00	A
Stream B-A	0.0	5.74	0.03	A	0.1	5.35	0.09	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	Do Minimum - OPERATION - Base + Committed + Development 2023							
Stream B-C	0.0	0.00	0.00	A	0.0	8.67	0.00	A
Stream B-A	0.2	9.40	0.13	A	0.2	6.62	0.13	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	Do Minimum - OPERATION - Base + Committed 2030							
Stream B-C	0.0	0.00	0.00	A	0.0	8.55	0.00	A
Stream B-A	0.0	5.72	0.03	A	0.1	5.40	0.10	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	Do Minimum - OPERATION - Base + Committed + Development 2030							
Stream B-C	0.0	0.00	0.00	A	0.0	8.68	0.00	A
Stream B-A	0.2	9.34	0.13	A	0.2	6.62	0.14	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	Do Minimum - OPERATION WITH LINK ROAD - Base + Committed + Development 2026							
Stream B-C	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream B-A	0.2	8.00	0.19	A	0.2	7.28	0.15	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CLEASBYD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	OPERATION - Base 2018	AM	ONE HOUR	06:45	08:15	15
D2	OPERATION - Base 2018	PM	ONE HOUR	15:45	17:15	15
D3	OPERATION - Base + Committed 2023	AM	ONE HOUR	06:45	08:15	15
D4	OPERATION - Base + Committed 2023	PM	ONE HOUR	15:45	17:15	15
D5	OPERATION - Base + Committed + Development 2023	AM	ONE HOUR	06:45	08:15	15
D6	OPERATION - Base + Committed + Development 2023	PM	ONE HOUR	15:45	17:15	15
D7	OPERATION - Base + Committed 2030	AM	ONE HOUR	06:45	08:15	15
D8	OPERATION - Base + Committed 2030	PM	ONE HOUR	15:45	17:15	15
D9	OPERATION - Base + Committed + Development 2030	AM	ONE HOUR	06:45	08:15	15
D10	OPERATION - Base + Committed + Development 2030	PM	ONE HOUR	15:45	17:15	15
D11	OPERATION WITH LINK ROAD - Base + Committed + Development 2026	AM	ONE HOUR	06:45	08:15	15
D12	OPERATION WITH LINK ROAD - Base + Committed + Development 2026	PM	ONE HOUR	15:45	17:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Do Minimum	100.000

Do Minimum - OPERATION - Base 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.55	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Hobson Way SB		Major
B	South Marsh Lane		Minor
C	Hobson Way NB		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	10.50		✓	3.60	250.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	9.90	9.80	9.75	9.00	✓	3.00	200	200

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	780	0.114	0.289	0.182	0.413
1	B-C	877	0.108	0.273	-	-
1	C-B	828	0.258	0.258	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	OPERATION - Base 2018	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	152	100.000
B		✓	17	100.000
C		✓	5	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	102	50
	B	17	0	0
	C	5	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	0
	B	14	0	0
	C	50	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.02	5.61	0.0	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	855	0.000	0	0.0	0.000	A
B-A	13	760	0.017	13	0.0	5.493	A
C-A	4			4			
C-B	0	799	0.000	0	0.0	0.000	A
A-B	77			77			
A-C	38			38			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	850	0.000	0	0.0	0.000	A
B-A	15	756	0.020	15	0.0	5.540	A
C-A	4			4			
C-B	0	793	0.000	0	0.0	0.000	A
A-B	92			92			
A-C	45			45			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	844	0.000	0	0.0	0.000	A
B-A	19	750	0.025	19	0.0	5.608	A
C-A	6			6			
C-B	0	785	0.000	0	0.0	0.000	A
A-B	112			112			
A-C	55			55			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	844	0.000	0	0.0	0.000	A
B-A	19	750	0.025	19	0.0	5.608	A
C-A	6			6			
C-B	0	785	0.000	0	0.0	0.000	A
A-B	112			112			
A-C	55			55			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	850	0.000	0	0.0	0.000	A
B-A	15	756	0.020	15	0.0	5.541	A
C-A	4			4			
C-B	0	793	0.000	0	0.0	0.000	A
A-B	92			92			
A-C	45			45			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	854	0.000	0	0.0	0.000	A
B-A	13	760	0.017	13	0.0	5.495	A
C-A	4			4			
C-B	0	799	0.000	0	0.0	0.000	A
A-B	77			77			
A-C	38			38			

Do Minimum - OPERATION - Base 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.32	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	OPERATION - Base 2018	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	24	100.000
B		✓	61	100.000
C		✓	13	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	16	8
	B	59	0	2
	C	13	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	60	0
	B	3	0	100
	C	8	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	8.45	0.0	A
B-A	0.08	5.24	0.1	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	861	0.002	1	0.0	8.374	A
B-A	44	775	0.057	44	0.1	5.071	A
C-A	10			10			
C-B	0	824	0.000	0	0.0	0.000	A
A-B	12			12			
A-C	6			6			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	858	0.002	2	0.0	8.407	A
B-A	53	774	0.069	53	0.1	5.140	A
C-A	12			12			
C-B	0	823	0.000	0	0.0	0.000	A
A-B	14			14			
A-C	7			7			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	854	0.003	2	0.0	8.453	A
B-A	65	773	0.084	65	0.1	5.236	A
C-A	14			14			
C-B	0	821	0.000	0	0.0	0.000	A
A-B	18			18			
A-C	9			9			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	854	0.003	2	0.0	8.454	A
B-A	65	773	0.084	65	0.1	5.236	A
C-A	14			14			
C-B	0	821	0.000	0	0.0	0.000	A
A-B	18			18			
A-C	9			9			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	858	0.002	2	0.0	8.408	A
B-A	53	774	0.069	53	0.1	5.141	A
C-A	12			12			
C-B	0	823	0.000	0	0.0	0.000	A
A-B	14			14			
A-C	7			7			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	861	0.002	2	0.0	8.375	A
B-A	44	775	0.057	44	0.1	5.073	A
C-A	10			10			
C-B	0	824	0.000	0	0.0	0.000	A
A-B	12			12			
A-C	6			6			

Do Minimum - OPERATION - Base + Committed 2023, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	OPERATION - Base + Committed 2023	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	193	100.000
B		✓	18	100.000
C		✓	27	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	109	84
	B	18	0	0
	C	27	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	15
	B	14	0	0
	C	87	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.03	5.74	0.0	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	847	0.000	0	0.0	0.000	A
B-A	14	749	0.018	13	0.0	5.581	A
C-A	20			20			
C-B	0	791	0.000	0	0.0	0.000	A
A-B	82			82			
A-C	63			63			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	841	0.000	0	0.0	0.000	A
B-A	16	743	0.022	16	0.0	5.647	A
C-A	24			24			
C-B	0	783	0.000	0	0.0	0.000	A
A-B	98			98			
A-C	76			76			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	833	0.000	0	0.0	0.000	A
B-A	20	734	0.027	20	0.0	5.743	A
C-A	30			30			
C-B	0	773	0.000	0	0.0	0.000	A
A-B	120			120			
A-C	92			92			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	833	0.000	0	0.0	0.000	A
B-A	20	734	0.027	20	0.0	5.743	A
C-A	30			30			
C-B	0	773	0.000	0	0.0	0.000	A
A-B	120			120			
A-C	92			92			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	841	0.000	0	0.0	0.000	A
B-A	16	743	0.022	16	0.0	5.650	A
C-A	24			24			
C-B	0	783	0.000	0	0.0	0.000	A
A-B	98			98			
A-C	76			76			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	847	0.000	0	0.0	0.000	A
B-A	14	749	0.018	14	0.0	5.581	A
C-A	20			20			
C-B	0	791	0.000	0	0.0	0.000	A
A-B	82			82			
A-C	63			63			

Do Minimum - OPERATION - Base + Committed 2023, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.36	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	OPERATION - Base + Committed 2023	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	48	100.000
B		✓	64	100.000
C		✓	36	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	17	31
	B	62	0	2
	C	36	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	55	0
	B	3	0	100
	C	50	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	8.54	0.0	A
B-A	0.09	5.35	0.1	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	856	0.002	1	0.0	8.428	A
B-A	47	767	0.061	46	0.1	5.144	A
C-A	27			27			
C-B	0	819	0.000	0	0.0	0.000	A
A-B	13			13			
A-C	23			23			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	851	0.002	2	0.0	8.473	A
B-A	56	764	0.073	56	0.1	5.231	A
C-A	32			32			
C-B	0	817	0.000	0	0.0	0.000	A
A-B	15			15			
A-C	28			28			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	846	0.003	2	0.0	8.535	A
B-A	68	761	0.090	68	0.1	5.352	A
C-A	40			40			
C-B	0	815	0.000	0	0.0	0.000	A
A-B	19			19			
A-C	34			34			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	846	0.003	2	0.0	8.535	A
B-A	68	761	0.090	68	0.1	5.352	A
C-A	40			40			
C-B	0	815	0.000	0	0.0	0.000	A
A-B	19			19			
A-C	34			34			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	851	0.002	2	0.0	8.475	A
B-A	56	764	0.073	56	0.1	5.232	A
C-A	32			32			
C-B	0	817	0.000	0	0.0	0.000	A
A-B	15			15			
A-C	28			28			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	856	0.002	2	0.0	8.429	A
B-A	47	767	0.061	47	0.1	5.149	A
C-A	27			27			
C-B	0	819	0.000	0	0.0	0.000	A
A-B	13			13			
A-C	23			23			

Do Minimum - OPERATION - Base + Committed + Development 2023, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.05	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	OPERATION - Base + Committed + Development 2023	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	275	100.000
B		✓	84	100.000
C		✓	27	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	191	84
	B	84	0	0
	C	27	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	25	0
	B	65	0	0
	C	87	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.13	9.40	0.2	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	826	0.000	0	0.0	0.000	A
B-A	63	742	0.085	63	0.2	8.738	A
C-A	20			20			
C-B	0	775	0.000	0	0.0	0.000	A
A-B	144			144			
A-C	63			63			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	816	0.000	0	0.0	0.000	A
B-A	76	734	0.103	75	0.2	9.012	A
C-A	24			24			
C-B	0	764	0.000	0	0.0	0.000	A
A-B	172			172			
A-C	76			76			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	802	0.000	0	0.0	0.000	A
B-A	92	724	0.128	92	0.2	9.399	A
C-A	30			30			
C-B	0	750	0.000	0	0.0	0.000	A
A-B	210			210			
A-C	92			92			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	802	0.000	0	0.0	0.000	A
B-A	92	724	0.128	92	0.2	9.405	A
C-A	30			30			
C-B	0	750	0.000	0	0.0	0.000	A
A-B	210			210			
A-C	92			92			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	816	0.000	0	0.0	0.000	A
B-A	76	734	0.103	76	0.2	9.023	A
C-A	24			24			
C-B	0	764	0.000	0	0.0	0.000	A
A-B	172			172			
A-C	76			76			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	826	0.000	0	0.0	0.000	A
B-A	63	742	0.085	63	0.2	8.759	A
C-A	20			20			
C-B	0	775	0.000	0	0.0	0.000	A
A-B	144			144			
A-C	63			63			

Do Minimum - OPERATION - Base + Committed + Development 2023, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.05	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	OPERATION - Base + Committed + Development 2023	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	74	100.000
B		✓	93	100.000
C		✓	36	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	43	31
	B	91	0	2
	C	36	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	79	55
	B	21	0	100
	C	50	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	8.67	0.0	A
B-A	0.13	6.62	0.2	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	847	0.002	1	0.0	8.512	A
B-A	69	765	0.090	68	0.1	6.247	A
C-A	27			27			
C-B	0	814	0.000	0	0.0	0.000	A
A-B	32			32			
A-C	23			23			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	841	0.002	2	0.0	8.576	A
B-A	82	762	0.107	82	0.1	6.405	A
C-A	32			32			
C-B	0	811	0.000	0	0.0	0.000	A
A-B	39			39			
A-C	28			28			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	833	0.003	2	0.0	8.667	A
B-A	100	758	0.132	100	0.2	6.621	A
C-A	40			40			
C-B	0	807	0.000	0	0.0	0.000	A
A-B	47			47			
A-C	34			34			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	833	0.003	2	0.0	8.667	A
B-A	100	758	0.132	100	0.2	6.624	A
C-A	40			40			
C-B	0	807	0.000	0	0.0	0.000	A
A-B	47			47			
A-C	34			34			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	841	0.002	2	0.0	8.579	A
B-A	82	762	0.107	82	0.1	6.407	A
C-A	32			32			
C-B	0	811	0.000	0	0.0	0.000	A
A-B	39			39			
A-C	28			28			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	847	0.002	2	0.0	8.516	A
B-A	69	765	0.090	69	0.1	6.259	A
C-A	27			27			
C-B	0	814	0.000	0	0.0	0.000	A
A-B	32			32			
A-C	23			23			

Do Minimum - OPERATION - Base + Committed 2030, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	OPERATION - Base + Committed 2030	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	204	100.000
B		✓	19	100.000
C		✓	28	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	116	88
	B	19	0	0
	C	28	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	14
	B	13	0	0
	C	81	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.03	5.72	0.0	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	845	0.000	0	0.0	0.000	A
B-A	14	747	0.019	14	0.0	5.549	A
C-A	21			21			
C-B	0	789	0.000	0	0.0	0.000	A
A-B	87			87			
A-C	66			66			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	839	0.000	0	0.0	0.000	A
B-A	17	741	0.023	17	0.0	5.620	A
C-A	25			25			
C-B	0	781	0.000	0	0.0	0.000	A
A-B	104			104			
A-C	79			79			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	830	0.000	0	0.0	0.000	A
B-A	21	732	0.029	21	0.0	5.720	A
C-A	31			31			
C-B	0	770	0.000	0	0.0	0.000	A
A-B	128			128			
A-C	97			97			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	830	0.000	0	0.0	0.000	A
B-A	21	732	0.029	21	0.0	5.720	A
C-A	31			31			
C-B	0	770	0.000	0	0.0	0.000	A
A-B	128			128			
A-C	97			97			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	839	0.000	0	0.0	0.000	A
B-A	17	741	0.023	17	0.0	5.622	A
C-A	25			25			
C-B	0	781	0.000	0	0.0	0.000	A
A-B	104			104			
A-C	79			79			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	845	0.000	0	0.0	0.000	A
B-A	14	747	0.019	14	0.0	5.550	A
C-A	21			21			
C-B	0	789	0.000	0	0.0	0.000	A
A-B	87			87			
A-C	66			66			

Do Minimum - OPERATION - Base + Committed 2030, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.44	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	OPERATION - Base + Committed 2030	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	49	100.000
B		✓	69	100.000
C		✓	37	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	18	31
	B	67	0	2
	C	37	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	64	55
	B	3	0	100
	C	48	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	8.55	0.0	A
B-A	0.10	5.40	0.1	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	855	0.002	1	0.0	8.440	A
B-A	50	767	0.066	50	0.1	5.170	A
C-A	28			28			
C-B	0	819	0.000	0	0.0	0.000	A
A-B	14			14			
A-C	23			23			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	850	0.002	2	0.0	8.487	A
B-A	60	764	0.079	60	0.1	5.266	A
C-A	33			33			
C-B	0	817	0.000	0	0.0	0.000	A
A-B	16			16			
A-C	28			28			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	844	0.003	2	0.0	8.553	A
B-A	74	761	0.097	74	0.1	5.397	A
C-A	41			41			
C-B	0	814	0.000	0	0.0	0.000	A
A-B	20			20			
A-C	34			34			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	844	0.003	2	0.0	8.553	A
B-A	74	761	0.097	74	0.1	5.397	A
C-A	41			41			
C-B	0	814	0.000	0	0.0	0.000	A
A-B	20			20			
A-C	34			34			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	850	0.002	2	0.0	8.488	A
B-A	60	764	0.079	60	0.1	5.269	A
C-A	33			33			
C-B	0	817	0.000	0	0.0	0.000	A
A-B	16			16			
A-C	28			28			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	854	0.002	2	0.0	8.441	A
B-A	50	767	0.066	51	0.1	5.178	A
C-A	28			28			
C-B	0	819	0.000	0	0.0	0.000	A
A-B	14			14			
A-C	23			23			

Do Minimum - OPERATION - Base + Committed + Development 2030, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.99	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	OPERATION - Base + Committed + Development 2030	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	286	100.000
B		✓	85	100.000
C		✓	28	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	198	88
	B	85	0	0
	C	28	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	24	14
	B	63	0	0
	C	81	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.13	9.34	0.2	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	824	0.000	0	0.0	0.000	A
B-A	64	740	0.086	63	0.2	8.662	A
C-A	21			21			
C-B	0	773	0.000	0	0.0	0.000	A
A-B	149			149			
A-C	66			66			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	814	0.000	0	0.0	0.000	A
B-A	76	732	0.104	76	0.2	8.941	A
C-A	25			25			
C-B	0	762	0.000	0	0.0	0.000	A
A-B	178			178			
A-C	79			79			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	800	0.000	0	0.0	0.000	A
B-A	94	722	0.130	93	0.2	9.336	A
C-A	31			31			
C-B	0	747	0.000	0	0.0	0.000	A
A-B	218			218			
A-C	97			97			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	800	0.000	0	0.0	0.000	A
B-A	94	722	0.130	94	0.2	9.342	A
C-A	31			31			
C-B	0	747	0.000	0	0.0	0.000	A
A-B	218			218			
A-C	97			97			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	814	0.000	0	0.0	0.000	A
B-A	76	732	0.104	77	0.2	8.952	A
C-A	25			25			
C-B	0	762	0.000	0	0.0	0.000	A
A-B	178			178			
A-C	79			79			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	824	0.000	0	0.0	0.000	A
B-A	64	740	0.086	64	0.2	8.683	A
C-A	21			21			
C-B	0	773	0.000	0	0.0	0.000	A
A-B	149			149			
A-C	66			66			

Do Minimum - OPERATION - Base + Committed + Development 2030, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.09	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	OPERATION - Base + Committed + Development 2030	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	75	100.000
B		✓	97	100.000
C		✓	37	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	44	31
	B	95	0	2
	C	37	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	83	55
	B	20	0	100
	C	48	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	8.68	0.0	A
B-A	0.14	6.62	0.2	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	846	0.002	1	0.0	8.522	A
B-A	72	765	0.094	71	0.1	6.225	A
C-A	28			28			
C-B	0	814	0.000	0	0.0	0.000	A
A-B	33			33			
A-C	23			23			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	840	0.002	2	0.0	8.589	A
B-A	85	762	0.112	85	0.2	6.388	A
C-A	33			33			
C-B	0	811	0.000	0	0.0	0.000	A
A-B	40			40			
A-C	28			28			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	831	0.003	2	0.0	8.682	A
B-A	105	757	0.138	104	0.2	6.614	A
C-A	41			41			
C-B	0	807	0.000	0	0.0	0.000	A
A-B	48			48			
A-C	34			34			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	831	0.003	2	0.0	8.683	A
B-A	105	757	0.138	105	0.2	6.617	A
C-A	41			41			
C-B	0	807	0.000	0	0.0	0.000	A
A-B	48			48			
A-C	34			34			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	840	0.002	2	0.0	8.589	A
B-A	85	762	0.112	86	0.2	6.393	A
C-A	33			33			
C-B	0	811	0.000	0	0.0	0.000	A
A-B	40			40			
A-C	28			28			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	846	0.002	2	0.0	8.526	A
B-A	72	765	0.094	72	0.1	6.234	A
C-A	28			28			
C-B	0	814	0.000	0	0.0	0.000	A
A-B	33			33			
A-C	23			23			

Do Minimum - OPERATION WITH LINK ROAD - Base + Committed + Development 2026, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D11	OPERATION WITH LINK ROAD - Base + Committed + Development 2026	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	464	100.000
B		✓	94	100.000
C		✓	560	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	170	294
	B	94	0	0
	C	560	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.19	8.00	0.2	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	780	0.000	0	0.0	0.000	A
B-A	71	625	0.113	70	0.1	6.484	A
C-A	422			422			
C-B	0	738	0.000	0	0.0	0.000	A
A-B	128			128			
A-C	221			221			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	760	0.000	0	0.0	0.000	A
B-A	85	595	0.142	84	0.2	7.050	A
C-A	503			503			
C-B	0	721	0.000	0	0.0	0.000	A
A-B	153			153			
A-C	264			264			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	732	0.000	0	0.0	0.000	A
B-A	103	553	0.187	103	0.2	7.996	A
C-A	617			617			
C-B	0	696	0.000	0	0.0	0.000	A
A-B	187			187			
A-C	324			324			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	732	0.000	0	0.0	0.000	A
B-A	103	553	0.187	103	0.2	8.004	A
C-A	617			617			
C-B	0	696	0.000	0	0.0	0.000	A
A-B	187			187			
A-C	324			324			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	760	0.000	0	0.0	0.000	A
B-A	85	595	0.142	85	0.2	7.062	A
C-A	503			503			
C-B	0	721	0.000	0	0.0	0.000	A
A-B	153			153			
A-C	264			264			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	779	0.000	0	0.0	0.000	A
B-A	71	625	0.113	71	0.1	6.500	A
C-A	422			422			
C-B	0	738	0.000	0	0.0	0.000	A
A-B	128			128			
A-C	221			221			

Do Minimum - OPERATION WITH LINK ROAD - Base + Committed + Development 2026, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D12	OPERATION WITH LINK ROAD - Base + Committed + Development 2026	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	458	100.000
B		✓	81	100.000
C		✓	301	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	47	411
	B	81	0	0
	C	301	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.15	7.28	0.2	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	770	0.000	0	0.0	0.000	A
B-A	61	646	0.094	61	0.1	6.150	A
C-A	227			227			
C-B	0	739	0.000	0	0.0	0.000	A
A-B	35			35			
A-C	309			309			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	748	0.000	0	0.0	0.000	A
B-A	73	619	0.118	73	0.1	6.582	A
C-A	271			271			
C-B	0	722	0.000	0	0.0	0.000	A
A-B	42			42			
A-C	369			369			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	719	0.000	0	0.0	0.000	A
B-A	89	583	0.153	89	0.2	7.283	A
C-A	331			331			
C-B	0	698	0.000	0	0.0	0.000	A
A-B	52			52			
A-C	453			453			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	719	0.000	0	0.0	0.000	A
B-A	89	583	0.153	89	0.2	7.284	A
C-A	331			331			
C-B	0	698	0.000	0	0.0	0.000	A
A-B	52			52			
A-C	453			453			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	748	0.000	0	0.0	0.000	A
B-A	73	619	0.118	73	0.1	6.589	A
C-A	271			271			
C-B	0	722	0.000	0	0.0	0.000	A
A-B	42			42			
A-C	369			369			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	770	0.000	0	0.0	0.000	A
B-A	61	646	0.094	61	0.1	6.162	A
C-A	227			227			
C-B	0	739	0.000	0	0.0	0.000	A
A-B	35			35			
A-C	309			309			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []
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Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\PICADY\1.0_Hobson Way RT
Report generation date: 17/10/2019 09:31:14

»Do Minimum - CONSTRUCTION - Base + Committed 2021, AM
»Do Minimum - CONSTRUCTION - Base + Committed 2021, PM
»Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2021, AM
»Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2021, PM
»Do Minimum - CONSTRUCTION - Base + Committed 2027, AM
»Do Minimum - CONSTRUCTION - Base + Committed 2027, PM
»Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2027, AM
»Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2027, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Do Minimum - CONSTRUCTION - Base + Committed 2021							
Stream B-C	0.0	0.00	0.00	A	0.0	8.53	0.00	A
Stream B-A	0.0	5.71	0.03	A	0.1	5.34	0.09	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2021							
Stream B-C	0.0	0.00	0.00	A	0.0	8.89	0.00	A
Stream B-A	0.1	6.80	0.04	A	0.3	6.39	0.22	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	Do Minimum - CONSTRUCTION - Base + Committed 2027							
Stream B-C	0.0	0.00	0.00	A	0.0	8.55	0.00	A
Stream B-A	0.0	5.71	0.03	A	0.1	5.38	0.09	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2027							
Stream B-C	0.0	0.00	0.00	A	0.0	8.91	0.00	A
Stream B-A	0.1	6.86	0.04	A	0.3	6.44	0.23	A
Stream C-B	0.0	0.00	0.00	A	0.0	0.00	0.00	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CLEASBYD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	CONSTRUCTION - Base + Committed 2021	AM	ONE HOUR	06:45	08:15	15
D2	CONSTRUCTION - Base + Committed 2021	PM	ONE HOUR	15:45	17:15	15
D3	CONSTRUCTION - Base + Committed + Peak of Construction 2021	AM	ONE HOUR	06:45	08:15	15
D4	CONSTRUCTION - Base + Committed + Peak of Construction 2021	PM	ONE HOUR	15:45	17:15	15
D5	CONSTRUCTION - Base + Committed 2027	AM	ONE HOUR	06:45	08:15	15
D6	CONSTRUCTION - Base + Committed 2027	PM	ONE HOUR	15:45	17:15	15
D7	CONSTRUCTION - Base + Committed + Peak of Construction 2027	AM	ONE HOUR	06:45	08:15	15
D8	CONSTRUCTION - Base + Committed + Peak of Construction 2027	PM	ONE HOUR	15:45	17:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Do Minimum	100.000

Do Minimum - CONSTRUCTION - Base + Committed 2021, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.46	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Hobson Way SB		Major
B	South Marsh Road WB		Minor
C	Hobson Way NB		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	10.50		✓	3.60	250.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	9.90	9.80	9.75	9.00	✓	3.00	200	200

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	780	0.114	0.289	0.182	0.413
1	B-C	877	0.108	0.273	-	-
1	C-B	828	0.258	0.258	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	CONSTRUCTION - Base + Committed 2021	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	180	100.000
B		✓	18	100.000
C		✓	27	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	106	74
	B	18	0	0
	C	27	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	17
	B	14	0	0
	C	87	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.03	5.71	0.0	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	849	0.000	0	0.0	0.000	A
B-A	14	751	0.018	13	0.0	5.562	A
C-A	20			20			
C-B	0	793	0.000	0	0.0	0.000	A
A-B	80			80			
A-C	56			56			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	844	0.000	0	0.0	0.000	A
B-A	16	746	0.022	16	0.0	5.625	A
C-A	24			24			
C-B	0	786	0.000	0	0.0	0.000	A
A-B	95			95			
A-C	67			67			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	836	0.000	0	0.0	0.000	A
B-A	20	738	0.027	20	0.0	5.714	A
C-A	30			30			
C-B	0	777	0.000	0	0.0	0.000	A
A-B	117			117			
A-C	81			81			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	836	0.000	0	0.0	0.000	A
B-A	20	738	0.027	20	0.0	5.714	A
C-A	30			30			
C-B	0	777	0.000	0	0.0	0.000	A
A-B	117			117			
A-C	81			81			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	844	0.000	0	0.0	0.000	A
B-A	16	746	0.022	16	0.0	5.628	A
C-A	24			24			
C-B	0	786	0.000	0	0.0	0.000	A
A-B	95			95			
A-C	67			67			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	849	0.000	0	0.0	0.000	A
B-A	14	751	0.018	14	0.0	5.565	A
C-A	20			20			
C-B	0	793	0.000	0	0.0	0.000	A
A-B	80			80			
A-C	56			56			

Do Minimum - CONSTRUCTION - Base + Committed 2021, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.35	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	CONSTRUCTION - Base + Committed 2021	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	47	100.000
B		✓	63	100.000
C		✓	36	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	17	30
	B	61	0	2
	C	36	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	60	58
	B	3	0	100
	C	8	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	8.53	0.0	A
B-A	0.09	5.34	0.1	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	856	0.002	1	0.0	8.424	A
B-A	46	767	0.060	46	0.1	5.138	A
C-A	27			27			
C-B	0	819	0.000	0	0.0	0.000	A
A-B	13			13			
A-C	23			23			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	852	0.002	2	0.0	8.468	A
B-A	55	765	0.072	55	0.1	5.222	A
C-A	32			32			
C-B	0	817	0.000	0	0.0	0.000	A
A-B	15			15			
A-C	27			27			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	846	0.003	2	0.0	8.529	A
B-A	67	761	0.088	67	0.1	5.341	A
C-A	40			40			
C-B	0	815	0.000	0	0.0	0.000	A
A-B	19			19			
A-C	33			33			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	846	0.003	2	0.0	8.529	A
B-A	67	761	0.088	67	0.1	5.341	A
C-A	40			40			
C-B	0	815	0.000	0	0.0	0.000	A
A-B	19			19			
A-C	33			33			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	852	0.002	2	0.0	8.468	A
B-A	55	765	0.072	55	0.1	5.223	A
C-A	32			32			
C-B	0	817	0.000	0	0.0	0.000	A
A-B	15			15			
A-C	27			27			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	856	0.002	2	0.0	8.425	A
B-A	46	767	0.060	46	0.1	5.140	A
C-A	27			27			
C-B	0	819	0.000	0	0.0	0.000	A
A-B	13			13			
A-C	23			23			

Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2021, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.50	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	CONSTRUCTION - Base + Committed + Peak of Construction 2021	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	328	100.000
B		✓	28	100.000
C		✓	27	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	254	74
	B	28	0	0
	C	27	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	17
	B	30	0	0
	C	87	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.04	6.80	0.1	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	835	0.000	0	0.0	0.000	A
B-A	21	739	0.029	21	0.0	6.519	A
C-A	20			20			
C-B	0	765	0.000	0	0.0	0.000	A
A-B	191			191			
A-C	56			56			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	827	0.000	0	0.0	0.000	A
B-A	25	730	0.034	25	0.0	6.634	A
C-A	24			24			
C-B	0	752	0.000	0	0.0	0.000	A
A-B	228			228			
A-C	67			67			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	815	0.000	0	0.0	0.000	A
B-A	31	719	0.043	31	0.1	6.797	A
C-A	30			30			
C-B	0	735	0.000	0	0.0	0.000	A
A-B	280			280			
A-C	81			81			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	815	0.000	0	0.0	0.000	A
B-A	31	719	0.043	31	0.1	6.797	A
C-A	30			30			
C-B	0	735	0.000	0	0.0	0.000	A
A-B	280			280			
A-C	81			81			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	827	0.000	0	0.0	0.000	A
B-A	25	730	0.034	25	0.0	6.638	A
C-A	24			24			
C-B	0	752	0.000	0	0.0	0.000	A
A-B	228			228			
A-C	67			67			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	835	0.000	0	0.0	0.000	A
B-A	21	739	0.029	21	0.0	6.522	A
C-A	20			20			
C-B	0	765	0.000	0	0.0	0.000	A
A-B	191			191			
A-C	56			56			

Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2021, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	4.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	CONSTRUCTION - Base + Committed + Peak of Construction 2021	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	57	100.000
B		✓	155	100.000
C		✓	36	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	27	30
	B	153	0	2
	C	36	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	73	58
	B	5	0	100
	C	52	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	8.89	0.0	A
B-A	0.22	6.39	0.3	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	835	0.002	1	0.0	8.641	A
B-A	115	766	0.150	114	0.2	5.792	A
C-A	27			27			
C-B	0	817	0.000	0	0.0	0.000	A
A-B	20			20			
A-C	23			23			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	825	0.002	2	0.0	8.741	A
B-A	138	764	0.180	137	0.2	6.033	A
C-A	32			32			
C-B	0	815	0.000	0	0.0	0.000	A
A-B	24			24			
A-C	27			27			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	812	0.003	2	0.0	8.889	A
B-A	168	760	0.222	168	0.3	6.384	A
C-A	40			40			
C-B	0	812	0.000	0	0.0	0.000	A
A-B	30			30			
A-C	33			33			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	812	0.003	2	0.0	8.890	A
B-A	168	760	0.222	168	0.3	6.389	A
C-A	40			40			
C-B	0	812	0.000	0	0.0	0.000	A
A-B	30			30			
A-C	33			33			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	825	0.002	2	0.0	8.743	A
B-A	138	764	0.180	138	0.2	6.041	A
C-A	32			32			
C-B	0	815	0.000	0	0.0	0.000	A
A-B	24			24			
A-C	27			27			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	834	0.002	2	0.0	8.644	A
B-A	115	766	0.150	115	0.2	5.809	A
C-A	27			27			
C-B	0	817	0.000	0	0.0	0.000	A
A-B	20			20			
A-C	23			23			

Do Minimum - CONSTRUCTION - Base + Committed 2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.44	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	CONSTRUCTION - Base + Committed 2027	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	200	100.000
B		✓	19	100.000
C		✓	28	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	113	87
	B	19	0	0
	C	28	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	5	14
	B	13	0	0
	C	87	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.03	5.71	0.0	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	846	0.000	0	0.0	0.000	A
B-A	14	748	0.019	14	0.0	5.546	A
C-A	21			21			
C-B	0	789	0.000	0	0.0	0.000	A
A-B	85			85			
A-C	65			65			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	839	0.000	0	0.0	0.000	A
B-A	17	741	0.023	17	0.0	5.615	A
C-A	25			25			
C-B	0	782	0.000	0	0.0	0.000	A
A-B	102			102			
A-C	78			78			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	831	0.000	0	0.0	0.000	A
B-A	21	733	0.029	21	0.0	5.714	A
C-A	31			31			
C-B	0	771	0.000	0	0.0	0.000	A
A-B	124			124			
A-C	96			96			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	831	0.000	0	0.0	0.000	A
B-A	21	733	0.029	21	0.0	5.714	A
C-A	31			31			
C-B	0	771	0.000	0	0.0	0.000	A
A-B	124			124			
A-C	96			96			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	839	0.000	0	0.0	0.000	A
B-A	17	741	0.023	17	0.0	5.616	A
C-A	25			25			
C-B	0	782	0.000	0	0.0	0.000	A
A-B	102			102			
A-C	78			78			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	846	0.000	0	0.0	0.000	A
B-A	14	748	0.019	14	0.0	5.546	A
C-A	21			21			
C-B	0	789	0.000	0	0.0	0.000	A
A-B	85			85			
A-C	65			65			

Do Minimum - CONSTRUCTION - Base + Committed 2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.41	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	CONSTRUCTION - Base + Committed 2027	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	49	100.000
B		✓	67	100.000
C		✓	36	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	18	31
	B	65	0	2
	C	36	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	64	55
	B	3	0	100
	C	8	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	8.55	0.0	A
B-A	0.09	5.38	0.1	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	855	0.002	1	0.0	8.435	A
B-A	49	767	0.064	49	0.1	5.162	A
C-A	27			27			
C-B	0	819	0.000	0	0.0	0.000	A
A-B	14			14			
A-C	23			23			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	851	0.002	2	0.0	8.482	A
B-A	58	764	0.076	58	0.1	5.251	A
C-A	32			32			
C-B	0	817	0.000	0	0.0	0.000	A
A-B	16			16			
A-C	28			28			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	845	0.003	2	0.0	8.546	A
B-A	72	761	0.094	71	0.1	5.379	A
C-A	40			40			
C-B	0	814	0.000	0	0.0	0.000	A
A-B	20			20			
A-C	34			34			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	845	0.003	2	0.0	8.547	A
B-A	72	761	0.094	72	0.1	5.379	A
C-A	40			40			
C-B	0	814	0.000	0	0.0	0.000	A
A-B	20			20			
A-C	34			34			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	851	0.002	2	0.0	8.482	A
B-A	58	764	0.076	59	0.1	5.255	A
C-A	32			32			
C-B	0	817	0.000	0	0.0	0.000	A
A-B	16			16			
A-C	28			28			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	855	0.002	2	0.0	8.438	A
B-A	49	767	0.064	49	0.1	5.164	A
C-A	27			27			
C-B	0	819	0.000	0	0.0	0.000	A
A-B	14			14			
A-C	23			23			

Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.49	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	CONSTRUCTION - Base + Committed + Peak of Construction 2027	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	348	100.000
B		✓	29	100.000
C		✓	28	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	261	87
	B	29	0	0
	C	28	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	17
	B	30	0	0
	C	87	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	0.00	0.0	A
B-A	0.04	6.86	0.1	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	831	0.000	0	0.0	0.000	A
B-A	22	735	0.030	22	0.0	6.559	A
C-A	21			21			
C-B	0	761	0.000	0	0.0	0.000	A
A-B	196			196			
A-C	65			65			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	822	0.000	0	0.0	0.000	A
B-A	26	726	0.036	26	0.0	6.683	A
C-A	25			25			
C-B	0	748	0.000	0	0.0	0.000	A
A-B	235			235			
A-C	78			78			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	810	0.000	0	0.0	0.000	A
B-A	32	714	0.045	32	0.1	6.860	A
C-A	31			31			
C-B	0	729	0.000	0	0.0	0.000	A
A-B	287			287			
A-C	96			96			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	810	0.000	0	0.0	0.000	A
B-A	32	714	0.045	32	0.1	6.860	A
C-A	31			31			
C-B	0	729	0.000	0	0.0	0.000	A
A-B	287			287			
A-C	96			96			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	822	0.000	0	0.0	0.000	A
B-A	26	726	0.036	26	0.0	6.684	A
C-A	25			25			
C-B	0	748	0.000	0	0.0	0.000	A
A-B	235			235			
A-C	78			78			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	0	831	0.000	0	0.0	0.000	A
B-A	22	735	0.030	22	0.0	6.565	A
C-A	21			21			
C-B	0	761	0.000	0	0.0	0.000	A
A-B	196			196			
A-C	65			65			

Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	4.05	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	CONSTRUCTION - Base + Committed + Peak of Construction 2027	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	59	100.000
B		✓	159	100.000
C		✓	36	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	28	31
	B	157	0	2
	C	36	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	73	58
	B	5	0	100
	C	52	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	8.91	0.0	A
B-A	0.23	6.44	0.3	A
C-A				
C-B	0.00	0.00	0.0	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	833	0.002	1	0.0	8.654	A
B-A	118	766	0.154	117	0.2	5.822	A
C-A	27			27			
C-B	0	817	0.000	0	0.0	0.000	A
A-B	21			21			
A-C	23			23			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	824	0.002	2	0.0	8.758	A
B-A	141	763	0.185	141	0.2	6.072	A
C-A	32			32			
C-B	0	815	0.000	0	0.0	0.000	A
A-B	25			25			
A-C	28			28			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	810	0.003	2	0.0	8.912	A
B-A	173	760	0.228	173	0.3	6.436	A
C-A	40			40			
C-B	0	811	0.000	0	0.0	0.000	A
A-B	31			31			
A-C	34			34			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	810	0.003	2	0.0	8.913	A
B-A	173	760	0.228	173	0.3	6.441	A
C-A	40			40			
C-B	0	811	0.000	0	0.0	0.000	A
A-B	31			31			
A-C	34			34			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	824	0.002	2	0.0	8.761	A
B-A	141	763	0.185	141	0.2	6.079	A
C-A	32			32			
C-B	0	815	0.000	0	0.0	0.000	A
A-B	25			25			
A-C	28			28			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	833	0.002	2	0.0	8.659	A
B-A	118	766	0.154	118	0.2	5.837	A
C-A	27			27			
C-B	0	817	0.000	0	0.0	0.000	A
A-B	21			21			
A-C	23			23			

ANNEX 15: HOBSON WAY/ SOUTH MARSH ROAD (WEST) MODELLING OUTPUTS

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []
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Filename: OPERATION - MARSH_HOBSON WAY.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\PICADY\2.0_S Marsh Road_Hobson Way
Report generation date: 15/10/2019 15:10:37

»Do Minimum - OPERATION - Base 2018, AM
»Do Minimum - OPERATION - Base 2018, PM
»Do Minimum - OPERATION - Base + Committed 2023, AM
»Do Minimum - OPERATION - Base + Committed 2023, PM
»Do Minimum - OPERATION - Base + Committed + Development 2023, AM
»Do Minimum - OPERATION - Base + Committed + Development 2023, PM
»Do Minimum - OPERATION - Base + Committed 2030, AM
»Do Minimum - OPERATION - Base + Committed 2030, PM
»Do Minimum - OPERATION - Base + Committed + Development 2030, AM
»Do Minimum - OPERATION - Base + Committed +Development 2030, PM
»Do Minimum - OPERATION WITH LINK ROAD - Base + Committed + Development 2026, AM
»Do Minimum - OPERATION WITH LINK ROAD - Base + Committed +Development 2026, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Do Minimum - OPERATION - Base 2018							
Stream B-C	0.1	5.33	0.11	A	0.0	5.06	0.00	A
Stream B-A	0.1	6.43	0.10	A	0.0	6.95	0.01	A
Stream C-B	0.0	4.45	0.01	A	0.2	5.33	0.16	A
	Do Minimum - OPERATION - Base + Committed 2023							
Stream B-C	0.1	5.44	0.12	A	0.0	5.11	0.00	A
Stream B-A	0.1	6.61	0.11	A	0.0	7.10	0.01	A
Stream C-B	0.0	4.48	0.01	A	0.2	5.46	0.17	A
	Do Minimum - OPERATION - Base + Committed + Development 2023							
Stream B-C	0.1	5.67	0.13	A	0.0	5.15	0.00	A
Stream B-A	0.1	6.99	0.13	A	0.0	7.24	0.01	A
Stream C-B	0.0	4.58	0.01	A	0.2	5.52	0.17	A
	Do Minimum - OPERATION - Base + Committed 2030							
Stream B-C	0.2	5.51	0.13	A	0.0	5.20	0.00	A
Stream B-A	0.1	6.69	0.12	A	0.0	6.77	0.01	A
Stream C-B	0.0	4.49	0.01	A	0.2	5.53	0.18	A
	Do Minimum - OPERATION - Base + Committed + Development 2030							
Stream B-C	0.2	5.74	0.14	A				
Stream B-A	0.2	7.09	0.13	A				
Stream C-B	0.0	4.59	0.01	A				
	Do Minimum - OPERATION - Base + Committed +Development 2030							
Stream B-C					0.0	5.25	0.00	A
Stream B-A					0.0	6.90	0.01	A
Stream C-B					0.2	5.59	0.18	A
	Do Minimum - OPERATION WITH LINK ROAD - Base + Committed + Development 2026							
Stream B-C	0.3	7.44	0.22	A				
Stream B-A	0.2	10.22	0.14	B				
Stream C-B	0.0	5.59	0.00	A				
	Do Minimum - OPERATION WITH LINK ROAD - Base + Committed +Development 2026							
Stream B-C					0.0	5.54	0.01	A
Stream B-A					0.0	7.83	0.01	A
Stream C-B					0.3	6.58	0.24	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CLEASBYD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	OPERATION - Base 2018	AM	ONE HOUR	06:45	08:15	15
D2	OPERATION - Base 2018	PM	ONE HOUR	15:45	17:15	15
D3	OPERATION - Base + Committed 2023	AM	ONE HOUR	06:45	08:15	15
D4	OPERATION - Base + Committed 2023	PM	ONE HOUR	15:45	17:15	15
D5	OPERATION - Base + Committed + Development 2023	AM	ONE HOUR	06:45	08:15	15
D6	OPERATION - Base + Committed + Development 2023	PM	ONE HOUR	15:45	17:15	15
D7	OPERATION - Base + Committed 2030	AM	ONE HOUR	06:45	08:15	15
D8	OPERATION - Base + Committed 2030	PM	ONE HOUR	15:45	17:15	15
D9	OPERATION - Base + Committed + Development 2030	AM	ONE HOUR	06:45	08:15	15
D10	OPERATION - Base + Committed +Development 2030	PM	ONE HOUR	15:45	17:15	15
D11	OPERATION WITH LINK ROAD - Base + Committed + Development 2026	AM	ONE HOUR	06:45	08:15	15
D12	OPERATION WITH LINK ROAD - Base + Committed +Development 2026	PM	ONE HOUR	15:45	17:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Do Minimum	100.000

Do Minimum - OPERATION - Base 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Hobson Way NB		Major
B	South Marsh Road EB		Minor
C	Hobson Way SB		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	11.50		✓	3.50	250.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	7.50	5.00	3.50	3.50		3.50	250	140

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	664	0.092	0.232	0.146	0.332
1	B-C	787	0.092	0.232	-	-
1	C-B	820	0.242	0.242	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	OPERATION - Base 2018	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	22	100.000
B		✓	138	100.000
C		✓	98	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	20
	B	59	0	79
	C	93	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	23
	B	3	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.11	5.33	0.1	A
B-A	0.10	6.43	0.1	A
C-A				
C-B	0.01	4.45	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	59	770	0.077	59	0.1	5.062	A
B-A	44	649	0.068	44	0.1	6.131	A
C-A	70			70			
C-B	4	816	0.005	4	0.0	4.429	A
A-B	2			2			
A-C	15			15			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	71	766	0.093	71	0.1	5.175	A
B-A	53	646	0.082	53	0.1	6.255	A
C-A	84			84			
C-B	4	816	0.006	4	0.0	4.437	A
A-B	2			2			
A-C	18			18			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	87	762	0.114	87	0.1	5.334	A
B-A	65	642	0.101	65	0.1	6.428	A
C-A	102			102			
C-B	6	815	0.007	6	0.0	4.449	A
A-B	2			2			
A-C	22			22			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	87	762	0.114	87	0.1	5.334	A
B-A	65	642	0.101	65	0.1	6.428	A
C-A	102			102			
C-B	6	815	0.007	6	0.0	4.449	A
A-B	2			2			
A-C	22			22			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	71	766	0.093	71	0.1	5.177	A
B-A	53	646	0.082	53	0.1	6.259	A
C-A	84			84			
C-B	4	816	0.006	4	0.0	4.439	A
A-B	2			2			
A-C	18			18			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	59	770	0.077	60	0.1	5.070	A
B-A	44	649	0.068	44	0.1	6.139	A
C-A	70			70			
C-B	4	816	0.005	4	0.0	4.431	A
A-B	2			2			
A-C	15			15			

Do Minimum - OPERATION - Base 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	3.09	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	OPERATION - Base 2018	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	72	100.000
B		✓	8	100.000
C		✓	133	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	33	39
	B	5	0	3
	C	19	114	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	9
	B	25	0	0
	C	71	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.06	0.0	A
B-A	0.01	6.95	0.0	A
C-A				
C-B	0.16	5.33	0.2	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	719	0.003	2	0.0	5.022	A
B-A	4	673	0.006	4	0.0	6.720	A
C-A	14			14			
C-B	86	807	0.106	85	0.1	4.983	A
A-B	25			25			
A-C	29			29			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	717	0.004	3	0.0	5.039	A
B-A	4	665	0.007	4	0.0	6.813	A
C-A	17			17			
C-B	102	805	0.127	102	0.1	5.125	A
A-B	30			30			
A-C	35			35			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	714	0.005	3	0.0	5.061	A
B-A	6	653	0.008	5	0.0	6.945	A
C-A	21			21			
C-B	126	801	0.157	125	0.2	5.324	A
A-B	36			36			
A-C	43			43			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	714	0.005	3	0.0	5.061	A
B-A	6	653	0.008	6	0.0	6.946	A
C-A	21			21			
C-B	126	801	0.157	126	0.2	5.326	A
A-B	36			36			
A-C	43			43			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	717	0.004	3	0.0	5.039	A
B-A	4	665	0.007	5	0.0	6.817	A
C-A	17			17			
C-B	102	805	0.127	103	0.1	5.129	A
A-B	30			30			
A-C	35			35			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	719	0.003	2	0.0	5.023	A
B-A	4	673	0.006	4	0.0	6.724	A
C-A	14			14			
C-B	86	807	0.106	86	0.1	4.992	A
A-B	25			25			
A-C	29			29			

Do Minimum - OPERATION - Base + Committed 2023, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.74	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	OPERATION - Base + Committed 2023	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	45	100.000
B		✓	147	100.000
C		✓	135	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	43
	B	63	0	84
	C	130	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	46
	B	3	0	0
	C	12	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.12	5.44	0.1	A
B-A	0.11	6.61	0.1	A
C-A				
C-B	0.01	4.48	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	63	765	0.083	63	0.1	5.127	A
B-A	47	641	0.074	47	0.1	6.243	A
C-A	98			98			
C-B	4	812	0.005	4	0.0	4.452	A
A-B	2			2			
A-C	32			32			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	76	760	0.099	75	0.1	5.257	A
B-A	57	636	0.089	57	0.1	6.395	A
C-A	117			117			
C-B	4	811	0.006	4	0.0	4.465	A
A-B	2			2			
A-C	39			39			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	92	754	0.123	92	0.1	5.441	A
B-A	69	630	0.110	69	0.1	6.612	A
C-A	143			143			
C-B	6	808	0.007	6	0.0	4.483	A
A-B	2			2			
A-C	47			47			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	92	754	0.123	92	0.1	5.441	A
B-A	69	630	0.110	69	0.1	6.611	A
C-A	143			143			
C-B	6	808	0.007	6	0.0	4.483	A
A-B	2			2			
A-C	47			47			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	76	760	0.099	76	0.1	5.260	A
B-A	57	636	0.089	57	0.1	6.400	A
C-A	117			117			
C-B	4	811	0.006	4	0.0	4.465	A
A-B	2			2			
A-C	39			39			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	63	764	0.083	63	0.1	5.136	A
B-A	47	641	0.074	48	0.1	6.251	A
C-A	98			98			
C-B	4	812	0.005	4	0.0	4.452	A
A-B	2			2			
A-C	32			32			

Do Minimum - OPERATION - Base + Committed 2023, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.64	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	OPERATION - Base + Committed 2023	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	99	100.000
B		✓	8	100.000
C		✓	164	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	35	64
	B	5	0	3
	C	42	122	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	29
	B	25	0	0
	C	85	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.11	0.0	A
B-A	0.01	7.10	0.0	A
C-A				
C-B	0.17	5.46	0.2	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	715	0.003	2	0.0	5.051	A
B-A	4	663	0.006	4	0.0	6.820	A
C-A	32			32			
C-B	92	802	0.114	91	0.1	5.060	A
A-B	26			26			
A-C	48			48			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	712	0.004	3	0.0	5.074	A
B-A	4	653	0.007	4	0.0	6.936	A
C-A	38			38			
C-B	110	799	0.137	110	0.2	5.222	A
A-B	31			31			
A-C	58			58			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	708	0.005	3	0.0	5.105	A
B-A	6	639	0.009	5	0.0	7.102	A
C-A	46			46			
C-B	134	794	0.169	134	0.2	5.453	A
A-B	39			39			
A-C	70			70			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	708	0.005	3	0.0	5.105	A
B-A	6	639	0.009	6	0.0	7.102	A
C-A	46			46			
C-B	134	794	0.169	134	0.2	5.456	A
A-B	39			39			
A-C	70			70			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	712	0.004	3	0.0	5.077	A
B-A	4	653	0.007	5	0.0	6.939	A
C-A	38			38			
C-B	110	799	0.137	110	0.2	5.225	A
A-B	31			31			
A-C	58			58			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	715	0.003	2	0.0	5.053	A
B-A	4	663	0.006	4	0.0	6.821	A
C-A	32			32			
C-B	92	802	0.114	92	0.1	5.067	A
A-B	26			26			
A-C	48			48			

Do Minimum - OPERATION - Base + Committed + Development 2023, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	OPERATION - Base + Committed + Development 2023	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	111	100.000
B		✓	154	100.000
C		✓	210	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	109
	B	70	0	84
	C	205	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	72
	B	3	0	0
	C	30	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.13	5.67	0.1	A
B-A	0.13	6.99	0.1	A
C-A				
C-B	0.01	4.58	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	63	744	0.085	63	0.1	5.282	A
B-A	53	627	0.084	52	0.1	6.443	A
C-A	154			154			
C-B	4	800	0.005	4	0.0	4.519	A
A-B	2			2			
A-C	82			82			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	76	737	0.102	75	0.1	5.442	A
B-A	63	619	0.102	63	0.1	6.667	A
C-A	184			184			
C-B	4	796	0.006	4	0.0	4.546	A
A-B	2			2			
A-C	98			98			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	92	727	0.127	92	0.1	5.668	A
B-A	77	607	0.127	77	0.1	6.989	A
C-A	226			226			
C-B	6	791	0.007	5	0.0	4.583	A
A-B	2			2			
A-C	120			120			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	92	727	0.127	92	0.1	5.671	A
B-A	77	607	0.127	77	0.1	6.991	A
C-A	226			226			
C-B	6	791	0.007	6	0.0	4.583	A
A-B	2			2			
A-C	120			120			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	76	737	0.102	76	0.1	5.447	A
B-A	63	619	0.102	63	0.1	6.669	A
C-A	184			184			
C-B	4	796	0.006	5	0.0	4.546	A
A-B	2			2			
A-C	98			98			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	63	744	0.085	63	0.1	5.290	A
B-A	53	627	0.084	53	0.1	6.454	A
C-A	154			154			
C-B	4	800	0.005	4	0.0	4.521	A
A-B	2			2			
A-C	82			82			

Do Minimum - OPERATION - Base + Committed + Development 2023, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.23	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	OPERATION - Base + Committed + Development 2023	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	127	100.000
B		✓	8	100.000
C		✓	190	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	35	92
	B	5	0	3
	C	68	122	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	45
	B	25	0	0
	C	90	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.15	0.0	A
B-A	0.01	7.24	0.0	A
C-A				
C-B	0.17	5.52	0.2	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	710	0.003	2	0.0	5.084	A
B-A	4	655	0.006	4	0.0	6.908	A
C-A	51			51			
C-B	92	797	0.115	91	0.1	5.096	A
A-B	26			26			
A-C	69			69			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	707	0.004	3	0.0	5.113	A
B-A	4	643	0.007	4	0.0	7.044	A
C-A	61			61			
C-B	110	793	0.138	110	0.2	5.269	A
A-B	31			31			
A-C	83			83			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	702	0.005	3	0.0	5.153	A
B-A	6	627	0.009	5	0.0	7.242	A
C-A	75			75			
C-B	134	787	0.171	134	0.2	5.516	A
A-B	39			39			
A-C	101			101			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	702	0.005	3	0.0	5.154	A
B-A	6	627	0.009	6	0.0	7.242	A
C-A	75			75			
C-B	134	787	0.171	134	0.2	5.518	A
A-B	39			39			
A-C	101			101			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	707	0.004	3	0.0	5.116	A
B-A	4	643	0.007	5	0.0	7.048	A
C-A	61			61			
C-B	110	793	0.138	110	0.2	5.273	A
A-B	31			31			
A-C	83			83			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	710	0.003	2	0.0	5.087	A
B-A	4	655	0.006	4	0.0	6.909	A
C-A	51			51			
C-B	92	797	0.115	92	0.1	5.104	A
A-B	26			26			
A-C	69			69			

Do Minimum - OPERATION - Base + Committed 2030, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	OPERATION - Base + Committed 2030	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	47	100.000
B		✓	157	100.000
C		✓	142	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	45
	B	67	0	90
	C	136	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	47
	B	3	0	0
	C	11	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.13	5.51	0.2	A
B-A	0.12	6.69	0.1	A
C-A				
C-B	0.01	4.49	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	68	764	0.089	67	0.1	5.166	A
B-A	50	639	0.079	50	0.1	6.291	A
C-A	102			102			
C-B	5	812	0.006	4	0.0	4.458	A
A-B	2			2			
A-C	34			34			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	81	759	0.107	81	0.1	5.307	A
B-A	60	634	0.095	60	0.1	6.457	A
C-A	122			122			
C-B	5	810	0.007	5	0.0	4.472	A
A-B	2			2			
A-C	40			40			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	99	753	0.132	99	0.2	5.505	A
B-A	74	628	0.118	74	0.1	6.689	A
C-A	150			150			
C-B	7	808	0.008	7	0.0	4.492	A
A-B	2			2			
A-C	50			50			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	99	753	0.132	99	0.2	5.508	A
B-A	74	628	0.118	74	0.1	6.692	A
C-A	150			150			
C-B	7	808	0.008	7	0.0	4.492	A
A-B	2			2			
A-C	50			50			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	81	759	0.107	81	0.1	5.312	A
B-A	60	634	0.095	60	0.1	6.459	A
C-A	122			122			
C-B	5	810	0.007	5	0.0	4.474	A
A-B	2			2			
A-C	40			40			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	68	764	0.089	68	0.1	5.173	A
B-A	50	639	0.079	51	0.1	6.299	A
C-A	102			102			
C-B	5	812	0.006	5	0.0	4.458	A
A-B	2			2			
A-C	34			34			

Do Minimum - OPERATION - Base + Committed 2030, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	OPERATION - Base + Committed 2030	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	103	100.000
B		✓	9	100.000
C		✓	172	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	37	66
	B	6	0	3
	C	43	129	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	27
	B	20	0	0
	C	81	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.20	0.0	A
B-A	0.01	6.77	0.0	A
C-A				
C-B	0.18	5.53	0.2	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	702	0.003	2	0.0	5.143	A
B-A	5	671	0.007	4	0.0	6.479	A
C-A	32			32			
C-B	97	802	0.121	97	0.1	5.103	A
A-B	28			28			
A-C	50			50			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	699	0.004	3	0.0	5.167	A
B-A	5	660	0.008	5	0.0	6.597	A
C-A	39			39			
C-B	116	798	0.145	116	0.2	5.277	A
A-B	33			33			
A-C	59			59			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	695	0.005	3	0.0	5.200	A
B-A	7	645	0.010	7	0.0	6.765	A
C-A	47			47			
C-B	142	793	0.179	142	0.2	5.527	A
A-B	41			41			
A-C	73			73			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	695	0.005	3	0.0	5.200	A
B-A	7	645	0.010	7	0.0	6.766	A
C-A	47			47			
C-B	142	793	0.179	142	0.2	5.529	A
A-B	41			41			
A-C	73			73			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	699	0.004	3	0.0	5.167	A
B-A	5	660	0.008	5	0.0	6.601	A
C-A	39			39			
C-B	116	798	0.145	116	0.2	5.282	A
A-B	33			33			
A-C	59			59			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	702	0.003	2	0.0	5.146	A
B-A	5	671	0.007	5	0.0	6.481	A
C-A	32			32			
C-B	97	802	0.121	97	0.1	5.112	A
A-B	28			28			
A-C	50			50			

Do Minimum - OPERATION - Base + Committed + Development 2030, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	OPERATION - Base + Committed + Development 2030	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	113	100.000
B		✓	164	100.000
C		✓	217	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	111
	B	74	0	90
	C	211	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	72
	B	3	0	0
	C	28	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.14	5.74	0.2	A
B-A	0.13	7.09	0.2	A
C-A				
C-B	0.01	4.59	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	68	744	0.091	67	0.1	5.320	A
B-A	56	625	0.089	55	0.1	6.501	A
C-A	159			159			
C-B	5	800	0.006	4	0.0	4.525	A
A-B	2			2			
A-C	84			84			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	81	736	0.110	81	0.1	5.492	A
B-A	67	617	0.108	66	0.1	6.739	A
C-A	190			190			
C-B	5	796	0.007	5	0.0	4.553	A
A-B	2			2			
A-C	100			100			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	99	726	0.136	99	0.2	5.738	A
B-A	81	605	0.135	81	0.2	7.083	A
C-A	232			232			
C-B	7	790	0.008	7	0.0	4.592	A
A-B	2			2			
A-C	122			122			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	99	726	0.136	99	0.2	5.740	A
B-A	81	605	0.135	81	0.2	7.086	A
C-A	232			232			
C-B	7	790	0.008	7	0.0	4.592	A
A-B	2			2			
A-C	122			122			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	81	736	0.110	81	0.1	5.497	A
B-A	67	617	0.108	67	0.1	6.741	A
C-A	190			190			
C-B	5	796	0.007	5	0.0	4.555	A
A-B	2			2			
A-C	100			100			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	68	743	0.091	68	0.1	5.330	A
B-A	56	625	0.089	56	0.1	6.512	A
C-A	159			159			
C-B	5	800	0.006	5	0.0	4.527	A
A-B	2			2			
A-C	84			84			

Do Minimum - OPERATION - Base + Committed +Development 2030, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.30	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	OPERATION - Base + Committed +Development 2030	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	131	100.000
B		✓	9	100.000
C		✓	198	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	37	94
	B	6	0	3
	C	69	129	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	43
	B	20	0	0
	C	88	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.25	0.0	A
B-A	0.01	6.90	0.0	A
C-A				
C-B	0.18	5.59	0.2	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	698	0.003	2	0.0	5.176	A
B-A	5	663	0.007	4	0.0	6.563	A
C-A	52			52			
C-B	97	797	0.122	97	0.1	5.135	A
A-B	28			28			
A-C	71			71			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	694	0.004	3	0.0	5.207	A
B-A	5	650	0.008	5	0.0	6.701	A
C-A	62			62			
C-B	116	792	0.146	116	0.2	5.322	A
A-B	33			33			
A-C	85			85			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	689	0.005	3	0.0	5.250	A
B-A	7	633	0.010	7	0.0	6.900	A
C-A	76			76			
C-B	142	786	0.181	142	0.2	5.591	A
A-B	41			41			
A-C	103			103			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	689	0.005	3	0.0	5.250	A
B-A	7	633	0.010	7	0.0	6.900	A
C-A	76			76			
C-B	142	786	0.181	142	0.2	5.593	A
A-B	41			41			
A-C	103			103			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	694	0.004	3	0.0	5.207	A
B-A	5	650	0.008	5	0.0	6.702	A
C-A	62			62			
C-B	116	792	0.146	116	0.2	5.328	A
A-B	33			33			
A-C	85			85			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	698	0.003	2	0.0	5.179	A
B-A	5	662	0.007	5	0.0	6.565	A
C-A	52			52			
C-B	97	797	0.122	97	0.1	5.150	A
A-B	28			28			
A-C	71			71			

Do Minimum - OPERATION WITH LINK ROAD - Base + Committed + Development 2026, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.20	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D11	OPERATION WITH LINK ROAD - Base + Committed + Development 2026	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	654	100.000
B		✓	179	100.000
C		✓	412	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	652
	B	54	0	125
	C	410	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.22	7.44	0.3	A
B-A	0.14	10.22	0.2	B
C-A				
C-B	0.00	5.59	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	94	685	0.137	93	0.2	6.075	A
B-A	41	482	0.084	40	0.1	8.137	A
C-A	309			309			
C-B	2	701	0.002	1	0.0	5.143	A
A-B	2			2			
A-C	491			491			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	112	659	0.171	112	0.2	6.584	A
B-A	49	453	0.107	48	0.1	8.904	A
C-A	369			369			
C-B	2	678	0.003	2	0.0	5.321	A
A-B	2			2			
A-C	586			586			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	138	622	0.221	137	0.3	7.425	A
B-A	59	412	0.144	59	0.2	10.214	B
C-A	451			451			
C-B	2	646	0.003	2	0.0	5.588	A
A-B	2			2			
A-C	718			718			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	138	622	0.221	138	0.3	7.435	A
B-A	59	412	0.144	59	0.2	10.223	B
C-A	451			451			
C-B	2	646	0.003	2	0.0	5.588	A
A-B	2			2			
A-C	718			718			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	112	659	0.171	113	0.2	6.598	A
B-A	49	453	0.107	49	0.1	8.917	A
C-A	369			369			
C-B	2	678	0.003	2	0.0	5.321	A
A-B	2			2			
A-C	586			586			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	94	685	0.137	94	0.2	6.093	A
B-A	41	482	0.084	41	0.1	8.153	A
C-A	309			309			
C-B	2	701	0.002	2	0.0	5.145	A
A-B	2			2			
A-C	491			491			

Do Minimum - OPERATION WITH LINK ROAD - Base + Committed +Development 2026, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D12	OPERATION WITH LINK ROAD - Base + Committed +Development 2026	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	382	100.000
B		✓	7	100.000
C		✓	610	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	21	361
	B	4	0	3
	C	454	156	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.01	5.54	0.0	A
B-A	0.01	7.83	0.0	A
C-A				
C-B	0.24	6.58	0.3	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	682	0.003	2	0.0	5.292	A
B-A	3	539	0.006	3	0.0	6.710	A
C-A	342			342			
C-B	117	751	0.156	117	0.2	5.671	A
A-B	16			16			
A-C	272			272			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	670	0.004	3	0.0	5.392	A
B-A	4	508	0.007	4	0.0	7.140	A
C-A	408			408			
C-B	140	737	0.190	140	0.2	6.025	A
A-B	19			19			
A-C	325			325			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	653	0.005	3	0.0	5.536	A
B-A	4	464	0.009	4	0.0	7.831	A
C-A	500			500			
C-B	172	719	0.239	171	0.3	6.575	A
A-B	23			23			
A-C	397			397			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	653	0.005	3	0.0	5.537	A
B-A	4	464	0.009	4	0.0	7.833	A
C-A	500			500			
C-B	172	719	0.239	172	0.3	6.580	A
A-B	23			23			
A-C	397			397			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	670	0.004	3	0.0	5.395	A
B-A	4	508	0.007	4	0.0	7.142	A
C-A	408			408			
C-B	140	737	0.190	141	0.2	6.036	A
A-B	19			19			
A-C	325			325			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	682	0.003	2	0.0	5.296	A
B-A	3	539	0.006	3	0.0	6.715	A
C-A	342			342			
C-B	117	751	0.156	118	0.2	5.688	A
A-B	16			16			
A-C	272			272			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.1.4646 []
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Filename: CONSTRUCTION - MARSH_HOBSON WAY.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\PICADY\2.0_S Marsh Road_Hobson Way
Report generation date: 17/10/2019 09:33:30

»Do Minimum - CONSTRUCTION - Base + Committed 2021, AM
»Do Minimum - CONSTRUCTION - Base + Committed 2021, PM
»Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2021, AM
»Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2021, PM
»Do Minimum - CONSTRUCTION - Base + Committed 2027, AM
»Do Minimum - CONSTRUCTION - Base + Committed 2027, PM
»Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2027, AM
»Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2027, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Do Minimum - CONSTRUCTION - Base + Committed 2021							
Stream B-C	0.1	5.41	0.12	A	0.0	5.10	0.00	A
Stream B-A	0.1	6.57	0.11	A	0.0	7.08	0.01	A
Stream C-B	0.0	4.48	0.01	A	0.2	5.42	0.16	A
	Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2021							
Stream B-C	0.1	5.60	0.12	A	0.0	5.26	0.00	A
Stream B-A	0.2	6.90	0.13	A	0.0	7.38	0.01	A
Stream C-B	0.0	4.50	0.01	A	0.2	5.63	0.17	A
	Do Minimum - CONSTRUCTION - Base + Committed 2027							
Stream B-C	0.1	5.49	0.13	A	0.0	5.20	0.00	A
Stream B-A	0.1	6.67	0.12	A	0.0	7.03	0.01	A
Stream C-B	0.0	4.49	0.01	A	0.2	5.50	0.17	A
	Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2027							
Stream B-C	0.2	5.67	0.13	A	0.0	5.36	0.00	A
Stream B-A	0.2	6.95	0.14	A	0.0	7.33	0.01	A
Stream C-B	0.0	4.51	0.01	A	0.2	5.71	0.18	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CLEASBYD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	CONSTRUCTION - Base + Committed 2021	AM	ONE HOUR	06:45	08:15	15
D2	CONSTRUCTION - Base + Committed 2021	PM	ONE HOUR	15:45	17:15	15
D3	CONSTRUCTION - Base + Committed + Peak of Construction 2021	AM	ONE HOUR	06:45	08:15	15
D4	CONSTRUCTION - Base + Committed + Peak of Construction 2021	PM	ONE HOUR	15:45	17:15	15
D5	CONSTRUCTION - Base + Committed 2027	AM	ONE HOUR	06:45	08:15	15
D6	CONSTRUCTION - Base + Committed 2027	PM	ONE HOUR	15:45	17:15	15
D7	CONSTRUCTION - Base + Committed + Peak of Construction 2027	AM	ONE HOUR	06:45	08:15	15
D8	CONSTRUCTION - Base + Committed + Peak of Construction 2027	PM	ONE HOUR	15:45	17:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Do Minimum	100.000

Do Minimum - CONSTRUCTION - Base + Committed 2021, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	untitled		Major
B	untitled		Minor
C	untitled		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	11.50		✓	3.50	250.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	7.50	5.00	3.50	3.50		3.50	250	140

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	663	0.092	0.232	0.146	0.332
1	B-C	787	0.092	0.232	-	-
1	C-B	820	0.242	0.242	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	CONSTRUCTION - Base + Committed 2021	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	45	100.000
B		✓	143	100.000
C		✓	124	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	43
	B	61	0	82
	C	119	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	47
	B	3	0	0
	C	13	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.12	5.41	0.1	A
B-A	0.11	6.57	0.1	A
C-A				
C-B	0.01	4.48	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	62	766	0.081	61	0.1	5.109	A
B-A	46	641	0.072	46	0.1	6.220	A
C-A	90			90			
C-B	4	812	0.005	4	0.0	4.452	A
A-B	2			2			
A-C	32			32			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	74	761	0.097	74	0.1	5.235	A
B-A	55	637	0.086	55	0.1	6.365	A
C-A	107			107			
C-B	4	811	0.006	4	0.0	4.465	A
A-B	2			2			
A-C	39			39			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	90	755	0.120	90	0.1	5.412	A
B-A	67	631	0.106	67	0.1	6.571	A
C-A	131			131			
C-B	6	808	0.007	6	0.0	4.483	A
A-B	2			2			
A-C	47			47			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	90	755	0.120	90	0.1	5.413	A
B-A	67	631	0.106	67	0.1	6.571	A
C-A	131			131			
C-B	6	808	0.007	6	0.0	4.483	A
A-B	2			2			
A-C	47			47			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	74	761	0.097	74	0.1	5.237	A
B-A	55	637	0.086	55	0.1	6.370	A
C-A	107			107			
C-B	4	811	0.006	4	0.0	4.465	A
A-B	2			2			
A-C	39			39			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	62	766	0.081	62	0.1	5.117	A
B-A	46	642	0.072	46	0.1	6.228	A
C-A	90			90			
C-B	4	812	0.005	4	0.0	4.452	A
A-B	2			2			
A-C	32			32			

Do Minimum - CONSTRUCTION - Base + Committed 2021, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	CONSTRUCTION - Base + Committed 2021	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	97	100.000
B		✓	8	100.000
C		✓	161	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	34	63
	B	5	0	3
	C	42	119	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	30
	B	25	0	0
	C	81	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.10	0.0	A
B-A	0.01	7.08	0.0	A
C-A				
C-B	0.16	5.42	0.2	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	715	0.003	2	0.0	5.050	A
B-A	4	665	0.006	4	0.0	6.809	A
C-A	32			32			
C-B	90	803	0.112	89	0.1	5.041	A
A-B	26			26			
A-C	47			47			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	712	0.004	3	0.0	5.072	A
B-A	4	654	0.007	4	0.0	6.922	A
C-A	38			38			
C-B	107	799	0.134	107	0.2	5.199	A
A-B	31			31			
A-C	57			57			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	709	0.005	3	0.0	5.103	A
B-A	6	641	0.009	5	0.0	7.084	A
C-A	46			46			
C-B	131	795	0.165	131	0.2	5.422	A
A-B	37			37			
A-C	69			69			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	709	0.005	3	0.0	5.103	A
B-A	6	641	0.009	6	0.0	7.085	A
C-A	46			46			
C-B	131	795	0.165	131	0.2	5.424	A
A-B	37			37			
A-C	69			69			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	712	0.004	3	0.0	5.075	A
B-A	4	654	0.007	5	0.0	6.923	A
C-A	38			38			
C-B	107	799	0.134	107	0.2	5.203	A
A-B	31			31			
A-C	57			57			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	715	0.003	2	0.0	5.053	A
B-A	4	664	0.006	4	0.0	6.812	A
C-A	32			32			
C-B	90	803	0.112	90	0.1	5.050	A
A-B	26			26			
A-C	47			47			

Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2021, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.13	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	CONSTRUCTION - Base + Committed + Peak of Construction 2021	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	55	100.000
B		✓	157	100.000
C		✓	258	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	53
	B	75	0	82
	C	253	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	54
	B	3	0	0
	C	8	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.12	5.60	0.1	A
B-A	0.13	6.90	0.2	A
C-A				
C-B	0.01	4.50	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	62	746	0.083	61	0.1	5.256	A
B-A	56	638	0.089	56	0.1	6.370	A
C-A	190			190			
C-B	4	810	0.005	4	0.0	4.462	A
A-B	2			2			
A-C	40			40			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	74	741	0.100	74	0.1	5.397	A
B-A	67	630	0.107	67	0.1	6.588	A
C-A	227			227			
C-B	4	808	0.006	4	0.0	4.477	A
A-B	2			2			
A-C	48			48			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	90	733	0.123	90	0.1	5.599	A
B-A	83	620	0.133	82	0.2	6.900	A
C-A	279			279			
C-B	6	806	0.007	5	0.0	4.498	A
A-B	2			2			
A-C	58			58			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	90	733	0.123	90	0.1	5.599	A
B-A	83	620	0.133	83	0.2	6.903	A
C-A	279			279			
C-B	6	806	0.007	6	0.0	4.498	A
A-B	2			2			
A-C	58			58			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	74	740	0.100	74	0.1	5.400	A
B-A	67	630	0.107	68	0.1	6.590	A
C-A	227			227			
C-B	4	808	0.006	4	0.0	4.477	A
A-B	2			2			
A-C	48			48			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	62	746	0.083	62	0.1	5.263	A
B-A	56	638	0.089	57	0.1	6.379	A
C-A	190			190			
C-B	4	810	0.005	4	0.0	4.464	A
A-B	2			2			
A-C	40			40			

Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2021, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.96	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	CONSTRUCTION - Base + Committed + Peak of Construction 2021	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	189	100.000
B		✓	8	100.000
C		✓	171	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	43	146
	B	5	0	3
	C	52	119	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	15
	B	25	0	0
	C	84	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.26	0.0	A
B-A	0.01	7.38	0.0	A
C-A				
C-B	0.17	5.63	0.2	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	701	0.003	2	0.0	5.151	A
B-A	4	647	0.006	4	0.0	6.994	A
C-A	39			39			
C-B	90	786	0.114	89	0.1	5.162	A
A-B	32			32			
A-C	110			110			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	696	0.004	3	0.0	5.195	A
B-A	4	634	0.007	4	0.0	7.152	A
C-A	47			47			
C-B	107	779	0.137	107	0.2	5.353	A
A-B	39			39			
A-C	131			131			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	688	0.005	3	0.0	5.255	A
B-A	6	615	0.009	5	0.0	7.382	A
C-A	57			57			
C-B	131	770	0.170	131	0.2	5.630	A
A-B	47			47			
A-C	161			161			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	688	0.005	3	0.0	5.255	A
B-A	6	615	0.009	6	0.0	7.383	A
C-A	57			57			
C-B	131	770	0.170	131	0.2	5.632	A
A-B	47			47			
A-C	161			161			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	696	0.004	3	0.0	5.197	A
B-A	4	633	0.007	5	0.0	7.153	A
C-A	47			47			
C-B	107	779	0.137	107	0.2	5.356	A
A-B	39			39			
A-C	131			131			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	701	0.003	2	0.0	5.154	A
B-A	4	647	0.006	4	0.0	6.998	A
C-A	39			39			
C-B	90	786	0.114	90	0.1	5.172	A
A-B	32			32			
A-C	110			110			

Do Minimum - CONSTRUCTION - Base + Committed 2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.79	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	CONSTRUCTION - Base + Committed 2027	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	46	100.000
B		✓	154	100.000
C		✓	140	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	44
	B	66	0	88
	C	134	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	49
	B	3	0	0
	C	12	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.13	5.49	0.1	A
B-A	0.12	6.67	0.1	A
C-A				
C-B	0.01	4.49	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	66	764	0.087	66	0.1	5.156	A
B-A	50	640	0.078	49	0.1	6.276	A
C-A	101			101			
C-B	5	812	0.006	4	0.0	4.457	A
A-B	2			2			
A-C	33			33			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	79	759	0.104	79	0.1	5.293	A
B-A	59	635	0.093	59	0.1	6.437	A
C-A	120			120			
C-B	5	810	0.007	5	0.0	4.471	A
A-B	2			2			
A-C	40			40			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	97	753	0.129	97	0.1	5.488	A
B-A	73	629	0.116	73	0.1	6.663	A
C-A	148			148			
C-B	7	808	0.008	7	0.0	4.490	A
A-B	2			2			
A-C	48			48			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	97	753	0.129	97	0.1	5.489	A
B-A	73	629	0.116	73	0.1	6.666	A
C-A	148			148			
C-B	7	808	0.008	7	0.0	4.490	A
A-B	2			2			
A-C	48			48			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	79	759	0.104	79	0.1	5.296	A
B-A	59	635	0.093	59	0.1	6.439	A
C-A	120			120			
C-B	5	810	0.007	5	0.0	4.473	A
A-B	2			2			
A-C	40			40			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	66	764	0.087	66	0.1	5.163	A
B-A	50	640	0.078	50	0.1	6.282	A
C-A	101			101			
C-B	5	812	0.006	5	0.0	4.457	A
A-B	2			2			
A-C	33			33			

Do Minimum - CONSTRUCTION - Base + Committed 2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.68	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	CONSTRUCTION - Base + Committed 2027	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	102	100.000
B		✓	9	100.000
C		✓	169	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	37	65
	B	6	0	3
	C	43	126	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	28
	B	25	0	0
	C	81	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.20	0.0	A
B-A	0.01	7.03	0.0	A
C-A				
C-B	0.17	5.50	0.2	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	702	0.003	2	0.0	5.142	A
B-A	5	672	0.007	4	0.0	6.739	A
C-A	32			32			
C-B	95	802	0.118	94	0.1	5.085	A
A-B	28			28			
A-C	49			49			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	699	0.004	3	0.0	5.166	A
B-A	5	661	0.008	5	0.0	6.859	A
C-A	39			39			
C-B	113	798	0.142	113	0.2	5.255	A
A-B	33			33			
A-C	58			58			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	696	0.005	3	0.0	5.198	A
B-A	7	647	0.010	7	0.0	7.031	A
C-A	47			47			
C-B	139	793	0.175	139	0.2	5.497	A
A-B	41			41			
A-C	72			72			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	696	0.005	3	0.0	5.198	A
B-A	7	646	0.010	7	0.0	7.031	A
C-A	47			47			
C-B	139	793	0.175	139	0.2	5.499	A
A-B	41			41			
A-C	72			72			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	699	0.004	3	0.0	5.166	A
B-A	5	661	0.008	5	0.0	6.863	A
C-A	39			39			
C-B	113	798	0.142	113	0.2	5.257	A
A-B	33			33			
A-C	58			58			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	702	0.003	2	0.0	5.145	A
B-A	5	672	0.007	5	0.0	6.741	A
C-A	32			32			
C-B	95	802	0.118	95	0.1	5.095	A
A-B	28			28			
A-C	49			49			

Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.17	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	CONSTRUCTION - Base + Committed + Peak of Construction 2027	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	56	100.000
B		✓	168	100.000
C		✓	274	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	54
	B	80	0	88
	C	268	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	55
	B	2	0	0
	C	8	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.13	5.67	0.2	A
B-A	0.14	6.95	0.2	A
C-A				
C-B	0.01	4.51	0.0	A
A-B				
A-C				

Main Results for each time segment

06:45 - 07:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	66	745	0.089	66	0.1	5.298	A
B-A	60	635	0.095	60	0.1	6.377	A
C-A	202			202			
C-B	5	810	0.006	4	0.0	4.467	A
A-B	2			2			
A-C	41			41			

07:00 - 07:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	79	739	0.107	79	0.1	5.451	A
B-A	72	627	0.115	72	0.1	6.611	A
C-A	241			241			
C-B	5	808	0.007	5	0.0	4.483	A
A-B	2			2			
A-C	49			49			

07:15 - 07:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	97	732	0.132	97	0.2	5.669	A
B-A	88	616	0.143	88	0.2	6.949	A
C-A	295			295			
C-B	7	806	0.008	7	0.0	4.505	A
A-B	2			2			
A-C	59			59			

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	97	731	0.132	97	0.2	5.672	A
B-A	88	616	0.143	88	0.2	6.952	A
C-A	295			295			
C-B	7	806	0.008	7	0.0	4.505	A
A-B	2			2			
A-C	59			59			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	79	739	0.107	79	0.1	5.454	A
B-A	72	627	0.115	72	0.1	6.616	A
C-A	241			241			
C-B	5	808	0.007	5	0.0	4.483	A
A-B	2			2			
A-C	49			49			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	66	745	0.089	66	0.1	5.307	A
B-A	60	635	0.095	60	0.1	6.386	A
C-A	202			202			
C-B	5	810	0.006	5	0.0	4.467	A
A-B	2			2			
A-C	41			41			

Do Minimum - CONSTRUCTION - Base + Committed + Peak of Construction 2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	CONSTRUCTION - Base + Committed + Peak of Construction 2027	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	194	100.000
B		✓	9	100.000
C		✓	179	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	45	149
	B	6	0	3
	C	53	126	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	15
	B	25	0	0
	C	84	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.36	0.0	A
B-A	0.01	7.33	0.0	A
C-A				
C-B	0.18	5.71	0.2	A
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	688	0.003	2	0.0	5.246	A
B-A	5	654	0.007	4	0.0	6.925	A
C-A	40			40			
C-B	95	785	0.121	94	0.1	5.203	A
A-B	34			34			
A-C	112			112			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	683	0.004	3	0.0	5.292	A
B-A	5	640	0.008	5	0.0	7.091	A
C-A	48			48			
C-B	113	778	0.146	113	0.2	5.410	A
A-B	40			40			
A-C	134			134			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	675	0.005	3	0.0	5.355	A
B-A	7	620	0.011	7	0.0	7.331	A
C-A	58			58			
C-B	139	769	0.180	139	0.2	5.710	A
A-B	50			50			
A-C	164			164			

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	675	0.005	3	0.0	5.355	A
B-A	7	620	0.011	7	0.0	7.332	A
C-A	58			58			
C-B	139	769	0.180	139	0.2	5.713	A
A-B	50			50			
A-C	164			164			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	683	0.004	3	0.0	5.292	A
B-A	5	640	0.008	5	0.0	7.095	A
C-A	48			48			
C-B	113	778	0.146	113	0.2	5.416	A
A-B	40			40			
A-C	134			134			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	2	688	0.003	2	0.0	5.247	A
B-A	5	654	0.007	5	0.0	6.927	A
C-A	40			40			
C-B	95	785	0.121	95	0.1	5.216	A
A-B	34			34			
A-C	112			112			

ANNEX 16: LAPORTE ROAD/ HOBSON WAY/ KILN LANE MODELLING OUTPUTS

ANNEX 17: TRONDHEIM WAY/ KILN LANE MODELLING OUTPUTS

ANNEX 18: A1173/ KILN LANE MODELLING OUTPUTS

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: 4.0 Kiln Lane ROUNDABOUT 15 min segments.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\4_R'abouts\4.0_Kiln Lane R'about
Report generation date: 15/10/2019 15:39:22

»Do Minimum - OPERATION - BASE 2018, PM
»Do Minimum - OPERATION - BASE 2018, AM

Summary of junction performance

	PM				AM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Do Minimum - OPERATION - BASE 2018							
Arm 1	0.0	7.10	0.01	A	0.0	3.28	0.00	A
Arm 2	0.6	4.02	0.33	A	6.0	15.47	0.86	C
Arm 3	4.3	13.49	0.82	B	1.0	6.67	0.45	A
Arm 4	2.7	13.30	0.72	B	0.4	4.33	0.22	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CLEASBYD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	OPERATION - BASE 2018	PM	DIRECT	16:00	17:00	60	15
D3	OPERATION - BASE 2018	AM	DIRECT	07:00	08:00	60	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Do Minimum	100.000

Do Minimum - OPERATION - BASE 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	11.19	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Unnamed Access	
2	A1173 EB Approach	
3	A1173 SB Approach	
4	Kiln Lane WB Approach	

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	3.52	6.09	5.7	16.9	49.2	11.9	
2	3.75	7.04	9.9	26.2	49.2	12.8	
3	3.40	7.95	6.8	20.8	49.2	14.0	
4	3.49	8.20	6.6	28.5	49.2	13.5	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.582	1460
2	0.639	1735
3	0.601	1553
4	0.614	1599

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	OPERATION - BASE 2018	PM	DIRECT	16:00	17:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

16:00 - 16:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	244	312
	3	0	976	0	140
	4	0	612	112	0

16:15 - 16:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	236	228
	3	0	460	0	168
	4	0	492	140	0

16:30 - 16:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	4	0	0
	2	0	0	276	180
	3	0	892	4	164
	4	0	596	152	0

16:45 - 17:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	292	164
	3	0	656	0	140
	4	0	480	76	0

Vehicle Mix

16:00 - 16:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	13	35
	3	0	4	0	24
	4	0	12	21	0

16:15 - 16:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	19	35
	3	0	5	0	62
	4	0	11	20	0

16:30 - 16:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	17	34
	3	0	5	0	41
	4	0	9	18	0

16:45 - 17:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	16	50
	3	0	4	0	54
	4	0	8	27	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.01	7.10	0.0	A
2	0.33	4.02	0.6	A
3	0.82	13.49	4.3	B
4	0.72	13.30	2.7	B

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1674	486	0.000	0	0.0	0.000	A
2	556	110	1664	0.334	554	0.6	4.022	A
3	1116	311	1367	0.816	1099	4.3	13.488	B
4	724	961	1010	0.717	713	2.7	13.303	B

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1111	813	0.000	0	0.0	0.000	A
2	464	141	1645	0.282	464	0.5	3.856	A
3	628	228	1416	0.443	642	0.9	5.472	A
4	632	472	1309	0.483	639	1.1	6.115	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	4	1631	511	0.008	4	0.0	7.098	A
2	456	155	1636	0.279	456	0.5	3.761	A
3	1060	180	1445	0.733	1052	2.9	9.820	A
4	748	889	1054	0.710	742	2.6	12.537	B

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1224	748	0.000	0.03	0.0	0.000	A
2	456	78	1685	0.271	456	0.5	3.698	A
3	796	164	1455	0.547	802	1.4	6.138	A
4	556	661	1194	0.466	562	1.0	6.352	A

Do Minimum - OPERATION - BASE 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	12.39	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D3	OPERATION - BASE 2018	AM	DIRECT	07:00	08:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

07:00 - 07:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	4	660	508
	3	0	156	0	52
	4	0	228	100	0

07:15 - 07:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	848	564
	3	0	232	0	88
	4	0	168	36	0

07:30 - 07:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	4	760	700
	3	0	328	0	72
	4	0	156	56	0

07:45 - 08:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	4	0	0
	2	0	0	696	664
	3	4	332	0	188
	4	0	200	84	0

Vehicle Mix

07:00 - 07:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	4	8
	3	0	19	0	18
	4	0	35	56	0

07:15 - 07:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	5	14
	3	0	27	0	33
	4	0	40	67	0

07:30 - 07:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	3	10
	3	0	27	0	29
	4	0	41	25	0

07:45 - 08:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	6	8
	3	0	21	0	11
	4	0	38	24	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.00	3.28	0.0	A
2	0.86	15.47	6.0	C
3	0.45	6.67	1.0	A
4	0.22	4.33	0.4	A

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	486	1177	0.000	0	0.0	0.000	A
2	1172	100	1671	0.701	1162	2.4	7.344	A
3	208	508	1248	0.167	207	0.2	4.102	A
4	328	159	1502	0.218	326	0.4	4.307	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	436	1206	0.000	0	0.0	0.000	A
2	1412	36	1712	0.825	1403	4.8	12.272	B
3	320	561	1217	0.263	319	0.5	5.152	A
4	204	231	1457	0.140	205	0.2	4.142	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	543	1144	0.000	0	0.0	0.000	A
2	1464	56	1699	0.862	1459	6.0	15.470	C
3	400	700	1133	0.353	399	0.7	6.239	A
4	212	331	1396	0.152	212	0.2	4.148	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	4	615	1102	0.004	4	0.0	3.278	A
2	1360	84	1681	0.809	1365	4.8	12.404	B
3	524	666	1153	0.454	523	1.0	6.675	A
4	284	336	1393	0.204	284	0.3	4.332	A

Junctions 9

ARCADY 9 - Roundabout Module

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Filename: 4.0 OPERATION Kiln Lane ROUNDABOUT 15 min segments.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\4_R'abouts\4.0 Kiln Lane Roundabout Proposed Mitigation
Report generation date: 15/10/2019 15:37:18

»Do Minimum - OPERATION - BASE + COMMITTED, 2023, PM
»Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023, PM
»Do Minimum - OPERATION - BASE + COMMITTED, 2023, AM
»Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023, AM
»Do Minimum - OPERATION - BASE + COMMITTED, 2030, AM
»Do Minimum - OPERATION - BASE + COMMITTED, 2030, PM
»Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030, AM
»Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030, PM

Summary of junction performance

	PM				AM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Do Minimum - OPERATION - BASE + COMMITTED, 2023							
Arm 1	0.0	10.20	0.01	B	0.0	3.61	0.00	A
Arm 2	0.6	3.46	0.33	A	5.2	11.64	0.84	B
Arm 3	4.1	11.65	0.80	B	1.0	6.27	0.46	A
Arm 4	1.3	5.57	0.53	A	0.3	2.88	0.18	A
	Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023							
Arm 1	0.0	10.68	0.01	B	0.0	3.74	0.00	A
Arm 2	0.7	3.59	0.34	A	6.9	14.88	0.87	B
Arm 3	4.3	12.26	0.81	B	1.1	6.74	0.48	A
Arm 4	1.4	5.86	0.55	A	0.4	3.13	0.21	A
	Do Minimum - OPERATION - BASE + COMMITTED, 2030							
Arm 1	0.3	21.72	0.16	C	0.0	6.15	0.03	A
Arm 2	0.7	3.72	0.36	A	8.8	18.34	0.90	C
Arm 3	6.6	16.88	0.88	C	1.2	7.16	0.51	A
Arm 4	1.6	6.67	0.59	A	0.3	2.97	0.20	A
	Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030							
Arm 1	0.3	23.48	0.17	C	0.0	6.38	0.03	A
Arm 2	0.8	3.81	0.37	A	12.8	25.67	0.94	D
Arm 3	6.9	17.70	0.89	C	1.3	7.78	0.53	A
Arm 4	1.8	7.07	0.61	A	0.4	3.23	0.23	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CLEASBYD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	OPERATION - BASE + COMMITTED, 2023	PM	DIRECT	16:00	17:00	60	15
D4	OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023	PM	DIRECT	16:00	17:00	60	15
D5	OPERATION - BASE + COMMITTED, 2023	AM	DIRECT	07:00	08:00	60	15
D6	OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023	AM	DIRECT	07:00	08:00	60	15
D7	OPERATION - BASE + COMMITTED, 2030	AM	DIRECT	07:00	08:00	60	15
D8	OPERATION - BASE + COMMITTED, 2030	PM	DIRECT	16:00	17:00	60	15
D9	OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030	AM	DIRECT	07:00	08:00	60	15
D10	OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030	PM	DIRECT	16:00	17:00	60	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Do Minimum	100.000

Do Minimum - OPERATION - BASE + COMMITTED, 2023, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	7.65	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Unnamed Access	
2	A1173 EB Approach	
3	A1173 SB Approach	
4	Kiln Lane WB Approach	

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	3.65	4.50	12.6	21.0	49.2	10.8	
2	3.70	8.24	19.0	40.0	49.2	16.4	
3	3.25	7.99	12.3	31.0	49.2	14.8	
4	3.97	8.14	64.8	19.9	49.2	17.5	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.576	1409
2	0.697	2037
3	0.640	1742
4	0.748	2348

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	OPERATION - BASE + COMMITTED, 2023	PM	DIRECT	16:00	17:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

16:00 - 16:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	276	360
	3	0	1061	0	154
	4	0	708	124	0

16:15 - 16:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	263	287
	3	0	515	0	179
	4	0	593	154	0

16:30 - 16:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	4	0	0
	2	0	0	306	223
	3	0	967	4	175
	4	0	696	166	0

16:45 - 17:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	315	202
	3	0	711	0	171
	4	0	563	81	0

Vehicle Mix

16:00 - 16:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	14	39
	3	0	4	0	24
	4	0	14	21	0

16:15 - 16:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	19	39
	3	0	6	0	62
	4	0	13	20	0

16:30 - 16:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	16	39
	3	0	5	0	41
	4	0	11	18	0

16:45 - 17:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	16	55
	3	0	4	0	54
	4	0	11	27	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.01	10.20	0.0	B
2	0.33	3.46	0.6	A
3	0.80	11.65	4.1	B
4	0.53	5.57	1.3	A

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1874	329	0.000	0	0.0	0.000	A
2	636	123	1951	0.326	634	0.6	3.463	A
3	1215	359	1512	0.803	1199	4.1	11.651	B
4	832	1047	1565	0.532	827	1.3	5.569	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1276	673	0.000	0	0.0	0.000	A
2	550	154	1929	0.285	550	0.5	3.361	A
3	694	287	1558	0.445	706	0.9	4.985	A
4	747	526	1954	0.382	749	0.7	3.423	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	4	1825	357	0.011	4	0.0	10.196	B
2	529	170	1919	0.276	529	0.5	3.230	A
3	1146	223	1599	0.717	1139	2.7	8.424	A
4	862	965	1626	0.530	860	1.3	5.259	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1362	623	0.000	0.04	0.0	0.000	A
2	517	82	1980	0.261	517	0.5	3.165	A
3	882	202	1613	0.547	887	1.4	5.549	A
4	644	716	1813	0.355	647	0.6	3.491	A

Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	7.96	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D4	OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023	PM	DIRECT	16:00	17:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

16:00 - 16:15

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	276	388
	3	0	1061	0	154
	4	0	736	124	0

16:15 - 16:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	263	315
	3	0	515	0	179
	4	0	621	154	0

16:30 - 16:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	4	0	0
	2	0	0	306	251
	3	0	967	4	175
	4	0	724	166	0

16:45 - 17:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	315	230
	3	0	711	0	171
	4	0	591	81	0

Vehicle Mix

16:00 - 16:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	14	42
	3	0	4	0	24
	4	0	16	21	0

16:15 - 16:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	19	42
	3	0	6	0	62
	4	0	15	20	0

16:30 - 16:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	16	43
	3	0	5	0	41
	4	0	14	18	0

16:45 - 17:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	16	58
	3	0	4	0	54
	4	0	13	27	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.01	10.68	0.0	B
2	0.34	3.59	0.7	A
3	0.81	12.26	4.3	B
4	0.55	5.86	1.4	A

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1900	313	0.000	0	0.0	0.000	A
2	664	123	1951	0.340	661	0.7	3.589	A
3	1215	386	1495	0.813	1198	4.3	12.257	B
4	860	1046	1566	0.549	854	1.4	5.862	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1305	657	0.000	0	0.0	0.000	A
2	578	154	1929	0.300	578	0.6	3.480	A
3	694	315	1540	0.451	707	1.0	5.105	A
4	775	527	1954	0.397	778	0.8	3.556	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	4	1852	341	0.012	4	0.0	10.675	B
2	557	170	1919	0.290	557	0.5	3.354	A
3	1146	251	1581	0.725	1139	2.8	8.746	A
4	890	964	1627	0.547	888	1.4	5.571	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1391	607	0.000	0.05	0.0	0.000	A
2	545	82	1980	0.275	545	0.5	3.277	A
3	882	230	1595	0.553	888	1.4	5.695	A
4	672	716	1812	0.371	675	0.7	3.631	A

Do Minimum - OPERATION - BASE + COMMITTED, 2023, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	9.46	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D5	OPERATION - BASE + COMMITTED, 2023	AM	DIRECT	07:00	08:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

07:00 - 07:15

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	4	733	635
	3	0	182	0	56
	4	0	279	120	0

07:15 - 07:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	934	678
	3	0	251	0	103
	4	0	228	43	0

07:30 - 07:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	4	849	815
	3	0	350	0	77
	4	0	206	64	0

07:45 - 08:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	4	0	0
	2	0	0	763	794
	3	4	354	0	209
	4	0	262	90	0

Vehicle Mix

07:00 - 07:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	5	13
	3	0	19	0	18
	4	0	40	56	0

07:15 - 07:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	6	17
	3	0	26	0	33
	4	0	46	67	0

07:30 - 07:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	4	12
	3	0	26	0	29
	4	0	48	25	0

07:45 - 08:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	6	11
	3	0	20	0	11
	4	0	44	24	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.00	3.61	0.0	A
2	0.84	11.64	5.2	B
3	0.46	6.27	1.0	A
4	0.18	2.88	0.3	A

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	583	1073	0.000	0	0.0	0.000	A
2	1372	120	1953	0.702	1362	2.5	6.501	A
3	238	634	1336	0.178	237	0.3	3.887	A
4	399	185	2209	0.181	398	0.3	2.869	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	522	1108	0.000	0	0.0	0.000	A
2	1612	43	2007	0.803	1605	4.3	9.713	A
3	354	675	1310	0.270	353	0.5	4.811	A
4	271	250	2160	0.125	271	0.2	2.840	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	623	1049	0.000	0	0.0	0.000	A
2	1668	64	1992	0.837	1664	5.2	11.642	B
3	427	816	1220	0.350	426	0.7	5.735	A
4	270	353	2084	0.130	270	0.2	2.815	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	4	706	1002	0.004	4	0.0	3.606	A
2	1557	90	1974	0.789	1561	4.2	9.560	A
3	567	796	1233	0.460	566	1.0	6.271	A
4	352	358	2080	0.169	352	0.3	2.880	A

Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	11.65	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D6	OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023	AM	DIRECT	07:00	08:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

07:00 - 07:15

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	4	733	707
	3	0	182	0	56
	4	0	343	120	0

07:15 - 07:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	934	754
	3	0	251	0	103
	4	0	292	43	0

07:30 - 07:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	4	849	887
	3	0	350	0	77
	4	0	270	64	0

07:45 - 08:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	4	0	0
	2	0	0	763	866
	3	4	354	0	209
	4	0	326	90	0

Vehicle Mix

07:00 - 07:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	5	17
	3	0	19	0	18
	4	0	48	56	0

07:15 - 07:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	6	21
	3	0	26	0	33
	4	0	55	67	0

07:30 - 07:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	4	16
	3	0	26	0	29
	4	0	58	25	0

07:45 - 08:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	6	15
	3	0	20	0	11
	4	0	52	24	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.00	3.74	0.0	A
2	0.87	14.88	6.9	B
3	0.48	6.74	1.1	A
4	0.21	3.13	0.4	A

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	647	1036	0.000	0	0.0	0.000	A
2	1444	120	1953	0.739	1432	3.0	7.465	A
3	238	705	1291	0.184	237	0.3	4.053	A
4	463	185	2209	0.210	461	0.4	3.086	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	586	1071	0.000	0	0.0	0.000	A
2	1688	43	2007	0.841	1678	5.5	11.935	B
3	354	750	1262	0.281	353	0.5	5.064	A
4	335	250	2160	0.155	335	0.3	3.087	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	687	1013	0.000	0	0.0	0.000	A
2	1740	64	1992	0.873	1734	6.9	14.877	B
3	427	887	1174	0.364	426	0.7	6.080	A
4	334	353	2084	0.160	334	0.3	3.094	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	4	769	965	0.004	4	0.0	3.744	A
2	1629	90	1974	0.825	1634	5.5	11.944	B
3	567	868	1186	0.478	566	1.1	6.738	A
4	416	358	2080	0.200	416	0.4	3.134	A

Do Minimum - OPERATION - BASE + COMMITTED, 2030, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	14.15	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D7	OPERATION - BASE + COMMITTED, 2030	AM	DIRECT	07:00	08:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

07:00 - 07:15

		To			
		1	2	3	4
From	1	0	12	8	8
	2	24	5	776	673
	3	8	196	0	59
	4	8	293	127	0

07:15 - 07:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	12	8	0
	2	20	0	994	718
	3	4	270	0	109
	4	4	238	45	0

07:30 - 07:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	12	4	0
	2	20	5	903	868
	3	4	374	0	82
	4	0	220	68	0

07:45 - 08:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	17	0	0
	2	20	0	817	841
	3	5	379	0	222
	4	0	275	95	0

Vehicle Mix

07:00 - 07:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	50	100	100
	2	20	0	5	12
	3	100	19	0	18
	4	0	40	56	0

07:15 - 07:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	50	100	0
	2	25	0	6	17
	3	0	25	0	33
	4	0	45	67	0

07:30 - 07:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	50	0	0
	2	25	0	4	12
	3	0	26	0	29
	4	0	46	25	0

07:45 - 08:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	32	0	0
	2	25	0	6	11
	3	0	20	0	11
	4	0	44	24	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.03	6.15	0.0	A
2	0.90	18.34	8.8	C
3	0.51	7.16	1.2	A
4	0.20	2.97	0.3	A

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	28	619	1052	0.027	28	0.0	6.151	A
2	1478	142	1938	0.763	1465	3.4	8.030	A
3	263	704	1292	0.204	262	0.3	4.197	A
4	428	232	2174	0.197	427	0.3	2.948	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	20	553	1090	0.018	20	0.0	5.597	A
2	1732	53	2000	0.866	1720	6.5	13.613	B
3	383	733	1272	0.301	382	0.5	5.121	A
4	287	293	2128	0.135	287	0.2	2.879	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	16	666	1025	0.016	16	0.0	4.767	A
2	1796	72	1987	0.904	1787	8.8	18.341	C
3	460	887	1174	0.392	459	0.8	6.343	A
4	288	402	2047	0.141	288	0.2	2.873	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	17	748	977	0.017	17	0.0	4.949	A
2	1678	95	1971	0.851	1686	6.7	14.182	B
3	606	865	1188	0.510	604	1.2	7.156	A
4	370	404	2046	0.181	370	0.3	2.969	A

Do Minimum - OPERATION - BASE + COMMITTED, 2030, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	10.39	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D8	OPERATION - BASE + COMMITTED, 2030	PM	DIRECT	16:00	17:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

16:00 - 16:15

		To			
		1	2	3	4
From	1	0	28	8	8
	2	28	0	295	378
	3	8	1127	0	163
	4	8	746	131	0

16:15 - 16:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	28	4	4
	2	24	0	282	306
	3	4	544	0	190
	4	0	629	163	0

16:30 - 16:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	29	4	0
	2	24	0	336	234
	3	0	1032	5	185
	4	0	738	176	0

16:45 - 17:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	24	0	0
	2	24	0	345	216
	3	0	757	0	181
	4	0	598	86	0

Vehicle Mix

16:00 - 16:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	17	100	100
	2	75	0	14	39
	3	100	4	0	24
	4	100	14	21	0

16:15 - 16:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	17	0	0
	2	50	0	19	40
	3	0	6	0	62
	4	0	13	20	0

16:30 - 16:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	16	0	0
	2	50	0	17	39
	3	0	5	0	41
	4	0	11	18	0

16:45 - 17:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	20	0	0
	2	50	0	17	53
	3	0	4	0	54
	4	0	10	27	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.16	21.72	0.3	C
2	0.36	3.72	0.7	A
3	0.88	16.88	6.6	C
4	0.59	6.67	1.6	A

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	44	1975	270	0.163	43	0.3	21.715	C
2	701	146	1935	0.362	698	0.7	3.724	A
3	1298	412	1478	0.878	1272	6.6	16.880	C
4	885	1140	1495	0.592	878	1.6	6.666	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	36	1359	625	0.058	37	0.1	6.947	A
2	612	172	1917	0.319	612	0.6	3.581	A
3	738	335	1528	0.483	760	1.1	5.599	A
4	792	592	1905	0.416	795	0.8	3.722	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	33	1939	291	0.113	33	0.1	15.846	C
2	594	184	1908	0.311	594	0.6	3.453	A
3	1222	258	1577	0.775	1212	3.6	10.508	B
4	914	1052	1561	0.586	911	1.6	6.191	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	24	1451	572	0.042	24	0.1	7.881	A
2	585	87	1976	0.296	585	0.5	3.348	A
3	938	240	1588	0.591	946	1.6	6.292	A
4	684	788	1759	0.389	687	0.7	3.774	A

Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	19.06	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D9	OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030	AM	DIRECT	07:00	08:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

07:00 - 07:15

		To			
		1	2	3	4
From	1	0	12	8	8
	2	20	5	776	745
	3	8	196	0	59
	4	8	357	127	0

07:15 - 07:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	12	8	0
	2	20	0	994	790
	3	4	270	0	109
	4	4	302	45	0

07:30 - 07:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	12	4	0
	2	20	5	903	940
	3	4	374	0	82
	4	0	284	68	0

07:45 - 08:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	17	0	0
	2	20	0	817	913
	3	5	379	0	222
	4	0	339	95	0

Vehicle Mix

07:00 - 07:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	50	100	100
	2	20	0	5	16
	3	100	19	0	18
	4	100	48	56	0

07:15 - 07:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	50	100	0
	2	25	0	6	21
	3	0	25	0	33
	4	0	54	67	0

07:30 - 07:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	50	0	0
	2	25	0	4	16
	3	0	26	0	29
	4	0	56	25	0

07:45 - 08:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	32	0	0
	2	25	0	6	14
	3	0	20	0	11
	4	0	52	24	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.03	6.38	0.0	A
2	0.94	25.67	12.8	D
3	0.53	7.78	1.3	A
4	0.23	3.23	0.4	A

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	28	682	1015	0.028	28	0.0	6.377	A
2	1546	142	1938	0.798	1529	4.1	9.376	A
3	263	770	1249	0.211	262	0.3	4.378	A
4	492	228	2177	0.226	490	0.4	3.211	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	20	617	1053	0.019	20	0.0	5.799	A
2	1804	53	2000	0.902	1786	8.7	17.495	C
3	383	803	1228	0.312	382	0.6	5.390	A
4	351	293	2128	0.165	352	0.3	3.134	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	16	730	988	0.016	16	0.0	4.950	A
2	1868	72	1987	0.940	1852	12.8	25.674	D
3	460	954	1131	0.407	459	0.9	6.749	A
4	352	402	2048	0.172	352	0.3	3.161	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	17	812	940	0.018	17	0.0	5.147	A
2	1750	95	1971	0.888	1762	9.8	20.116	C
3	606	939	1141	0.531	604	1.3	7.778	A
4	434	404	2046	0.212	434	0.4	3.234	A

Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2023, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	10.79	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D10	OPERATION - BASE + COMMITTED + DEVELOPMENT, 2030	PM	DIRECT	16:00	17:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

16:00 - 16:15

		To			
		1	2	3	4
From	1	0	28	8	8
	2	24	0	295	402
	3	8	1127	0	163
	4	8	778	131	0

16:15 - 16:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	28	4	4
	2	24	0	282	330
	3	4	544	0	190
	4	0	661	163	0

16:30 - 16:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	29	4	0
	2	24	0	336	258
	3	0	1032	5	185
	4	0	770	176	0

16:45 - 17:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	24	0	0
	2	24	0	345	240
	3	0	757	0	181
	4	0	630	86	0

Vehicle Mix

16:00 - 16:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	17	100	100
	2	75	0	14	41
	3	100	4	0	24
	4	100	16	21	0

16:15 - 16:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	17	0	0
	2	50	0	19	43
	3	0	6	0	62
	4	0	16	20	0

16:30 - 16:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	16	0	0
	2	50	0	17	43
	3	0	5	0	41
	4	0	13	18	0

16:45 - 17:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	20	0	0
	2	50	0	17	57
	3	0	4	0	54
	4	0	13	27	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.17	23.48	0.3	C
2	0.37	3.81	0.8	A
3	0.89	17.70	6.9	C
4	0.61	7.07	1.8	A

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	44	2005	253	0.174	43	0.3	23.480	C
2	721	146	1935	0.373	718	0.8	3.814	A
3	1298	432	1465	0.886	1270	6.9	17.701	C
4	917	1135	1499	0.612	910	1.8	7.069	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	36	1392	606	0.059	37	0.1	7.189	A
2	636	172	1917	0.332	636	0.7	3.698	A
3	738	359	1512	0.488	761	1.1	5.738	A
4	824	593	1904	0.433	828	0.9	3.916	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	33	1970	273	0.121	33	0.2	17.026	C
2	618	184	1908	0.324	618	0.6	3.565	A
3	1222	282	1561	0.783	1212	3.7	10.928	B
4	946	1052	1561	0.606	943	1.7	6.593	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	24	1484	553	0.043	24	0.1	8.164	A
2	609	87	1976	0.308	609	0.6	3.460	A
3	938	264	1573	0.596	946	1.7	6.454	A
4	716	788	1758	0.407	720	0.8	3.984	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: 4.0 OPERATION Kiln Lane ROUNDABOUT.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\4_R'abouts\4.0 Kiln Lane Roundabout Proposed Mitigation\ss
Report generation date: 15/10/2019 15:42:27

«Do Minimum - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT, 2026, AM

»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CLEASBYD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Do Minimum	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT, 2026	AM	ONE HOUR	06:45	08:15	15

Do Minimum - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT, 2026, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2022, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D8 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2028, PM	Demand Set 8: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT, 2026, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	5.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Unnamed Access	
2	A1173 EB Approach	
3	A1173 SB Approach	
4	Kiln Lane WB Approach	

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	3.65	4.50	12.6	21.0	49.2	10.8	
2	3.70	8.24	19.0	40.0	49.2	16.4	
3	3.25	7.99	12.3	31.0	49.2	14.8	
4	3.97	8.14	64.8	19.9	49.2	17.5	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.576	1409
2	0.697	2037
3	0.640	1742
4	0.748	2348

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

Traffic Demand

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	22	100.000
2		✓	1279	100.000
3		✓	508	100.000
4		✓	214	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	15	5	2
	2	21	2	698	558
	3	5	354	0	149
	4	3	129	82	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.02	3.51	0.0	A
2	0.72	6.42	2.5	A
3	0.42	4.66	0.7	A
4	0.12	2.00	0.1	A

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	17	426	1163	0.014	17	0.0	3.138	A
2	963	67	1990	0.484	959	0.9	3.478	A
3	382	437	1462	0.262	381	0.4	3.325	A
4	161	287	2133	0.076	161	0.1	1.824	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	20	509	1115	0.018	20	0.0	3.285	A
2	1150	80	1981	0.580	1148	1.4	4.313	A
3	457	523	1407	0.325	456	0.5	3.784	A
4	192	343	2091	0.092	192	0.1	1.894	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	24	623	1049	0.023	24	0.0	3.511	A
2	1408	98	1969	0.715	1404	2.5	6.325	A
3	559	640	1332	0.420	558	0.7	4.645	A
4	236	420	2034	0.116	235	0.1	2.001	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	24	624	1049	0.023	24	0.0	3.512	A
2	1408	98	1969	0.715	1408	2.5	6.418	A
3	559	642	1331	0.420	559	0.7	4.664	A
4	236	421	2033	0.116	236	0.1	2.002	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	20	511	1114	0.018	20	0.0	3.290	A
2	1150	80	1981	0.580	1154	1.4	4.375	A
3	457	526	1405	0.325	458	0.5	3.802	A
4	192	344	2090	0.092	192	0.1	1.895	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	17	427	1162	0.014	17	0.0	3.143	A
2	963	67	1990	0.484	965	0.9	3.516	A
3	382	440	1460	0.262	383	0.4	3.344	A
4	161	288	2132	0.076	161	0.1	1.828	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: 4.0 OPERATION Kiln Lane ROUNDABOUT.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\4_R'abouts\4.0 Kiln Lane Roundabout Proposed Mitigation\ss
Report generation date: 15/10/2019 15:43:42

«Do Minimum - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT, 2026, PM

»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Results

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CLEASBYD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Do Minimum	100.000

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT, 2026	PM	ONE HOUR	15:45	17:15	15

Do Minimum - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT, 2026, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2022, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D8 - OPERATION - BASE + COMMITTED + DEVELOPMENT, 2028, PM	Demand Set 8: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT, 2026, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	4.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Unnamed Access	
2	A1173 EB Approach	
3	A1173 SB Approach	
4	Kiln Lane WB Approach	

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	3.65	4.50	12.6	21.0	49.2	10.8	
2	3.70	8.24	19.0	40.0	49.2	16.4	
3	3.25	7.99	12.3	31.0	49.2	14.8	
4	3.97	8.14	64.8	19.9	49.2	17.5	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.576	1409
2	0.697	2037
3	0.640	1742
4	0.748	2348

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

Traffic Demand

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	35	100.000
2		✓	491	100.000
3		✓	977	100.000
4		✓	411	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	28	4	3	0
	2	25	0	368	98
	3	3	825	1	148
	4	2	289	120	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.06	6.14	0.1	A
2	0.28	2.61	0.4	A
3	0.66	6.43	1.9	A
4	0.28	3.08	0.4	A

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	26	926	875	0.030	26	0.0	4.243	A
2	370	114	1957	0.189	369	0.2	2.265	A
3	736	113	1669	0.441	732	0.8	3.830	A
4	309	661	1853	0.167	309	0.2	2.329	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	31	1109	770	0.041	31	0.0	4.877	A
2	441	137	1942	0.227	441	0.3	2.399	A
3	878	136	1655	0.531	877	1.1	4.619	A
4	369	792	1756	0.210	369	0.3	2.596	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	39	1357	627	0.061	38	0.1	6.120	A
2	541	167	1920	0.282	540	0.4	2.608	A
3	1076	166	1636	0.658	1073	1.9	6.360	A
4	453	968	1624	0.279	452	0.4	3.070	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	39	1360	625	0.062	39	0.1	6.138	A
2	541	167	1920	0.282	541	0.4	2.608	A
3	1076	166	1636	0.658	1076	1.9	6.426	A
4	453	971	1622	0.279	453	0.4	3.078	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	31	1113	767	0.041	32	0.0	4.897	A
2	441	137	1941	0.227	442	0.3	2.402	A
3	878	136	1655	0.531	881	1.1	4.672	A
4	369	796	1753	0.211	370	0.3	2.605	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	26	931	872	0.030	26	0.0	4.257	A
2	370	115	1957	0.189	370	0.2	2.268	A
3	736	114	1669	0.441	737	0.8	3.867	A
4	309	665	1850	0.167	310	0.2	2.336	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: 4.0 CONSTRUCTION Kiln Lane ROUNDABOUT 15 min segments.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\4_R'abouts\4.0 Kiln Lane Roundabout Proposed Mitigation
Report generation date: 17/10/2019 09:40:33

»Do Minimum - CONSTRUCTION - BASE + COMMITTED, 2021, PM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021, PM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED, 2021, AM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021, AM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED, 2027, AM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED, 2027, PM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027, AM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027, PM

Summary of junction performance

	PM				AM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Do Minimum - CONSTRUCTION - BASE + COMMITTED, 2021							
Arm 1	0.0	9.71	0.01	A	0.0	3.55	0.00	A
Arm 2	0.6	3.41	0.31	A	6.5	14.08	0.87	B
Arm 3	3.7	10.88	0.79	B	0.9	5.91	0.44	A
Arm 4	1.2	5.32	0.52	A	0.3	2.86	0.17	A
	Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021							
Arm 1	0.0	11.08	0.01	B	0.0	3.56	0.00	A
Arm 2	0.6	3.50	0.32	A	11.9	23.96	0.94	C
Arm 3	3.8	11.18	0.79	B	1.0	6.72	0.47	A
Arm 4	1.5	5.95	0.57	A	0.3	2.91	0.18	A
	Do Minimum - CONSTRUCTION - BASE + COMMITTED, 2027							
Arm 1	0.3	22.03	0.17	C	0.1	6.34	0.03	A
Arm 2	0.7	3.69	0.36	A	7.5	16.00	0.89	C
Arm 3	5.7	15.23	0.86	C	1.1	6.89	0.49	A
Arm 4	1.5	6.37	0.58	A	0.3	2.95	0.19	A
	Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027							
Arm 1	0.4	27.84	0.20	D	0.1	6.40	0.03	A
Arm 2	0.7	3.77	0.36	A	14.6	28.63	0.95	D
Arm 3	5.9	15.78	0.86	C	1.3	8.02	0.53	A
Arm 4	2.0	7.35	0.64	A	0.4	3.02	0.20	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CLEASBYD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	CONSTRUCTION - BASE + COMMITTED, 2021	PM	DIRECT	16:00	17:00	60	15
D4	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021	PM	DIRECT	16:00	17:00	60	15
D5	CONSTRUCTION - BASE + COMMITTED, 2021	AM	DIRECT	07:00	08:00	60	15
D6	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021	AM	DIRECT	07:00	08:00	60	15
D7	CONSTRUCTION - BASE + COMMITTED, 2027	AM	DIRECT	07:00	08:00	60	15
D8	CONSTRUCTION - BASE + COMMITTED, 2027	PM	DIRECT	16:00	17:00	60	15
D9	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027	AM	DIRECT	07:00	08:00	60	15
D10	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027	PM	DIRECT	16:00	17:00	60	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Do Minimum	100.000

Do Minimum - CONSTRUCTION - BASE + COMMITTED, 2021, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	7.26	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Unnamed Access	
2	A1173 EB Approach	
3	A1173 SB Approach	
4	Kiln Lane WB Approach	

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	3.65	4.50	12.6	21.0	49.2	10.8	
2	3.70	8.24	19.0	40.0	49.2	16.4	
3	3.25	7.99	12.3	31.0	49.2	14.8	
4	3.97	8.14	64.8	19.9	49.2	17.5	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.576	1409
2	0.697	2037
3	0.640	1742
4	0.748	2348

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	CONSTRUCTION - BASE + COMMITTED, 2021	PM	DIRECT	16:00	17:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

16:00 - 16:15

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	266	348
	3	0	1047	0	150
	4	0	684	121	0

16:15 - 16:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	253	281
	3	0	514	0	175
	4	0	576	150	0

16:30 - 16:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	4	0	0
	2	0	0	299	211
	3	0	956	4	171
	4	0	680	162	0

16:45 - 17:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	303	190
	3	0	706	0	166
	4	0	551	79	0

Vehicle Mix

16:00 - 16:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	14	40
	3	0	4	0	24
	4	0	14	21	0

16:15 - 16:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	20	41
	3	0	6	0	62
	4	0	13	20	0

16:30 - 16:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	16	41
	3	0	5	0	41
	4	0	11	18	0

16:45 - 17:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	16	53
	3	0	4	0	54
	4	0	11	27	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.01	9.71	0.0	A
2	0.31	3.41	0.6	A
3	0.79	10.88	3.7	B
4	0.52	5.32	1.2	A

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1834	351	0.000	0	0.0	0.000	A
2	614	120	1953	0.314	612	0.6	3.413	A
3	1197	347	1520	0.787	1182	3.7	10.878	B
4	805	1034	1575	0.511	800	1.2	5.315	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1252	687	0.000	0	0.0	0.000	A
2	534	150	1932	0.276	534	0.5	3.355	A
3	689	281	1562	0.441	700	0.9	4.911	A
4	726	524	1956	0.371	728	0.7	3.361	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	4	1794	374	0.011	4	0.0	9.715	A
2	510	166	1921	0.265	510	0.5	3.193	A
3	1131	211	1607	0.704	1125	2.5	8.048	A
4	842	954	1634	0.515	840	1.2	5.076	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1343	635	0.000	0.04	0.0	0.000	A
2	493	80	1981	0.249	493	0.4	3.093	A
3	872	190	1620	0.538	877	1.3	5.401	A
4	630	710	1817	0.347	632	0.6	3.436	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	7.54	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D4	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021	PM	DIRECT	16:00	17:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

16:00 - 16:15

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	266	364
	3	0	1047	0	150
	4	0	772	125	0

16:15 - 16:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	253	289
	3	0	514	0	175
	4	0	660	150	0

16:30 - 16:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	4	0	0
	2	0	0	299	219
	3	0	956	4	171
	4	0	760	162	0

16:45 - 17:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	303	198
	3	0	706	0	166
	4	0	631	79	0

Vehicle Mix

16:00 - 16:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	14	42
	3	0	4	0	24
	4	0	13	20	0

16:15 - 16:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	20	43
	3	0	6	0	62
	4	0	12	20	0

16:30 - 16:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	16	43
	3	0	5	0	41
	4	0	11	18	0

16:45 - 17:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	16	55
	3	0	4	0	54
	4	0	10	27	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.01	11.08	0.0	B
2	0.32	3.50	0.6	A
3	0.79	11.18	3.8	B
4	0.57	5.95	1.5	A

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1925	299	0.000	0	0.0	0.000	A
2	630	124	1950	0.323	628	0.6	3.496	A
3	1197	363	1510	0.793	1182	3.8	11.177	B
4	897	1034	1575	0.570	891	1.5	5.947	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1337	638	0.000	0	0.0	0.000	A
2	542	150	1932	0.281	542	0.5	3.402	A
3	689	289	1557	0.443	701	0.9	4.945	A
4	810	525	1955	0.414	813	0.8	3.582	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	4	1874	329	0.012	4	0.0	11.085	B
2	518	166	1921	0.270	518	0.5	3.234	A
3	1131	219	1602	0.706	1125	2.5	8.133	A
4	922	954	1634	0.564	920	1.4	5.628	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	1423	588	0.000	0.05	0.0	0.000	A
2	501	80	1981	0.253	501	0.4	3.134	A
3	872	198	1615	0.540	877	1.3	5.442	A
4	710	710	1817	0.391	713	0.7	3.653	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED, 2021, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	11.22	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D5	CONSTRUCTION - BASE + COMMITTED, 2021	AM	DIRECT	07:00	08:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

07:00 - 07:15

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	4	839	597
	3	0	170	0	54
	4	0	265	117	0

07:15 - 07:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	1031	643
	3	0	249	0	100
	4	0	211	42	0

07:30 - 07:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	4	948	781
	3	0	341	0	75
	4	0	194	63	0

07:45 - 08:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	4	0	0
	2	0	0	869	752
	3	4	341	0	204
	4	0	249	88	0

Vehicle Mix

07:00 - 07:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	4	12
	3	0	17	0	18
	4	0	42	56	0

07:15 - 07:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	5	16
	3	0	28	0	33
	4	0	46	67	0

07:30 - 07:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	3	12
	3	0	26	0	29
	4	0	47	25	0

07:45 - 08:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	5	10
	3	0	21	0	11
	4	0	43	24	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.00	3.55	0.0	A
2	0.87	14.08	6.5	B
3	0.44	5.91	0.9	A
4	0.17	2.86	0.3	A

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	554	1089	0.000	0	0.0	0.000	A
2	1440	117	1956	0.736	1428	2.9	7.169	A
3	224	596	1360	0.165	223	0.2	3.707	A
4	382	173	2218	0.172	381	0.3	2.859	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	502	1119	0.000	0	0.0	0.000	A
2	1674	42	2007	0.834	1665	5.1	11.172	B
3	349	640	1332	0.262	348	0.5	4.728	A
4	253	248	2162	0.117	253	0.2	2.812	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	601	1062	0.000	0	0.0	0.000	A
2	1733	63	1993	0.870	1727	6.5	14.081	B
3	416	781	1242	0.335	415	0.6	5.506	A
4	257	344	2090	0.123	257	0.2	2.767	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	4	678	1018	0.004	4	0.0	3.549	A
2	1621	88	1976	0.821	1626	5.2	11.253	B
3	549	754	1259	0.436	548	0.9	5.910	A
4	337	345	2090	0.161	337	0.3	2.823	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	18.52	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D6	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021	AM	DIRECT	07:00	08:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

07:00 - 07:15

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	4	839	733
	3	0	170	0	58
	4	0	281	117	0

07:15 - 07:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	1031	775
	3	0	249	0	100
	4	0	219	42	0

07:30 - 07:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	4	948	913
	3	0	341	0	75
	4	0	202	63	0

07:45 - 08:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	4	0	0
	2	0	0	869	884
	3	4	341	0	204
	4	0	257	88	0

Vehicle Mix

07:00 - 07:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	4	10
	3	0	17	0	17
	4	0	44	56	0

07:15 - 07:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	5	14
	3	0	28	0	33
	4	0	47	67	0

07:30 - 07:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	3	10
	3	0	26	0	29
	4	0	48	25	0

07:45 - 08:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	5	9
	3	0	21	0	11
	4	0	44	24	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.00	3.56	0.0	A
2	0.94	23.96	11.9	C
3	0.47	6.72	1.0	A
4	0.18	2.91	0.3	A

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	570	1080	0.000	0	0.0	0.000	A
2	1576	117	1956	0.806	1559	4.2	9.332	A
3	228	729	1275	0.179	227	0.3	4.015	A
4	398	173	2218	0.179	397	0.3	2.910	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	510	1115	0.000	0	0.0	0.000	A
2	1806	42	2007	0.900	1790	8.3	16.752	C
3	349	769	1250	0.279	348	0.5	5.159	A
4	261	248	2162	0.121	261	0.2	2.841	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	0	609	1058	0.000	0	0.0	0.000	A
2	1865	63	1993	0.936	1851	11.9	23.961	C
3	416	908	1161	0.358	415	0.7	6.104	A
4	265	344	2091	0.127	265	0.2	2.796	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	4	686	1013	0.004	4	0.0	3.565	A
2	1753	88	1976	0.887	1763	9.4	19.053	C
3	549	888	1173	0.468	548	1.0	6.716	A
4	345	345	2090	0.165	345	0.3	2.853	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED, 2027, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	12.51	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D7	CONSTRUCTION - BASE + COMMITTED, 2027	AM	DIRECT	07:00	08:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

07:00 - 07:15

		To			
		1	2	3	4
From	1	0	20	8	8
	2	24	4	761	661
	3	8	193	0	58
	4	8	288	124	0

07:15 - 07:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	12	8	0
	2	20	0	974	706
	3	4	265	0	107
	4	4	235	44	0

07:30 - 07:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	12	4	0
	2	20	4	885	852
	3	4	367	0	80
	4	0	217	67	0

07:45 - 08:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	16	0	0
	2	20	0	801	826
	3	4	371	0	218
	4	0	271	93	0

Vehicle Mix

07:00 - 07:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	67	100	100
	2	20	0	5	12
	3	100	19	0	18
	4	0	40	56	0

07:15 - 07:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	50	100	0
	2	25	0	6	17
	3	0	25	0	33
	4	0	45	67	0

07:30 - 07:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	50	0	0
	2	25	0	4	12
	3	0	26	0	29
	4	0	47	25	0

07:45 - 08:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	32	0	0
	2	25	0	6	11
	3	0	20	0	11
	4	0	44	24	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.03	6.34	0.1	A
2	0.89	16.00	7.5	C
3	0.49	6.89	1.1	A
4	0.19	2.95	0.3	A

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	36	607	1059	0.034	36	0.1	6.339	A
2	1450	139	1940	0.748	1438	3.1	7.590	A
3	259	691	1300	0.199	258	0.3	4.152	A
4	420	228	2177	0.193	419	0.3	2.931	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	20	544	1095	0.018	20	0.0	5.576	A
2	1700	52	2000	0.850	1689	5.8	12.374	B
3	376	722	1280	0.294	375	0.5	5.042	A
4	283	288	2132	0.133	283	0.2	2.866	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	16	654	1032	0.016	16	0.0	4.735	A
2	1761	71	1987	0.886	1754	7.5	16.003	C
3	451	871	1184	0.381	450	0.8	6.180	A
4	284	394	2053	0.138	284	0.2	2.872	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	16	734	985	0.016	16	0.0	4.903	A
2	1647	93	1972	0.835	1654	5.9	12.565	B
3	593	849	1199	0.495	592	1.1	6.887	A
4	364	395	2053	0.177	364	0.3	2.948	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED, 2027, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	9.60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D8	CONSTRUCTION - BASE + COMMITTED, 2027	PM	DIRECT	16:00	17:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

16:00 - 16:15

		To			
		1	2	3	4
From	1	0	32	8	8
	2	28	0	290	372
	3	8	1105	0	159
	4	8	733	128	0

16:15 - 16:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	28	4	4
	2	24	0	276	301
	3	4	534	0	186
	4	0	618	159	0

16:30 - 16:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	28	4	0
	2	24	0	330	230
	3	0	1012	4	182
	4	0	724	173	0

16:45 - 17:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	24	0	0
	2	24	0	338	213
	3	0	742	0	177
	4	0	587	84	0

Vehicle Mix

16:00 - 16:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	33	100	100
	2	75	0	14	39
	3	100	4	0	24
	4	100	14	21	0

16:15 - 16:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	17	0	0
	2	50	0	19	40
	3	0	6	0	62
	4	0	13	20	0

16:30 - 16:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	16	0	0
	2	50	0	17	39
	3	0	5	0	41
	4	0	11	18	0

16:45 - 17:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	20	0	0
	2	50	0	17	53
	3	0	4	0	54
	4	0	11	27	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.17	22.03	0.3	C
2	0.36	3.69	0.7	A
3	0.86	15.23	5.7	C
4	0.58	6.37	1.5	A

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	48	1940	290	0.165	47	0.3	22.033	C
2	690	143	1937	0.356	687	0.7	3.685	A
3	1272	406	1482	0.858	1249	5.7	15.233	C
4	869	1121	1510	0.576	863	1.5	6.367	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	36	1331	642	0.056	37	0.1	6.790	A
2	601	168	1920	0.313	601	0.6	3.544	A
3	724	330	1531	0.473	743	1.0	5.430	A
4	777	579	1915	0.406	780	0.8	3.636	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	32	1902	312	0.103	32	0.1	14.587	B
2	584	180	1911	0.306	584	0.6	3.420	A
3	1198	254	1579	0.759	1189	3.3	9.859	A
4	897	1032	1576	0.569	894	1.5	5.905	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	24	1422	589	0.041	24	0.1	7.649	A
2	575	85	1978	0.291	575	0.5	3.322	A
3	919	237	1590	0.578	926	1.5	6.075	A
4	671	772	1770	0.379	674	0.7	3.712	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	21.58	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D9	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027	AM	DIRECT	07:00	08:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

07:00 - 07:15

		To			
		1	2	3	4
From	1	0	20	8	8
	2	24	4	761	797
	3	8	193	0	62
	4	8	304	124	0

07:15 - 07:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	12	8	0
	2	20	0	974	838
	3	4	265	0	107
	4	4	243	44	0

07:30 - 07:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	12	4	0
	2	20	4	885	984
	3	4	367	0	80
	4	0	225	67	0

07:45 - 08:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	16	0	0
	2	20	0	801	958
	3	4	371	0	218
	4	0	279	93	0

Vehicle Mix

07:00 - 07:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	67	100	100
	2	20	0	5	11
	3	100	19	0	17
	4	100	42	56	0

07:15 - 07:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	50	100	0
	2	25	0	6	15
	3	0	25	0	33
	4	0	47	67	0

07:30 - 07:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	50	0	0
	2	25	0	4	11
	3	0	26	0	29
	4	0	48	25	0

07:45 - 08:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	32	0	0
	2	25	0	6	10
	3	0	20	0	11
	4	0	45	24	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.03	6.40	0.1	A
2	0.95	28.63	14.6	D
3	0.53	8.02	1.3	A
4	0.20	3.02	0.4	A

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	36	623	1050	0.034	36	0.1	6.396	A
2	1586	139	1940	0.818	1568	4.6	10.028	B
3	263	823	1215	0.216	262	0.3	4.525	A
4	436	228	2177	0.200	435	0.4	3.023	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	20	552	1091	0.018	20	0.0	5.600	A
2	1832	52	2000	0.916	1812	9.7	19.094	C
3	376	849	1198	0.314	375	0.6	5.540	A
4	291	288	2132	0.136	292	0.2	2.909	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	16	662	1027	0.016	16	0.0	4.756	A
2	1893	71	1987	0.953	1873	14.6	28.631	D
3	451	995	1105	0.408	450	0.9	6.923	A
4	292	393	2054	0.142	292	0.2	2.902	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	16	742	981	0.016	16	0.0	4.926	A
2	1779	93	1972	0.902	1792	11.4	23.106	C
3	593	984	1112	0.533	591	1.3	8.017	A
4	372	395	2053	0.181	372	0.3	2.979	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Demand Sets	D4 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2021, PM	Demand Set 4: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	10.13	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D10	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT, 2027	PM	DIRECT	16:00	17:00	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000
4		✓	100.000

Origin-Destination Data

Demand (PCU/hr)

16:00 - 16:15

		To			
		1	2	3	4
From	1	0	32	8	8
	2	28	0	290	388
	3	8	1105	0	159
	4	8	821	132	0

16:15 - 16:30

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	28	4	4
	2	24	0	276	309
	3	4	534	0	186
	4	0	702	159	0

16:30 - 16:45

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	28	4	0
	2	24	0	330	238
	3	0	1012	4	182
	4	0	804	173	0

16:45 - 17:00

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	24	0	0
	2	24	0	338	221
	3	0	742	0	177
	4	0	667	84	0

Vehicle Mix

16:00 - 16:15

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	33	100	100
	2	75	0	14	41
	3	100	4	0	24
	4	100	14	20	0

16:15 - 16:30

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	17	0	0
	2	50	0	19	41
	3	0	6	0	62
	4	0	12	20	0

16:30 - 16:45

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	16	0	0
	2	50	0	17	40
	3	0	5	0	41
	4	0	11	18	0

16:45 - 17:00

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	20	0	0
	2	50	0	17	54
	3	0	4	0	54
	4	0	10	27	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.20	27.84	0.4	D
2	0.36	3.77	0.7	A
3	0.86	15.78	5.9	C
4	0.64	7.35	2.0	A

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	48	2030	239	0.201	47	0.4	27.844	D
2	706	146	1935	0.365	703	0.7	3.772	A
3	1272	422	1472	0.864	1248	5.9	15.779	C
4	961	1120	1510	0.636	953	2.0	7.346	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	36	1417	592	0.061	37	0.1	7.419	A
2	609	168	1920	0.317	610	0.6	3.585	A
3	724	338	1526	0.474	744	1.1	5.479	A
4	861	580	1914	0.450	865	0.9	3.905	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	32	1981	267	0.120	32	0.2	17.407	C
2	592	180	1911	0.310	592	0.6	3.452	A
3	1198	262	1574	0.761	1189	3.3	9.979	A
4	977	1032	1576	0.620	974	1.8	6.663	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	24	1503	542	0.044	24	0.1	8.337	A
2	583	85	1978	0.295	583	0.5	3.358	A
3	919	245	1585	0.580	926	1.6	6.125	A
4	751	772	1770	0.424	755	0.8	3.974	A

ANNEX 19: A1173/ SHIIP SITE ACCESS MODELLING OUTPUTS

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: A1173 New Roundabout.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\A1173 New Roundabout
Report generation date: 17/10/2019 09:20:50

»2021 Base + Commmitted, AM
»2021 Base + Committed, PM
»2021 Base + Commmitted + Development, AM
»2021 Base + Committed + Development , PM
»2023 Base + Commmitted, AM
»2023 Base + Committed, PM
»2023 Base + Commmitted + Development, AM
»2023 Base + Committed + Development, PM
»2030 Base + Commmitted, AM
»2030 Base + Committed, PM
»2030 Base + Commmitted + Development, AM
»2030 Base + Committed + Development, PM
»2027 Base + Commmitted, AM
»2027 Base + Committed, PM
»2027 Base + Commmitted + Development, AM
»2027 Base + Committed + Development , PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2021 Base + Commmitted							
Arm 1	0.0	2.68	0.01	A				
Arm 2	1.9	3.65	0.64	A				
Arm 3	0.1	10.18	0.04	B				
Arm 4	0.3	2.04	0.20	A				
	2021 Base + Committed							
Arm 1					0.0	4.76	0.03	A
Arm 2					0.4	2.05	0.22	A
Arm 3					0.0	2.93	0.01	A
Arm 4					1.2	2.87	0.54	A
	2021 Base + Commmitted + Development							
Arm 1	0.0	2.70	0.01	A				
Arm 2	2.4	4.23	0.69	A				
Arm 3	0.1	12.42	0.04	B				
Arm 4	0.3	2.07	0.20	A				
	2021 Base + Committed + Development							
Arm 1					0.0	5.18	0.04	A

Arm 2					0.4	2.08	0.23	A
Arm 3					0.0	2.95	0.01	A
Arm 4					1.4	3.07	0.57	A
	2023 Base + Commmitted							
Arm 1	0.0	3.06	0.03	A				
Arm 2	1.9	3.65	0.63	A				
Arm 3	0.1	8.81	0.04	A				
Arm 4	0.3	2.10	0.21	A				
	2023 Base + Committed							
Arm 1					0.1	5.51	0.12	A
Arm 2					0.4	2.11	0.23	A
Arm 3					0.0	3.10	0.03	A
Arm 4					1.3	2.96	0.55	A
	2023 Base + Commmitted + Development							
Arm 1	0.0	3.18	0.03	A				
Arm 2	2.2	4.01	0.66	A				
Arm 3	0.1	9.77	0.04	A				
Arm 4	0.4	2.27	0.23	A				
	2023 Base + Committed + Development							
Arm 1					0.1	5.68	0.12	A
Arm 2					0.4	2.17	0.24	A
Arm 3					0.0	3.15	0.03	A
Arm 4					1.4	3.06	0.56	A
	2030 Base + Commmitted							
Arm 1	0.1	3.42	0.06	A				
Arm 2	2.4	4.36	0.69	A				
Arm 3	0.1	11.21	0.05	B				
Arm 4	0.4	2.20	0.23	A				
	2030 Base + Committed							
Arm 1					0.3	7.36	0.23	A
Arm 2					0.5	2.25	0.28	A
Arm 3					0.0	3.33	0.03	A
Arm 4					1.7	3.48	0.61	A
	2030 Base + Commmitted + Development							
Arm 1	0.1	3.55	0.06	A				
Arm 2	2.8	4.87	0.72	A				
Arm 3	0.1	12.81	0.06	B				
Arm 4	0.5	2.36	0.26	A				
	2030 Base + Committed + Development							
Arm 1					0.3	7.66	0.24	A
Arm 2					0.5	2.31	0.29	A
Arm 3					0.0	3.39	0.03	A
Arm 4					1.7	3.61	0.62	A
	2027 Base + Commmitted							
Arm 1	0.1	3.40	0.06	A				
Arm 2	2.3	4.20	0.68	A				
Arm 3	0.1	10.63	0.05	B				
Arm 4	0.4	2.18	0.23	A				
	2027 Base + Committed							
Arm 1					0.3	7.36	0.23	A
Arm 2					0.5	2.26	0.28	A
Arm 3					0.0	3.33	0.03	A
Arm 4					1.7	3.48	0.61	A
	2027 Base + Commmitted + Development							
Arm 1	0.1	3.42	0.06	A				
Arm 2	2.9	4.93	0.73	A				

Arm 3	0.1	13.51	0.06	B				
Arm 4	0.4	2.20	0.23	A				
	2027 Base + Committed + Development							
Arm 1					0.4	8.33	0.25	A
Arm 2					0.5	2.29	0.28	A
Arm 3					0.0	3.35	0.03	A
Arm 4					1.9	3.79	0.64	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/02/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\henry.eyre
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021 Base + Commmitted	AM	ONE HOUR	06:45	08:15	15
D2	2021 Base + Committed	PM	ONE HOUR	15:45	17:15	15
D3	2021 Base + Commmitted + Development	AM	ONE HOUR	06:45	08:15	15
D4	2021 Base + Committed + Development	PM	ONE HOUR	15:45	17:15	15
D5	2023 Base + Commmitted	AM	ONE HOUR	06:45	08:15	15
D6	2023 Base + Committed	PM	ONE HOUR	15:45	17:15	15
D7	2023 Base + Commmitted + Development	AM	ONE HOUR	06:45	08:15	15
D8	2023 Base + Committed + Development	PM	ONE HOUR	15:45	17:15	15
D9	2030 Base + Commmitted	AM	ONE HOUR	06:45	08:15	15
D10	2030 Base + Committed	PM	ONE HOUR	15:45	17:15	15
D11	2030 Base + Commmitted + Development	AM	ONE HOUR	06:45	08:15	15
D12	2030 Base + Committed + Development	PM	ONE HOUR	15:45	17:15	15
D13	2027 Base + Commmitted	AM	ONE HOUR	06:45	08:15	15
D14	2027 Base + Committed	PM	ONE HOUR	15:45	17:15	15
D15	2027 Base + Commmitted + Development	AM	ONE HOUR	06:45	08:15	15
D16	2027 Base + Committed + Development	PM	ONE HOUR	15:45	17:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2021 Base + Commmitted, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	3.33	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Site Access (S)	
2	A1173 (W)	
3	Site Access (N)	
4	A1173 (E)	

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	3.65	7.14	24.4	20.0	40.1	15.5	
2	4.92	10.00	92.2	20.0	40.1	13.2	
3	3.64	7.11	20.7	20.0	40.1	17.3	
4	4.93	10.00	88.5	20.0	40.1	14.4	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.702	1924
2	0.911	2962
3	0.688	1866
4	0.906	2943

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021 Base + Commmitted	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	9	100.000
2		✓	1710	100.000
3		✓	19	100.000
4		✓	517	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	8	0	1
	2	23	0	13	1674
	3	0	13	0	6
	4	4	509	4	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	14	0	0
	2	5	0	18	9
	3	0	44	0	100
	4	0	33	33	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.01	2.68	0.0	A
2	0.64	3.65	1.9	A
3	0.04	10.18	0.1	B
4	0.20	2.04	0.3	A

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	7	395	1646	0.004	7	0.0	2.464	A
2	1287	4	2959	0.435	1284	0.8	2.337	A
3	14	1275	989	0.014	14	0.0	5.836	A
4	389	27	2919	0.133	388	0.2	1.887	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	8	473	1592	0.005	8	0.0	2.550	A
2	1537	4	2958	0.520	1536	1.2	2.756	A
3	17	1525	817	0.021	17	0.0	7.112	A
4	465	32	2914	0.160	465	0.3	1.949	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	10	579	1518	0.007	10	0.0	2.679	A
2	1883	6	2957	0.637	1880	1.9	3.633	A
3	21	1867	581	0.036	21	0.1	10.142	B
4	569	40	2907	0.196	569	0.3	2.042	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	10	579	1517	0.007	10	0.0	2.680	A
2	1883	6	2957	0.637	1883	1.9	3.650	A
3	21	1869	580	0.036	21	0.1	10.179	B
4	569	40	2907	0.196	569	0.3	2.042	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	8	473	1592	0.005	8	0.0	2.553	A
2	1537	4	2958	0.520	1540	1.2	2.771	A
3	17	1529	814	0.021	17	0.0	7.140	A
4	465	32	2914	0.160	465	0.3	1.950	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	7	396	1646	0.004	7	0.0	2.467	A
2	1287	4	2959	0.435	1289	0.8	2.350	A
3	14	1280	985	0.015	14	0.0	5.855	A
4	389	27	2919	0.133	389	0.2	1.887	A

2021 Base + Committed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	2.65	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2021 Base + Committed	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	25	100.000
2		✓	599	100.000
3		✓	16	100.000
4		✓	1423	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	21	0	4
	2	8	0	12	579
	3	0	12	0	4
	4	1	1420	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	5	0	0
	2	14	0	33	31
	3	0	9	0	33
	4	0	8	100	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.03	4.76	0.0	A
2	0.22	2.05	0.4	A
3	0.01	2.93	0.0	A
4	0.54	2.87	1.2	A

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	19	1077	1168	0.016	19	0.0	3.262	A
2	451	5	2958	0.152	450	0.2	1.876	A
3	12	444	1560	0.008	12	0.0	2.653	A
4	1071	15	2930	0.366	1069	0.6	2.088	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	22	1288	1020	0.022	22	0.0	3.759	A
2	538	5	2958	0.182	538	0.3	1.945	A
3	14	531	1501	0.010	14	0.0	2.764	A
4	1279	18	2927	0.437	1278	0.8	2.358	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	28	1577	817	0.034	27	0.0	4.748	A
2	660	7	2956	0.223	659	0.4	2.049	A
3	18	650	1418	0.012	18	0.0	2.932	A
4	1567	22	2923	0.536	1565	1.2	2.860	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	28	1579	816	0.034	28	0.0	4.755	A
2	660	7	2956	0.223	660	0.4	2.049	A
3	18	651	1418	0.012	18	0.0	2.933	A
4	1567	22	2923	0.536	1567	1.2	2.867	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	22	1291	1018	0.022	23	0.0	3.766	A
2	538	5	2958	0.182	539	0.3	1.948	A
3	14	532	1500	0.010	14	0.0	2.767	A
4	1279	18	2927	0.437	1281	0.8	2.367	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	19	1080	1166	0.016	19	0.0	3.269	A
2	451	5	2958	0.152	451	0.2	1.879	A
3	12	445	1560	0.008	12	0.0	2.656	A
4	1071	15	2929	0.366	1072	0.6	2.095	A

2021 Base + Commmitted + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	3.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2021 Base + Commmitted + Development	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	9	100.000
2		✓	1843	100.000
3		✓	19	100.000
4		✓	529	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	8	0	1
	2	23	0	13	1807
	3	0	13	0	6
	4	4	521	4	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	14	0	0
	2	5	0	18	9
	3	0	44	0	100
	4	0	34	33	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.01	2.70	0.0	A
2	0.69	4.23	2.4	A
3	0.04	12.42	0.1	B
4	0.20	2.07	0.3	A

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	7	404	1640	0.004	7	0.0	2.479	A
2	1388	4	2959	0.469	1384	1.0	2.484	A
3	14	1375	920	0.016	14	0.0	6.277	A
4	398	27	2919	0.136	397	0.2	1.907	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	8	483	1584	0.005	8	0.0	2.569	A
2	1657	4	2958	0.560	1655	1.4	3.007	A
3	17	1644	734	0.023	17	0.0	7.926	A
4	476	32	2914	0.163	475	0.3	1.972	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	10	592	1508	0.007	10	0.0	2.702	A
2	2029	6	2957	0.686	2025	2.3	4.192	A
3	21	2012	481	0.043	21	0.1	12.343	B
4	582	39	2907	0.200	582	0.3	2.069	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	10	592	1508	0.007	10	0.0	2.703	A
2	2029	6	2957	0.686	2029	2.4	4.226	A
3	21	2016	479	0.044	21	0.1	12.419	B
4	582	40	2907	0.200	582	0.3	2.069	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	8	484	1584	0.005	8	0.0	2.569	A
2	1657	4	2958	0.560	1661	1.4	3.032	A
3	17	1650	731	0.023	17	0.0	7.973	A
4	476	33	2914	0.163	476	0.3	1.975	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	7	405	1639	0.004	7	0.0	2.482	A
2	1388	4	2959	0.469	1389	1.0	2.503	A
3	14	1380	916	0.016	14	0.0	6.307	A
4	398	27	2919	0.136	398	0.2	1.911	A

2021 Base + Committed + Development , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	2.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2021 Base + Committed + Development	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	25	100.000
2		✓	611	100.000
3		✓	16	100.000
4		✓	1506	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	21	0	4
	2	8	0	12	591
	3	0	12	0	4
	4	1	1503	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	5	0	0
	2	14	0	33	32
	3	0	9	0	33
	4	0	8	100	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.04	5.18	0.0	A
2	0.23	2.08	0.4	A
3	0.01	2.95	0.0	A
4	0.57	3.07	1.4	A

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	19	1139	1124	0.017	19	0.0	3.391	A
2	460	5	2958	0.155	459	0.2	1.897	A
3	12	453	1554	0.008	12	0.0	2.664	A
4	1134	15	2930	0.387	1131	0.7	2.160	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	22	1363	968	0.023	22	0.0	3.967	A
2	549	5	2958	0.186	549	0.3	1.969	A
3	14	542	1493	0.010	14	0.0	2.778	A
4	1354	18	2927	0.463	1353	0.9	2.470	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	28	1668	753	0.037	27	0.0	5.167	A
2	673	7	2956	0.228	672	0.4	2.076	A
3	18	664	1409	0.013	18	0.0	2.951	A
4	1658	22	2923	0.567	1656	1.4	3.067	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	28	1670	752	0.037	28	0.0	5.176	A
2	673	7	2956	0.228	673	0.4	2.076	A
3	18	664	1409	0.013	18	0.0	2.952	A
4	1658	22	2923	0.567	1658	1.4	3.074	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	22	1366	966	0.023	23	0.0	3.978	A
2	549	5	2958	0.186	550	0.3	1.971	A
3	14	542	1493	0.010	14	0.0	2.779	A
4	1354	18	2927	0.463	1356	0.9	2.480	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	19	1143	1122	0.017	19	0.0	3.399	A
2	460	5	2958	0.155	460	0.2	1.897	A
3	12	454	1553	0.008	12	0.0	2.667	A
4	1134	15	2929	0.387	1135	0.7	2.168	A

2023 Base + Commmitted, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	3.32	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2023 Base + Commmitted	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	41	100.000
2		✓	1693	100.000
3		✓	21	100.000
4		✓	540	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	32	0	9
	2	70	0	23	1600
	3	0	16	0	5
	4	14	520	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	23	0	29
	2	6	0	10	10
	3	0	33	0	67
	4	8	33	20	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.03	3.06	0.0	A
2	0.63	3.65	1.9	A
3	0.04	8.81	0.1	A
4	0.21	2.10	0.3	A

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	31	407	1638	0.019	31	0.0	2.783	A
2	1275	11	2952	0.432	1271	0.8	2.347	A
3	16	1261	998	0.016	16	0.0	5.120	A
4	407	65	2885	0.141	406	0.2	1.917	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	37	487	1582	0.023	37	0.0	2.894	A
2	1522	13	2950	0.516	1521	1.2	2.763	A
3	19	1508	828	0.023	19	0.0	6.216	A
4	485	77	2873	0.169	485	0.3	1.990	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	45	596	1505	0.030	45	0.0	3.063	A
2	1864	17	2947	0.632	1861	1.9	3.631	A
3	23	1846	596	0.039	23	0.1	8.783	A
4	595	94	2858	0.208	594	0.3	2.100	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	45	597	1505	0.030	45	0.0	3.063	A
2	1864	17	2947	0.632	1864	1.9	3.648	A
3	23	1849	594	0.039	23	0.1	8.814	A
4	595	95	2857	0.208	595	0.3	2.100	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	37	488	1581	0.023	37	0.0	2.895	A
2	1522	13	2950	0.516	1525	1.2	2.778	A
3	19	1512	825	0.023	19	0.0	6.241	A
4	485	77	2873	0.169	486	0.3	1.991	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	31	408	1637	0.019	31	0.0	2.784	A
2	1275	11	2952	0.432	1276	0.8	2.362	A
3	16	1265	995	0.016	16	0.0	5.139	A
4	407	65	2884	0.141	407	0.2	1.917	A

2023 Base + Committed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	2.82	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2023 Base + Committed	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	85	100.000
2		✓	625	100.000
3		✓	34	100.000
4		✓	1430	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	69	0	16
	2	39	0	21	565
	3	0	26	0	8
	4	9	1415	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	8	0	14
	2	26	0	40	32
	3	0	13	0	33
	4	29	7	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.12	5.51	0.1	A
2	0.23	2.11	0.4	A
3	0.03	3.10	0.0	A
4	0.55	2.96	1.3	A

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	64	1087	1161	0.055	64	0.1	3.578	A
2	471	17	2947	0.160	470	0.2	1.915	A
3	26	466	1546	0.017	26	0.0	2.774	A
4	1077	49	2899	0.371	1074	0.6	2.113	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	76	1300	1012	0.076	76	0.1	4.198	A
2	562	20	2944	0.191	562	0.3	1.992	A
3	31	557	1483	0.021	31	0.0	2.903	A
4	1286	58	2890	0.445	1285	0.9	2.403	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	94	1591	807	0.116	93	0.1	5.500	A
2	688	24	2940	0.234	688	0.4	2.107	A
3	37	682	1397	0.027	37	0.0	3.102	A
4	1574	72	2878	0.547	1573	1.3	2.953	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	94	1593	806	0.116	94	0.1	5.512	A
2	688	24	2940	0.234	688	0.4	2.107	A
3	37	683	1396	0.027	37	0.0	3.102	A
4	1574	72	2878	0.547	1574	1.3	2.960	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	76	1303	1010	0.076	77	0.1	4.210	A
2	562	20	2944	0.191	562	0.3	1.994	A
3	31	558	1482	0.021	31	0.0	2.906	A
4	1286	58	2890	0.445	1287	0.9	2.412	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	64	1090	1159	0.055	64	0.1	3.586	A
2	471	17	2947	0.160	471	0.3	1.915	A
3	26	467	1545	0.017	26	0.0	2.777	A
4	1077	49	2899	0.371	1077	0.6	2.120	A

2023 Base + Commmitted + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	3.61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	2023 Base + Commmitted + Development	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	41	100.000
2		✓	1767	100.000
3		✓	21	100.000
4		✓	608	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	32	0	9
	2	70	0	23	1674
	3	0	16	0	5
	4	14	588	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	23	0	29
	2	6	0	10	12
	3	0	33	0	67
	4	8	39	20	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.03	3.18	0.0	A
2	0.66	4.01	2.2	A
3	0.04	9.77	0.1	A
4	0.23	2.27	0.4	A

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	31	458	1602	0.019	31	0.0	2.846	A
2	1330	11	2952	0.451	1327	0.9	2.469	A
3	16	1316	960	0.016	16	0.0	5.326	A
4	458	65	2885	0.159	457	0.3	2.043	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	37	548	1539	0.024	37	0.0	2.977	A
2	1588	13	2950	0.538	1587	1.3	2.948	A
3	19	1574	783	0.024	19	0.0	6.587	A
4	547	77	2873	0.190	546	0.3	2.133	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	45	671	1453	0.031	45	0.0	3.177	A
2	1946	17	2947	0.660	1942	2.1	3.987	A
3	23	1927	540	0.043	23	0.1	9.727	A
4	669	94	2858	0.234	669	0.4	2.267	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	45	672	1452	0.031	45	0.0	3.178	A
2	1946	17	2947	0.660	1945	2.2	4.014	A
3	23	1930	538	0.043	23	0.1	9.774	A
4	669	95	2857	0.234	669	0.4	2.268	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	37	549	1539	0.024	37	0.0	2.978	A
2	1588	13	2950	0.538	1592	1.3	2.967	A
3	19	1579	779	0.024	19	0.0	6.621	A
4	547	78	2873	0.190	547	0.3	2.133	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	31	460	1601	0.019	31	0.0	2.850	A
2	1330	11	2952	0.451	1332	0.9	2.486	A
3	16	1321	957	0.017	16	0.0	5.347	A
4	458	65	2884	0.159	458	0.3	2.045	A

2023 Base + Committed + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	2.90	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	2023 Base + Committed + Development	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	85	100.000
2		✓	653	100.000
3		✓	34	100.000
4		✓	1458	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	69	0	16
	2	39	0	21	593
	3	0	26	0	8
	4	9	1443	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	8	0	14
	2	26	0	40	34
	3	0	13	0	33
	4	29	8	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.12	5.68	0.1	A
2	0.24	2.17	0.4	A
3	0.03	3.15	0.0	A
4	0.56	3.06	1.4	A

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	64	1108	1146	0.056	64	0.1	3.626	A
2	492	17	2947	0.167	491	0.3	1.957	A
3	26	487	1531	0.017	26	0.0	2.800	A
4	1098	49	2899	0.379	1095	0.7	2.157	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	76	1325	994	0.077	76	0.1	4.279	A
2	587	20	2944	0.199	587	0.3	2.041	A
3	31	582	1465	0.021	31	0.0	2.938	A
4	1311	58	2890	0.454	1310	0.9	2.464	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	94	1622	786	0.119	93	0.1	5.671	A
2	719	24	2940	0.245	719	0.4	2.165	A
3	37	713	1375	0.027	37	0.0	3.151	A
4	1605	72	2878	0.558	1603	1.4	3.052	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	94	1624	784	0.119	94	0.1	5.684	A
2	719	24	2940	0.245	719	0.4	2.165	A
3	37	713	1375	0.027	37	0.0	3.152	A
4	1605	72	2878	0.558	1605	1.4	3.060	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	76	1328	992	0.077	77	0.1	4.292	A
2	587	20	2944	0.199	587	0.3	2.041	A
3	31	583	1465	0.021	31	0.0	2.942	A
4	1311	58	2890	0.454	1313	0.9	2.474	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	64	1111	1144	0.056	64	0.1	3.636	A
2	492	17	2947	0.167	492	0.3	1.959	A
3	26	488	1530	0.017	26	0.0	2.802	A
4	1098	49	2899	0.379	1099	0.7	2.166	A

2030 Base + Commmitted, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	3.89	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	2030 Base + Commmitted	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	79	100.000
2		✓	1844	100.000
3		✓	21	100.000
4		✓	585	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	60	0	19
	2	118	0	23	1703
	3	0	16	0	5
	4	21	558	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	28	0	46
	2	9	0	10	10
	3	0	33	0	67
	4	5	34	20	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.06	3.42	0.1	A
2	0.69	4.36	2.4	A
3	0.05	11.21	0.1	B
4	0.23	2.20	0.4	A

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	59	436	1618	0.037	59	0.1	3.046	A
2	1388	19	2945	0.471	1384	1.0	2.529	A
3	16	1381	915	0.017	16	0.0	5.592	A
4	440	101	2852	0.154	439	0.2	1.976	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	71	521	1558	0.046	71	0.1	3.192	A
2	1658	22	2942	0.563	1656	1.4	3.073	A
3	19	1652	729	0.026	19	0.0	7.085	A
4	526	120	2834	0.186	526	0.3	2.066	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	87	638	1476	0.059	87	0.1	3.418	A
2	2030	28	2937	0.691	2026	2.4	4.325	A
3	23	2022	475	0.049	23	0.1	11.135	B
4	644	147	2810	0.229	644	0.4	2.202	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	87	639	1476	0.059	87	0.1	3.419	A
2	2030	28	2937	0.691	2030	2.4	4.362	A
3	23	2026	472	0.049	23	0.1	11.209	B
4	644	148	2809	0.229	644	0.4	2.202	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	71	522	1557	0.046	71	0.1	3.194	A
2	1658	22	2942	0.563	1662	1.4	3.102	A
3	19	1658	725	0.026	19	0.0	7.130	A
4	526	121	2834	0.186	526	0.3	2.069	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	59	437	1617	0.037	60	0.1	3.048	A
2	1388	19	2945	0.471	1390	1.0	2.549	A
3	16	1387	912	0.017	16	0.0	5.617	A
4	440	101	2852	0.154	441	0.2	1.978	A

2030 Base + Committed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	3.35	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	2030 Base + Committed	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	149	100.000
2		✓	735	100.000
3		✓	34	100.000
4		✓	1560	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	121	0	28
	2	79	0	21	635
	3	0	26	0	8
	4	18	1536	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	10	0	22
	2	34	0	40	32
	3	0	13	0	33
	4	38	8	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.23	7.36	0.3	A
2	0.28	2.25	0.5	A
3	0.03	3.33	0.0	A
4	0.61	3.48	1.7	A

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	112	1177	1098	0.102	112	0.1	4.090	A
2	553	25	2939	0.188	552	0.3	1.996	A
3	26	557	1482	0.017	26	0.0	2.894	A
4	1174	79	2872	0.409	1171	0.7	2.291	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	134	1408	936	0.143	134	0.2	5.030	A
2	661	31	2935	0.225	660	0.4	2.096	A
3	31	667	1407	0.022	31	0.0	3.062	A
4	1402	94	2858	0.491	1401	1.0	2.676	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	164	1724	714	0.230	163	0.3	7.318	A
2	809	37	2928	0.276	809	0.5	2.249	A
3	37	816	1304	0.029	37	0.0	3.328	A
4	1718	116	2838	0.605	1715	1.6	3.466	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	164	1726	712	0.230	164	0.3	7.355	A
2	809	37	2928	0.276	809	0.5	2.249	A
3	37	817	1304	0.029	37	0.0	3.329	A
4	1718	116	2838	0.605	1718	1.7	3.480	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	134	1412	933	0.144	135	0.2	5.057	A
2	661	31	2935	0.225	661	0.4	2.097	A
3	31	668	1407	0.022	31	0.0	3.064	A
4	1402	94	2858	0.491	1405	1.1	2.691	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	112	1182	1095	0.102	112	0.1	4.108	A
2	553	26	2939	0.188	554	0.3	2.000	A
3	26	559	1481	0.017	26	0.0	2.896	A
4	1174	79	2871	0.409	1176	0.8	2.302	A

2030 Base + Commmitted + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	4.28	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D11	2030 Base + Commmitted + Development	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	79	100.000
2		✓	1918	100.000
3		✓	21	100.000
4		✓	653	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	60	0	19
	2	118	0	23	1777
	3	0	16	0	5
	4	21	626	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	28	0	46
	2	9	0	10	12
	3	0	33	0	67
	4	5	39	20	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.06	3.55	0.1	A
2	0.72	4.87	2.8	A
3	0.06	12.81	0.1	B
4	0.26	2.36	0.5	A

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	59	487	1582	0.038	59	0.1	3.118	A
2	1444	19	2945	0.490	1440	1.1	2.665	A
3	16	1437	877	0.018	16	0.0	5.839	A
4	492	101	2852	0.172	490	0.3	2.093	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	71	582	1515	0.047	71	0.1	3.287	A
2	1724	22	2942	0.586	1722	1.6	3.293	A
3	19	1719	683	0.028	19	0.0	7.571	A
4	587	120	2834	0.207	587	0.4	2.200	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	87	713	1423	0.061	87	0.1	3.552	A
2	2112	28	2937	0.719	2107	2.8	4.816	A
3	23	2102	419	0.055	23	0.1	12.692	B
4	719	147	2810	0.256	719	0.5	2.364	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	87	713	1423	0.061	87	0.1	3.553	A
2	2112	28	2937	0.719	2112	2.8	4.871	A
3	23	2107	416	0.056	23	0.1	12.808	B
4	719	148	2809	0.256	719	0.5	2.365	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	71	583	1514	0.047	71	0.1	3.292	A
2	1724	22	2942	0.586	1729	1.6	3.330	A
3	19	1726	679	0.028	19	0.0	7.630	A
4	587	121	2834	0.207	587	0.4	2.203	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	59	488	1581	0.038	60	0.1	3.122	A
2	1444	19	2945	0.490	1446	1.1	2.687	A
3	16	1443	873	0.018	16	0.0	5.872	A
4	492	101	2852	0.172	492	0.3	2.097	A

2030 Base + Committed + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	3.45	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D12	2030 Base + Committed + Development	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	149	100.000
2		✓	763	100.000
3		✓	34	100.000
4		✓	1588	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	121	0	28
	2	79	0	21	663
	3	0	26	0	8
	4	18	1564	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	10	0	22
	2	34	0	40	34
	3	0	13	0	33
	4	38	9	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.24	7.66	0.3	A
2	0.29	2.31	0.5	A
3	0.03	3.39	0.0	A
4	0.62	3.61	1.7	A

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	112	1198	1083	0.104	112	0.1	4.152	A
2	574	25	2939	0.195	573	0.3	2.040	A
3	26	578	1468	0.017	26	0.0	2.923	A
4	1196	79	2872	0.416	1192	0.8	2.341	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	134	1434	918	0.146	134	0.2	5.143	A
2	686	31	2935	0.234	686	0.4	2.147	A
3	31	692	1390	0.022	31	0.0	3.101	A
4	1428	94	2858	0.500	1426	1.1	2.748	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	164	1755	693	0.237	163	0.3	7.618	A
2	840	37	2928	0.287	840	0.5	2.312	A
3	37	847	1283	0.029	37	0.0	3.384	A
4	1748	116	2838	0.616	1746	1.7	3.594	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	164	1757	691	0.237	164	0.3	7.657	A
2	840	37	2928	0.287	840	0.5	2.312	A
3	37	848	1283	0.029	37	0.0	3.385	A
4	1748	116	2838	0.616	1748	1.7	3.611	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	134	1437	915	0.146	135	0.2	5.171	A
2	686	31	2935	0.234	686	0.4	2.150	A
3	31	693	1389	0.022	31	0.0	3.103	A
4	1428	94	2858	0.500	1430	1.1	2.762	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	112	1203	1080	0.104	112	0.1	4.171	A
2	574	26	2939	0.195	575	0.3	2.042	A
3	26	580	1467	0.017	26	0.0	2.925	A
4	1196	79	2871	0.416	1197	0.8	2.352	A

2027 Base + Commmitted, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	3.76	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D13	2027 Base + Commmitted	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	79	100.000
2		✓	1812	100.000
3		✓	21	100.000
4		✓	575	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	60	0	19
	2	118	0	23	1671
	3	0	16	0	5
	4	21	548	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	28	0	46
	2	9	0	10	10
	3	0	33	0	67
	4	5	33	20	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.06	3.40	0.1	A
2	0.68	4.20	2.3	A
3	0.05	10.63	0.1	B
4	0.23	2.18	0.4	A

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	59	428	1623	0.037	59	0.1	3.036	A
2	1364	19	2945	0.463	1360	0.9	2.490	A
3	16	1357	932	0.017	16	0.0	5.491	A
4	433	101	2852	0.152	432	0.2	1.957	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	71	512	1564	0.045	71	0.1	3.179	A
2	1629	22	2942	0.554	1627	1.4	3.006	A
3	19	1624	749	0.025	19	0.0	6.894	A
4	517	120	2834	0.182	517	0.3	2.043	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	87	627	1484	0.059	87	0.1	3.399	A
2	1995	28	2937	0.679	1991	2.3	4.166	A
3	23	1987	499	0.046	23	0.1	10.574	B
4	633	147	2810	0.225	633	0.4	2.175	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	87	628	1483	0.059	87	0.1	3.400	A
2	1995	28	2937	0.679	1995	2.3	4.199	A
3	23	1991	496	0.047	23	0.1	10.635	B
4	633	148	2809	0.225	633	0.4	2.175	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	71	513	1564	0.045	71	0.1	3.180	A
2	1629	22	2942	0.554	1633	1.4	3.030	A
3	19	1629	745	0.025	19	0.0	6.934	A
4	517	121	2834	0.182	517	0.3	2.044	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	59	429	1622	0.037	60	0.1	3.040	A
2	1364	19	2945	0.463	1366	1.0	2.507	A
3	16	1363	928	0.017	16	0.0	5.515	A
4	433	101	2852	0.152	433	0.2	1.959	A

2027 Base + Committed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	3.35	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D14	2027 Base + Committed	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	149	100.000
2		✓	735	100.000
3		✓	34	100.000
4		✓	1560	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	121	0	28
	2	79	0	21	635
	3	0	26	0	8
	4	18	1536	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	10	0	22
	2	34	0	40	33
	3	0	13	0	33
	4	38	8	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.23	7.36	0.3	A
2	0.28	2.26	0.5	A
3	0.03	3.33	0.0	A
4	0.61	3.48	1.7	A

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	112	1177	1098	0.102	112	0.1	4.090	A
2	553	25	2939	0.188	552	0.3	2.009	A
3	26	557	1482	0.017	26	0.0	2.894	A
4	1174	79	2872	0.409	1171	0.7	2.291	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	134	1408	936	0.143	134	0.2	5.030	A
2	661	31	2935	0.225	660	0.4	2.110	A
3	31	667	1407	0.022	31	0.0	3.062	A
4	1402	94	2858	0.491	1401	1.0	2.676	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	164	1724	714	0.230	163	0.3	7.318	A
2	809	37	2928	0.276	809	0.5	2.263	A
3	37	816	1304	0.029	37	0.0	3.328	A
4	1718	116	2838	0.605	1715	1.6	3.466	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	164	1726	712	0.230	164	0.3	7.355	A
2	809	37	2928	0.276	809	0.5	2.264	A
3	37	817	1304	0.029	37	0.0	3.329	A
4	1718	116	2838	0.605	1718	1.7	3.480	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	134	1412	933	0.144	135	0.2	5.055	A
2	661	31	2935	0.225	661	0.4	2.112	A
3	31	668	1407	0.022	31	0.0	3.064	A
4	1402	94	2858	0.491	1405	1.1	2.691	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	112	1182	1095	0.102	112	0.1	4.110	A
2	553	26	2939	0.188	554	0.3	2.011	A
3	26	559	1481	0.017	26	0.0	2.896	A
4	1174	79	2871	0.409	1176	0.8	2.302	A

2027 Base + Commmitted + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	4.34	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D15	2027 Base + Commmitted + Development	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	79	100.000
2		✓	1945	100.000
3		✓	21	100.000
4		✓	587	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	60	0	19
	2	118	0	23	1804
	3	0	16	0	5
	4	21	560	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	28	0	46
	2	9	0	10	9
	3	0	33	0	67
	4	5	34	20	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.06	3.42	0.1	A
2	0.73	4.93	2.9	A
3	0.06	13.51	0.1	B
4	0.23	2.20	0.4	A

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	59	437	1617	0.037	59	0.1	3.048	A
2	1464	19	2945	0.497	1460	1.1	2.634	A
3	16	1457	863	0.018	16	0.0	5.936	A
4	442	101	2852	0.155	441	0.2	1.977	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	71	523	1557	0.046	71	0.1	3.195	A
2	1749	22	2942	0.594	1746	1.6	3.277	A
3	19	1743	667	0.028	19	0.0	7.767	A
4	528	120	2834	0.186	527	0.3	2.068	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	87	640	1474	0.059	87	0.1	3.422	A
2	2141	28	2937	0.729	2136	2.9	4.868	A
3	23	2132	399	0.058	23	0.1	13.377	B
4	646	147	2810	0.230	646	0.4	2.204	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	87	641	1474	0.059	87	0.1	3.422	A
2	2141	28	2937	0.729	2141	2.9	4.928	A
3	23	2137	395	0.058	23	0.1	13.512	B
4	646	148	2809	0.230	646	0.4	2.205	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	71	524	1556	0.046	71	0.1	3.197	A
2	1749	22	2942	0.594	1754	1.6	3.316	A
3	19	1750	662	0.029	19	0.0	7.832	A
4	528	121	2834	0.186	528	0.3	2.069	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	59	438	1616	0.037	60	0.1	3.052	A
2	1464	19	2945	0.497	1466	1.1	2.656	A
3	16	1463	859	0.018	16	0.0	5.970	A
4	442	101	2852	0.155	442	0.2	1.980	A

2027 Base + Committed + Development , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	3.61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D16	2027 Base + Committed + Development	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	149	100.000
2		✓	747	100.000
3		✓	34	100.000
4		✓	1643	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	121	0	28
	2	79	0	21	647
	3	0	26	0	8
	4	18	1619	6	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	10	0	22
	2	34	0	40	34
	3	0	13	0	33
	4	38	8	50	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.25	8.33	0.4	A
2	0.28	2.29	0.5	A
3	0.03	3.35	0.0	A
4	0.64	3.79	1.9	A

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	112	1240	1054	0.106	112	0.1	4.280	A
2	562	25	2939	0.191	561	0.3	2.030	A
3	26	566	1476	0.017	26	0.0	2.906	A
4	1237	79	2872	0.431	1234	0.8	2.376	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	134	1483	883	0.152	134	0.2	5.381	A
2	672	31	2935	0.229	671	0.4	2.133	A
3	31	677	1400	0.022	31	0.0	3.079	A
4	1477	94	2858	0.517	1476	1.2	2.820	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	164	1815	650	0.252	163	0.4	8.272	A
2	822	37	2928	0.281	822	0.5	2.292	A
3	37	830	1295	0.029	37	0.0	3.352	A
4	1809	116	2838	0.637	1806	1.9	3.767	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	164	1818	648	0.253	164	0.4	8.329	A
2	822	37	2928	0.281	822	0.5	2.293	A
3	37	830	1295	0.029	37	0.0	3.353	A
4	1809	116	2838	0.637	1809	1.9	3.788	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	134	1487	880	0.152	135	0.2	5.415	A
2	672	31	2934	0.229	672	0.4	2.136	A
3	31	678	1399	0.022	31	0.0	3.083	A
4	1477	94	2858	0.517	1480	1.2	2.837	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	112	1244	1051	0.107	112	0.1	4.301	A
2	562	26	2939	0.191	563	0.3	2.032	A
3	26	568	1475	0.017	26	0.0	2.908	A
4	1237	79	2871	0.431	1238	0.8	2.390	A

ANNEX 20: A1173/ A180 MODELLING OUTPUTS

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: 5.0 A180 A1173 Interchange.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\Modelling\4_R'abouts\5.0_A180 Interchange
Report generation date: 19/09/2018 11:41:11

»Do Minimum - OPERATION - BASE 2018, AM
»Do Minimum - OPERATION - BASE 2018, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Do Minimum [Lane Simulation] - OPERATION - BASE 2018							
Arm A	0.6	8.10		A	0.3	5.04		A
Arm B	0.5	4.08		A	0.3	3.96		A
Arm C	0.4	2.15		A	2.1	3.09		A
Arm D	2.9	8.83		A	0.6	3.29		A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CLEASBYD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	50197840	159	10.25

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	OPERATION - BASE 2018	AM	ONE HOUR	06:45	08:15	15	✓
D2	OPERATION - BASE 2018	PM	ONE HOUR	15:45	17:15	15	✓

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Do Minimum	✓	✓	100.000	100.000

Do Minimum - OPERATION - BASE 2018, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	6.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A1173 NB APPROACH	
B	A180 EB OFFSLIP	
C	A1173 SB APPROACH	
D	A180 WB OFF-SLIP	

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
A	4.48	7.91	21.9	31.0	136.2	26.3	
B	6.21	8.38	24.6	46.7	67.6	20.6	
C	5.22	8.26	21.2	40.2	136.5	17.6	
D	8.01	8.75	22.5	95.7	67.1	27.4	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.889	2658
B	1.116	2893
C	1.128	3070
D	1.434	3345

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B	✓	8.00	0	99999
		2	A,C,D	✓	8.00	0	99999
	2	1	(A,B,C,D)		Infinity		
B	1 [Give-way line]	1	B,C,D		Infinity	1500	2000
		2	A,B,D		Infinity	1500	2000
C	1 [Give-way line]	1	A,B,C,D		Infinity	1800	99999
D	1 [Give-way line]	1	A,B		Infinity	1500	2000
		2	B,C,D		Infinity	1500	2000

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.445	1329
		2	0.445	1329
B	1 [Give-way line]	1	0.558	1447
		2	0.558	1447
C	1 [Give-way line]	1	1.128	3070
D	1 [Give-way line]	1	0.717	1673
		2	0.717	1673

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			A	B	C	D
A	1 [Give-way line]	1		✓		
		2	✓		✓	✓
	2	1	✓	✓	✓	✓
B	1 [Give-way line]	1		✓	✓	✓
		2	✓	✓		✓
C	1 [Give-way line]	1	✓	✓	✓	✓
D	1 [Give-way line]	1	✓	✓		
		2		✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	OPERATION - BASE 2018	AM	ONE HOUR	06:45	08:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	229	100.000
B		ONE HOUR	✓	354	100.000
C		ONE HOUR	✓	422	100.000
D		ONE HOUR	✓	1083	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	11	62	156
	B	16	1	336	1
	C	40	176	0	206
	D	74	0	1009	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	45	3
	B	33	0	23	0
	C	52	75	0	13
	D	15	0	3	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	8.10	0.6	A	212	318
B	4.08	0.5	A	323	485
C	2.15	0.4	A	392	588
D	8.83	2.9	A	998	1497

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	170	43	882	171	101	0.0	0.2	4.988	A
B	268	67	916	268	138	0.0	0.3	3.624	A
C	319	80	129	318	1055	0.0	0.2	1.935	A
D	812	203	173	811	274	0.0	1.1	4.434	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	206	52	1077	206	118	0.2	0.3	6.142	A
B	312	78	1115	312	169	0.3	0.2	3.859	A
C	384	96	153	384	1274	0.2	0.2	1.996	A
D	984	246	210	985	328	1.1	1.5	5.601	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	253	63	1302	255	142	0.3	0.6	8.098	A
B	394	98	1347	392	210	0.2	0.5	3.851	A
C	476	119	191	475	1548	0.2	0.4	2.153	A
D	1185	296	259	1184	407	1.5	2.7	8.829	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	254	63	1322	254	149	0.6	0.5	8.075	A
B	381	95	1371	381	206	0.5	0.5	4.080	A
C	476	119	188	475	1563	0.4	0.3	2.148	A
D	1208	302	259	1212	404	2.7	2.9	8.826	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	206	52	1047	205	118	0.5	0.5	6.503	A
B	319	80	1089	319	163	0.5	0.4	3.704	A
C	376	94	150	376	1258	0.3	0.2	2.013	A
D	966	241	203	961	322	2.9	1.9	5.834	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	183	46	907	183	107	0.5	0.3	5.346	A
B	265	66	946	266	144	0.4	0.3	3.551	A
C	320	80	140	319	1073	0.2	0.2	1.930	A
D	832	208	183	831	276	1.9	1.2	4.744	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

06:45 - 07:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	937	0.009	9	0.0	0.0	3.899	A
			2	A,C,D	162	937	0.173	163	0.0	0.2	5.048	A
		2	1	(A,B,C,D)	170			170	0.0	0.0	0.005	A
	Exit	1	1		101			101	0.0	0.0	0.000	A
B	Entry	1	1	B,C,D	256	1500	0.170	256	0.0	0.3	3.642	A
			2	A,B,D	12	1500	0.008	12	0.0	0.0	3.232	A
	Exit	1	1		138			138	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	319	2923	0.109	318	0.0	0.2	1.935	A
	Exit	1	1		1055			1055	0.0	0.0	0.000	A
D	Entry	1	1	A,B	58	1553	0.037	58	0.0	0.1	2.809	A
			2	B,C,D	755	1553	0.486	753	0.0	1.1	4.539	A
	Exit	1	1		274			274	0.0	0.0	0.000	A

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	850	0.012	10	0.0	0.0	4.204	A
			2	A,C,D	196	850	0.230	196	0.2	0.3	6.254	A
		2	1	(A,B,C,D)	206			206	0.0	0.0	0.000	A
	Exit	1	1		118			118	0.0	0.0	0.000	A
B	Entry	1	1	B,C,D	298	1500	0.199	298	0.3	0.2	3.895	A
			2	A,B,D	14	1500	0.009	14	0.0	0.0	3.106	A
	Exit	1	1		169			169	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	384	2896	0.132	384	0.2	0.2	1.996	A
	Exit	1	1		1274			1274	0.0	0.0	0.000	A
D	Entry	1	1	A,B	67	1533	0.044	67	0.1	0.0	2.759	A
			2	B,C,D	917	1533	0.598	919	1.1	1.4	5.794	A
	Exit	1	1		328			328	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	750	0.017	13	0.0	0.0	4.565	A
			2	A,C,D	240	750	0.321	242	0.3	0.6	8.287	A
		2	1	(A,B,C,D)	253			253	0.0	0.0	0.008	A
	Exit	1	1		142			142	0.0	0.0	0.000	A
B	Entry	1	1	B,C,D	375	1500	0.250	373	0.2	0.5	3.885	A
			2	A,B,D	19	1500	0.012	19	0.0	0.0	3.137	A
	Exit	1	1		210			210	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	476	2854	0.167	475	0.2	0.4	2.153	A
	Exit	1	1		1548			1548	0.0	0.0	0.000	A
D	Entry	1	1	A,B	79	1514	0.052	79	0.0	0.1	3.045	A
			2	B,C,D	1106	1514	0.730	1105	1.4	2.6	9.211	A
	Exit	1	1		407			407	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	741	0.017	12	0.0	0.0	5.368	A
			2	A,C,D	241	741	0.326	242	0.6	0.5	8.228	A
		2	1	(A,B,C,D)	254			254	0.0	0.0	0.002	A
	Exit	1	1		149			149	0.0	0.0	0.000	A
B	Entry	1	1	B,C,D	362	1500	0.241	363	0.5	0.4	4.107	A
			2	A,B,D	19	1500	0.012	18	0.0	0.0	3.508	A
	Exit	1	1		206			206	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	476	2857	0.167	475	0.4	0.3	2.148	A
	Exit	1	1		1563			1563	0.0	0.0	0.000	A
D	Entry	1	1	A,B	83	1516	0.055	84	0.1	0.1	2.893	A
			2	B,C,D	1125	1516	0.742	1128	2.6	2.8	9.216	A
	Exit	1	1		404			404	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	863	0.010	9	0.0	0.0	4.262	A
			2	A,C,D	198	863	0.229	196	0.5	0.5	6.632	A
		2	1	(A,B,C,D)	206			206	0.0	0.0	0.000	A
	Exit	1	1		118			118	0.0	0.0	0.000	A
B	Entry	1	1	B,C,D	303	1500	0.202	304	0.4	0.4	3.732	A
			2	A,B,D	15	1500	0.010	15	0.0	0.0	3.116	A
	Exit	1	1		163			163	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	376	2901	0.130	376	0.3	0.2	2.013	A
	Exit	1	1		1258			1258	0.0	0.0	0.000	A
D	Entry	1	1	A,B	69	1538	0.045	68	0.1	0.1	2.882	A
			2	B,C,D	897	1538	0.583	894	2.8	1.8	6.030	A
	Exit	1	1		322			322	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	8	925	0.008	8	0.0	0.0	3.904	A
			2	A,C,D	175	925	0.190	175	0.5	0.3	5.424	A
		2	1	(A,B,C,D)	183			183	0.0	0.0	0.000	A
	Exit	1	1		107			107	0.0	0.0	0.000	A
B	Entry	1	1	B,C,D	250	1500	0.167	251	0.4	0.3	3.565	A
			2	A,B,D	15	1500	0.010	15	0.0	0.0	3.266	A
	Exit	1	1		144			144	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	320	2912	0.110	319	0.2	0.2	1.930	A
	Exit	1	1		1073			1073	0.0	0.0	0.000	A
D	Entry	1	1	A,B	60	1547	0.039	60	0.1	0.0	2.662	A
			2	B,C,D	772	1547	0.499	771	1.8	1.1	4.884	A
	Exit	1	1		276			276	0.0	0.0	0.000	A

Do Minimum - OPERATION - BASE 2018, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	3.37	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	OPERATION - BASE 2018	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	172	100.000
B		ONE HOUR	✓	218	100.000
C		ONE HOUR	✓	1398	100.000
D		ONE HOUR	✓	490	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	2	11	63	96
	B	61	1	156	0
	C	123	295	0	980
	D	186	2	301	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	44	5
	B	3	0	73	0
	C	9	22	0	4
	D	3	100	13	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.04	0.3	A	159	238
B	3.96	0.3	A	196	294
C	3.09	2.1	A	1281	1922
D	3.29	0.6	A	442	663

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	133	33	448	132	275	0.0	0.2	4.127	A
B	161	40	350	162	230	0.0	0.1	3.870	A
C	1036	259	122	1036	390	0.0	0.7	2.065	A
D	360	90	365	358	793	0.0	0.4	2.971	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	161	40	548	160	323	0.2	0.2	4.454	A
B	185	46	426	185	282	0.1	0.1	3.912	A
C	1275	319	141	1273	470	0.7	0.8	2.443	A
D	443	111	429	442	985	0.4	0.4	3.148	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	192	48	659	193	405	0.2	0.2	4.661	A
B	235	59	515	236	338	0.1	0.3	3.963	A
C	1523	381	176	1526	575	0.8	1.2	3.015	A
D	536	134	528	536	1174	0.4	0.6	3.222	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	187	47	652	187	416	0.2	0.3	5.040	A
B	238	59	504	237	335	0.3	0.2	3.831	A
C	1540	385	181	1532	561	1.2	2.1	3.093	A
D	533	133	536	532	1176	0.6	0.6	3.293	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	154	39	534	156	325	0.3	0.2	4.511	A
B	198	49	417	198	272	0.2	0.2	3.783	A
C	1254	313	141	1257	474	2.1	0.7	2.493	A
D	434	109	424	435	973	0.6	0.4	3.096	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	124	31	441	123	272	0.2	0.1	3.968	A
B	160	40	333	160	232	0.2	0.2	3.560	A
C	1061	265	120	1061	372	0.7	0.8	2.130	A
D	347	87	367	347	814	0.4	0.3	2.938	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

15:45 - 16:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	7	1130	0.007	7	0.0	0.0	3.054	A
			2	A,C,D	125	1130	0.111	124	0.0	0.2	4.211	A
		2	1	(A,B,C,D)	133			133	0.0	0.0	0.000	A
	Exit	1	1		275			275	0.0	0.0	0.000	A
B	Entry	1	1	B,C,D	113	1500	0.075	114	0.0	0.1	4.687	A
			2	A,B,D	48	1500	0.032	48	0.0	0.0	2.664	A
	Exit	1	1		230			230	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1036	2932	0.353	1036	0.0	0.7	2.065	A
	Exit	1	1		390			390	0.0	0.0	0.000	A
D	Entry	1	1	A,B	133	1501	0.089	132	0.0	0.1	2.588	A
			2	B,C,D	227	1501	0.151	226	0.0	0.2	3.214	A
	Exit	1	1		793			793	0.0	0.0	0.000	A

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1085	0.009	10	0.0	0.0	3.440	A
			2	A,C,D	151	1085	0.139	150	0.2	0.2	4.540	A
		2	1	(A,B,C,D)	161			161	0.0	0.0	0.000	A
	Exit	1	1		323			323	0.0	0.0	0.000	A
B	Entry	1	1	B,C,D	135	1500	0.090	135	0.1	0.1	4.745	A
			2	A,B,D	49	1500	0.033	49	0.0	0.0	2.618	A
	Exit	1	1		282			282	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1275	2910	0.438	1273	0.7	0.8	2.443	A
	Exit	1	1		470			470	0.0	0.0	0.000	A
D	Entry	1	1	A,B	166	1500	0.111	166	0.1	0.1	2.776	A
			2	B,C,D	277	1500	0.185	276	0.2	0.2	3.388	A
	Exit	1	1		985			985	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	1036	0.011	11	0.0	0.0	3.577	A
			2	A,C,D	180	1036	0.174	182	0.2	0.2	4.742	A
		2	1	(A,B,C,D)	192			192	0.0	0.0	0.002	A
	Exit	1	1		405			405	0.0	0.0	0.000	A
B	Entry	1	1	B,C,D	168	1500	0.112	169	0.1	0.2	4.897	A
			2	A,B,D	67	1500	0.045	67	0.0	0.0	2.553	A
	Exit	1	1		338			338	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1523	2871	0.530	1526	0.8	1.2	3.015	A
	Exit	1	1		575			575	0.0	0.0	0.000	A
D	Entry	1	1	A,B	202	1500	0.135	203	0.1	0.1	2.861	A
			2	B,C,D	334	1500	0.223	334	0.2	0.5	3.463	A
	Exit	1	1		1174			1174	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	1039	0.012	12	0.0	0.0	3.469	A
			2	A,C,D	176	1039	0.169	175	0.2	0.3	5.174	A
		2	1	(A,B,C,D)	187			187	0.0	0.0	0.000	A
	Exit	1	1		416			416	0.0	0.0	0.000	A
B	Entry	1	1	B,C,D	170	1500	0.113	169	0.2	0.2	4.660	A
			2	A,B,D	68	1500	0.045	68	0.0	0.0	2.595	A
	Exit	1	1		335			335	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1540	2866	0.537	1532	1.2	2.1	3.093	A
	Exit	1	1		561			561	0.0	0.0	0.000	A
D	Entry	1	1	A,B	204	1500	0.136	203	0.1	0.2	2.881	A
			2	B,C,D	329	1500	0.219	329	0.5	0.3	3.568	A
	Exit	1	1		1176			1176	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1092	0.009	10	0.0	0.0	3.429	A
			2	A,C,D	145	1092	0.132	146	0.3	0.2	4.602	A
		2	1	(A,B,C,D)	154			154	0.0	0.0	0.000	A
	Exit	1	1		325			325	0.0	0.0	0.000	A
B	Entry	1	1	B,C,D	146	1500	0.097	146	0.2	0.2	4.565	A
			2	A,B,D	52	1500	0.035	52	0.0	0.0	2.549	A
	Exit	1	1		272			272	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1254	2911	0.431	1257	2.1	0.7	2.493	A
	Exit	1	1		474			474	0.0	0.0	0.000	A
D	Entry	1	1	A,B	161	1500	0.107	161	0.2	0.1	2.775	A
			2	B,C,D	273	1500	0.182	274	0.3	0.2	3.313	A
	Exit	1	1		973			973	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	7	1133	0.007	7	0.0	0.0	2.830	A
			2	A,C,D	116	1133	0.102	116	0.2	0.1	4.061	A
		2	1	(A,B,C,D)	124			124	0.0	0.0	0.000	A
	Exit	1	1		272			272	0.0	0.0	0.000	A
B	Entry	1	1	B,C,D	112	1500	0.075	112	0.2	0.1	4.278	A
			2	A,B,D	48	1500	0.032	48	0.0	0.0	2.435	A
	Exit	1	1		232			232	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1061	2934	0.362	1061	0.7	0.8	2.130	A
	Exit	1	1		372			372	0.0	0.0	0.000	A
D	Entry	1	1	A,B	128	1501	0.086	129	0.1	0.1	2.638	A
			2	B,C,D	218	1501	0.145	218	0.2	0.2	3.144	A
	Exit	1	1		814			814	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: OPERATION A180 Interchange.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\4_R'abouts\5.0 A180 Interchange Proposed Mitigation
Report generation date: 17/10/2019 09:23:59

»Do Minimum - OPERATION - BASE + COMMITTED 2023, AM
»Do Minimum - OPERATION - BASE + COMMITTED 2023, PM
»Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, AM
»Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, PM
»Do Minimum - OPERATION - BASE + COMMITTED 2030, AM
»Do Minimum - OPERATION - BASE + COMMITTED 2030, PM
»Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, AM
»Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, PM
»Do Minimum - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, AM
»Do Minimum - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Do Minimum [Lane Simulation] - OPERATION - BASE + COMMITTED 2023								
Arm A	0.9	10.22		B	0.3	5.17		A
Arm B	0.7	4.62		A	0.4	4.30		A
Arm C	0.4	2.39		A	2.2	4.37		A
Arm D	6.6	16.83		C	0.6	3.50		A
Do Minimum [Lane Simulation] - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023								
Arm A	1.0	11.35		B	0.3	5.11		A
Arm B	0.8	4.96		A	0.5	4.37		A
Arm C	0.6	2.59		A	2.6	4.66		A
Arm D	8.5	22.32		C	0.6	3.53		A
Do Minimum [Lane Simulation] - OPERATION - BASE + COMMITTED 2030								
Arm A	1.2	12.72		B	0.4	5.45		A
Arm B	0.9	4.88		A	0.5	4.41		A
Arm C	0.5	2.42		A	3.6	5.43		A
Arm D	13.4	31.98		D	0.7	3.54		A
Do Minimum [Lane Simulation] - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030								
Arm A	1.8	15.31		C	0.4	5.54		A
Arm B	0.9	5.36		A	0.5	4.61		A
Arm C	0.6	2.68		A	3.2	5.81		A
Arm D	18.3	38.79		E	0.8	3.61		A
Do Minimum [Lane Simulation] - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026								
Arm A	3.2	15.32		C	1.4	6.68		A
Arm B	0.2	2.89		A	0.2	2.85		A
Arm C	0.3	1.87		A	1.0	3.00		A
Arm D	1.7	5.33		A	0.6	3.37		A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CLEASBYD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	384883252	266	20.33

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	OPERATION - BASE + COMMITTED 2023	AM	ONE HOUR	06:45	08:15	15	✓
D4	OPERATION - BASE + COMMITTED 2023	PM	ONE HOUR	15:45	17:15	15	✓
D5	OPERATION - BASE + COMMITTED + DEVELOPMENT 2023	AM	ONE HOUR	06:45	08:15	15	✓
D6	OPERATION - BASE + COMMITTED + DEVELOPMENT 2023	PM	ONE HOUR	15:45	17:15	15	✓
D7	OPERATION - BASE + COMMITTED 2030	AM	ONE HOUR	06:45	08:15	15	✓
D8	OPERATION - BASE + COMMITTED 2030	PM	ONE HOUR	15:45	17:15	15	✓
D9	OPERATION - BASE + COMMITTED + DEVELOPMENT 2030	AM	ONE HOUR	06:45	08:15	15	✓
D10	OPERATION - BASE + COMMITTED + DEVELOPMENT 2030	PM	ONE HOUR	15:45	17:15	15	✓
D11	OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026	AM	ONE HOUR	06:45	08:15	15	✓
D12	OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026	PM	ONE HOUR	15:45	17:15	15	✓

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Do Minimum	✓	✓	100.000	100.000

Do Minimum - OPERATION - BASE + COMMITTED 2023, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D12 - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, PM	Demand Set 12: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	10.81	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A1173 NB APPROACH	
B	A180 EB OFFSLIP	
C	A1173 SB APPROACH	
D	A180 WB OFF-SLIP	

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
A	4.62	8.54	23.5	17.7	93.0	11.0	
B	7.72	8.46	24.6	24.2	100.0	10.0	
C	4.09	7.98	29.1	39.3	100.0	9.5	
D	6.55	7.41	25.6	44.3	93.0	0.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.963	2852
B	1.025	3095
C	1.121	2968
D	1.219	3099

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B	✓	9.00	0	99999
		2	A,C,D	✓	9.00	0	99999
	2	1	(A,B,C,D)		Infinity		
B	1 [Give-way line]	1	C		Infinity	1500	2000
		2	A,B,D		Infinity	1500	2000
C	1 [Give-way line]	1	A,B,C,D		Infinity	1800	99999
D	1 [Give-way line]	1	A		Infinity	1500	2000
		2	B,C,D		Infinity	1500	2000

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.482	1426
		2	0.482	1426
B	1 [Give-way line]	1	0.513	1548
		2	0.513	1548
C	1 [Give-way line]	1	1.121	2968
D	1 [Give-way line]	1	0.609	1550
		2	0.609	1550

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			A	B	C	D
A	1 [Give-way line]	1		✓		
		2	✓		✓	✓
	2	1	✓	✓	✓	✓
B	1 [Give-way line]	1			✓	
		2	✓	✓		✓
C	1 [Give-way line]	1	✓	✓	✓	✓
D	1 [Give-way line]	1	✓			
		2		✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	OPERATION - BASE + COMMITTED 2023	AM	ONE HOUR	06:45	08:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	258	100.000
B		ONE HOUR	✓	466	100.000
C		ONE HOUR	✓	538	100.000
D		ONE HOUR	✓	1249	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	12	79	167
	B	17	1	447	1
	C	47	242	0	249
	D	79	0	1170	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	37	3
	B	31	0	25	0
	C	50	74	0	14
	D	15	0	4	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	10.22	0.9	B	239	359
B	4.62	0.7	A	428	642
C	2.39	0.4	A	488	731
D	16.83	6.6	C	1146	1718

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	193	48	1063	193	107	0.0	0.3	4.972	A
B	350	87	1064	348	191	0.0	0.5	3.960	A
C	396	99	138	398	1275	0.0	0.2	2.090	A
D	942	236	227	943	309	0.0	1.7	5.900	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	238	60	1279	237	123	0.3	0.5	6.870	A
B	419	105	1288	419	228	0.5	0.6	4.191	A
C	482	120	167	481	1539	0.2	0.4	2.185	A
D	1124	281	274	1128	373	1.7	2.4	8.102	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	287	72	1550	289	157	0.5	0.8	9.554	A
B	511	128	1563	511	276	0.6	0.7	4.621	A
C	586	147	205	586	1869	0.4	0.3	2.381	A
D	1376	344	330	1377	461	2.4	6.3	15.809	C

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	284	71	1547	285	161	0.8	0.9	10.220	B
B	507	127	1559	506	272	0.7	0.7	4.573	A
C	585	146	207	587	1858	0.3	0.4	2.392	A
D	1375	344	329	1378	464	6.3	6.6	16.834	C

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	234	59	1269	235	125	0.9	0.4	7.448	A
B	424	106	1270	422	234	0.7	0.5	4.131	A
C	476	119	165	477	1526	0.4	0.3	2.211	A
D	1120	280	276	1117	366	6.6	2.6	9.296	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	198	50	1056	198	108	0.4	0.3	5.743	A
B	359	90	1067	358	187	0.5	0.4	4.017	A
C	400	100	144	400	1281	0.3	0.2	2.074	A
D	936	234	225	938	319	2.6	1.3	5.870	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

06:45 - 07:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	914	0.010	10	0.0	0.0	3.673	A
			2	A,C,D	183	914	0.201	183	0.0	0.3	5.045	A
		2	1	(A,B,C,D)	193			193	0.0	0.0	0.000	A
	Exit	1	1		107			107	0.0	0.0	0.000	A
B	Entry	1	1	C	335	1500	0.223	334	0.0	0.5	3.997	A
			2	A,B,D	15	1500	0.010	15	0.0	0.0	3.053	A
	Exit	1	1		191			191	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	396	2814	0.141	398	0.0	0.2	2.090	A
	Exit	1	1		1275			1275	0.0	0.0	0.000	A
D	Entry	1	1	A	61	1500	0.041	61	0.0	0.1	2.926	A
			2	B,C,D	881	1500	0.587	881	0.0	1.6	6.086	A
	Exit	1	1		309			309	0.0	0.0	0.000	A

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	810	0.012	10	0.0	0.0	4.257	A
			2	A,C,D	228	810	0.282	227	0.3	0.5	7.002	A
		2	1	(A,B,C,D)	238			238	0.0	0.0	0.002	A
	Exit	1	1		123			123	0.0	0.0	0.000	A
B	Entry	1	1	C	402	1500	0.268	402	0.5	0.6	4.238	A
			2	A,B,D	16	1500	0.011	16	0.0	0.0	3.075	A
	Exit	1	1		228			228	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	482	2780	0.173	481	0.2	0.4	2.185	A
	Exit	1	1		1539			1539	0.0	0.0	0.000	A
D	Entry	1	1	A	68	1500	0.045	67	0.1	0.1	2.917	A
			2	B,C,D	1057	1500	0.704	1061	1.6	2.3	8.410	A
	Exit	1	1		373			373	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	14	679	0.021	14	0.0	0.0	5.183	A
			2	A,C,D	273	679	0.402	274	0.5	0.8	9.784	A
		2	1	(A,B,C,D)	287			287	0.0	0.0	0.017	A
	Exit	1	1		157			157	0.0	0.0	0.000	A
B	Entry	1	1	C	491	1500	0.328	492	0.6	0.7	4.688	A
			2	A,B,D	20	1500	0.013	20	0.0	0.0	2.987	A
	Exit	1	1		276			276	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	586	2738	0.214	586	0.4	0.3	2.381	A
	Exit	1	1		1869			1869	0.0	0.0	0.000	A
D	Entry	1	1	A	89	1500	0.059	88	0.1	0.1	2.962	A
			2	B,C,D	1287	1500	0.858	1288	2.3	6.2	16.603	C
	Exit	1	1		461			461	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	681	0.020	13	0.0	0.0	5.714	A
			2	A,C,D	271	681	0.398	272	0.8	0.8	10.446	B
		2	1	(A,B,C,D)	284			284	0.0	0.0	0.018	A
	Exit	1	1		161			161	0.0	0.0	0.000	A
B	Entry	1	1	C	486	1500	0.324	485	0.7	0.7	4.628	A
			2	A,B,D	21	1500	0.014	21	0.0	0.0	3.253	A
	Exit	1	1		272			272	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	585	2736	0.214	587	0.3	0.4	2.392	A
	Exit	1	1		1858			1858	0.0	0.0	0.000	A
D	Entry	1	1	A	90	1500	0.060	90	0.1	0.1	3.029	A
			2	B,C,D	1285	1500	0.856	1288	6.2	6.5	17.682	C
	Exit	1	1		464			464	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	815	0.015	12	0.0	0.0	4.475	A
			2	A,C,D	222	815	0.273	222	0.8	0.4	7.634	A
		2	1	(A,B,C,D)	234			234	0.0	0.0	0.005	A
	Exit	1	1		125			125	0.0	0.0	0.000	A
B	Entry	1	1	C	407	1500	0.271	406	0.7	0.5	4.181	A
			2	A,B,D	17	1500	0.011	16	0.0	0.0	2.937	A
	Exit	1	1		234			234	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	476	2782	0.171	477	0.4	0.3	2.211	A
	Exit	1	1		1526			1526	0.0	0.0	0.000	A
D	Entry	1	1	A	70	1500	0.047	70	0.1	0.1	2.888	A
			2	B,C,D	1049	1500	0.700	1047	6.5	2.5	9.684	A
	Exit	1	1		366			366	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	917	0.010	9	0.0	0.0	4.122	A
			2	A,C,D	189	917	0.206	189	0.4	0.3	5.827	A
		2	1	(A,B,C,D)	198			198	0.0	0.0	0.000	A
	Exit	1	1		108			108	0.0	0.0	0.000	A
B	Entry	1	1	C	344	1500	0.230	343	0.5	0.4	4.060	A
			2	A,B,D	14	1500	0.009	14	0.0	0.0	2.986	A
	Exit	1	1		187			187	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	400	2806	0.142	400	0.3	0.2	2.074	A
	Exit	1	1		1281			1281	0.0	0.0	0.000	A
D	Entry	1	1	A	60	1500	0.040	60	0.1	0.1	2.852	A
			2	B,C,D	876	1500	0.584	878	2.5	1.3	6.054	A
	Exit	1	1		319			319	0.0	0.0	0.000	A

Do Minimum - OPERATION - BASE + COMMITTED 2023, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D12 - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, PM	Demand Set 12: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	4.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	OPERATION - BASE + COMMITTED 2023	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	188	100.000
B		ONE HOUR	✓	291	100.000
C		ONE HOUR	✓	1646	100.000
D		ONE HOUR	✓	551	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	2	12	72	102
	B	65	1	225	0
	C	143	382	0	1121
	D	198	2	350	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	42	5
	B	3	0	74	0
	C	9	25	0	4
	D	3	100	13	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.17	0.3	A	174	262
B	4.30	0.4	A	268	402
C	4.37	2.2	A	1523	2284
D	3.50	0.6	A	504	756

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	136	34	559	138	305	0.0	0.1	4.123	A
B	215	54	396	217	300	0.0	0.2	4.101	A
C	1233	308	126	1230	487	0.0	1.2	2.537	A
D	417	104	445	418	912	0.0	0.4	3.197	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	172	43	664	173	375	0.1	0.2	4.405	A
B	258	65	474	257	363	0.2	0.4	4.035	A
C	1489	372	157	1489	574	1.2	1.5	3.174	A
D	489	122	549	490	1097	0.4	0.4	3.140	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	202	51	818	202	442	0.2	0.3	5.085	A
B	327	82	581	326	439	0.4	0.4	4.298	A
C	1821	455	186	1822	721	1.5	2.2	4.332	A
D	598	150	659	601	1349	0.4	0.4	3.496	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	215	54	818	215	446	0.3	0.3	5.168	A
B	321	80	590	322	444	0.4	0.4	4.182	A
C	1833	458	190	1832	721	2.2	2.2	4.374	A
D	608	152	658	607	1364	0.4	0.6	3.499	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	177	44	667	178	378	0.3	0.3	4.421	A
B	267	67	481	267	363	0.4	0.3	4.023	A
C	1497	374	160	1496	589	2.2	1.5	3.155	A
D	502	126	541	503	1114	0.6	0.5	3.234	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	143	36	547	144	320	0.3	0.2	4.222	A
B	222	55	391	222	300	0.3	0.2	3.826	A
C	1263	316	131	1260	482	1.5	1.0	2.564	A
D	411	103	456	411	935	0.5	0.4	3.186	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

15:45 - 16:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1157	0.009	10	0.0	0.0	3.131	A
			2	A,C,D	126	1157	0.109	128	0.0	0.1	4.195	A
		2	1	(A,B,C,D)	136			136	0.0	0.0	0.000	A
	Exit	1	1		305			305	0.0	0.0	0.000	A
B	Entry	1	1	C	165	1500	0.110	167	0.0	0.1	4.796	A
			2	A,B,D	50	1500	0.033	49	0.0	0.1	2.698	A
	Exit	1	1		300			300	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1233	2826	0.436	1230	0.0	1.2	2.537	A
	Exit	1	1		487			487	0.0	0.0	0.000	A
D	Entry	1	1	A	149	1500	0.099	148	0.0	0.2	2.705	A
			2	B,C,D	268	1500	0.179	270	0.0	0.2	3.495	A
	Exit	1	1		912			912	0.0	0.0	0.000	A

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1106	0.009	10	0.0	0.0	2.940	A
			2	A,C,D	162	1106	0.147	163	0.1	0.2	4.516	A
		2	1	(A,B,C,D)	172			172	0.0	0.0	0.000	A
	Exit	1	1		375			375	0.0	0.0	0.000	A
B	Entry	1	1	C	198	1500	0.132	197	0.1	0.3	4.811	A
			2	A,B,D	60	1500	0.040	60	0.1	0.0	2.462	A
	Exit	1	1		363			363	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1489	2792	0.533	1489	1.2	1.5	3.174	A
	Exit	1	1		574			574	0.0	0.0	0.000	A
D	Entry	1	1	A	176	1500	0.117	177	0.2	0.1	2.788	A
			2	B,C,D	313	1500	0.209	313	0.2	0.3	3.358	A
	Exit	1	1		1097			1097	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	1032	0.012	12	0.0	0.0	3.234	A
			2	A,C,D	190	1032	0.184	190	0.2	0.2	5.217	A
		2	1	(A,B,C,D)	202			202	0.0	0.0	0.000	A
	Exit	1	1		442			442	0.0	0.0	0.000	A
B	Entry	1	1	C	252	1500	0.168	251	0.3	0.4	5.154	A
			2	A,B,D	75	1500	0.050	76	0.0	0.0	2.566	A
	Exit	1	1		439			439	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1821	2759	0.660	1822	1.5	2.2	4.332	A
	Exit	1	1		721			721	0.0	0.0	0.000	A
D	Entry	1	1	A	207	1500	0.138	207	0.1	0.1	2.909	A
			2	B,C,D	392	1500	0.261	394	0.3	0.3	3.856	A
	Exit	1	1		1349			1349	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	14	1032	0.013	14	0.0	0.0	3.631	A
			2	A,C,D	202	1032	0.195	202	0.2	0.3	5.289	A
		2	1	(A,B,C,D)	215			215	0.0	0.0	0.000	A
	Exit	1	1		446			446	0.0	0.0	0.000	A
B	Entry	1	1	C	249	1500	0.166	252	0.4	0.3	4.996	A
			2	A,B,D	71	1500	0.048	71	0.0	0.1	2.471	A
	Exit	1	1		444			444	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1833	2754	0.665	1832	2.2	2.2	4.374	A
	Exit	1	1		721			721	0.0	0.0	0.000	A
D	Entry	1	1	A	216	1500	0.144	216	0.1	0.1	2.953	A
			2	B,C,D	392	1500	0.261	391	0.3	0.5	3.827	A
	Exit	1	1		1364			1364	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1105	0.009	10	0.0	0.0	3.079	A
			2	A,C,D	167	1105	0.151	167	0.3	0.3	4.514	A
		2	1	(A,B,C,D)	177			177	0.0	0.0	0.000	A
	Exit	1	1		378			378	0.0	0.0	0.000	A
B	Entry	1	1	C	204	1500	0.136	204	0.3	0.2	4.759	A
			2	A,B,D	63	1500	0.042	63	0.1	0.1	2.498	A
	Exit	1	1		363			363	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1497	2789	0.537	1496	2.2	1.5	3.155	A
	Exit	1	1		589			589	0.0	0.0	0.000	A
D	Entry	1	1	A	187	1500	0.125	187	0.1	0.1	2.830	A
			2	B,C,D	316	1500	0.210	316	0.5	0.3	3.479	A
	Exit	1	1		1114			1114	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	1163	0.008	9	0.0	0.0	3.144	A
			2	A,C,D	134	1163	0.115	134	0.3	0.2	4.306	A
		2	1	(A,B,C,D)	143			143	0.0	0.0	0.000	A
	Exit	1	1		320			320	0.0	0.0	0.000	A
B	Entry	1	1	C	170	1500	0.113	169	0.2	0.2	4.495	A
			2	A,B,D	52	1500	0.035	53	0.1	0.0	2.528	A
	Exit	1	1		300			300	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1263	2821	0.448	1260	1.5	1.0	2.564	A
	Exit	1	1		482			482	0.0	0.0	0.000	A
D	Entry	1	1	A	152	1500	0.101	152	0.1	0.1	2.753	A
			2	B,C,D	259	1500	0.173	259	0.3	0.3	3.452	A
	Exit	1	1		935			935	0.0	0.0	0.000	A

Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D12 - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, PM	Demand Set 12: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	13.46	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	OPERATION - BASE + COMMITTED + DEVELOPMENT 2023	AM	ONE HOUR	06:45	08:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	259	100.000
B		ONE HOUR	✓	501	100.000
C		ONE HOUR	✓	605	100.000
D		ONE HOUR	✓	1288	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	12	80	167
	B	17	1	482	1
	C	48	275	0	282
	D	79	0	1209	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	37	3
	B	31	0	28	0
	C	50	77	0	20
	D	15	0	5	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	11.35	1.0	B	238	358
B	4.96	0.8	A	461	691
C	2.59	0.6	A	556	834
D	22.32	8.5	C	1181	1771

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	193	48	1126	193	107	0.0	0.3	5.263	A
B	378	95	1100	377	218	0.0	0.5	4.194	A
C	456	114	138	456	1339	0.0	0.3	2.227	A
D	976	244	257	976	337	0.0	1.8	6.461	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	232	58	1330	232	129	0.3	0.5	7.018	A
B	459	115	1304	459	259	0.5	0.6	4.442	A
C	543	136	165	542	1597	0.3	0.4	2.364	A
D	1157	289	305	1154	402	1.8	3.1	8.796	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	286	71	1639	285	155	0.5	1.0	10.352	B
B	550	138	1598	552	326	0.6	0.8	4.946	A
C	677	169	205	676	1944	0.4	0.6	2.586	A
D	1409	352	383	1411	499	3.1	8.3	18.882	C

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	287	72	1640	285	158	1.0	1.0	11.350	B
B	555	139	1605	554	319	0.8	0.8	4.964	A
C	672	168	203	670	1956	0.6	0.6	2.575	A
D	1412	353	378	1420	496	8.3	8.5	22.321	C

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	235	59	1325	235	132	1.0	0.5	7.869	A
B	443	111	1313	444	247	0.8	0.6	4.383	A
C	532	133	167	530	1590	0.6	0.5	2.387	A
D	1163	291	293	1165	404	8.5	2.8	10.219	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	197	49	1125	198	107	0.5	0.3	5.873	A
B	380	95	1099	380	224	0.6	0.4	4.106	A
C	458	114	139	457	1340	0.5	0.3	2.234	A
D	968	242	263	970	333	2.8	1.7	6.442	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

06:45 - 07:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	884	0.010	9	0.0	0.0	3.893	A
			2	A,C,D	184	884	0.208	183	0.0	0.3	5.338	A
		2	1	(A,B,C,D)	193			193	0.0	0.0	0.000	A
	Exit	1	1		107			107	0.0	0.0	0.000	A
B	Entry	1	1	C	364	1500	0.243	364	0.0	0.5	4.238	A
			2	A,B,D	14	1500	0.009	14	0.0	0.0	3.082	A
	Exit	1	1		218			218	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	456	2813	0.162	456	0.0	0.3	2.227	A
	Exit	1	1		1339			1339	0.0	0.0	0.000	A
D	Entry	1	1	A	59	1500	0.039	59	0.0	0.0	2.885	A
			2	B,C,D	917	1500	0.611	917	0.0	1.8	6.672	A
	Exit	1	1		337			337	0.0	0.0	0.000	A

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	785	0.014	11	0.0	0.0	4.643	A
			2	A,C,D	221	785	0.281	221	0.3	0.5	7.141	A
		2	1	(A,B,C,D)	232			232	0.0	0.0	0.002	A
	Exit	1	1		129			129	0.0	0.0	0.000	A
B	Entry	1	1	C	442	1500	0.295	442	0.5	0.6	4.496	A
			2	A,B,D	16	1500	0.011	16	0.0	0.0	3.043	A
	Exit	1	1		259			259	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	543	2783	0.195	542	0.3	0.4	2.364	A
	Exit	1	1		1597			1597	0.0	0.0	0.000	A
D	Entry	1	1	A	72	1500	0.048	72	0.0	0.1	2.961	A
			2	B,C,D	1085	1500	0.723	1082	1.8	3.0	9.149	A
	Exit	1	1		402			402	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	14	636	0.022	14	0.0	0.0	5.603	A
			2	A,C,D	272	636	0.427	270	0.5	1.0	10.586	B
		2	1	(A,B,C,D)	286			286	0.0	0.0	0.018	A
	Exit	1	1		155			155	0.0	0.0	0.000	A
B	Entry	1	1	C	530	1500	0.353	531	0.6	0.8	5.015	A
			2	A,B,D	20	1500	0.013	20	0.0	0.0	3.192	A
	Exit	1	1		326			326	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	677	2738	0.247	676	0.4	0.6	2.586	A
	Exit	1	1		1944			1944	0.0	0.0	0.000	A
D	Entry	1	1	A	84	1500	0.056	83	0.1	0.1	2.951	A
			2	B,C,D	1326	1500	0.884	1327	3.0	8.3	19.837	C
	Exit	1	1		499			499	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	636	0.021	13	0.0	0.0	5.788	A
			2	A,C,D	274	636	0.431	272	1.0	1.0	11.619	B
		2	1	(A,B,C,D)	287			287	0.0	0.0	0.027	A
	Exit	1	1		158			158	0.0	0.0	0.000	A
B	Entry	1	1	C	534	1500	0.356	533	0.8	0.8	5.036	A
			2	A,B,D	21	1500	0.014	21	0.0	0.0	3.093	A
	Exit	1	1		319			319	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	672	2740	0.245	670	0.6	0.6	2.575	A
	Exit	1	1		1956			1956	0.0	0.0	0.000	A
D	Entry	1	1	A	86	1500	0.057	86	0.1	0.1	2.935	A
			2	B,C,D	1326	1500	0.884	1334	8.3	8.4	23.466	C
	Exit	1	1		496			496	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	787	0.015	11	0.0	0.0	4.731	A
			2	A,C,D	224	787	0.284	224	1.0	0.5	8.038	A
		2	1	(A,B,C,D)	235			235	0.0	0.0	0.004	A
	Exit	1	1		132			132	0.0	0.0	0.000	A
B	Entry	1	1	C	427	1500	0.284	427	0.8	0.6	4.433	A
			2	A,B,D	16	1500	0.011	17	0.0	0.0	3.101	A
	Exit	1	1		247			247	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	532	2781	0.191	530	0.6	0.5	2.387	A
	Exit	1	1		1590			1590	0.0	0.0	0.000	A
D	Entry	1	1	A	74	1500	0.050	75	0.1	0.0	2.903	A
			2	B,C,D	1089	1500	0.726	1090	8.4	2.7	10.666	B
	Exit	1	1		404			404	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	884	0.010	9	0.0	0.0	4.263	A
			2	A,C,D	188	884	0.213	189	0.5	0.3	5.961	A
		2	1	(A,B,C,D)	197			197	0.0	0.0	0.000	A
	Exit	1	1		107			107	0.0	0.0	0.000	A
B	Entry	1	1	C	365	1500	0.244	366	0.6	0.4	4.152	A
			2	A,B,D	14	1500	0.009	14	0.0	0.0	2.937	A
	Exit	1	1		224			224	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	458	2812	0.163	457	0.5	0.3	2.234	A
	Exit	1	1		1340			1340	0.0	0.0	0.000	A
D	Entry	1	1	A	60	1500	0.040	60	0.0	0.0	2.972	A
			2	B,C,D	908	1500	0.605	910	2.7	1.7	6.649	A
	Exit	1	1		333			333	0.0	0.0	0.000	A

Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D12 - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, PM	Demand Set 12: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	4.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	OPERATION - BASE + COMMITTED + DEVELOPMENT 2023	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	188	100.000
B		ONE HOUR	✓	304	100.000
C		ONE HOUR	✓	1674	100.000
D		ONE HOUR	✓	564	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	2	12	72	102
	B	65	1	238	0
	C	143	396	0	1135
	D	198	2	363	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	42	5
	B	3	0	74	0
	C	9	27	0	5
	D	3	100	15	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.11	0.3	A	174	261
B	4.37	0.5	A	277	416
C	4.66	2.6	A	1531	2296
D	3.53	0.6	A	519	779

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	139	35	568	140	309	0.0	0.1	3.957	A
B	225	56	403	225	306	0.0	0.3	3.944	A
C	1269	317	133	1267	495	0.0	1.1	2.585	A
D	425	106	453	425	946	0.0	0.4	3.169	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	168	42	679	168	368	0.1	0.2	4.493	A
B	274	69	487	275	360	0.3	0.3	4.073	A
C	1485	371	155	1488	607	1.1	1.1	3.095	A
D	510	128	537	510	1106	0.4	0.5	3.309	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	210	52	841	209	445	0.2	0.3	5.035	A
B	333	83	599	334	451	0.3	0.4	4.252	A
C	1833	458	188	1832	745	1.1	2.6	4.449	A
D	624	156	663	624	1357	0.5	0.6	3.533	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	210	53	835	210	451	0.3	0.3	5.115	A
B	336	84	592	335	453	0.4	0.5	4.374	A
C	1841	460	189	1838	738	2.6	2.6	4.663	A
D	617	154	670	617	1357	0.6	0.6	3.502	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	172	43	687	172	375	0.3	0.2	4.633	A
B	271	68	490	271	369	0.5	0.3	4.104	A
C	1508	377	156	1506	605	2.6	1.4	3.220	A
D	513	128	551	512	1112	0.6	0.5	3.308	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	145	36	576	144	304	0.2	0.2	4.039	A
B	225	56	410	224	310	0.3	0.3	4.101	A
C	1248	312	130	1249	504	1.4	0.9	2.639	A
D	426	107	453	427	927	0.5	0.4	3.167	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

15:45 - 16:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	1152	0.007	9	0.0	0.0	3.020	A
			2	A,C,D	130	1152	0.113	131	0.0	0.1	4.030	A
		2	1	(A,B,C,D)	139			139	0.0	0.0	0.000	A
	Exit	1	1		309			309	0.0	0.0	0.000	A
B	Entry	1	1	C	175	1500	0.116	174	0.0	0.3	4.636	A
			2	A,B,D	50	1500	0.034	51	0.0	0.0	2.499	A
	Exit	1	1		306			306	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1269	2819	0.450	1267	0.0	1.1	2.585	A
	Exit	1	1		495			495	0.0	0.0	0.000	A
D	Entry	1	1	A	151	1500	0.101	152	0.0	0.1	2.783	A
			2	B,C,D	273	1500	0.182	274	0.0	0.3	3.405	A
	Exit	1	1		946			946	0.0	0.0	0.000	A

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	1099	0.010	11	0.0	0.0	3.420	A
			2	A,C,D	157	1099	0.143	157	0.1	0.2	4.582	A
		2	1	(A,B,C,D)	168			168	0.0	0.0	0.000	A
	Exit	1	1		368			368	0.0	0.0	0.000	A
B	Entry	1	1	C	213	1500	0.142	213	0.3	0.2	4.802	A
			2	A,B,D	62	1500	0.041	62	0.0	0.0	2.532	A
	Exit	1	1		360			360	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1485	2794	0.532	1488	1.1	1.1	3.095	A
	Exit	1	1		607			607	0.0	0.0	0.000	A
D	Entry	1	1	A	177	1500	0.118	178	0.1	0.1	2.837	A
			2	B,C,D	333	1500	0.222	332	0.3	0.4	3.587	A
	Exit	1	1		1106			1106	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	1021	0.012	13	0.0	0.0	3.459	A
			2	A,C,D	197	1021	0.193	196	0.2	0.3	5.158	A
		2	1	(A,B,C,D)	210			210	0.0	0.0	0.000	A
	Exit	1	1		445			445	0.0	0.0	0.000	A
B	Entry	1	1	C	260	1500	0.173	261	0.2	0.3	5.026	A
			2	A,B,D	73	1500	0.049	73	0.0	0.1	2.598	A
	Exit	1	1		451			451	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1833	2757	0.665	1832	1.1	2.6	4.449	A
	Exit	1	1		745			745	0.0	0.0	0.000	A
D	Entry	1	1	A	218	1500	0.145	219	0.1	0.2	2.917	A
			2	B,C,D	405	1500	0.270	405	0.4	0.5	3.903	A
	Exit	1	1		1357			1357	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	14	1024	0.014	14	0.0	0.0	3.782	A
			2	A,C,D	196	1024	0.191	195	0.3	0.3	5.221	A
		2	1	(A,B,C,D)	210			210	0.0	0.0	0.000	A
	Exit	1	1		451			451	0.0	0.0	0.000	A
B	Entry	1	1	C	262	1500	0.175	261	0.3	0.5	5.178	A
			2	A,B,D	74	1500	0.049	74	0.1	0.0	2.638	A
	Exit	1	1		453			453	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1841	2756	0.668	1838	2.6	2.6	4.663	A
	Exit	1	1		738			738	0.0	0.0	0.000	A
D	Entry	1	1	A	217	1500	0.145	218	0.2	0.2	2.952	A
			2	B,C,D	400	1500	0.266	399	0.5	0.4	3.836	A
	Exit	1	1		1357			1357	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1095	0.009	10	0.0	0.0	3.395	A
			2	A,C,D	162	1095	0.148	161	0.3	0.2	4.726	A
		2	1	(A,B,C,D)	172			172	0.0	0.0	0.000	A
	Exit	1	1		375			375	0.0	0.0	0.000	A
B	Entry	1	1	C	210	1500	0.140	210	0.5	0.3	4.824	A
			2	A,B,D	61	1500	0.041	61	0.0	0.1	2.590	A
	Exit	1	1		369			369	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1508	2793	0.540	1506	2.6	1.4	3.220	A
	Exit	1	1		605			605	0.0	0.0	0.000	A
D	Entry	1	1	A	182	1500	0.122	182	0.2	0.2	2.814	A
			2	B,C,D	330	1500	0.220	330	0.4	0.4	3.610	A
	Exit	1	1		1112			1112	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1149	0.008	10	0.0	0.0	3.146	A
			2	A,C,D	135	1149	0.117	135	0.2	0.2	4.116	A
		2	1	(A,B,C,D)	145			145	0.0	0.0	0.000	A
	Exit	1	1		304			304	0.0	0.0	0.000	A
B	Entry	1	1	C	175	1500	0.117	175	0.3	0.2	4.813	A
			2	A,B,D	49	1500	0.033	49	0.1	0.1	2.620	A
	Exit	1	1		310			310	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1248	2822	0.442	1249	1.4	0.9	2.639	A
	Exit	1	1		504			504	0.0	0.0	0.000	A
D	Entry	1	1	A	150	1500	0.100	150	0.2	0.1	2.754	A
			2	B,C,D	276	1500	0.184	277	0.4	0.3	3.414	A
	Exit	1	1		927			927	0.0	0.0	0.000	A

Do Minimum - OPERATION - BASE + COMMITTED 2030, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D12 - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, PM	Demand Set 12: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	18.48	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	OPERATION - BASE + COMMITTED 2030	AM	ONE HOUR	06:45	08:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	276	100.000
B		ONE HOUR	✓	512	100.000
C		ONE HOUR	✓	603	100.000
D		ONE HOUR	✓	1348	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	12	87	177
	B	18	1	492	1
	C	54	273	0	276
	D	84	0	1264	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	36	3
	B	36	0	26	0
	C	47	75	0	13
	D	14	0	4	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	12.72	1.2	B	252	378
B	4.88	0.9	A	471	706
C	2.42	0.5	A	554	831
D	31.98	13.4	D	1241	1861

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	207	52	1138	208	117	0.0	0.4	5.360	A
B	393	98	1141	393	204	0.0	0.4	4.091	A
C	443	111	149	443	1385	0.0	0.3	2.119	A
D	1009	252	246	1009	346	0.0	1.6	6.724	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	238	60	1405	236	131	0.4	0.5	7.460	A
B	472	118	1380	472	262	0.4	0.6	4.421	A
C	542	135	173	541	1679	0.3	0.4	2.325	A
D	1222	305	313	1223	401	1.6	3.7	9.482	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	304	76	1690	303	177	0.5	1.1	11.494	B
B	567	142	1674	567	319	0.6	0.9	4.876	A
C	671	168	220	674	2021	0.4	0.4	2.425	A
D	1510	378	388	1479	506	3.7	12.4	23.751	C

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	301	75	1674	299	178	1.1	1.2	12.724	B
B	552	138	1658	553	315	0.9	0.7	4.834	A
C	660	165	218	659	1993	0.4	0.5	2.389	A
D	1469	367	381	1471	496	12.4	13.4	31.980	D

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	247	62	1398	248	141	1.2	0.5	8.947	A
B	456	114	1386	454	260	0.7	0.8	4.373	A
C	546	137	176	546	1664	0.5	0.4	2.310	A
D	1216	304	315	1223	407	13.4	3.6	14.568	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	213	53	1162	213	118	0.5	0.4	6.282	A
B	383	96	1156	381	220	0.8	0.5	4.038	A
C	465	116	150	465	1388	0.4	0.3	2.171	A
D	1018	255	268	1013	348	3.6	2.2	7.089	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

06:45 - 07:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	878	0.011	10	0.0	0.0	3.880	A
			2	A,C,D	197	878	0.225	198	0.0	0.4	5.440	A
		2	1	(A,B,C,D)	207			207	0.0	0.0	0.000	A
	Exit	1	1		117			117	0.0	0.0	0.000	A
B	Entry	1	1	C	379	1500	0.253	379	0.0	0.4	4.119	A
			2	A,B,D	14	1500	0.009	14	0.0	0.0	3.374	A
	Exit	1	1		204			204	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	443	2801	0.158	443	0.0	0.3	2.119	A
	Exit	1	1		1385			1385	0.0	0.0	0.000	A
D	Entry	1	1	A	65	1500	0.044	66	0.0	0.1	2.774	A
			2	B,C,D	943	1500	0.629	943	0.0	1.6	6.968	A
	Exit	1	1		346			346	0.0	0.0	0.000	A

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	749	0.013	10	0.0	0.0	4.543	A
			2	A,C,D	228	749	0.305	227	0.4	0.5	7.615	A
		2	1	(A,B,C,D)	238			238	0.0	0.0	0.000	A
	Exit	1	1		131			131	0.0	0.0	0.000	A
B	Entry	1	1	C	452	1500	0.302	453	0.4	0.6	4.460	A
			2	A,B,D	19	1500	0.013	19	0.0	0.0	3.404	A
	Exit	1	1		262			262	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	542	2774	0.195	541	0.3	0.4	2.325	A
	Exit	1	1		1679			1679	0.0	0.0	0.000	A
D	Entry	1	1	A	69	1500	0.046	70	0.1	0.1	2.813	A
			2	B,C,D	1152	1500	0.768	1153	1.6	3.6	9.882	A
	Exit	1	1		401			401	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	612	0.020	12	0.0	0.0	5.574	A
			2	A,C,D	292	612	0.477	291	0.5	1.1	11.759	B
		2	1	(A,B,C,D)	304			304	0.0	0.0	0.019	A
	Exit	1	1		177			177	0.0	0.0	0.000	A
B	Entry	1	1	C	541	1500	0.361	541	0.6	0.9	4.939	A
			2	A,B,D	26	1500	0.017	26	0.0	0.0	3.331	A
	Exit	1	1		319			319	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	671	2722	0.246	674	0.4	0.4	2.425	A
	Exit	1	1		2021			2021	0.0	0.0	0.000	A
D	Entry	1	1	A	95	1500	0.064	96	0.1	0.0	2.957	A
			2	B,C,D	1415	1500	0.943	1383	3.6	12.3	25.043	D
	Exit	1	1		506			506	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	620	0.021	13	0.0	0.0	5.799	A
			2	A,C,D	288	620	0.465	286	1.1	1.2	12.998	B
		2	1	(A,B,C,D)	301			301	0.0	0.0	0.067	A
	Exit	1	1		178			178	0.0	0.0	0.000	A
B	Entry	1	1	C	529	1500	0.353	531	0.9	0.7	4.897	A
			2	A,B,D	23	1500	0.016	23	0.0	0.0	3.203	A
	Exit	1	1		315			315	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	660	2724	0.242	659	0.4	0.5	2.389	A
	Exit	1	1		1993			1993	0.0	0.0	0.000	A
D	Entry	1	1	A	99	1500	0.066	99	0.0	0.1	2.890	A
			2	B,C,D	1371	1500	0.914	1372	12.3	13.4	33.760	D
	Exit	1	1		496			496	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	753	0.014	10	0.0	0.0	4.971	A
			2	A,C,D	237	753	0.315	238	1.2	0.5	9.138	A
		2	1	(A,B,C,D)	247			247	0.0	0.0	0.005	A
	Exit	1	1		141			141	0.0	0.0	0.000	A
B	Entry	1	1	C	438	1500	0.292	436	0.7	0.7	4.413	A
			2	A,B,D	18	1500	0.012	18	0.0	0.1	3.327	A
	Exit	1	1		260			260	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	546	2770	0.197	546	0.5	0.4	2.310	A
	Exit	1	1		1664			1664	0.0	0.0	0.000	A
D	Entry	1	1	A	75	1500	0.050	75	0.1	0.1	2.812	A
			2	B,C,D	1141	1500	0.760	1148	13.4	3.5	15.278	C
	Exit	1	1		407			407	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	866	0.011	10	0.0	0.0	3.864	A
			2	A,C,D	204	866	0.235	204	0.5	0.4	6.408	A
		2	1	(A,B,C,D)	213			213	0.0	0.0	0.000	A
	Exit	1	1		118			118	0.0	0.0	0.000	A
B	Entry	1	1	C	367	1500	0.245	366	0.7	0.5	4.079	A
			2	A,B,D	15	1500	0.010	15	0.1	0.0	2.964	A
	Exit	1	1		220			220	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	465	2800	0.166	465	0.4	0.3	2.171	A
	Exit	1	1		1388			1388	0.0	0.0	0.000	A
D	Entry	1	1	A	61	1500	0.041	61	0.1	0.1	2.797	A
			2	B,C,D	957	1500	0.638	952	3.5	2.2	7.339	A
	Exit	1	1		348			348	0.0	0.0	0.000	A

Do Minimum - OPERATION - BASE + COMMITTED 2030, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D12 - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, PM	Demand Set 12: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	4.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	OPERATION - BASE + COMMITTED 2030	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	205	100.000
B		ONE HOUR	✓	336	100.000
C		ONE HOUR	✓	1800	100.000
D		ONE HOUR	✓	600	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	2	12	83	108
	B	69	1	266	0
	C	156	427	0	1217
	D	210	2	387	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	41	6
	B	3	0	73	0
	C	9	26	0	4
	D	3	100	13	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.45	0.4	A	189	283
B	4.41	0.5	A	309	464
C	5.43	3.6	A	1650	2475
D	3.54	0.7	A	553	829

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	155	39	618	155	335	0.0	0.3	4.137	A
B	252	63	437	251	336	0.0	0.3	4.092	A
C	1359	340	136	1361	553	0.0	1.1	2.730	A
D	452	113	500	453	997	0.0	0.4	3.164	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	184	46	742	183	397	0.3	0.3	4.786	A
B	303	76	527	303	398	0.3	0.4	4.225	A
C	1622	406	161	1626	669	1.1	1.5	3.504	A
D	550	137	589	550	1198	0.4	0.6	3.383	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	228	57	898	228	479	0.3	0.4	5.449	A
B	369	92	642	371	484	0.4	0.4	4.412	A
C	1971	493	198	1970	815	1.5	3.0	5.312	A
D	661	165	714	662	1453	0.6	0.7	3.543	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	225	56	906	224	480	0.4	0.4	5.382	A
B	372	93	646	372	485	0.4	0.5	4.356	A
C	1981	495	200	1978	817	3.0	3.6	5.429	A
D	667	167	719	667	1459	0.7	0.7	3.496	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	188	47	733	187	388	0.4	0.3	4.734	A
B	310	78	527	310	393	0.5	0.3	4.273	A
C	1611	403	164	1609	673	3.6	1.7	3.613	A
D	538	135	583	539	1191	0.7	0.5	3.330	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	154	38	618	154	324	0.3	0.1	4.334	A
B	249	62	435	249	337	0.3	0.4	4.166	A
C	1355	339	136	1356	548	1.7	1.1	2.798	A
D	447	112	496	447	997	0.5	0.4	3.159	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

15:45 - 16:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1128	0.008	10	0.0	0.0	3.154	A
			2	A,C,D	146	1128	0.129	146	0.0	0.3	4.208	A
		2	1	(A,B,C,D)	155			155	0.0	0.0	0.001	A
	Exit	1	1		335			335	0.0	0.0	0.000	A
B	Entry	1	1	C	199	1500	0.132	198	0.0	0.3	4.824	A
			2	A,B,D	54	1500	0.036	54	0.0	0.0	2.432	A
	Exit	1	1		336			336	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1359	2815	0.483	1361	0.0	1.1	2.730	A
	Exit	1	1		553			553	0.0	0.0	0.000	A
D	Entry	1	1	A	159	1500	0.106	160	0.0	0.1	2.753	A
			2	B,C,D	293	1500	0.195	293	0.0	0.3	3.408	A
	Exit	1	1		997			997	0.0	0.0	0.000	A

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	1069	0.009	10	0.0	0.0	3.584	A
			2	A,C,D	174	1069	0.163	174	0.3	0.3	4.870	A
		2	1	(A,B,C,D)	184			184	0.0	0.0	0.000	A
	Exit	1	1		397			397	0.0	0.0	0.000	A
B	Entry	1	1	C	241	1500	0.161	242	0.3	0.3	4.978	A
			2	A,B,D	62	1500	0.041	62	0.0	0.0	2.531	A
	Exit	1	1		398			398	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1622	2787	0.582	1626	1.1	1.5	3.504	A
	Exit	1	1		669			669	0.0	0.0	0.000	A
D	Entry	1	1	A	195	1500	0.130	195	0.1	0.2	2.897	A
			2	B,C,D	355	1500	0.237	355	0.3	0.4	3.668	A
	Exit	1	1		1198			1198	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	994	0.013	13	0.0	0.0	3.606	A
			2	A,C,D	214	994	0.216	215	0.3	0.4	5.582	A
		2	1	(A,B,C,D)	228			228	0.0	0.0	0.001	A
	Exit	1	1		479			479	0.0	0.0	0.000	A
B	Entry	1	1	C	295	1500	0.197	297	0.3	0.4	5.198	A
			2	A,B,D	74	1500	0.049	74	0.0	0.1	2.584	A
	Exit	1	1		484			484	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1971	2746	0.718	1970	1.5	3.0	5.312	A
	Exit	1	1		815			815	0.0	0.0	0.000	A
D	Entry	1	1	A	233	1500	0.155	233	0.2	0.2	2.913	A
			2	B,C,D	428	1500	0.286	429	0.4	0.5	3.919	A
	Exit	1	1		1453			1453	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	989	0.012	12	0.0	0.0	3.616	A
			2	A,C,D	213	989	0.215	212	0.4	0.3	5.508	A
		2	1	(A,B,C,D)	225			225	0.0	0.0	0.000	A
	Exit	1	1		480			480	0.0	0.0	0.000	A
B	Entry	1	1	C	296	1500	0.197	296	0.4	0.4	5.125	A
			2	A,B,D	76	1500	0.051	76	0.1	0.1	2.601	A
	Exit	1	1		485			485	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1981	2744	0.722	1978	3.0	3.6	5.429	A
	Exit	1	1		817			817	0.0	0.0	0.000	A
D	Entry	1	1	A	232	1500	0.155	232	0.2	0.2	2.963	A
			2	B,C,D	435	1500	0.290	435	0.5	0.5	3.810	A
	Exit	1	1		1459			1459	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	1073	0.012	12	0.0	0.0	3.411	A
			2	A,C,D	176	1073	0.164	175	0.3	0.3	4.835	A
		2	1	(A,B,C,D)	188			188	0.0	0.0	0.001	A
	Exit	1	1		388			388	0.0	0.0	0.000	A
B	Entry	1	1	C	249	1500	0.166	249	0.4	0.3	4.994	A
			2	A,B,D	61	1500	0.041	61	0.1	0.0	2.602	A
	Exit	1	1		393			393	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1611	2784	0.579	1609	3.6	1.7	3.613	A
	Exit	1	1		673			673	0.0	0.0	0.000	A
D	Entry	1	1	A	184	1500	0.123	184	0.2	0.1	2.828	A
			2	B,C,D	354	1500	0.236	355	0.5	0.4	3.620	A
	Exit	1	1		1191			1191	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	1128	0.008	9	0.0	0.0	3.370	A
			2	A,C,D	145	1128	0.128	145	0.3	0.1	4.403	A
		2	1	(A,B,C,D)	154			154	0.0	0.0	0.000	A
	Exit	1	1		324			324	0.0	0.0	0.000	A
B	Entry	1	1	C	196	1500	0.131	197	0.3	0.3	4.847	A
			2	A,B,D	52	1500	0.035	52	0.0	0.0	2.634	A
	Exit	1	1		337			337	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1355	2815	0.481	1356	1.7	1.1	2.798	A
	Exit	1	1		548			548	0.0	0.0	0.000	A
D	Entry	1	1	A	155	1500	0.103	155	0.1	0.1	2.766	A
			2	B,C,D	293	1500	0.195	292	0.4	0.3	3.392	A
	Exit	1	1		997			997	0.0	0.0	0.000	A

Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D12 - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, PM	Demand Set 12: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	21.76	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	OPERATION - BASE + COMMITTED + DEVELOPMENT 2030	AM	ONE HOUR	06:45	08:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	277	100.000
B		ONE HOUR	✓	547	100.000
C		ONE HOUR	✓	669	100.000
D		ONE HOUR	✓	1387	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	12	88	177
	B	18	1	527	1
	C	54	306	0	309
	D	84	0	1303	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	36	3
	B	36	0	29	0
	C	47	77	0	19
	D	14	0	5	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	15.31	1.8	C	255	382
B	5.36	0.9	A	504	756
C	2.68	0.6	A	617	926
D	38.79	18.3	E	1274	1911

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	202	50	1218	203	114	0.0	0.4	5.599	A
B	413	103	1178	412	243	0.0	0.6	4.375	A
C	503	126	145	503	1445	0.0	0.4	2.216	A
D	1038	260	291	1042	358	0.0	2.0	7.268	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	248	62	1471	247	140	0.4	0.6	7.968	A
B	492	123	1430	493	289	0.6	0.6	4.672	A
C	599	150	176	595	1747	0.4	0.6	2.382	A
D	1269	317	343	1269	428	2.0	4.3	11.570	B

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	313	78	1769	308	178	0.6	1.8	14.796	B
B	605	151	1725	607	352	0.6	0.8	5.362	A
C	743	186	218	743	2114	0.6	0.6	2.677	A
D	1538	385	420	1528	541	4.3	14.4	27.901	D

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	311	78	1757	308	172	1.8	1.6	15.309	C
B	596	149	1708	596	357	0.8	0.9	5.174	A
C	746	187	223	745	2082	0.6	0.6	2.616	A
D	1517	379	425	1504	543	14.4	18.3	38.788	E

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	248	62	1452	247	141	1.6	0.6	9.953	A
B	495	124	1410	497	288	0.9	0.6	4.627	A
C	600	150	178	600	1729	0.6	0.4	2.453	A
D	1242	310	339	1253	438	18.3	3.7	18.791	C

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	206	52	1215	207	116	0.6	0.4	6.710	A
B	422	106	1176	424	246	0.6	0.4	4.505	A
C	514	129	145	515	1455	0.4	0.3	2.294	A
D	1041	260	289	1042	371	3.7	2.1	7.338	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

06:45 - 07:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	839	0.010	8	0.0	0.0	4.099	A
			2	A,C,D	193	839	0.230	195	0.0	0.4	5.676	A
		2	1	(A,B,C,D)	202			202	0.0	0.0	0.000	A
	Exit	1	1		114			114	0.0	0.0	0.000	A
B	Entry	1	1	C	399	1500	0.266	398	0.0	0.5	4.424	A
			2	A,B,D	15	1500	0.010	15	0.0	0.0	3.058	A
	Exit	1	1		243			243	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	503	2805	0.179	503	0.0	0.4	2.216	A
	Exit	1	1		1445			1445	0.0	0.0	0.000	A
D	Entry	1	1	A	58	1500	0.039	58	0.0	0.1	2.886	A
			2	B,C,D	980	1500	0.653	984	0.0	2.0	7.525	A
	Exit	1	1		358			358	0.0	0.0	0.000	A

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	717	0.015	11	0.0	0.0	5.009	A
			2	A,C,D	238	717	0.331	237	0.4	0.6	8.121	A
		2	1	(A,B,C,D)	248			248	0.0	0.0	0.002	A
	Exit	1	1		140			140	0.0	0.0	0.000	A
B	Entry	1	1	C	475	1500	0.317	476	0.5	0.6	4.727	A
			2	A,B,D	17	1500	0.011	17	0.0	0.0	3.195	A
	Exit	1	1		289			289	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	599	2771	0.216	595	0.4	0.6	2.382	A
	Exit	1	1		1747			1747	0.0	0.0	0.000	A
D	Entry	1	1	A	76	1500	0.051	76	0.1	0.1	2.863	A
			2	B,C,D	1194	1500	0.796	1193	2.0	4.2	12.092	B
	Exit	1	1		428			428	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	14	574	0.024	14	0.0	0.0	6.303	A
			2	A,C,D	298	574	0.520	294	0.6	1.7	14.736	B
		2	1	(A,B,C,D)	313			312	0.0	0.1	0.416	A
	Exit	1	1		178			178	0.0	0.0	0.000	A
B	Entry	1	1	C	583	1500	0.389	586	0.6	0.7	5.446	A
			2	A,B,D	21	1500	0.014	21	0.0	0.0	3.041	A
	Exit	1	1		352			352	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	743	2723	0.273	743	0.6	0.6	2.677	A
	Exit	1	1		2114			2114	0.0	0.0	0.000	A
D	Entry	1	1	A	98	1500	0.065	97	0.1	0.1	2.997	A
			2	B,C,D	1441	1500	0.960	1431	4.2	14.3	29.387	D
	Exit	1	1		541			541	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	580	0.020	12	0.0	0.0	6.490	A
			2	A,C,D	298	580	0.515	296	1.7	1.6	15.464	C
		2	1	(A,B,C,D)	311			310	0.1	0.1	0.304	A
	Exit	1	1		172			172	0.0	0.0	0.000	A
B	Entry	1	1	C	572	1500	0.382	573	0.7	0.9	5.244	A
			2	A,B,D	23	1500	0.016	23	0.0	0.0	3.394	A
	Exit	1	1		357			357	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	746	2718	0.274	745	0.6	0.6	2.616	A
	Exit	1	1		2082			2082	0.0	0.0	0.000	A
D	Entry	1	1	A	92	1500	0.062	92	0.1	0.1	2.945	A
			2	B,C,D	1425	1500	0.950	1412	14.3	18.2	40.953	E
	Exit	1	1		543			543	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	727	0.015	11	0.0	0.0	5.512	A
			2	A,C,D	238	727	0.327	236	1.6	0.6	10.172	B
		2	1	(A,B,C,D)	248			248	0.1	0.0	0.034	A
	Exit	1	1		141			141	0.0	0.0	0.000	A
B	Entry	1	1	C	476	1500	0.317	478	0.9	0.6	4.672	A
			2	A,B,D	19	1500	0.012	19	0.0	0.0	3.406	A
	Exit	1	1		288			288	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	600	2769	0.217	600	0.6	0.4	2.453	A
	Exit	1	1		1729			1729	0.0	0.0	0.000	A
D	Entry	1	1	A	79	1500	0.053	79	0.1	0.1	2.937	A
			2	B,C,D	1163	1500	0.775	1174	18.2	3.6	19.747	C
	Exit	1	1		438			438	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	841	0.012	10	0.0	0.0	4.194	A
			2	A,C,D	196	841	0.234	197	0.6	0.4	6.827	A
		2	1	(A,B,C,D)	206			206	0.0	0.0	0.001	A
	Exit	1	1		116			116	0.0	0.0	0.000	A
B	Entry	1	1	C	408	1500	0.272	410	0.6	0.4	4.550	A
			2	A,B,D	14	1500	0.010	14	0.0	0.0	3.242	A
	Exit	1	1		246			246	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	514	2805	0.183	515	0.4	0.3	2.294	A
	Exit	1	1		1455			1455	0.0	0.0	0.000	A
D	Entry	1	1	A	64	1500	0.042	64	0.1	0.1	2.888	A
			2	B,C,D	977	1500	0.652	979	3.6	2.1	7.605	A
	Exit	1	1		371			371	0.0	0.0	0.000	A

Do Minimum - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D12 - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, PM	Demand Set 12: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	5.20	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	OPERATION - BASE + COMMITTED + DEVELOPMENT 2030	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	205	100.000
B		ONE HOUR	✓	349	100.000
C		ONE HOUR	✓	1828	100.000
D		ONE HOUR	✓	613	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	2	12	83	108
	B	69	1	279	0
	C	156	441	0	1231
	D	210	2	400	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	41	6
	B	3	0	74	0
	C	9	27	0	5
	D	3	100	15	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.54	0.4	A	187	281
B	4.61	0.5	A	318	477
C	5.81	3.2	A	1680	2521
D	3.61	0.8	A	565	847

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	154	39	644	154	332	0.0	0.2	4.309	A
B	255	64	450	255	348	0.0	0.3	4.203	A
C	1383	346	136	1388	569	0.0	0.9	2.864	A
D	468	117	509	468	1015	0.0	0.5	3.267	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	183	46	756	183	388	0.2	0.3	4.656	A
B	311	78	532	311	407	0.3	0.4	4.344	A
C	1644	411	160	1649	683	0.9	1.6	3.592	A
D	549	137	596	548	1213	0.5	0.6	3.410	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	231	58	939	232	490	0.3	0.3	5.480	A
B	383	96	662	384	509	0.4	0.5	4.529	A
C	2005	501	203	2009	843	1.6	3.1	5.497	A
D	684	171	746	683	1466	0.6	0.7	3.607	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	227	57	926	226	484	0.3	0.4	5.538	A
B	384	96	646	383	506	0.5	0.5	4.611	A
C	2024	506	193	2028	837	3.1	3.2	5.813	A
D	669	167	741	669	1480	0.7	0.8	3.576	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	178	45	763	178	401	0.4	0.3	4.909	A
B	314	79	532	314	409	0.5	0.5	4.247	A
C	1649	412	162	1650	683	3.2	1.7	3.695	A
D	558	139	605	558	1207	0.8	0.5	3.436	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	151	38	636	151	322	0.3	0.3	4.432	A
B	262	66	443	264	344	0.5	0.2	4.199	A
C	1377	344	135	1378	572	1.7	0.9	2.836	A
D	460	115	501	457	1012	0.5	0.6	3.237	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

15:45 - 16:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	1116	0.008	8	0.0	0.0	3.237	A
			2	A,C,D	146	1116	0.131	145	0.0	0.2	4.384	A
		2	1	(A,B,C,D)	154			154	0.0	0.0	0.000	A
	Exit	1	1		332			332	0.0	0.0	0.000	A
B	Entry	1	1	C	203	1500	0.135	203	0.0	0.2	4.920	A
			2	A,B,D	52	1500	0.035	52	0.0	0.0	2.554	A
	Exit	1	1		348			348	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1383	2816	0.491	1388	0.0	0.9	2.864	A
	Exit	1	1		569			569	0.0	0.0	0.000	A
D	Entry	1	1	A	161	1500	0.108	162	0.0	0.1	2.774	A
			2	B,C,D	306	1500	0.204	306	0.0	0.4	3.558	A
	Exit	1	1		1015			1015	0.0	0.0	0.000	A

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	1062	0.011	12	0.0	0.0	3.427	A
			2	A,C,D	172	1062	0.162	171	0.2	0.2	4.750	A
		2	1	(A,B,C,D)	183			183	0.0	0.0	0.000	A
	Exit	1	1		388			388	0.0	0.0	0.000	A
B	Entry	1	1	C	250	1500	0.166	251	0.2	0.3	5.093	A
			2	A,B,D	61	1500	0.041	61	0.0	0.1	2.574	A
	Exit	1	1		407			407	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1644	2788	0.590	1649	0.9	1.6	3.592	A
	Exit	1	1		683			683	0.0	0.0	0.000	A
D	Entry	1	1	A	187	1500	0.124	186	0.1	0.2	2.815	A
			2	B,C,D	363	1500	0.242	363	0.4	0.4	3.742	A
	Exit	1	1		1213			1213	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	14	974	0.014	14	0.0	0.0	3.468	A
			2	A,C,D	217	974	0.223	218	0.2	0.3	5.628	A
		2	1	(A,B,C,D)	231			231	0.0	0.0	0.000	A
	Exit	1	1		490			490	0.0	0.0	0.000	A
B	Entry	1	1	C	307	1500	0.205	307	0.3	0.4	5.332	A
			2	A,B,D	76	1500	0.051	76	0.1	0.0	2.662	A
	Exit	1	1		509			509	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	2005	2741	0.732	2009	1.6	3.1	5.497	A
	Exit	1	1		843			843	0.0	0.0	0.000	A
D	Entry	1	1	A	236	1500	0.157	236	0.2	0.2	2.936	A
			2	B,C,D	448	1500	0.299	447	0.4	0.6	4.001	A
	Exit	1	1		1466			1466	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	14	980	0.015	14	0.0	0.0	3.696	A
			2	A,C,D	213	980	0.218	212	0.3	0.4	5.673	A
		2	1	(A,B,C,D)	227			227	0.0	0.0	0.002	A
	Exit	1	1		484			484	0.0	0.0	0.000	A
B	Entry	1	1	C	308	1500	0.205	307	0.4	0.5	5.458	A
			2	A,B,D	76	1500	0.051	76	0.0	0.1	2.633	A
	Exit	1	1		506			506	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	2024	2752	0.736	2028	3.1	3.2	5.813	A
	Exit	1	1		837			837	0.0	0.0	0.000	A
D	Entry	1	1	A	234	1500	0.156	233	0.2	0.2	2.961	A
			2	B,C,D	436	1500	0.290	436	0.6	0.6	3.941	A
	Exit	1	1		1480			1480	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1058	0.010	10	0.0	0.0	3.556	A
			2	A,C,D	168	1058	0.159	168	0.4	0.2	5.010	A
		2	1	(A,B,C,D)	178			178	0.0	0.0	0.000	A
	Exit	1	1		401			401	0.0	0.0	0.000	A
B	Entry	1	1	C	252	1500	0.168	252	0.5	0.5	4.924	A
			2	A,B,D	62	1500	0.041	62	0.1	0.1	2.659	A
	Exit	1	1		409			409	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1649	2786	0.592	1650	3.2	1.7	3.695	A
	Exit	1	1		683			683	0.0	0.0	0.000	A
D	Entry	1	1	A	193	1500	0.129	193	0.2	0.1	2.846	A
			2	B,C,D	365	1500	0.243	365	0.6	0.4	3.783	A
	Exit	1	1		1207			1207	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	1120	0.008	9	0.0	0.0	3.247	A
			2	A,C,D	142	1120	0.127	142	0.2	0.3	4.516	A
		2	1	(A,B,C,D)	151			151	0.0	0.0	0.000	A
	Exit	1	1		322			322	0.0	0.0	0.000	A
B	Entry	1	1	C	212	1500	0.141	213	0.5	0.2	4.932	A
			2	A,B,D	51	1500	0.034	51	0.1	0.0	2.457	A
	Exit	1	1		344			344	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1377	2817	0.489	1378	1.7	0.9	2.836	A
	Exit	1	1		572			572	0.0	0.0	0.000	A
D	Entry	1	1	A	156	1500	0.104	156	0.1	0.2	2.783	A
			2	B,C,D	304	1500	0.203	302	0.4	0.4	3.499	A
	Exit	1	1		1012			1012	0.0	0.0	0.000	A

Do Minimum - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D12 - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, PM	Demand Set 12: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	7.31	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026	AM	ONE HOUR	06:45	08:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	707	100.000
B		ONE HOUR	✓	268	100.000
C		ONE HOUR	✓	483	100.000
D		ONE HOUR	✓	924	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	62	231	414
	B	13	0	255	0
	C	140	128	0	215
	D	146	0	778	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	15.32	3.2	C	649	974
B	2.89	0.2	A	247	371
C	1.87	0.3	A	445	668
D	5.33	1.7	A	846	1268

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	536	134	686	536	229	0.0	0.9	5.435	A
B	203	51	1076	203	147	0.0	0.1	2.752	A
C	368	92	329	368	951	0.0	0.1	1.553	A
D	699	175	216	699	481	0.0	0.8	3.789	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	641	160	816	642	269	0.9	1.4	7.328	A
B	234	58	1279	234	178	0.1	0.2	2.775	A
C	444	111	391	443	1123	0.1	0.3	1.714	A
D	825	206	258	827	576	0.8	0.9	4.208	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	792	198	991	789	326	1.4	3.2	12.747	B
B	295	74	1566	295	214	0.2	0.2	2.888	A
C	534	134	479	536	1382	0.3	0.2	1.872	A
D	1003	251	315	1002	700	0.9	1.6	5.161	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	779	195	991	779	334	3.2	3.2	15.316	C
B	297	74	1559	297	211	0.2	0.2	2.841	A
C	526	132	473	528	1383	0.2	0.2	1.859	A
D	1017	254	310	1014	691	1.6	1.7	5.328	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	622	156	813	625	264	3.2	1.1	8.113	A
B	250	62	1268	250	170	0.2	0.2	2.840	A
C	433	108	384	434	1134	0.2	0.2	1.741	A
D	824	206	250	827	568	1.7	0.9	4.272	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	525	131	690	527	228	1.1	0.7	5.876	A
B	204	51	1073	204	145	0.2	0.2	2.749	A
C	366	91	324	366	953	0.2	0.1	1.589	A
D	705	176	215	704	476	0.9	0.8	3.744	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

06:45 - 07:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	48	1095	0.044	48	0.0	0.0	3.313	A
			2	A,C,D	488	1095	0.446	488	0.0	0.9	5.618	A
		2	1	(A,B,C,D)	536			536	0.0	0.0	0.021	A
	Exit	1	1		229			229	0.0	0.0	0.000	A
B	Entry	1	1	C	192	1500	0.128	193	0.0	0.1	2.760	A
			2	A,B,D	11	1500	0.007	11	0.0	0.0	2.583	A
	Exit	1	1		147			147	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	368	2599	0.141	368	0.0	0.1	1.553	A
	Exit	1	1		951			951	0.0	0.0	0.000	A
D	Entry	1	1	A	112	1500	0.074	112	0.0	0.1	2.526	A
			2	B,C,D	588	1500	0.392	588	0.0	0.7	4.035	A
	Exit	1	1		481			481	0.0	0.0	0.000	A

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	58	1033	0.056	58	0.0	0.1	3.740	A
			2	A,C,D	583	1033	0.564	584	0.9	1.3	7.639	A
		2	1	(A,B,C,D)	641			641	0.0	0.0	0.039	A
	Exit	1	1		269			269	0.0	0.0	0.000	A
B	Entry	1	1	C	224	1500	0.149	224	0.1	0.2	2.783	A
			2	A,B,D	10	1500	0.007	10	0.0	0.0	2.610	A
	Exit	1	1		178			178	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	444	2530	0.175	443	0.1	0.3	1.714	A
	Exit	1	1		1123			1123	0.0	0.0	0.000	A
D	Entry	1	1	A	131	1500	0.087	132	0.1	0.1	2.586	A
			2	B,C,D	694	1500	0.462	695	0.7	0.8	4.512	A
	Exit	1	1		576			576	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	67	949	0.071	67	0.1	0.1	4.106	A
			2	A,C,D	725	949	0.765	722	1.3	2.9	12.869	B
		2	1	(A,B,C,D)	792			793	0.0	0.2	0.629	A
	Exit	1	1		326			326	0.0	0.0	0.000	A
B	Entry	1	1	C	282	1500	0.188	282	0.2	0.2	2.899	A
			2	A,B,D	13	1500	0.009	13	0.0	0.0	2.651	A
	Exit	1	1		214			214	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	534	2431	0.220	536	0.3	0.2	1.872	A
	Exit	1	1		1382			1382	0.0	0.0	0.000	A
D	Entry	1	1	A	159	1500	0.106	158	0.1	0.1	2.702	A
			2	B,C,D	845	1500	0.563	844	0.8	1.5	5.624	A
	Exit	1	1		700			700	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	69	949	0.072	69	0.1	0.1	4.053	A
			2	A,C,D	709	949	0.748	710	2.9	2.9	14.706	B
		2	1	(A,B,C,D)	779			778	0.2	0.3	1.529	A
	Exit	1	1		334			334	0.0	0.0	0.000	A
B	Entry	1	1	C	282	1500	0.188	283	0.2	0.2	2.862	A
			2	A,B,D	15	1500	0.010	15	0.0	0.0	2.469	A
	Exit	1	1		211			211	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	526	2437	0.216	528	0.2	0.2	1.859	A
	Exit	1	1		1383			1383	0.0	0.0	0.000	A
D	Entry	1	1	A	165	1500	0.110	165	0.1	0.2	2.777	A
			2	B,C,D	852	1500	0.568	849	1.5	1.5	5.816	A
	Exit	1	1		691			691	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	56	1034	0.054	56	0.1	0.0	3.798	A
			2	A,C,D	566	1034	0.547	569	2.9	1.1	8.467	A
		2	1	(A,B,C,D)	622			622	0.3	0.0	0.091	A
	Exit	1	1		264			264	0.0	0.0	0.000	A
B	Entry	1	1	C	237	1500	0.158	237	0.2	0.2	2.871	A
			2	A,B,D	13	1500	0.008	13	0.0	0.0	2.250	A
	Exit	1	1		170			170	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	433	2538	0.171	434	0.2	0.2	1.741	A
	Exit	1	1		1134			1134	0.0	0.0	0.000	A
D	Entry	1	1	A	128	1500	0.085	128	0.2	0.1	2.597	A
			2	B,C,D	696	1500	0.464	699	1.5	0.8	4.580	A
	Exit	1	1		568			568	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	47	1093	0.043	47	0.0	0.0	3.468	A
			2	A,C,D	478	1093	0.437	480	1.1	0.7	6.104	A
		2	1	(A,B,C,D)	525			525	0.0	0.0	0.013	A
	Exit	1	1		228			228	0.0	0.0	0.000	A
B	Entry	1	1	C	195	1500	0.130	194	0.2	0.2	2.765	A
			2	A,B,D	10	1500	0.007	10	0.0	0.0	2.451	A
	Exit	1	1		145			145	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	366	2605	0.140	366	0.2	0.1	1.589	A
	Exit	1	1		953			953	0.0	0.0	0.000	A
D	Entry	1	1	A	112	1500	0.074	112	0.1	0.1	2.511	A
			2	B,C,D	593	1500	0.396	592	0.8	0.7	3.983	A
	Exit	1	1		476			476	0.0	0.0	0.000	A

Do Minimum - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2023, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - OPERATION - BASE + COMMITTED + DEVELOPMENT 2030, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D12 - OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026, PM	Demand Set 12: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	4.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	OPERATION WITH LINK ROAD - BASE + COMMITTED + DEVELOPMENT 2026	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	706	100.000
B		ONE HOUR	✓	252	100.000
C		ONE HOUR	✓	1115	100.000
D		ONE HOUR	✓	569	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	62	230	414
	B	13	0	239	0
	C	386	219	0	510
	D	413	0	156	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	6.68	1.4	A	647	971
B	2.85	0.2	A	229	344
C	3.00	1.0	A	1013	1519
D	3.37	0.6	A	519	779

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	527	132	293	526	613	0.0	0.8	4.261	A
B	187	47	605	187	214	0.0	0.1	2.725	A
C	837	209	320	836	472	0.0	0.5	1.918	A
D	438	110	469	438	686	0.0	0.4	2.959	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	645	161	339	643	735	0.8	0.9	4.916	A
B	235	59	727	235	256	0.1	0.2	2.766	A
C	995	249	385	994	576	0.5	0.6	2.289	A
D	523	131	548	525	832	0.4	0.3	2.981	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	779	195	408	777	899	0.9	1.4	6.679	A
B	273	68	878	272	308	0.2	0.2	2.851	A
C	1227	307	465	1227	686	0.6	1.0	3.004	A
D	626	156	679	628	1012	0.3	0.5	3.367	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	777	194	395	777	880	1.4	1.2	6.507	A
B	271	68	869	271	302	0.2	0.1	2.796	A
C	1211	303	465	1212	676	1.0	0.8	2.925	A
D	603	151	672	603	1005	0.5	0.6	3.200	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	634	158	332	636	713	1.2	0.9	5.277	A
B	231	58	723	231	245	0.1	0.2	2.755	A
C	980	245	386	982	567	0.8	0.6	2.382	A
D	496	124	548	497	821	0.6	0.4	2.993	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	523	131	279	523	607	0.9	0.5	4.396	A
B	179	45	593	179	209	0.2	0.2	2.649	A
C	827	207	315	827	458	0.6	0.4	2.031	A
D	431	108	456	429	685	0.4	0.4	2.892	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

15:45 - 16:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	45	1285	0.035	45	0.0	0.1	2.977	A
			2	A,C,D	482	1285	0.375	481	0.0	0.7	4.383	A
		2	1	(A,B,C,D)	527			527	0.0	0.0	0.000	A
	Exit	1	1		613			613	0.0	0.0	0.000	A
B	Entry	1	1	C	177	1500	0.118	177	0.0	0.1	2.747	A
			2	A,B,D	10	1500	0.007	10	0.0	0.0	2.315	A
	Exit	1	1		214			214	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	837	2609	0.321	836	0.0	0.5	1.918	A
	Exit	1	1		472			472	0.0	0.0	0.000	A
D	Entry	1	1	A	314	1500	0.209	314	0.0	0.3	3.059	A
			2	B,C,D	125	1500	0.083	124	0.0	0.1	2.701	A
	Exit	1	1		686			686	0.0	0.0	0.000	A

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	59	1263	0.047	60	0.1	0.0	2.947	A
			2	A,C,D	586	1263	0.464	583	0.7	0.9	5.103	A
		2	1	(A,B,C,D)	645			645	0.0	0.0	0.000	A
	Exit	1	1		735			735	0.0	0.0	0.000	A
B	Entry	1	1	C	224	1500	0.149	224	0.1	0.2	2.790	A
			2	A,B,D	11	1500	0.007	11	0.0	0.0	2.262	A
	Exit	1	1		256			256	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	995	2536	0.392	994	0.5	0.6	2.289	A
	Exit	1	1		576			576	0.0	0.0	0.000	A
D	Entry	1	1	A	380	1500	0.253	382	0.3	0.2	3.137	A
			2	B,C,D	143	1500	0.095	143	0.1	0.1	2.574	A
	Exit	1	1		832			832	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	69	1229	0.056	69	0.0	0.1	2.944	A
			2	A,C,D	709	1229	0.577	708	0.9	1.3	6.999	A
		2	1	(A,B,C,D)	779			778	0.0	0.1	0.032	A
	Exit	1	1		899			899	0.0	0.0	0.000	A
B	Entry	1	1	C	260	1500	0.173	259	0.2	0.2	2.883	A
			2	A,B,D	13	1500	0.008	12	0.0	0.0	2.236	A
	Exit	1	1		308			308	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1227	2447	0.501	1227	0.6	1.0	3.004	A
	Exit	1	1		686			686	0.0	0.0	0.000	A
D	Entry	1	1	A	458	1500	0.306	458	0.2	0.4	3.602	A
			2	B,C,D	168	1500	0.112	170	0.1	0.1	2.729	A
	Exit	1	1		1012			1012	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	66	1236	0.053	67	0.1	0.0	2.978	A
			2	A,C,D	711	1236	0.576	710	1.3	1.2	6.795	A
		2	1	(A,B,C,D)	777			777	0.1	0.0	0.059	A
	Exit	1	1		880			880	0.0	0.0	0.000	A
B	Entry	1	1	C	257	1500	0.172	258	0.2	0.1	2.807	A
			2	A,B,D	14	1500	0.009	14	0.0	0.0	2.600	A
	Exit	1	1		302			302	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1211	2446	0.495	1212	1.0	0.8	2.925	A
	Exit	1	1		676			676	0.0	0.0	0.000	A
D	Entry	1	1	A	443	1500	0.295	443	0.4	0.4	3.404	A
			2	B,C,D	160	1500	0.107	160	0.1	0.2	2.641	A
	Exit	1	1		1005			1005	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	55	1266	0.043	55	0.0	0.1	3.062	A
			2	A,C,D	579	1266	0.457	581	1.2	0.8	5.501	A
		2	1	(A,B,C,D)	634			634	0.0	0.0	0.002	A
	Exit	1	1		713			713	0.0	0.0	0.000	A
B	Entry	1	1	C	220	1500	0.147	220	0.1	0.2	2.766	A
			2	A,B,D	11	1500	0.007	11	0.0	0.0	2.536	A
	Exit	1	1		245			245	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	980	2535	0.387	982	0.8	0.6	2.382	A
	Exit	1	1		567			567	0.0	0.0	0.000	A
D	Entry	1	1	A	355	1500	0.236	355	0.4	0.3	3.173	A
			2	B,C,D	141	1500	0.094	142	0.2	0.1	2.524	A
	Exit	1	1		821			821	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	48	1292	0.037	48	0.1	0.0	2.739	A
			2	A,C,D	475	1292	0.368	475	0.8	0.5	4.560	A
		2	1	(A,B,C,D)	523			523	0.0	0.0	0.000	A
	Exit	1	1		607			607	0.0	0.0	0.000	A
B	Entry	1	1	C	170	1500	0.113	170	0.2	0.1	2.680	A
			2	A,B,D	10	1500	0.006	9	0.0	0.0	2.082	A
	Exit	1	1		209			209	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	827	2615	0.316	827	0.6	0.4	2.031	A
	Exit	1	1		458			458	0.0	0.0	0.000	A
D	Entry	1	1	A	312	1500	0.208	311	0.3	0.3	3.037	A
			2	B,C,D	119	1500	0.079	118	0.1	0.1	2.508	A
	Exit	1	1		685			685	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: CONSTRUCTION A180 Interchange.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\4_R'abouts\5.0 A180 Interchange Proposed Mitigation
Report generation date: 17/10/2019 09:44:14

»Do Minimum - CONSTRUCTION - BASE + COMMITTED 2021, AM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED 2021, PM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021, AM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021, PM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED 2027, AM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED 2027, PM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027, AM
»Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	Do Minimum [Lane Simulation] - CONSTRUCTION - BASE + COMMITTED 2021							
Arm A	0.9	10.75		B	0.4	4.77		A
Arm B	0.7	4.49		A	0.4	4.13		A
Arm C	0.4	2.37		A	1.8	3.99		A
Arm D	8.8	20.22		C	0.6	3.32		A
	Do Minimum [Lane Simulation] - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021							
Arm A	0.9	11.13		B	0.4	5.30		A
Arm B	1.0	4.86		A	0.5	4.16		A
Arm C	0.4	2.37		A	2.2	4.37		A
Arm D	9.4	22.93		C	0.6	3.37		A
	Do Minimum [Lane Simulation] - CONSTRUCTION - BASE + COMMITTED 2027							
Arm A	1.1	12.09		B	0.3	5.38		A
Arm B	0.9	4.84		A	0.6	4.39		A
Arm C	0.6	2.46		A	3.0	5.09		A
Arm D	11.9	26.61		D	0.7	3.53		A
	Do Minimum [Lane Simulation] - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027							
Arm A	1.0	12.73		B	0.5	5.75		A
Arm B	1.0	5.24		A	0.6	4.42		A
Arm C	0.4	2.51		A	3.5	5.87		A
Arm D	12.0	27.35		D	0.7	3.57		A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	20/08/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\CLEASBYD
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1600702312	253	23.21

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	CONSTRUCTION - BASE + COMMITTED 2021	AM	ONE HOUR	06:45	08:15	15	✓
D4	CONSTRUCTION - BASE + COMMITTED 2021	PM	ONE HOUR	15:45	17:15	15	✓
D5	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021	AM	ONE HOUR	06:45	08:15	15	✓
D6	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021	PM	ONE HOUR	15:45	17:15	15	✓
D7	CONSTRUCTION - BASE + COMMITTED 2027	AM	ONE HOUR	06:45	08:15	15	✓
D8	CONSTRUCTION - BASE + COMMITTED 2027	PM	ONE HOUR	15:45	17:15	15	✓
D9	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027	AM	ONE HOUR	06:45	08:15	15	✓
D10	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027	PM	ONE HOUR	15:45	17:15	15	✓

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Do Minimum	✓	✓	100.000	100.000

Do Minimum - CONSTRUCTION - BASE + COMMITTED 2021, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	12.78	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A1173 NB APPROACH	
B	A180 EB OFFSLIP	
C	A1173 SB APPROACH	
D	A180 WB OFF-SLIP	

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
A	4.62	8.54	23.5	17.7	93.0	11.0	
B	7.72	8.46	24.6	24.2	100.0	10.0	
C	4.09	7.98	29.1	39.3	100.0	9.5	
D	6.55	7.41	25.6	44.3	93.0	0.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.963	2852
B	1.025	3095
C	1.121	2968
D	1.219	3099

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B	✓	9.00	0	99999
		2	A,C,D	✓	9.00	0	99999
	2	1	(A,B,C,D)		Infinity		
B	1 [Give-way line]	1	C		Infinity	1500	2000
		2	A,B,D		Infinity	1500	2000
C	1 [Give-way line]	1	A,B,C,D		Infinity	1800	99999
D	1 [Give-way line]	1	A		Infinity	1500	2000
		2	B,C,D		Infinity	1500	2000

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.482	1426
		2	0.482	1426
B	1 [Give-way line]	1	0.513	1548
		2	0.513	1548
C	1 [Give-way line]	1	1.121	2968
D	1 [Give-way line]	1	0.609	1550
		2	0.609	1550

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			A	B	C	D
A	1 [Give-way line]	1		✓		
		2	✓		✓	✓
	2	1	✓	✓	✓	✓
B	1 [Give-way line]	1			✓	
		2	✓	✓		✓
C	1 [Give-way line]	1	✓	✓	✓	✓
D	1 [Give-way line]	1	✓			
		2		✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	CONSTRUCTION - BASE + COMMITTED 2021	AM	ONE HOUR	06:45	08:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	256	100.000
B		ONE HOUR	✓	451	100.000
C		ONE HOUR	✓	496	100.000
D		ONE HOUR	✓	1271	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	11	82	163
	B	17	1	432	1
	C	43	220	0	233
	D	77	0	1194	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	33	3
	B	31	0	24	0
	C	52	75	0	13
	D	14	0	3	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	10.75	0.9	B	237	355
B	4.49	0.7	A	415	623
C	2.37	0.4	A	458	687
D	20.22	8.8	C	1169	1753

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	197	49	1061	196	100	0.0	0.3	5.166	A
B	343	86	1087	343	170	0.0	0.3	3.809	A
C	375	94	139	374	1291	0.0	0.2	2.036	A
D	954	238	206	954	306	0.0	1.5	6.006	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	228	57	1274	228	126	0.3	0.4	6.606	A
B	408	102	1296	408	205	0.3	0.5	4.075	A
C	447	112	163	446	1542	0.2	0.3	2.179	A
D	1144	286	250	1150	359	1.5	2.7	8.221	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	288	72	1561	288	151	0.4	0.9	9.245	A
B	496	124	1589	497	260	0.5	0.7	4.445	A
C	551	138	205	551	1881	0.3	0.3	2.308	A
D	1408	352	314	1399	443	2.7	8.8	18.148	C

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	282	70	1559	282	151	0.9	0.7	10.753	B
B	500	125	1582	499	260	0.7	0.7	4.485	A
C	559	140	199	559	1882	0.3	0.4	2.371	A
D	1395	349	313	1396	445	8.8	7.5	20.220	C

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	235	59	1273	234	123	0.7	0.4	7.391	A
B	402	101	1293	403	214	0.7	0.5	4.048	A
C	447	112	165	447	1531	0.4	0.2	2.138	A
D	1139	285	257	1139	355	7.5	2.8	9.878	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	192	48	1075	192	105	0.4	0.3	5.677	A
B	341	85	1095	339	172	0.5	0.5	3.829	A
C	369	92	136	369	1298	0.2	0.2	2.097	A
D	973	243	208	972	297	2.8	1.6	6.110	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

06:45 - 07:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	8	915	0.009	8	0.0	0.0	3.819	A
			2	A,C,D	189	915	0.207	188	0.0	0.3	5.231	A
		2	1	(A,B,C,D)	197			197	0.0	0.0	0.000	A
	Exit	1	1		100			100	0.0	0.0	0.000	A
B	Entry	1	1	C	329	1500	0.219	329	0.0	0.3	3.843	A
			2	A,B,D	15	1500	0.010	15	0.0	0.0	3.002	A
	Exit	1	1		170			170	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	375	2813	0.133	374	0.0	0.2	2.036	A
	Exit	1	1		1291			1291	0.0	0.0	0.000	A
D	Entry	1	1	A	55	1500	0.037	56	0.0	0.0	2.833	A
			2	B,C,D	898	1500	0.599	899	0.0	1.5	6.188	A
	Exit	1	1		306			306	0.0	0.0	0.000	A

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	812	0.012	10	0.0	0.0	4.438	A
			2	A,C,D	217	812	0.268	218	0.3	0.4	6.705	A
		2	1	(A,B,C,D)	228			228	0.0	0.0	0.010	A
	Exit	1	1		126			126	0.0	0.0	0.000	A
B	Entry	1	1	C	392	1500	0.261	391	0.3	0.5	4.115	A
			2	A,B,D	17	1500	0.011	16	0.0	0.0	3.140	A
	Exit	1	1		205			205	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	447	2785	0.160	446	0.2	0.3	2.179	A
	Exit	1	1		1542			1542	0.0	0.0	0.000	A
D	Entry	1	1	A	72	1500	0.048	71	0.0	0.1	2.904	A
			2	B,C,D	1073	1500	0.715	1079	1.5	2.6	8.532	A
	Exit	1	1		359			359	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	674	0.020	13	0.0	0.0	5.201	A
			2	A,C,D	275	674	0.408	274	0.4	0.9	9.442	A
		2	1	(A,B,C,D)	288			288	0.0	0.0	0.006	A
	Exit	1	1		151			151	0.0	0.0	0.000	A
B	Entry	1	1	C	476	1500	0.317	477	0.5	0.7	4.494	A
			2	A,B,D	20	1500	0.014	20	0.0	0.0	3.232	A
	Exit	1	1		260			260	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	551	2738	0.201	551	0.3	0.3	2.308	A
	Exit	1	1		1881			1881	0.0	0.0	0.000	A
D	Entry	1	1	A	85	1500	0.057	84	0.1	0.1	2.862	A
			2	B,C,D	1323	1500	0.882	1314	2.6	8.7	19.035	C
	Exit	1	1		443			443	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	675	0.019	13	0.0	0.0	5.463	A
			2	A,C,D	269	675	0.399	270	0.9	0.7	10.973	B
		2	1	(A,B,C,D)	282			282	0.0	0.0	0.056	A
	Exit	1	1		151			151	0.0	0.0	0.000	A
B	Entry	1	1	C	480	1500	0.320	479	0.7	0.7	4.551	A
			2	A,B,D	20	1500	0.013	20	0.0	0.0	2.983	A
	Exit	1	1		260			260	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	559	2744	0.204	559	0.3	0.4	2.371	A
	Exit	1	1		1882			1882	0.0	0.0	0.000	A
D	Entry	1	1	A	84	1500	0.056	84	0.1	0.1	2.899	A
			2	B,C,D	1311	1500	0.874	1312	8.7	7.4	21.234	C
	Exit	1	1		445			445	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	813	0.014	11	0.0	0.0	4.544	A
			2	A,C,D	224	813	0.275	223	0.7	0.4	7.540	A
		2	1	(A,B,C,D)	235			235	0.0	0.0	0.004	A
	Exit	1	1		123			123	0.0	0.0	0.000	A
B	Entry	1	1	C	386	1500	0.257	386	0.7	0.5	4.088	A
			2	A,B,D	16	1500	0.011	16	0.0	0.0	3.121	A
	Exit	1	1		214			214	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	447	2783	0.161	447	0.4	0.2	2.138	A
	Exit	1	1		1531			1531	0.0	0.0	0.000	A
D	Entry	1	1	A	70	1500	0.046	70	0.1	0.1	2.877	A
			2	B,C,D	1069	1500	0.713	1069	7.4	2.8	10.279	B
	Exit	1	1		355			355	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	908	0.010	9	0.0	0.0	3.934	A
			2	A,C,D	183	908	0.201	182	0.4	0.3	5.766	A
		2	1	(A,B,C,D)	192			192	0.0	0.0	0.000	A
	Exit	1	1		105			105	0.0	0.0	0.000	A
B	Entry	1	1	C	325	1500	0.217	324	0.5	0.4	3.860	A
			2	A,B,D	16	1500	0.011	16	0.0	0.0	3.177	A
	Exit	1	1		172			172	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	369	2816	0.131	369	0.2	0.2	2.097	A
	Exit	1	1		1298			1298	0.0	0.0	0.000	A
D	Entry	1	1	A	59	1500	0.039	59	0.1	0.0	2.891	A
			2	B,C,D	914	1500	0.609	913	2.8	1.6	6.299	A
	Exit	1	1		297			297	0.0	0.0	0.000	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED 2021, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	3.92	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	CONSTRUCTION - BASE + COMMITTED 2021	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	181	100.000
B		ONE HOUR	✓	263	100.000
C		ONE HOUR	✓	1564	100.000
D		ONE HOUR	✓	525	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	2	11	68	100
	B	63	1	199	0
	C	133	359	0	1072
	D	193	2	329	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	43	5
	B	3	0	74	0
	C	8	25	0	4
	D	3	100	13	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	4.77	0.4	A	166	250
B	4.13	0.4	A	242	363
C	3.99	1.8	A	1434	2151
D	3.32	0.6	A	483	725

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	130	33	531	131	294	0.0	0.0	3.729	A
B	197	49	378	199	284	0.0	0.1	4.018	A
C	1169	292	122	1167	455	0.0	0.9	2.345	A
D	404	101	419	406	870	0.0	0.3	3.047	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	162	40	629	162	348	0.0	0.2	4.501	A
B	242	60	451	243	339	0.1	0.2	3.921	A
C	1400	350	151	1397	544	0.9	1.1	2.927	A
D	476	119	504	474	1044	0.3	0.6	3.226	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	205	51	750	205	430	0.2	0.2	4.695	A
B	287	72	544	286	410	0.2	0.3	4.077	A
C	1715	429	187	1718	643	1.1	1.6	3.717	A
D	562	140	616	564	1289	0.6	0.5	3.317	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	198	49	754	197	421	0.2	0.4	4.768	A
B	292	73	537	291	413	0.3	0.4	4.126	A
C	1721	430	186	1725	644	1.6	1.8	3.985	A
D	563	141	610	565	1301	0.5	0.4	3.316	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	168	42	631	167	367	0.4	0.3	4.479	A
B	236	59	456	236	343	0.4	0.2	4.031	A
C	1408	352	154	1412	539	1.8	1.2	2.920	A
D	485	121	512	487	1054	0.4	0.4	3.193	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	136	34	542	136	296	0.3	0.2	3.936	A
B	199	50	388	199	290	0.2	0.1	3.917	A
C	1190	297	132	1188	456	1.2	0.9	2.422	A
D	409	102	430	408	890	0.4	0.5	3.182	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

15:45 - 16:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	8	1170	0.007	8	0.0	0.0	2.948	A
			2	A,C,D	122	1170	0.104	123	0.0	0.0	3.792	A
		2	1	(A,B,C,D)	130			130	0.0	0.0	0.000	A
	Exit	1	1		294			294	0.0	0.0	0.000	A
B	Entry	1	1	C	151	1500	0.101	152	0.0	0.1	4.826	A
			2	A,B,D	46	1500	0.031	47	0.0	0.0	2.480	A
	Exit	1	1		284			284	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1169	2831	0.413	1167	0.0	0.9	2.345	A
	Exit	1	1		455			455	0.0	0.0	0.000	A
D	Entry	1	1	A	148	1500	0.099	148	0.0	0.1	2.687	A
			2	B,C,D	257	1500	0.171	257	0.0	0.2	3.269	A
	Exit	1	1		870			870	0.0	0.0	0.000	A

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	1123	0.010	11	0.0	0.0	3.248	A
			2	A,C,D	150	1123	0.134	150	0.0	0.2	4.601	A
		2	1	(A,B,C,D)	162			162	0.0	0.0	0.000	A
	Exit	1	1		348			348	0.0	0.0	0.000	A
B	Entry	1	1	C	181	1500	0.121	182	0.1	0.2	4.662	A
			2	A,B,D	61	1500	0.041	61	0.0	0.0	2.576	A
	Exit	1	1		339			339	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1400	2799	0.500	1397	0.9	1.1	2.927	A
	Exit	1	1		544			544	0.0	0.0	0.000	A
D	Entry	1	1	A	170	1500	0.114	171	0.1	0.1	2.826	A
			2	B,C,D	305	1500	0.203	303	0.2	0.5	3.473	A
	Exit	1	1		1044			1044	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	1065	0.013	14	0.0	0.0	3.253	A
			2	A,C,D	192	1065	0.180	191	0.2	0.2	4.801	A
		2	1	(A,B,C,D)	205			205	0.0	0.0	0.000	A
	Exit	1	1		430			430	0.0	0.0	0.000	A
B	Entry	1	1	C	219	1500	0.146	218	0.2	0.3	4.881	A
			2	A,B,D	68	1500	0.045	68	0.0	0.0	2.585	A
	Exit	1	1		410			410	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1715	2759	0.622	1718	1.1	1.6	3.717	A
	Exit	1	1		643			643	0.0	0.0	0.000	A
D	Entry	1	1	A	207	1500	0.138	208	0.1	0.1	2.823	A
			2	B,C,D	355	1500	0.237	356	0.5	0.3	3.635	A
	Exit	1	1		1289			1289	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	1063	0.012	13	0.0	0.0	3.368	A
			2	A,C,D	185	1063	0.174	185	0.2	0.4	4.875	A
		2	1	(A,B,C,D)	198			198	0.0	0.0	0.000	A
	Exit	1	1		421			421	0.0	0.0	0.000	A
B	Entry	1	1	C	221	1500	0.148	222	0.3	0.3	4.916	A
			2	A,B,D	70	1500	0.047	70	0.0	0.1	2.696	A
	Exit	1	1		413			413	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1721	2759	0.624	1725	1.6	1.8	3.985	A
	Exit	1	1		644			644	0.0	0.0	0.000	A
D	Entry	1	1	A	209	1500	0.139	209	0.1	0.1	2.840	A
			2	B,C,D	354	1500	0.236	355	0.3	0.3	3.616	A
	Exit	1	1		1301			1301	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1122	0.009	10	0.0	0.0	3.143	A
			2	A,C,D	158	1122	0.141	157	0.4	0.2	4.582	A
		2	1	(A,B,C,D)	168			168	0.0	0.0	0.000	A
	Exit	1	1		367			367	0.0	0.0	0.000	A
B	Entry	1	1	C	178	1500	0.119	178	0.3	0.2	4.825	A
			2	A,B,D	58	1500	0.039	58	0.1	0.0	2.586	A
	Exit	1	1		343			343	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1408	2796	0.504	1412	1.8	1.2	2.920	A
	Exit	1	1		539			539	0.0	0.0	0.000	A
D	Entry	1	1	A	186	1500	0.124	187	0.1	0.1	2.825	A
			2	B,C,D	298	1500	0.199	300	0.3	0.3	3.436	A
	Exit	1	1		1054			1054	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	8	1165	0.007	8	0.0	0.0	3.207	A
			2	A,C,D	128	1165	0.109	127	0.2	0.2	3.989	A
		2	1	(A,B,C,D)	136			136	0.0	0.0	0.000	A
	Exit	1	1		296			296	0.0	0.0	0.000	A
B	Entry	1	1	C	147	1500	0.098	148	0.2	0.1	4.779	A
			2	A,B,D	51	1500	0.034	51	0.0	0.0	2.455	A
	Exit	1	1		290			290	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1190	2820	0.422	1188	1.2	0.9	2.422	A
	Exit	1	1		456			456	0.0	0.0	0.000	A
D	Entry	1	1	A	145	1500	0.097	145	0.1	0.2	2.851	A
			2	B,C,D	264	1500	0.176	263	0.3	0.3	3.394	A
	Exit	1	1		890			890	0.0	0.0	0.000	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	13.90	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021	AM	ONE HOUR	06:45	08:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	256	100.000
B		ONE HOUR	✓	562	100.000
C		ONE HOUR	✓	506	100.000
D		ONE HOUR	✓	1293	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	11	82	163
	B	17	1	543	1
	C	43	225	0	238
	D	77	0	1216	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	33	3
	B	31	0	18	0
	C	52	75	0	15
	D	14	0	3	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	11.13	0.9	B	237	356
B	4.86	1.0	A	517	775
C	2.37	0.4	A	464	696
D	22.93	9.4	C	1182	1773

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	191	48	1085	192	103	0.0	0.2	5.214	A
B	429	107	1104	427	173	0.0	0.6	3.941	A
C	384	96	133	382	1397	0.0	0.3	2.090	A
D	978	244	211	977	304	0.0	1.7	6.125	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	236	59	1283	235	125	0.2	0.5	6.806	A
B	512	128	1302	515	216	0.6	0.5	4.372	A
C	459	115	163	459	1654	0.3	0.3	2.183	A
D	1146	286	260	1148	363	1.7	2.8	9.285	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	282	70	1587	282	149	0.5	0.8	10.032	B
B	603	151	1612	599	257	0.5	1.0	4.854	A
C	545	136	202	544	2010	0.3	0.3	2.311	A
D	1429	357	310	1426	436	2.8	8.5	18.128	C

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	284	71	1587	285	151	0.8	0.9	11.126	B
B	624	156	1604	624	268	1.0	0.9	4.863	A
C	566	141	201	567	2027	0.3	0.4	2.366	A
D	1422	356	323	1415	445	8.5	9.4	22.931	C

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	232	58	1296	233	121	0.9	0.4	7.580	A
B	509	127	1312	509	217	0.9	0.7	4.299	A
C	457	114	166	456	1655	0.4	0.4	2.200	A
D	1158	290	259	1159	362	9.4	2.7	10.753	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	199	50	1074	200	102	0.4	0.3	5.678	A
B	423	106	1097	421	176	0.7	0.6	3.958	A
C	372	93	139	373	1380	0.4	0.2	2.080	A
D	961	240	211	965	300	2.7	1.6	6.349	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

06:45 - 07:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	8	903	0.009	8	0.0	0.0	3.777	A
			2	A,C,D	183	903	0.203	184	0.0	0.2	5.287	A
		2	1	(A,B,C,D)	191			191	0.0	0.0	0.000	A
	Exit	1	1		103			103	0.0	0.0	0.000	A
B	Entry	1	1	C	416	1500	0.277	414	0.0	0.6	3.973	A
			2	A,B,D	12	1500	0.008	13	0.0	0.0	2.942	A
	Exit	1	1		173			173	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	384	2818	0.136	382	0.0	0.3	2.090	A
	Exit	1	1		1397			1397	0.0	0.0	0.000	A
D	Entry	1	1	A	58	1500	0.038	58	0.0	0.0	2.827	A
			2	B,C,D	920	1500	0.614	920	0.0	1.7	6.317	A
	Exit	1	1		304			304	0.0	0.0	0.000	A

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	808	0.013	11	0.0	0.0	4.689	A
			2	A,C,D	225	808	0.278	224	0.2	0.5	6.915	A
		2	1	(A,B,C,D)	236			236	0.0	0.0	0.000	A
	Exit	1	1		125			125	0.0	0.0	0.000	A
B	Entry	1	1	C	494	1500	0.330	498	0.6	0.5	4.415	A
			2	A,B,D	17	1500	0.012	17	0.0	0.0	3.033	A
	Exit	1	1		216			216	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	459	2785	0.165	459	0.3	0.3	2.183	A
	Exit	1	1		1654			1654	0.0	0.0	0.000	A
D	Entry	1	1	A	70	1500	0.047	70	0.0	0.1	2.782	A
			2	B,C,D	1076	1500	0.717	1078	1.7	2.7	9.664	A
	Exit	1	1		363			363	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	662	0.019	12	0.0	0.0	5.462	A
			2	A,C,D	269	662	0.406	269	0.5	0.8	10.151	B
		2	1	(A,B,C,D)	282			281	0.0	0.0	0.096	A
	Exit	1	1		149			149	0.0	0.0	0.000	A
B	Entry	1	1	C	582	1500	0.388	579	0.5	1.0	4.908	A
			2	A,B,D	20	1500	0.014	20	0.0	0.0	3.126	A
	Exit	1	1		257			257	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	545	2742	0.199	544	0.3	0.3	2.311	A
	Exit	1	1		2010			2010	0.0	0.0	0.000	A
D	Entry	1	1	A	83	1500	0.055	83	0.1	0.1	2.843	A
			2	B,C,D	1345	1500	0.897	1343	2.7	8.5	19.020	C
	Exit	1	1		436			436	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	661	0.016	11	0.0	0.0	5.764	A
			2	A,C,D	273	661	0.413	275	0.8	0.9	11.335	B
		2	1	(A,B,C,D)	284			284	0.0	0.0	0.054	A
	Exit	1	1		151			151	0.0	0.0	0.000	A
B	Entry	1	1	C	602	1500	0.401	602	1.0	0.9	4.915	A
			2	A,B,D	22	1500	0.014	22	0.0	0.0	3.247	A
	Exit	1	1		268			268	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	566	2743	0.206	567	0.3	0.4	2.366	A
	Exit	1	1		2027			2027	0.0	0.0	0.000	A
D	Entry	1	1	A	86	1500	0.057	86	0.1	0.1	2.859	A
			2	B,C,D	1337	1500	0.891	1330	8.5	9.3	24.082	C
	Exit	1	1		445			445	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	801	0.013	10	0.0	0.0	5.127	A
			2	A,C,D	222	801	0.277	223	0.9	0.4	7.696	A
		2	1	(A,B,C,D)	232			232	0.0	0.0	0.005	A
	Exit	1	1		121			121	0.0	0.0	0.000	A
B	Entry	1	1	C	492	1500	0.328	492	0.9	0.7	4.344	A
			2	A,B,D	17	1500	0.011	17	0.0	0.0	2.910	A
	Exit	1	1		217			217	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	457	2782	0.164	456	0.4	0.4	2.200	A
	Exit	1	1		1655			1655	0.0	0.0	0.000	A
D	Entry	1	1	A	69	1500	0.046	69	0.1	0.1	2.975	A
			2	B,C,D	1089	1500	0.726	1090	9.3	2.6	11.201	B
	Exit	1	1		362			362	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	8	909	0.009	8	0.0	0.0	3.840	A
			2	A,C,D	191	909	0.210	191	0.4	0.3	5.769	A
		2	1	(A,B,C,D)	199			199	0.0	0.0	0.000	A
	Exit	1	1		102			102	0.0	0.0	0.000	A
B	Entry	1	1	C	409	1500	0.273	407	0.7	0.6	3.986	A
			2	A,B,D	14	1500	0.010	14	0.0	0.0	3.088	A
	Exit	1	1		176			176	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	372	2813	0.132	373	0.4	0.2	2.080	A
	Exit	1	1		1380			1380	0.0	0.0	0.000	A
D	Entry	1	1	A	58	1500	0.039	59	0.1	0.0	2.705	A
			2	B,C,D	902	1500	0.601	906	2.6	1.6	6.560	A
	Exit	1	1		300			300	0.0	0.0	0.000	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	4.21	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	181	100.000
B		ONE HOUR	✓	268	100.000
C		ONE HOUR	✓	1647	100.000
D		ONE HOUR	✓	530	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	2	11	68	100
	B	63	1	204	0
	C	133	427	0	1087
	D	193	2	334	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	43	5
	B	3	0	74	0
	C	8	21	0	5
	D	3	100	14	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.30	0.4	A	168	252
B	4.16	0.5	A	244	366
C	4.37	2.2	A	1514	2272
D	3.37	0.6	A	482	723

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	131	33	566	131	295	0.0	0.1	4.023	A
B	205	51	374	204	323	0.0	0.2	3.790	A
C	1239	310	124	1237	454	0.0	1.0	2.563	A
D	398	100	461	399	899	0.0	0.4	3.139	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	165	41	680	166	355	0.1	0.2	4.604	A
B	243	61	450	245	396	0.2	0.2	4.136	A
C	1483	371	150	1480	545	1.0	1.8	3.102	A
D	474	119	561	474	1069	0.4	0.5	3.173	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	199	50	841	201	431	0.2	0.3	4.796	A
B	296	74	554	294	488	0.2	0.5	4.055	A
C	1826	456	187	1825	661	1.8	2.2	4.228	A
D	578	144	694	578	1318	0.5	0.6	3.370	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	200	50	844	198	432	0.3	0.4	5.301	A
B	291	73	554	292	488	0.5	0.3	4.158	A
C	1828	457	191	1827	655	2.2	2.2	4.368	A
D	588	147	689	587	1329	0.6	0.5	3.347	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	170	43	671	168	348	0.4	0.3	4.457	A
B	243	61	451	241	388	0.3	0.4	3.953	A
C	1478	369	150	1473	542	2.2	1.4	3.082	A
D	463	116	554	465	1069	0.5	0.3	3.234	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	143	36	573	143	293	0.3	0.1	3.921	A
B	186	46	381	185	335	0.4	0.3	3.964	A
C	1233	308	129	1230	438	1.4	1.1	2.593	A
D	391	98	476	391	884	0.3	0.4	3.195	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

15:45 - 16:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	1153	0.008	9	0.0	0.0	2.808	A
			2	A,C,D	122	1153	0.105	122	0.0	0.1	4.114	A
		2	1	(A,B,C,D)	131			131	0.0	0.0	0.000	A
	Exit	1	1		295			295	0.0	0.0	0.000	A
B	Entry	1	1	C	158	1500	0.105	157	0.0	0.2	4.517	A
			2	A,B,D	48	1500	0.032	48	0.0	0.0	2.506	A
	Exit	1	1		323			323	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1239	2829	0.438	1237	0.0	1.0	2.563	A
	Exit	1	1		454			454	0.0	0.0	0.000	A
D	Entry	1	1	A	145	1500	0.097	146	0.0	0.1	2.680	A
			2	B,C,D	253	1500	0.169	253	0.0	0.3	3.429	A
	Exit	1	1		899			899	0.0	0.0	0.000	A

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1098	0.009	10	0.0	0.0	3.108	A
			2	A,C,D	154	1098	0.140	155	0.1	0.2	4.729	A
		2	1	(A,B,C,D)	165			165	0.0	0.0	0.000	A
	Exit	1	1		355			355	0.0	0.0	0.000	A
B	Entry	1	1	C	187	1500	0.125	189	0.2	0.1	4.879	A
			2	A,B,D	57	1500	0.038	56	0.0	0.1	2.704	A
	Exit	1	1		396			396	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1483	2800	0.530	1480	1.0	1.8	3.102	A
	Exit	1	1		545			545	0.0	0.0	0.000	A
D	Entry	1	1	A	178	1500	0.118	179	0.1	0.1	2.818	A
			2	B,C,D	297	1500	0.198	295	0.3	0.3	3.404	A
	Exit	1	1		1069			1069	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	1021	0.013	13	0.0	0.0	3.580	A
			2	A,C,D	185	1021	0.182	187	0.2	0.3	4.894	A
		2	1	(A,B,C,D)	199			199	0.0	0.0	0.000	A
	Exit	1	1		431			431	0.0	0.0	0.000	A
B	Entry	1	1	C	223	1500	0.149	221	0.1	0.5	4.813	A
			2	A,B,D	73	1500	0.049	73	0.1	0.0	2.575	A
	Exit	1	1		488			488	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1826	2758	0.662	1825	1.8	2.2	4.228	A
	Exit	1	1		661			661	0.0	0.0	0.000	A
D	Entry	1	1	A	209	1500	0.140	210	0.1	0.1	2.810	A
			2	B,C,D	368	1500	0.246	368	0.3	0.5	3.729	A
	Exit	1	1		1318			1318	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	1020	0.013	13	0.0	0.0	3.918	A
			2	A,C,D	187	1020	0.184	186	0.3	0.4	5.406	A
		2	1	(A,B,C,D)	200			200	0.0	0.0	0.000	A
	Exit	1	1		432			432	0.0	0.0	0.000	A
B	Entry	1	1	C	219	1500	0.146	219	0.5	0.3	4.969	A
			2	A,B,D	72	1500	0.048	72	0.0	0.0	2.614	A
	Exit	1	1		488			488	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1828	2754	0.664	1827	2.2	2.2	4.368	A
	Exit	1	1		655			655	0.0	0.0	0.000	A
D	Entry	1	1	A	217	1500	0.145	216	0.1	0.1	2.809	A
			2	B,C,D	371	1500	0.247	370	0.5	0.4	3.690	A
	Exit	1	1		1329			1329	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1103	0.009	10	0.0	0.0	3.396	A
			2	A,C,D	160	1103	0.145	158	0.4	0.3	4.535	A
		2	1	(A,B,C,D)	170			170	0.0	0.0	0.000	A
	Exit	1	1		348			348	0.0	0.0	0.000	A
B	Entry	1	1	C	187	1500	0.125	186	0.3	0.3	4.726	A
			2	A,B,D	56	1500	0.037	55	0.0	0.1	2.513	A
	Exit	1	1		388			388	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1478	2800	0.528	1473	2.2	1.4	3.082	A
	Exit	1	1		542			542	0.0	0.0	0.000	A
D	Entry	1	1	A	169	1500	0.113	170	0.1	0.1	2.801	A
			2	B,C,D	293	1500	0.196	295	0.4	0.2	3.512	A
	Exit	1	1		1069			1069	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	8	1150	0.007	8	0.0	0.0	3.201	A
			2	A,C,D	135	1150	0.117	135	0.3	0.1	3.981	A
		2	1	(A,B,C,D)	143			143	0.0	0.0	0.000	A
	Exit	1	1		293			293	0.0	0.0	0.000	A
B	Entry	1	1	C	138	1500	0.092	138	0.3	0.2	4.706	A
			2	A,B,D	48	1500	0.032	48	0.1	0.0	2.563	A
	Exit	1	1		335			335	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1233	2823	0.437	1230	1.4	1.1	2.593	A
	Exit	1	1		438			438	0.0	0.0	0.000	A
D	Entry	1	1	A	143	1500	0.096	143	0.1	0.1	2.708	A
			2	B,C,D	248	1500	0.165	248	0.2	0.3	3.499	A
	Exit	1	1		884			884	0.0	0.0	0.000	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED 2027, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	15.80	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	CONSTRUCTION - BASE + COMMITTED 2027	AM	ONE HOUR	06:45	08:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	271	100.000
B		ONE HOUR	✓	504	100.000
C		ONE HOUR	✓	593	100.000
D		ONE HOUR	✓	1323	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	12	86	173
	B	18	1	484	1
	C	53	269	0	271
	D	82	0	1241	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	35	4
	B	31	0	26	0
	C	49	74	0	14
	D	15	0	4	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	12.09	1.1	B	247	370
B	4.84	0.9	A	458	687
C	2.46	0.6	A	542	813
D	26.61	11.9	D	1218	1827

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	202	50	1143	201	119	0.0	0.3	5.221	A
B	372	93	1136	372	207	0.0	0.5	4.074	A
C	443	111	142	444	1367	0.0	0.2	2.088	A
D	1011	253	255	1007	332	0.0	2.0	6.448	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	242	60	1352	240	137	0.3	0.6	7.435	A
B	455	114	1344	455	247	0.5	0.5	4.423	A
C	522	131	174	524	1626	0.2	0.3	2.289	A
D	1185	296	302	1186	395	2.0	3.5	9.661	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	301	75	1647	299	168	0.6	1.0	11.456	B
B	548	137	1643	548	303	0.5	0.9	4.838	A
C	643	161	213	641	1978	0.3	0.6	2.456	A
D	1452	363	368	1447	486	3.5	9.7	21.060	C

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	295	74	1656	295	161	1.0	1.1	12.091	B
B	545	136	1643	544	309	0.9	0.8	4.759	A
C	651	163	210	653	1977	0.6	0.4	2.460	A
D	1465	366	371	1446	492	9.7	11.9	26.611	D

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	238	59	1358	240	140	1.1	0.5	8.365	A
B	452	113	1349	452	249	0.8	0.7	4.441	A
C	535	134	174	534	1627	0.4	0.3	2.292	A
D	1195	299	305	1192	403	11.9	3.4	12.695	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	204	51	1154	204	119	0.5	0.3	6.061	A
B	377	94	1136	376	222	0.7	0.6	4.044	A
C	458	115	150	457	1362	0.3	0.3	2.185	A
D	1002	250	271	1002	336	3.4	2.0	6.846	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

06:45 - 07:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	875	0.011	9	0.0	0.0	3.792	A
			2	A,C,D	192	875	0.220	192	0.0	0.3	5.297	A
		2	1	(A,B,C,D)	202			202	0.0	0.0	0.003	A
	Exit	1	1		119			119	0.0	0.0	0.000	A
B	Entry	1	1	C	356	1500	0.238	357	0.0	0.5	4.099	A
			2	A,B,D	16	1500	0.010	16	0.0	0.0	3.473	A
	Exit	1	1		207			207	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	443	2809	0.158	444	0.0	0.2	2.088	A
	Exit	1	1		1367			1367	0.0	0.0	0.000	A
D	Entry	1	1	A	63	1500	0.042	62	0.0	0.1	2.974	A
			2	B,C,D	948	1500	0.632	945	0.0	1.9	6.658	A
	Exit	1	1		332			332	0.0	0.0	0.000	A

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	775	0.014	11	0.0	0.0	4.548	A
			2	A,C,D	231	775	0.298	229	0.3	0.6	7.584	A
		2	1	(A,B,C,D)	242			242	0.0	0.0	0.000	A
	Exit	1	1		137			137	0.0	0.0	0.000	A
B	Entry	1	1	C	436	1500	0.291	436	0.5	0.5	4.466	A
			2	A,B,D	19	1500	0.012	19	0.0	0.0	3.347	A
	Exit	1	1		247			247	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	522	2773	0.188	524	0.2	0.3	2.289	A
	Exit	1	1		1626			1626	0.0	0.0	0.000	A
D	Entry	1	1	A	71	1500	0.047	71	0.1	0.1	2.994	A
			2	B,C,D	1114	1500	0.743	1115	1.9	3.4	10.049	B
	Exit	1	1		395			395	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	14	633	0.022	14	0.0	0.0	5.562	A
			2	A,C,D	286	633	0.453	285	0.6	1.0	11.690	B
		2	1	(A,B,C,D)	301			301	0.0	0.0	0.070	A
	Exit	1	1		168			168	0.0	0.0	0.000	A
B	Entry	1	1	C	526	1500	0.351	526	0.5	0.9	4.916	A
			2	A,B,D	21	1500	0.014	21	0.0	0.0	3.005	A
	Exit	1	1		303			303	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	643	2729	0.235	641	0.3	0.6	2.456	A
	Exit	1	1		1978			1978	0.0	0.0	0.000	A
D	Entry	1	1	A	89	1500	0.059	90	0.1	0.1	2.903	A
			2	B,C,D	1363	1500	0.909	1358	3.4	9.6	22.137	C
	Exit	1	1		486			486	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	628	0.019	12	0.0	0.0	6.265	A
			2	A,C,D	284	628	0.451	283	1.0	1.1	12.334	B
		2	1	(A,B,C,D)	295			295	0.0	0.0	0.046	A
	Exit	1	1		161			161	0.0	0.0	0.000	A
B	Entry	1	1	C	523	1500	0.349	522	0.9	0.8	4.829	A
			2	A,B,D	22	1500	0.014	22	0.0	0.0	3.061	A
	Exit	1	1		309			309	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	651	2733	0.238	653	0.6	0.4	2.460	A
	Exit	1	1		1977			1977	0.0	0.0	0.000	A
D	Entry	1	1	A	87	1500	0.058	87	0.1	0.1	2.882	A
			2	B,C,D	1378	1500	0.919	1360	9.6	11.9	28.001	D
	Exit	1	1		492			492	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	772	0.015	11	0.0	0.0	5.161	A
			2	A,C,D	227	772	0.294	229	1.1	0.5	8.510	A
		2	1	(A,B,C,D)	238			238	0.0	0.0	0.018	A
	Exit	1	1		140			140	0.0	0.0	0.000	A
B	Entry	1	1	C	433	1500	0.289	432	0.8	0.7	4.502	A
			2	A,B,D	19	1500	0.013	20	0.0	0.0	3.033	A
	Exit	1	1		249			249	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	535	2773	0.193	534	0.4	0.3	2.292	A
	Exit	1	1		1627			1627	0.0	0.0	0.000	A
D	Entry	1	1	A	72	1500	0.048	72	0.1	0.1	2.941	A
			2	B,C,D	1123	1500	0.748	1120	11.9	3.3	13.273	B
	Exit	1	1		403			403	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	870	0.011	9	0.0	0.0	4.149	A
			2	A,C,D	195	870	0.224	195	0.5	0.3	6.165	A
		2	1	(A,B,C,D)	204			204	0.0	0.0	0.000	A
	Exit	1	1		119			119	0.0	0.0	0.000	A
B	Entry	1	1	C	360	1500	0.240	359	0.7	0.6	4.087	A
			2	A,B,D	17	1500	0.011	17	0.0	0.0	3.000	A
	Exit	1	1		222			222	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	458	2799	0.164	457	0.3	0.3	2.185	A
	Exit	1	1		1362			1362	0.0	0.0	0.000	A
D	Entry	1	1	A	62	1500	0.041	61	0.1	0.0	2.910	A
			2	B,C,D	940	1500	0.627	941	3.3	1.9	7.075	A
	Exit	1	1		336			336	0.0	0.0	0.000	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED 2027, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	4.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	CONSTRUCTION - BASE + COMMITTED 2027	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	202	100.000
B		ONE HOUR	✓	332	100.000
C		ONE HOUR	✓	1769	100.000
D		ONE HOUR	✓	589	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	2	12	82	106
	B	68	1	263	0
	C	153	421	0	1195
	D	206	2	380	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	42	6
	B	3	0	73	0
	C	9	26	0	4
	D	3	100	13	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.38	0.3	A	184	276
B	4.39	0.6	A	308	461
C	5.09	3.0	A	1621	2432
D	3.53	0.7	A	542	813

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	150	38	609	150	326	0.0	0.2	4.314	A
B	253	63	434	254	325	0.0	0.3	4.037	A
C	1333	333	137	1336	551	0.0	1.1	2.680	A
D	450	112	486	449	986	0.0	0.5	3.185	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	183	46	722	183	380	0.2	0.3	4.610	A
B	291	73	513	291	391	0.3	0.3	4.279	A
C	1599	400	159	1598	645	1.1	1.7	3.453	A
D	525	131	577	525	1180	0.5	0.6	3.326	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	226	57	882	226	468	0.3	0.3	5.298	A
B	367	92	632	365	475	0.3	0.6	4.291	A
C	1944	486	199	1941	798	1.7	3.0	5.087	A
D	648	162	701	648	1439	0.6	0.6	3.534	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	219	55	894	219	470	0.3	0.3	5.383	A
B	377	94	637	377	476	0.6	0.6	4.389	A
C	1938	485	196	1937	818	3.0	2.9	5.091	A
D	656	164	709	656	1424	0.6	0.7	3.485	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	180	45	708	180	386	0.3	0.3	4.941	A
B	304	76	504	304	384	0.6	0.4	4.233	A
C	1587	397	159	1590	649	2.9	1.5	3.484	A
D	523	131	570	524	1179	0.7	0.4	3.246	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	147	37	606	147	330	0.3	0.2	4.285	A
B	252	63	430	251	323	0.4	0.4	4.107	A
C	1326	332	131	1326	551	1.5	0.8	2.718	A
D	450	112	487	450	971	0.4	0.4	3.140	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

15:45 - 16:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	1133	0.008	9	0.0	0.0	3.159	A
			2	A,C,D	142	1133	0.125	142	0.0	0.2	4.390	A
		2	1	(A,B,C,D)	150			150	0.0	0.0	0.000	A
	Exit	1	1		326			326	0.0	0.0	0.000	A
B	Entry	1	1	C	202	1500	0.135	203	0.0	0.3	4.690	A
			2	A,B,D	51	1500	0.034	51	0.0	0.0	2.561	A
	Exit	1	1		325			325	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1333	2815	0.474	1336	0.0	1.1	2.680	A
	Exit	1	1		551			551	0.0	0.0	0.000	A
D	Entry	1	1	A	156	1500	0.104	156	0.0	0.2	2.763	A
			2	B,C,D	294	1500	0.196	293	0.0	0.3	3.436	A
	Exit	1	1		986			986	0.0	0.0	0.000	A

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	1078	0.010	11	0.0	0.0	3.360	A
			2	A,C,D	172	1078	0.160	172	0.2	0.3	4.707	A
		2	1	(A,B,C,D)	183			183	0.0	0.0	0.000	A
	Exit	1	1		380			380	0.0	0.0	0.000	A
B	Entry	1	1	C	231	1500	0.154	231	0.3	0.3	5.035	A
			2	A,B,D	60	1500	0.040	60	0.0	0.0	2.587	A
	Exit	1	1		391			391	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1599	2790	0.573	1598	1.1	1.7	3.453	A
	Exit	1	1		645			645	0.0	0.0	0.000	A
D	Entry	1	1	A	182	1500	0.121	182	0.2	0.2	2.829	A
			2	B,C,D	343	1500	0.229	343	0.3	0.4	3.614	A
	Exit	1	1		1180			1180	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	1001	0.013	13	0.0	0.0	3.763	A
			2	A,C,D	214	1001	0.213	213	0.3	0.3	5.413	A
		2	1	(A,B,C,D)	226			226	0.0	0.0	0.000	A
	Exit	1	1		468			468	0.0	0.0	0.000	A
B	Entry	1	1	C	292	1500	0.195	290	0.3	0.6	5.048	A
			2	A,B,D	75	1500	0.050	75	0.0	0.1	2.572	A
	Exit	1	1		475			475	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1944	2745	0.708	1941	1.7	3.0	5.087	A
	Exit	1	1		798			798	0.0	0.0	0.000	A
D	Entry	1	1	A	227	1500	0.151	226	0.2	0.2	2.921	A
			2	B,C,D	421	1500	0.281	422	0.4	0.4	3.893	A
	Exit	1	1		1439			1439	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	995	0.012	12	0.0	0.0	3.694	A
			2	A,C,D	207	995	0.208	207	0.3	0.3	5.506	A
		2	1	(A,B,C,D)	219			219	0.0	0.0	0.000	A
	Exit	1	1		470			470	0.0	0.0	0.000	A
B	Entry	1	1	C	301	1500	0.200	300	0.6	0.5	5.151	A
			2	A,B,D	77	1500	0.051	77	0.1	0.0	2.659	A
	Exit	1	1		476			476	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1938	2748	0.705	1937	3.0	2.9	5.091	A
	Exit	1	1		818			818	0.0	0.0	0.000	A
D	Entry	1	1	A	225	1500	0.150	224	0.2	0.2	2.875	A
			2	B,C,D	432	1500	0.288	432	0.4	0.5	3.843	A
	Exit	1	1		1424			1424	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1085	0.009	10	0.0	0.0	3.216	A
			2	A,C,D	170	1085	0.156	169	0.3	0.3	5.070	A
		2	1	(A,B,C,D)	180			180	0.0	0.0	0.000	A
	Exit	1	1		386			386	0.0	0.0	0.000	A
B	Entry	1	1	C	242	1500	0.161	242	0.5	0.3	4.954	A
			2	A,B,D	62	1500	0.042	62	0.0	0.0	2.612	A
	Exit	1	1		384			384	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1587	2790	0.569	1590	2.9	1.5	3.484	A
	Exit	1	1		649			649	0.0	0.0	0.000	A
D	Entry	1	1	A	188	1500	0.125	188	0.2	0.1	2.821	A
			2	B,C,D	335	1500	0.223	336	0.5	0.3	3.498	A
	Exit	1	1		1179			1179	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	1134	0.008	9	0.0	0.0	3.361	A
			2	A,C,D	138	1134	0.122	139	0.3	0.2	4.355	A
		2	1	(A,B,C,D)	147			147	0.0	0.0	0.000	A
	Exit	1	1		330			330	0.0	0.0	0.000	A
B	Entry	1	1	C	201	1500	0.134	200	0.3	0.3	4.772	A
			2	A,B,D	51	1500	0.034	52	0.0	0.0	2.570	A
	Exit	1	1		323			323	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1326	2822	0.470	1326	1.5	0.8	2.718	A
	Exit	1	1		551			551	0.0	0.0	0.000	A
D	Entry	1	1	A	156	1500	0.104	157	0.1	0.1	2.750	A
			2	B,C,D	293	1500	0.195	293	0.3	0.3	3.374	A
	Exit	1	1		971			971	0.0	0.0	0.000	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	15.86	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027	AM	ONE HOUR	06:45	08:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	271	100.000
B		ONE HOUR	✓	615	100.000
C		ONE HOUR	✓	603	100.000
D		ONE HOUR	✓	1345	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	12	86	173
	B	18	1	595	1
	C	53	274	0	276
	D	82	0	1263	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	35	4
	B	31	0	20	0
	C	49	75	0	15
	D	15	0	4	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	12.73	1.0	B	248	371
B	5.24	1.0	A	561	842
C	2.51	0.4	A	554	831
D	27.35	12.0	D	1231	1846

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	204	51	1150	203	117	0.0	0.4	5.395	A
B	459	115	1137	463	216	0.0	0.5	4.255	A
C	461	115	144	461	1456	0.0	0.2	2.142	A
D	1004	251	264	1003	341	0.0	1.8	6.532	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	240	60	1379	241	142	0.4	0.5	7.715	A
B	549	137	1362	548	259	0.5	0.8	4.574	A
C	539	135	171	541	1739	0.2	0.3	2.302	A
D	1204	301	313	1209	399	1.8	3.3	10.025	B

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	292	73	1676	294	170	0.5	1.0	11.748	B
B	680	170	1654	681	316	0.8	0.9	5.239	A
C	665	166	211	666	2124	0.3	0.4	2.480	A
D	1472	368	382	1463	494	3.3	11.0	22.862	C

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	298	75	1680	303	168	1.0	0.9	12.728	B
B	675	169	1668	675	314	0.9	1.0	5.215	A
C	666	167	214	668	2128	0.4	0.4	2.505	A
D	1481	370	377	1471	505	11.0	12.0	27.350	D

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	246	61	1384	248	138	0.9	0.5	8.570	A
B	552	138	1370	552	261	1.0	0.7	4.641	A
C	546	137	175	548	1747	0.4	0.3	2.318	A
D	1203	301	315	1206	408	12.0	3.1	13.654	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	205	51	1159	207	114	0.5	0.2	6.316	A
B	452	113	1155	454	211	0.7	0.6	4.209	A
C	447	112	153	446	1456	0.3	0.4	2.153	A
D	1020	255	256	1017	342	3.1	2.1	6.816	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

06:45 - 07:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	9	872	0.010	9	0.0	0.0	4.143	A
			2	A,C,D	195	872	0.224	195	0.0	0.4	5.463	A
		2	1	(A,B,C,D)	204			204	0.0	0.0	0.000	A
	Exit	1	1		117			117	0.0	0.0	0.000	A
B	Entry	1	1	C	445	1500	0.297	448	0.0	0.5	4.292	A
			2	A,B,D	14	1500	0.010	15	0.0	0.0	3.068	A
	Exit	1	1		216			216	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	461	2806	0.164	461	0.0	0.2	2.142	A
	Exit	1	1		1456			1456	0.0	0.0	0.000	A
D	Entry	1	1	A	61	1500	0.040	60	0.0	0.1	2.921	A
			2	B,C,D	943	1500	0.629	942	0.0	1.7	6.741	A
	Exit	1	1		341			341	0.0	0.0	0.000	A

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	761	0.013	10	0.0	0.0	4.499	A
			2	A,C,D	230	761	0.303	231	0.4	0.5	7.877	A
		2	1	(A,B,C,D)	240			240	0.0	0.0	0.001	A
	Exit	1	1		142			142	0.0	0.0	0.000	A
B	Entry	1	1	C	531	1500	0.354	531	0.5	0.8	4.623	A
			2	A,B,D	18	1500	0.012	18	0.0	0.0	2.947	A
	Exit	1	1		259			259	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	539	2776	0.194	541	0.2	0.3	2.302	A
	Exit	1	1		1739			1739	0.0	0.0	0.000	A
D	Entry	1	1	A	79	1500	0.052	78	0.1	0.1	2.791	A
			2	B,C,D	1126	1500	0.751	1130	1.7	3.3	10.450	B
	Exit	1	1		399			399	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	14	619	0.022	14	0.0	0.0	5.493	A
			2	A,C,D	278	619	0.450	280	0.5	1.0	12.015	B
		2	1	(A,B,C,D)	292			292	0.0	0.0	0.055	A
	Exit	1	1		170			170	0.0	0.0	0.000	A
B	Entry	1	1	C	658	1500	0.439	660	0.8	0.9	5.305	A
			2	A,B,D	22	1500	0.014	22	0.0	0.0	3.131	A
	Exit	1	1		316			316	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	665	2732	0.243	666	0.3	0.4	2.480	A
	Exit	1	1		2124			2124	0.0	0.0	0.000	A
D	Entry	1	1	A	90	1500	0.060	90	0.1	0.1	2.959	A
			2	B,C,D	1382	1500	0.921	1373	3.3	10.9	24.017	C
	Exit	1	1		494			494	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	617	0.021	13	0.0	0.0	6.084	A
			2	A,C,D	286	617	0.463	289	1.0	0.9	12.973	B
		2	1	(A,B,C,D)	298			299	0.0	0.0	0.090	A
	Exit	1	1		168			168	0.0	0.0	0.000	A
B	Entry	1	1	C	655	1500	0.437	654	0.9	1.0	5.283	A
			2	A,B,D	20	1500	0.014	21	0.0	0.0	3.044	A
	Exit	1	1		314			314	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	666	2728	0.244	668	0.4	0.4	2.505	A
	Exit	1	1		2128			2128	0.0	0.0	0.000	A
D	Entry	1	1	A	92	1500	0.062	92	0.1	0.1	3.004	A
			2	B,C,D	1389	1500	0.926	1378	10.9	11.9	28.838	D
	Exit	1	1		505			505	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	759	0.014	11	0.0	0.0	5.369	A
			2	A,C,D	235	759	0.310	237	0.9	0.5	8.744	A
		2	1	(A,B,C,D)	246			246	0.0	0.0	0.001	A
	Exit	1	1		138			138	0.0	0.0	0.000	A
B	Entry	1	1	C	535	1500	0.356	535	1.0	0.7	4.689	A
			2	A,B,D	17	1500	0.012	17	0.0	0.0	3.100	A
	Exit	1	1		261			261	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	546	2771	0.197	548	0.4	0.3	2.318	A
	Exit	1	1		1747			1747	0.0	0.0	0.000	A
D	Entry	1	1	A	73	1500	0.048	73	0.1	0.1	2.914	A
			2	B,C,D	1130	1500	0.754	1133	11.9	3.1	14.266	B
	Exit	1	1		408			408	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	8	868	0.009	8	0.0	0.0	4.639	A
			2	A,C,D	197	868	0.227	199	0.5	0.2	6.394	A
		2	1	(A,B,C,D)	205			205	0.0	0.0	0.000	A
	Exit	1	1		114			114	0.0	0.0	0.000	A
B	Entry	1	1	C	435	1500	0.290	437	0.7	0.5	4.241	A
			2	A,B,D	17	1500	0.011	17	0.0	0.0	3.249	A
	Exit	1	1		211			211	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	447	2796	0.160	446	0.3	0.4	2.153	A
	Exit	1	1		1456			1456	0.0	0.0	0.000	A
D	Entry	1	1	A	61	1500	0.041	61	0.1	0.0	2.956	A
			2	B,C,D	959	1500	0.639	956	3.1	2.0	7.040	A
	Exit	1	1		342			342	0.0	0.0	0.000	A

Do Minimum - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Do Minimum [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Demand Sets	D6 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2021, PM	Demand Set 6: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
Warning	Demand Sets	D10 - CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027, PM	Demand Set 10: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A1173 / A180 INTERCHANGE	Large Roundabout	A,B,C,D	5.25	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1025	39.00
B	1211	110.00
C	248	49.00
D	248	104.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	CONSTRUCTION - BASE + COMMITTED + DEVELOPMENT 2027	PM	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	202	100.000
B		ONE HOUR	✓	338	100.000
C		ONE HOUR	✓	1852	100.000
D		ONE HOUR	✓	595	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	2	12	82	106
	B	68	1	269	0
	C	153	489	0	1210
	D	206	2	386	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	42	6
	B	3	0	73	0
	C	9	22	0	5
	D	3	100	14	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.75	0.5	A	185	278
B	4.42	0.6	A	306	459
C	5.87	3.5	A	1706	2559
D	3.57	0.7	A	541	811

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	152	38	663	152	314	0.0	0.2	4.296	A
B	248	62	427	248	387	0.0	0.2	4.090	A
C	1404	351	132	1401	544	0.0	1.4	2.864	A
D	439	110	539	437	994	0.0	0.5	3.181	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	180	45	786	180	380	0.2	0.3	4.758	A
B	300	75	510	301	456	0.2	0.5	4.400	A
C	1661	415	161	1665	649	1.4	1.7	3.744	A
D	525	131	640	525	1186	0.5	0.5	3.381	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	223	56	987	222	463	0.3	0.5	5.445	A
B	359	90	642	360	568	0.5	0.4	4.424	A
C	2045	511	195	2043	807	1.7	3.5	5.871	A
D	659	165	791	660	1447	0.5	0.7	3.544	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	215	54	952	216	468	0.5	0.4	5.752	A
B	374	94	624	374	545	0.4	0.6	4.413	A
C	2046	512	191	2048	806	3.5	2.8	5.536	A
D	646	162	774	646	1465	0.7	0.7	3.569	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	185	46	792	183	371	0.4	0.4	4.987	A
B	303	76	517	302	458	0.6	0.4	4.237	A
C	1672	418	163	1671	656	2.8	1.7	3.695	A
D	522	131	642	521	1192	0.7	0.5	3.351	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	156	39	673	155	326	0.4	0.2	4.409	A
B	253	63	443	252	385	0.4	0.4	4.156	A
C	1407	352	136	1410	560	1.7	1.0	2.772	A
D	452	113	545	454	1000	0.5	0.4	3.272	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

15:45 - 16:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	8	1107	0.007	8	0.0	0.0	3.245	A
			2	A,C,D	144	1107	0.130	144	0.0	0.2	4.370	A
		2	1	(A,B,C,D)	152			152	0.0	0.0	0.000	A
	Exit	1	1		314			314	0.0	0.0	0.000	A
B	Entry	1	1	C	199	1500	0.132	199	0.0	0.2	4.763	A
			2	A,B,D	50	1500	0.033	50	0.0	0.0	2.552	A
	Exit	1	1		387			387	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1404	2820	0.498	1401	0.0	1.4	2.864	A
	Exit	1	1		544			544	0.0	0.0	0.000	A
D	Entry	1	1	A	151	1500	0.101	151	0.0	0.1	2.748	A
			2	B,C,D	288	1500	0.192	286	0.0	0.4	3.433	A
	Exit	1	1		994			994	0.0	0.0	0.000	A

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	1047	0.011	11	0.0	0.0	3.390	A
			2	A,C,D	169	1047	0.161	169	0.2	0.3	4.864	A
		2	1	(A,B,C,D)	180			180	0.0	0.0	0.000	A
	Exit	1	1		380			380	0.0	0.0	0.000	A
B	Entry	1	1	C	240	1500	0.160	240	0.2	0.5	5.131	A
			2	A,B,D	60	1500	0.040	60	0.0	0.0	2.674	A
	Exit	1	1		456			456	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1661	2787	0.596	1665	1.4	1.7	3.744	A
	Exit	1	1		649			649	0.0	0.0	0.000	A
D	Entry	1	1	A	181	1500	0.121	182	0.1	0.1	2.837	A
			2	B,C,D	344	1500	0.229	344	0.4	0.4	3.700	A
	Exit	1	1		1186			1186	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	12	950	0.013	12	0.0	0.0	3.591	A
			2	A,C,D	211	950	0.222	210	0.3	0.5	5.579	A
		2	1	(A,B,C,D)	223			223	0.0	0.0	0.000	A
	Exit	1	1		463			463	0.0	0.0	0.000	A
B	Entry	1	1	C	288	1500	0.192	288	0.5	0.4	5.173	A
			2	A,B,D	71	1500	0.048	72	0.0	0.0	2.659	A
	Exit	1	1		568			568	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	2045	2749	0.744	2043	1.7	3.5	5.871	A
	Exit	1	1		807			807	0.0	0.0	0.000	A
D	Entry	1	1	A	224	1500	0.149	225	0.1	0.1	2.927	A
			2	B,C,D	435	1500	0.290	435	0.4	0.5	3.907	A
	Exit	1	1		1447			1447	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	13	967	0.013	13	0.0	0.0	3.922	A
			2	A,C,D	202	967	0.209	203	0.5	0.4	5.892	A
		2	1	(A,B,C,D)	215			215	0.0	0.0	0.002	A
	Exit	1	1		468			468	0.0	0.0	0.000	A
B	Entry	1	1	C	300	1500	0.200	299	0.4	0.6	5.165	A
			2	A,B,D	75	1500	0.050	75	0.0	0.0	2.589	A
	Exit	1	1		545			545	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	2046	2754	0.743	2048	3.5	2.8	5.536	A
	Exit	1	1		806			806	0.0	0.0	0.000	A
D	Entry	1	1	A	223	1500	0.149	223	0.1	0.2	2.978	A
			2	B,C,D	423	1500	0.282	423	0.5	0.5	3.912	A
	Exit	1	1		1465			1465	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	11	1045	0.010	11	0.0	0.0	3.577	A
			2	A,C,D	175	1045	0.167	172	0.4	0.4	5.096	A
		2	1	(A,B,C,D)	185			185	0.0	0.0	0.001	A
	Exit	1	1		371			371	0.0	0.0	0.000	A
B	Entry	1	1	C	240	1500	0.160	239	0.6	0.3	4.952	A
			2	A,B,D	63	1500	0.042	63	0.0	0.0	2.647	A
	Exit	1	1		458			458	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1672	2785	0.600	1671	2.8	1.7	3.695	A
	Exit	1	1		656			656	0.0	0.0	0.000	A
D	Entry	1	1	A	175	1500	0.117	174	0.2	0.2	2.817	A
			2	B,C,D	347	1500	0.231	347	0.5	0.4	3.663	A
	Exit	1	1		1192			1192	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B	10	1102	0.009	10	0.0	0.0	3.558	A
			2	A,C,D	146	1102	0.133	145	0.4	0.2	4.481	A
		2	1	(A,B,C,D)	156			156	0.0	0.0	0.000	A
	Exit	1	1		326			326	0.0	0.0	0.000	A
B	Entry	1	1	C	200	1500	0.134	199	0.3	0.3	4.845	A
			2	A,B,D	53	1500	0.035	53	0.0	0.0	2.580	A
	Exit	1	1		385			385	0.0	0.0	0.000	A
C	Entry	1	1	A,B,C,D	1407	2816	0.500	1410	1.7	1.0	2.772	A
	Exit	1	1		560			560	0.0	0.0	0.000	A
D	Entry	1	1	A	155	1500	0.103	155	0.2	0.1	2.730	A
			2	B,C,D	297	1500	0.198	299	0.4	0.3	3.597	A
	Exit	1	1		1000			1000	0.0	0.0	0.000	A

ANNEX 21: A180 WESTGATE ROUNDABOUT MODELLING OUTPUTS

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: Operation Westgate Roundabout Grimsby.j9
Path: \\UKLDS2PFPSW001.na.aecomnet.com\LE_PROJECTS\Transport Projects\60580855 - Project Koala\PEIR\Modelling\4_R'abouts\7.0 Westgate Roundabout Grimsby
Report generation date: 17/10/2019 09:28:51

»OPERATION - Base 2018, AM
»OPERATION - Base 2018, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	OPERATION - Base 2018							
Arm 1	44.1	73.20	1.02	F	3.1	7.97	0.75	A
Arm 2	5.8	31.36	0.87	D	1.3	6.95	0.57	A
Arm 3	4.0	98.54	0.85	F	1.7	19.53	0.63	C
Arm 4	2.6	6.92	0.70	A	200.0	336.80	1.19	F
Arm 5	0.6	9.52	0.32	A	19.3	210.43	1.07	F

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	26/09/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\cleasbyd
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	OPERATION - Base 2018	AM	ONE HOUR	06:45	08:15	15
D2	OPERATION - Base 2018	PM	ONE HOUR	15:45	17:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

OPERATION - Base 2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	44.38	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A180 E	
2	Pyewipe Rd	
3	Birchin Way	
4	A180 W	
5	Moody Lane	

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	7.25	7.25	0.0	33.0	83.0	18.0	
2	4.75	6.75	10.0	20.0	83.0	15.0	
3	3.25	4.25	8.0	17.0	83.0	20.0	
4	7.25	7.25	0.0	18.0	83.0	25.0	
5	4.00	4.00	0.0	26.0	83.0	25.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.571	2331
2	0.507	1903
3	0.404	1232
4	0.544	2223
5	0.407	1247

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	OPERATION - Base 2018	AM	ONE HOUR	06:45	08:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1869	100.000
2		✓	644	100.000
3		✓	146	100.000
4		✓	1245	100.000
5		✓	194	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	2	42	83	1526	216
	2	49	0	63	433	99
	3	33	32	0	74	7
	4	820	264	93	4	64
	5	87	28	8	69	2

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	2	5	4	2
	2	2	0	2	2	0
	3	14	3	0	9	0
	4	15	6	8	0	74
	5	14	16	14	32	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	1.02	73.20	44.1	F
2	0.87	31.36	5.8	D
3	0.85	98.54	4.0	F
4	0.70	6.92	2.6	A
5	0.32	9.52	0.6	A

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1407	375	2117	0.665	1399	2.0	5.147	A
2	485	1499	1143	0.424	482	0.7	5.513	A
3	110	1796	507	0.217	109	0.3	9.756	A
4	937	329	2044	0.459	933	1.0	3.695	A
5	146	972	852	0.172	145	0.2	6.103	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1680	448	2075	0.810	1671	4.2	9.072	A
2	579	1792	995	0.582	576	1.4	8.694	A
3	131	2147	365	0.359	130	0.6	16.479	C
4	1119	393	2009	0.557	1117	1.4	4.608	A
5	174	1163	774	0.225	174	0.3	7.195	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	2058	547	2018	1.019	1960	28.6	39.301	E
2	709	2109	834	0.850	695	4.9	24.296	C
3	161	2539	207	0.776	152	2.8	62.909	F
4	1371	465	1970	0.696	1366	2.6	6.770	A
5	214	1419	670	0.319	213	0.6	9.427	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	2058	549	2017	1.020	1996	44.1	73.203	F
2	709	2145	816	0.869	705	5.8	31.358	D
3	161	2581	190	0.846	156	4.0	98.545	F
4	1371	474	1965	0.698	1371	2.6	6.920	A
5	214	1425	667	0.320	214	0.6	9.515	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1680	454	2071	0.811	1837	4.8	25.410	D
2	579	1955	912	0.635	595	1.8	12.076	B
3	131	2319	296	0.444	144	0.9	27.501	D
4	1119	424	1992	0.562	1124	1.5	4.764	A
5	174	1177	768	0.227	175	0.4	7.291	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1407	378	2115	0.665	1418	2.1	5.439	A
2	485	1519	1133	0.428	489	0.8	5.721	A
3	110	1821	497	0.221	112	0.3	10.189	B
4	937	335	2041	0.459	939	1.0	3.742	A
5	146	980	848	0.172	146	0.3	6.154	A

OPERATION - Base 2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	172.10	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	OPERATION - Base 2018	PM	ONE HOUR	15:45	17:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	1309	100.000
2		✓	627	100.000
3		✓	293	100.000
4		✓	2135	100.000
5		✓	299	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	2	182	80	995	50
	2	142	1	97	358	29
	3	90	89	0	109	5
	4	1559	494	54	3	25
	5	181	63	7	48	0

Vehicle Mix

Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	2	1	6	6
	2	1	0	2	2	12
	3	1	0	0	6	0
	4	3	2	8	0	69
	5	1	2	50	20	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
1	0.75	7.97	3.1	A
2	0.57	6.95	1.3	A
3	0.63	19.53	1.7	C
4	1.19	336.80	200.0	F
5	1.07	210.43	19.3	F

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	985	566	2008	0.491	981	1.0	3.674	A
2	472	928	1432	0.330	470	0.5	3.814	A
3	221	1220	740	0.298	219	0.4	7.061	A
4	1607	305	2057	0.782	1593	3.6	7.804	A
5	225	1817	508	0.443	222	0.8	13.025	B

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1177	670	1948	0.604	1174	1.6	4.875	A
2	564	1110	1341	0.420	563	0.7	4.723	A
3	263	1460	643	0.410	262	0.7	9.666	A
4	1919	366	2024	0.948	1883	12.6	22.196	C
5	269	2151	372	0.722	262	2.4	32.639	D

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1441	722	1918	0.751	1435	3.1	7.736	A
2	690	1342	1223	0.565	688	1.3	6.850	A
3	323	1779	514	0.628	319	1.6	18.567	C
4	2351	446	1980	1.187	1974	106.8	116.334	F
5	329	2305	310	1.063	291	12.0	115.836	F

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1441	728	1915	0.753	1441	3.1	7.968	A
2	690	1349	1219	0.566	690	1.3	6.949	A
3	323	1787	511	0.632	322	1.7	19.527	C
4	2351	449	1978	1.188	1978	200.0	282.548	F
5	329	2311	307	1.072	300	19.3	210.434	F

16:45 - 17:00

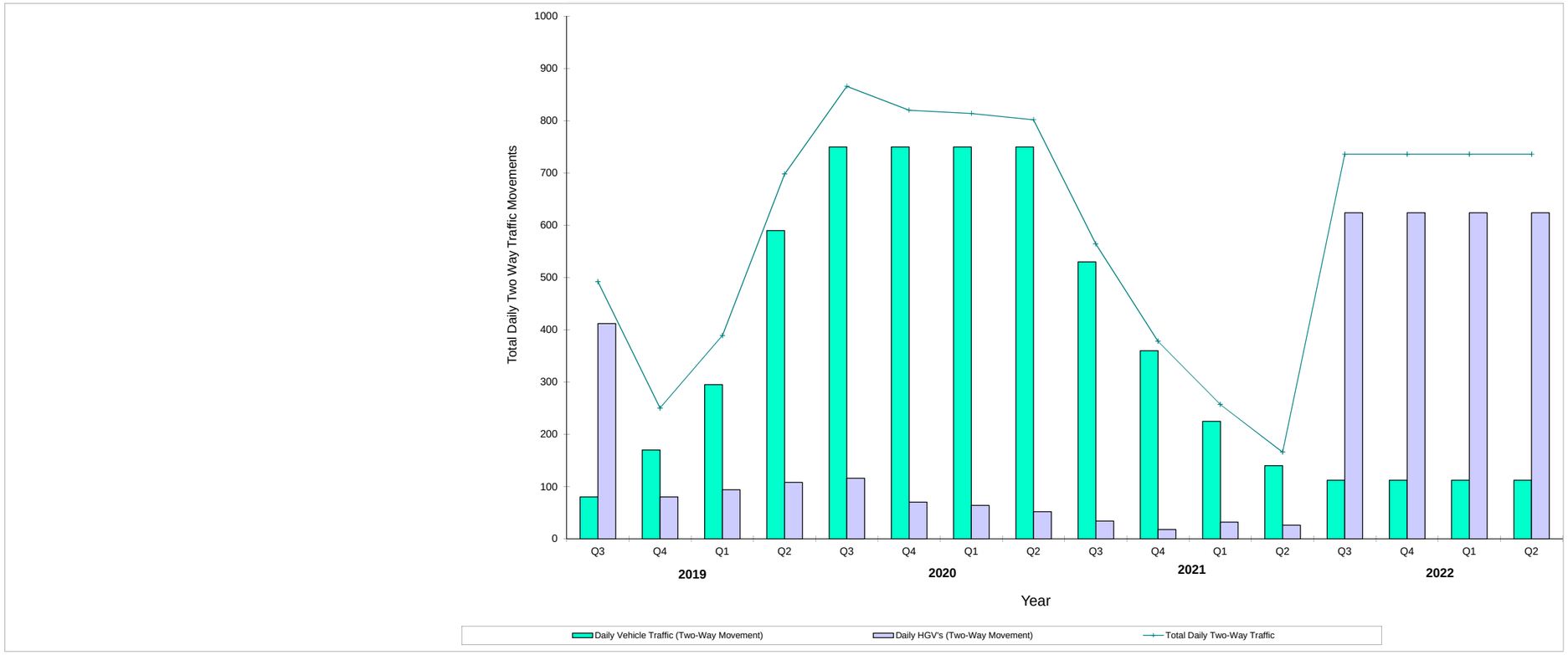
Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	1177	722	1919	0.613	1183	1.7	5.181	A
2	564	1128	1331	0.423	566	0.8	4.822	A
3	263	1476	636	0.414	267	0.7	10.099	B
4	1919	370	2021	0.949	2011	177.1	336.805	F
5	269	2282	319	0.842	306	10.0	186.296	F

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
1	985	696	1933	0.510	988	1.1	4.012	A
2	472	952	1421	0.332	473	0.5	3.886	A
3	221	1234	734	0.300	222	0.4	7.214	A
4	1607	308	2055	0.782	2043	68.1	217.690	F
5	225	2264	326	0.690	254	2.7	63.880	F

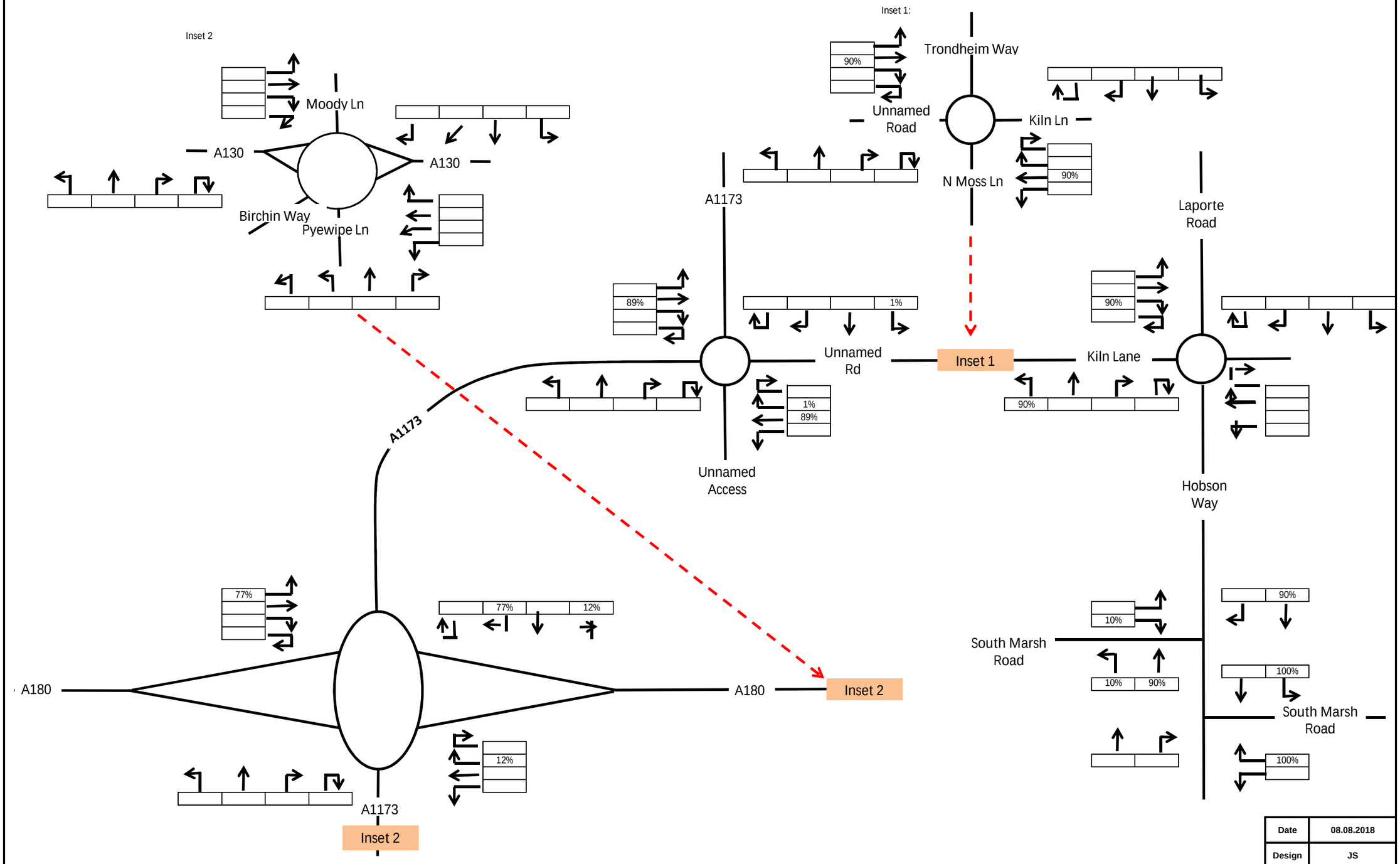
ANNEX 22: CONSTRUCTION TRAFFIC PROFILE

	Year 1 Construction				Year 2 Construction				Year 3 Construction				Operation			
Description	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**
Civil Construction																
Mechanical Erection																
Cold Commisioning																
Hot Commisioning																
Operation																
Typical Daily Construction Workforce in Month	80	170	295	590	750	750	750	750	530	360	225	140				
Typical Daily Construction Worker Vehicles (Inbound)(Based on 2.0 per vehicle)	40	85	148	295	375	375	375	375	265	180	113	70				
Typical Daily Construction Worker Vehicles (Outbound)(Based on 2.0 per vehicle)	40	85	148	295	375	375	375	375	265	180	113	70				
Typical Maximum Daily HGV Trafic in Month (Inbound)	206	40	47	54	58	35	32	26	17	9	16	13				
Typical Maximum Daily HGV Trafic in Month (Outbound)	206	40	47	54	58	35	32	26	17	9	16	13				
Typical Daily Operational Workforce in Month													56	56	56	56
Typical Daily Operational Traffic (Inbound) (Based on 1.0 per vehicle)													56	56	56	56
Typical Daily Operational Traffic (Outbound) (Based on 1.0 per vehicle)													56	56	56	56
Typical Maximum Daily Operational HGV Traffic (Inbound)													312	312	312	312
Typical Maximum Daily Operational HGV Traffic (Outbound)													312	312	312	312
Daily Vehicle Traffic (Two-Way Movement)	80	170	295	590	750	750	750	750	530	360	225	140	112	112	112	112
Daily HGV's (Two-Way Movement)	412	80	94	108	116	70	64	52	34	18	32	26	624	624	624	624
Total Daily Two-Way Traffic	**492**	**250**	**389**	**698**	**866**	**820**	**814**	**802**	**564**	**378**	**257**	**166**	**736**	**736**	**736**	**736**



SOUTH HUMBER BANK ENERGY CENTRE: PROFILE OF TRAFFIC DURING CONSTRUCTION AND OPERATION (TWO-WAY TRIPS)

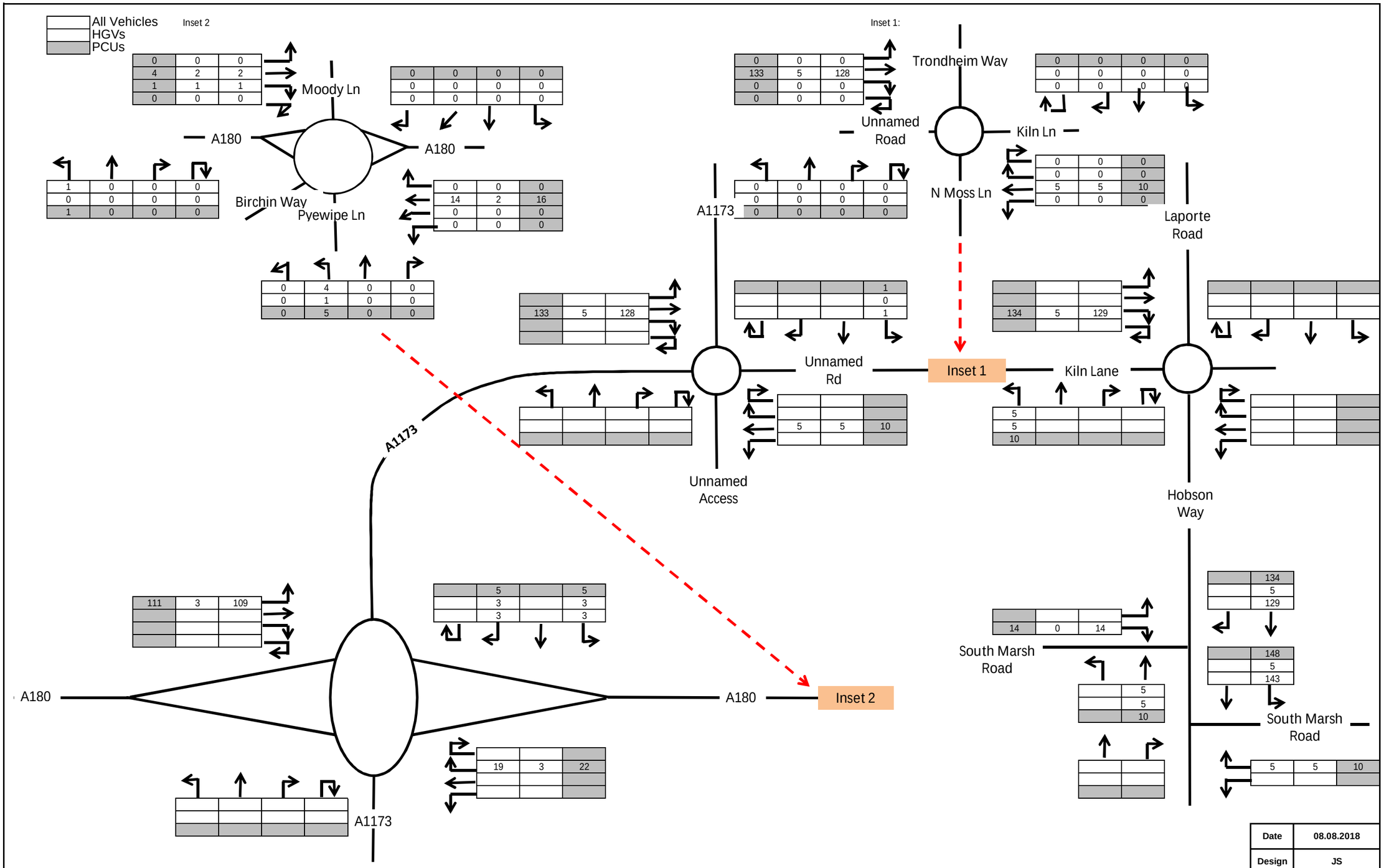
ANNEX 23: CONSTRUCTION WORKER VEHICLE ASSIGNMENT



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

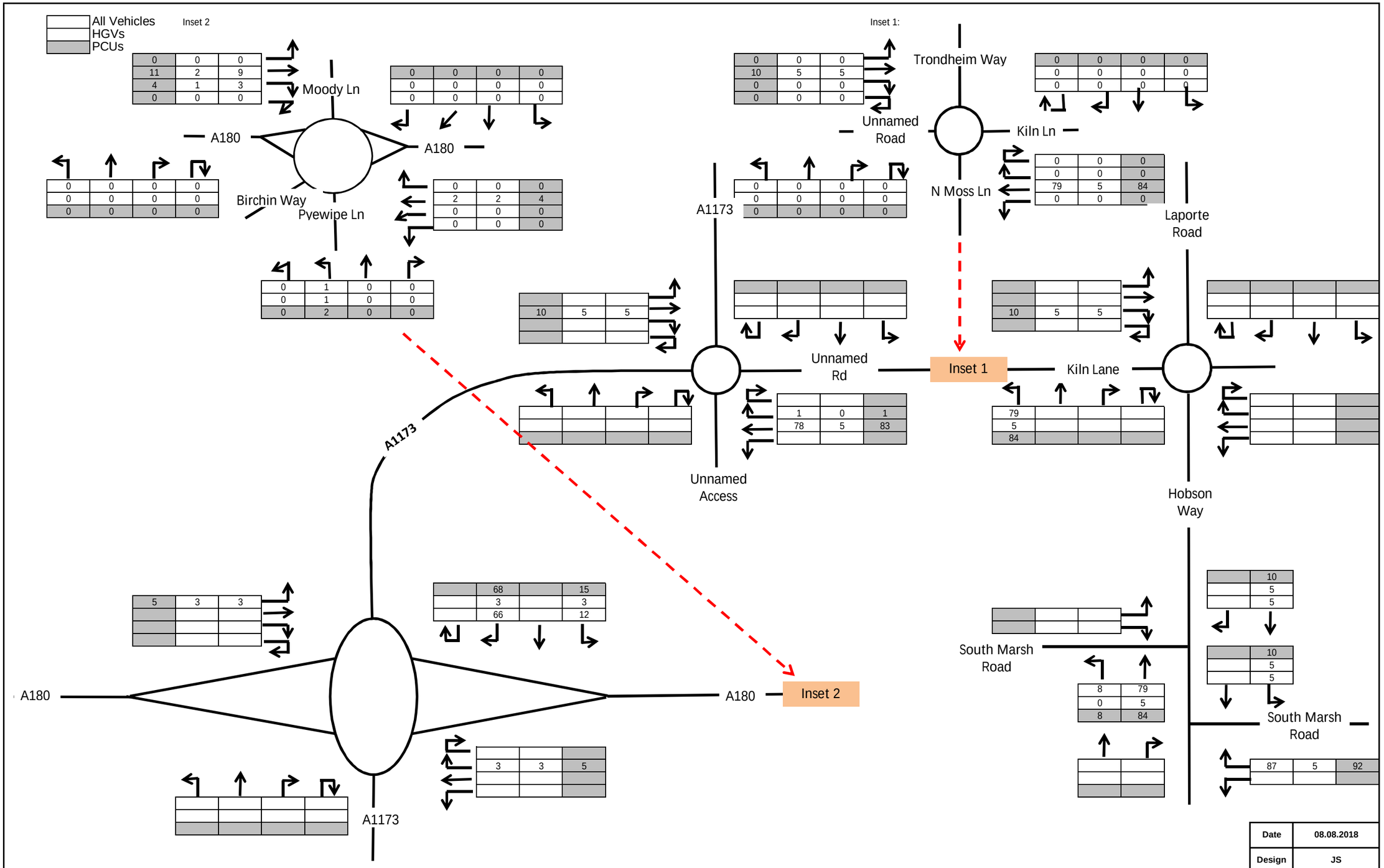
Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Construction Staff Vehicle Assignment	AECOM	Annex 22	A
				File:	

ANNEX 24: TOTAL CONSTRUCTION VEHICLE FLOWS DURING PEAK OF CONSTRUCTION



Date	08.08.2018
Design	JS
Checked	PF
Appr'd	PF

Client:	Project:	Title:		Drawing Number:	Revision:
EP SHB	South Humber Bank Energy Centre	Total Construction Development Flows - AM Peak (07:00 - 08:00)	AECOM	Annex 23	A
				File:	



Client:	Project:	Title:		Drawing Number:	Revision:	Date	08.08.2018
EP SHB	South Humber Bank Energy Centre	Total Construction Development Flows - PM Peak (16:00 - 17:00)	AECOM	Annex 23	A	Design	JS
						Checked	PF
						Appr'd	PF
				File:			

ANNEX 25: DELIVERY AND SERVICING PLAN

EP UK Investments

South Humber Bank Energy Centre Development Consent Order

South Marsh Road, Stallingborough, DN41 8BZ

Operational Delivery and Servicing Plan

Applicant: EP Waste Management Limited
Date: October 2019

DOCUMENT HISTORY

Revision	PEI Report issue		
Author	Jonathan Scott		
Signed		**Date**	October 2019
Approved By	Peter Firth		
Signed		**Date**	October 2019
Document Owner	AECOM		

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FIGURE 2.1: HGV DESIGNATED ROUTE PLAN 3

1.0 INTRODUCTION

1.1 This Delivery and Servicing Plan has been prepared by AECOM on behalf of EP Waste Management Limited to accompany the Transport Assessment (TA) for the proposed South Humber Bank Energy Centre, an energy from waste plant located on land within the boundary of the existing South Humber Bank Power Station, South Marsh Road, Stallingborough.

1.2 This plan demonstrates how deliveries to the Proposed Development during operation will be managed and should be read in accordance with the TA presented within Appendix 9A in PEI Report Volume III.

2.0 DELIVERY AND SERVICING STRATEGY

Delivery Hours

2.1 The Proposed Development will receive fuel by road during the following hours:

- Monday to Sunday: 00:00 – 23:59 (excluding Christmas Day, Boxing Day and New Year's Day)

2.2 Although the above timings allow for deliveries every day of the week, it is likely that deliveries will be concentrated around the period from Monday to Friday.

Weighbridges

2.3 Incoming HGVs will enter the Site through the main entrance. They will proceed along the access road to the incoming weighbridges where the quantity of incoming fuel will be checked and recorded.

2.4 The weight of the outgoing HGVs will be recorded on separate outgoing weighbridges as they leave the Site.

2.5 Total HGV movements at the Site are estimated to be 312 in and 312 out per day and a maximum of 44 HGV deliveries during the hourly peak comprising:

- 34 fuel deliveries;
- 1 consumables delivery; and
- 9 bottom ash and flue gas treatment residue collections.

2.6 Four weighbridges will be installed: two incoming and two outgoing. The indicative location of the weighbridges is shown on the attached layout plan.

2.7 Should all weighbridges be occupied, there is sufficient space on the access road to allow for some queuing and an HGV holding area is to be provided to the east of the weighbridge accommodating up to approximately six HGVs. These measures combined will prevent HGV stacking on the public highway.

2.8 A separate lane to either side of the incoming and outgoing weighbridges will be provided for use by staff and visitor vehicles.

Fuel Reception

2.9 After weighing, the HGVs will proceed to the tipping hall where they will be directed to a vacant tipping bay to discharge into a bunker.

2.10 It is assumed that the average unloading time is 12 minutes, which is the total time occupying a bay, including reversing and leaving. Table 2.1 indicates that based on a peak of 34 fuel deliveries per hour, the fuel reception hall requires a minimum of 7 tipping bays.

Table 2.1: Tipping bay requirements

	TOTAL
Peak Fuel Deliveries per Hour	34 HGVs
Unloading Time per Bay	12 minutes
Minimum Bays Required	7 bays

2.11 However, to provide flexibility in operations, the design layout has allowed for 11 tipping bays.

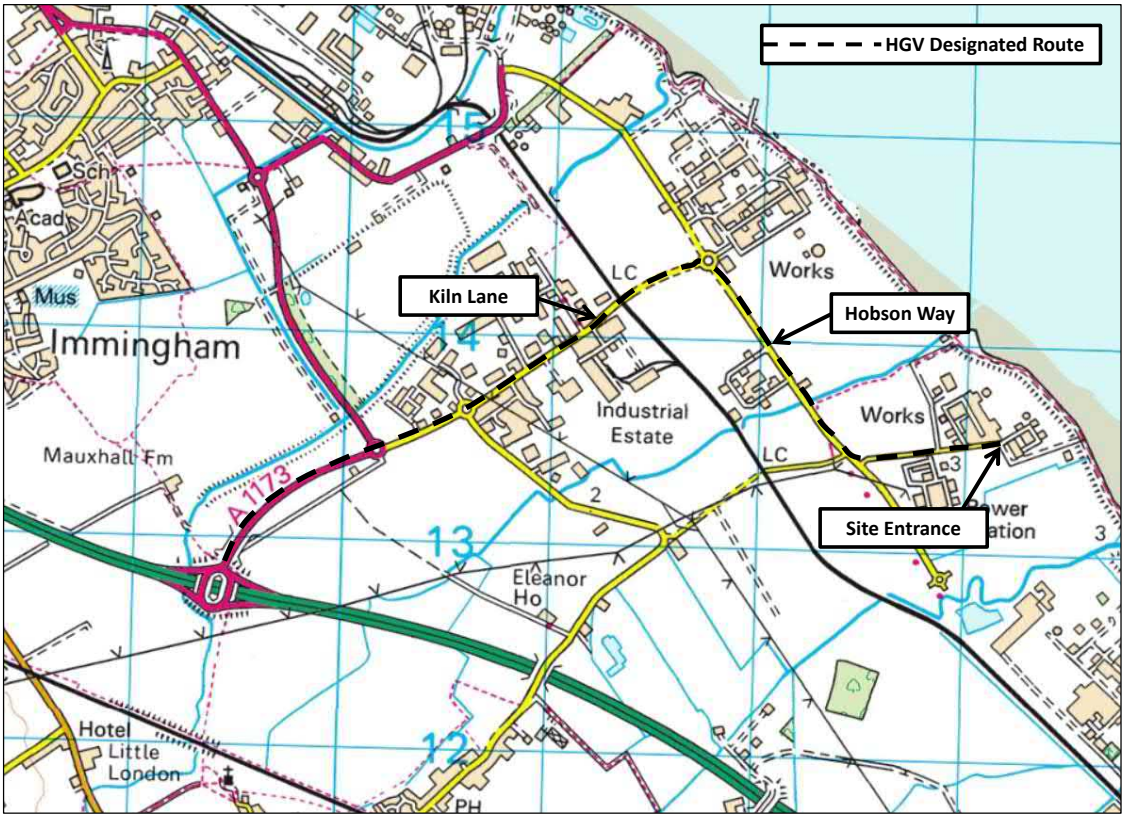
2.12 On completion of the tipping operation, the HGVs will leave the tipping hall via a separate exit. A designated route for all vehicles on Site will reduce the risk of congestion and collisions.

HGV Routing Agreement

2.13 All operational HGV traffic to/ from the Site will be required to route to/ from the A180 via the A1173, Kiln Lane, Hobson Way and South Marsh Road. This will be formalised by a routing agreement and will be rigorously enforced by the Proposed Development operator. The designated HGV routing plan is shown in Figure 2.1 below.

2.14 However, in the event of the closure of South Marsh Road or the Site entrance for an emergency or for reasons beyond the operator's control, access will be via the existing South Humber Bank Power Station entrance on Hobson Way.

Figure 2.1: HGV designated route plan



2.15 The operator will encourage the public to report any incidents regarding any breaches of the routing agreement to the operator's management team together with information on the location of the HGV, direction of travel and its number plate/ operator. This information will allow the operator to take appropriate action to avoid any future incidents.

3.0 MAINTENANCE AND OTHER CONTINGENCIES

Maintenance

3.1 It is expected that each year the Proposed Development will be taken offline for approximately three weeks to allow for invasive maintenance activities such as internal inspection of the boiler, and approximately every five to six years it will be taken offline for a major outage for substantial maintenance activities such as replacement of sections of the boiler.

3.2 Whilst there will be a requirement for some maintenance HGVs during these shutdown periods, Abnormal Indivisible Loads are not anticipated.

Contingency

3.3 In the event of an unforeseen issue with the plant, HGVs would not be held at the gatehouse but in the short term would continue to deposit fuel into the bunker as normal (utilising the spare capacity in the fuel bunker which is sized to hold up to four days of fuel). If the plant problem continued for a longer period, fuel deliveries would be stopped at source preventing HGVs queueing on Site.

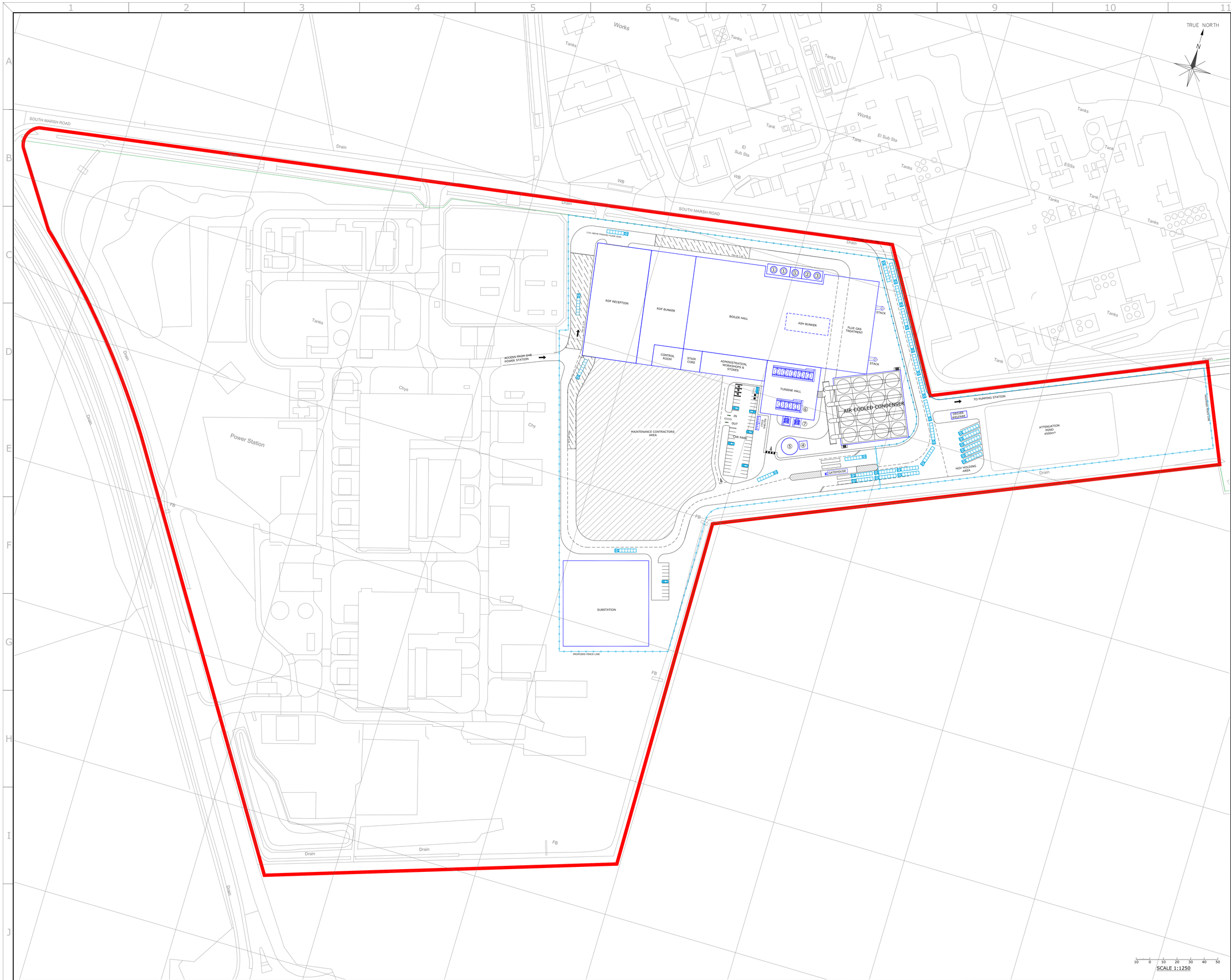
3.4 In the event of a weighbridge failure resulting in HGVs being held at the gatehouse, the design layout incorporates a level of resilience with the provision of four weighbridges and barriers and a wide access road. Also, there is space for a least 21 HGVs to queue between the Site entrance and the gatehouse. If necessary, HGVs would be allowed to queue on any available hardstanding areas within the Site (beyond the gatehouse) to prevent queuing onto the public highway in the event of a major failure such as all inbound and outbound weighbridges failing at once. In such an event, suppliers would be told to stop sending fuel until the problem is resolved. As such, no scenario is envisaged where HGVs would queue onto the public highway.

3.5 In the event of the closure of South Marsh Road or the Site entrance for an emergency or for reasons beyond the operator's control, contingency plans will include (not limited to) taking access to the Proposed Development via the existing South Humber Bank Power Station entrance on Hobson Way.

3.6 In the event of the closure of the A180 in the Site vicinity, diversionary routes will be required. It is anticipated for those deliveries arriving from the west, HGVs will join the A160 at the Brocklesby Interchange before continuing on the A1173 Manby Road/ Kings Road heading south to the A1173/ Kiln Lane Roundabout.

3.7 For those deliveries arriving from Grimsby and Cleethorpes to the south-east, HGVs will use the A1136 and continue on the B1210 Stallingborough Road before joining the A1173 which crosses over the A180.

SITE LAYOUT PLAN



ALL INFORMATION ON THIS DRAWING IS INDICATIVE ONLY, AND MAY BE SUBJECT TO FURTHER DESIGN DEVELOPMENT.

DO NOT SCALE

NOTES:

LEGEND

1. REAGENT SILOS
2. AMMONIA TANK
3. FUEL OIL TANK
4. FIRE WATER PUMP HOUSE
5. FIRE WATER TANK
6. CLOSED CIRCUIT COOLING WATER FANS
7. GENERATOR TRANSFORMERS

KEY

- PLANNING APPLICATION BOUNDARY
- FENCELINE
- GATES

REV.	DETAILS OF REVISION	DRAWN	CHKD	APR	DATE
R3	PRELIMINARY	AO	MSS		09.10.19
R2	PRELIMINARY	AO	MSS		20.08.19
R1	PRELIMINARY	DTW	MSS		11.07.19

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CLIENT: EP UK INVESTMENTS LTD

SITE: SOUTH HUMBER BANK

PROJECT: SOUTH HUMBER BANK ENERGY CENTRE

TITLE: DCO SITE PLAN

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CHECKED BY:	MSS	DATE: 11.07.19
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REVISION: R3

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ANNEX 26: FRAMEWORK CONSTRUCTION WORKER TRAVEL PLAN

EP UK Investments

South Humber Bank Energy Centre Development Consent Order

South Marsh Road, Stallingborough, DN41 8BZ

Framework Construction Worker Travel Plan

Applicant: EP Waste Management Limited
Date: October 2019

DOCUMENT HISTORY

Revision	PEI Report issue		
Author	Jonathan Scott		
Signed		**Date**	October 2019
Approved By	Peter Firth		
Signed		**Date**	October 2019
Document Owner	AECOM		

GLOSSARY

Abbreviation	Description
CWTP	Construction Worker Travel Plan

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FIGURE 2.3: 5 KM/ 8 KM CYCLING CATCHMENT AREA 4

1.0 INTRODUCTION

1.1 This Framework Construction Worker Travel Plan (CWTP) has been prepared by AECOM on behalf of EP Waste Management Limited to accompany a Transport Assessment for the proposed South Humber Bank Energy Centre, Stallingborough, North East Lincolnshire.

1.2 The Framework CWTP is designed to promote and encourage the use of sustainable transport modes and reduce reliance on the private car during the construction phase of the development, which is expected to take 36 months.

1.3 EP Waste Management Limited is committed to the sustainable development agenda and realise that the success of the travel plan will be based on its enthusiasm and commitment to ensure that the chosen contractor encourages and promotes the suggested measures detailed within this report to their workers. The Framework CWTP sets out the aims, objectives and measures to promote sustainable travel to the Site.

1.4 This document is a Framework CWTP. The appointed contractor will be required to use this as the starting point for their final CWTP and demonstrate how the targets defined in this Framework CWTP will be achieved. It also identifies the suggested measures to be implemented by the contractor.

1.5 Following this introduction the Framework CWTP is structured as follows:

- Section 2 provides background information including the Site location and accessibility;
- Section 3 describes the Proposed Development;
- Section 4 presents the final CWTP objectives;
- Section 5 sets out the roles and responsibilities;
- Section 6 describes the proposed measures;
- Section 7 describes the process for setting targets; and
- Section 8 outlines the proposed monitoring of the final CWTP.

2.0 BACKGROUND

Site Description

2.1 The Site is located off South Marsh Road, Stallingborough, North East Lincolnshire approximately 5 km south-east of Immingham. The Main Development Area is located on vacant land within the boundary of the existing South Humber Bank Power Station (SHBPS). The Site location is shown in Figure 2.1.

2.2 South Marsh Road provides highway access to SHBPS, and also to Synthomer (UK) Limited and the NEWLINCS Integrated Waste Management Facility (both located north of the Site), and for the Environment Agency to access parts of the Humber Estuary flood defences (to the east of the Site).

Figure 2.1: Site location

Accessibility

2.3 The accessibility of the Proposed Development has been reviewed with respect to opportunities for walking, cycling and the availability of public transport.

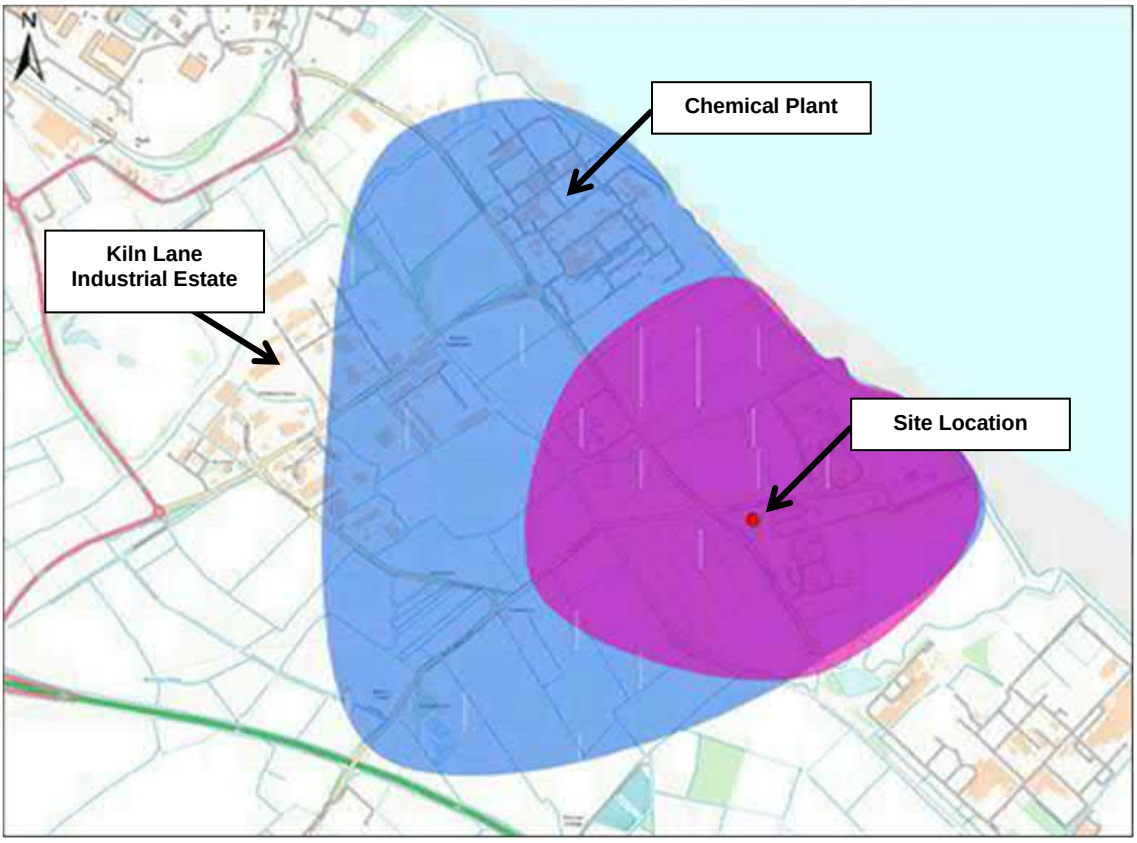
2.4 The Site is located in a remote location on the southern bank of the Humber Estuary. Given its location and the construction working hours, opportunities to access the Site by sustainable modes are limited.

2.5 Notwithstanding, this section considers the opportunities to walk, cycle or use public transport to access the construction Site.

Walking

2.6 The Chartered Institution of Highways and Transportation (CIHT) document 'Providing for Journeys on Foot' suggests a maximum walking distance of 2 km. Figure 2.2 below shows a 1 km and 2 km walking catchment area from the Proposed Development.

Figure 2.2: 1 km/ 2 km walking catchment area



2.7 Figure 2.2 shows that there are no residential areas (except for a small number of isolated properties) within a 2 km walking distance of the Site. In terms of pedestrian facilities in the vicinity of the Site, a footway approximately 2 m wide is provided along the western kerbline of Hobson Way. No footways are provided on South Marsh Road.

2.8 In summary it is not anticipated that walking trips would likely represent a practical travel mode for construction workers.

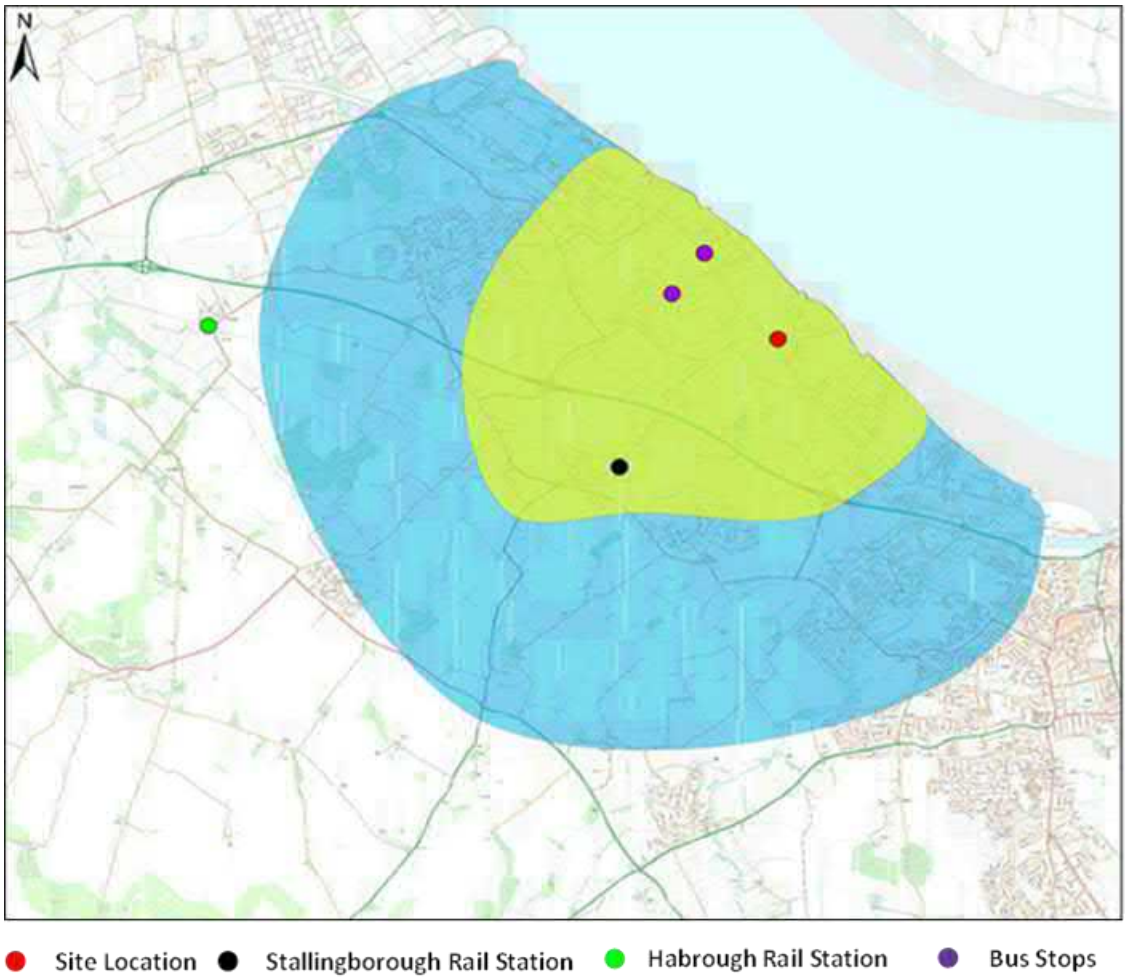
Cycling

2.9 Cycling is considered to be a viable alternative to that of the private car for journeys up to 8 km, providing a healthy and environmentally friendly form of transport.

2.10 In respect of acceptable cycle distances, 'Local Transport Note 2/08: Cycling Infrastructure Design', published by the Department for Transport states that many utility cycle trips are less than 3 miles (approximately 5 km), but for commuter journeys a distance of 5 miles (approximately 8 km) is not uncommon.

2.11 Taking this into account, a plan illustrating the indicative 5 km and 8 km cycle catchment area from the Proposed Development is shown in Figure 2.3.

Figure 2.3: 5 km/ 8 km cycling catchment area



2.12 Figure 2.3 shows Healing, Great Coates, Stallingborough, and parts of Immingham are within an 8 km cycle distance of the Site. Due to the nature of construction and as set out in Table 11.4 of the Transport Assessment in Appendix 9A of PEI Report Volume III, the number of workers originating from these areas is expected to be minimal.

2.13 Within the vicinity of the Site there are no dedicated traffic-free cycle routes. Whilst this is not considered to be an issue for experienced cyclists, the surrounding road network is regularly used by HGVs given its industrial nature and therefore may not represent an attractive option for less experienced cyclists.

Bus

2.14 The CIHT guidance document 'Planning for Public Transport in Developments' recommends that 400 m is the desirable walking distance to a bus stop from a new development. The nearest bus stop to the Site is located approximately 1.9 km to the north of the Site on Laporte Road, outside of the acceptable walking distance.

2.15 This bus stop is served by the 5M bus service. The frequency of this service is shown in Table 2.1.

Table 2.1: Bus service frequency

SERVICE	ROUTE	FREQUENCY		
		MON - FRI	SAT	SUN
5M	Immingham - Grimsby	06:49, 07:49. 16:15 & 17:10	No Service	No Service

2.16 In summary this bus stop is located outside of the acceptable walking distance to a bus stop and given the low frequency of service represents an unattractive option for construction workers. In addition there are no footways present on South Marsh Road between the junction with Hobson Way and the Site.

Rail

2.17 The nearest railway station to the Site is Stallingborough approximately 3.2 km south west of the Site (see Figure 2.3). Whilst the station is located outside the acceptable 2 km walking catchment area, multi modal journeys using rail and cycling could be utilised.

2.18 Stallingborough station is on the Cleethorpes to Barton on Humber line and provides a two hourly service in each direction Monday to Saturday.

2.19 Rail Services are operated by Northern. Table 2.2 Illustrates the rail frequency from Stallingborough rail station

Table 2.2: Summary of rail frequency

SERVICE	MONDAY TO SATURDAY FREQUENCY	SUNDAY FREQUENCY
Barton On Humber	2 hours	2 to 3 hours
Cleethorpes (via Grimsby)	2 hours (once per hour during morning peak)	2 to 3 hours

3.0 PROPOSED DEVELOPMENT

Development Description

3.1 The Proposed Development is an energy from waste power station which will generate energy through the controlled combustion of refuse derived fuel (RDF) with a gross electrical output of up to 95 MW.

Construction Programme

3.2 It is anticipated that construction could commence in Q1 2020 at the earliest and last circa 36 months.

Construction Phase Site Worker Traffic Generation

3.3 During construction, the Proposed Development would require a maximum of 750 workers per day at the peak of construction.

3.4 The standard construction working hours for the Proposed Development will be 07:00 to 19:00 Monday to Saturday. Key exceptions to these working hours could include activities that be carried out continuously (such as concrete slip-forming) and internal non-noisy activities, where they comply with any restrictions agreed with NELC.

3.5 In relation to traffic generation associated with construction workers, an average occupancy of two workers per vehicle has been applied. This occupancy rate has been accepted by transport stakeholders on other recent power station construction projects including Eggborough Combined Cycle Gas Turbine (CCGT) and Knottingley CCGT and is therefore considered robust. The resulting construction worker traffic volumes throughout construction are set out in Table 3.1.

Table 3.1: Daily construction worker vehicle generations

YEAR OF CONSTRUCTION	DAILY WORKFORCE	DAILY VEHICLE GENERATIONS
Q1 2020	80	40
Q2 2020	170	85
Q3 2020	295	148
Q4 2020	590	295
Q1 2021	750	375
Q2 2021	750	375
Q3 2021	750	375
Q4 2021	750	375
Q1 2022	530	265
Q2 2022	360	180
Q3 2022	225	113
Q4 2022	140	70

3.6 Table 3.2 illustrates the daily vehicle arrival and departure profile during the peak of construction where the daily workforce is estimated to be up to 750 workers.

Table 3.2: Daily vehicle profile during peak of construction

HOUR BEGINNING	% OF DAILY INBOUND	% OF DAILY OUTBOUND	ARRIVALS	DEPARTURES
06:00	42%	0%	158	0
07:00	37%	0%	138	0
08:00	12%	0%	45	0
09:00	9%	0%	34	0
16:00	0%	22%	0	82
17:00	0%	26%	0	98
18:00	0%	47%	0	176
19:00	0%	5%	0	19
Total	**100%**	**100%**	**375**	**375**

Access Proposals

3.7 All construction workers will arrive and depart the Proposed Development via a construction site entrance that is expected to be located off South Marsh Road to the east of the South Humber Bank Power Station entrance.

Car Parking Provision

3.8 Parking demand will vary throughout the construction phase and an area of hardstanding will be set aside within the Site to accommodate parking for construction workers as required.

4.0 OBJECTIVES

4.1 The final CWTP will act in helping the environment by reducing the number of trips made to and from the construction site by private car. All staff during construction will be made aware of the measures included in the final CWTP so that benefits can be delivered and the number of car borne trips can be reduced by promoting car sharing and minibus use.

4.2 The final CWTP will aim to ensure all construction staff are aware of the advantages and potential for travel by more sustainable and environmentally friendly modes of transport through raising awareness and the provision of information identifying travel options and the necessary contact information.

4.3 The primary objectives which are of most relevance during the construction period of the proposed development are to:

- ensure that an appropriate package of measures is employed to encourage sustainable transport behaviour;
- reduce car usage (particularly single occupancy journeys);
- raise awareness of the sustainable transport measures serving construction site; and
- minimise the impacts of traffic on sensitive locations.

5.0 ROLES AND RESPONSIBILITIES

5.1 The Travel Plan Co-ordinator has a key role to play in managing, monitoring and implementing the individual measures within the CWTP.

5.2 A Travel Plan Co-ordinator will be appointed by the contractor to manage and deliver the CWTP. The Travel Plan Co-ordinator's contact details will be supplied to North East Lincolnshire Council and Highways England.

5.3 The Travel Plan Co-ordinator will work closely with the Site manager who has overall responsibility for the Site.

5.4 The responsibilities of EP Waste Management Limited will primarily include:

- contractually committing the contractor to finalise the CWTP and to comply with the guidelines outlined within it.

5.5 The responsibilities of the Travel Plan Co-ordinator will primarily include:

- ensuring the obligations of contractors/ sub-contractors related to the CWTP are adhered to;
- ensuring the travel plan notice board is located in a prominent position and that the information is kept up to date;
- monitoring parking to ensure no parking on any public highway leading to the Site;
- being based on the Site;
- acting as the key point of contact for issues related to construction traffic;
- reviewing cycle parking provision on a regular basis;
- engaging with local stakeholders;
- monitoring performance against the targets of the final CWTP; and
- implementing additional measures if not delivering on targets set.

5.6 The contractor will be responsible for managing how their workers travel to and from the Site. Given the limited number of parking spaces to be provided, the contractor's responsibilities will primarily include:

- providing a Travel Plan Co-ordinator to oversee the management and delivery of the CWTP;
- encouraging and promoting the use of sustainable transport measures included within the final CWTP; and
- organising crew minibuses to transport workers to and from the Site if appropriate.

6.0 TRAVEL PLAN MEASURES

General

6.1 To encourage sustainable travel behaviour by construction staff throughout the period of construction, it is important that an appropriate package of measures is introduced.

6.2 The measures should primarily aim to minimise the level of construction worker traffic and then whenever possible minimise the impact and disruption on the remaining traffic and local road network.

Proposed Measures to Reduce the Level of Traffic

Car Parking

6.3 The availability of car parking has a major influence on the means of transport people use for their journeys and is therefore an important travel plan measure in promoting sustainable travel to and from the Site.

6.4 It is proposed that sections of the car park will be gradually opened up, to make sure that the number of vehicles is controlled, and that sustainable transport options are promoted throughout the course of construction.

6.5 It is proposed that car parking at the Site will be monitored with restricted access.

6.6 In arranging the layout of the car park, it is proposed that the spaces closest to the construction site/ offices will be designated for car sharers and minibuses.

Minibus

6.7 Given the restriction on the number of car parking spaces provided, contractors will be encouraged to provide minibuses for transporting their workers from key points of construction worker origin to the Site. This will have the benefit of reducing the number of vehicular trips on the local road network. For example many construction workers will find local accommodation. The locations of accommodation chosen by these workers are likely to provide suitable pick up locations for the minibus.

6.8 The contractor will be requested to encourage the use of common accommodation locations by workers that are not from the local area, to encourage the use of shared transport modes such as minibus.

6.9 The contractor will be requested to provide minibuses and to organise where the minibuses will pick up workers and at what times if appropriate.

Car Sharing

6.10 The contractor will be encouraged to set up and manage a car share scheme for its workers. In construction projects, car sharing is often popular amongst workers due to the financial and social benefits it can provide. It is expected that some workers will be away from home and may welcome the companionship of other colleagues.

6.11 In emergencies, the Travel Plan Co-ordinator should provide a guaranteed lift home for car sharers. The provision should be extended for emergency situations for staff who cycle to the Site.

Cycling

6.12 Although cycling to the Site is likely to have limited appeal to construction site personnel (due to carrying PPE etc.) secure parking for bicycles will be provided within the temporary car park. Construction staff that cycle to work will also have access to shower and changing facilities and lockers to store clothing, cycle helmets etc.

On-Site Storage

6.13 An on Site storage facility is usually provided by contractors. Providing this facility would encourage construction workers to store their tools on Site. This would reduce the amount of tools they need to carry each day and would assist those workers who are considering cycling or car sharing as a potential travel mode.

Minimising the Impact on the Local Road Network

Signage Strategy

6.14 In order to ensure that construction vehicles unable to park on Site do not park on the public highway in the vicinity of the Site, clear and appropriate signage will be required on South Marsh Road. The signage will indicate no parking is permitted on the road and the potential penalties for those who do.

Staggered Working Hours

6.15 It is understood that the start and finishing hours of contractors may vary according to discipline. This should help to ensure that the flow of construction worker traffic is either outside of, or spread across the AM and PM Peak, thereby minimising the impact on any particular time period.

Travel Plan Communication

6.16 Details of the sustainable transport options available for accessing the Site will be provided in an information pack and presented to construction workers prior to them starting work at the Site. This will raise awareness of the initiatives being implemented and also allow staff to register an interest in the schemes. The contractor will be responsible for ensuring all construction workers receive the information pack prior to starting work on Site.

6.17 The contractor will be encouraged to ensure that all construction workers receive an introductory briefing on the travel plan when they commence work. This will be incorporated into the Site safety briefing and will include the provision of the following information:

- designated access and exit routes to the Site;
- details of sustainable transport measures available for accessing the Site; and
- parking arrangements.

6.18 The provision of such a meeting should ensure that each worker is fully aware of the CWTP and the respective sustainable transport measures contained within it.

7.0 TARGETS

7.1 Without management, construction industry standards suggest a typical vehicle occupancy of 1.35 which would result in 555 vehicles arriving and departing the Site per day at the peak of construction.

7.2 One of the prime objectives of an active CWTP is to set clear and realistic targets. The main target to be achieved during the construction of the Proposed Development is as follows:

- to achieve a car occupancy of two workers per vehicle over the duration of the construction project. Up until handover of the Proposed Development, no more than one car or van should be parked on Site for every two people registered on Site per day.

7.3 The Travel Plan Co-ordinator will monitor parking utilisation at the Site reviewing the split between cars, vans and minibuses. Ensuring that this target is met is dependent on the contractor encouraging its workers to travel to and from the Site by sustainable options provided in the final CWTP. If monitoring (see Section 8 below) finds that the target is not being met, this will result in the implementation of additional measures to ensure the CWTP stays on course to meet its overall objectives.

7.4 This target represents a 32% reduction in vehicles arriving at the Site when compared to the industry standard.

8.0 MONITORING

8.1 Monitoring the final CWTP will be central to ensuring its aims are delivered in practice throughout the construction timeframe. Effective monitoring should guarantee that failures or changing conditions are identified at the earliest point and that remedial action (i.e. identifying additional measures, providing incentives, marketing campaign to promote the CWTP) can be taken, to ensure that the CWTP stays on course to meet its overall objectives.

8.2 The Travel Plan Co-ordinator will be responsible for monitoring the final CWTP, to ensure an efficient and effective execution of the measures, and to refine the measures where necessary to cope with the changes in demand over the life of the construction project.

8.3 An important part of the monitoring strategy will be obtaining feedback from employees of the Principal Contractor, North East Lincolnshire Council and local residents regarding any issues with construction worker traffic. The appointment of a Travel Plan Co-ordinator will ensure that an appropriate person is available and can react to such feedback.

8.4 Furthermore, employees will be given the chance to offer their suggestions and ideas via a suggestion box/ an informal discussion with the Travel Plan Co-ordinator, while review meetings will be held at regular intervals with construction worker representatives to ensure any issues are dealt with effectively.

8.5 The Travel Plan Co-ordinator will monitor parking utilisation at the Site to review the split of vehicles between cars, vans and minibuses. It is anticipated that monitoring will be undertaken on a regular basis with a six monthly monitoring report prepared by the Travel Plan Co-ordinator and submitted to North East Lincolnshire Council's Travel Plan Officer. In addition, monitoring of the local road network will be undertaken to ensure no parking on the public highway leading to the Site.

ANNEX 27: FRAMEWORK CONSTRUCTION TRAFFIC MANAGEMENT PLAN

EP UK Investments

South Humber Bank Energy Centre Development Consent Order

South Marsh Road, Stallingborough, DN41 8BZ

Framework Construction Traffic Management Plan

Applicant: EP Waste Management Limited
Date: October 2019

DOCUMENT HISTORY

Revision	PEI Report issue		
Author	Jonathan Scott		
Signed		**Date**	October 2019
Approved By	Peter Firth		
Signed		**Date**	October 2019
Document Owner	AECOM		

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1.0 INTRODUCTION

Overview

1.1 This Framework Construction Traffic Management Plan (CTMP) has been prepared by AECOM on behalf of EP Waste Management Limited to accompany the Transport Assessment (TA) for the proposed South Humber Bank Energy Centre, an energy from waste plant located on land within the boundary of the existing South Humber Bank Power Station, South Marsh Road, Stallingborough.

1.2 The Site is located to the north of the A180 and is accessed via the A1173, Kiln Lane, Hobson Way and South Marsh Road.

1.3 The construction of the Proposed Development will generate a volume of HGVs delivering plant and machinery, concrete and aggregates, steelwork, bricks and block work and other general construction materials. A number of abnormal indivisible loads (AILs) will also be generated by the construction of the Proposed Development which will need a special strategy for delivery.

1.4 This document is a Framework CTMP. The appointed contractor will be required to use this framework document as the starting point for the final CTMP.

1.5 Following this introduction the Framework CTMP is structured as follows:

- Section 2 describes the Proposed Development including the construction programme and the HGV generation;
- Section 3 describes the proposed measures to control HGV routing and impact;
- Section 4 describes the proposed AIL route;
- Section 5 provides the monitoring strategy; and
- Section 6 describes the planned liaison with key stakeholders.

2.0 BACKGROUND

Site Description

2.1 The Site is located off South Marsh Road, Stallingborough, North East Lincolnshire approximately 5 km south-east of Immingham. The Main Development Area is located on vacant land within the boundary of the existing South Humber Bank Power Station. Its location in relation to the surrounding area and the strategic road network is shown in Figure 2.1.

2.2 South Marsh Road provides highway access to the SHBPS, and also to Synthomer (UK) Limited and the NEWLINCS Integrated Waste Management Facility (both located north of the Site), and for the Environment Agency to parts of the Humber Estuary flood defences (to the east of the Site).

Figure 2.1: Site location

Development Description

2.3 The Proposed Development is an energy from waste power station which will generate energy through the controlled combustion of refuse derived fuel (RDF) and with a gross electrical output of up to 95 MW.

Construction Programme

2.4 It is anticipated that construction could commence in Q1 2020 at the earliest or Q3 2026 at the latest and last circa 36 months.

Construction Phase Site Worker Traffic Generation

2.5 For construction worker traffic generation and the proposed measures to be implemented to encourage sustainable travel modes, please refer to the Framework Construction Workers Travel Plan (at Annex 26 of this Transport Assessment).

Construction Phase HGV Traffic Generation

2.6 The volume of HGVs on the network is predicted to be at its maximum of 412 two-way daily vehicle movements (206 in and 206 out) during Q1 2020 of construction and is associated with the possible removal of the top 2 m of ground within the Main Development Area and replacing with imported compacted engineering fill to improve bearing capacity. During the remainder of the construction period HGV movements will vary between 18 and 116 daily two-way movements as shown in Table 2.1.

Table 2.1: Construction HGV movements

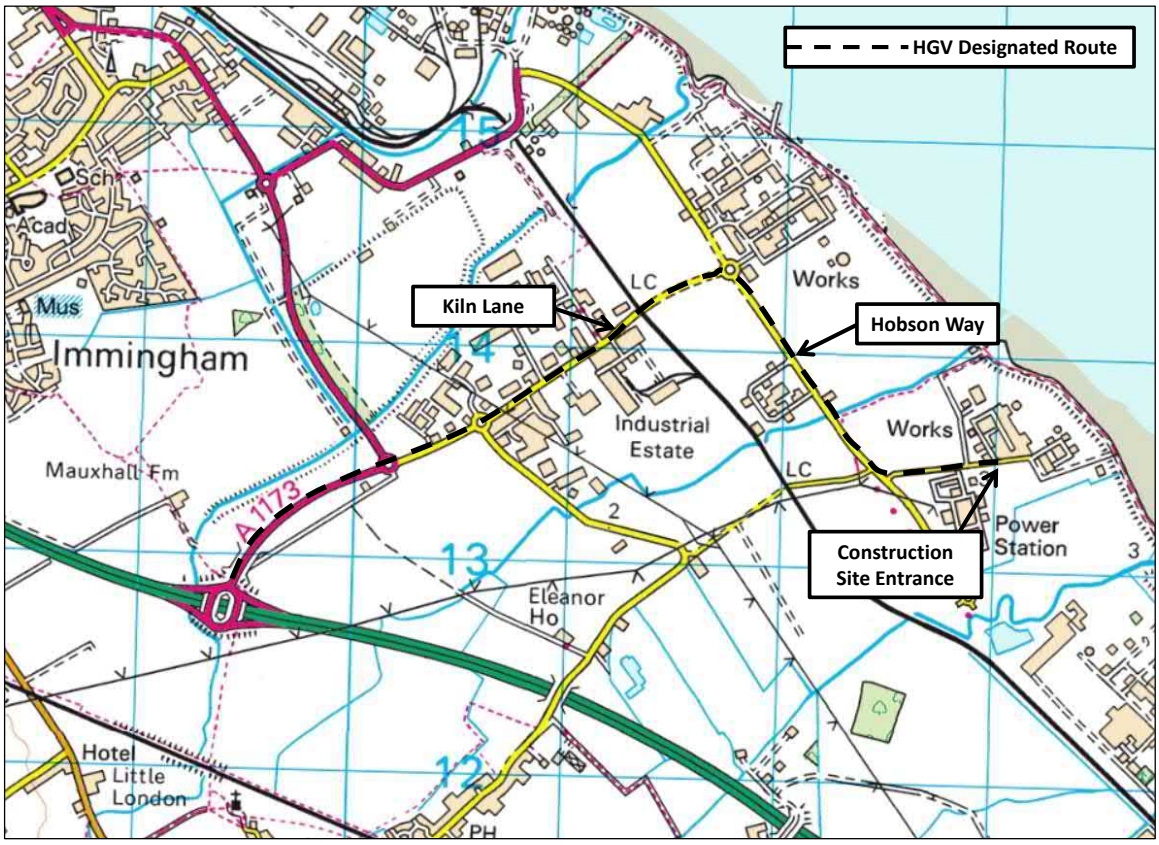
YEAR OF CONSTRUCTION	DAILY TWO-WAY HGV MOVEMENTS
Q1 2020	412
Q2 2020	80
Q3 2020	94
Q4 2020	108
Q1 2021	116
Q2 2021	70
Q3 2021	64
Q4 2021	52
Q1 2022	34
Q2 2022	18
Q3 2022	32
Q4 2022	26

3.0 MEASURES TO CONTROL HGV ROUTING AND IMPACT

Designated Route to Site

3.1 It is proposed that all construction HGVs associated with the construction of the Proposed Development will arrive and depart the Site via the construction site entrance located off South Marsh Road. All HGVs associated with the construction of the Proposed Development will be required to arrive and depart the Site towards the A180 via Hobson Way, Kiln Lane and the A1173. The designated HGV routing plan is shown in Figure 3.1 below.

Figure 3.1: HGV designated route plan



3.2 The HGV routing plan will be distributed to all drivers during their induction. It will be a condition of contract between EP Waste Management Limited and the appointed contractor to ensure that all HGV deliveries to the Site are instructed to use the designated route to access and egress the construction site. Sanctions will be put in place to deal with non-compliance.

Construction Programme / Site Hours

3.3 Construction at the Site is programmed to be carried out over a 36 month period.

3.4 In order to minimise the disruption to the public the standard construction hours will be restricted to the following:

- Monday – Saturday: 07:00 – 19:00

3.5 It is proposed that HGV deliveries will be made during these hours.

Wheel Cleaning Facility

3.6 In the interests of highway safety, wheel cleaning facilities will be installed on-site from the start of the construction phase. All HGVs leaving the construction site will be required to wheel wash when exiting the Site. The need for this measure should be periodically reviewed throughout the construction period.

Advanced Warning Signs

3.7 Advance warning signage will be erected on South Marsh Road prior to the construction site entrance to warn drivers of the construction access ahead and the potential for slow turning vehicles. An example of the proposed signage is shown below.

3.8 The appointed contractor will be required to maintain all signage.

Contact Name and Number

3.9 A 24 hour contact name and number will be established by the contractor and displayed on a notice board at the construction site entrance points.

4.0 ABNORMAL INDIVISIBLE LOADS

4.1 A number of AILs will need to be brought into the construction site over the construction period.

4.2 The ports of Immingham, Hull and Goole are situated near to the Proposed Development. Detailed consideration will be given to the appropriate port and AIL routes during detailed design once final details of the size and origin of loads are known.

4.3 Abnormal Loads Officers at Highways England and the North East Lincolnshire Council will be consulted at the earliest opportunity on the programme and plan for the delivery of AILs.

4.4 The public will also be made aware of when abnormal load deliveries are taking place via social media, local radio and the local press.

5.0 MONITORING

5.1 A programme of monitoring will be implemented to assess the effectiveness of the measures included in the final CTMP to control the routing and impact of construction HGVs. A monitoring programme will also provide a firm basis upon which to answer queries and complaints regarding the HGV traffic impact during construction. A 24 hour contact name and number will be established by the contractor and displayed at the Site.

5.2 The appointed contractor will maintain gatehouse records of construction HGVs entering and leaving the Site and they will be available to North East Lincolnshire Council on request.

5.3 Should any complaints be raised by members of the public with regards to construction HGVs not using the dedicated HGV route to the Site, gatehouse records will be used to identify the offending HGV involved and appropriate sanctions put in place to ensure no repeat events.

6.0 CONSULTATION

6.1 A formal process of liaison between all relevant parties is proposed to:

- establish a channel of communication between the contractor and the regulating authorities;
- make all interested parties aware of the results of monitoring of the final CTMP;
- provide a route by which any complaints can be communicated and dealt with;
- provide a route through which transport related issues can be identified and dealt with; and
- provide prior notice of significant events e.g. delivery of abnormal loads.

6.2 It is proposed that a short written report is prepared on behalf of the contractor on a six monthly basis and circulated to all key stakeholders.

6.3 Any comments generated by the report will be circulated to all key stakeholders and a meeting may be held if required.