



Transport Assessment

Knowsley Lane, Knowsley

Client: Caddick Developments



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	Name	Position
Written By	Vanessa Blackburn	Senior Transport Planner
Checked & Approved By	David Schumacher	Director

CONTENTS

1	INTRODUCTION.....	3
1.1	Purpose of Report	3
1.2	Scope of Report	3
2	TRANSPORT POLICY AND GUIDANCE.....	5
2.1	Introduction.....	5
2.2	National Planning Policy Framework.....	5
2.3	Planning Practice Guidance	6
2.4	Local Transport Plan and A Transport Plan for Growth.....	7
2.5	Knowsley Local Plan Core Strategy and Replacement Unitary Development Plan Policies	8
2.6	Ensuring a Choice of Travel SPD	9
2.7	Summary	10
3	EXISTING SITUATION	11
3.1	Site Description	11
3.2	Local Highway Network.....	12
3.3	Local Cycle Network	13
3.4	Existing Traffic Conditions	14
3.5	Road Safety Review	16
4	DEVELOPMENT PROPOSAL.....	19
4.1	Development Description.....	19
4.2	Proposed Access Arrangement.....	19
4.3	Pedestrian/Cycle Access	20
4.4	Internal Layout	20
4.5	Access for Commercial Vehicles	21
4.6	Parking Provision	21
4.7	Summary	25
5	ACCESS BY SUSTAINABLE MODES.....	27
5.1	Introduction to Sustainable Modes of Transport.....	27
5.2	Access on Foot.....	27
5.3	Access by Cycle.....	29
5.4	Access by Bus.....	30
5.5	Minimum Accessibility Standards Assessment (MASA).....	32
5.6	Summary	32
6	IMPACT ASSESSMENT	33
6.1	Introduction.....	33
6.2	Observed Flows	33
6.3	Committed Development	33

6.4	Forecast Traffic Growth	33
6.5	B8/ B2 Split	34
6.6	Vehicular Trip Generation	35
6.7	Multimodal Trip Generation.....	41
6.8	Trip Distribution	42
6.9	Off-Site Impact Assessment.....	43
6.10	Junction Capacity Assessments	43
6.11	Summary	48
7	SUMMARY AND CONCLUSION	49
7.1	Summary	49
7.2	Conclusion	50

APPENDICES

Appendix A	Scoping Correspondence
Appendix B	Traffic Flow Diagrams
Appendix C	Accident Data
Appendix D	Technical Drawings
Appendix E	MASA
Appendix F	TRICS Outputs
Appendix G	2011 Census MTW Data & Distribution Calculation
Appendix H	Junction Capacity Assessment Report Outputs

1 INTRODUCTION

1.1 Purpose of Report

- 1.1.1 This report considers the highways and transportation implications associated with Caddick Development's proposal for a detailed application for the development of an employment led scheme comprising B8/B2 Uses with ancillary offices (E(g)(i) Use) on a site off Knowsley Lane in Knowsley.
- 1.1.2 This document considers the accessibility of the site and safety for all modes of travel including walking, cycling and public transport.
- 1.1.3 The conclusions and recommendations contained herein have been drawn based on information available and obtained in advance of the planning submission to which this report relates.
- 1.1.4 Reasonable checks have been carried out on any third-party information used in the preparation of this report but, nonetheless, Prime Transport Planning ('Prime') accepts no liability for the accuracy or otherwise of this third-party data.
- 1.1.5 Third-party rights are excluded for the use of information contained within this report.

1.2 Scope of Report

- 1.2.1 This report has been prepared in accordance with the Government's Planning Practice Guidance: *Transport evidence bases in plan making* (2014) and *Travel Plans, transport assessments and statements in decision-taking* (2014). *Transport evidence bases in plan making* replaced the Department for Transport's (DfT) *Guidance on Transport Assessment (GTA)* in 2014, however, the new document is not a like-for-like replacement for GTA, providing no guidance on the production of Transport Assessments to accompany developments. The latest guidance instead helps local planning authorities assess strategic transport needs to reflect and, where appropriate, mitigate these in their Local Plan.
- 1.2.2 More relevant information is provided within the PPG under *Travel Plans, Transport Assessments and Statements in Decision-Taking* however this also does not provide the level of detailed guidance that was contained within DfT's GTA.
- 1.2.3 The lack of current detailed guidance places greater emphasis on agreeing the scope of a TA with the highway authority responsible for the location in which the development is proposed and in employing industry best-practice. Given that GTA was in place for 7-years, Prime believes that assessment in-line with the document still represents industry best-practice, particularly for aspects where the current guidance lacks the necessary detail to form a robust assessment.
- 1.2.4 Knowsley Metropolitan Borough Council (KMBC) is both the planning and the highway authority responsible for determining planning applications, and the highway implications of said applications

respectively. A scoping document was sent to KMBC Highways Officers, which highlighted the proposed methodology in late February 2021 with KMBC responding in late April 2021. Further scoping discussions with KMBC Highways has been undertaken in March 2022 to confirm if the most recent proposals are acceptable, however this resulted in a number of additional requests which are out of the scope which had previously been agreed. A copy of the scoping correspondence is provided in Appendix A.

1.2.5 Following this introduction, the remainder of this report is structured as follows:

- Section 2 describes the relevant local and national transport policy and guidance;
- Section 3 describes the existing situation in terms of the site, local highway network and traffic conditions in the vicinity of the site, plus a discussion on the existing safety of the local highway network adjacent to the site;
- Section 4 details the development proposal including the access strategy and parking arrangements;
- Section 5 details access to the site by sustainable modes of travel which includes walking, cycling and public transport;
- Section 6 discusses the forecasting methodology and trip generation of the site
- Section 7 provides capacity assessments of key junctions in the vicinity of the site including the proposed main site access; and
- Section 8 concludes the findings of the Transport Assessment.

2 TRANSPORT POLICY AND GUIDANCE

2.1 Introduction

- 2.1.1 It is important that any new developments consider national and local planning policy. This section details the policies that are relevant to this development.

2.2 National Planning Policy Framework

- 2.2.1 The current *National Planning Policy Framework* (NPPF) was published in July 2021 and sets out the Government's current planning policies. At the heart of NPPF is '*a presumption in favour of sustainable development*' as detailed in paragraphs 10 and 11.
- 2.2.2 Section 9 of the NPPF, *Promoting sustainable transport*, outlines the important role that the planning system has in facilitating sustainable development. It states in paragraph 105 that:

'Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health.'

- 2.2.3 The document offers guidance for planning policies including:
- supporting appropriate mixes of land uses;
 - minimising the number and length of journeys;
 - actively involving local highway authorities, transport infrastructure providers and operators and neighbouring councils in order to align strategies and investments for supporting sustainable travel; and
 - providing high quality walking and cycling networks and associated supporting facilities such as cycle parking.

- 2.2.4 Paragraph 110 of the NPPF provides direction for the assessment of sites for development, stating:

'...it should be ensured that:

a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

b) safe and suitable access to the site can be achieved for all users; and

c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code;

d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.'

2.2.5 In determining planning applications, paragraph 111 states that:

*'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be **severe**.'*

2.2.6 Paragraph 112 continues:

'Within this context, applications for development should:

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.'

2.2.7 Paragraph 113 highlights the need for planning applications for developments that will *'generate significant amounts of movement'* to be accompanied by a Transport Assessment or Transport Statement and a Travel Plan so that the *'likely impacts of the proposal can be assessed'*.

2.3 Planning Practice Guidance

2.3.1 The theme of sustainable development runs throughout Planning Practice Guidance, with the detailed elements regarding transport being focussed in the following sections:

- Transport Evidence Bases in Plan Making and Decision Taking; and
- Travel Plans, Transport Assessments and Statements in Decision Taking.

2.3.2 Both sections of the Guidance provide significant amounts of detail on the information types and sources that are appropriate for helping Local Planning Authorities to take forward their Local Plan with an appropriate evidence base. The guidance is also a useful reference for assessing schemes such as the development which this report accompanies.

2.3.3 The core components of the requirements for assessment, as set out in the guidance, can be summarised as:

- ‘The key issues, which should be considered in developing a transport evidence base, include the need to:
- assess the existing situation and likely generation of trips over time by all modes and the impact on the locality in economic, social and environmental terms;
- assess the opportunities to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport;
- highlight and promote opportunities to reduce the need for travel where appropriate;
- identify opportunities to prioritise the use of alternative modes in both existing and new development locations if appropriate;
- consider the cumulative impacts of existing and proposed development on transport networks;
- assess the quality and capacity of transport infrastructure and its ability to meet forecast demands; and
- identify the short, medium and long-term transport proposals across all modes’.

2.3.4 The principles set out in Planning Practice Guidance are consistent with the approach undertaken in the production of this report.

2.4 Local Transport Plan and A Transport Plan for Growth

2.4.1 The Merseyside Local Transport Plan 3 (LTP3) was adopted in April 2011 and provides the statutory framework for transport strategy and plans across Merseyside.

2.4.2 The Merseyside LTP3 is set within the context of the vision of the Liverpool City Region (LCR) with the goal:

‘To establish our status as a thriving international city region by 2030’.

2.4.3 The LCR vision for transport is:

‘A city region committed to a low carbon future, which has a transport network and mobility culture that positively contribute to a thriving economy and the health and wellbeing of its citizens and where sustainable travel is the option of choice’.

2.4.4 In order to support the LCR and achieve the transport vision, LTP3 sets out six goals, as follows:

- One - Help create the right conditions for sustainable economic growth by supporting the priorities of the Liverpool City Region, the Local Enterprise Partnership and the Local Strategic Partnerships;
- Two - Provide and promote a clean, low emission transport system which is resilient to changes to climate and oil availability;
- Three - Ensure the transport system promotes and enables improved health and wellbeing and road safety;
- Four - Ensure equality of travel opportunity for all, through a transport system that allows people to connect easily with employment, education, healthcare, other essential services and leisure and recreational opportunities;
- Five - Ensure the transport network supports the economic success of the city region by the efficient movement of people and goods; and
- Six - Maintain our assets to a high standard.

2.4.5 Since LTP3 was published, there has been significant progress in formally bringing together local authorities across Merseyside and Halton to establish the LCR Combined Authority. Recognising the differences between the respective LTPs for Merseyside and Halton, and the government policy changes since the LTPs were published, *A Transport Plan for Growth* (TPG) was published in March 2015.

2.4.6 TPG sets out three Transport Priorities, as follows:

- ‘Growth’ – supporting economic growth in the City Region, through increasing employment, levels of productivity and investment;
- ‘Low Carbon’ – we want to live and work in a City Region that draws its energy from a range of sustainable energy sources, where travel is in vehicles powered by alternatives to fossil fuels, and with increased active travel opportunities; and
- ‘Access to Opportunity’ – supporting those who wish to access employment, training, education and further learning opportunities, and the wider work in supporting the whole City Region in access to fresh food, leisure and healthcare’.

2.5 Knowsley Local Plan Core Strategy and Replacement Unitary Development Plan Policies

2.5.1 Knowsley adopted the Local Plan Core Strategy (CS) in January 2016 and together with the saved policies of the Knowsley Replacement Unitary Development Plan (UDP), adopted June 2006, forms the principal policy requirements for new development within the Borough.

2.5.2 The CS is clear in the need to support a sustainable transport system and pattern of development which minimises the need to travel and will ensure that jobs, shops and services are accessible to all,

with the aim of reducing the reliance on the car for travel. This is set out in the Vision, Strategic Objective 6, and under Policy CS2.

- 2.5.3 CS Policy CS7 (Transport Network) identifies a series of requirements for new development. The policy emphasises the need for development to be located and designed to prioritise accessibility and sustainable modes of transport through a choice of walking, cycling, public transport, and incorporate access for private vehicles; and that it must comply with adopted cycle, car, disabled and service vehicle parking standards for different types and scales of new development.
- 2.5.4 The relevant saved policies from the UDP are Policy T6 which aims to ensure that there is an emphasis on walking, cycling and public transport and sets car parking as a maximum *‘in order to encourage the shift towards more sustainable forms of travel’*; Policy T7 which aims to ensure the walking and cycling network is at least preserved and where possible enhanced; and Policy T10 which requires that proposals for new developments and change of use of existing buildings have adequate access for the less mobile and people who have sensory impairments.

2.6 Ensuring a Choice of Travel SPD

- 2.6.1 The *Ensuring a Choice of Travel* Supplementary Planning Document (SPD) was originally developed in partnership with the Merseyside Local Authorities and Merseytravel in order to provide consistent guidance to developers on access and transport requirements for new developments across the wider Merseyside area. Its overall objectives are:

- ‘Ensure a reasonable choice of access by all modes of transport to new development;
- Reduce the environmental impact of travel choices, by reducing pollution, and improving the local environment;
- Improving road safety;
- Promote healthier lifestyles by providing opportunities for people to walk or cycle for work or leisure purposes;
- Reduce the level of traffic growth and congestion on the strategic and local road network; and,
- Encourage opportunities to improve the quality of development proposals by better use of space through the provision of less car parking spaces where appropriate.’

Transport Assessments and Transport Statements

- 2.6.2 Chapter 6 of the SPD details the requirement for Transport Assessments (TAs). The SPD states that a TA is required which examines in detail the demand for travel generated by a development, and how this can be met in a safe and sustainable way - minimising any negative impacts on the surrounding community.

Travel Plans

- 2.6.3 Chapter 7 of the SPD outlines the benefits of and requirements for Travel Plans (TPs). The SPD defines a TP as,

'A Travel Plan is a plan for managing transport effectively for a specific site. It aims to improve access to the site by many modes of travel, thus improving transport choices for everyone. It is made up of a package of practical measures with the aim of reducing car dependency and encouraging the use of walking, cycling, and public transport..'

Minimum Accessibility Standard Assessment

- 2.6.4 Among the transport requirements set out in the SPD are a 'Minimum Accessibility Standard Assessment' (MASA), which is a scoring system for new developments based on their land use type, scale, location, and facilities provided. The MASA that has been undertaken for the proposed development is detailed in Section 3.

Parking Standards

- 2.6.5 The SPD also sets out parking standards and will be detailed further in Section 4.

2.7 Summary

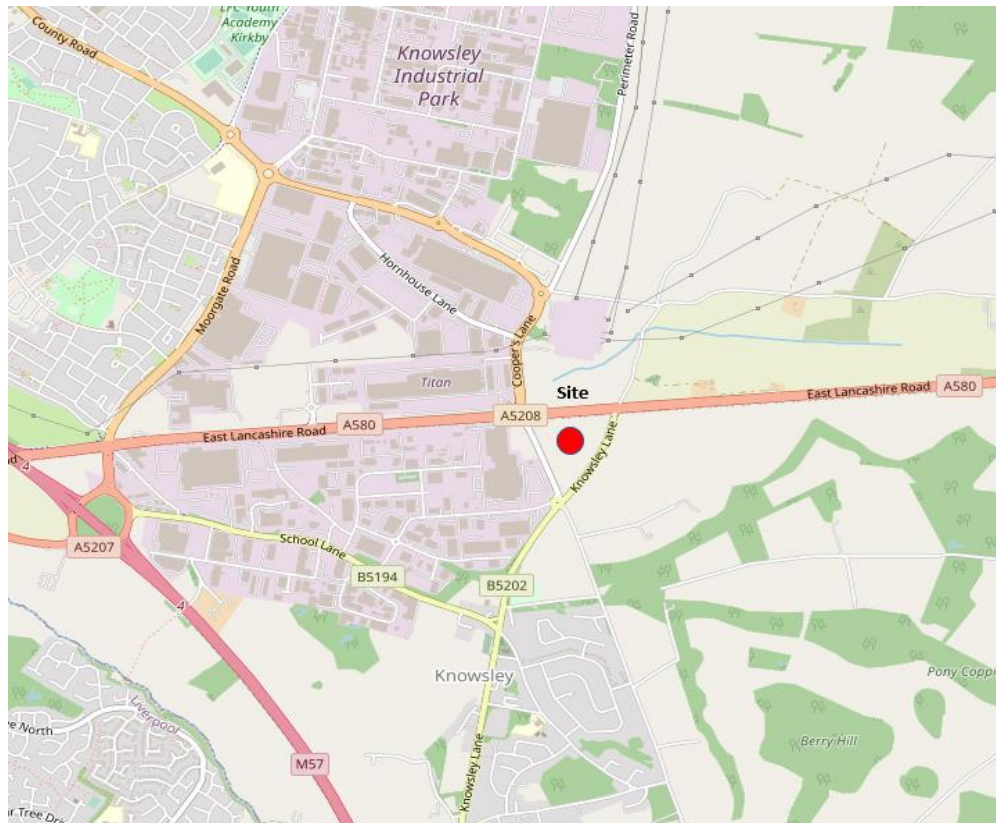
- 2.7.1 This section has outlined national and local transport policies and guidance which are applicable to the development site. How the site conforms to and complements these policies and guidance will be discussed in the following sections of this report, where relevant.

3 EXISTING SITUATION

3.1 Site Description

- 3.1.1 The site is located at the northern end of Knowsley Lane, adjacent to the existing Knowsley Industrial Estate. Knowsley Village is located circa 800m to the south-west of the site.
- 3.1.2 Knowsley Lane itself forms the eastern boundary of the site, Ormskirk Road forms the western boundary and the A580 East Lancs Road forms the northern boundary. The site currently consists of a large field with trees and vegetation across the more northern boundary. An existing farmhouse is located to the north of the field but does not form part of this application.
- 3.1.3 The location of the site in the context of Kirkby, Knowsley Village and the local highway network is illustrated in Image 3.1 below.

Image 3.1: Site Location



Source: <https://www.openstreetmap.org/search?query=kirkby#map=14/53.4753/-2.9045>

3.2 Local Highway Network

Knowsley Lane

- 3.2.1 Knowsley Lane (B5202) forms the western boundary of the site. It is a 'B' classified road and connects to the A580 East Lancs Road to the north, through Knowsley Village to the south and eventually connects into the A57 Liverpool Road in Huyton some 5km to the south of the site.
- 3.2.2 Adjacent to the site it is circa 7m in width and has a footway circa 2m in width in the southern verge. Note there is no footway in the northern verge along the site frontage. The road is subject to a 50mph speed limit and street lighting is provided. At its northern end it forms a priority controlled left in/left out arrangement with the A580 East Lancs Road. At its southern end it forms a roundabout junction with Ormskirk Road and Kitling Road. The frontage is mainly open fields, with two residential properties found at its northern end near to the junction with the A580 East Lancs Road.
- 3.2.3 To the south of its junction with the Ormskirk Road/Kitling Road roundabout, Knowsley Lane continues in a southwards direction toward Knowsley Village. The carriageway width remains at circa 7m and 2 x 2m footways are provided in both verges. The footway in the northern verge stops circa 100m to the south of the abovementioned roundabout. The speed limit on Knowsley Lane reduces from 50mph to 30mph circa 150m to the south of the abovementioned roundabout, the change of speed limit being delineated by speed limit roundels on yellow backing boards and 'dragons teeth' road markings. A pair of bus stops are also provided on this section of Knowsley Lane, both stops have bus stop 'Flag' with timetable information also being provided.

Ormskirk Road

- 3.2.4 Ormskirk Road forms the western boundary of the site. Adjacent to the site it is circa 7m to 8m in width and has a footway circa 2m in width in both verges. The road is subject to a 50mph speed limit and street lighting is provided. At its northern end it forms a signal controlled junction with the A580 East Lancs Road and as mentioned above, at its southern end it forms a roundabout junction with Knowsley Lane and Kitling Road. The existing farm that can be found on the site is accessed via Ormskirk Road.
- 3.2.5 A pair of bus stops can be found on Ormskirk Road along the site frontage. Both bus stops consist of a bus stop 'flag' with timetable information also being provided.

A580 East Lancashire Road

- 3.2.6 A580 East Lancs Road forms the northern boundary of the site and generally travels in an east to west alignment. This is an 'A' classified road and provides a strategic connection between Liverpool and Manchester. Adjacent to the site the westbound carriageway consists of 3 running lanes, this widening to 2 right turn lanes, 2 straight ahead lanes and 1 left turn lane at the signal controlled

junction with Ormskirk Road. A 3m wide combined footway/cycleway is also provided in the southern verge.

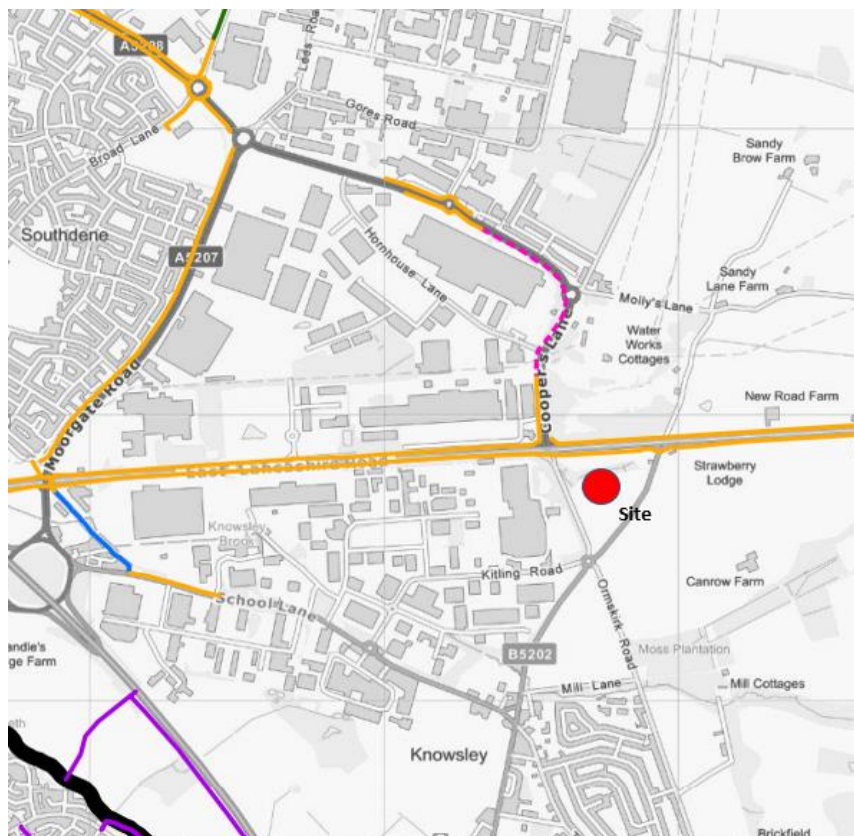
- 3.2.7 The eastbound carriageway consists of 2 running lanes and includes a short section of footway circa 2m in width. The general speed limit along the route is 60mph, however on the approach to the signal controlled junction with Ormskirk Road this speed limit reduces to 50mph. Pedestrian crossing facilities are incorporated within the abovementioned signals which including pedestrian guard railing, dropped crossings/tactile paving and push button activated red and green men control the movement of pedestrians across all arms of the junction.

3.3 Local Cycle Network

- 3.3.1 Image 3.2 below highlights the local highway network surrounding the site and the local cycling infrastructure within the vicinity of the site. An examination of Image 3.2 shows that extent of the shared footway/cycleway along the A580 East Lancs Road, Moorgate Road, Coopers Lane and County Road (orange line on the Image).

- 3.3.2 It would appear from site observations that the section of cycleway on Coopers Lane indicated purple on Image 3.2 has been implemented under KMBC's '*Connecting Kirkby*' initiative providing a continuous connection between the cycle facilities on A580 East Lancs Road and Coopers Lane.

Image 3.2: Local Cycle Network



Source: https://merseytravel.adidocdn.dev/assets/uploads/LCR_Cycle_Network_A3P_Knowsley.pdf

3.4 Existing Traffic Conditions

Traffic Surveys

- 3.4.1 As part of the Scoping exercise undertaken with the highway officers at KMBC it was agreed that capacity assessments would be required at the following junctions:
- A580 East Lancs Road/Ormskirk Road (signals); and
 - B5202 Knowsley Lane/Ormskirk Road (roundabout).
- 3.4.2 Historic traffic data was obtained from KMBC for the A580 East Lancs Road/Ormskirk Road signalised junction. This had been undertaken in May 2018 and could be used as a benchmark of traffic conditions pre Covid-19.
- 3.4.3 There was no historic data for the Knowsley Lane/Ormskirk roundabout so 360TSL, a specialist traffic survey and data collection company, was instructed to undertake traffic surveys at the junction in order to source data for use in the junction capacity assessments.
- 3.4.4 Classified turning count and queue length surveys were undertaken on Thursday 27th May 2021. The data contained within the 2018 count at the A580 East Lancs signal to the north of this junction can be used to determine if traffic levels had returned to some form of normality following the Covid-19 pandemic. The utilisation of the results of these surveys in ascertaining the capacity of the abovementioned junctions, is described in Section 6.
- 3.4.5 The traffic survey data has been interrogated to derive the AM and PM peak hours of the local highway network, which are as follows:

A580/A5208/Ormskirk Road

- AM Peak: 0745-0845; and
- PM Peak: 1630-1730.

Ormskirk Road/B5202/Kitling Road

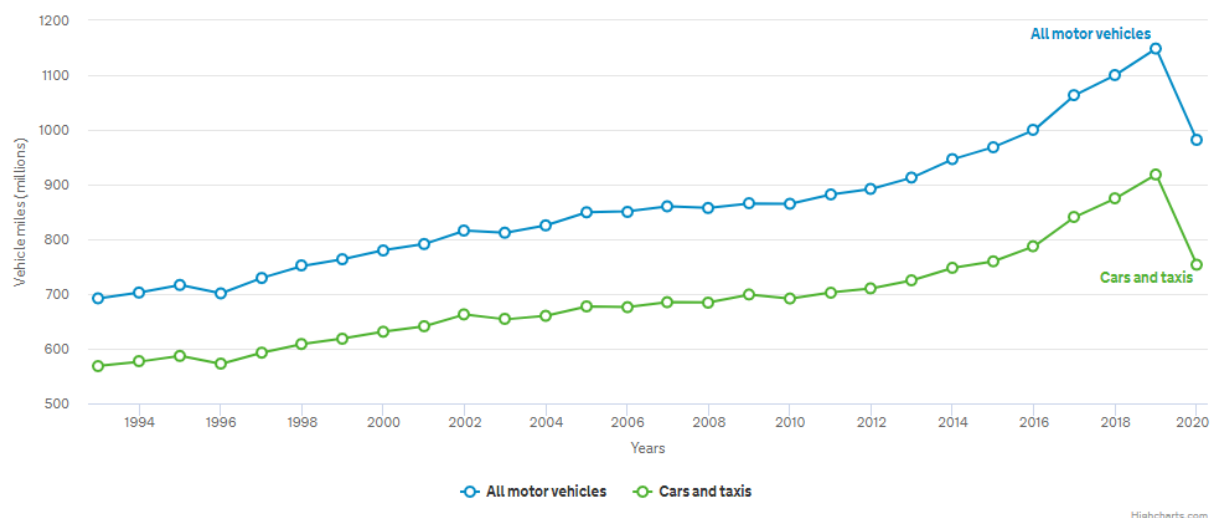
- AM Peak: 0815-0915; and
- PM Peak: 1615-1715.

- 3.4.6 Traffic Flow Diagrams 1 and 2, included in Appendix B, summarise the observed peak hour traffic flows and queue lengths. In relation to the Ormskirk Road/B5202/Kitling Road junction, in order to aid the capacity assessment modelling detailed in Section 6, the three user classes surveyed have been condensed into two, with buses added to the 'HGVs' user class. The queue length surveys recorded the maximum queue lengths every five minutes at the various junctions surveyed. Queues were measured as stationary and/or slow-moving traffic less than 5mph. The traffic data provided by KMBC for the A580/A5208/Ormskirk Road junction did not include queue data.

3.4.7 We recognise that the traffic surveys associated with the Ormskirk Road/B5202/Kitling Road junction were undertaken at a time when traffic flows may have been influenced by the Covid-19 pandemic. Whilst travel restrictions were not in place at the time and the majority of LHAs across the country were accepting new survey data, attempts have been made to validate the data with pre-pandemic levels. In order to provide a robust assessment, the 2018 and 2021 Observed traffic flows have been compared with each other, with it being found that the 2021 flows were lower than the 2018 flows when comparing corresponding northbound and southbound movements. As such, factors were derived between both sets of flows, which were then applied to the 2021 flows to form the 2021 Baseline flows, which are shown in Traffic Flow Diagrams 3 and 4. Separate factors were applied to northbound and southbound movements, with an average of the two applied to westbound and eastbound movements.

3.4.8 The 2018 flows at the signalised junction have been treated as 2021 flows given that negative traffic growth has occurred as a result of the Covid-19 pandemic and the 2020 recession. This is evidenced by comparing traffic count data for Knowsley from the DfT Road Traffic Statistics website¹. Chart 3.1 shows the recorded annual traffic flow in Knowsley between 1993 and 2020.

Chart 3.1: Annual Traffic Flow in Knowsley in Vehicles Miles (millions)



3.4.9 The chart shows fairly steady traffic growth up to 2019 then falling dramatically in 2020 which was the year the pandemic began. The total traffic (all vehicles) in 2020 was 981.7 vehicle miles (millions), which was a level similar to 2015 and 2016 levels. Given that growth was negative in 2020, it is fair to assume that traffic levels in 2021 will not have returned to 2018 levels as any post-pandemic traffic growth is likely to be slower and less pronounced than the 2019-2020 reduction. As such, it is reasonable to treat 2018 as 2021, particularly as pre-pandemic, pre-recession and pre-Brexit levels of growth will be applied to derive the forecast year which is detailed in Section 6.4.

¹ <https://roadtraffic.dft.gov.uk/local-authorities/157>

- 3.4.10 All traffic flow diagrams are included in Appendix B.
- 3.4.11 The observed traffic speeds on Ormskirk Road adjacent to the site were measured via an Automatic Traffic Counter (ATC), which was installed for 7 days from Wednesday 26th May 2021 to Tuesday 1st June 2021.
- 3.4.12 The results of the ATC survey are shown in Table 3.1 below.

Table 3.1: Recorded Speeds along Ormskirk Road in the Vicinity of the Site

Direction	Speed (mph)	
	Average	85th %ile
Northbound	31.9	38.1
Southbound	34.5	40.6

- 3.4.13 The ATC survey was undertaken in proximity to the location of the proposed vehicular access. The results demonstrate that vehicles are travelling slower than the 50mph speed limit, with 85th percentile speeds of 38.1mph and 40.6mph in a northbound and southbound direction respectively.

3.5 Road Safety Review

- 3.5.1 Personal injury accident data has been obtained from KMBC for the latest 5 years of data available at the time of the request. The data provided can be viewed within Appendix C. The study area covers Ormskirk Road from its junction with the A580 East Lancs Road to its junction with Knowsley Lane, Knowsley Lane from its junction with Ormskirk Road to its junction with the East Lancs Road and the section of the East Lancs Road between Knowsley Lane and its junction with Ormskirk Road. This study area was agreed with the highway officers at KMBC.
- 3.5.2 A total of four injury accidents occurred within this study area within the abovementioned time periods, all of which occurred at the junction of East Lancs Road/Knowsley Lane. Three of these incidents resulted in slight injuries being sustained and one incident resulted in a serious injury being sustained.
- 3.5.3 The incident that resulted in a serious injury being sustained involved a vehicle travelling eastbound on the East Lancs Road in collision with a vehicle turning right out of Coopers Lane (the northern arm of this junction). This incident occurred when the traffic signals were not operational at the time of the incident, this being a major causation factor. A serious injury was sustained by the driver of one of the vehicles.
- 3.5.4 Of the three incidents that resulted in slight injuries being sustained, one involved a stolen car being forced to stop by the police, one involved a rear end shunt on the approach to the signals, the final incident involved a cyclist using the pedestrian crossing facilities at the junction being struck by a vehicle travelling eastbound on the East Lancs Road. The cyclist had failed to obey the red/green men.

Conclusion to Road Safety Review

- 3.5.5 The review of the above would suggest that the accidents were concentrated at the East Lancs/Knowsley Lane junction.
- 3.5.6 The data would however suggest that there does not appear to be any common causation factors associated with these accidents. Given the volume of traffic that utilises this junction, the number of recorded incidents of circa two accidents per annum is not unusual. It is also worth noting that no accidents have occurred on Ormskirk Road within this time period.
- 3.5.7 It is therefore considered that there are no deficiencies in the highway network, or existing safety issues in the vicinity of the site, that would be exacerbated by the development proposals.

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4 DEVELOPMENT PROPOSAL

4.1 Development Description

- 4.1.1 The development is an employment use led scheme comprising BB/B2 Uses with ancillary offices (E(g)(i) Use) on a site off Knowsley Lane in Knowsley. The development will consist of 3 separate units which will be delivered in a phased manner. The total gross internal area (GIA) of each unit is provided in Table 4.1.

Table 4.1: Proposed Development GIA

Building	Area (sq/ft)	Area (m ²)
1	73,500	6,835
2	31,500	2,929
3	52,500	4,877
Total	157,500	14,641

4.2 Proposed Access Arrangement

- 4.2.1 The proposed access arrangement has been carefully selected following rigorous options testing, which reviewed potential access points on both Ormskirk Road and Knowsley Lane. Access from Ormskirk Road was preferred as it facilitated a more direct access to the A580 East Lancs Road and avoided the need for vehicles to have to negotiate the left in/left out junction arrangement that can be found at the junction of the A580 East Lancs Road/Knowsley Lane. This was also the preferred access option of the highway officers at KMBC.
- 4.2.2 The access will take the form of a priority controlled junction with a ghost island right turn facility, the geometries of which are in accordance with Design Manual for Road and Bridges (DMRB) requirements for the prevailing 50mph speed limit. This is to be located centrally along the site frontage, circa 160m north of the Ormskirk Road/Knowsley Lane roundabout. It is proposed that this access comprises a 7.3m carriageway, 2 x 3m shared cycleways which drop down to 2m wide footways internally, 15m junction radii, with a left turn auxiliary deceleration lane on the southbound approach to the junction and an acceleration taper provided to the south to aid left turn movements in/out of the site. Visibility splays of 4.5m x 160m visibility splays in accordance with DMRB requirements for a 50mph speed limit are also provided. The junction geometric parameters are robust enough to accommodate the largest vehicles which could utilise this access, i.e. 16.5m long articulated HGVs.
- 4.2.3 The proposed ghost island right will allow right turning traffic into the development to stack on the highway without blocking ahead movements and has been designed with a 3.5m wide turning lane and 3m wide running lanes.

- 4.2.4 The existing bus stop located along the site frontage can either be incorporated within the deceleration lane or relocated south of the proposed access. The exact location and form of bus stop will be subject to further discussions with KMBC and Merseytravel, and detailed design.
- 4.2.5 A 3m shared cycleway is also proposed along the Ormskirk Road site frontage from the site entrance to a point approximately 75m from the junction with the East Lancs Road. Whilst a full connection cannot be made to the existing cycle provision which exists along the East Lancs Road due to third party ownership to the north of the site, the proposed shared footway/cycleway along the site frontage allows the council to facilitate the connection in the future.
- 4.2.6 Furthermore, to ensure no parking will take place on the roads surrounding the development, the applicant is willing to provide funding towards a Traffic Regulation Order (TRO) which prevents parking along Ormskirk Road and Knowsley Lane, including any associated signing and lining.
- 4.2.7 Drawing P20066-001H in Appendix D depicts the proposed site access. The proposed access has been agreed in principle with highways officers at KMBC.

4.3 Pedestrian/Cycle Access

- 4.3.1 Access for pedestrian and cyclists will be accommodated at the main vehicular access described above via the proposed 3m shared cycleway and internal 2m wide footways.
- 4.3.2 The existing PRoW which runs through the site will remain accessible but will be diverted to follow the masterplan proposals.

4.4 Internal Layout

- 4.4.1 The proposed site layout has been designed by Fletcher Rae Architects and should be available for download from the KMBC planning portal. It is not included within this document as it has the potential to be revised up to the point of submission and therefore to avoid conflicting and superseded layouts being submitted within the various planning documents, it is omitted from this report.
- 4.4.2 The layout shows three separate buildings facing onto an internal spine road that leads to the proposed site access onto Ormskirk Road. Internal priority controlled junctions provide access to the service areas and parking areas associated with each building.
- 4.4.3 The internal access road is 7.3m in width with localised widening on the bends and 12m internal radii at junctions which is easily sufficient to allow access by HGVs to all parts of the site. The carriageways reduce to 6m wide where HGV accesses is not required. All service areas have been designed to provide turning circles and loading bays large enough to allow HGVs to manoeuvre easily throughout the site as detailed below.
- 4.4.4 2m footways continue on both sides on the internal road network throughout the site.

- 4.4.5 The existing access to the farmhouse will be maintained and as mentioned previously, does not form part of this application, with an appropriate acoustic buffer being proposed between the existing farmhouse land and the new proposals.

4.5 Access for Commercial Vehicles

- 4.5.1 To demonstrate that the access and internal layout will be safe and suitable to serve the site for larger vehicles, a swept path analysis using the industry approved AutoTrack software package has been undertaken for a 16.5m long articulated HGV, the largest vehicle expected to regularly access the site. The swept path analysis has been illustrated in Drawings P20066-002A and P20066-003A in Appendix D which demonstrates that the vehicle can safely access, manoeuvre within the service areas, and egress the site in forward gear.
- 4.5.2 During the latest pre-app with KMBC Highways, it was requested that a swept path analysis was undertaken of the Knowsley Road/ Ormskirk Road/Kitling Road roundabout. Given this is an existing roundabout which serves a large industrial estate, the junction regularly and easily accommodates HGVs. Nevertheless, to satisfy KMBC Highways, Drawing P20066-004 in Appendix D shows a 16.5m articulated HGV making the turn at the roundabout.

4.6 Parking Provision

- 4.6.1 The proposed level of parking for each unit is shown in Table 4.2 below. The level of parking is based on the applicant's knowledge of the operational requirements for such developments having delivered numerous schemes across the North West of England and the wider UK.

Table 4.2: Proposed Parking Provision

Building	GFA sqm	Car park spaces (B8)	Potential Flexible Spaces (B2)	Total Parking Provision	Accessible Spaces (5%)	EV Spaces (10%)	External Cycle Spaces	Internal Cycle Spaces	Motorcycle Spaces
1	6835	71	22	93	5	10	16	15	7
2	2929	43	0	43	3	5	8	8	3
3	4877	50	17	67	4	7	12	12	5
Total	14641	164	39	203	12	22	36	35	15

- 4.6.2 Whilst it is difficult for the applicant to specify an exact split of the uses at this stage of the process because the end users are not yet known, experience at similar industrial sites that have been delivered by Caddick Developments across the UK would suggest that the market take up of such schemes is likely to comprise mostly B8 use, with up to 30% B2 use, with any use class E being ancillary to the two other uses.
- 4.6.3 The overall parking provision shown in Table 4.2 is therefore based on a 70% B8 use and 30% B2 use split for each unit. An examination of the layout shows a mixture of car park spaces and potential

‘flexible’ spaces within the service yards for units 1 and 3. The provision of 43 full spaces has been shown at unit 2 to accommodate the circa 70:30 B8:B2 split given the proposed site layout, size of service yard and positioning of the building entrance. With regards to units 1 and 3, the 71 and 50 spaces shown are slightly over the parking provision requirements for a solely B8 development, and land within the service yards has been identified to show that additional ‘flexible’ spaces can be implemented should B2 use of up to 30% be introduced for each unit.

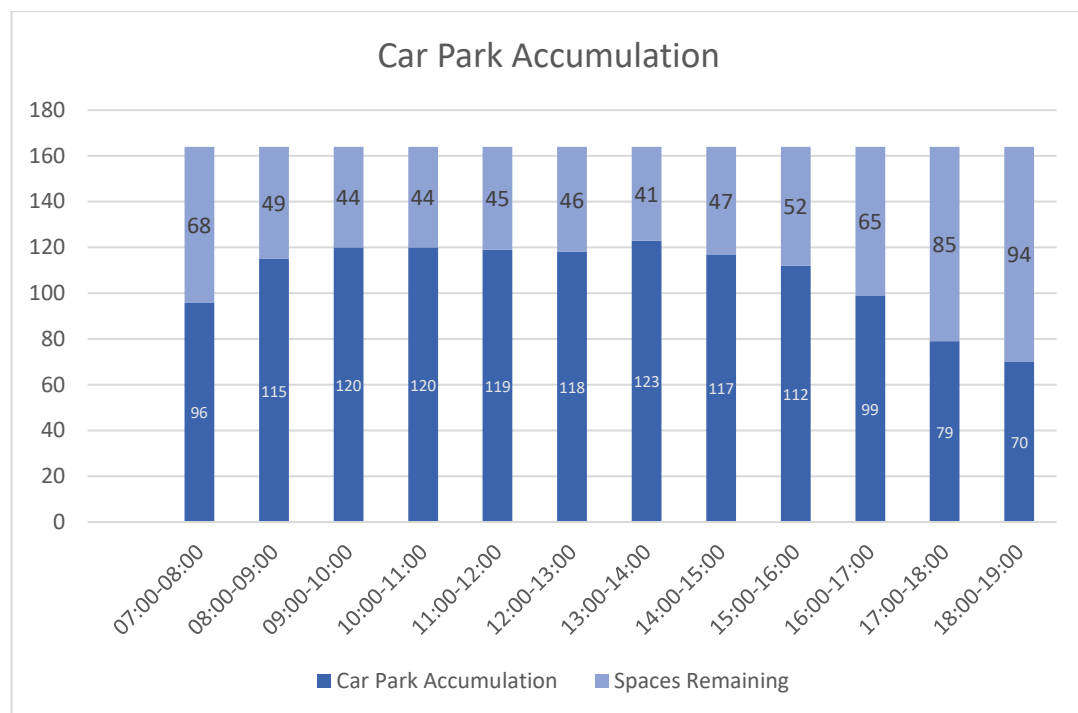
- 4.6.4 It is therefore clear that the site offers a reasonable level of flexibility in terms of market uptake. It is worth noting that parking based on a 70:30 B8:B2 split had previously been agreed with KMBC Highways during the initial pre-app conversations.

Car Park Accumulation

- 4.6.5 To provide evidence and comfort that the proposed level of parking is appropriate for the quantum of development, a car park accumulation exercise has been undertaken using the trip rates which are described in more detail in Section 6.
- 4.6.6 The total trip generation for light vehicles (extracted from Table 6.8), the car park accumulation for the site and the remaining number of spaces available every hour is shown in Table 4.3 and Figure 4.1 below. In order to provide an overly robust assessment, we have estimated that the car parking will be 50% full overnight, and the figures have been based on the 164 car park spaces only.

Table 4.1 Total Trip Generation and Car Park Accumulation

Time Range	Combined Trip Gen			Car Park Accumulation	Spaces Remaining
	Arrivals	Departures	Total		
07:00-08:00	18	4	22	96	68
08:00-09:00	23	4	27	115	49
09:00-10:00	11	6	17	120	44
10:00-11:00	5	5	10	120	44
11:00-12:00	5	6	11	119	45
12:00-13:00	7	8	15	118	46
13:00-14:00	14	9	23	123	41
14:00-15:00	7	13	20	117	47
15:00-16:00	5	10	15	112	52
16:00-17:00	5	18	23	99	65
17:00-18:00	3	23	26	79	85
18:00-19:00	3	12	15	70	94

Figure 4.1 Car Park Accumulation and Remaining Spaces

- 4.6.7 The above demonstrates that based on the above assessment, the maximum car park demand is forecast to be circa 123 spaces between 1pm - 2pm, with a remaining 41 unoccupied spaces. The accumulation exercise therefore demonstrates that the 203 spaces (164 car park spaces and 39 potential B2 'flexible' spaces) is more than sufficient to support the development. The additional parking avoids the possibility of overspill parking in the surrounding area, allows for a degree of flexibility in the delivery of the initial phases of the scheme and also futureproofs the scheme for changes in tenants over the coming years.
- 4.6.8 To further justify the level of parking, a car park accumulation exercise has been undertaken on a purely B2 use, the results of which are shown in Table 4.4 below. Again, we have based our assumptions that the car parking will be 50% full overnight with the exercise only undertaken on the 164 car park spaces to provide an overly robust assessment.

Table 4.2 Total Trip Generation and Car Park Accumulation 100% B2

Time Range	B2 Trip Gen			Car Park Accumulation	Spaces Remaining
	Arrivals	Departures	Total		
07:00-08:00	29	3	32	108	56
08:00-09:00	50	4	54	154	10
09:00-10:00	14	6	20	162	2
10:00-11:00	9	5	14	166	-2
11:00-12:00	4	6	10	164	0
12:00-13:00	9	13	22	160	4
13:00-14:00	20	11	31	169	-5
14:00-15:00	8	19	27	158	6
15:00-16:00	5	12	17	151	13
16:00-17:00	6	28	34	129	35
17:00-18:00	4	47	51	86	78
18:00-19:00	3	19	22	70	94

- 4.6.9 The results indicate that even if the development provided 100% B2 use, which is a purely hypothetical situation given the applicant is applying for a mixed use (mainly B8) scheme, the car park spaces would be over capacity by up to 5 spaces between the hours of 10am – 11am and 1pm – 2pm. Given it has been demonstrated that an additional 39 spaces can be provided within the service yards, there is clearly enough parking capacity to ‘mop-up’ this hypothetical demand and any overspill parking.

Local Parking Standards

- 4.6.10 KMBC’s *Ensuring a Choice of Travel SPD* suggests car parking in developments should not exceed the Council’s maximum parking standards. The adopted maximum parking standards for B8 storage and distribution Industry in ‘other areas’ is 1 space per 100sqm which would equate to 146 spaces and B2 general industry requires 1 space per 45sqm of floor area which would equate to 325 spaces. The proposed development is to provide up to 203 spaces in total, reflecting the blend of the two uses on site. The scheme therefore complies with KMBC standards because it is below their ‘maximum’ requirements.
- 4.6.11 It should be noted that the level of parking proposed has been carefully considered by the applicant using their detailed knowledge and experience as one of the largest multi-unit industrial property developers in the UK. A car park accumulation exercise has been undertaken to demonstrate there will be sufficient parking to support the proposed development, with spare capacity to avoid the possibility of overspill parking and allow for a degree of flexibility in the delivery of the scheme and changes in future tenants.
- 4.6.12 Whilst noting the above, the provision of on-site parking in line KMBC’s maximum standards would go against the ethos of Policy T6 of the UDP and national policy which is focused on reducing the need to travel by car and encouraging accessibility by walking, cycling and public transport.

Cycle Parking

- 4.6.13 The overall cycle storage provision of 71 spaces on site is above KMBC's minimum requirement to help encourage cycling to and from the site.
- 4.6.14 36 of these cycle spaces will be provided externally within cycle shelters located at the front of each unit, benefitting from good natural surveillance. The remaining 35 spaces will be provided internally. Showers, changing and locker facilities will also be provided within each unit.

4.7 Summary

- 4.7.1 The development is proposed to be served by a single access point off Ormskirk Road in the form of a priority controlled junction with ghost island right turn arrangement and deceleration auxiliary left turn lane designed in accordance with DMRB standards the prevailing 50mph speed limit. Visibility splays also in accordance with DMRB have been shown to be deliverable from the proposed site access. The principle of access in this location has been agreed with KMBC Highways.
- 4.7.2 It has been demonstrated that the site is able to accommodate all likely vehicle types which will regularly access the development. Pedestrians will be afforded continuous footways throughout the proposed development which connect to the existing footways along Ormskirk Road.
- 4.7.3 The currently proposed parking numbers have been based on a 70% B8 and 30% B2 split and meet with KMBC's parking standards. Accessible, EV, cycle and motorcycle parking provision will also meet or exceed KMBC's minimum parking requirements. Furthermore, the applicant is willing to provide funding towards a TRO which prevents parking along Ormskirk Road and Knowsley Lane to ensure no parking will take place on the roads surrounding the development.

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5 ACCESS BY SUSTAINABLE MODES

5.1 Introduction to Sustainable Modes of Transport

- 5.1.1 National and local transport planning policy centres on the importance of sustainable development, meaning that new developments should be located in areas where there is access to sustainable modes of travel, or where sustainable modes of travel can be introduced. The *National Design Guide* (2021) defines sustainable transport modes as:

‘Any efficient, safe and accessible means of transport with overall low impact on the environment, including walking and cycling, low and ultra low emission vehicles, car sharing and public transport.’

- 5.1.2 Walking, cycling and public transport are commonly regarded to be the most sustainable modes of transportation. This section of the report will describe how the site can be accessed by these modes.

5.2 Access on Foot

- 5.2.1 The site is located adjacent to the existing Knowsley Industrial Estate. The existing network of roads in the vicinity of the site provide good quality footways and crossing points at key crossing locations. Pedestrian crossing facilities are also incorporated within the East Lancs Road/Ormskirk Road junction. This network of footways provides continuous routes, complete with street lighting, to the various residential areas and other facilities that exist around the site. As mentioned previously, continuous footways are proposed throughout the development, which will be safe and lit.
- 5.2.2 Research has indicated that acceptable walking distances depend on a number of factors, including the quality of the development, the type of amenity offered, the surrounding area, and other local facilities. The Chartered Institution of Highways and Transportation (CIHT) document entitled *Providing for Journeys on Foot* (2000) suggests walking distances which are relevant to this application. These distances are shown in Table 5.1.

Table 5.1: Suggested Acceptable Walking Distances

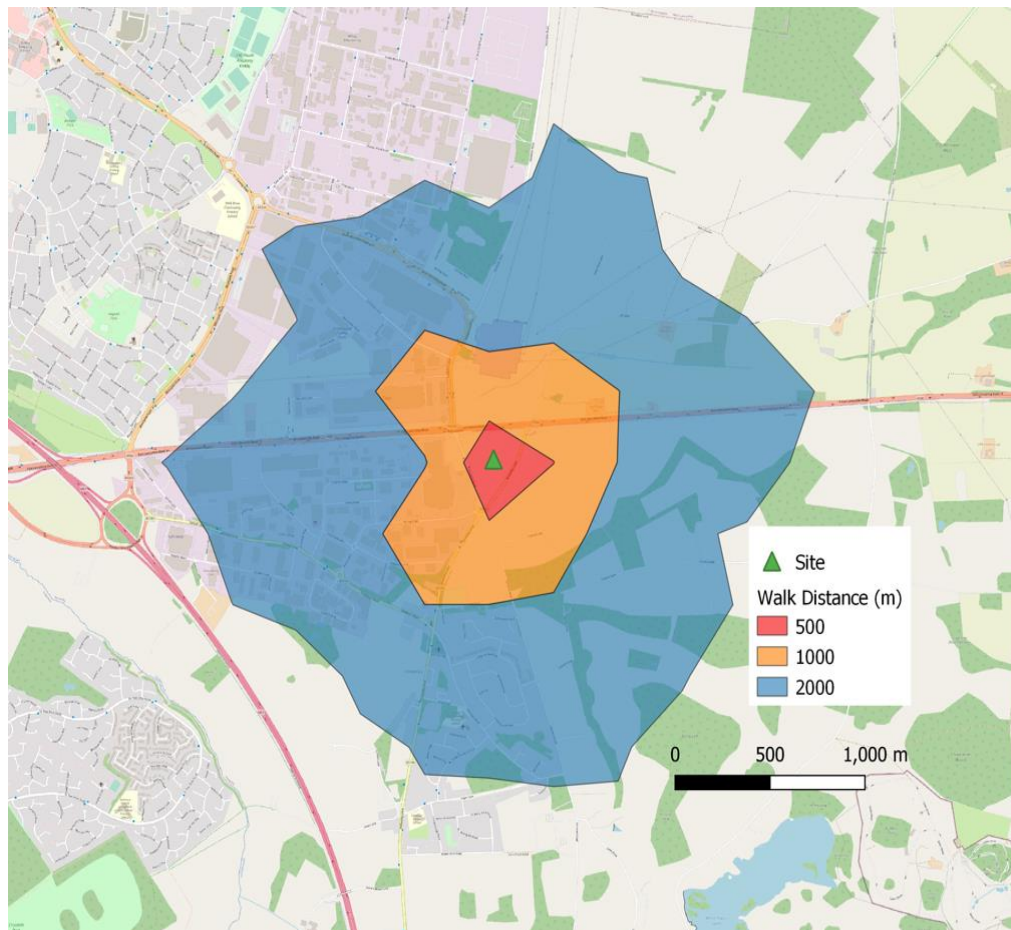
Criteria	Town Centres (m)	Commuting/School/Sightseeing (m)	Elsewhere/Local Services (m)
Desirable	200	500	400
Acceptable	400	1000	800
Preferred Maximum	800	2000	1200

Source: CIHT Document ‘Providing for Journeys on Foot’ (2000)

- 5.2.3 In order to highlight the site’s accessibility on foot, an indicative walking isochrone has been produced using the Geographic Information System (GIS) software Visography TRACC. Image 5.1 below represents the site’s walking catchment with the CIHT’s ‘Desirable’ distances of 500m (red isochrone),

'Acceptable' distance of 1,000 (orange isochrone) and 'Preferred Maximum' distance of 2,000m (blue isochrone) for commuting trips illustrated.

Image 5.1: Pedestrian Isochrone



5.2.4 To provide an accurate representation of the future highway network, the site's proposed vehicular and pedestrian access points have been manually added to the network used for the isochrone. The accessibility distance is based on an origin/destination point in the approximate centre of the developed portion of the site.

5.2.5 Whilst Table 5.1 provides useful guidance on walking distances, MfS provides a context for interpreting them. MfS states that:

'The propensity to walk is influenced not only by distance, but also by the quality of the walking experience. A 20-minute walk alongside a busy highway can seem endless, yet in a rich and stimulating street, such as in a Town Centre, it can pass without noticing.'

5.2.6 It can be seen from Image 5.1 that the Coopers Lane Service Station is within a 1,000m walk of the site, this facilitating access to a Spar convenience store, Greggs and Starbucks, as well as a cashpoint. Also within a 1,000m walk from the site is the Copper Pot public house. Both of these facilities can be utilised by potential employees on the site for lunches/refreshments etc.

5.2.7 It can also be seen from Image 5.1 that the majority of Knowsley Industrial Estate is within a 2,000m walk from the site. The residential area of Knowsley Village is also within a 2,000m 'Preferred Maximum' walking distance of the site providing the opportunity for potential employees to walk to work from Knowsley Village.

5.2.8 Given the evidence presented in Image 5.1 and above, walking can be considered to be a realistic and viable method of travel for staff and visitors accessing the site, with facilities to purchase lunch/refreshments also being within easy walking distance of the site. The above suggests that the site's location is accessible via this sustainable mode.

5.3 Access by Cycle

5.3.1 It is widely recognised that cycling can offer an attractive alternative to short car trips, particularly those under 5km, but also as part of longer journeys by public transport.

5.3.2 The CIHT document *Cycle Friendly Infrastructure* (2004) states in paragraph 2.3 that:

'Three quarters of journeys by all modes of travel are less than five miles (8km) and half under two miles (3.2km) (DoT 1993, table 2a). These are distances that can be cycled comfortably by a reasonably fit person.'

5.3.3 Local Transport Note 1/20 *Cycle Infrastructure Design* states similar, that

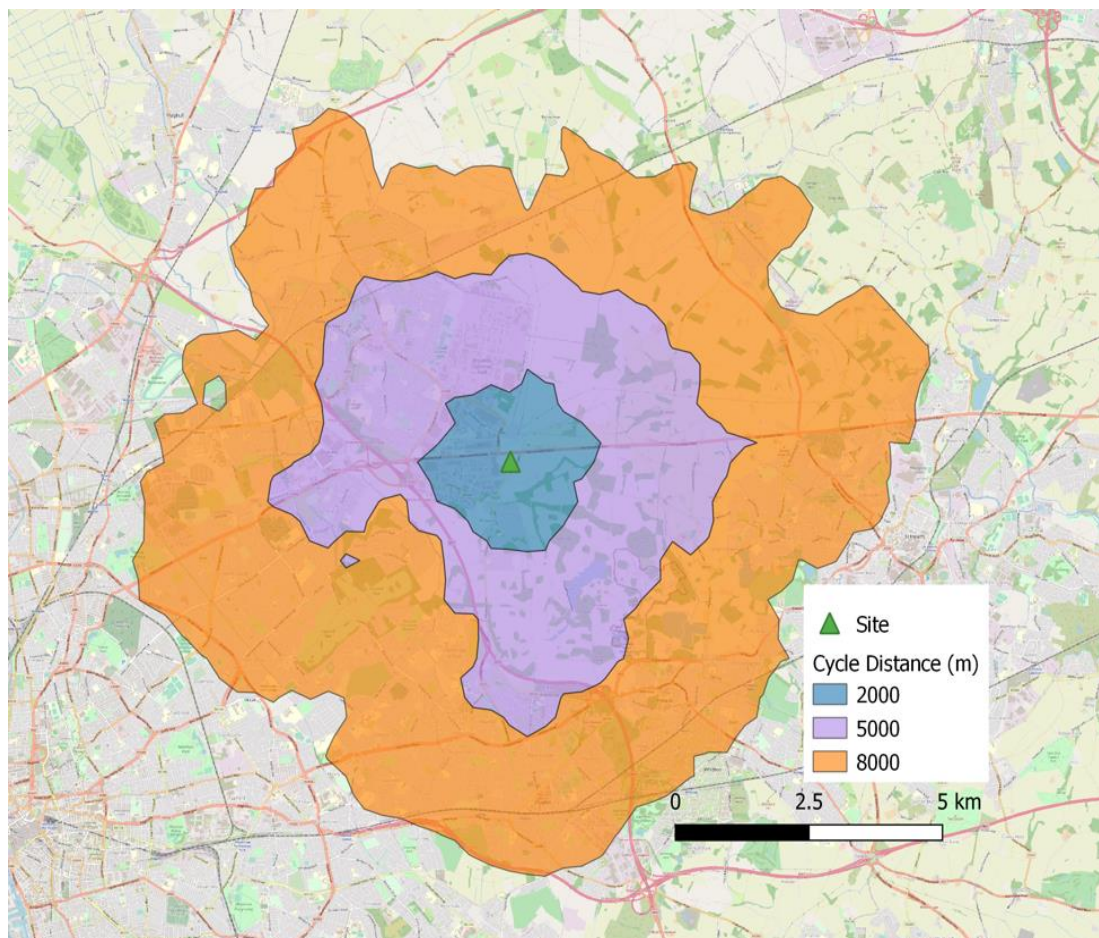
'Two out of every three personal trips are less than five miles [8km] in length – an achievable distance to cycle for most people'.

5.3.4 The National Travel Survey states that in 2019, the average cycling trip took 23-minutes, equivalent to 6,133m (based on an average speed of 16kph), again this being an average with a proportion of respondents cycling a greater distance than this.

5.3.5 As mentioned above, there are extensive cycleway provision in the vicinity of the site. This includes a shared footway/cycleway along the East Lancs Road, Moorgate Road, Coopers Lane and County Road.

5.3.6 A cycling isochrone showing the site's catchment has also been produced using TRACC and is shown as Image 5.2 below. The figure illustrates 2,000m (blue isochrone) 5,000m (purple isochrone) and 8,000m (orange isochrone) catchment ranges which equate to 10, 25 and 40-minute journey times respectively which are based on the somewhat conservative or leisurely cycle speed of 12kph. Anecdotally, commuting cyclists are generally thought to travel at speeds between 15-20kph so a greater catchment may be more realistic.

5.3.7 Image 5.2 illustrates that all the amenities mentioned in the 'Access by Foot' section are within a 10-minute cycle time. Access to the District Centres of Kirkby, Fazakerley, Aintree, Huyton, Whiston and the town of St. Helens are within the 8,000m catchment, this will enable future staff and visitors to cycle to and from the site.

Image 5.2: Cycling Isochrone

5.3.8 Based on the 'comfortable' and 'achievable' cycle distances established by the CIHT and DfT guidance, the catchment plan suggests that cycling would be a viable mode of travel for access to a range of local amenities and nearby residential areas.

5.3.9 The proposed development is therefore considered to be accessible via bicycle for future staff and visitors to the site.

5.4 Access by Bus

5.4.1 The CIHT document *Planning for Public Transport in Developments* (1999) recommends a walking distance of up to 400m to bus waiting facilities from new developments, which is equivalent to a five-minute walk based on approximately a 1.4m/s walking speed.

5.4.2 As mentioned above, a pair of bus stops are provided on Ormskirk Road along the site frontage together with a pair of bus stops also being provided on Knowsley Lane. It should however be noted that both sets of bus stops provide access to the same bus services. The following review therefore concentrates on the bus stops located nearest to the site access on Ormskirk Road.

- 5.4.3 The bus stop on Ormskirk Road providing access to northbound services is located toward the northern end of the site, access to southbound services on Ormskirk Road is provided by a bus stop located in the vicinity of the site access. As mentioned above, stops consist of a bus stop 'flag' with timetable information being provided.
- 5.4.4 It is evident that the walking distances to the local bus stops are within the CIHT typical recommended walking distance of 400m.
- 5.4.5 Tables 5.2 below summarises the services that can be accessed at these bus stops. The information below has been obtained from Traveline (<https://www.traveline.info>).

Table 5.2: Summary of Bus Services Accessed via Ormskirk Road

Bus Service	Route	Weekday			Weekend	
		AM	Inter	PM	Saturday	Sunday
14C	Liverpool – Tower Hill	1	No Service	No Service	No Service	No Service
217/217A	Kirkby – Huyton	3/hr	2/hr	2/hr	1/hr	1/hr
289/297	Kirkby – St. Helens	1/hr	1/hr	1/hr	1/hr	No Service
827	Kirkby – Old Swan	1	No Service	No Service	No Service	No Service
897	Huyton Ind Est – Kirkby	2/day				
898	Page Moss – Kirkby	1/hr	1/hr	1/hr	1/hr	1/hr
899	Page Moss – Kirkby	1/hr	1/hr	1/hr	No Service	No Service

- 5.4.6 The above table demonstrates that the bus services, which run in proximity to the site, enable passengers to travel to Liverpool city centre, Kirkby, Huyton and St. Helens and may residential areas in between.
- 5.4.7 Given the above, bus travel is therefore considered to be a viable mode of transport and provides a convenient choice for a number of future staff or visitors to the site.
- 5.4.8 The NPPF, at paragraph 112, states that developments should '*so far as possible*', facilitate '*access to high quality public transport*'. It is our opinion that the existing bus service provision in the vicinity of the development is appropriate and reasonable for its size and nature. The site, by taking advantage of the good quality footway connections to the abovementioned bus stops, does provide '*appropriate opportunities to promote sustainable transport modes*' (paragraph 110 NPPF).

5.5 Minimum Accessibility Standards Assessment (MASA)

- 5.5.1 The Minimum Accessibility Standards Assessment (MASA) requires a score to be given for developments, depending on the land use type, scale, location, and facilities provided. The minimum required scores are provided in Table 5.3 are based on the site being a major industrial development located in a 'Other Urban Centre' location.

Table 5.3: Minimum Required MASA Scoring

Development Type, Location, Size	Minimum score for walking	Minimum score for cycling	Minimum score for public transport	Minimum score for vehicle access and parking
B2 Industrial Use, 'Other Urban', 'Major'	2	3	5	1

- 5.5.2 The MASA undertaken for the site is included in full in Appendix E. However, a summary of the scoring awarded is provided in Table 5.4.

Table 5.4: MASA Scoring Results

Development Type, Location, Size	Score for walking	Score for cycling	Score for public transport	Score for vehicle access and parking
B2 Industrial Use, 'Other Urban Centre', 'Major'	2	4	5	2

- 5.5.3 It can be seen from Tables 5.3 and 5.4 that the development proposals would meet or exceed the minimum scoring requirements of the MASA exercise.

5.6 Summary

- 5.6.1 This section of the report has demonstrated that the site is in a sustainable location surrounded by an extensive residential area. The local bus services provide connections to multiple locations in the area making bus travel a viable option for some staff and member of the development.
- 5.6.2 A key theme of national and local transport planning policy is that development should be located where the use of sustainable transport modes can be maximised. As detailed in Section 2 of this report, the NPPF states that *'significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes'*, as well as providing *'safe and suitable'* access for all.
- 5.6.3 It is therefore felt that, in relation to Paragraph 110 of the NPPF, *'appropriate opportunities to promote sustainable transport modes can be – or have been – taken up'*.

6 IMPACT ASSESSMENT

6.1 Introduction

- 6.1.1 This section of the report details the methodology used to predict the demand associated with the development. It then provides an assessment of the impact that it is likely to have on the highway network and discusses whether any mitigation measures are required to accommodate the additional trips generated by the development.

6.2 Observed Flows

- 6.2.1 As stated in Section 3, the observed peak hour traffic flows and queue lengths are shown in Traffic Flow Diagrams 1 and 2 and are presented as the Observed traffic flows. It was found that the 2021 flows were lower than the 2018 flows, as such factors were derived between both sets of flows, which were then applied to the 2021 flows to form the 2021 Baseline flows, with the 2018 flows treated as a 2021 Baseline, which are shown in Traffic Flow Diagrams 3 and 4.

6.3 Committed Development

- 6.3.1 Prime requested details of committed developments from KMBC, with KMBC subsequently recommending including traffic flows associated with the following committed development:

20/00124/FUL - Land off Marl Road: Erection of B8 Warehouse/Distribution Centre including mezzanine floor, ancillary office and welfare floorspace, truckers facilities plus gatehouse, access, parking and servicing areas together with associated works and infrastructure.

- 6.3.2 Whilst the associated assessment did not include our study area, data for the nearest junctions was located and assigned to our study area based on a combination of assumptions and use of a modified version of our traffic distribution detailed in Section 6.7.

6.4 Forecast Traffic Growth

- 6.4.1 In accordance with GTA the forecast year of assessment is 2027, which represents the year of application (2022) plus five years. It is expected that the site will be fully built-out and occupied by this forecast year.

- 6.4.2 The 2021 Baseline traffic flows have been factored to the 2027 assessment year, using the DfT software TEMPro (Trip End Model Presentation Program) version 7.2. This package allows access to data used in the National Trip End Model (NTEM) and can be used to 'provide summaries of traffic growth using data from the National Transport Model (NTM)' (<https://www.gov.uk/government/collections/tempro>). Whilst this is an industry standard methodology, it should be noted that the current TEMPro datasets do not take into account the

economic downturn associated with Brexit, the 2020 recession and the Covid-19 pandemic, so the levels of growth forecast are likely to be notably higher than what will actually occur, which allows for a particularly robust assessment.

- 6.4.3 In order to derive local traffic growth factors, the 'Knowsley 005' Mid Layer Super Output Area (MSOA) was selected. Trip end growth factors for car drivers were derived and adjusted by NTM dataset AF15 for 'urban' area types and 'principal' road types.
- 6.4.4 Normally the growth factors are adjusted to take into account traffic flows associated with committed development schemes. However, on this occasion they have not been adjusted allowing for a particularly robust assessment.
- 6.4.5 The resulting TEMPro growth factors derived from the above are shown in Table 6.1 below.

Table 6.1: Traffic Growth Factors 2021-2027

Level	Area	Local Growth Figure	
		AM	PM
E02001331	Knowsley 005	1.0571	1.0535

- 6.4.6 The growth factors include forecast development in the area, as well as background traffic growth and have been applied to the 2021 Baseline traffic flows to form the 2027 Baseline traffic flows, which are shown in Traffic Flow Diagrams 5 and 6. As TEMPro is not applicable to HGVs, the DfT's Road Traffic Forecasts were used, however as this showed negative growth between 2021 and 2027 (0.9965 for principal 'A' roads), a factor of 1.00 was applied.
- 6.4.7 The trips associated with the committed development are shown in Traffic Flow Diagrams 7 and 8, which have been added to the 2027 Baseline traffic flows to form the 2027 Without Development traffic flows, which are shown in Traffic Flow Diagrams 9 and 10.
- 6.4.8 All traffic flow diagrams are included in Appendix B.

6.5 B8/ B2 Split

- 6.5.1 As mentioned previously, it is proposed that the site is likely to comprise approximately 70% B8 use and 30% B2 use based on Caddick Development's experience of such schemes. The following assessment is therefore based on a 70:30 B8:B2 split, with this methodology initially being agreed with highways officers at KMBC.
- 6.5.2 Table 6.2 below shows the floorspace outputs when applying the 70:30 B8:B2 split.

Table 6.2 GFA based on 70:30 B8:B2 Splits

Use	Percentage split	Quantum of development
B8	70%	10,249
B2	30%	4,392
Total	100%	14,641

6.6 Vehicular Trip Generation

6.6.1 The TRICS database has been used to forecast the likely number of vehicular trips that the development will generate. This industry-standard database contains traffic generation surveys of numerous sites of various land use types across the UK and Eire.

B8 Use

6.6.2 Whilst TRICS based B8 trip rates were agreed with KMBC in 2021, given the officer's recent request to use more up-to-date TRICS based trip rates, we have derived B8 trip rates using the same main TRICS interrogation parameters the officer used for B2.

6.6.3 The full reports of the TRICS data and selection process are included in Appendix F.

6.6.4 The derived trip rates were then applied to the proposed 10,249 sqm GFA, this being 70% of the total proposed floor space. The likely 12-hour (7am-7pm) vehicular trip generation is shown in Table 6.3, with the AM and PM peak hours highlighted in bold font.

Table 6.3: 12 Hour TRICS Derived Average Vehicular Trip Rates and Trip Generation - Proposed B8 10,249 sqm

Time	Average Trip Rates			Average Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
07:00-08:00	0.120	0.054	0.174	12	6	18
08:00-09:00	0.117	0.066	0.183	12	7	19
09:00-10:00	0.106	0.064	0.170	11	7	18
10:00-11:00	0.056	0.060	0.116	6	6	12
11:00-12:00	0.060	0.068	0.128	6	7	13
12:00-13:00	0.065	0.070	0.135	7	7	14
13:00-14:00	0.100	0.088	0.188	10	9	19
14:00-15:00	0.051	0.089	0.140	5	9	14
15:00-16:00	0.058	0.074	0.132	6	8	14
16:00-17:00	0.060	0.110	0.170	6	11	17
17:00-18:00	0.049	0.107	0.156	5	11	16
18:00-19:00	0.025	0.070	0.095	3	7	10
Daily (12hr)	1.153	1.122	2.275	89	95	184

- 6.6.5 As the above table shows, the B8 element of the proposed development is likely to generate in the region of 19 vehicular two-way trips in the AM peak hour and 16 vehicular two-way trips in the PM peak hour, equivalent to a vehicular movement every circa 4 minutes.
- 6.6.6 The vehicular trip generation presented in Table 6.5 above has been split into two categories: 'Lights' and 'Heavies' as per the B2 rates. The 10,249 sqm GFA was applied to the OGV trip rates in the TRICS sample, with the resulting trip generation figures subtracted from the vehicular trip generation figures. The resulting 'Lights' and 'Heavies' trip generation figures are presented in Table 6.4 and 6.5 respectively.

Table 6.4: 12 Hour Trip Generation - Lights

Time	Average Trip Generation		
	Arrivals	Departures	Totals
07:00-08:00	9	3	12
08:00-09:00	8	3	11
09:00-10:00	7	4	11
10:00-11:00	3	3	6
11:00-12:00	4	4	8
12:00-13:00	4	4	8
13:00-14:00	8	6	14
14:00-15:00	4	7	11
15:00-16:00	3	6	9
16:00-17:00	3	9	12
17:00-18:00	2	9	11
18:00-19:00	2	6	8
Daily (12hr)	57	64	121

Table 6.5: 12 Hour Trip Generation - Heavies

Time	Average Trip Generation		
	Arrivals	Departures	Totals
07:00-08:00	3	3	6
08:00-09:00	4	4	8
09:00-10:00	4	3	7
10:00-11:00	3	3	6
11:00-12:00	2	3	5
12:00-13:00	3	3	6
13:00-14:00	2	3	5
14:00-15:00	1	2	3
15:00-16:00	3	2	5
16:00-17:00	3	2	5
17:00-18:00	3	2	5
18:00-19:00	1	1	2
Daily (12hr)	32	31	63

B2 Use

- 6.6.7 TRICS based vehicular trip rates were originally agreed with KMBC Highways during scoping discussions in 2021, however, in March 2022 officers also requested that we should utilise updated data and provided Prime with updated B2 trip rates derived from the TRICS database.
- 6.6.8 The floor areas associated with the sites contained within the TRICS database are presented as gross floor areas (GFA), whereas the proposed floor areas have been presented as GIAs. However, it is important to note that GIA is virtually identical to, albeit slightly greater than, GFA.
- 6.6.9 The full reports of the TRICS data and selection process are included in Appendix F.
- 6.6.10 The derived trip rates were then applied to the proposed 4,392 sqm GFA, this being 30% of the total proposed floorspace. The likely 12-hour (7am-7pm) vehicular trip generation is shown in Table 6.6, with the AM and PM peak hours highlighted in bold font.

Table 6.6: 12 Hour TRICS Derived Average Vehicular Trip Rates and Trip Generation - Proposed B2 4,392 sqm

Time	Average Trip Rates			Average Trip Generation		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
07:00-08:00	0.204	0.030	0.234	9	1	10
08:00-09:00	0.353	0.044	0.397	16	2	18
09:00-10:00	0.115	0.054	0.169	5	2	7
10:00-11:00	0.079	0.058	0.137	3	3	6
11:00-12:00	0.038	0.059	0.097	2	3	5
12:00-13:00	0.069	0.096	0.165	3	4	7
13:00-14:00	0.152	0.087	0.239	7	4	11
14:00-15:00	0.061	0.137	0.198	3	6	9
15:00-16:00	0.044	0.087	0.131	2	4	6
16:00-17:00	0.041	0.196	0.237	2	9	11
17:00-18:00	0.030	0.321	0.351	1	14	15
18:00-19:00	0.021	0.131	0.152	1	6	7
Daily (12hr)	1.400	1.476	2.876	54	58	112

- 6.6.11 As the above table shows, the B2 element of the proposed development is likely to generate in the region of 18 vehicular two-way trips in the AM peak hour and 15 vehicular two-way trips in the PM peak hour, equivalent to a vehicular movement every circa 4 minutes.
- 6.6.12 Given the nature of the proposed development, it is evident that it will generate HGV trips throughout the course of the day. As such, the vehicular trip generation presented in Table 6.2 above has been split into two categories: 'Lights' and 'Heavies' (HGVs/OGVs). The 4,392 sqm GFA was applied to the OGV trip rates in the TRICS sample, with the resulting trip generation figures subtracted from the total vehicular trip generation figures. The resulting 'Lights' and 'Heavies' trip generation figures are presented in Table 6.7 and 6.8 respectively.

Table 6.7: 12 Hour Trip Generation - Lights

Time	Average Trip Generation		
	Arrivals	Departures	Totals
07:00-08:00	9	1	10
08:00-09:00	15	1	16
09:00-10:00	4	2	6
10:00-11:00	2	2	4
11:00-12:00	1	2	3
12:00-13:00	3	4	7
13:00-14:00	6	3	9
14:00-15:00	3	6	9
15:00-16:00	2	4	6
16:00-17:00	2	9	11
17:00-18:00	1	14	15
18:00-19:00	1	6	7
Daily (12hr)	49	54	103

Table 6.8: 12 Hour Trip Generation - Heavies

Time	Average Trip Generation		
	Arrivals	Departures	Totals
07:00-08:00	0	0	0
08:00-09:00	1	1	2
09:00-10:00	1	0	1
10:00-11:00	1	1	2
11:00-12:00	1	1	2
12:00-13:00	0	0	0
13:00-14:00	1	1	2
14:00-15:00	0	0	0
15:00-16:00	0	0	0
16:00-17:00	0	0	0
17:00-18:00	0	0	0
18:00-19:00	0	0	0
Daily (12hr)	5	4	9

Total Proposed Development

- 6.6.13 The likely trip generation of the proposed development for 'lights' and 'heavies' are presented in Tables 6.9 and 6.10, while Table 6.11 shows the combined trip generation for the proposed development in its entirety.

Table 6.9: Total Trip Generation - Lights

Time	Average Trip Generation		
	Arrivals	Departures	Totals
07:00-08:00	18	4	22
08:00-09:00	23	4	27
09:00-10:00	11	6	17
10:00-11:00	5	5	10
11:00-12:00	5	6	11
12:00-13:00	7	8	15
13:00-14:00	14	9	23
14:00-15:00	7	13	20
15:00-16:00	5	10	15
16:00-17:00	5	18	23
17:00-18:00	3	23	26
18:00-19:00	3	12	15
Daily (12hr)	106	118	224

- 6.6.14 As the above table shows, the proposed development is likely to generate in the region of 27 'Light' two-way trips in the AM peak hour and 26 'Light' two-way trips in the PM peak hour, equivalent to a 'Light' movement every circa 2 minutes.

Table 6.10: Total Trip Generation - Heavies

Time	Average Trip Generation		
	Arrivals	Departures	Totals
07:00-08:00	3	3	6
08:00-09:00	5	5	10
09:00-10:00	5	3	8
10:00-11:00	4	4	8
11:00-12:00	3	4	7
12:00-13:00	3	3	6
13:00-14:00	3	4	7
14:00-15:00	1	2	3
15:00-16:00	3	2	5
16:00-17:00	3	2	5
17:00-18:00	3	2	5
18:00-19:00	1	1	2
Daily (12hr)	37	35	72

- 6.6.15 As the above table shows, the proposed development is likely to generate in the region of 10 'Heavy' two-way trips in the AM peak and 5 'Heavy' two-way trips in the PM peak.
- 6.6.16 The total number of trips generated by the site is summarised in Table 6.11.

Table 6.11: Combined Total Trip Generation (70% B8 and 30% B2)

Time	Average Trip Generation		
	Arrivals	Departures	Totals
07:00-08:00	21	7	28
08:00-09:00	28	9	37
09:00-10:00	16	9	25
10:00-11:00	9	9	18
11:00-12:00	8	10	18
12:00-13:00	10	11	21
13:00-14:00	17	13	30
14:00-15:00	8	15	23
15:00-16:00	8	12	20
16:00-17:00	8	20	28
17:00-18:00	6	25	31
18:00-19:00	4	13	17
Daily (12hr)	179	179	358

- 6.6.17 As the above table shows, the proposed development in its entirety is likely to generate in the region of 37 total two-way trips in the AM peak and 31 total two-way trips in the PM peak.

Sensitivity Test

- 6.6.18 During the recent scoping discussions with KMBC in March 2022, the highway officer suggested that the impact assessment should be based on 100% B2 trip rates. We disagree with this approach as we consider the proposed 70:30 split is more representative of the likely development of the site. Whilst providing a robust assessment is important, it is equally important to provide a realistic assessment; if the applicant were seeking B2 use only, they would only apply for B2. From the applicant's and our recent experience of working on industrial schemes across the country with a variety of developers and agents, that the demand for high-quality B8 accommodation is considerably exceeding the demand for B2.
- 6.6.19 We have however included the 100% B2 assessment by way of sensitivity test with the core assessment remaining as a 70:30 B8:B2 split. 100% B2 would generate circa 58 vehicular two-way trips in the AM peak hour and 51 vehicular two-way trips in the PM peak hour, which is less than one trip per minute. The combined trip generation based on 100% B2 is presented in Table 6.12 below.

Table 6.12: Combined Total Trip Generation (100% B2)

Time	Average Trip Generation		
	Arrivals	Departures	Totals
07:00-08:00	30	4	34
08:00-09:00	52	6	58
09:00-10:00	17	8	25
10:00-11:00	12	8	20
11:00-12:00	6	9	15
12:00-13:00	10	14	24
13:00-14:00	22	13	35
14:00-15:00	9	20	29
15:00-16:00	6	13	19
16:00-17:00	6	29	35
17:00-18:00	4	47	51
18:00-19:00	3	19	22
Daily (12hr)	205	216	421

6.7 Multimodal Trip Generation

- 6.7.1 The number of non-car trips has been forecast using 2011 census Method of Travel to Work (MTW) data for the local mid layer super output (MSOA) area Knowsley 005 (E02001331) as a workplace destination. Factors have been derived by dividing the TRICS car driver trips by the census equivalent, with these factors (0.0025 AM and 0.0024 PM) applied to the other census travel modes to forecast the site's likely modal split. A summary of these multimodal trips is shown in Table 6.13 below.

Table 6.13: Forecast Multimodal Person Trips

Method	Census Trips	Modal Split	AM Trips	PM Trips
Driving a car or van	10760	77.6%	27	26
Passenger in a car or van	1139	8.2%	3	3
Bus, minibus or coach	1110	8.0%	3	3
On foot	566	4.1%	1	1
Bicycle	283	2.0%	1	1
Total travel to work	13858	100.0%	35	34
<i>Factors</i>			<i>0.0025</i>	<i>0.0024</i>
HGVs	-	-	10	5
Total Trips	-	-	45	39

- 6.7.2 The above suggests that the proposed development will generate 45 and 39 total person trips in the AM and PM peak hour respectively. Following driving being the most popular mode, 3 trips in each peak will be as car/van passengers, while 3 trips in each peak will be as bus passengers. Bicycle and walking trips will both account for a combined 2 trips in each peak. It is hoped that the Travel Plan, produced alongside this TA, will help to increase the use of the non-car driver modes.

6.8 Trip Distribution

- 6.8.1 Traffic generated by the development proposal has been distributed on to the highway network based on 2011 Census MTW data for car drivers using the Knowsley 005 MSOA. Origin-destination pairs containing 19 trips or less were removed from the data, accounting for less than 26% of the total trips, to make the data more manageable and to eliminate less common and generally longer distance trips from the dataset.
- 6.8.2 The main commuter origins within each MSOA were identified and the most likely route from/to the site, referred to as the primary route, was derived using web-based route planning software (Google Maps). Whilst some destinations may have more than one suitable route available, the most efficient routes (based on travel time and distance) have been chosen in order to concentrate the traffic on these routes within the exercise, forming a worst-case assessment. Where there is a clear choice between routes, primary and secondary routes have been identified.
- 6.8.3 From our knowledge of the local area, we believe that trips from/to the south, particularly south Liverpool and Huyton, will elect to travel along Knowsley Lane via M57 junction 2 at Prescott, with longer distance trips from the south, such as Warrington and Halton, also using this route but with some drivers electing to stay on the M57 for longer and travel along School Lane and Kitling Road via M57 junction 4. Both of these routes tend to have more free-flowing conditions and avoid two signalised junctions on the A580.
- 6.8.4 Five routes through the study area have been identified and are shown in Table 6.14, with a summary of the percentage of development trips that will be distributed along each also shown.

Table 6.14: Distribution Summary

Route	Typical Destination	Route %
A580 W	Aintree, Croxteth, Crosby, Waterloo, Seaforth & Litherland	41.7%
A5208	Kirkby, East Maghull	12.1%
A580 E	St Helens, Newton-le-Willows, Rainford, Billinge & Eccleston	15.8%
Knowsley Ln SW	South Liverpool, Huyton, Halton & Warrington	28.1%
Kitling Rd	Halton & Warrington	2.3%

- 6.8.5 The distribution is shown diagrammatically in Traffic Flow Diagram 11 with details of the distribution calculation and data provided in Appendix G. The distributed development traffic is shown in Traffic Flow Diagrams 12 and 13. Heavies have been assigned based on what we predict to be the most commonly used routes, these being the A580 west and east and Kitling Road.
- 6.8.6 These development trips have then been added to the 2027 Without Development traffic flows and are shown in Traffic Flow Diagrams 14 and 15. These flows represent the '2027 With Development' scenario.

6.9 Off-Site Impact Assessment

6.9.1 Having derived estimated traffic flows for the forecast year in the Without and With Development scenarios, it is possible to compare expected traffic flows within the study area at each of the junctions surveyed as described in Section 3.

6.9.2 Table 6.15 provides a comparison of traffic flows in the forecast year for the Without and With Development scenarios summarising the difference in absolute and percentage terms.

Table 6.15: Comparison of Two-way Traffic Flows - 2027 Without Development and 2027 With Development

Junction	2027 AM Peak				2027 PM Peak			
	Without Dev	With Dev	Abs Diff	% Diff	Without Dev	With Dev	Abs Diff	% Diff
1. A580/A5208/Ormskirk Road	3715	3740	25	0.7%	3897	3918	21	0.5%
2. Ormskirk Road/B5202/Kitling Road	1194	1206	12	1.0%	1362	1372	10	0.7%
Sensitivity Test: 100% B2								
1. A580/A5208/Ormskirk Road	3715	3755	40	1.1%	3897	3933	36	0.9%
2. Ormskirk Road/B5202/Kitling Road	1194	1212	18	1.5%	1362	1377	15	1.1%

6.9.3 Based on the flow differences in Table 6.15, the greatest impact of the proposed development will be on the A580/A5208/Ormskirk Road junction, with an increase of 25 two-way trips (0.7%) in the AM peak and 21 two-way trips (0.5%) in the PM peak. The Ormskirk Road/B5202/Kitling Road junction is expected to experience an increase of 12 two-way trips (1.0%) in the AM peak and 10 two-way trips (0.7%) in the PM peak.

6.9.4 The sensitivity test is forecast to add 40 and 36 two-way trips to the A580/A5208/Ormskirk Road junction in the respective peak hours and 18 and 15 trips to the Ormskirk Road/B5202/Kitling Road roundabout.

6.9.5 GTA suggests that an increase of 30 two-way trips is a useful point of reference regarding traffic impact at junctions, implying that any increase in trips less than this figure is unlikely to cause a detrimental impact. Although the increase in trips does not exceed the threshold at both study junctions for the core assessment, for the purposes of a robust assessment, capacity assessments have been undertaken at both of the off-site junctions.

6.10 Junction Capacity Assessments

6.10.1 Industry standard software has been used to model the junctions, with Junctions 9 used for the roundabout and priority-controlled site access and LinSig V3 for the signalised junction.

- 6.10.2 In order to convert the traffic flows into PCUs, which is the requisite input flow unit required in the modelling software, a factor of 2.0 has been applied to the heavy vehicle user class, while cars effectively have a factor of 1.0. These factors are widely accepted in transport modelling.
- 6.10.3 When interpreting the results of the LinSig model (signals), the capacity of the junction as a whole is indicated by the practical reserve capacity (PRC) with negative values indicating that the practical capacity threshold has been exceeded and a PRC less than -10% indicating that a junction is operating above the theoretical capacity threshold.
- 6.10.4 When interpreting the results of the Junctions 9 models (roundabout and site access), the capacity of each arm or movement is calculated as the Ratio of Flow to Capacity (RFC) with 0.85 representing the practical capacity threshold of the arm and 1.00 representing the theoretical capacity threshold. It is above the practical capacity threshold where capacity problems may begin to occur while exceeding the theoretical capacity means that arms are over capacity.
- 6.10.5 Modelled queues are shown in passenger car units (PCUs), this being equivalent to a distance of 5.75m which is the length of road space (car length plus gap length) that a typical car will occupy when queueing. In order to convert the traffic flows into PCUs, which is the requisite input flow unit required in the modelling software, a factor of 2.0 has been applied to the heavy vehicle user class, while cars effectively have a factor of 1.0. These factors are widely accepted in transport modelling.
- 6.10.6 The junction geometry has been coded based on a mixture of OS mapping, aerial photography and on-site measurements.
- 6.10.7 Traffic flows for the roundabout and site access have been input based on the 'ONE HOUR' (ODTAB) option which synthesises a 'peak within a peak' at the middle of the time period modelled and as such is considered the worst-case form of assessment in terms of impact. LinSig utilises an average flow profile.
- 6.10.8 All model report outputs are included in Appendix H. The results of the capacity assessment for each of the junctions are described below.

A580/A5208/Ormskirk Road

- 6.10.9 An important input to LinSig models is cycletime, particularly where MOVA is in place as it is at this junction, as this controlled technology dynamically allocates greentime and adjusts cycletimes to live traffic conditions. One of the best ways to model this in LinSig is to take an average cycletime. Whilst traffic flows for the junction were obtained from KMBC, cycletimes at the time of the 2018 traffic survey were not available. As such, a series of cycletime measures were undertaken on a PM peak site visit in March 2022 and an AM peak site visit in April 2022.
- 6.10.10 In the PM peak, the minimum cycletime was 105 seconds, the maximum 181 seconds and the average of 14 observed cycles was 133 seconds. In the AM peak, the minimum cycletime was also 105 seconds,

the maximum 180 seconds and the average of 16 observed cycles was 126 seconds. This shows clear fluctuation and effective MOVA control. A rounded down cycletime of 130 seconds has been used to model the PM peak and 120 seconds used to model the AM peak.

- 6.10.11 As Table 6.12 shows, the development is forecast to add up to 25 trips to the junction in the AM peak and 21 trips to the junction in the PM peak. Based on the abovementioned cycle times, these are equivalent to less than once trip per cycle, which would be spread across multiple lanes.
- 6.10.12 The junction has been modelled using a combination of on-site stop line measurements and Google Earth.
- 6.10.13 A summary of the result is provided in Table 6.16.

Table 6.16: Junction Capacity Assessment Results – A580/A5208/Ormskirk Road

Lane Ref	Lane Description	AM Peak		PM Peak	
		DoS (%)	MMQ (PCU)	DoS (%)	MMQ (PCU)
2021 Baseline					
1/2+1/1	A580 West Ahead Left	79.1 : 79.1%	13.3	86.2 : 86.2%	19.8
1/3+1/4	A580 West Ahead Right	66.5 : 66.5%	11.6	83.9 : 83.9%	21.4
2/2+2/1	A580 East Ahead Left	78.2 : 78.2%	17.0	48.9 : 48.9%	9.3
2/3	A580 East Ahead	76.80%	17.5	49.90%	10.2
2/4+2/5	A580 East Right	79.1 : 78.9%	9.3	68.1 : 68.0%	4.3
3/1	Coopers Ln Left	33.90%	6.0	86.90%	21.4
3/2+3/3	Coopers Ln Right Ahead	78.8 : 78.8%	11.5	84.4 : 84.4%	15.2
4/2+4/1	Ormskirk Rd Left Ahead	80.4 : 80.4%	13.6	84.5 : 84.5%	15.5
4/3	Ormskirk Rd Right	36.00%	4.8	68.10%	11.1
PRC (%)		12.0		3.5	
Delay (pcuHr)		54.34		61.56	
2027 Without Development					
1/2+1/1	A580 West Ahead Left	83.0 : 83.0%	14.4	90.3 : 90.3%	22.8
1/3+1/4	A580 West Ahead Right	72.0 : 72.0%	13.0	88.4 : 88.4%	23.8
2/2+2/1	A580 East Ahead Left	82.0 : 82.0%	18.5	51.4 : 51.4%	9.9
2/3	A580 East Ahead	81.00%	19.1	52.40%	10.9
2/4+2/5	A580 East Right	84.9 : 84.7%	10.7	73.2 : 73.6%	4.9
3/1	Coopers Ln Left	35.70%	6.4	91.90%	24.6
3/2+3/3	Coopers Ln Right Ahead	83.2 : 83.2%	12.9	89.1 : 89.1%	17.6
4/2+4/1	Ormskirk Rd Left Ahead	85.7 : 85.7%	15.3	89.5 : 89.5%	17.8
4/3	Ormskirk Rd Right	38.00%	5.1	71.70%	11.9
PRC (%)		5.0		-2.2	
Delay (pcuHr)		61.10		71.47	
2027 With Development					
1/2+1/1	A580 West Ahead Left	86.0 : 86.0%	15.2	90.3 : 90.3%	22.8
1/3+1/4	A580 West Ahead Right	77.1 : 77.1%	14.0	88.6 : 88.6%	23.9
2/2+2/1	A580 East Ahead Left	84.1 : 84.1%	19.0	51.6 : 51.6%	10.0
2/3	A580 East Ahead	83.00%	19.6	52.30%	10.8
2/4+2/5	A580 East Right	84.9 : 84.7%	10.7	73.2 : 73.6%	4.9
3/1	Coopers Ln Left	35.70%	6.4	91.90%	24.6
3/2+3/3	Coopers Ln Right Ahead	83.9 : 83.9%	13.2	89.1 : 89.1%	17.6
4/2+4/1	Ormskirk Rd Left Ahead	83.4 : 83.4%	14.9	91.8 : 91.8%	19.1
4/3	Ormskirk Rd Right	37.30%	5.1	72.60%	12.1
PRC (%)		4.7		-2.2	
Delay (pcuHr)		63.19		72.75	
Sensitivity Test: 2027 With Development 100% B2					
1/2+1/1	A580 West Ahead Left	86.0 : 86.0%	15.2	92.0 : 92.0%	23.8
1/3+1/4	A580 West Ahead Right	77.5 : 77.5%	14.1	90.6 : 90.6%	24.9
2/2+2/1	A580 East Ahead Left	84.3 : 84.3%	19.0	52.7 : 52.7%	10.1
2/3	A580 East Ahead	82.90%	19.5	53.60%	11.1
2/4+2/5	A580 East Right	84.9 : 84.7%	10.7	73.2 : 73.6%	4.9
3/1	Coopers Ln Left	35.70%	6.4	91.90%	24.6
3/2+3/3	Coopers Ln Right Ahead	84.6 : 84.6%	13.4	89.1 : 89.1%	17.6
4/2+4/1	Ormskirk Rd Left Ahead	83.1 : 83.1%	14.8	91.0 : 91.0%	19.1
4/3	Ormskirk Rd Right	37.30%	5.1	70.90%	12.0
PRC (%)		4.7		-2.3	
Delay (pcuHr)		63.48		74.36	

- 6.10.14 The results suggest that the traffic growth in the 2027 Without Development scenario will lead to the junction operating above the practical capacity threshold (PRC = 0.0%) in the PM peak, with the Baseline value of 3.5% reducing to -2.2, but this technically means that the junction still has 7.8% capacity. The addition of the development traffic does not reduce the value any further in the PM peak with the AM peak continuing to operate below the practical capacity threshold with the PRC value reducing by just 0.3% as a result of the development. The results are reflective of the proposed development adding less than once trip per cycle. The results suggest that the traffic signals can accommodate the development traffic with minimal change to their operation.
- 6.10.15 Even adding the 100% B2 use shown by the sensitivity test results in a minimal impact, with the PRC in the AM peak remaining the same as the core scenario and reducing the PM PRC value by just 0.1%.

Ormskirk Road/B5202/Kitling Road

- 6.10.16 The results of the capacity assessment are shown in Table 6.17.

Table 6.17: Junction Capacity Assessment Results - Ormskirk Road/B5202/Kitling Road

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2021 Baseline				
1 - Ormskirk Road (Northern Arm)	0.30	0.5	0.24	0.3
2 - B5202 (North-Eastern Arm)	0.06	0.1	0.21	0.3
3 - Ormskirk Road (South-Eastern Arm)	0.16	0.2	0.08	0.1
4 - B5202 (South-Western Arm)	0.41	0.7	0.33	0.5
5 - Kitling Road	0.17	0.2	0.34	0.5
2027 Without Development				
1 - Ormskirk Road (Northern Arm)	0.32	0.5	0.25	0.3
2 - B5202 (North-Eastern Arm)	0.06	0.1	0.23	0.3
3 - Ormskirk Road (South-Eastern Arm)	0.17	0.2	0.08	0.1
4 - B5202 (South-Western Arm)	0.44	0.8	0.36	0.6
5 - Kitling Road	0.18	0.2	0.37	0.6
2027 With Development				
1 - Ormskirk Road (Northern Arm)	0.32	0.6	0.26	0.4
2 - B5202 (North-Eastern Arm)	0.06	0.1	0.23	0.3
3 - Ormskirk Road (South-Eastern Arm)	0.17	0.2	0.08	0.1
4 - B5202 (South-Western Arm)	0.44	0.8	0.36	0.6
5 - Kitling Road	0.19	0.3	0.37	0.6
Sensitivity Test: 2027 With Development 100% B2				
1 - Ormskirk Road (Northern Arm)	0.32	0.5	0.27	0.4
2 - B5202 (North-Eastern Arm)	0.06	0.1	0.23	0.3
3 - Ormskirk Road (South-Eastern Arm)	0.17	0.2	0.08	0.1
4 - B5202 (South-Western Arm)	0.45	0.9	0.36	0.6
5 - Kitling Road	0.19	0.3	0.37	0.6

- 6.10.17 The results show that the junction will continue to operate with a considerable level of spare capacity with the development in place, with the highest RFC being 0.44 on the B5202 south-western arm in the AM peak. However, it is important to note that the RFC is also 0.44 on said arm in the '2027

Without Development' scenario, indicating that the proposed development has no impact at all. The sensitivity test increases this RFC by just 0.01 with the roundabout continuing to operate with a considerable level of spare capacity in both peaks.

Proposed Site Access/A480

6.10.18 The results of the capacity assessment are shown in Table 6.18.

Table 6.18: Junction Capacity Assessment Results - Proposed Site Access/Ormskirk Road

Arm	AM		PM	
	RFC	Q (PCU)	RFC	Q (PCU)
2027 With Development				
Proposed Site Access	0.04	0.1	0.10	0.1
Ormskirk Road (Southern Arm)	0.02	0.0	0.01	0.0
Sensitivity Test: 2027 With Development 100% B2				
Proposed Site Access	0.02	0.0	0.18	0.2
Ormskirk Road (Southern Arm)	0.03	0.0	0.00	0.0

6.10.19 The results show that the proposed site access will operate with a considerable level of spare capacity and will therefore be suitable to serve the proposed development.

6.11 Summary

6.11.1 This section has explained the particularly robust traffic forecasting methodology and capacity assessment used to determine the suitability of the surrounding highway network to accommodate the development proposal.

6.11.2 It has been demonstrated that the proposed development will have a negligible impact on the local highway network.

6.11.3 The development proposals are not going to result in an '*unacceptable impact on highway safety*' and the residual cumulative impact of the development can certainly not be considered '*severe*' meaning that according to paragraph 111 of the NPPF, as described in Section 2 of this report, the development should not be refused on transport grounds.

7 SUMMARY AND CONCLUSION

7.1 Summary

- 7.1.1 This report considers the highways and transportation implications associated a detailed application for the development of an employment led scheme comprising B8/B2 Uses with ancillary offices (E(g)(i) Use) on a site off Knowsley Lane in Knowsley.
- 7.1.2 The development is proposed to be served by one new access point off Ormskirk Road in the form of a priority controlled ghost island right turn arrangement designed in accordance with DMRB standards the prevailing 50mph speed limit. The access will also be afforded a deceleration lane and has been agreed in principle with highways officers at KMBC.
- 7.1.3 It has been demonstrated that the site is able to accommodate all likely vehicle types which will regularly access the development. Pedestrians and cyclists will be afforded a new 3m shared footway/ cycleway along the Ormskirk Road frontage, with continuous footways providing throughout the proposed development.
- 7.1.4 Parking provision has been provided in accordance with KMBC requirements for 70% of B8 use and 30% of B2 use. It has been demonstrated through a car park accumulation exercise that the proposed level of parking is more than sufficient to support the quantum of proposed development. The applicant is willing to provide funding towards a TRO which prevents parking along Ormskirk Road and Knowsley Lane to ensure no parking will take place on the roads surrounding the development. Accessible, EV, cycle and motorcycle parking provision will also meet or exceed KMBC's minimum parking requirements
- 7.1.5 A review of accident data for the local area has been undertaken for the most recent five years available. The data indicates four accidents have occurred in the study area over a 5-year period, three of which resulted in slight injuries and the other in serious, suggesting there are no deficiencies in the highway network, or existing safety issues within the vicinity of the site, that would be exacerbated by the development proposal. No accidents have occurred along Ormskirk Road within this time period.
- 7.1.6 An assessment has been undertaken of the site's level of accessibility by sustainable modes, from which it can be concluded that realistic options exist for access to local residential areas and local amenities on foot, by cycle and by public transport. The assessment has also been subject to a sensitivity test, based on a solely B2 Use. The sensitivity test shows there is no adverse effect on the operation of the local highway.
- 7.1.7 A particularly robust impact assessment has been undertaken including junction capacity assessments at the nearest two off-site junctions. The results of the junction capacity assessment indicate that

there is spare capacity to accommodate the development proposals which would have an overall negligible impact on the local highway network.

7.2 Conclusion

- 7.2.1 It is concluded that the proposed development would not result in an '*unacceptable impact on highway safety*' nor have a '*severe*' impact on the operation of the highway network in terms of capacity. The impact is best described as negligible.
- 7.2.2 As the proposal complies with local and national planning policy and guidance with respect to sustainable accessibility, safety and impact on the highway network, there are no highways or transportation related reasons why planning permission should not be granted.

APPENDIX A

SCOPING CORRESPONDENCE

SCOPING CHECKLIST FOR: Land to the north of Knowsley Lane, Knowsley

HIGHWAY AUTHORITY: Knowsley Metropolitan Borough Council (KMBC)

DATE PREPARED: 23.02.2021

Ref	Item	Intention	LHA Comments
1	Level of planning approval sought e.g. outline, full.	Outline	
2	Size and description of development proposals.	Mixture of B1, B2 and B8 units comprising a total unit area of approximately 150,000sqft (13,935.34 sqm) with a forecast split of approximately 70% B8 and 30% B2. <u>Current Building Plot Areas</u> • Building 1 – Approx. 70,000sqft • Building 2 - Approx. 30,000sqft • Building 3 – Approx. 50,000sqft See attached plan for site location.	
3	Description of existing land uses, existing trip distribution.	Farmland (virtually no trip generation)	
4	Does the development involve the relocation of an existing use?	No	
5	What transport based supporting documents will be produced?	Transport Assessment and Framework Travel Plan	
6	Are traffic surveys of the existing conditions available or required?	Suggested traffic surveys at the following locations: • Ormskirk Lane/B202 Knowsley Lane (Roundabout); and • Ormskirk Lane/ A580 East Lincs Road (signals). Please advise if KMBC have historical data available which could be used for the assessments. If not, please confirm if MMC and queue length surveys undertaken in March 2021 at these proposed junctions will be acceptable. We also propose to undertake a 7-day ATC survey along Knowsley Lane adjacent to the proposed site access position to establish the current daily flow profile and traffic speeds.	

SCOPING CHECKLIST FOR: Land to the north of Knowsley Lane, Knowsley

HIGHWAY AUTHORITY: Knowsley Metropolitan Borough Council (KMBC)

DATE PREPARED: 23.02.2021

7	Details of any other developments to be considered.	<u>Please advise if there are any other developments being undertaken in this area</u>																														
8	Details of any adjacent highway improvement proposals by others.	<u>Please advise if there are any highway improvement schemes that need to be taken account of.</u>																														
9	When are the critical periods for assessments?	Weekday AM and PM peaks derived from surveys mentioned above.																														
10	When would the site be fully operational?	2026 – (assumed)																														
11	What are the assessment years?	2021 - Base flows only 2026 – 5 years post submission - without and with development																														
12	Traffic growth factors?	TEMPO growth factors will be utilised.																														
13	How will vehicular trip generation be derived for the proposal?	Average vehicular trip rates have been derived from the TRICS database and are presented in the tables below, together with the resulting trip generation. The below figures have been based on the development split of 70:30 B8:B2 for the approximate combined unit size of 150,000sqft (13,935.34 sqm). Industrial Warehousing (B8) – Trip Rates & Trip Gen <table border="1"> <thead> <tr> <th colspan="5">B8 Trip Rates (70% of 13,935.34 sqm unit area)</th> </tr> <tr> <th rowspan="2">Time</th> <th colspan="2">Average Trip Rates</th> <th colspan="2">Average Trip Generation</th> </tr> <tr> <th>Arrivals</th> <th>Departures</th> <th>Totals</th> <th>Totals</th> </tr> </thead> <tbody> <tr> <td>08:00-09:00</td> <td>0.097</td> <td>0.069</td> <td>0.166</td> <td>7</td> </tr> <tr> <td>17:00-18:00</td> <td>0.055</td> <td>0.096</td> <td>0.151</td> <td>9</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>14</td> </tr> </tbody> </table>	B8 Trip Rates (70% of 13,935.34 sqm unit area)					Time	Average Trip Rates		Average Trip Generation		Arrivals	Departures	Totals	Totals	08:00-09:00	0.097	0.069	0.166	7	17:00-18:00	0.055	0.096	0.151	9					14	
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SCOPING CHECKLIST FOR: Land to the north of Knowsley Lane, Knowsley

HIGHWAY AUTHORITY: Knowsley Metropolitan Borough Council (KMBC)

DATE PREPARED: 23.02.2021

		Industrial Unit (B2) – Trip Rates & Trip Gen <table><thead><tr><th colspan="6">B2 Trip Rates (30% of total 13,935.34 sqm unit area)</th></tr><tr><th rowspan="2">Time</th><th colspan="2">Average Trip Rates</th><th colspan="3">Average Trip Generation</th></tr><tr><th>Arrivals</th><th>Departures</th><th>Totals</th><th>Arrivals</th><th>Departures</th></tr></thead><tbody><tr><td>08:00-09:00</td><td>0.197</td><td>0.046</td><td>0.243</td><td>8</td><td>2</td></tr><tr><td>17:00-18:00</td><td>0.024</td><td>0.135</td><td>0.159</td><td>1</td><td>6</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>7</td></tr></tbody></table> Likely Total Trip Generation <table><thead><tr><th colspan="4">Total Trip Generation</th></tr><tr><th>Time</th><th>Arrivals</th><th>Departures</th><th>Totals</th></tr></thead><tbody><tr><td>08:00-09:00</td><td>17</td><td>9</td><td>26</td></tr><tr><td>17:00-18:00</td><td>6</td><td>15</td><td>21</td></tr></tbody></table> The TRICS outputs are attached. Please confirm acceptance of the above trip rates for the purposes of the assessment.	B2 Trip Rates (30% of total 13,935.34 sqm unit area)						Time	Average Trip Rates		Average Trip Generation			Arrivals	Departures	Totals	Arrivals	Departures	08:00-09:00	0.197	0.046	0.243	8	2	17:00-18:00	0.024	0.135	0.159	1	6						7	Total Trip Generation				Time	Arrivals	Departures	Totals	08:00-09:00	17	9	26	17:00-18:00	6	15	21	
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14	How will non-car mode trip generation be derived for the proposal?	TRICS (where possible) for all non-car modes or 2011 Census Method of Travel to Work modal splits																																																				
15	Would traffic from adjacent sites be attracted to the site? Pass-by traffic?	100% newly generated trips.																																																				
16	What is the assumed trip distribution?	The Transport Assessment will distribute trips generated by the site in accordance with Method of Travel to Work information derived from 2011 Census data																																																				
17	What is the extent of the accident study area to be considered?	See attached suggested study area. Study area includes all site frontage along Ormskirk Road, Knowsley Lane and A580. Accident data will be obtained from KMBC for the latest five-year period.																																																				

SCOPING CHECKLIST FOR: Land to the north of Knowsley Lane, Knowsley

HIGHWAY AUTHORITY: Knowsley Metropolitan Borough Council (KMBC)

DATE PREPARED: 23.02.2021

18	Capacity tests required for the proposed and following existing junctions	A capacity assessment will be undertaken as part of this application. The junctions proposed for assessment are highlighted in section 6 as well as the attached plan, and will be assessed in accordance with the cumulative impact of the proposed site.	
19	Are adjacent junctions or links likely to become overloaded?	To be determined through capacity assessment	
20	Is a new or modified highway access likely?	Vehicular access to the proposed site is via Knowsley Lane, located centrally along the site frontage to ensure adequate visibility. The access arrangement will take the form of a ghost island right turn appropriate for a 50mph design speed. See Drawing P20066-001B attached for site access proposals.	
21	What level of car parking is required?	Currently a total of 227 car parking spaces split between the 3 buildings: • Building 1 (14,446.12 sqm) – 110 spaces; • Building 2 (6,463.00 sqm) – 44 spaces; • Building 3 (10,180.42 sqm) – 73 spaces. <u>Comments on parking numbers for the proposed development mix welcome</u>	
22	Are special provisions required for cyclists, pedestrians, those with a disability or public transport?	To be reviewed as part of the Transport Assessment.	
23	What planning policy should the development comply with?	• NPPF; • Knowsley Ensuring a choice of Travel SPD • Merseyside Local Transport Plan 3. <u>Please advise of any others to be taken into account.</u>	
24	Are there any other special circumstances relevant to this proposal?	<u>Please advise.</u>	

SCOPING CHECKLIST FOR: Land to the north of Knowsley Lane, Knowsley

HIGHWAY AUTHORITY: Knowsley Metropolitan Borough Council (KMBC)

DATE PREPARED: 23.02.2021

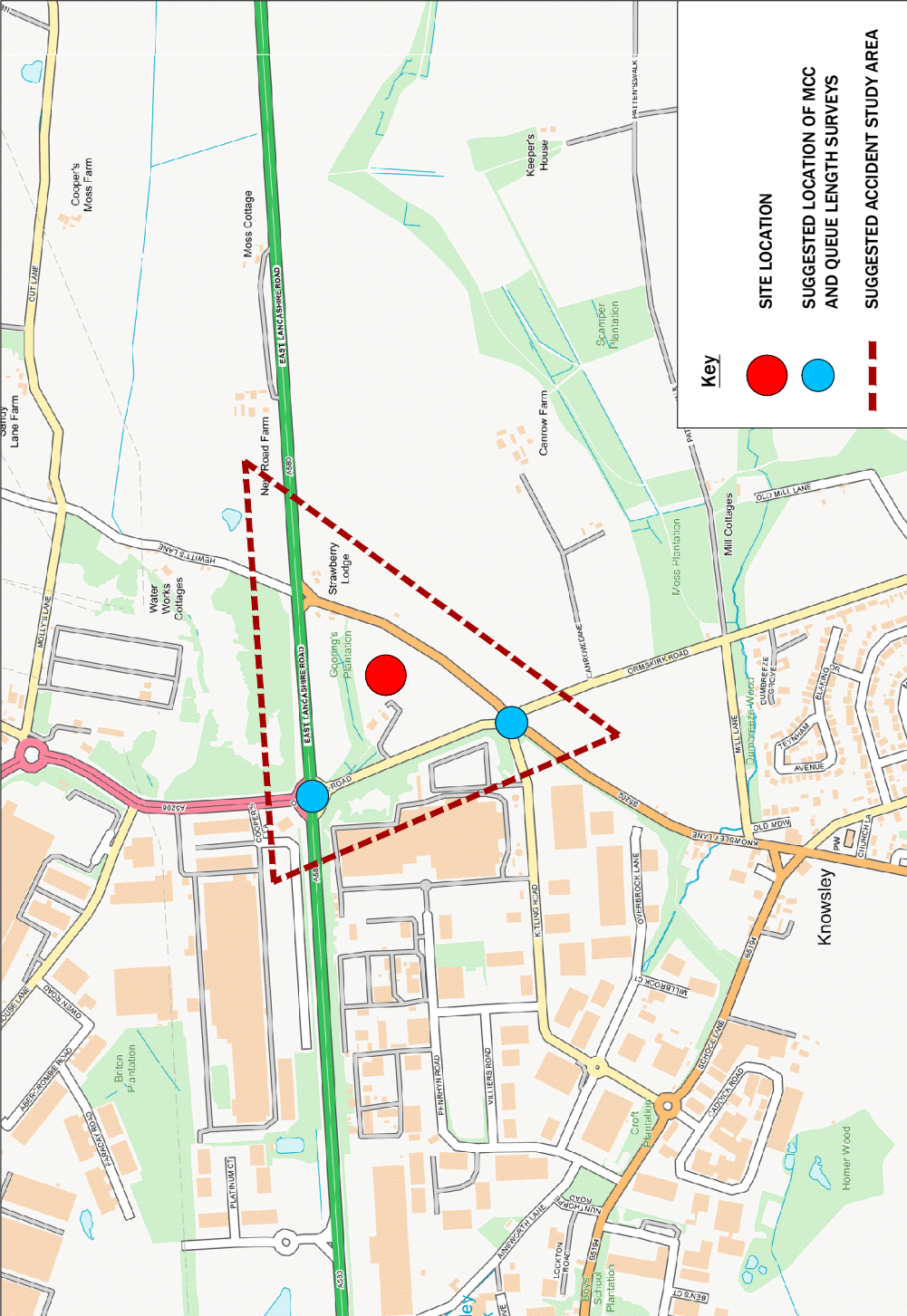
ATTACHMENTS:

SITE LOCATION AND SURVEY PLAN

TRICS

DRAWING P20066-001B – PROPOSED ACCESS STRATEGY

DRAWING 19011_SK23 – PROPOSED SITE PLAN



Highway Pre-application Memo

Transportation and Traffic Services

Date:	21 st April 2021
To:	Andrew Hunt
Planning App. No:	21/00015/PREAPP
Location:	Knowsley Lane Knowsley
Proposal:	B1/B2/B8 development, Knowsley Lane, Knowsley

Highways would have no objection in principle to a development of this type/scale/nature at this location, based on site layout drawing No 19011_SK33 rev F and drawing No P20066-001B titled Proposed Access Strategy.

This is subject to the following information that would be required as part of a future planning application.

1. Item 5 – Transport Assessment will be required.
2. Item 6 in the scoping note. I am not been able to confirm whether data is available. Therefore, it is suggested that either contact is made directly with Peter Cunningham at peter.cunningham@knowsley.gov.uk or new traffic data is obtained.
3. Highway Improvement scheme information – for information of potential future highway schemes contact either Yvonne Hegarty at Yvonne.hegarty@knowsley.gov.uk or Mark Hetherington at mark.hetherington@knowsley.gov.uk
4. Item 13 – the TRICs trip rates shown are currently acceptable
5. Item 20 Plan 19011_SK33 rev F sets out a new access point off Ormskirk Road, not Knowsley Lane as described. The introduction of a priority junction design for the access is subject to a capacity assessment. The construction of this junction will be subject to a s278 agreement with the Council.
6. Item 21 – recommended parking space figures are set out in the SPD titled ‘Ensuring a Choice of Travel’ (page 38 – 39). The area and use class split suggested in item 2 sets out an expectancy for 425 parking spaces to be provided. As the parking numbers suggested, at 227 in item 21 are almost 50% less than recommended, the parking issue needs to be reconsidered.

The development would need to have adequate off-street parking, including disabled/cycle/motorcycle/coach/HGV parking, in accordance with the parking standards contained within the Council’s ‘Ensuring a Choice of Travel’ Supplementary Planning Document available on the website.

7. The site needs to present itself as supporting sustainable transport use. Therefore:
- a) a Framework Travel Plan should be provided
 - b) for staff, covered secure cycle storage needs to be provided. Numbers to be provided as set out the local SPD titled 'Ensuring a Choice of Travel'
 - c) Facilities to be provided that allows cyclists to shower and change clothing when necessary
 - d) Identify local bus stops – consider whether an improvement is needed that will encourage bus use.
8. The internal layout has not been assessed, as it is not part of a planning submission and may change.
9. (Adopted highway records) - The adopted highways (including footpaths) in the borough can be identified through the highway records element of the following attachment on Knowsley Council's website: [Highways Mapping \(knowsley.gov.uk\)](https://www.knowsley.gov.uk/highways-mapping). Alternatively, a plan can be provided on request for a fee (contact Ray Maguire, tel. 0151 443 2226, email ray.maguire@knowsley.gov.uk).
10. (Adopted highway boundary and street furniture) - The proposed site layout plan must show the existing adopted highway boundary for the site and any existing street furniture/traffic calming measures that may need to be relocated/altered because of the proposals.
11. (S38/S278) – A S38/S278 highway agreement would be required. This is prior to the commencement of any highway construction work commences on the existing highway network or on the internal highway layout
12. (Street lighting/signing PFI) - The Council entered a Street Lighting and Signing PFI Contract on 1st August 2011 and as part of this the majority of streetlights and some traffic signs in the Borough are being replaced over the next few years. All new street lighting and signing to be installed on the existing public highway or highway proposed for adoption will be subject to a commuted sum to cover its future maintenance. The developer will be responsible for paying for the relocation of any existing signs/lighting columns which must be agreed/undertaken by the PFI Service Provider, SSE, tel. 0151 481 4530.
13. (Highway structures) - The proposed highway structure(s) must be checked and approved prior by the Council's design consultants prior to work commencing on site and the developer will be responsible for paying all the design checking fees. An Approval In Principle (AIP) document must be completed and submitted with the detailed design drawings and calculations. Copies of the AIP document can be obtained from the Local Highway Authority (contact Maria Barry, tel. 0151 443 2282).
14. (Boundary treatments) – solid boundary treatments on the plot frontages/sides or adjacent to vehicular accesses must be no more than 0.75 metres in height to ensure highway visibility is not compromised for motorists emerging from accesses. Additionally, pedestrian intervisibility splays of 2 x 2 metres must be provided adjacent to both sides of vehicular accesses.

Vanessa Blackburn

From: Barry, Maria <Maria.Barry@knowsley.gov.uk>
Sent: 07 May 2021 17:00
To: Jones, Kenneth; Vanessa Blackburn
Subject: RE: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

Hi Ken/Vanessa

I have no knowledge of the proposed development but if you are undertaking a turning count to be used for junction modelling a queue survey must be undertaken at the same time to record the maximum queue length on each junction arm at 5 minute intervals during the full survey periods (average queues or queue lengths surveyed as far as the eye can see will not be accepted). The queue surveys need to be used to validate the junction model. This is a Knowsley requirement for all junction modelling.

Traffic counts need to be undertaken in neutral periods in accordance with DMRB standards.

In the covid climate Knowsley have not been accepting any surveys undertaken during lockdown periods. Therefore, there is no objection in principle to undertaking traffic counts at the moment provided no new lockdown restrictions are imposed. However, if a development is likely to be contentious or possibly the subject of a planning appeal/inquiry or judicial review I would recommend postponing surveys.

Alternatively, Knowsley has accepted the use of older data (more than 3 or 4 years old beyond which we would not normally accept) during the covid period. The data could be factored up to the current/opening year. In these circumstances we have requested a second count is done in an appropriate location nearby where a count has already been carried out at that location in the last few years (4 years max.) before covid. The new and old data at that same location could then be compared to get an appropriate factor to account for changes in traffic flow on the network due to covid. The factor could then be applied to the count required for the development. Prior to taking this approach you should agree the second count location to be used for the benchmarking exercise with KMBC Highways.

Peter Cunningham peter.cunningham@knowsley.gov.uk can advise if Knowsley have any traffic data available if you have not already asked. A fee is applicable for the purchase of traffic data.

I hope this helps.

Regards

Maria Barry

Lead Engineer - Development
Highways & Capital Delivery

Tel: 0151 443 2349 Mobile: 07384 900841 Email: maria.barry@knowsley.gov.uk
Knowsley Council | Yorkon Buildings | Archway Road | Huyton | L36 9YU

From: Jones, Kenneth <kenneth.jones@knowsley.gov.uk>
Sent: 07 May 2021 12:44
To: Vanessa Blackburn <V.Blackburn@primetp.co.uk>; Barry, Maria <Maria.Barry@knowsley.gov.uk>
Subject: RE: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

Hi Vanessa, my apologies for the mis-understanding. I can only say that any survey carried out now would be expected to be, not a true reflection of what has gone on previously or what will happen in the future. I can see people objecting to figures and the Council not being able to justify anything that relies on them.

Perhaps, you could look for an approved large development locally, that had to survey the roundabout, in recent years and then add the predicted traffic growth figure to what is presented in the old survey results. I suggest that Maria, who I have copied in, may be able to help you on this as Maria has been here for a while now.

Regards

Ken Jones

Principal Engineer
Highways and Transportation

Tel: 0151 443 2231 Mobile: 07970 486184 Email: kenneth.jones@knowsley.gov.uk
Knowsley Council | Yorkon Buildings | Archway Road | Huyton | L36 9YU

From: Vanessa Blackburn <V.Blackburn@primetp.co.uk>
Sent: 07 May 2021 12:46
To: Jones, Kenneth <kenneth.jones@knowsley.gov.uk>
Cc: Barry, Maria <Maria.Barry@knowsley.gov.uk>
Subject: RE: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

Thanks Ken,

We would be instructing a third party to undertake the traffic surveys on our behalf and I'm sure they have a process and procedure they follow.

I was more asking with regards as to whether undertaking traffic surveys during this time period is acceptable due to covid-19 and the impact this may have on travel patterns?

Kind regards,

Vanessa Blackburn
Transport Planner
Prime Transport Planning

DD: +44 (0)151 728 1860

www.primetp.co.uk



From: Jones, Kenneth <kenneth.jones@knowsley.gov.uk>
Sent: 07 May 2021 10:55
To: Barry, Maria <Maria.Barry@knowsley.gov.uk>; Thorpe, Richard <Richard.Thorpe@knowsley.gov.uk>; Vanessa Blackburn <V.Blackburn@primetp.co.uk>
Subject: RE: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

Hi Maria/Richard,

The company below are wanting to carryout a traffic survey on the Ormskirk Lane/B202 Knowsley Lane roundabout. As I am new to the Council, is there a procedure the applicant needs to go through.

Vanessa I am sure there is a process, it could be as simple as informing the Council but wait until you hear from us.

Ken Jones

Principal Engineer
Highways and Transportation

Tel: 0151 443 2231 Mobile: 07970 486184 Email: kenneth.jones@knowsley.gov.uk
Knowsley Council | Yorkon Buildings | Archway Road | Huyton | L36 9YU

From: Vanessa Blackburn <V.Blackburn@primetp.co.uk>
Sent: 07 May 2021 10:34
To: Jones, Kenneth <kenneth.jones@knowsley.gov.uk>
Subject: RE: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

Morning Ken,

In relation to the scoping note for the site off Ormskirk Lane and the traffic surveys.

We have been able to obtain traffic survey data for the Ormskirk Lane/ A580 East Lancs Road signals but not the Ormskirk Lane/B202 Knowsley Lane roundabout to south.

We're therefore going to instruct a traffic count survey and ATC to be undertaken either week commencing 10th May 2021 or the following week.

Are you able to confirm if undertaking the surveys during this time period is acceptable?

If we don't hear from you then we'll assume it's okay to proceed.

Kind regards,

Vanessa Blackburn
Transport Planner
Prime Transport Planning

DD: +44 (0)151 728 1860

www.primetp.co.uk



From: Vanessa Blackburn
Sent: 30 April 2021 13:23
To: 'Jones, Kenneth' <kenneth.jones@knowsley.gov.uk>
Subject: RE: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

Afternoon ken,

Many thanks for your response. Much appreciated.

Kind regards,

Vanessa Blackburn
Transport Planner
Prime Transport Planning

DD: +44 (0)151 728 1860

www.primetp.co.uk



From: Jones, Kenneth <kenneth.jones@knowsley.gov.uk>
Sent: 30 April 2021 12:58
To: Vanessa Blackburn <V.Blackburn@primetp.co.uk>
Subject: RE: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

Hi Vanessa

It is confirmed that the revised parking space allocation would be acceptable.

Ken Jones

Principal Engineer
Highways and Transportation

Tel: 0151 443 2231 Mobile: 07970 486184 Email: kenneth.jones@knowsley.gov.uk
Knowsley Council | Yorkon Buildings | Archway Road | Huyton | L36 9YU

From: Vanessa Blackburn <V.Blackburn@primetp.co.uk>
Sent: 28 April 2021 12:54
To: Jones, Kenneth <kenneth.jones@knowsley.gov.uk>
Cc: Barry, Maria <Maria.Barry@knowsley.gov.uk>; David Schumacher <D.Schumacher@primetp.co.uk>
Subject: RE: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

Hi Ken/Maria,

We received your formal response with regards to the site off Ormskirk Lane, thank you.

Happy with everything you've outlined, however I wanted to make you aware that there was an error our end with regards to the building sizes in item 21 which has an impact on parking numbers.
The correct figures are shown in the table:

Building	GFA sqft	GFA sqm	B1	B8:B2 70:30 Split	Proposed
1	70000	6503.2	2.50%	94	110
2	30000	2787.1	5.00%	43	44
3	50000	4645.1	5.00%	71	73
Total	150000	13935.3	-	208	227

Are you able to confirm if these figures are now acceptable?

I look forward to hearing from you.

Kind regards,

Vanessa Blackburn
Transport Planner
Prime Transport Planning

DD: +44 (0)151 728 1860

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From: Jones, Kenneth <kenneth.jones@knowsley.gov.uk>
Sent: 21 April 2021 13:36
To: Vanessa Blackburn <V.Blackburn@primetp.co.uk>
Subject: FW: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

Hi Vanessa

Just to let you know. I have responded formally on behalf of highways DC, to the planning officer Andrew Hunt. It is expected that he will contact you shortly.

Ken Jones

Principle Engineer
Highways and Transportation

From: Barry, Maria <Maria.Barry@knowsley.gov.uk>
Sent: 31 March 2021 12:06
To: Jones, Kenneth <kenneth.jones@knowsley.gov.uk>
Subject: FW: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

Hi Ken

Can you have a look at this pre-app when you get a chance?

Happy to discuss as necessary.

Regards

Maria Barry
Lead Engineer
MDT & DC
Highways and Transportation

Tel: (0151)- 443 2349 Mob: 07384 900841
Email: maria.barry@knowsley.gov.uk
Knowsley Council | Yorkon Buildings | Archway Road | Huyton | L36 9YU

From: Vanessa Blackburn <V.Blackburn@primetp.co.uk>
Sent: 31 March 2021 10:40
To: Barry, Maria <Maria.Barry@knowsley.gov.uk>
Cc: Jones, Kenneth <kenneth.jones@knowsley.gov.uk>; Blackburn, Andrew <Andrew.Blackburn@knowsley.gov.uk>
Subject: RE: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

Morning Maria,

I hope you're well.

Further to my email back in December, a formal pre-app was submitted a few weeks ago in relation to the site off Ormskirk Road (reference 21/00015/PREAPP).

I therefore wondered if you or a colleague were in a position to provide any comment on the scoping note and plans submitted? In particular it would be useful to know if the trip rates were agreeable.

I look forward to hearing from you.

Kind regards,

Vanessa Blackburn
Transport Planner
Prime Transport Planning

DD: +44 (0)151 728 1860

From: Barry, Maria <Maria.Barry@knowsley.gov.uk>

Sent: 08 December 2020 15:10

To: Vanessa Blackburn <V.Blackburn@primetp.co.uk>; Blackburn, Andrew <Andrew.Blackburn@knowsley.gov.uk>

Cc: david.baker@caddickgroup.co.uk; David Schumacher <D.Schumacher@primetp.co.uk>

Subject: RE: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

Hi Vanessa

Please can you submit your request to the Planning Department as a formal pre-application.

Many thanks.

Regards

Maria Barry
Lead Engineer
MDT & DC
Highways and Transportation

Tel: (0151)- 443 2349 Mob: 07384 900841

Email: maria.barry@knowsley.gov.uk

Knowsley Council | Yorkon Buildings | Archway Road | Huyton | L36 9YU

From: Vanessa Blackburn <V.Blackburn@primetp.co.uk>

Sent: 08 December 2020 15:14

To: Blackburn, Andrew <Andrew.Blackburn@knowsley.gov.uk>; Barry, Maria <Maria.Barry@knowsley.gov.uk>

Cc: david.baker@caddickgroup.co.uk; David Schumacher <D.Schumacher@primetp.co.uk>

Subject: External Mail: B1/B2/B8 development, Knowsley Lane, Knowsley - Scoping Request

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Afternoon Andrew/ Maria,

I hope you're both keeping well.

Your colleague, Jon Parry has forwarded your email addresses on to us as we have recently been appointed to provide a Transport Assessment to accompany an outline planning application for the delivery of mixed B1/ B2/ B8 units on land to the north of Knowsley Lane, Knowsley.

We would be grateful for your response and comments on the attached scoping note in relation to the application.

Would it be possible to provide an indication of timescales for a scoping response please?

Many thanks and kind regards,

Vanessa

Vanessa Blackburn
Transport Planner

DD: +44 (0)151 728 1860

9 Hurricane Court, Liverpool International Business Park

Vanessa Blackburn

From: Morley, Anthony <Anthony.Morley@knowsley.gov.uk>
Sent: 24 March 2022 15:58
To: Vanessa Blackburn
Cc: Dave Schumacher
Subject: RE: External Mail: Knowsley Lane/ Ormskirk Rd_scoping

Afternoon,

Yes that drawing looks much better than what I saw previously!

If those two junctions were agreed at pre app then I am ok with honouring that. I do need to caveat though, by saying I could ask for more if I feel it necessary,

Regarding the TRO Fee (£6.5k) + cost of install + commuted sums for signage
[Licences and permits for highways | Knowsley Council](#)

The applicant could carry out the works themselves as part of the s278 agreement which could save them some money. The TRO would still be required on both lanes (noting that the TRO fee is set and is the same regardless of length). There is an existing PRoW which comes out onto Knowsley Lane and this access is proposed to be improved in line with the scheme. This improvement could encourage staff to park on the lane to walk through to the site.

My initial thoughts for the shared footway / cycleway was for it to start in roughly the same location of the bus stop (the same approx. start for the deceleration lane) and for it to run along Ormskirk Road and through the site, to come out at the existing PRoW point onto Knowsley Lane. The council land was ultimately reserved for this use in the first place, and is something we want to see.

I know you mentioned your potential concerns for the bus stop being incorporated into the deceleration lane. I have said to the planners that I will be seeking a stage 1 RSA for any proposals which come forward. Merseytravel would also be consulted with the proposal,

Best Regards,

Anthony Morley
Principal Engineer
Highways and Capital Delivery

Telephone: 0151 443 5030
Mobile: 07385 347627

Knowsley Council, Nutgrove Building - Second Floor, Westmorland Road, Huyton, Knowsley,



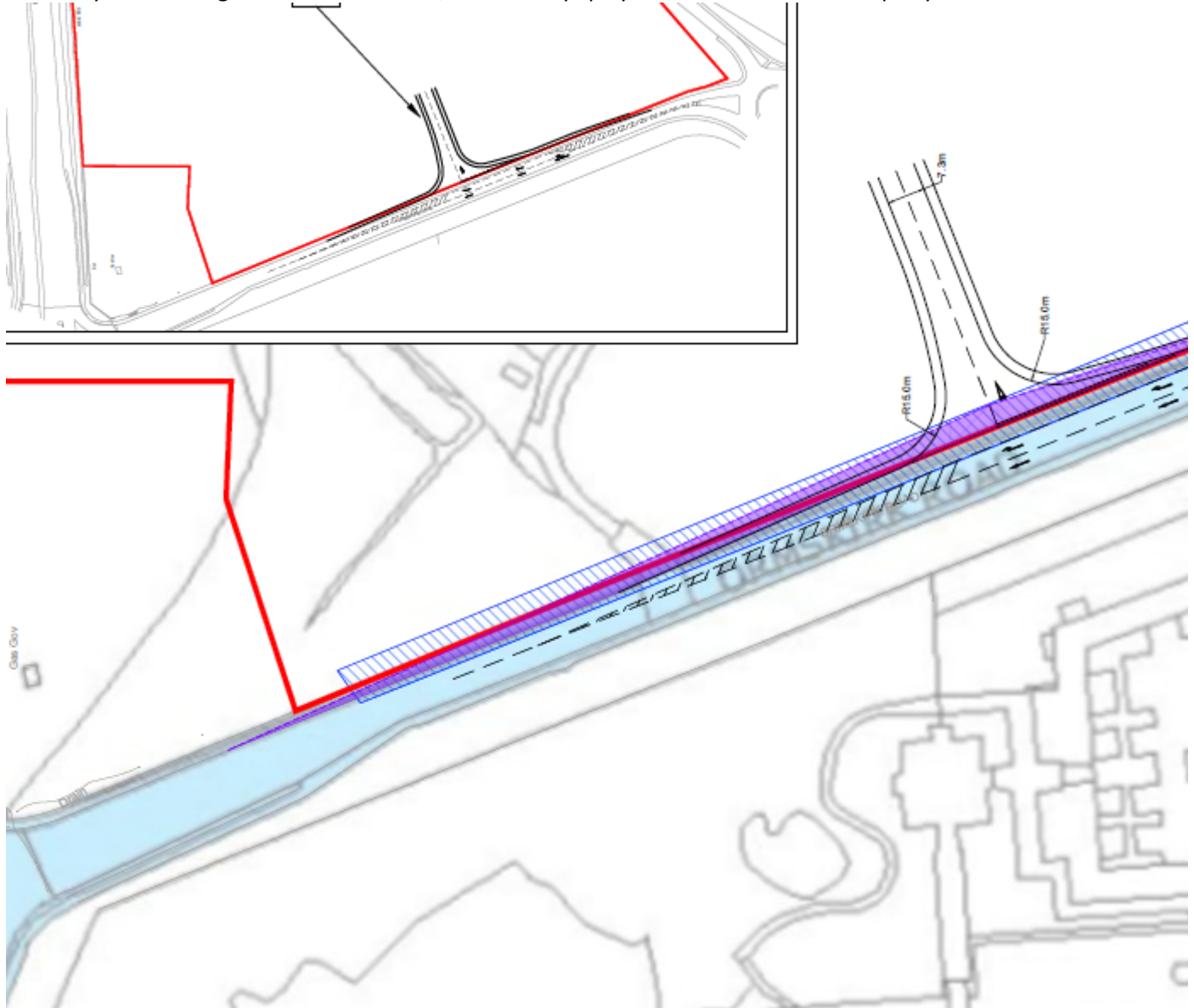
From: Vanessa Blackburn <v.blackburn@primetp.co.uk>
Sent: 24 March 2022 15:06
To: Morley, Anthony <Anthony.Morley@knowsley.gov.uk>
Cc: Dave Schumacher <d.schumacher@primetp.co.uk>
Subject: RE: External Mail: Knowsley Lane/ Ormskirk Rd_scoping

Hi Anthony,

Thanks for your quick response and time on the phone before.

As discussed, I will be checking the parking figures with the client but will take your suggestions into consideration.

With regards to the visibility, the image below shows a snapshot of our current access proposals with the highway boundary shown in light blue. As discussed, the visibility splay does not cross the third party land.



With regards to the request for a deceleration lane, you suggested that a left turn lane would still be required even with a reduction in the speed limit, however you mentioned that a planning application cannot be based on the outcome of a TRO. I will therefore discuss the various options with our client.

As discussed, an assessment of the B5202 Roundabout to the south and the A5080 signals to the north has been undertaken, and not the priority left turn only lane onto the A5080 to the east, given this is what was agreed at the previous pre-app. I trust this is acceptable?

Could you confirm if the double yellows on Ormskirk Road and Knowsley Lane would still be required if the applicant can meet the 75% B2 parking provision? Particularly on Knowsley Lane given the distance from the site access and low traffic flows?

As discussed, if you could send over some ballpark figures for TROs it would be useful.

Lastly, and something I forgot to pick up on the phone call, with regards to the cycleway on Ormskirk Road, is this a must? Given that the applicant is unable to provide the full connection to the north due to third party land?

If you're able to chase on the signal specs and issue the committed developments if you haven't already done so that would be really appreciated.

Speak soon

Kind regards,

Vanessa Blackburn
Senior Transport Planner
Prime Transport Planning

DD: +44 (0)151 728 1861

M: +44(0) 7904 382278

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From: Morley, Anthony <Anthony.Morley@knowsley.gov.uk>
Sent: 24 March 2022 09:17
To: Vanessa Blackburn <v.blackburn@primetp.co.uk>
Cc: Dave Schumacher <d.schumacher@primetp.co.uk>
Subject: RE: External Mail: Knowsley Lane/ Ormskirk Rd_scoping

Morning Vanessa,

Given the nature of the site I will be seeking a TRO in the form of double yellow lines for both Ormskirk Road and Knowsley Lane.

In the meeting I considered the parking on a worst case assessment of 100% B2 (1 space per 45sqm). I do acknowledge that our parking standards are maximums, however I will be seeking a 75% provision. I informed the applicant of this, and they seemed amenable to providing the small increase in parking I was after, i.e Building 1 (73,500sqft) 100 spaces proposed = 66% of provision – in accordance to standards (1 / 45sqm) an additional 14 spaces is required

If Maria / Ken approved the TRICs assessment highlighted in your scoping note then I am happy to honour that.

I reviewed the visibility drawing which highlighted the 160m splay. The splay will need to be provided entirely within either the applicants land ownership, existing highway boundary or potential future highway boundary (i.e the blue hatched council owned land). There appears to be a gap in the council owned land to the north which the splay crosses. To the south the splay crosses into land which is outside of the redline boundary and outside of the highway boundary. I have asked a colleague to double check that points I have highlighted, but please bare this in mind when producing future drawings (it could be the gap to the north is owned by the applicant).

I also advised the applicant that I will be seeking a deceleration lane for the scheme and a shared footway cycle way, to be hopefully be provided within the council owned land available, which we would ultimately adopt through s38. Happy to discuss this further with you as and when the time comes. I will be sending Ben through some committed sites to take into account for any assessments. As a minimum I will want the B5202 Roundabout to the south assessed, the A5080 signals to the north and the priority left turn only lane onto the A5080 to the east. Dependent upon results, more may be required, though what I have asked for is probably the extent of what is necessary.

Best Regards,

Anthony Morley
Principal Engineer

Highways and Capital Delivery

Telephone: 0151 443 5030

Mobile: 07385 347627

Knowsley Council, Nutgrove Building - Second Floor, Westmorland Road, Huyton, Knowsley,



From: Vanessa Blackburn <v.blackburn@primetp.co.uk>

Sent: 23 March 2022 16:37

To: Morley, Anthony <Anthony.Morley@knowsley.gov.uk>

Cc: Dave Schumacher <d.schumacher@primetp.co.uk>

Subject: External Mail: Knowsley Lane/ Ormskirk Rd_scoping

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Hi Ant,

Hope you're okay!

I understand that you had a meeting with the planners/ client on the proposed industrial development at Knowsley Lane last week.

I'm not sure if this has already been forwarded on to you, but please find attached our original scoping note and Knowsley's highways response. You'll note there was an error in GFAs on our original scoping note which affected the parking numbers, therefore this was followed up in an email and a 70:30 B8:B2 parking ratio was previously agreed.

I trust this is therefore still acceptable?

Kind regards,

Vanessa Blackburn
Senior Transport Planner

DD: +44 (0)151 728 1861

M: +44(0) 7904 382278

9 Hurricane Court, Liverpool International Business Park
Estuary Boulevard, Liverpool, L24 8RL

www.primetp.co.uk



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Vanessa Blackburn

From: Morley, Anthony <Anthony.Morley@knowsley.gov.uk>
Sent: 25 March 2022 13:28
To: Vanessa Blackburn
Cc: David Stoddart; Dave Schumacher
Subject: RE: External Mail: RE: InView ID: 1264606 - RE: A580/ Ormskirk Road signalised junction
Attachments: trics.pdf

Afternoon Ness,

I want to see what actually comes of signal spec issue before I consider this further.

Ultimately, it is a large site adjacent to an important junction, some form of assessment is going to be required. I should of mentioned with my other response, that the same as my considerations for parking, I will want a worst case assessment of entirely B2 for trip generation.

I have also checked the response Maria / Ken provided with the scoping response, and it is worded as 'currently accepted'. The TRICs assessment was completed in December 2020 on version 7.7.3, with the original scoping response provided only a few months after. TRICs is now onto revision 7.8.4. I have completed my own quick assessment (19 – 09 date range, edge of town and free standing selected, 5000 to 67459 sqm range) and a more up to date trip rate has been derived.

Given that no formal application has been submitted for this site yet (and I have only been able to review documentation last week) and it is only a small exercise to re-run trics and submit new values, I will ask that up to date values are used. The highest AM and PM rates should be utilised, in conjunction with any surveyed peak flows, in order for a robust assessment to be conducted. I have provided my own TRICs values for ease,

Many thanks,

Anthony Morley
Principal Engineer
Highways and Capitial Delivery

Telephone: 0151 443 5030
Mobile: 07385 347627

Knowsley Council, Nutgrove Building - Second Floor, Westmorland Road, Huyton, Knowsley,



From: Vanessa Blackburn <v.blackburn@primetp.co.uk>
Sent: 25 March 2022 12:34
To: Morley, Anthony <Anthony.Morley@knowsley.gov.uk>
Cc: David Stoddart <D.Stoddart@primetp.co.uk>; Dave Schumacher <d.schumacher@primetp.co.uk>
Subject: External Mail: RE: InView ID: 1264606 - RE: A580/ Ormskirk Road signalised junction

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Afternoon Ant,

Further to Kirsty's email, it appears as though Knowsley Council/ Siemens don't currently have the correct controller specs for the East Lancs/ Knowsley Lane signalised junction, which as Dave has already mentioned in his reply will make undertaking a reliable capacity assessment at the junction difficult.

Furthermore, the trips the site is sending through this particular junction is only circa 20 trips in both peak hours. It's also worth noting that only circa 10 trips are going through the roundabout to the south.

On this basis we conclude that capacity assessments of either junction are not warranted.

I trust this is acceptable?

Kind regards,

Vanessa Blackburn
Senior Transport Planner
Prime Transport Planning

DD: +44 (0)151 728 1861

M: +44(0) 7904 382278

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From: Morris, Kirsty <Kirsty.Morris@knowsley.gov.uk>

Sent: 25 March 2022 12:12

To: David Stoddart <D.Stoddart@primetp.co.uk>

Cc: Morley, Anthony <Anthony.Morley@knowsley.gov.uk>; Vanessa Blackburn <v.blackburn@primetp.co.uk>; its.service.mobility@yunextraffic.com

Subject: RE: InView ID: 1264606 - RE: A580/ Ormskirk Road signalised junction

Hi, consultancy team at Yunex have been asked about this, as all data on their system, InView, was provided; they may have more information – otherwise may need to get someone to go to site (which will be chargeable to requester). Matt has asked Jonny, regarding whether there is a copy of the actual doc as again it does not show in their system, InView.

Kind regards,

Kirsty Morris
Interim Street Lighting and Traffic Signals Contract Manager
Street Lighting Private Finance Initiative Contract

Telephone: 0151 443 4862

Mobile: 07881267599

Knowsley Council, Stretton Way Depot, Stretton Way, Huyton, Knowsley, L36 6JF



From: David Stoddart <D.Stoddart@primetp.co.uk>

Sent: 25 March 2022 10:37

To: Morris, Kirsty <Kirsty.Morris@knowsley.gov.uk>

Cc: Morley, Anthony <Anthony.Morley@knowsley.gov.uk>; Vanessa Blackburn <v.blackburn@primetp.co.uk>
Subject: External Mail: RE: InView ID: 1264606 - RE: A580/ Ormskirk Road signalised junction

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Thanks Kirsty,

We could really do with the other pages of the up-to-date controller specs, rather than just the front cover they previously provided a photograph of.

Many thanks

Dave

David Stoddart
Associate Director
Prime Transport Planning

DD: +44 (0)151 728 1864 M: +44(0) 7944 446528

www.primetp.co.uk



From: Morris, Kirsty <Kirsty.Morris@knowsley.gov.uk>
Sent: 25 March 2022 10:32
To: David Stoddart <D.Stoddart@primetp.co.uk>
Cc: Morley, Anthony <Anthony.Morley@knowsley.gov.uk>; Vanessa Blackburn <v.blackburn@primetp.co.uk>
Subject: RE: InView ID: 1264606 - RE: A580/ Ormskirk Road signalised junction

Hi, this information request is sent to Yunex (formerly known as Siemens) and they respond accordingly with the information they have so I am assuming this is everything however I will forward on your query for them to look into.

Kind regards,

Kirsty Morris
Interim Street Lighting and Traffic Signals Contract Manager
Street Lighting Private Finance Initiative Contract

Telephone: 0151 443 4862
Mobile: 07881267599

Knowsley Council, Stretton Way Depot, Stretton Way, Huyton, Knowsley, L36 6JF



From: David Stoddart <D.Stoddart@primetp.co.uk>
Sent: 22 March 2022 18:30
To: Traffic Signals <Traffic.Signals@knowsley.gov.uk>
Cc: Vanessa Blackburn <v.blackburn@primetp.co.uk>
Subject: External Mail: RE: InView ID: 1264606 - RE: A580/ Ormskirk Road signalised junction

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Hi,

Your department provided my colleague Vanessa with the controller specs and additional information for the above junction in October last year.

Unfortunately it looks like most of the information dates back to 2005 prior to the upgrade in around 2015 when the third A580 eastbound exit lane was lost to provide a second right turn lane from A580 westbound to Coopers Lane, and the Ormskirk Road right turn was separated from the A580 eastbound ahead movement.

Do you have the updated controller specs which match the current arrangement. The attached photo of the front page of the specs (attached) was provided, but we could do with the whole document if possible? I'm particularly keen to know what changes were made to the phasing and staging as part of the upgrade. I note the attached recent timing include a Stage Z, would this be the right turn from the A580 to Ormskirk Road?

Kind regards

Dave

David Stoddart
Associate Director
Prime Transport Planning

DD: +44 (0)151 728 1864 M: +44(0) 7944 446528



www.primetp.co.uk

From: Morris, Kirsty <Kirsty.Morris@knowsley.gov.uk>
Sent: 01 October 2021 16:34
To: Vanessa Blackburn <v.blackburn@primetp.co.uk>
Cc: Vose, Sarah <Sarah.Vose@knowsley.gov.uk>; Dave Schumacher <d.schumacher@primetp.co.uk>
Subject: RE: InView ID: 1264606 - RE: A580/ Ormskirk Road signalised junction

Hi Vanessa, please find attached the information Yunex (Siemens) have provided. The method of control is **Running MOVA**.

Hope this is everything?

Kind regards,

Kirsty Morris
Technical Support Officer, Highways Contracts
0151 443 4862 Knowsley Council, Stretton Way, Huyton L36 6JF

Please consider the environment before printing this email

From: Vanessa Blackburn <v.blackburn@primetp.co.uk>
Sent: 27 September 2021 11:43
To: Traffic Signals <Traffic.Signals@knowsley.gov.uk>
Subject: External Mail: A580/ Ormskirk Road signalised junction

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Hi,

We'll be undertaking some modelling work of the East Lancs/ Ormskirk Road signalised junction in relation to a planning application for a site close by, and therefore wondered if it was possible if Knowsley are able to provide the following information:

- controller specs;
- a plan showing the as built layout;
- details of the method of control e.g. MOVA;
- details of any proposed upgrades;
- is it also possible to undertake a data capture of the stage times for a given date?

Any assistance you're able provide on the points above would be greatly appreciated.

Kind regards,



Vanessa Blackburn
Transport Planner

DD: +44 (0)151 728 1861

M: +44(0) 7904 382278

9 Hurricane Court, Liverpool International Business Park



Estuary Boulevard, Liverpool, L24 8RL



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APPENDIX B

TRAFFIC FLOW DIAGRAMS

Traffic Flow Diagrams			
Reference	Scenario	Peak	Derivation
1	Traffic Flow Diagram 1 - Observed Flows	AM	Raw Data
2	Traffic Flow Diagram 2 - Observed Flows	PM	Raw Data
3	Traffic Flow Diagram 3 - 2021 Baseline Flows	AM	1*18-21 Factor
4	Traffic Flow Diagram 4 - 2021 Baseline Flows	PM	2*18-21 Factor
5	Traffic Flow Diagram 5 - 2027 Baseline Flows	AM	3*TEMPPro
6	Traffic Flow Diagram 6 - 2027 Baseline Flows	PM	4*TEMPPro
7	Traffic Flow Diagram 7 - Committed Development Flows	AM	20/00124/FUL
8	Traffic Flow Diagram 8 - Committed Development Flows	PM	20/00124/FUL
9	Traffic Flow Diagram 9 - 2027 Without Development Flows	AM	5+7
10	Traffic Flow Diagram 10 - 2027 Without Development Flows	PM	6+8
11	Traffic Flow Diagram 11 - Development Traffic Distribution	Both	MTW Census
12	Traffic Flow Diagram 12 - Development Flows	AM	11*TRICS
13	Traffic Flow Diagram 13 - Development Flows	PM	11*TRICS
14	Traffic Flow Diagram 14 - 2027 With Development Flows	AM	5+9
15	Traffic Flow Diagram 15 - 2027 With Development Flows	PM	6+10
16	Traffic Flow Diagram 16 - Development Flows (B2 100%)	AM	11*TRICS
17	Traffic Flow Diagram 17 - Development Flows (B2 100%)	PM	11*TRICS
18	Traffic Flow Diagram 18 - 2027 With Development Flows (B2 100%)	AM	9+16
19	Traffic Flow Diagram 19 - 2027 With Development Flows (B2 100%)	PM	10+17

Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 1 - Observed Flows
Peak AM

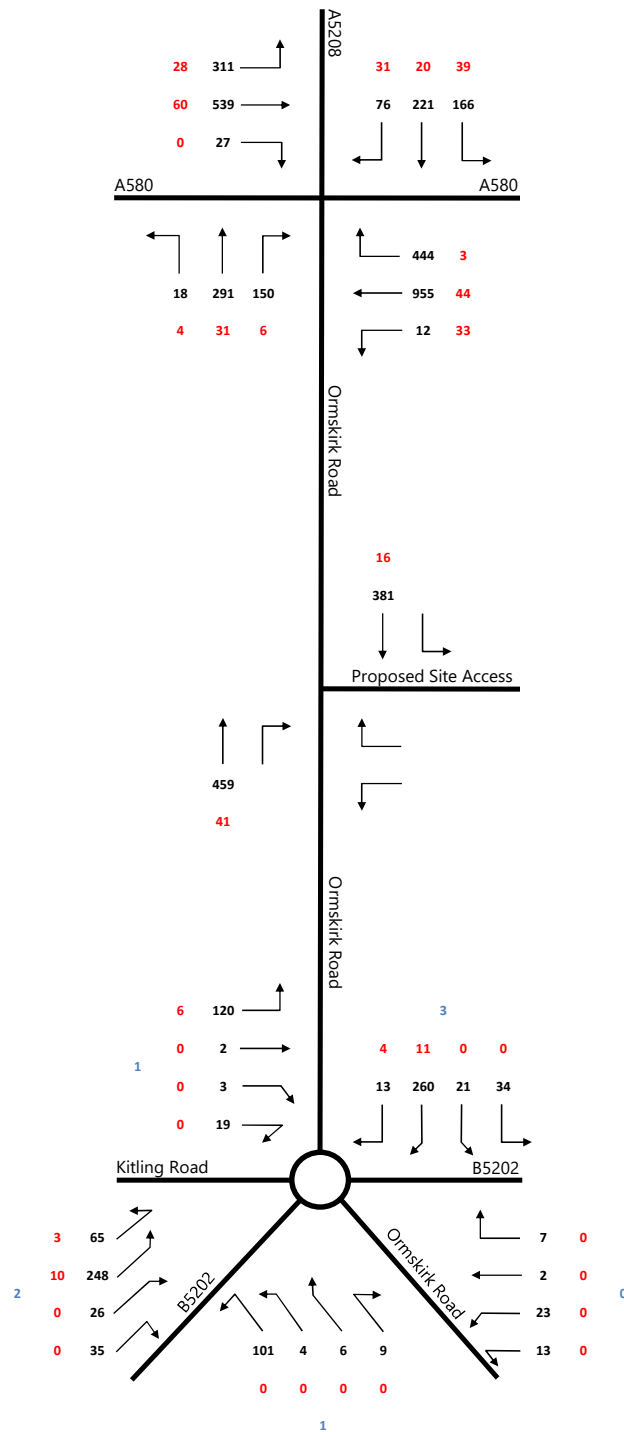
Notes: All flows are in vehicles
Light Vehicles (cars & LGVs) in black

Heavy Vehicles (HGVs & buses) in red

Observed queues in blue

Traffic flows at A580/A5208 junction are from 2018 provided by KMBC

Traffic flows at Ormskirk Road/B5202/Kitling Road junction are from 2021 provided by third party company



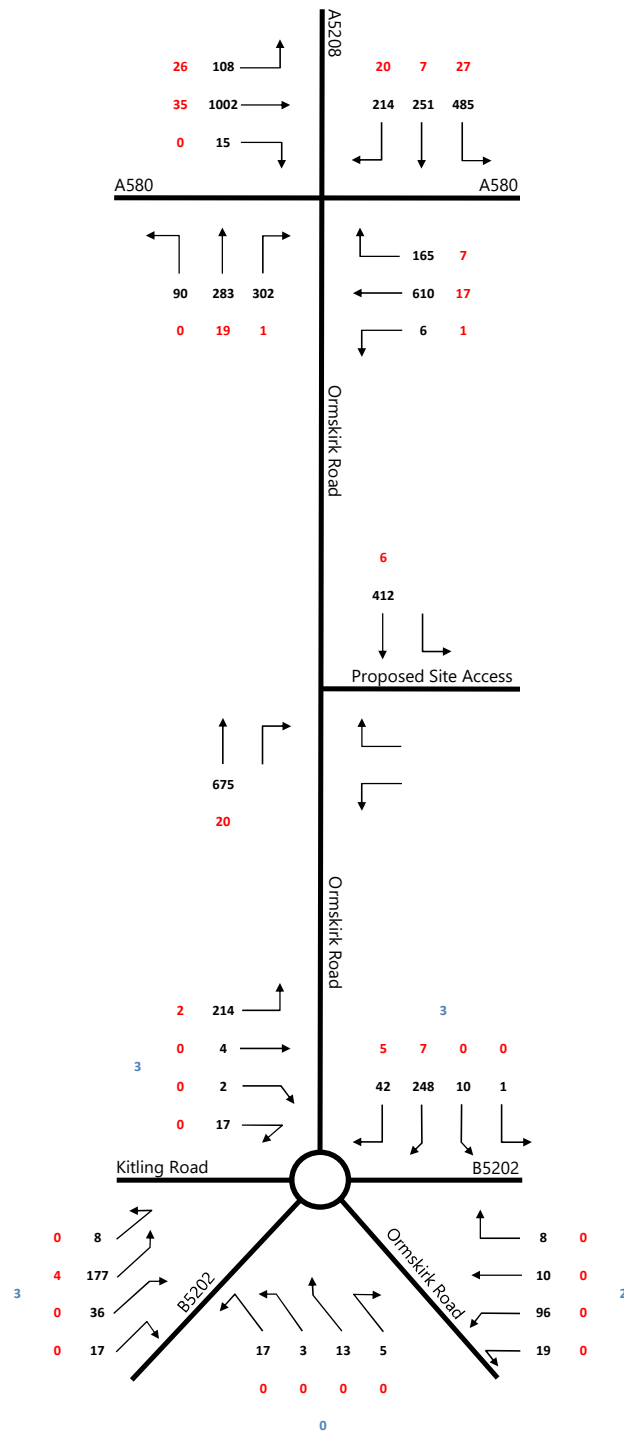
Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 2 - Observed Flows
Peak PM

Notes: All flows are in vehicles
Light Vehicles (cars & LGVs) in black
Heavy Vehicles (HGVs & buses) in red

Observed queues in blue

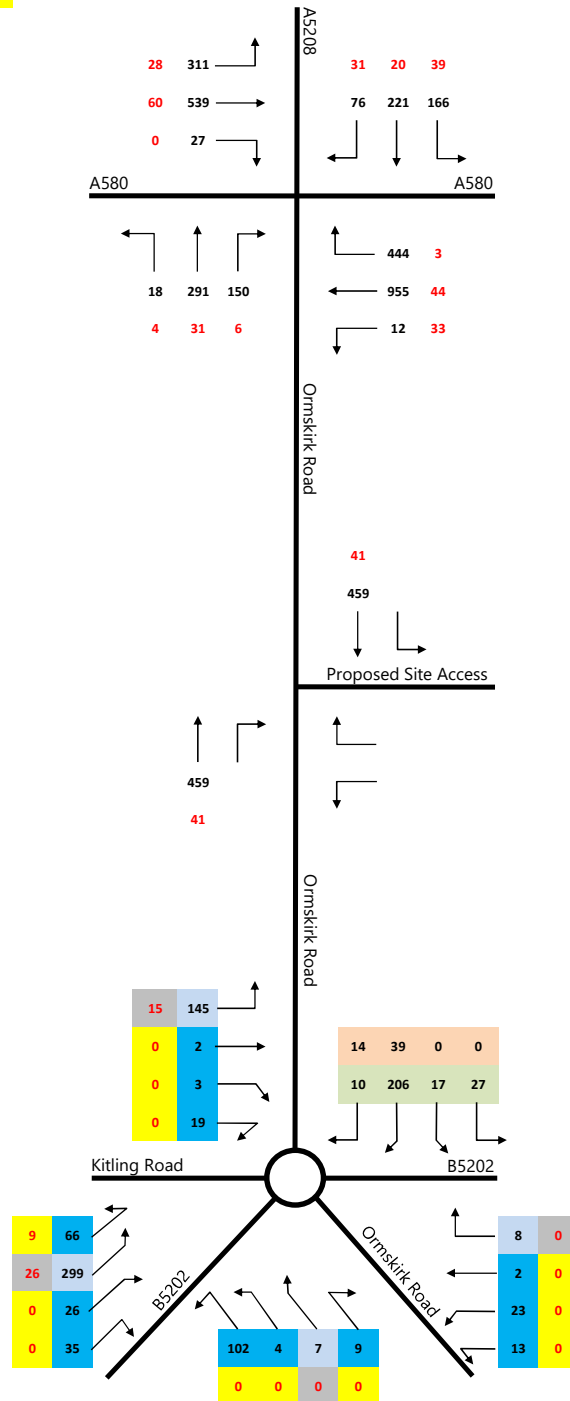
Traffic flows at A580/A5208 junction are from 2018 provided by KMBC

Traffic flows at Ormskirk Road/B5202/Kitling Road junction are from 2021 provided by third party company



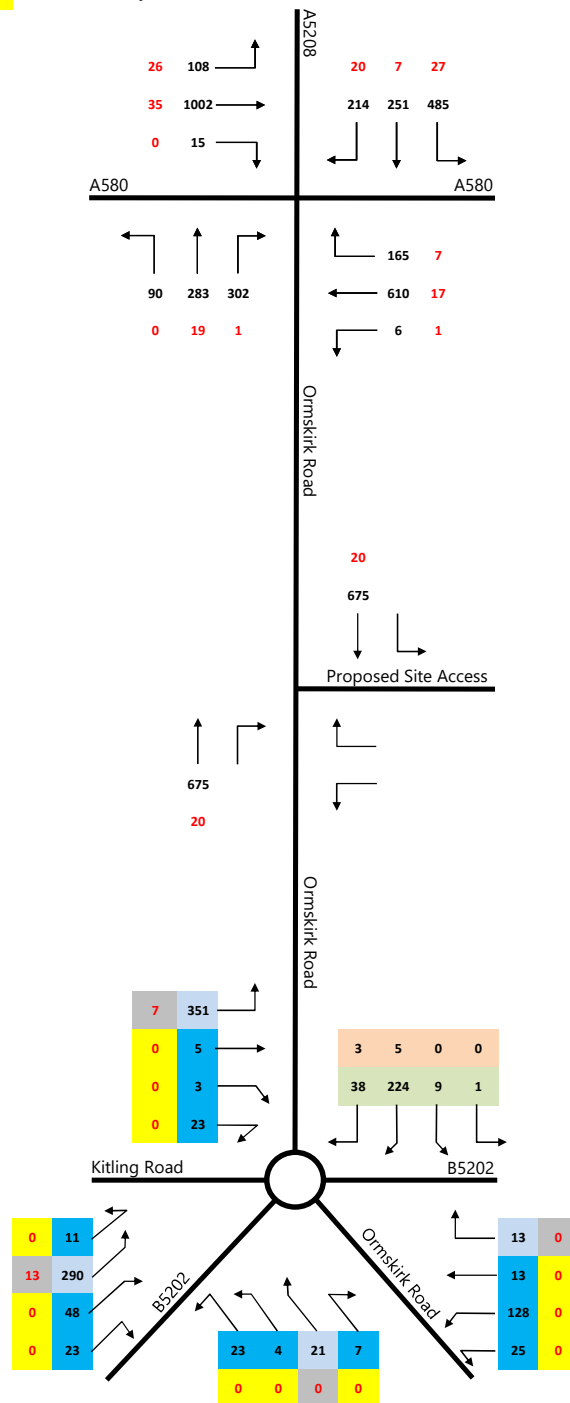
Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 3 - 2021 Baseline Flows
Peak: AM
Notes: Light Vehicles (cars & LGVs) in black
 Heavy Vehicles (HGVs & buses) in red

- 18-21 Northbound Flow Factor - Lights
- 18-21 Northbound Flow Factor - Heavies
- 18-21 Southbound Flow Factor - Lights
- 18-21 Southbound Flow Factor - Heavies
- 18-21 Two-Way Flow Factor - Lights
- 18-21 Two-Way Flow Factor - Heavies



Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 4 - 2021 Baseline Flows
Peak: PM
Notes: Light Vehicles (cars & LGVs) in black
 Heavy Vehicles (HGVs & buses) in red

- 18-21 Northbound Flow Factor - Lights
- 18-21 Northbound Flow Factor - Heavies
- 18-21 Southbound Flow Factor - Lights
- 18-21 Southbound Flow Factor - Heavies
- 18-21 Two-Way Flow Factor - Lights
- 18-21 Two-Way Flow Factor - Heavies

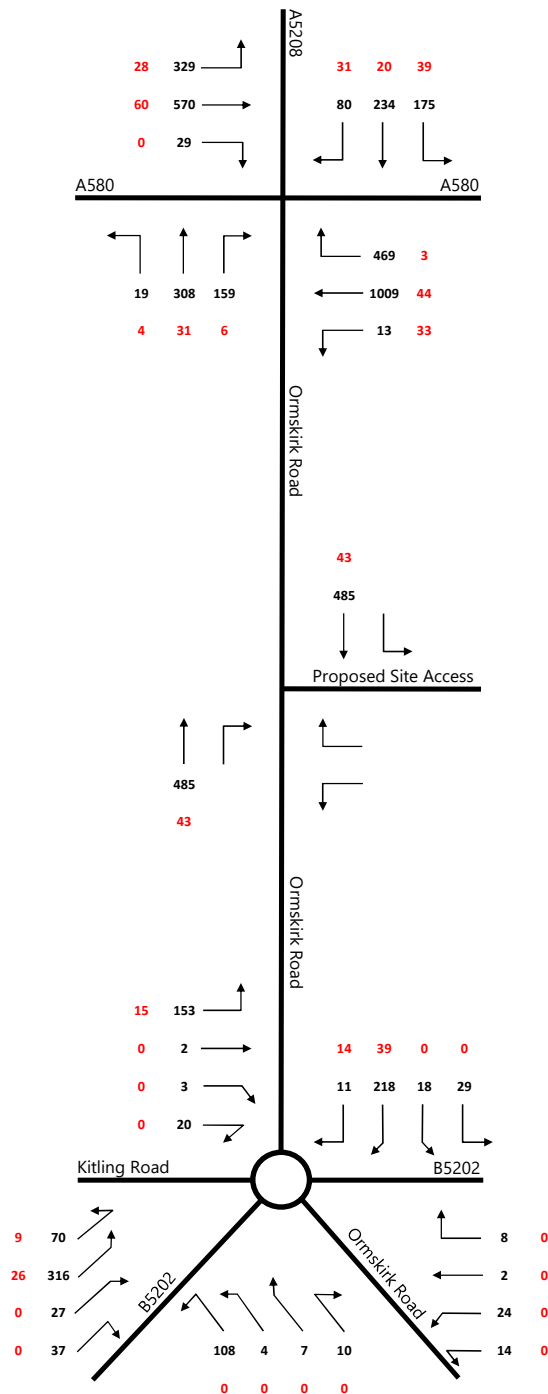


Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 5 - 2027 Baseline Flows
Peak AM
Notes: All flows are in vehicles

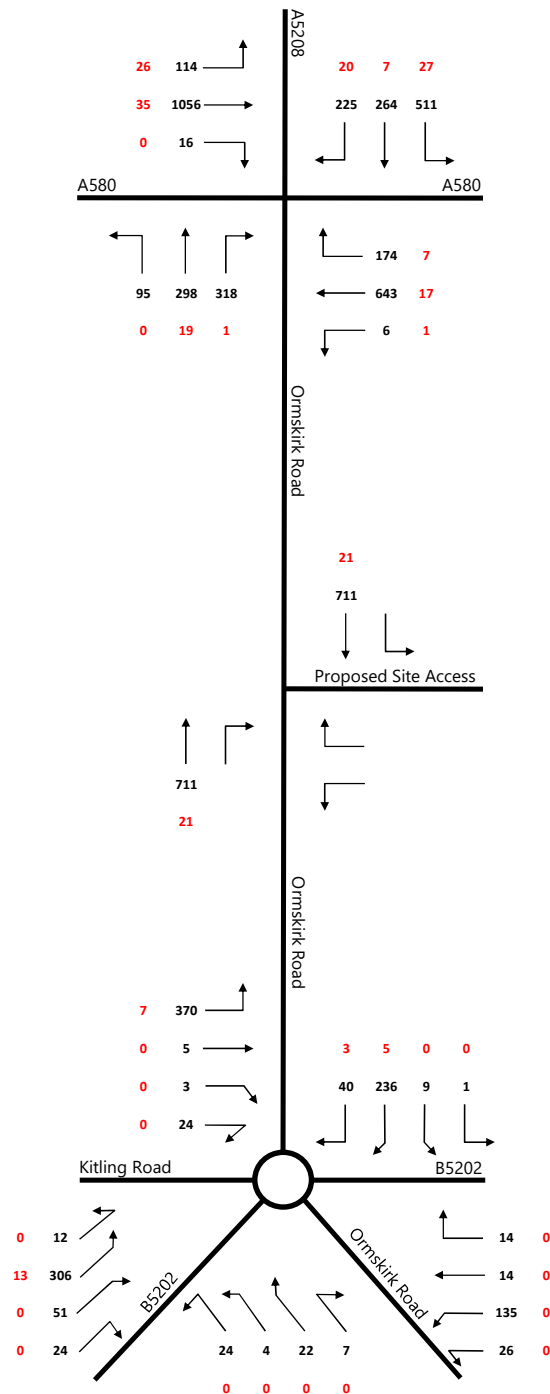
Light Vehicles (cars & LGVs) in black

Heavy Vehicles (HGVs & buses) in red

FACTOR HEAVIES BY RTF I.E. 1.0



Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 6 - 2027 Baseline Flows
Peak PM
Notes: All flows are in vehicles
 Light Vehicles (cars & LGVs) in black
 Heavy Vehicles (HGVs & buses) in red
 FACTOR HEAVIES BY RTF I.E. 1.0



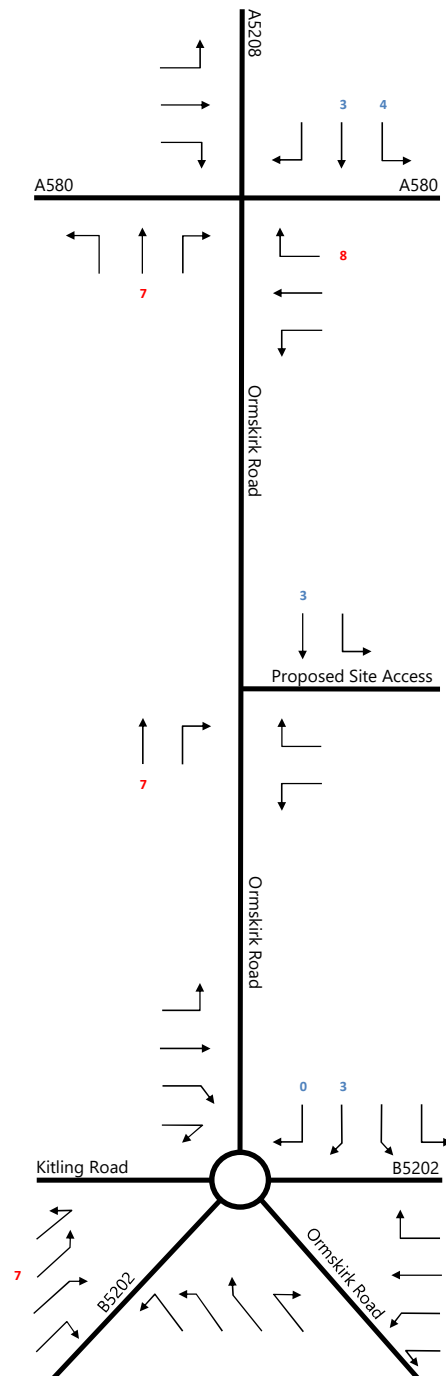
Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 7 - Committed Development Flows
Peak AM
Notes: Arrivals
Departures

App no. 20/00124/FUL

Land off Marl Road - Erection of B8 Warehouse (77,637 sqm GIA)

Traffic flows distributed in accordance with 2011 Census MTW distribution presented in Traffic Flow Diagram 9

All flows are in PCUs



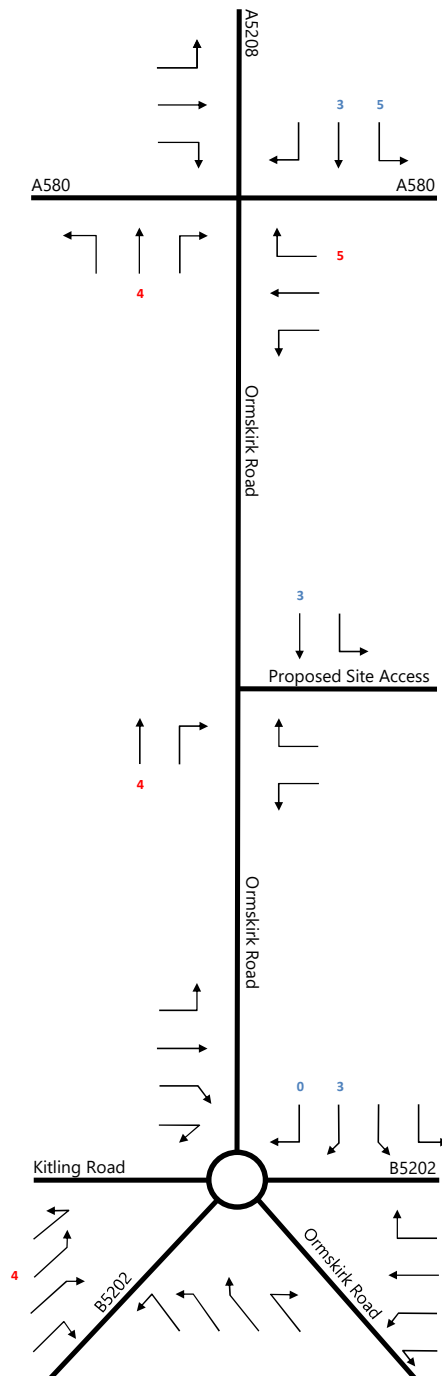
Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 8 - Committed Development Flows
Peak PM
Notes: Arrivals
Departures

App no. 20/00124/FUL

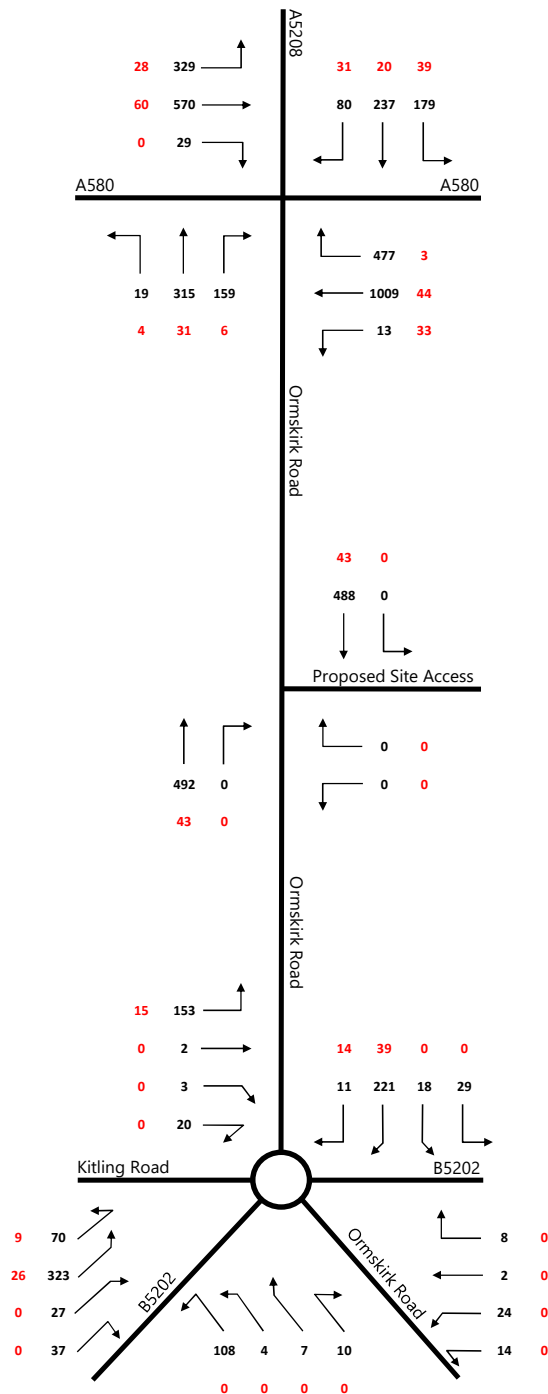
Land off Marl Road - Erection of B8 Warehouse (77,637 sqm GIA)

Traffic flows distributed in accordance with 2011 Census MTW distribution presented in Traffic Flow Diagram 9

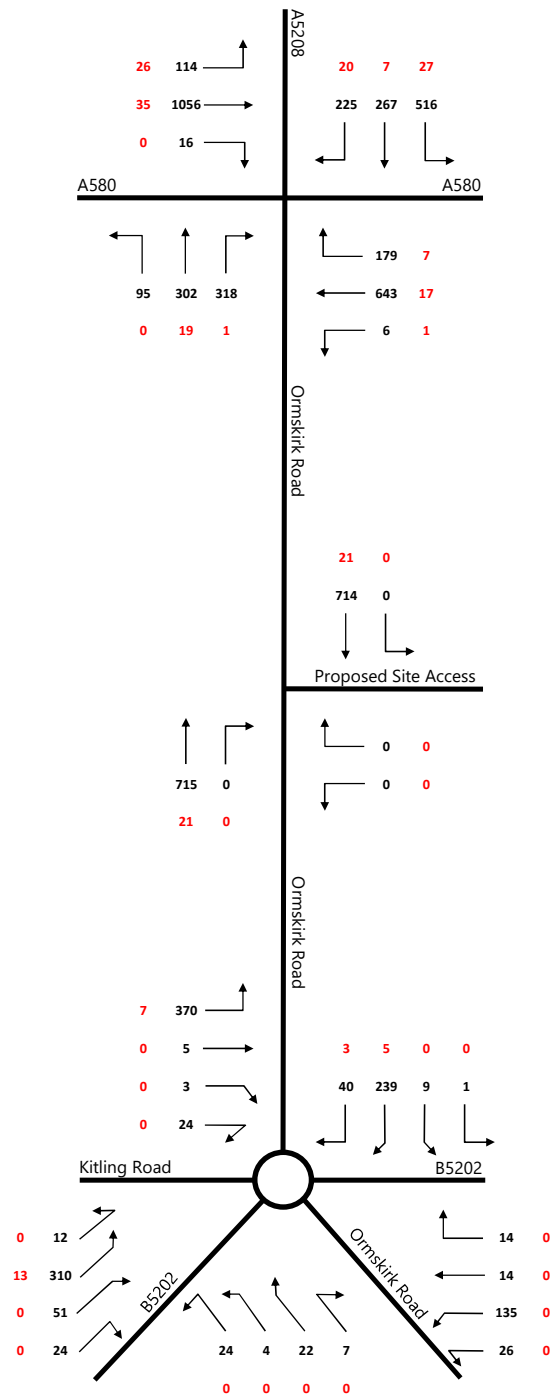
All flows are in PCUs



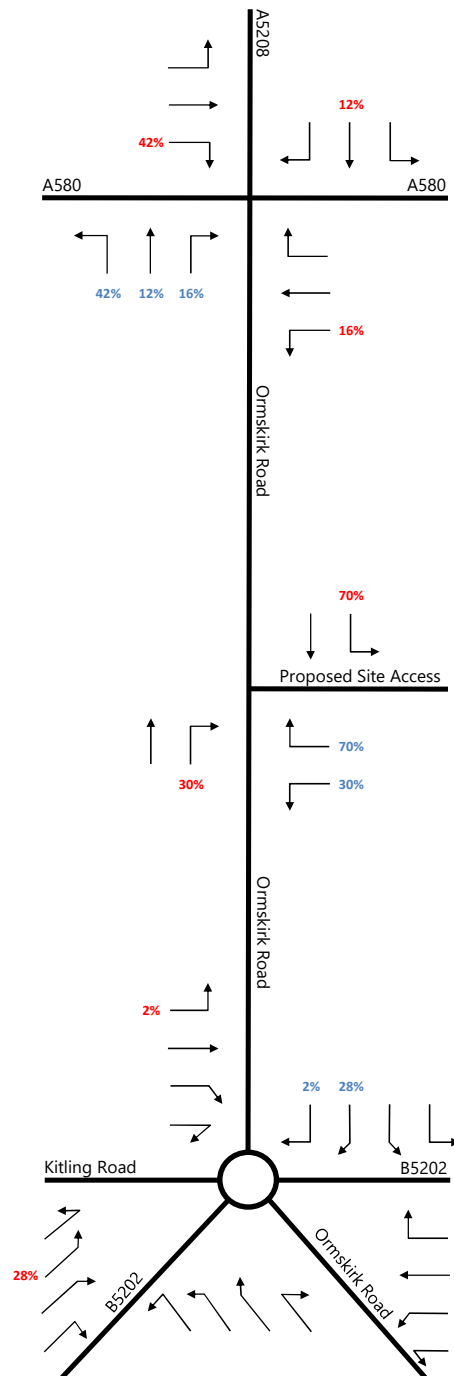
Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 9 - 2027 Without Development Flows
Peak AM
Notes: All flows are in vehicles
 Light Vehicles (cars & LGVs) in black
 Heavy Vehicles (HGVs & buses) in red



Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 10 - 2027 Without Development Flows
Peak PM
Notes: All flows are in vehicles
 Light Vehicles (cars & LGVs) in black
 Heavy Vehicles (HGVs & buses) in red

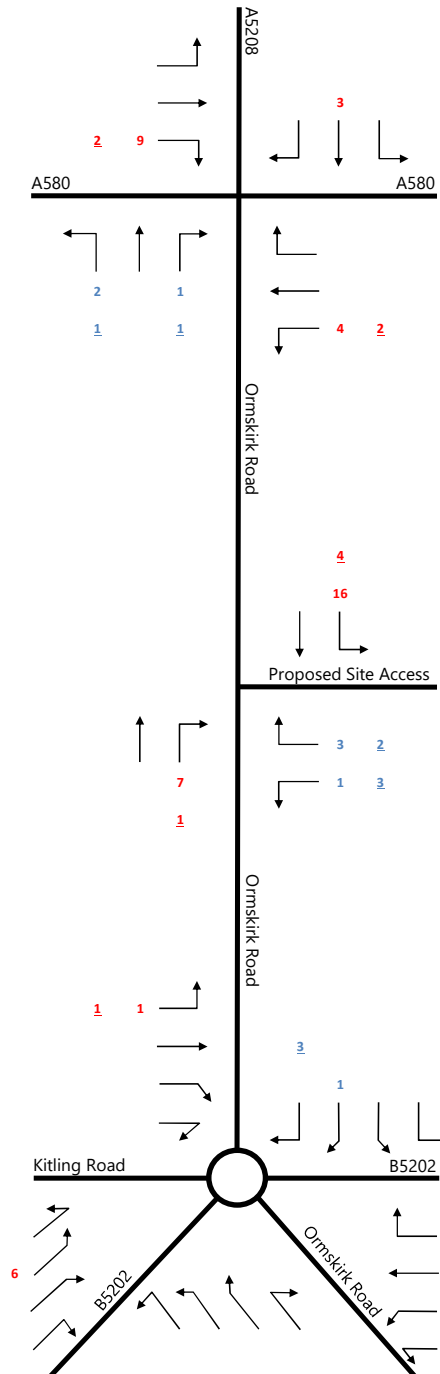


Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 11 - Development Traffic Distribution
Peak: Both
Notes: Based on 2011 Census MTW for local MSOA
Arrivals in red
Departures in Blue



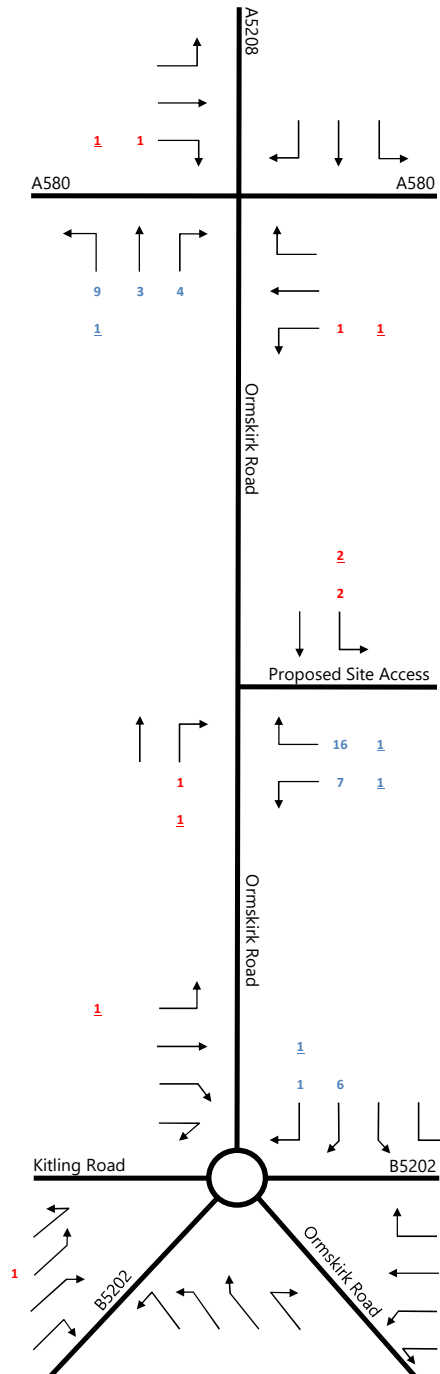
Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 12 - Development Flows
Peak AM
Notes: Normal = Light Vehicles & Underline = Heavy Vehicles

Arrivals 23 5
 Departures 4 5

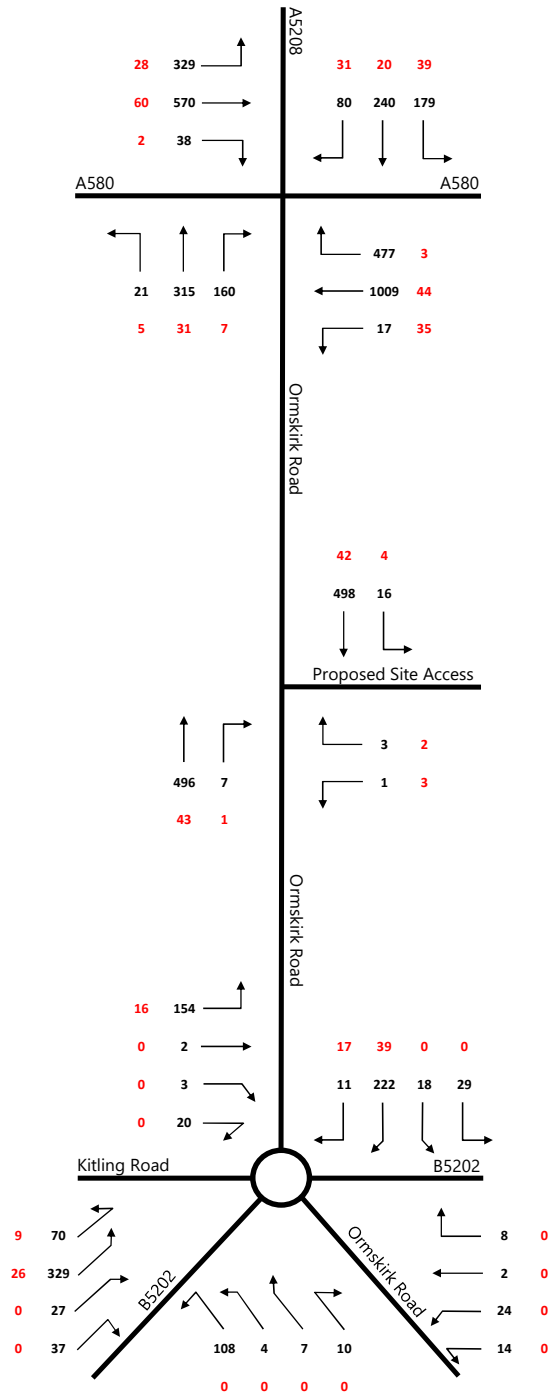


Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 13 - Development Flows
Peak PM
Notes: Normal = Light Vehicles & Underline = Heavy Vehicles

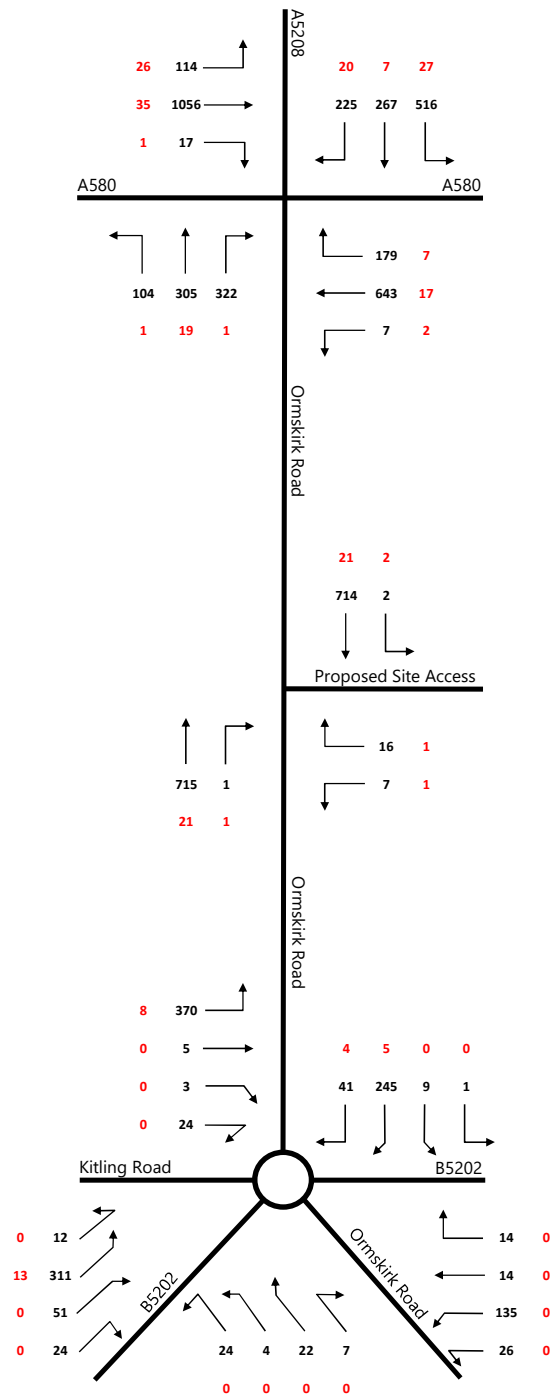
Arrivals 3 3
 Departures 23 2



Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 14 - 2027 With Development Flows
Peak AM
Notes: All flows are in vehicles
 Light Vehicles (cars & LGVs) in black
 Heavy Vehicles (HGVs & buses) in red

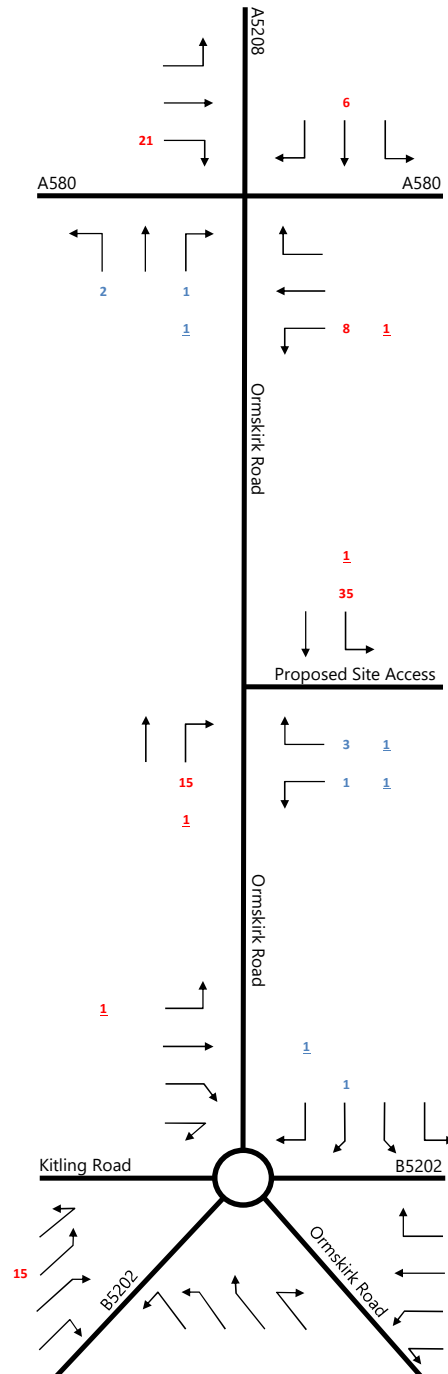


Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 15 - 2027 With Development Flows
Peak PM
Notes: All flows are in vehicles
 Light Vehicles (cars & LGVs) in black
 Heavy Vehicles (HGVs & buses) in red



Arrivals	50	<u>2</u>
Departures	4	<u>2</u>

B2 100% SENSITIVITY TEST

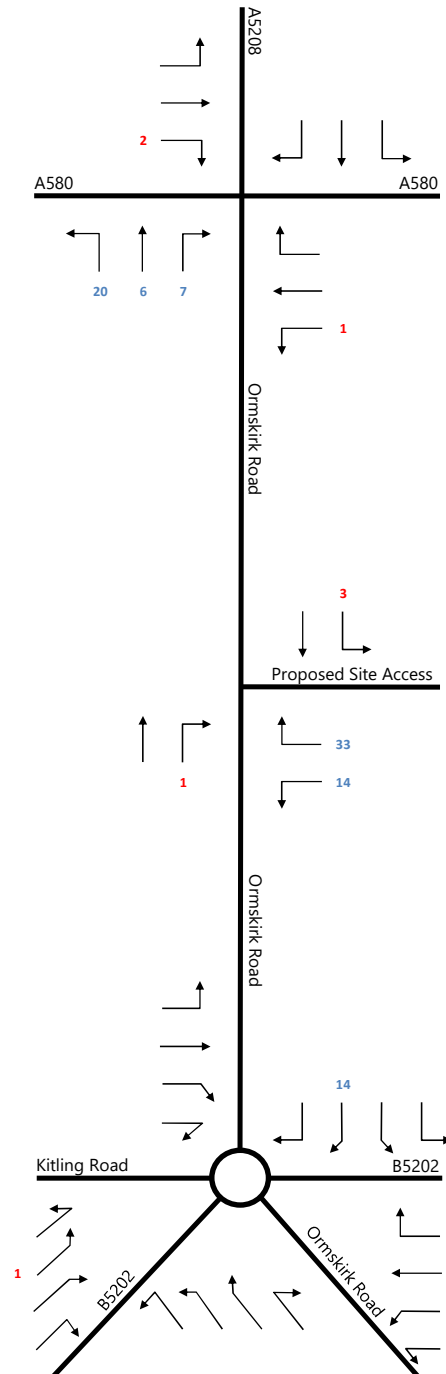


Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 17 - Development Flows (B2 100%)
Peak PM
Notes: Normal = Light Vehicles & Underline = Heavy Vehicles

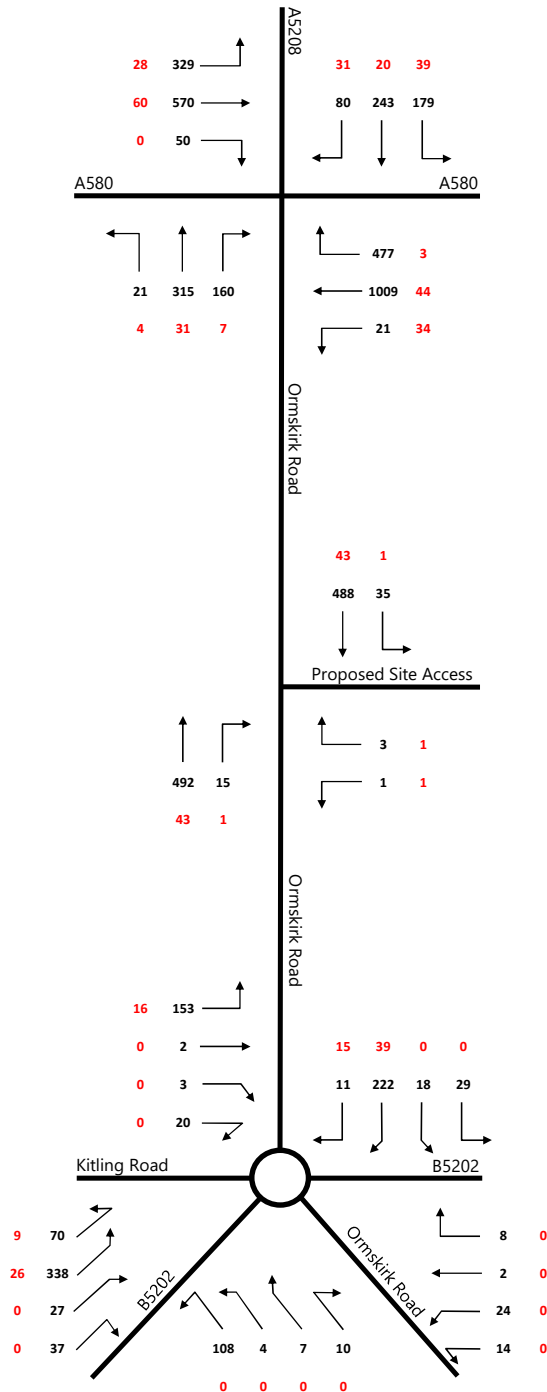
Arrivals 4 0

Departures 47 0

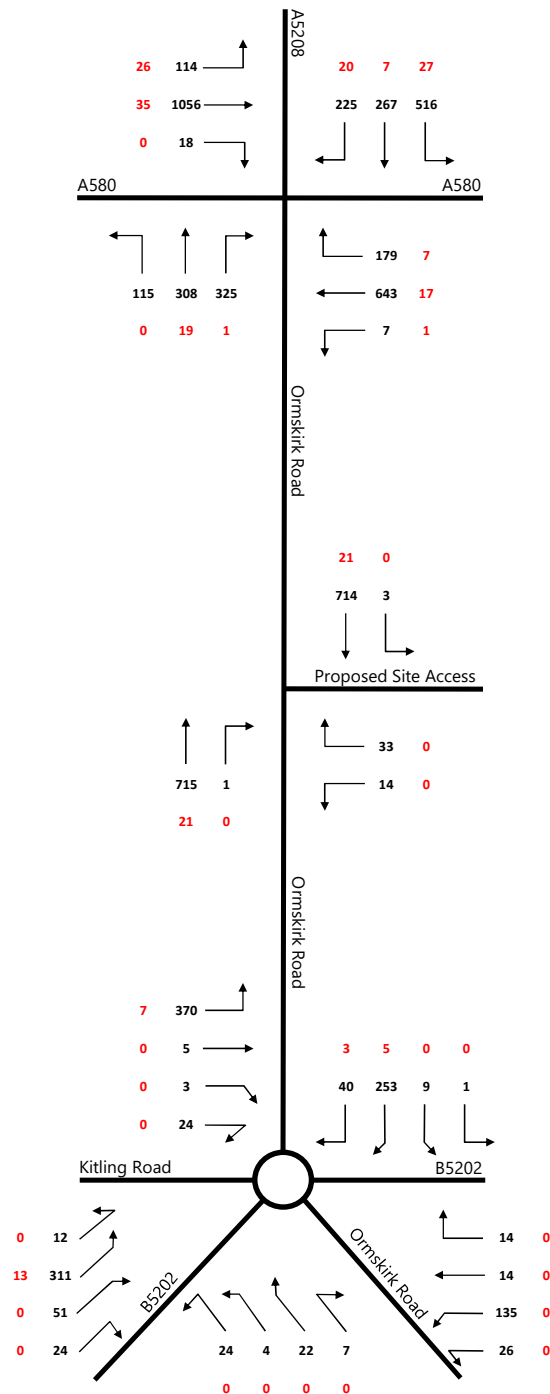
B2 100% SENSITIVITY TEST



Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 18 - 2027 With Development Flows (B2 100%)
Peak AM
Notes: All flows are in vehicles
 Light Vehicles (cars & LGVs) in black
 Heavy Vehicles (HGVs & buses) in red
B2 100% SENSITIVITY TEST



Project: Knowsley Lane, Knowsley
Scenario: Traffic Flow Diagram 19 - 2027 With Development Flows (B2 100%)
Peak PM
Notes: All flows are in vehicles
 Light Vehicles (cars & LGVs) in black
 Heavy Vehicles (HGVs & buses) in red
B2 100% SENSITIVITY TEST



APPENDIX C

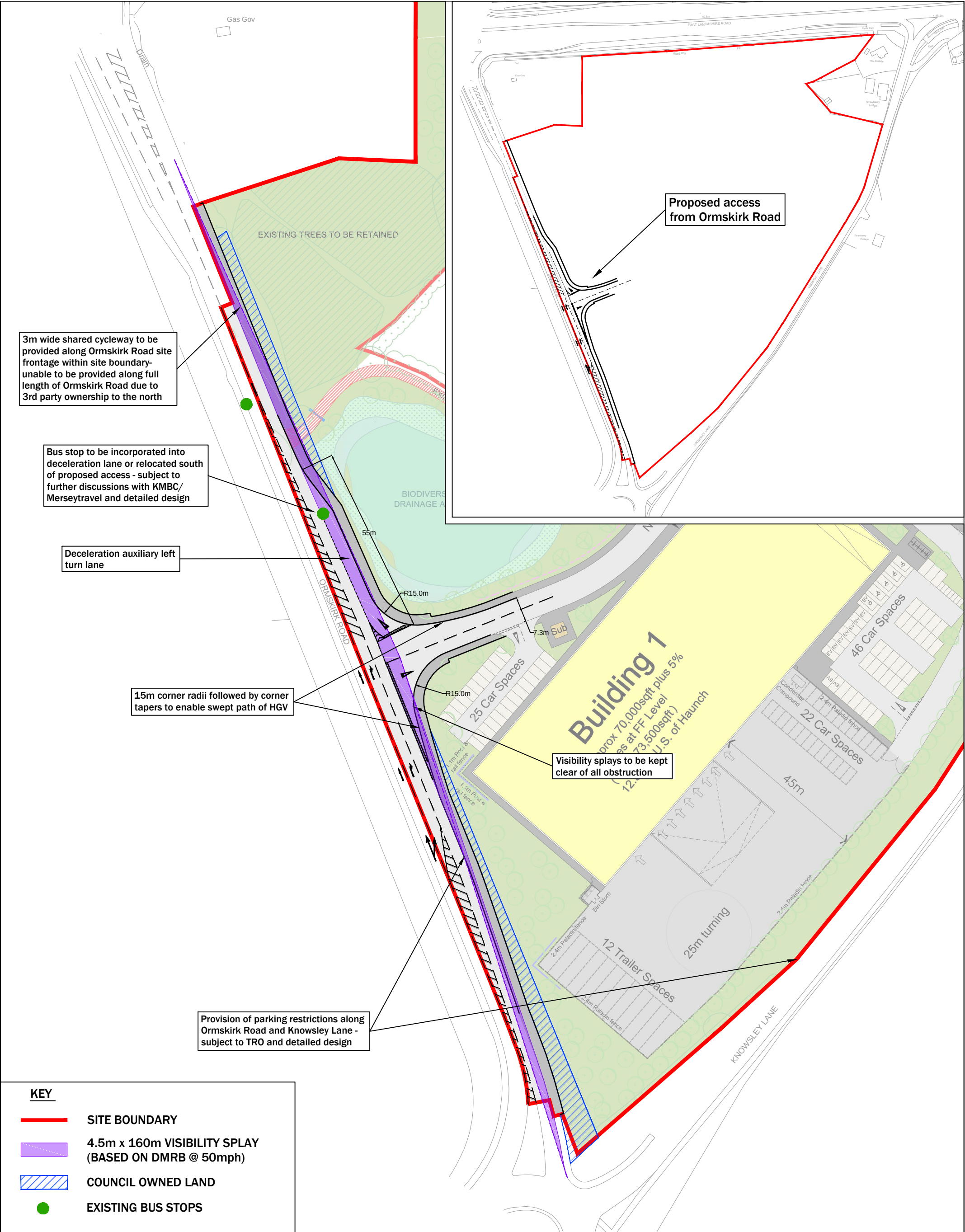
ACCIDENT DATA

Ormskirt Road

No.	Area	L/A	Reference	Severity	Day	Date	Time	Grid Coords	Link/Node	Street			
1	E08000011		1702371	Slight	Wednesday	20/09/2017	20:45	343567/396876					
Location: COOPER'S LANE and EAST LANCASHIRE ROAD 1st Rd: A580 2nd Rd: A5208													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
50MPH	Dual c'way	X-Rds ATS	Dark/lights lit	Fine	Dry	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/
1	Car	No	Stop	W N	On main	Mid junction	No	None		None	Male	35	-v
2	Car	No	Start	W N	On main	Mid junction	No	Bollard		None	Untra.	-1	N/
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Drv/Rider	Male	35	Slight	No	Not ped	Not ped	Not ped	Other			
Description: STOLEN VEHICLE DISPLAYING FALSE NUMBERPLATES SIGHTED BY PATROL IN UNMARKED POLICE VEHICLE. SUBJECT VEHICLE FOLLOWED WHILST OTHER PATROLS MADE TO THE LOCATION. A PRE-EMPTIVE TPAC CONTAINMENT WAS PUT IN PLACE AROUND THE SUBJECT VEHICLE, HOWEVER IT ACCELERATED AND RAMMED PAST THE POLICE VEHICLE BEFORE IMMEDIATELY LOSING CONTROL AND COLLIDED WITH STREET FURNITURE BEFORE COMING TO A STOP. THE OCCUPANTS ALL FLED THE VEHICLE, WITH TWO BEING DETAINED AND ARRESTED.													
User Information:													
2	E08000011		1802247	Slight	Wednesday	12/09/2018	13:25	343559/396886					
Location: COOPERS LANE and EAST LANCASHIRE ROAD 1st Rd: A5208 2nd Rd: A580													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
40MPH	Dual c'way	X-Rds ATS	Daylight	Fine	Dry	None	None	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/
1	Car	No	Going ahead	N S	On main	Junt appr	No	None		None	Untra.	-1	N/
2	M/cycle 50 - 1	No	Going ahead	N S	On main	Junt appr	No	None		None	Male	19	-v
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Male	19	Slight	No	Not ped	Not ped	Not ped	Other			
Description: VEHICEL TWO HAS BEEN PULLING OVER DUE TO MACHANICAL ISSUES. VEHILE ONE HAS THEN COLLIDED WITH VEHICLE TWO BEFORE MAKING AWAY FROM THE SCENE WIHTOUT LEAVING ANY DETAILS.													
User Information:													
3	E08000011		1910390	Serious	Thursday	17/01/2019	14:06	343542/396898					
Location: JUNCTION COOPERS LANE/EAST LANCASHIRE ROAD COOPERS LANE 1st Rd: A5208 2nd Rd: A580													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
50MPH	Dual c'way	X-Rds ATS	Dark/lights lit	Fine	Dry	None	None	ATS out	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/
1	Car	No	Going ahead	W E	On main	Mid junction	No	None	Nearside	Wall or fe	Male	31	-v
2	Car	No	Right turn	S E	On main	Mid junction	No	None		None	Female	51	N/
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	2	Drv/Rider	Female	51	Serious	No	Not ped	Not ped	Not ped	Other			
Description: V001 IS TRAVELLING ALONG EAST LANCS EASTBOUND APPROACHING THE JUNCTION WITH COOPERS LANE. THE SPEED LIMIT FOR THIS ROAD IS 50MPH. THE TRAFFIC LIGHTS AT THIS JUNCTION WERE OUT AT THE TIME AND THE SUN WAS LOW. V002 COMES OUT OF ORMSKIRK ROAD AND IS CROSSING THE EAST LANCS WITH A VIEW TO TURN RIGHT AND JOIN THE MAIN CARRIAGEWAY OF THE LANCS EASTBOUND. V001 DOES NOT SEE V002 PULLING OUT INFRONT FROM HIS OFFSIDE AND EQUALLY V002 DOES NOT SEE V001 APPROACHING AND A COLLISION OCCURS.													
User Information:													
4	E08000011		1913224	Slight	Friday	29/11/2019	07:00	343542/396889					
Location: COOPERS LANE and EAST LANCASHIRE ROAD 1st Rd: A5208 2nd Rd: A580													
Speed	C'Way	Jct Det/Ctrl	Lighting	Weather	Rd Surf	PedX - Human	- Phy Fac	Special	Hazard				
60MPH	Dual c'way	X-Rds ATS	Dark/lights lit	Fine	Wet	None	Ped Phase	None	None				
Veh	Vehicle type	Towing	Manoeuvre	Dir	Veh loc	Junct. loc	Skidding	Hit obj in	Left cway	Hit obj off	Sex	Age	B/
2	Car	No	Going ahead	W E	On main	Junt appr	No	None		None	Male	45	-v
Cas No	Veh ref	Cas Class	Sex	Age	Severity	Car Pass	Ped Direction	Ped Movement	Ped location	School Pupil			
1	1	Drv/Rider	Male	23	Slight	No	Not ped	Not ped	Not ped	Other			
Description: V002 TRAVELLING EASTBOUND ON THE EASTLANCASHIRE ROAD. V002 HAS TRAVELLED THROUGH GREEN ATS AS THE CYCLIST HAS USED THE PEDESTRIAN CROSSING IN ORDER TO CROSS THE CARRIAGEWAY AND HAS FAILED TO GIVE WAY TO VEHICLES ON THE CARRIAGEWAY													
User Information:													

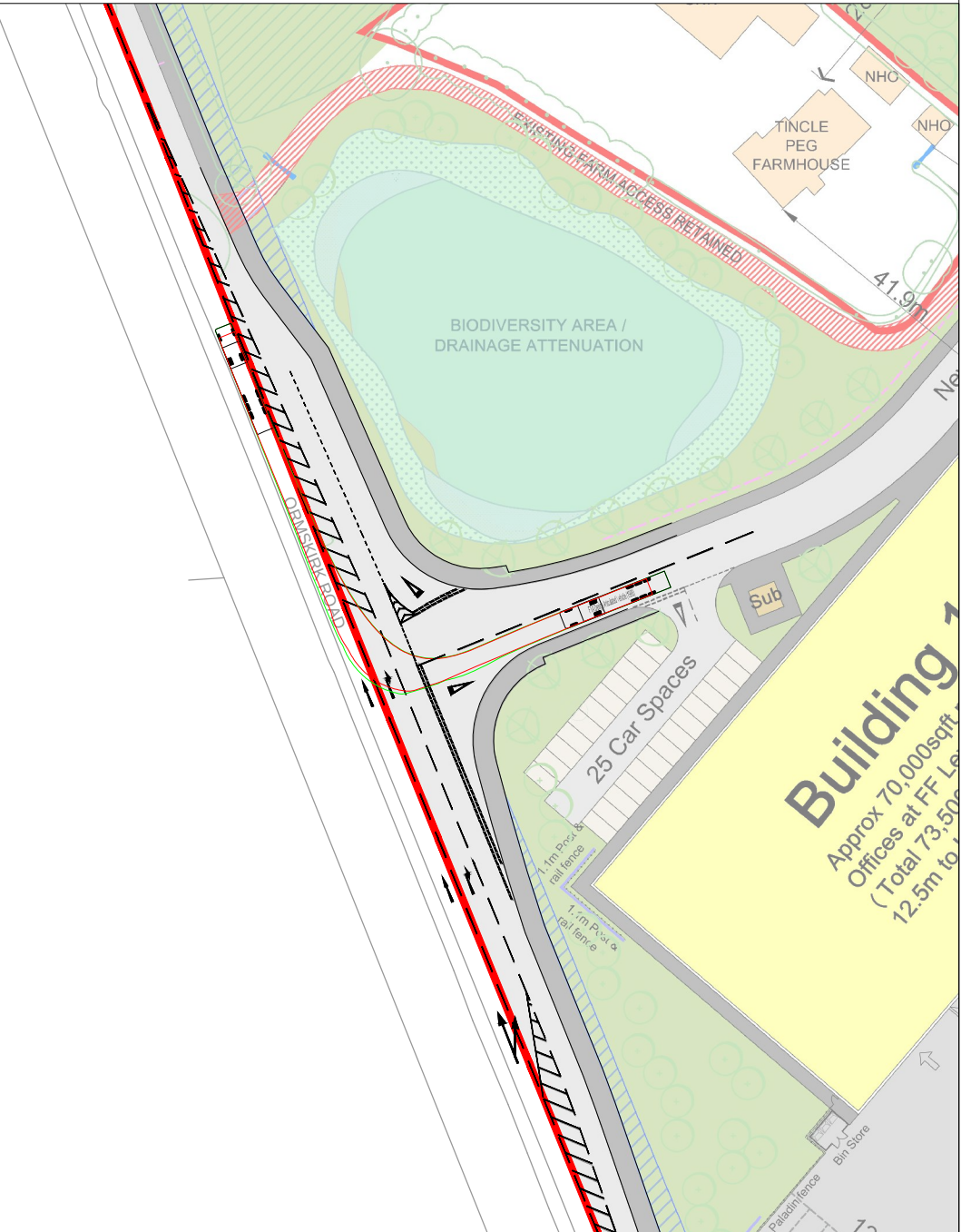
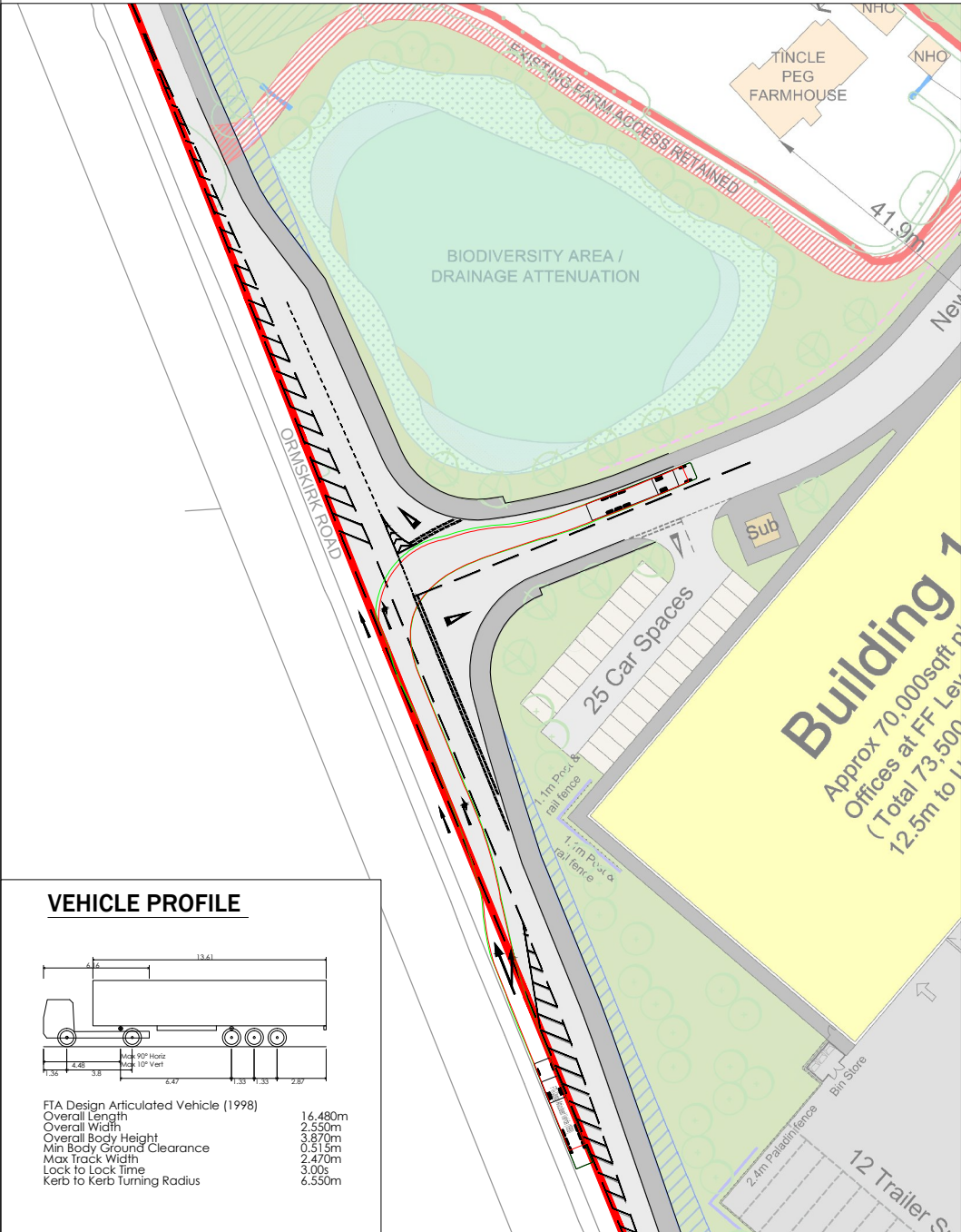
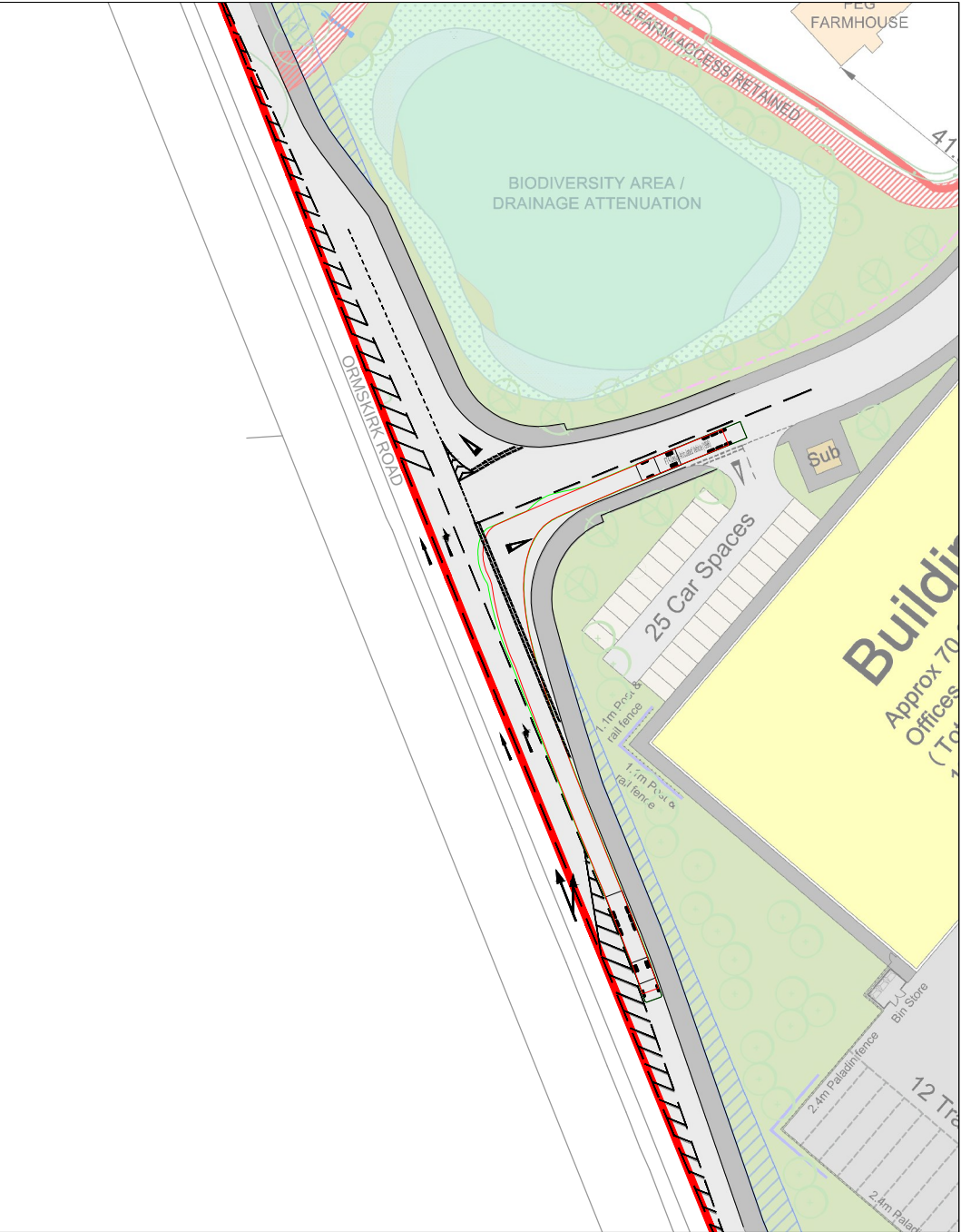
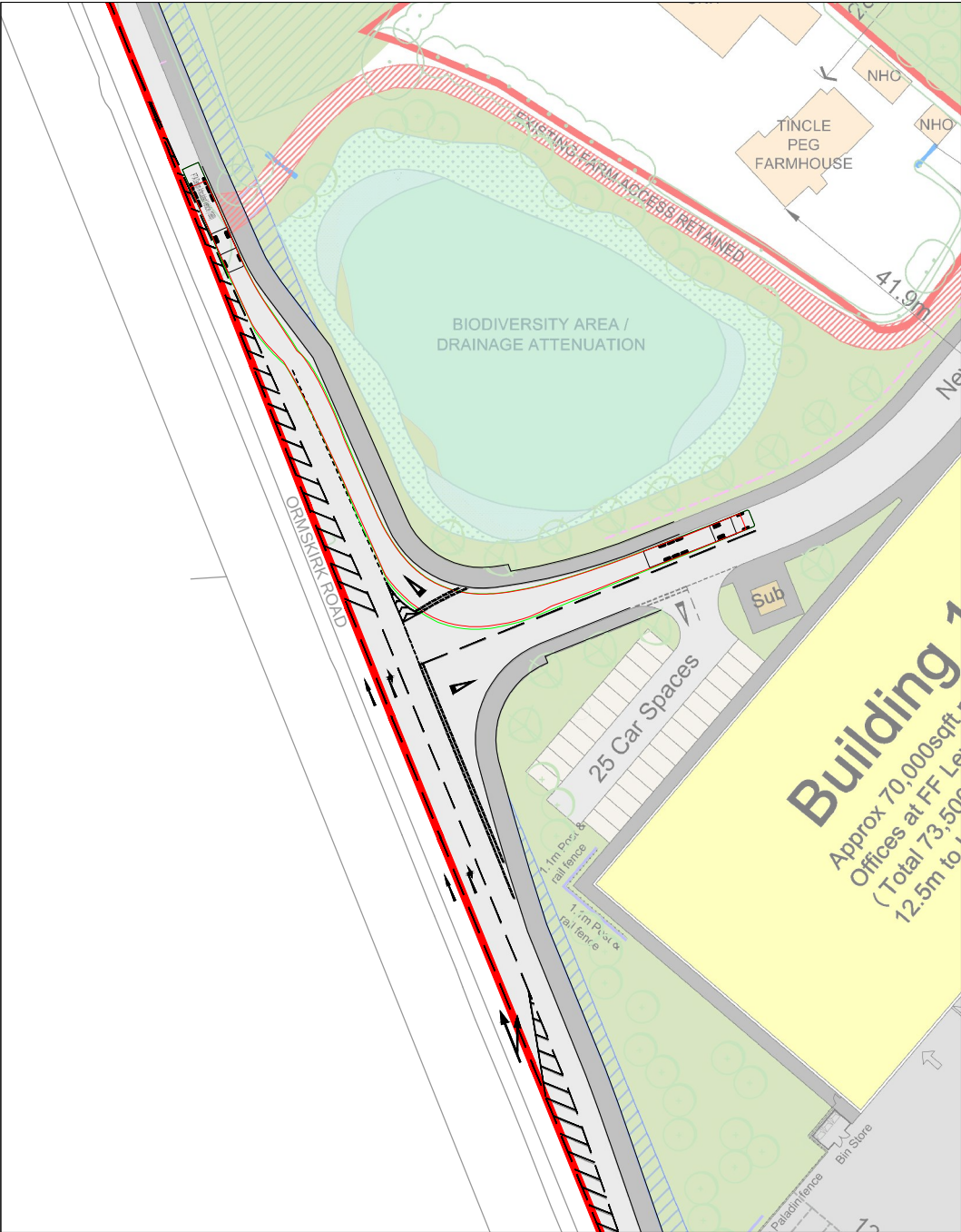
APPENDIX D

TECHNICAL DRAWINGS

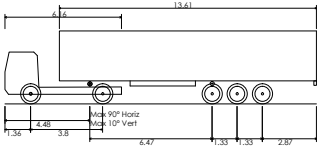


 9 Hurricane Court Liverpool International Business Park Estuary Boulevard Liverpool L24 8RL www.primetp.co.uk 0151 728 1860	H	26.05.22	VB	LATEST LAYOUT
	F	23.03.22	VB	LEFT LANE & 3m CYCLEWAY
	E	23.02.22	VB	CHANGES TO PAGE LAYOUT
	D	04.11.21	VB	MINOR AMENDMENTS
	C	02.11.21	VB	REVISED ACCESS POSITION (COUNCIL LAND)
B	23.02.21	VB	SITE PLAN REMOVED	
A	22.01.21	VB	MINOR AMENDMENTS	
Rev	Date	By	Revision notes	
Status				
FINAL				

Project	ORMSKIRK ROAD, KNOWSLEY	Drawn by DS	Issue date 21 JAN 2021
		Scale(s) 1:1000 @ A3	
Title	PROPOSED ACCESS STRATEGY	Drawing No P20066-001H	



VEHICLE PROFILE



FTA Design Articulated Vehicle (1998)
Overall Length 16.480m
Overall Width 2.550m
Overall Body Height 3.870m
Min Body Ground Clearance 0.515m
Max Track Width 2.470m
Lock to Lock Time 3.00s
Kerb to Kerb Turning Radius 6.530m



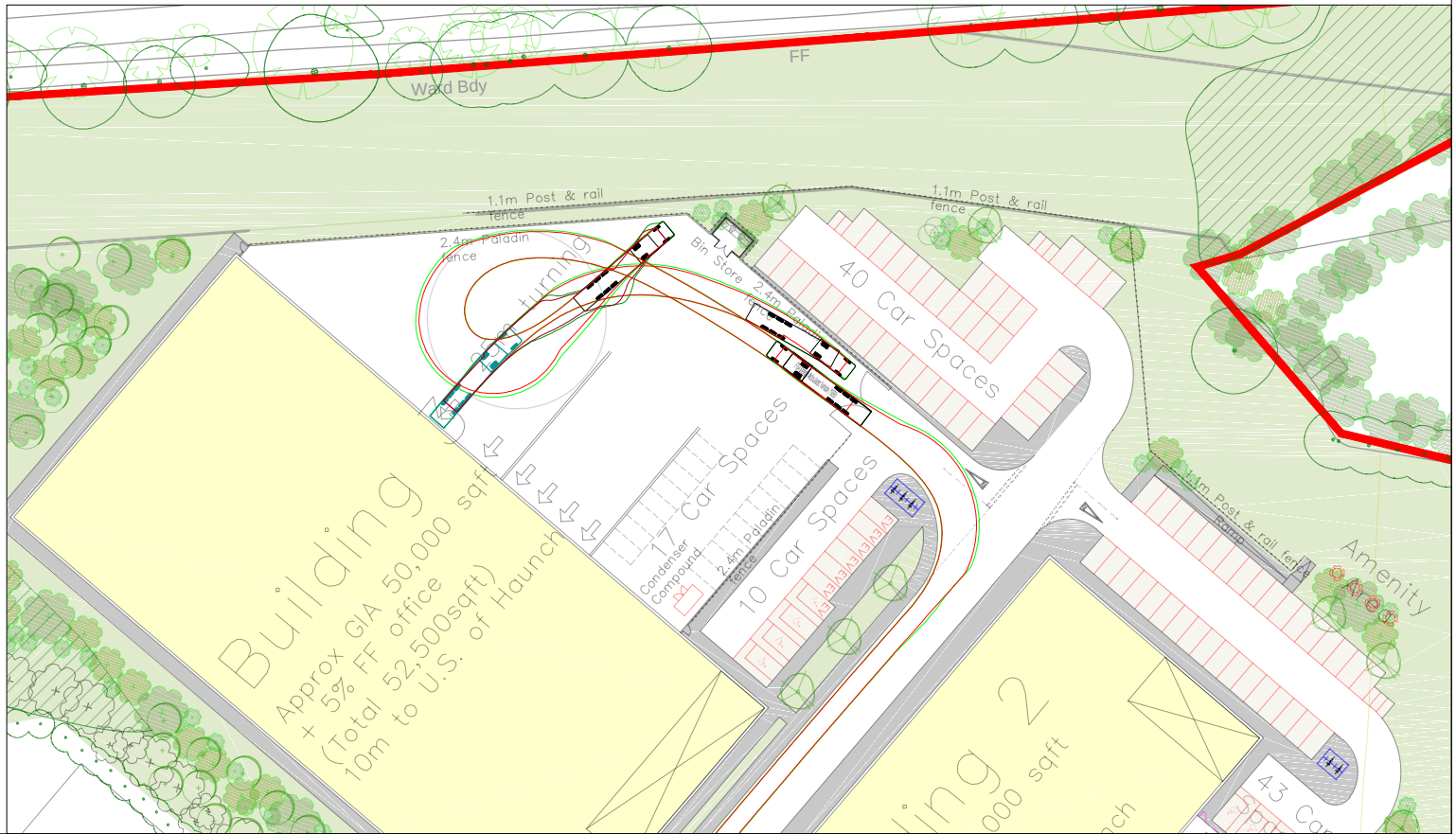
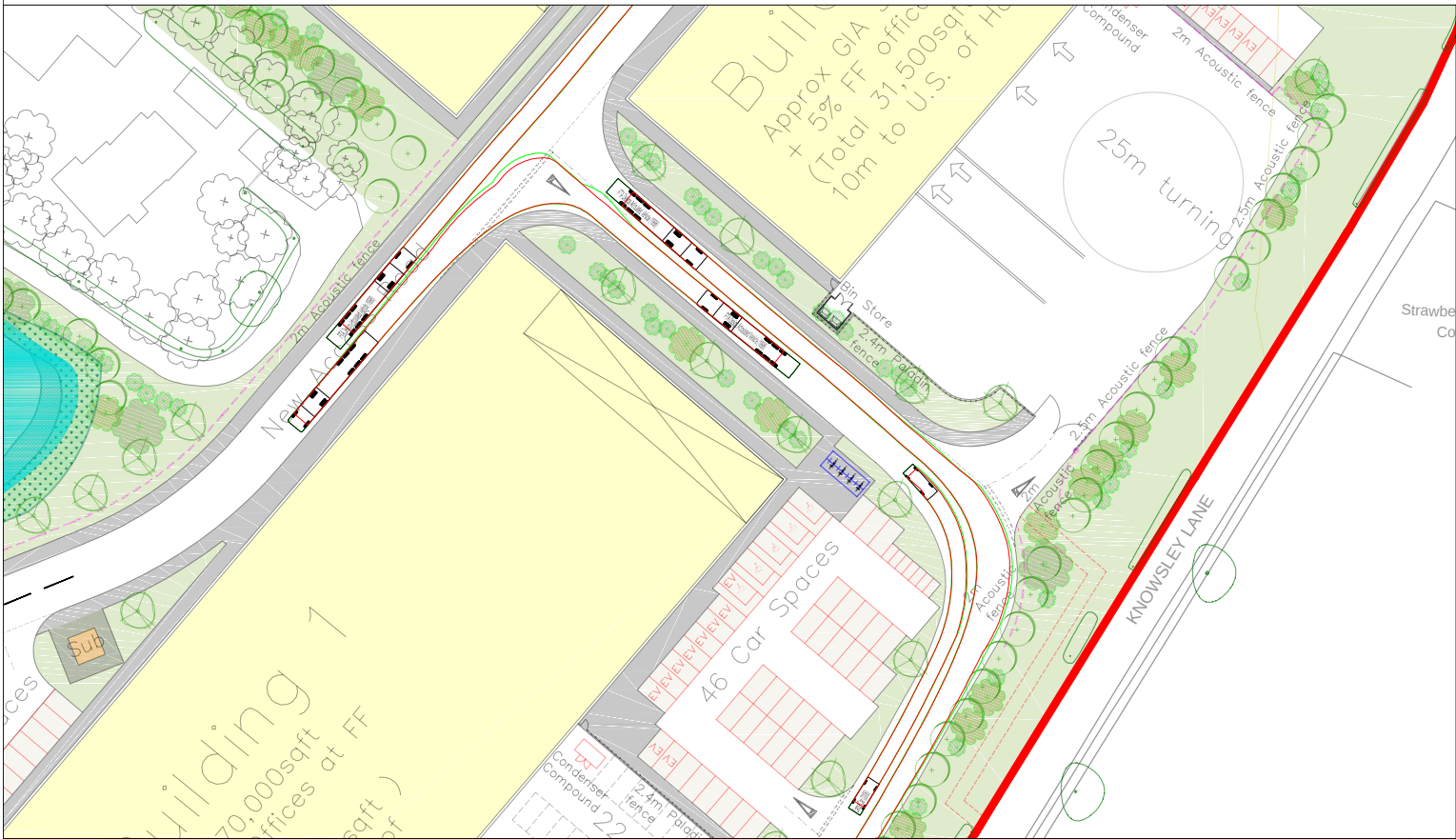
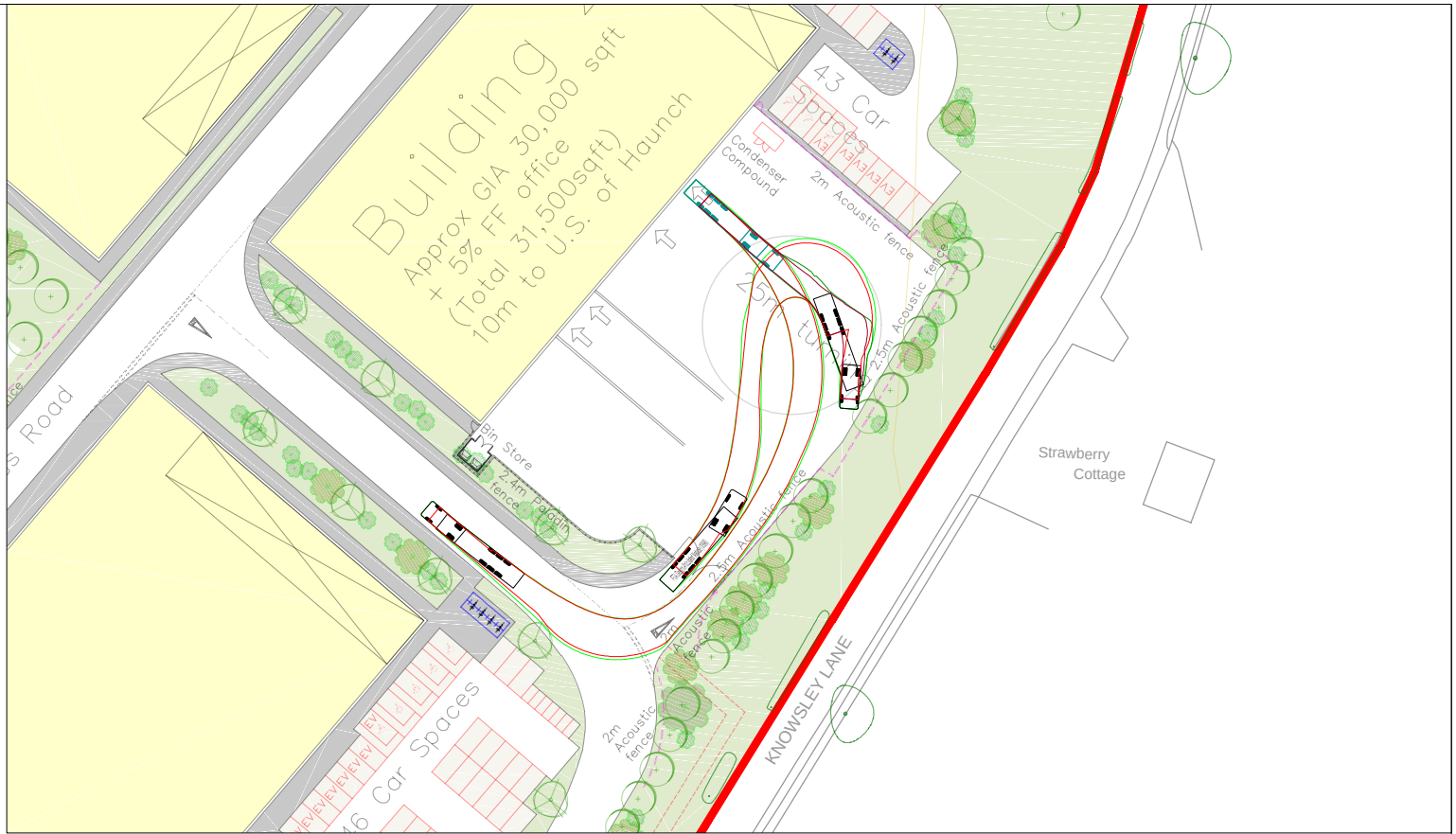
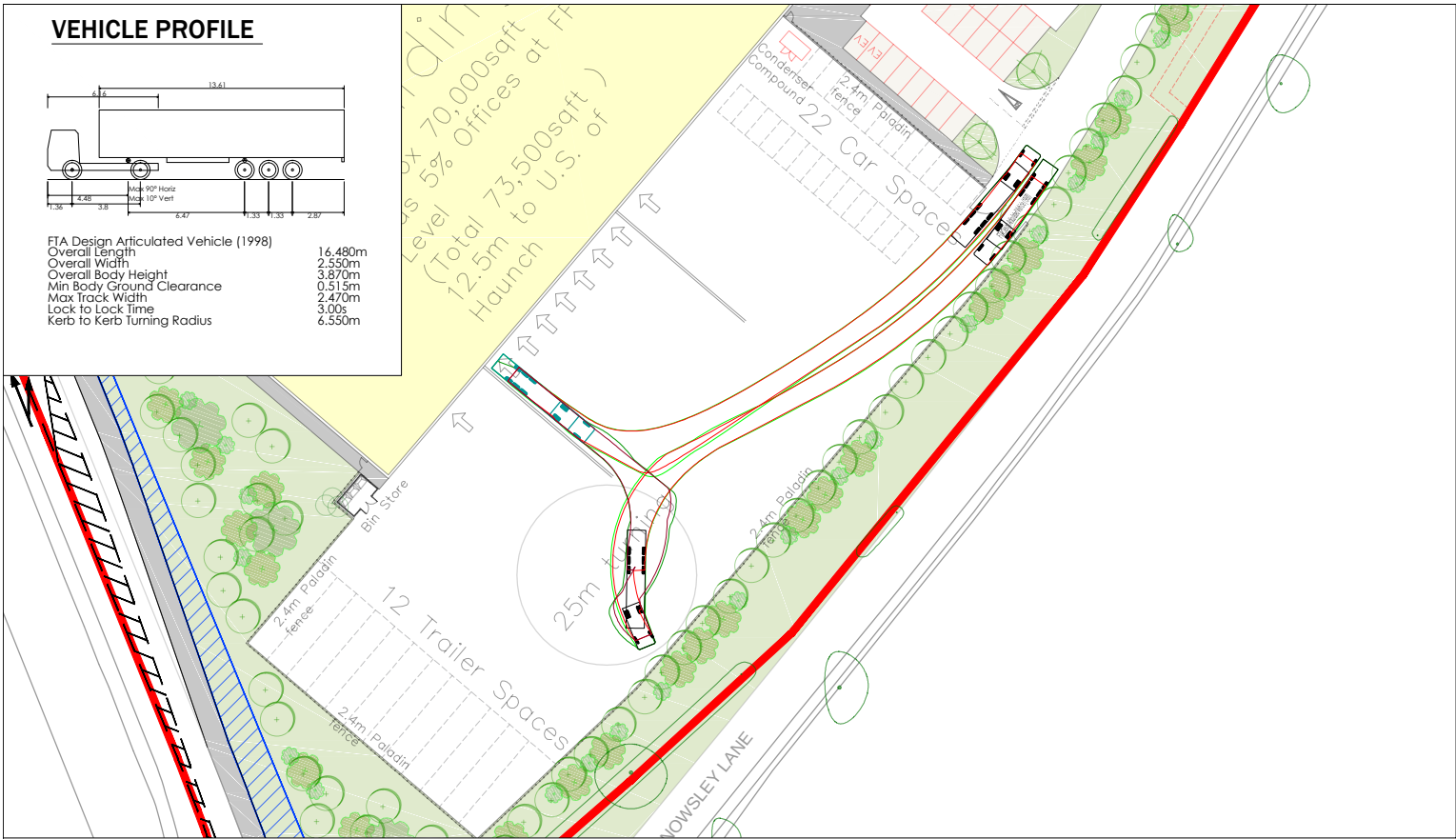
9 Hurricane Court
Liverpool International Business Park | Estuary Boulevard | Liverpool | L24 8RL
www.primetp.co.uk | 0151 728 1860

A	26.05.22	VB	LATEST SITE BOUNDARY
Rev	Date	By	Revision notes
Status			

INFORMATION

Project	ORMSKIRK ROAD, KNOWSLEY
Title	SWEPT PATH ANALYSIS - SITE ACCESS

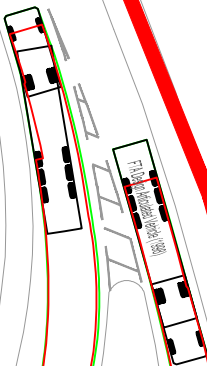
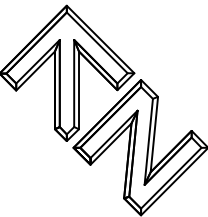
Drawn by VB	Issue date 27 APR 2022
Scale(s)	1:1000 @ A3
Drawing No	P20066-002A

[illegible]

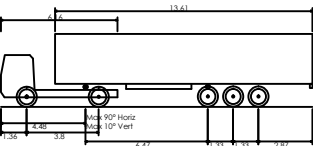
A	26.05.22	VB	LATEST SITE LAYOUT
Rev	Date	By	Revision notes
Status INFORMATION			

Project	ORMSKIRK ROAD, KNOWSLEY
Title	SWEPT PATH ANALYSIS - INTERNAL LAYOUT

Drawn by VB	Issue date 27 APR 2022
Scale(s) 1:500 @ A3	
Drawing No P20066-003A	



VEHICLE PROFILE



FTA Design Articulated Vehicle (1998)
Overall Length 16.480m
Overall Width 2.550m
Overall Body Height 3.870m
Min Body Ground Clearance 0.515m
Max Track Width 2.470m
Lock to Lock Time 3.00s
Kerb to Kerb Turning Radius 6.550m



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*	*	*	*
Rev	Date	By	Revision notes

Status

INFORMATION

Project

ORMSKIRK ROAD, KNOWSLEY

Title

B5202 KNOWSLEY
LANE/ORMSKIRK ROAD
ROUNDAABOUT

Drawn by VB	Issue date 27 APR 2022
Scale(s) 1:1000 @ A3	
Drawing No P20066-004	

APPENDIX E

MASA

Accessibility Assessment Form

Access on foot			Points	Score	Justification for Scoring
Location	<u>Residential Development:</u> Is the site within 800m of a district or local centre (see Accessibility Maps)	Yes	2		
		No	0		
	OR <u>Non-residential development:</u> Is the density of existing local housing (i.e. within 800m) more than 30 houses per hectare (see Accessibility Maps)				
Internal layout	Does 'circulation' and access inside the sites reflect direct, safe and easy to use pedestrian routes for all, with priority given to pedestrians when they have to cross roads or cycle routes?	Yes	1	1	Internal layout provides footways throughout the site connecting all elements of the scheme
		No	0		
External layout	Are there barriers between site and local facilities or housing, which restrict pedestrian access? Examples include no dropped kerbs at crossings or on desire lines; steep gradients; a lack of a formal crossing where there is heavy traffic; security concerns, e.g. lack of lighting	Yes	-1	1	Existing footways and crossing facilities incorporated within the East Lancs Road/Ormskirk Road junction to the north
		No	1		
	Total Score			2	
	Minimum score required			2	

Comments or action needed to correct any shortfall

N/A

Access by Cycle			Points	Score	Justification for Scoring
Location	<u>Residential Development</u> : Is the site within 1500m of a district or local centre (see Accessibility Maps) Or <u>Non-residential development</u> : Is the density of existing local housing (e.g. within 1500m) more than 30 houses per hectare (see Accessibility Maps)	Yes	2	2	Residential areas within Kirkby 1500m to the northwest of the site access. Density is >30dph as per Map 1
		No	0		
Internal layout	Does 'circulation' and access inside the site reflect appropriate and direct cycle routes, with priority given to cyclists where they meet motor vehicles?	Yes	1	0	
		No	0		
External Access	Is the development within 400m of an existing or proposed designated cycle route and/ or proposes to create a link to a cycle route, or develop a route.	Yes	1	1	Shared footway/ cycleway along the East Lancs Road
		No	-1		
Other	Development includes cycle parking, shower facilities, and lockers for cyclists.	Yes	1	1	Showers & lockers provided
		No	0		
	Total Score			4	
	Minimum score required			3	
Comments or action needed to correct any shortfall					
N/A					

Access by Public Transport			Points	Score	Justification for Scoring
Location and access to public transport	Is the site within a 200m walk of a bus or tram stop, and/or within 400m of a rail station?	Yes	2	2	Existing bus stops on Ormskirk Road and close to access
		No	0		
	Are there barriers on direct pedestrian routes to bus or tram stops or rail stations e.g. a lack of dropped kerbs, footpaths less than 2m wide, a lack of formal crossings and / or bus stop infrastructure.	Yes	0	1	Direct footways provided to bus stops on Ormskirk Road
		No	1		
Frequency	High (four or more bus or tram services or trains an hour)		2	2	Bus stops on Ormskirk Road provide access to a number of services
	Medium (two or three bus or tram services or trains an hour)		1		
	Low (less than two bus or tram services or trains an hour)		0		
Other	The proposal contributes to bus priority measures serving the site	Yes	1		
		No	0		
	The proposal contributes to bus stops, bus interchange, tram facilities or bus or rail stations in the vicinity and/or provides bus stops or bus interchange in the site	Yes	1		
		No	0		
	The proposal contributes to an existing or new supported bus service	Yes	1		
		No	0		
	Total Score			5	
	Minimum score required			5	
Comments or action needed to correct any shortfall					
N/A					

Parking			Points	Score	Justification for Scoring
Parking	The off-street parking provided is as advised in Section 4 for that development type	Yes	1	1	Parking provision does not exceed Council's maximum standards
		No	0		
	The off street parking provided is less than 75% of the amount advised in Section 4 for that development type (or shares parking provision with another development).	Yes	2		
		No	0		
	For development in controlled parking zones:				
	Is the proposal for a car free development?	Yes	1	N/A	
		No	0		
	Does it support the control or removal of on-street parking spaces (inc provision of disabled spaces) or contributes to other identified measures in the local parking strategy (including car clubs)	Yes	1	1	Parking restrictions to be provided on Ormskirk Road and Knowsley Lane
		No	0		
	Total Score			2	
	Minimum score required			1	

Comments or action needed to correct any shortfall.

The suitability of the parking provision is described and justified within the Transport Assessment supporting the application. The TA includes details of a car parking accumulation exercise which demonstrates there will be ample parking provision on site to support the development.

APPENDIX F

TRICS OUTPUTS

Calculation Reference: AUDIT-753001-220325-0337

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : F - WAREHOUSING (COMMERCIAL)
 TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	EX ESSEX	1 days
	KC KENT	1 days
03	SOUTH WEST	
	DV DEVON	1 days
05	EAST MIDLANDS	
	LN LINCOLNSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	WY WEST YORKSHIRE	1 days
09	NORTH	
	TW TYNE & WEAR	1 days
10	WALES	
	WR WREXHAM	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
 Actual Range: 6560 to 50000 (units: sqm)
 Range Selected by User: 5000 to 80066 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/09 to 03/04/19

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

Selected survey days:

Monday	1 days
Tuesday	1 days
Wednesday	1 days
Thursday	1 days
Friday	3 days

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

Selected survey types:

Manual count	7 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	5
Free Standing (PPS6 Out of Town)	2

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

Selected Location Sub Categories:

Industrial Zone	5
Out of Town	1
No Sub Category	1

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

Secondary Filtering selection:

Use Class:

n/a	1 days
B8	6 days

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

Filter by Site Operations Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

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

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

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	1 days
125,001 to 250,000	3 days
250,001 to 500,000	2 days

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

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	4 days

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

Travel Plan:

No	7 days
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This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	7 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	DV-02-F-02 CHILLPARK BRAKE NEAR EXETER CLYST HONITON Free Standing (PPS6 Out of Town) Out of Town Total Gross floor area: 50000 sqm Survey date: WEDNESDAY 03/04/19	LIDL DISTRIBUTION CENTRE DEVON	Survey Type: MANUAL
2	EX-02-F-01 BRUNEL WAY COLCHESTER SEVERALLS INDUSTRIAL PK Edge of Town Industrial Zone Total Gross floor area: 6560 sqm Survey date: FRIDAY 18/05/18	SPORTS SUPPLEMENTS ESSEX	Survey Type: MANUAL
3	KC-02-F-02 MILLS ROAD AYLESFORD QUARRY WOOD Edge of Town Industrial Zone Total Gross floor area: 11200 sqm Survey date: FRIDAY 22/09/17	COMMERCIAL WAREHOUSING KENT	Survey Type: MANUAL
4	LN-02-F-01 TRENT ROAD GRANTHAM Edge of Town No Sub Category Total Gross floor area: 32300 sqm Survey date: MONDAY 29/11/10	BOOK SERVICE LINCOLNSHIRE	Survey Type: MANUAL
5	TW-02-F-01 MANDARIN WAY WASHINGTON PATTISON IND. ESTATE Edge of Town Industrial Zone Total Gross floor area: 31000 sqm Survey date: FRIDAY 13/11/15	ASDA DISTRIBUTION CENTRE TYNE & WEAR	Survey Type: MANUAL
6	WR-02-F-01 UNIT 1-2 PACIFIC PARK NEAR WREXHAM WREXHAM IND. ESTATE Free Standing (PPS6 Out of Town) Industrial Zone Total Gross floor area: 9000 sqm Survey date: TUESDAY 18/10/11	WAREHOUSE WREXHAM	Survey Type: MANUAL
7	WY-02-F-02 STAITHGATE LANE BRADFORD NEWHALL Edge of Town Industrial Zone Total Gross floor area: 10446 sqm Survey date: THURSDAY 14/03/19	DISTRIBUTION COMPANY WEST YORKSHIRE	Survey Type: MANUAL

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

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)
TOTAL VEHICLES
 Calculation factor: 100 sqm
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	2	30223	0.081	2	30223	0.046	2	30223	0.127
06:00 - 07:00	2	30223	0.136	2	30223	0.068	2	30223	0.204
07:00 - 08:00	7	21501	0.120	7	21501	0.054	7	21501	0.174
08:00 - 09:00	7	21501	0.117	7	21501	0.066	7	21501	0.183
09:00 - 10:00	7	21501	0.106	7	21501	0.064	7	21501	0.170
10:00 - 11:00	7	21501	0.056	7	21501	0.060	7	21501	0.116
11:00 - 12:00	7	21501	0.060	7	21501	0.068	7	21501	0.128
12:00 - 13:00	7	21501	0.065	7	21501	0.070	7	21501	0.135
13:00 - 14:00	7	21501	0.100	7	21501	0.088	7	21501	0.188
14:00 - 15:00	7	21501	0.051	7	21501	0.089	7	21501	0.140
15:00 - 16:00	7	21501	0.058	7	21501	0.074	7	21501	0.132
16:00 - 17:00	7	21501	0.060	7	21501	0.110	7	21501	0.170
17:00 - 18:00	7	21501	0.049	7	21501	0.107	7	21501	0.156
18:00 - 19:00	7	21501	0.025	7	21501	0.070	7	21501	0.095
19:00 - 20:00	2	30223	0.028	2	30223	0.055	2	30223	0.083
20:00 - 21:00	2	30223	0.041	2	30223	0.033	2	30223	0.074
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.153			1.122			2.275

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

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

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Parameter summary

Trip rate parameter range selected:	6560 - 50000 (units: sqm)
Survey date range:	01/01/09 - 03/04/19
Number of weekdays (Monday-Friday):	7
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)
 TAXIS
 Calculation factor: 100 sqm
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	2	30223	0.000	2	30223	0.000	2	30223	0.000
06:00 - 07:00	2	30223	0.002	2	30223	0.002	2	30223	0.004
07:00 - 08:00	7	21501	0.003	7	21501	0.003	7	21501	0.006
08:00 - 09:00	7	21501	0.000	7	21501	0.000	7	21501	0.000
09:00 - 10:00	7	21501	0.000	7	21501	0.000	7	21501	0.000
10:00 - 11:00	7	21501	0.000	7	21501	0.000	7	21501	0.000
11:00 - 12:00	7	21501	0.000	7	21501	0.000	7	21501	0.000
12:00 - 13:00	7	21501	0.000	7	21501	0.000	7	21501	0.000
13:00 - 14:00	7	21501	0.000	7	21501	0.000	7	21501	0.000
14:00 - 15:00	7	21501	0.000	7	21501	0.000	7	21501	0.000
15:00 - 16:00	7	21501	0.000	7	21501	0.000	7	21501	0.000
16:00 - 17:00	7	21501	0.001	7	21501	0.001	7	21501	0.002
17:00 - 18:00	7	21501	0.001	7	21501	0.001	7	21501	0.002
18:00 - 19:00	7	21501	0.000	7	21501	0.000	7	21501	0.000
19:00 - 20:00	2	30223	0.000	2	30223	0.000	2	30223	0.000
20:00 - 21:00	2	30223	0.000	2	30223	0.000	2	30223	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.007			0.007			0.014

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

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

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)
OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	2	30223	0.026	2	30223	0.031	2	30223	0.057
06:00 - 07:00	2	30223	0.043	2	30223	0.043	2	30223	0.086
07:00 - 08:00	7	21501	0.030	7	21501	0.033	7	21501	0.063
08:00 - 09:00	7	21501	0.036	7	21501	0.040	7	21501	0.076
09:00 - 10:00	7	21501	0.040	7	21501	0.029	7	21501	0.069
10:00 - 11:00	7	21501	0.033	7	21501	0.031	7	21501	0.064
11:00 - 12:00	7	21501	0.021	7	21501	0.032	7	21501	0.053
12:00 - 13:00	7	21501	0.025	7	21501	0.031	7	21501	0.056
13:00 - 14:00	7	21501	0.021	7	21501	0.030	7	21501	0.051
14:00 - 15:00	7	21501	0.012	7	21501	0.017	7	21501	0.029
15:00 - 16:00	7	21501	0.027	7	21501	0.018	7	21501	0.045
16:00 - 17:00	7	21501	0.029	7	21501	0.022	7	21501	0.051
17:00 - 18:00	7	21501	0.033	7	21501	0.019	7	21501	0.052
18:00 - 19:00	7	21501	0.014	7	21501	0.014	7	21501	0.028
19:00 - 20:00	2	30223	0.010	2	30223	0.018	2	30223	0.028
20:00 - 21:00	2	30223	0.015	2	30223	0.015	2	30223	0.030
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.415			0.423			0.838

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

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

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00	2	30223	0.000	2	30223	0.000	2	30223	0.000
06:00 - 07:00	2	30223	0.002	2	30223	0.002	2	30223	0.004
07:00 - 08:00	7	21501	0.001	7	21501	0.000	7	21501	0.001
08:00 - 09:00	7	21501	0.005	7	21501	0.001	7	21501	0.006
09:00 - 10:00	7	21501	0.001	7	21501	0.000	7	21501	0.001
10:00 - 11:00	7	21501	0.000	7	21501	0.000	7	21501	0.000
11:00 - 12:00	7	21501	0.000	7	21501	0.001	7	21501	0.001
12:00 - 13:00	7	21501	0.001	7	21501	0.000	7	21501	0.001
13:00 - 14:00	7	21501	0.003	7	21501	0.003	7	21501	0.006
14:00 - 15:00	7	21501	0.001	7	21501	0.003	7	21501	0.004
15:00 - 16:00	7	21501	0.004	7	21501	0.001	7	21501	0.005
16:00 - 17:00	7	21501	0.001	7	21501	0.001	7	21501	0.002
17:00 - 18:00	7	21501	0.001	7	21501	0.003	7	21501	0.004
18:00 - 19:00	7	21501	0.000	7	21501	0.003	7	21501	0.003
19:00 - 20:00	2	30223	0.000	2	30223	0.000	2	30223	0.000
20:00 - 21:00	2	30223	0.000	2	30223	0.000	2	30223	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.020			0.018			0.038

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

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

Calculation Reference: AUDIT-753001-220325-0341

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : C - INDUSTRIAL UNIT
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	WS WEST SUSSEX	1 days
03	SOUTH WEST	
	DV DEVON	1 days
06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
11	SCOTLAND	
	EB CITY OF EDINBURGH	1 days

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

Primary Filtering selection:

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

Parameter: Gross floor area
Actual Range: 5070 to 20000 (units: sqm)
Range Selected by User: 5000 to 67459 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

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

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

Selected survey days:

Monday	2 days
Tuesday	2 days
Wednesday	1 days
Thursday	1 days

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

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	5
Free Standing (PPS6 Out of Town)	1

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

Selected Location Sub Categories:

Industrial Zone	4
Development Zone	1
Out of Town	1

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

Secondary Filtering selection:

Use Class:

Not Known 6 days

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

Filter by Site Operations Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,000 or Less	1 days
5,001 to 10,000	2 days
10,001 to 15,000	2 days
50,001 to 100,000	1 days

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

Population within 5 miles:

50,001 to 75,000	2 days
125,001 to 250,000	3 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	3 days
1.6 to 2.0	1 days

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

Travel Plan:

Yes	1 days
No	5 days

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

PTAL Rating:

No PTAL Present	6 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	CH-02-C-02	INDUSTRIAL MATERIALS	CESHIRE
	JUPITER DRIVE		
	CHESTER		
	CHESTER W. EMP. PARK		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	8100 sqm	
	Survey date: WEDNESDAY	19/11/14	Survey Type: MANUAL
2	CH-02-C-03	OFFICE FURNITURE	CESHIRE
	BRUNEL ROAD		
	MACCLESFIELD		
	LYME GREEN BUS. PARK		
	Edge of Town		
	Development Zone		
	Total Gross floor area:	6658 sqm	
	Survey date: MONDAY	19/09/16	Survey Type: MANUAL
3	DV-02-C-01	TUBE MANUFACTURE	DEVON
	PLYMBRIDGE ROAD		
	PLYMOUTH		
	ESTOVER		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	20000 sqm	
	Survey date: TUESDAY	17/07/12	Survey Type: MANUAL
4	EB-02-C-02	FOOD PRODUCTION	CITY OF EDINBURGH
	CALDER ROAD		
	EDINBURGH		
	SIGHTHILL		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	19805 sqm	
	Survey date: MONDAY	25/10/10	Survey Type: MANUAL
5	WM-02-C-03	INDUSTRIAL GLASS	WEST MIDLANDS
	DOWNING STREET		
	SMETHWICK		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	5070 sqm	
	Survey date: TUESDAY	06/11/12	Survey Type: MANUAL
6	WS-02-C-02	AVIATION COMPANY	WEST SUSSEX
	MAYDWELL AVENUE		
	NEAR HORSHAM		
	SLINFOLD		
	Free Standing (PPS6 Out of Town)		
	Out of Town		
	Total Gross floor area:	11375 sqm	
	Survey date: THURSDAY	23/01/14	Survey Type: MANUAL

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

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

TOTAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	11375	0.149	1	11375	0.044	1	11375	0.193
07:00 - 08:00	6	11835	0.204	6	11835	0.030	6	11835	0.234
08:00 - 09:00	6	11835	0.353	6	11835	0.044	6	11835	0.397
09:00 - 10:00	6	11835	0.115	6	11835	0.054	6	11835	0.169
10:00 - 11:00	6	11835	0.079	6	11835	0.058	6	11835	0.137
11:00 - 12:00	6	11835	0.038	6	11835	0.059	6	11835	0.097
12:00 - 13:00	6	11835	0.069	6	11835	0.096	6	11835	0.165
13:00 - 14:00	6	11835	0.152	6	11835	0.087	6	11835	0.239
14:00 - 15:00	6	11835	0.061	6	11835	0.137	6	11835	0.198
15:00 - 16:00	6	11835	0.044	6	11835	0.087	6	11835	0.131
16:00 - 17:00	6	11835	0.041	6	11835	0.196	6	11835	0.237
17:00 - 18:00	6	11835	0.030	6	11835	0.321	6	11835	0.351
18:00 - 19:00	6	11835	0.021	6	11835	0.131	6	11835	0.152
19:00 - 20:00	1	11375	0.044	1	11375	0.132	1	11375	0.176
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.400			1.476			2.876

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

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

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Parameter summary

Trip rate parameter range selected:	5070 - 20000 (units: sqm)
Survey date range:	01/01/09 - 24/09/19
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT
 TAXIS
 Calculation factor: 100 sqm
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
07:00 - 08:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
08:00 - 09:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
09:00 - 10:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
10:00 - 11:00	6	11835	0.001	6	11835	0.001	6	11835	0.002
11:00 - 12:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
12:00 - 13:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
13:00 - 14:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
14:00 - 15:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
15:00 - 16:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
16:00 - 17:00	6	11835	0.003	6	11835	0.003	6	11835	0.006
17:00 - 18:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
18:00 - 19:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
19:00 - 20:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.004			0.004			0.008

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

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

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

OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
07:00 - 08:00	6	11835	0.004	6	11835	0.007	6	11835	0.011
08:00 - 09:00	6	11835	0.015	6	11835	0.013	6	11835	0.028
09:00 - 10:00	6	11835	0.018	6	11835	0.011	6	11835	0.029
10:00 - 11:00	6	11835	0.023	6	11835	0.020	6	11835	0.043
11:00 - 12:00	6	11835	0.013	6	11835	0.023	6	11835	0.036
12:00 - 13:00	6	11835	0.008	6	11835	0.008	6	11835	0.016
13:00 - 14:00	6	11835	0.013	6	11835	0.013	6	11835	0.026
14:00 - 15:00	6	11835	0.008	6	11835	0.004	6	11835	0.012
15:00 - 16:00	6	11835	0.006	6	11835	0.006	6	11835	0.012
16:00 - 17:00	6	11835	0.003	6	11835	0.008	6	11835	0.011
17:00 - 18:00	6	11835	0.001	6	11835	0.001	6	11835	0.002
18:00 - 19:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
19:00 - 20:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.112			0.114			0.226

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

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

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT
 PSVS
 Calculation factor: 100 sqm
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
07:00 - 08:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
08:00 - 09:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
09:00 - 10:00	6	11835	0.001	6	11835	0.001	6	11835	0.002
10:00 - 11:00	6	11835	0.001	6	11835	0.000	6	11835	0.001
11:00 - 12:00	6	11835	0.000	6	11835	0.001	6	11835	0.001
12:00 - 13:00	6	11835	0.001	6	11835	0.001	6	11835	0.002
13:00 - 14:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
14:00 - 15:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
15:00 - 16:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
16:00 - 17:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
17:00 - 18:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
18:00 - 19:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
19:00 - 20:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.003			0.003			0.006

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

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

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT
CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
07:00 - 08:00	6	11835	0.003	6	11835	0.000	6	11835	0.003
08:00 - 09:00	6	11835	0.003	6	11835	0.000	6	11835	0.003
09:00 - 10:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
10:00 - 11:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
11:00 - 12:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
12:00 - 13:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
13:00 - 14:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
14:00 - 15:00	6	11835	0.006	6	11835	0.004	6	11835	0.010
15:00 - 16:00	6	11835	0.000	6	11835	0.000	6	11835	0.000
16:00 - 17:00	6	11835	0.001	6	11835	0.007	6	11835	0.008
17:00 - 18:00	6	11835	0.000	6	11835	0.008	6	11835	0.008
18:00 - 19:00	6	11835	0.000	6	11835	0.006	6	11835	0.006
19:00 - 20:00	1	11375	0.000	1	11375	0.000	1	11375	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.013			0.025			0.038

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

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

APPENDIX G

2011 CENSUS MTW DATA & DISTRIBUTION CALCULATION

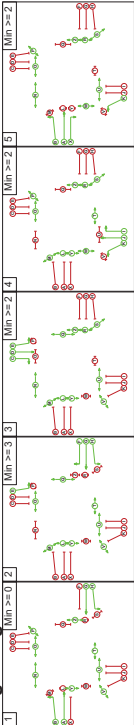
MSOA	Trips	MSOA Name	Local Area	Primary	Pri %	Secondary	Sec %	Notes
E02002574	30 Halton 001	MSOA 001	Lurth Heath, BarrowsGreen, Moorfield Primary School	Knowsley Ln SW	0.2%	0.2%	0.2%	0.2%
E02002575	55 Halton 002		Upton, Parklands, Upton Rocks, Birchfield Sports and Social Club	Knowsley Ln SW	0.4%	0.4%	0.4%	0.4%
E02002576	26 Halton 003		Halton View, Shell Green, Moss Banks	Knowsley Ln SW	0.2%	0.2%	0.2%	0.2%
E02002577	24 Halton 004		Hough Green Park, Hough Green, St. Basil's Primary School	Knowsley Ln SW	0.2%	0.2%	0.2%	0.2%
E02002578	27 Halton 005		Victoria Park, Widnes Golf Course, Kingsway Estate	Knowsley Ln SW	0.2%	0.2%	0.2%	0.2%
E02002580	22 Halton 007		Widnes, Newton, Woodend	Knowsley Ln SW	0.2%	0.2%	0.2%	0.2%
E02002581	22 Halton 008		Hale & Halebank	Knowsley Ln SW	0.2%	0.2%	0.2%	0.2%
E02002585	29 Halton 012		Runcorn, Weston Point, Beacon Hill	Knowsley Ln SW	0.2%	0.2%	0.2%	0.2%
E02001327	162 Knowsley 001		Eastcroft Park School, Ravenscroft Community Primary School	AS208	2.5%			
E02001328	330 Knowsley 002		N. Kirby, Melling Mount	AS208	5.1%			
E02001329	191 Knowsley 003	MSOA 003	Kirby Shopping Centre, Kirby High School, Knowsley Community College (Kirby Campus)	AS208	2.1%	AS80 W	0.9%	70/30 - Residential areas concentrated to the north, more likely to travel via County Road/Coopers Lane
E02001330	153 Knowsley 004		Liverpool Municipal North Golf Course, Kirby Interchange	AS80 W	2.4%			
E02001331	339 Knowsley 005		Knowsley Village, Knowsley Safari Park, Knowsley Industrial Park, Knowsley Business Park	Knowsley Ln SW	5.2%			
E02001332	90 Knowsley 006		Stockbridge Village, Haswell Drive	Knowsley Ln SW	1.4%			
E02001333	76 Knowsley 007		Prescot, Cables Shopping Centre, Prescot Cemetery	Knowsley Ln SW	0.6%	AS80 E	0.6%	50/50 - Equal distance/time to site. Neither journeys begin with main carriageway
E02001334	38 Knowsley 008		Knowsley Community College, Page Moss	Knowsley Ln SW	0.6%			
E02001335	63 Knowsley 009		Whiston Hospital, Prescott Primary School, St. Luke's Catholic Primary School	AS80 E	0.7%	Knowsley Ln SW	0.3%	70/30 - Knowsley lane less likely to avoid congestion in Prescot
E02001336	48 Knowsley 010		Knowsley Safari Park Train Station, Riding Hill, Knowsley Lane Primary School	Knowsley Ln SW	0.7%			
E02001337	70 Knowsley 011		King George V Memorial Playing Fields, Kings Business Park, Knowsley Central School	Knowsley Ln SW	1.1%			
E02001338	51 Knowsley 012		Jubilee Park, Roby Park Primary School	Knowsley Ln SW	0.8%			
E02001339	43 Knowsley 013	MSOA 013	Jubilee Town Hall, Halshead Primary School, Stadt Moers Park: Pottery Field	Knowsley Ln SW	0.7%			
E02001340	99 Knowsley 014		Court Hey, Swanside	Knowsley Ln SW	1.5%			
E02001341	53 Knowsley 015		Huyton East, Huyton Industrial Estate	Knowsley Ln SW	0.8%			
E02001342	74 Knowsley 016		Huyton Town Centre, Knowsley Community College, Roby Train Station, Huyton Train Station	Knowsley Ln SW	1.1%			
E02001343	54 Knowsley 017		Halewood, Interchange Motorway Estate	AS80 W	0.6%	Knowsley Ln SW	0.2%	70/30 - Similar distance, more likely to stay on motorway, better flow of traffic, Knowsley lane more restrictive
E02001344	25 Knowsley 018		Halewood Green, Maple Lodge Care Home	AS80 W	0.5%	AS80 W	0.1%	70/30 - See above
E02001345	26 Knowsley 019		Plantation Primary School, Halewood Triangle Country Park	AS80 W	0.3%	Knowsley Ln SW	0.1%	70/30 - Similar travel time, MS7 more likely to move quicker than traffic on Knowsley Lane
E02001346	34 Knowsley 020		Jaguar Landrover Plant	AS80 W	0.5%			
E02001347	97 Liverpool 001		Fazakerley High School, Fazakerley Primary School	AS80 W	1.5%			
E02001348	72 Liverpool 002		Longmore Community Primary School	AS80 W	1.1%			
E02001349	73 Liverpool 003	MSOA 003	Ormeau Park, Rix Lane Recreation Ground	AS80 W	1.1%			
E02001350	96 Liverpool 004		Glinnos, St John Bosco Arts College	AS80 W	1.5%			
E02001351	70 Liverpool 005		Archbishop Beck Catholic Sports College, Aintree Hospital	AS80 W	1.1%			
E02001352	44 Liverpool 006		Walton, Clock View Hospital, Walton Cemetery	AS80 W	0.7%			
E02001353	139 Liverpool 007		Croxteth, Croxteth Community Primary School	AS80 W	2.1%			
E02001354	52 Liverpool 008		Liver Industrial estate, Abingdon Grove	AS80 W	0.7%			
E02001355	42 Liverpool 009		Alsop High School, Walton Sports Centre	AS80 W	0.6%			
E02001356	25 Liverpool 010		Monksdown Primary School, The De La Salle Academy	AS80 W	0.4%			
E02001357	49 Liverpool 011		Norris Green, Malmesbury Road	AS80 W	0.8%			
E02001358	38 Liverpool 012		Goodson Park, Gowlads Street Primary School	AS80 W	0.6%			
E02001359	69 Liverpool 013	MSOA 013	Croxteth Park	Knowsley Ln SW	0.5%	AS80 W	0.5%	50/50 - Similar travel time, Depending on side of Croxteth Hall & Country Park
E02001360	29 Liverpool 014		Wellington Employment Park, Kirkdale medical centre	AS80 W	0.4%			
E02001361	51 Liverpool 015		Anfield Cemetery	AS80 W	0.8%			
E02001362	49 Liverpool 016		West Derby	Knowsley Ln SW	0.8%			
E02001363	45 Liverpool 017		Mab Lane Junior Mixed and Infant School	Knowsley Ln SW	0.7%			
E02001364	28 Liverpool 018		Anfield Stadium, Four Oaks Primary School, Stanley Park	AS80 W	0.4%			
E02001365	30 Liverpool 019		All Saints Roman Catholic Junior School	AS80 W	0.5%			
E02001366	40 Liverpool 020		West Derby School, Lister Infant School	AS80 W	0.5%	Knowsley Ln SW	0.1%	80/20 - Route towards AS80 includes two-lane two way carriage way, less chance of high level congestion
E02001367	66 Liverpool 021		Holly Lodge girls college	Knowsley Ln SW	0.5%	AS80 W	0.5%	50/50 - Similar travel time, Similar distance - 5.5/5.6 mile
E02001369	32 Liverpool 023		Everton	AS80 W	0.5%			
E02001371	44 Liverpool 025	MSOA 025	Dovecot Primary School, Libra close	Knowsley Ln SW	0.7%			
E02001372	40 Liverpool 026		Alder Hey Children's Hospital, Broadgreen Hospital, Broughton Hall High School, Knotty Ash Primary School	Knowsley Ln SW	0.3%	AS80 W	0.3%	50/50 - Similar travel time
E02001373	48 Liverpool 027		Fairfield, Liverpool Shopping Park	AS80 W	0.5%	Knowsley Ln SW	0.2%	70/30 - Similar travel time, quicker onto AS046
E02001374	26 Liverpool 028		Liverpool Innovation Park, TJ Hughes, Barclays	AS80 W	0.2%	Knowsley Ln SW	0.2%	50/50 - Depends on proximity to either AS049 or AS080
E02001375	30 Liverpool 029		Old Swan Library, Broadgreen Primary School	AS80 W	0.2%	Knowsley Ln SW	0.2%	50/50 - Knowsley Ln quicker/ Dual Carriageway to allows for better movement at peak times
E02001376	20 Liverpool 030		Kingsingh	AS80 W	0.2%	Knowsley Ln SW	0.1%	70/30 - Dual Carriageway to allows for better movement at peak times
E02001378	25 Liverpool 032		Olive Mount Hospital, Liverpool Shopping Park, Rathbone Hospital	Knowsley Ln SW	0.4%			
E02001380	31 Liverpool 034		Broad Green, Northway Primary School and Nursery	Knowsley Ln SW	0.5%			
E02001381	22 Liverpool 035		Wavertree Technology Park, Archbishop Blanch High School	Knowsley Ln SW	0.3%			
E02001382	45 Liverpool 036		Childwall, St Paschal Baylon Catholic Primary School	Knowsley Ln SW	0.7%			
E02001384	20 Liverpool 038	MSOA 038	Liverpool Cathedral, Georgian Quarter, Chisaton	Knowsley Ln SW	0.2%	Knowsley Ln SW	0.2%	50/50 - Similar travel time
E02001387	21 Liverpool 041		King David Campus, Liverpool Hope University	Knowsley Ln SW	0.3%			
E02001388	21 Liverpool 042		The Royal School for the Blind, The Blue Coat School, Liverpool College, Spire Hospital	Knowsley Ln SW	0.3%			
E02001391	21 Liverpool 045		Netherley, Childwall Golf Club, Lee Park Golf Club	Knowsley Ln SW	0.3%			
E02001392	28 Liverpool 046		Woolton High School, Reynolds Park	Knowsley Ln SW	0.4%			
E02001393	29 Liverpool 047		Liverpool Hope University, Calderstones School, Abbot's Lea School	Knowsley Ln SW	0.4%			
E02001395	26 Liverpool 049		Tesco, Doveedale Primary School	Knowsley Ln SW	0.4%			
E02001399	32 Liverpool 053		Liverpool John Moores - IM March Campus, West Allerton Primary School	Knowsley Ln SW	0.5%			
E02001400	22 Liverpool 054		Allerton Primary School, Triumph Business Park	Knowsley Ln SW	0.3%			
E02001401	28 Liverpool 055		Hunts Cross Retail Park, St Julie's High School	Knowsley Ln SW	0.4%			
E02001402	29 Liverpool 056	MSOA 056	Alghurth Train Station, Cressington, Grazevaldale	Knowsley Ln SW	0.5%			
E02001405	31 Liverpool 059		Speke Shopping Park, Morrisons, Iceland	Knowsley Ln SW	0.5%			
E02001436	21 Sefton 008		southport business park, southport hospital	AS80 W	0.3%			
E02001437	28 Sefton 009		Birkdale	AS80 W	0.4%			
E02001441	34 Sefton 013		RAF Woodvale	AS80 W	0.5%			
E02001442	25 Sefton 014		North East Formby	AS80 W	0.4%			
E02001443	45 Sefton 015		south west Formby, range high school	AS80 W	0.7%			
E02001444	24 Sefton 016		South East Formby, Ince Blundell	AS80 W	0.4%			
E02001445	114 Sefton 017		Lydiate, north maghull, rose mount nursery	AS80 W	1.8%			
E02001446	82 Sefton 018		east maghull, maghull north train station	AS208	1.3%			
E02001447	68 Sefton 019	MSOA 019	Maricourt Catholic High School, Maghull	AS80 W	1.0%			
E02001448	72 Sefton 020		south west maghull, sefton meadows garden centre	AS80 W	1.1%			
E02001449	49 Sefton 021		little Crosby, Thornton, hightown	AS80 W	0.8%			
E02001450	24 Sefton 022		Hall road train station, blundell sands, St michael church of england high school	AS80 W	0.4%			
E02001451	44 Sefton 023		netherton, bootle and netherton community fire station	AS80 W	0.7%			
E02001452	24 Sefton 024		forefield community infant and nursery school, pendle drive	AS80 W	0.4%			
E02001453	52 Sefton 025		great Crosby roman catholic primary school	AS80 W	0.8%			
E02001454	86 Sefton 026		waddicar, ashworth hospital	AS208	0.7%	AS80 W	0.7%	0.7% 50/50 - Similar travel time, similar road (Two lane carriageway
E02001455	64 Sefton 027		Aintree Retail Park & Aintree Racecourse	AS80 W	1.0%			
E02001456	33 Sefton 028		brighton le sands, St marys college	AS80 W	0.5%			
E02001457	33 Sefton 029	MSOA 029	Netherton & Litherland	AS80 W	0.5%			
E02001458	31 Sefton 030		Crosby, waterloo primary school	AS80 W	0.5%			
E02001459	51 Sefton 031		Litherland high school, hutton hill park	AS80 W	0.8%			
E02001460	37 Sefton 032		Seaforth & Waterloo	AS80 W	0.6%			
E02001461	44 Sefton 033		savio salesian college	AS80 W	0.7%			
E02001463	37 Sefton 035		trinity park, bootle cemetery	AS80 W	0.6%			
E02001464	21 Sefton 036		North Bootle	AS80 W	0.3%			
E02001466	43 Sefton 038		bedford primary school, liverpool trojans baseball club	AS80 W	0.7%			
E02001406	46 St. Helens 001	MSOA 001	Rainford	AS80 E	0.7%			
E02001407	34 St. Helens 002		Billinge	AS80 E	0.5%			
E02001409	58 St. Helens 004		Haresfinch, Pilkington's, Carr Mill, Moss Bank	AS80 E	0.9%			
E02001412	45 St. Helens 007		Denton's Green, Cowley Hill, Windle	AS80 E	0.7%			
E02001413	47 St. Helens 008		Blackbrook, St Augustin's School	AS80 E	0.7%			
E02001414	36 St. Helens 009		Eccleston	AS80 E	0.6%			
E02001416	20 St. Helens 011		Broad Oak, East Parr	AS80 E	0.3%			
E02001417	26 St. Helens 012		Town Centre West, Newtown	AS80 E	0.4%			
E02001420	27 St. Helens 015		Newton-le-Willows East	AS80 E	0.4%			
E02001421	37 St. Helens 016		West Park, Grange Park	AS80 E	0.6%			
E02001423	37 St. Helens 018	MSOA 018	Portico, Eccleston Lane Ends	AS80 E	0.6%			
E02001424	52 St. Helens 019		Peaseley Cross, Thatto Heath, Lea Green	AS80 E	0.8%			
E02001425	53 St. Helens 020		Sutton, Sutton Leach, Reginald Rd Ind Est	AS80 E	0.8%			
E02001426	29 St. Helens 021		Longton Lane Community Primary School, Rainhill Cricket Club Pitch, Penny's Pl	Knowsley Ln SW	0.4%			
E02001427	57 St. Helens 022		St Helens Junction, Sutton Manor, Clock Face, Bold	AS80 E	0.9%			
E02001428	29 St. Helens 023		Rainhill	Knowsley Ln SW	0.4%			
E02002598	22 Warrington 009	MSOA 009	Warrington	Knowsley Ln SW	0.2%	Killing Rd	0.2%	
E02002599	21 Warrington 010		Gulliver's World Theme Park, Westbrook, Westbrook Old Hall Primary School	Knowsley Ln SW	0.2%	Killing Rd	0.2%	
E02002604	24 Warrington 015		Tim Parry Recreation Ground, Lingley Green, Sankey for Penketh	Knowsley Ln SW	0.2%	Killing Rd	0.2%	
E02005306	36 West Lancashire 003		Haskayne, scarisbrick	AS80 E	0.6%			
E02005307	37 West Lancashire 004		Burscough Bridge, Richmond Park	AS208	0.3%	AS80 E	0.3%	50/50 - Similar Travel Time
E02005309	35 West Lancashire 006		Portonville Primary School, West End Primary School	AS208	0.3%	AS80 W	0.3%	50/50 - Similar travel time and road
E02005310	25 West Lancashire 007		Ormskirk town centre	AS80 E	0.4%			
E02005311	39 West Lancashire 008		Bickerstaffe	AS80 E	0.6%			
E02005312	35 West Lancashire 009		Lathom High School, Tawd Valley Park	AS80 E	0.5%			
E02005313	28 West Lancashire 010		West Lancashire College, Skelmersdale, Birch Green	AS80 E	0.4%			
E02005314	36 West Lancashire 011	MSOA 011	east Skelmersdale	AS80 E	0.6%			
E02005315	98 West Lancashire 012		Aughton, Town Green, Cleaves Hills	AS80 W	1.5%			
E02005318	20 West Lancashire 015		Upholland, West Pimbo Ind Est	AS80 E	0.3%			
E02001304	23 Wigan 018		Far Moor, Higher End, Orrell	AS80 E	0.4%			
E02001307	36 Wigan 021		Winstanley, Wheatleia Industrial Estate, Highfield	AS80 E	0.6%			
E02001322	23 Wigan 036		Ashdon-in-Makerfield, Ashdon Bears Rugby Club	AS80 E	0.4%			
E02001325	22 Wigan 039		Kenyon Hall Farm Airstrip, Town of Lowton, Lowton St. Lukes	AS80 E	0.3%			
Total	6508				91.9%		8.2%	100.0%

APPENDIX H

JUNCTION CAPACITY ASSESSMENT REPORT OUTPUTS

Full Input Data And Results

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

From Stage	To Stage				
	1	2	3	4	5
	1		9	9	9
	2	10		10	9
	3	9	9		9
	4	10	9	10	10
	5	10	10	9	10

Full Input Data And Results
Give-Way Lane Input Data
Junction: A580/Coopers Lane
There are no Opposed Lanes in this Junction

Lane Input Data

Junction: A580/Coopers Lane												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A580 West)	U	B	2	3	16.5	Geom	-	4.00	0.00	Y	Arm 7 Left	30.00
1/2 (A580 West)	U	A	2	3	60.0	Geom	-	3.30	0.00	Y	Arm 6 Ahead	Inf
1/3 (A580 West)	U	A	2	3	60.0	Geom	-	3.30	0.00	N	Arm 6 Ahead	Inf
1/4 (A580 West)	U	X	2	3	15.7	Geom	-	3.30	0.00	Y	Arm 8 Right	25.00
2/1 (A580 East)	U	H	2	3	22.3	Geom	-	4.80	0.00	Y	Arm 8 Left	25.00
2/2 (A580 East)	U	G	2	3	60.0	Geom	-	3.35	0.00	Y	Arm 5 Ahead	Inf
2/3 (A580 East)	U	G	2	3	60.0	Geom	-	3.35	0.00	N	Arm 5 Ahead	Inf
2/4 (A580 East)	U	F	2	3	60.0	Geom	-	3.35	0.00	N	Arm 7 Right	25.00
2/5 (A580 East)	U	F	2	3	40.0	Geom	-	3.35	0.00	Y	Arm 7 Right	22.00
3/1 (Coopers Ln)	U	E	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 6 Left	30.00
3/2 (Coopers Ln)	U	D	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 8 Ahead	Inf
3/3 (Coopers Ln)	U	C	2	3	5.0	Geom	-	3.85	0.00	Y	Arm 5 Right	28.00
4/1 (Ormskirk Rd)	U	K	2	3	3.8	Geom	-	4.00	0.00	Y	Arm 5 Left	30.00
4/2 (Ormskirk Rd)	U	J	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 7 Ahead	Inf
4/3 (Ormskirk Rd)	U	I	2	3	13.9	Geom	-	3.65	0.00	N	Arm 6 Right	25.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM Base 2021'	07:45	08:45	01:00	
2: 'PM Base 2021'	16:30	17:30	01:00	
3: 'AM Without Dev 2027'	07:45	08:45	01:00	
4: 'PM Without Dev 2027'	16:30	17:30	01:00	
5: 'AM With Dev 2027'	07:45	08:45	01:00	
6: 'PM With Dev 2027'	16:30	17:30	01:00	
7: 'AM With Dev 2027 100% B2'	07:45	08:45	01:00	
8: 'PM With Dev 2027 100% B2'	16:30	17:30	01:00	

Scenario 1: 'AM Base 2021' (FG1: 'AM Base 2021', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination						
	A	B	C	D	Tot.		
	A	0	78	1043	450	1571	
	B	162	0	26	353	541	
	C	659	27	0	367	1053	
D	244	261	138	0	643		
Tot.	1065	366	1207	1170	3808		

Traffic Lane Flows

Lane	Scenario 1: AM Base 2021
Junction: A580/Coopers Lane	
1/1 (short)	367
1/2 (with short)	668(In) 301(Out)
1/3 (with short)	385(In) 358(Out)
1/4 (short)	27
2/1 (short)	78
2/2 (with short)	586(In) 508(Out)
2/3	535
2/4 (with short)	450(In) 234(Out)
2/5 (short)	216
3/1	244
3/2 (with short)	399(In) 261(Out)
3/3 (short)	138
4/1 (short)	26
4/2 (with short)	379(In) 353(Out)
4/3	162
5/1	590
5/2	617
6/1	504
6/2	561
7/1	595
7/2	575
8/1	366

Lane Saturation Flows

Junction: A580/Coopers Lane									
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)	
1/1 (A580 West)	4.00	0.00	Y	Arm 7 Left	30.00	100.0 %	1919	1919	
1/2 (A580 West)	3.30	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1945	1945	
1/3 (A580 West)	3.30	0.00	N	Arm 6 Ahead	Inf	100.0 %	2085	2085	
1/4 (A580 West)	3.30	0.00	Y	Arm 8 Right	25.00	100.0 %	1835	1835	
2/1 (A580 East)	4.80	0.00	Y	Arm 8 Left	25.00	100.0 %	1976	1976	
2/2 (A580 East)	3.35	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1950	1950	
2/3 (A580 East)	3.35	0.00	N	Arm 5 Ahead	Inf	100.0 %	2090	2090	
2/4 (A580 East)	3.35	0.00	N	Arm 7 Right	25.00	100.0 %	1972	1972	
2/5 (A580 East)	3.35	0.00	Y	Arm 7 Right	22.00	100.0 %	1826	1826	
3/1 (Coopers Ln)	4.00	0.00	Y	Arm 6 Left	30.00	100.0 %	1919	1919	
3/2 (Coopers Ln)	3.70	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1985	1985	
3/3 (Coopers Ln)	3.85	0.00	Y	Arm 5 Right	28.00	100.0 %	1898	1898	
4/1 (Ormskirk Rd)	4.00	0.00	Y	Arm 5 Left	30.00	100.0 %	1919	1919	
4/2 (Ormskirk Rd)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980	
4/3 (Ormskirk Rd)	3.65	0.00	N	Arm 6 Right	25.00	100.0 %	2000	2000	
5/1	Infinite Saturation Flow						Inf	Inf	
5/2	Infinite Saturation Flow						Inf	Inf	
6/1	Infinite Saturation Flow						Inf	Inf	
6/2	Infinite Saturation Flow						Inf	Inf	
7/1	Infinite Saturation Flow						Inf	Inf	
7/2	Infinite Saturation Flow						Inf	Inf	
8/1	Infinite Saturation Flow						Inf	Inf	

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
	A	0	79	1097	483	1659
Origin	B	171	0	27	377	575
	C	690	29	0	385	1104
	D	257	277	142	0	676
	Tot.	1118	385	1266	1245	4014

Traffic Lane Flows

Lane	Scenario 3: AM Without Dev 2027	
	Junction: A580/Coopers Lane	
1/1 (short)	385	
1/2 (with short)	687(In) 302(Out)	
1/3 (with short)	417(In) 388(Out)	
1/4 (short)	29	
2/1 (short)	79	
2/2 (with short)	612(In) 533(Out)	
2/3	564	
2/4 (with short)	483(In) 251(Out)	
2/5 (short)	232	
3/1	257	
3/2 (with short)	419(In) 277(Out)	
3/3 (short)	142	
4/1 (short)	27	
4/2 (with short)	404(In) 377(Out)	
4/3	171	
5/1	618	
5/2	648	
6/1	515	
6/2	603	
7/1	633	
7/2	612	
8/1	385	

Lane Saturation Flows

Junction: A580/Coopers Lane									
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)	
1/1 (A580 West)	4.00	0.00	Y	Arm 7 Left	30.00	100.0 %	1919	1919	
1/2 (A580 West)	3.30	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1945	1945	
1/3 (A580 West)	3.30	0.00	N	Arm 6 Ahead	Inf	100.0 %	2085	2085	
1/4 (A580 West)	3.30	0.00	Y	Arm 8 Right	25.00	100.0 %	1835	1835	
2/1 (A580 East)	4.80	0.00	Y	Arm 8 Left	25.00	100.0 %	1976	1976	
2/2 (A580 East)	3.35	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1950	1950	
2/3 (A580 East)	3.35	0.00	N	Arm 5 Ahead	Inf	100.0 %	2090	2090	
2/4 (A580 East)	3.35	0.00	N	Arm 7 Right	25.00	100.0 %	1972	1972	
2/5 (A580 East)	3.35	0.00	Y	Arm 7 Right	22.00	100.0 %	1826	1826	
3/1 (Coopers Ln)	4.00	0.00	Y	Arm 6 Left	30.00	100.0 %	1919	1919	
3/2 (Coopers Ln)	3.70	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1985	1985	
3/3 (Coopers Ln)	3.85	0.00	Y	Arm 5 Right	28.00	100.0 %	1898	1898	
4/1 (Ormskirk Rd)	4.00	0.00	Y	Arm 5 Left	30.00	100.0 %	1919	1919	
4/2 (Ormskirk Rd)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980	
4/3 (Ormskirk Rd)	3.65	0.00	N	Arm 6 Right	25.00	100.0 %	2000	2000	
5/1	Infinite Saturation Flow						Inf	Inf	
5/2	Infinite Saturation Flow						Inf	Inf	
6/1	Infinite Saturation Flow						Inf	Inf	
6/2	Infinite Saturation Flow						Inf	Inf	
7/1	Infinite Saturation Flow						Inf	Inf	
7/2	Infinite Saturation Flow						Inf	Inf	
8/1	Infinite Saturation Flow						Inf	Inf	

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
	A	0	87	1097	483	1667
Origin	B	174	0	31	377	582
	C	690	42	0	385	1117
	D	257	280	142	0	679
	Tot.	1121	409	1270	1245	4045

Traffic Lane Flows

Lane	Scenario 5: AM With Dev 2027	
	Junction: A580/Coopers Lane	
1/1 (short)	385	
1/2 (with short)	673(In) 288(Out)	
1/3 (with short)	444(In) 402(Out)	
1/4 (short)	42	
2/1 (short)	87	
2/2 (with short)	620(In) 533(Out)	
2/3	564	
2/4 (with short)	483(In) 251(Out)	
2/5 (short)	232	
3/1	257	
3/2 (with short)	422(In) 280(Out)	
3/3 (short)	142	
4/1 (short)	31	
4/2 (with short)	408(In) 377(Out)	
4/3	174	
5/1	620	
5/2	650	
6/1	503	
6/2	618	
7/1	633	
7/2	612	
8/1	409	

Lane Saturation Flows

Junction: A580/Coopers Lane									
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)	
1/1 (A580 West)	4.00	0.00	Y	Arm 7 Left	30.00	100.0 %	1919	1919	
1/2 (A580 West)	3.30	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1945	1945	
1/3 (A580 West)	3.30	0.00	N	Arm 6 Ahead	Inf	100.0 %	2085	2085	
1/4 (A580 West)	3.30	0.00	Y	Arm 8 Right	25.00	100.0 %	1835	1835	
2/1 (A580 East)	4.80	0.00	Y	Arm 8 Left	25.00	100.0 %	1976	1976	
2/2 (A580 East)	3.35	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1950	1950	
2/3 (A580 East)	3.35	0.00	N	Arm 5 Ahead	Inf	100.0 %	2090	2090	
2/4 (A580 East)	3.35	0.00	N	Arm 7 Right	25.00	100.0 %	1972	1972	
2/5 (A580 East)	3.35	0.00	Y	Arm 7 Right	22.00	100.0 %	1826	1826	
3/1 (Coopers Ln)	4.00	0.00	Y	Arm 6 Left	30.00	100.0 %	1919	1919	
3/2 (Coopers Ln)	3.70	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1985	1985	
3/3 (Coopers Ln)	3.85	0.00	Y	Arm 5 Right	28.00	100.0 %	1898	1898	
4/1 (Ormskirk Rd)	4.00	0.00	Y	Arm 5 Left	30.00	100.0 %	1919	1919	
4/2 (Ormskirk Rd)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980	
4/3 (Ormskirk Rd)	3.65	0.00	N	Arm 6 Right	25.00	100.0 %	2000	2000	
5/1	Infinite Saturation Flow						Inf	Inf	
5/2	Infinite Saturation Flow						Inf	Inf	
6/1	Infinite Saturation Flow						Inf	Inf	
6/2	Infinite Saturation Flow						Inf	Inf	
7/1	Infinite Saturation Flow						Inf	Inf	
7/2	Infinite Saturation Flow						Inf	Inf	
8/1	Infinite Saturation Flow						Inf	Inf	

Scenario 8: 'PM With Dev 2027 100% B2' (FG8: 'PM With Dev 2027 100% B2', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
	A	0	9	677	193	879
Origin	B	327	0	115	346	788
	C	1126	18	0	166	1310
	D	570	261	265	0	1116
	Tot.	2023	308	1057	705	4093

Traffic Lane Flows

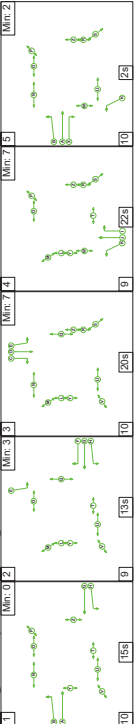
Lane	Scenario 8: PM With Dev 2027 100% B2	
	Junction: A580/Coopers Lane	
1/1 (short)	166	
1/2 (with short)	697(In) 531(Out)	
1/3 (with short)	613(In) 595(Out)	
1/4 (short)	18	
2/1 (short)	9	
2/2 (with short)	333(In) 324(Out)	
2/3	353	
2/4 (with short)	193(In) 100(Out)	
2/5 (short)	93	
3/1	570	
3/2 (with short)	546(In) 281(Out)	
3/3 (short)	265	
4/1 (short)	115	
4/2 (with short)	461(In) 346(Out)	
4/3	327	
5/1	515	
5/2	542	
6/1	979	
6/2	1044	
7/1	356	
7/2	349	
8/1	308	

Lane Saturation Flows

Junction: A580/Coopers Lane									
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)	
1/1 (A580 West)	4.00	0.00	Y	Arm 7 Left	30.00	100.0 %	1919	1919	
1/2 (A580 West)	3.30	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1945	1945	
1/3 (A580 West)	3.30	0.00	N	Arm 6 Ahead	Inf	100.0 %	2085	2085	
1/4 (A580 West)	3.30	0.00	Y	Arm 8 Right	25.00	100.0 %	1835	1835	
2/1 (A580 East)	4.80	0.00	Y	Arm 8 Left	25.00	100.0 %	1976	1976	
2/2 (A580 East)	3.35	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1950	1950	
2/3 (A580 East)	3.35	0.00	N	Arm 5 Ahead	Inf	100.0 %	2090	2090	
2/4 (A580 East)	3.35	0.00	N	Arm 7 Right	25.00	100.0 %	1972	1972	
2/5 (A580 East)	3.35	0.00	Y	Arm 7 Right	22.00	100.0 %	1826	1826	
3/1 (Coopers Ln)	4.00	0.00	Y	Arm 6 Left	30.00	100.0 %	1919	1919	
3/2 (Coopers Ln)	3.70	0.00	Y	Arm 8 Ahead	Inf	100.0 %	1985	1985	
3/3 (Coopers Ln)	3.85	0.00	Y	Arm 5 Right	28.00	100.0 %	1898	1898	
4/1 (Ormskirk Rd)	4.00	0.00	Y	Arm 5 Left	30.00	100.0 %	1919	1919	
4/2 (Ormskirk Rd)	3.65	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1980	1980	
4/3 (Ormskirk Rd)	3.65	0.00	N	Arm 6 Right	25.00	100.0 %	2000	2000	
5/1	Infinite Saturation Flow						Inf	Inf	
5/2	Infinite Saturation Flow						Inf	Inf	
6/1	Infinite Saturation Flow						Inf	Inf	
6/2	Infinite Saturation Flow						Inf	Inf	
7/1	Infinite Saturation Flow						Inf	Inf	
7/2	Infinite Saturation Flow						Inf	Inf	
8/1	Infinite Saturation Flow						Inf	Inf	

Scenario 1: 'AM Base 2021' (FG1: 'AM Base 2021', Plan 1: 'Network Control Plan 1')

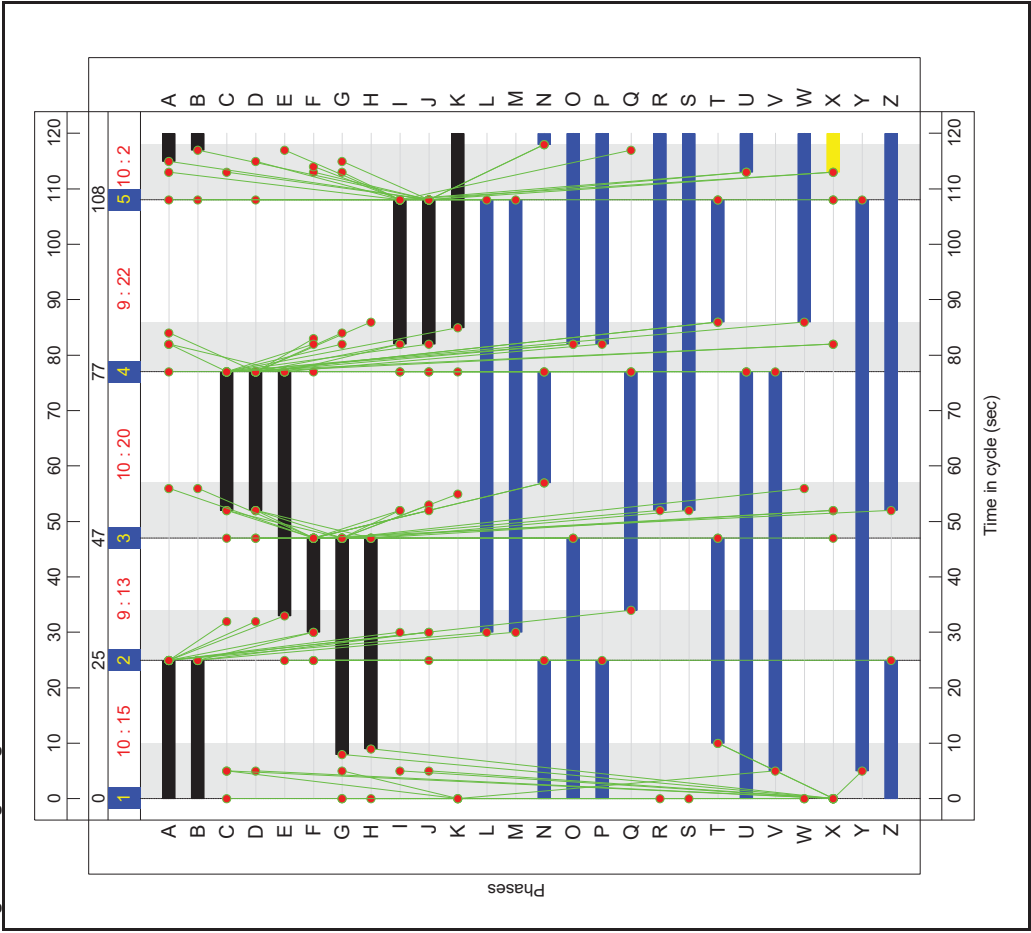
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	15	13	20	22	2
Change Point	0	25	47	77	108

Signal Timings Diagram

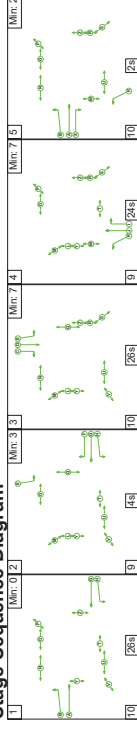


Full Input Data And Results

Network Results													
Item	Lane Description	Lane Type	Controller Stream	Position in Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (e)	Sat Flow (pcu/hr)	Capacity (pcu)	Des Sat (%)
Network: A580/Coopers Lane Existing													
A580/Coopers Lane	-	-	N/A	-	-	-	-	-	-	-	-	-	80.4%
1/2+1/1	A580 West Ahead Left	U	N/A	N/A	A B	-	1	30.28	-	668	1945:1919	380+464	79.1% 79.1%
1/3+1/4	A580 West Ahead Right	U	N/A	N/A	A X	-	1	30.7	-	365	2095:1835	539+41	66.5% 66.5%
2/2+2/1	A580 East Ahead Left	U	N/A	N/A	G H	-	1	39.38	-	586	1950:1976	650+100	78.2% 78.2%
2/3	A580 East Ahead	U	N/A	N/A	G	-	1	39	-	535	2080	697	78.8% 78.8%
2/4+2/5	A580 East Right	U	N/A	N/A	F	-	1	17	-	450	1872:1826	296+274	78.1% 75.9%
3/1	Coopers Ln Left	U	N/A	N/A	E	-	1	44	-	244	1919	720	33.9% 33.9%
3/2+3/3	Coopers Ln Right Ahead	U	N/A	N/A	D C	-	1	25	-	389	1985:1898	331+175	78.8% 78.8%
4/2+4/1	Ormskirk Rd Left Ahead	U	N/A	N/A	J K	-	1	26.35	-	379	1980:1919	439+32	80.4% 80.4%
4/3	Ormskirk Rd Right	U	N/A	N/A	I	-	1	26	-	462	2000	450	36.0% 36.0%
5/1	-	U	N/A	N/A	-	-	-	-	-	590	Inf	Inf	0.0% 0.0%
5/2	-	U	N/A	N/A	-	-	-	-	-	617	Inf	Inf	0.0% 0.0%
6/1	-	U	N/A	N/A	-	-	-	-	-	504	Inf	Inf	0.0% 0.0%
6/2	-	U	N/A	N/A	-	-	-	-	-	551	Inf	Inf	0.0% 0.0%
7/1	-	U	N/A	N/A	-	-	-	-	-	595	Inf	Inf	0.0% 0.0%
7/2	-	U	N/A	N/A	-	-	-	-	-	575	Inf	Inf	0.0% 0.0%
8/1	-	U	N/A	N/A	-	-	-	-	-	366	Inf	Inf	0.0% 0.0%

Full Input Data And Results
Scenario 2: 'PM Base 2021' (FG2: 'PM Base 2021', Plan 1: 'Network Control Plan 1')

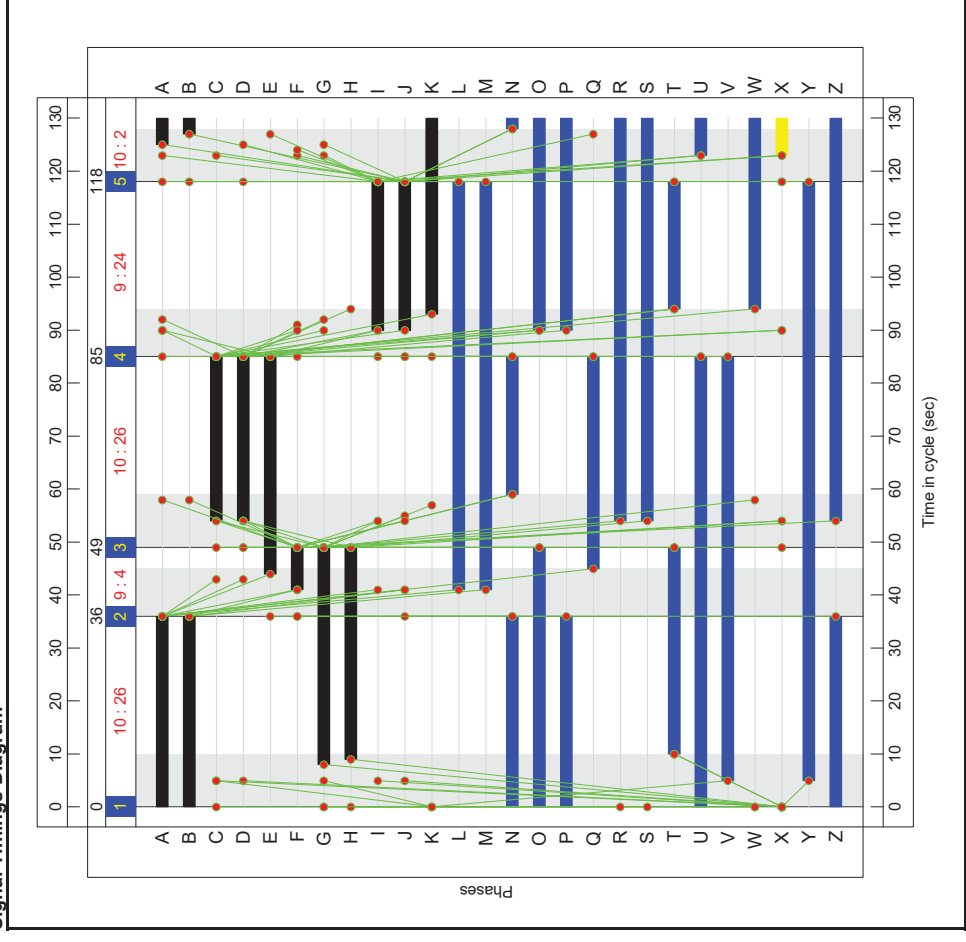
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	26	4	26	24	2
Change Point	0	36	49	85	118

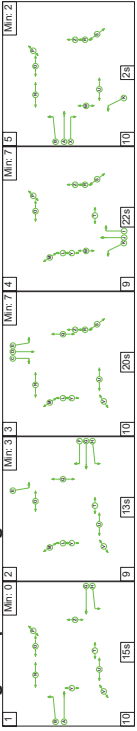
Signal Timings Diagram



Full Input Data And Results

Network Results													
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/hr)	Capacity (pcu)	Dev Sat (%)
Network: A580/Coopers Lane Existing	-	-	N/A	-	-	-	-	-	-	-	-	-	86.9%
	A580/Coopers Lane	-	N/A	-	-	-	-	-	-	-	-	-	86.9%
1/2+1/1	A580 West Ahead Left	U	N/A	N/A	A B		1	4139	-	667	1945:1919	588+186	88.2 : 86.2%
1/3+1/4	A580 West Ahead Right	U	N/A	N/A	A X		1	417	-	960	2085:1835	673+18	83.9 : 83.9%
2/2+2/1	A580 East Ahead Left	U	N/A	N/A	G H		1	4140	-	315	1950:1976	628+16	48.9 : 48.9%
2/3	A580 East Ahead	U	N/A	N/A	G		1	41	-	337	2080	675	49.9%
2/4+2/5	A580 East Right	U	N/A	N/A	F		1	8	-	179	1972:1826	137+126	68.1 : 68.0%
3/1	Coopers Ln Left	U	N/A	N/A	E		1	41	-	539	1919	620	86.9%
3/2+3/3	Coopers Ln Right Ahead	U	N/A	N/A	D C		1	31	-	519	1985:1898	314+301	84.4 : 84.4%
4/2+4/1	Ormskirk Rd Left Ahead	U	N/A	N/A	J K		1	2837	-	411	1980:1919	380+106	84.5 : 84.5%
4/3	Ormskirk Rd Right	U	N/A	N/A	I		1	28	-	304	2000	446	68.1%
5/1		U	N/A	N/A	-		-	-	-	479	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	509	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	928	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	987	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	334	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	326	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	288	Inf	Inf	0.0%

Full Input Data And Results
Scenario 3: 'AM Without Dev 2027' (FG3: 'AM Without Dev 2027', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram

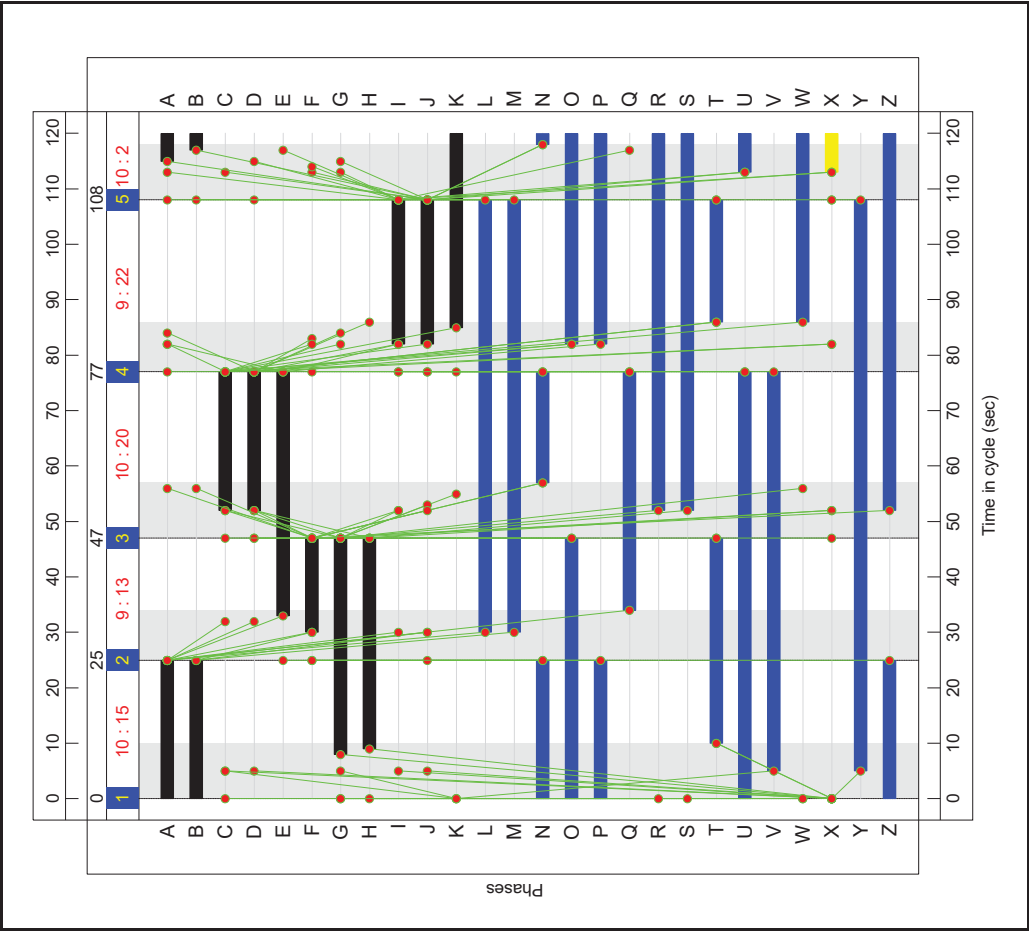


Stage Timings

Stage	1	2	3	4	5
Duration	15	13	20	22	2
Change Point	0	25	47	77	108

Full Input Data And Results													
Item	Arriving (pcu)	Leaving (pcu)	Turners In (pcu)	Turners When Proposed (pcu)	Turners In (pcu)	Uniform Delay (pcu/hr)	Band + Oversat Delay (pcu/hr)	Storage Area Uniform Delay (pcu/hr)	Total Delay (pcu/hr)	Av. Delay per CU (s/pcu)	Max. Back of Queue (pcu)	Rand + Queue (pcu)	Mean Max Queue (pcu)
Network: AS80Coopers Lane Existing AS80Coopers Lane	-	-	0	0	0	44.8	16.8	0.0	61.6	-	-	-	-
	667	667	-	-	-	7.2	3.0	-	10.1	54.8	16.9	3.0	19.8
	580	580	-	-	-	6.7	2.5	-	9.2	56.8	18.9	2.5	21.4
	315	315	-	-	-	3.1	0.5	-	3.6	40.7	8.9	0.5	9.3
	337	337	-	-	-	3.3	0.5	-	3.8	40.8	9.7	0.5	10.2
	179	179	-	-	-	2.9	1.0	-	4.0	80.0	3.3	1.0	4.3
	539	539	-	-	-	6.2	3.1	-	9.3	62.1	18.3	3.1	21.4
	519	519	-	-	-	6.3	2.6	-	8.9	61.7	12.7	2.6	15.2
	411	411	-	-	-	5.2	2.6	-	7.7	67.9	13.0	2.6	15.5
	404	304	-	-	-	3.9	1.1	-	5.0	58.7	10.0	1.1	11.1
479	479	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
509	509	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
52	52	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
61	61	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
62	62	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
71	71	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
72	72	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
73	73	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
81	81	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
C1 - 1002			PRG for Signalled Lanes (%):			3.5	Total Delay for Signalled Lanes (pcu/hr):			61.66	Cycle Time (h): 130		0.0
			PRG Over All Lanes (%):			3.5	Total Delay Over All Lanes (pcu/hr):			61.66			0.0

Signal Timings Diagram

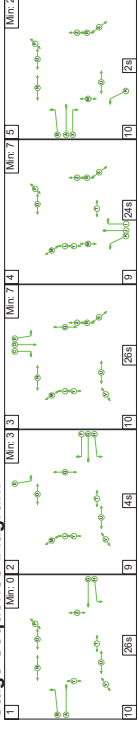


Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position in Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/hr)	Capacity (pcu)	Deg Sat (%)
Network: A580/Coopers Lane Existing													
A580/Coopers Lane	-	-	N/A	-	-	-	-	-	-	-	-	-	85.7%
1/2+1/1	A580 West Ahead Left	U	N/A	N/A	A B	-	1	30.28	-	887	1945:1919	364+464	83.0 : 83.0%
1/3+1/4	A580 West Ahead Right	U	N/A	N/A	A X	-	1	30.7	-	417	2085:1835	539+40	72.0 : 72.0%
2/2+2/1	A580 East Ahead Left	U	N/A	N/A	G H	-	1	39.38	-	612	1950:1976	650+96	82.0 : 82.0%
2/3	A580 East Ahead	U	N/A	N/A	G	-	1	39	-	564	2080	697	81.0%
2/4+2/5	A580 East Right	U	N/A	N/A	F	-	1	17	-	483	1872:1826	296+274	84.9 : 84.7%
3/1	Coopers Ln Left	U	N/A	N/A	E	-	1	44	-	257	1919	720	35.7%
3/2+3/3	Coopers Ln Right Ahead	U	N/A	N/A	D C	-	1	25	-	419	1985:1898	333+171	83.2 : 83.2%
4/2+4/1	Ormskirk Rd Left Ahead	U	N/A	N/A	J K	-	1	26.35	-	404	1980:1919	440+32	85.7 : 85.7%
4/3	Ormskirk Rd Right	U	N/A	N/A	I	-	1	26	-	171	2000	450	38.0%
5/1	-	U	N/A	N/A	-	-	-	-	-	618	Inf	Inf	0.0%
5/2	-	U	N/A	N/A	-	-	-	-	-	648	Inf	Inf	0.0%
6/1	-	U	N/A	N/A	-	-	-	-	-	516	Inf	Inf	0.0%
6/2	-	U	N/A	N/A	-	-	-	-	-	603	Inf	Inf	0.0%
7/1	-	U	N/A	N/A	-	-	-	-	-	633	Inf	Inf	0.0%
7/2	-	U	N/A	N/A	-	-	-	-	-	612	Inf	Inf	0.0%
8/1	-	U	N/A	N/A	-	-	-	-	-	385	Inf	Inf	0.0%

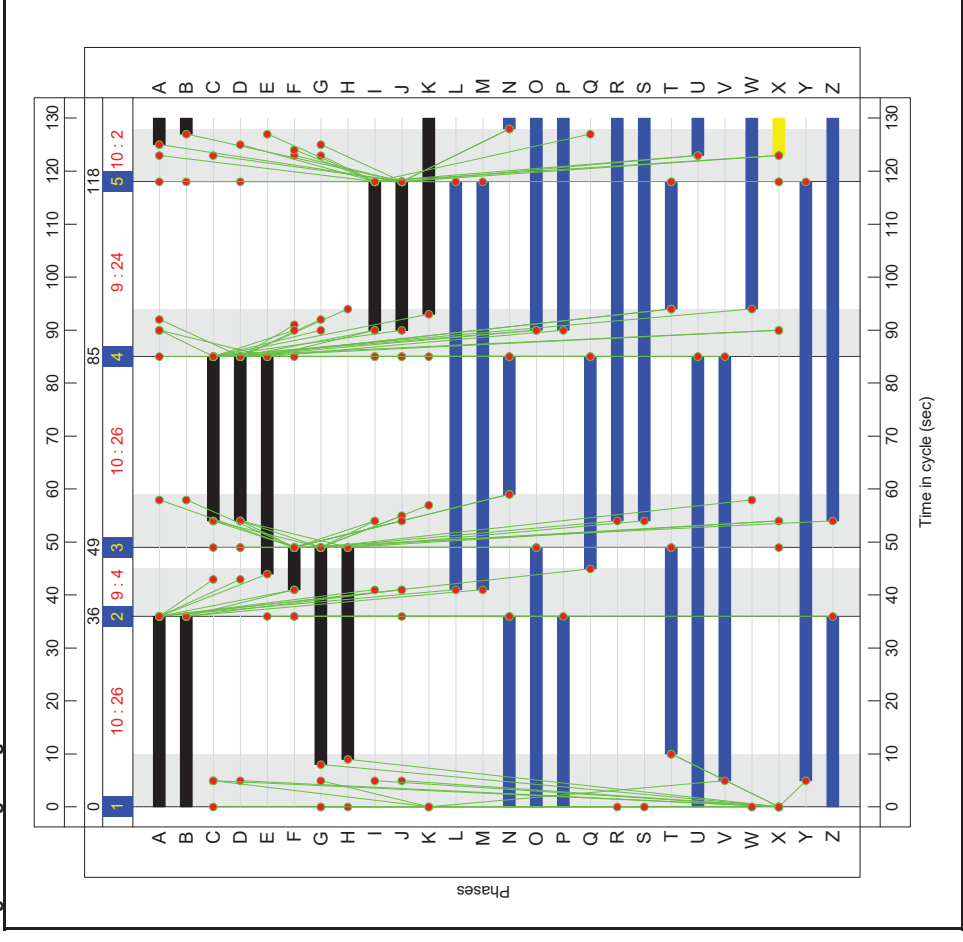
Full Input Data And Results
Scenario 4: 'PM Without Dev 2027' (FG4: 'PM Without Dev 2027', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	26	4	26	24	2
Change Point	0	36	49	85	118

Signal Timings Diagram



Full Input Data And Results

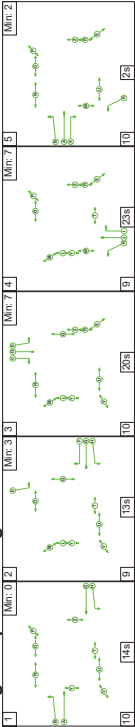
Item	Arriving (pcu)	Leaving (pcu)	Turners in Gaps (pcu)	Turners When Proposed (pcu)	Turners in Program (pcu)	Uniform Delay (pcu/hr)	Red+Overat Delay (pcu/hr)	Storage Area Uniform Delay (pcu/hr)	Total Delay (pcu/hr)	Avg. Delay (s/pcu)	Max. Back of Queue (pcu)	Red+ Queue (pcu)	Mean Max Queue (pcu)
Network:	-	-	0	0	0	44.9	16.2	0.0	61.1	-	-	-	-
A580Coppers Lane Easting	-	-	0	0	0	44.9	16.2	0.0	61.1	-	-	-	-
A580Coppers Lane	687	687	-	-	-	7.9	2.4	-	10.3	53.8	12.1	2.4	14.4
1/2/1/1	417	417	-	-	-	4.8	1.3	-	6.1	52.4	11.7	1.3	13.0
2/2/2/1	612	612	-	-	-	6.1	2.2	-	8.3	48.6	16.3	2.2	18.5
2/3	564	564	-	-	-	5.7	2.1	-	7.8	48.7	17.1	2.1	19.1
2/4/2/5	483	483	-	-	-	6.7	2.6	-	9.3	69.2	8.1	2.6	10.7
3/1	257	257	-	-	-	1.9	0.3	-	2.2	31.0	6.1	0.3	6.4
3/2/3/3	419	419	-	-	-	5.0	2.3	-	7.4	63.2	10.6	2.3	12.9
4/2/4/1	404	404	-	-	-	4.9	2.8	-	7.7	68.6	12.5	2.8	15.3
4/3	171	171	-	-	-	1.9	0.3	-	2.2	45.9	4.8	0.3	5.1
5/1	618	618	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	648	648	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	515	515	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	603	603	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	633	633	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	612	612	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	385	385	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - 1002										Cycle Time (s): 120			
PRC for Signalised Lanes (%):										61.10			
PRC Over All Lanes (%):										81.10			
Total Delay for Signalised Lanes (pcu/hr):										61.10			
Total Delay Over All Lanes (pcu/hr):										81.10			

Full Input Data And Results

Network Results													
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/hr)	Capacity (pcu)	Dev Sat (%)
Network: A580/Coopers Lane Existing	-	-	N/A	-	-	-	-	-	-	-	-	-	91.9%
	A580/Coopers Lane	-	N/A	-	-	-	-	-	-	-	-	-	91.9%
1/2+1/1	A580 West Ahead Left	U	N/A	N/A	A B		1	4139	-	607	1945:1919	588+184	90.3 : 90.3%
1/3+1/4	A580 West Ahead Right	U	N/A	N/A	A X		1	417	-	611	2085:1835	673+18	88.4 : 88.4%
2/2+2/1	A580 East Ahead Left	U	N/A	N/A	G H		1	4140	-	331	1950:1976	628+16	51.4 : 51.4%
2/3	A580 East Ahead	U	N/A	N/A	G		1	41	-	354	2080	675	52.4%
2/4+2/5	A580 East Right	U	N/A	N/A	F		1	8	-	193	1972:1826	137+126	73.2 : 73.6%
3/1	Coopers Ln Left	U	N/A	N/A	E		1	41	-	570	1919	620	91.9%
3/2+3/3	Coopers Ln Right Ahead	U	N/A	N/A	D C		1	31	-	546	1985:1898	315+297	88.1 : 88.1%
4/2+4/1	Ormskirk Rd Left Ahead	U	N/A	N/A	J K		1	2837	-	435	1980:1919	380+106	89.5 : 89.5%
4/3	Ormskirk Rd Right	U	N/A	N/A	I		1	28	-	320	2000	446	71.7%
5/1		U	N/A	N/A	-		-	-	-	504	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	533	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	976	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	1040	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	353	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	346	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	305	Inf	Inf	0.0%

Full Input Data And Results
Scenario 5: 'AM With Dev 2027' (FG5: 'AM With Dev 2027', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



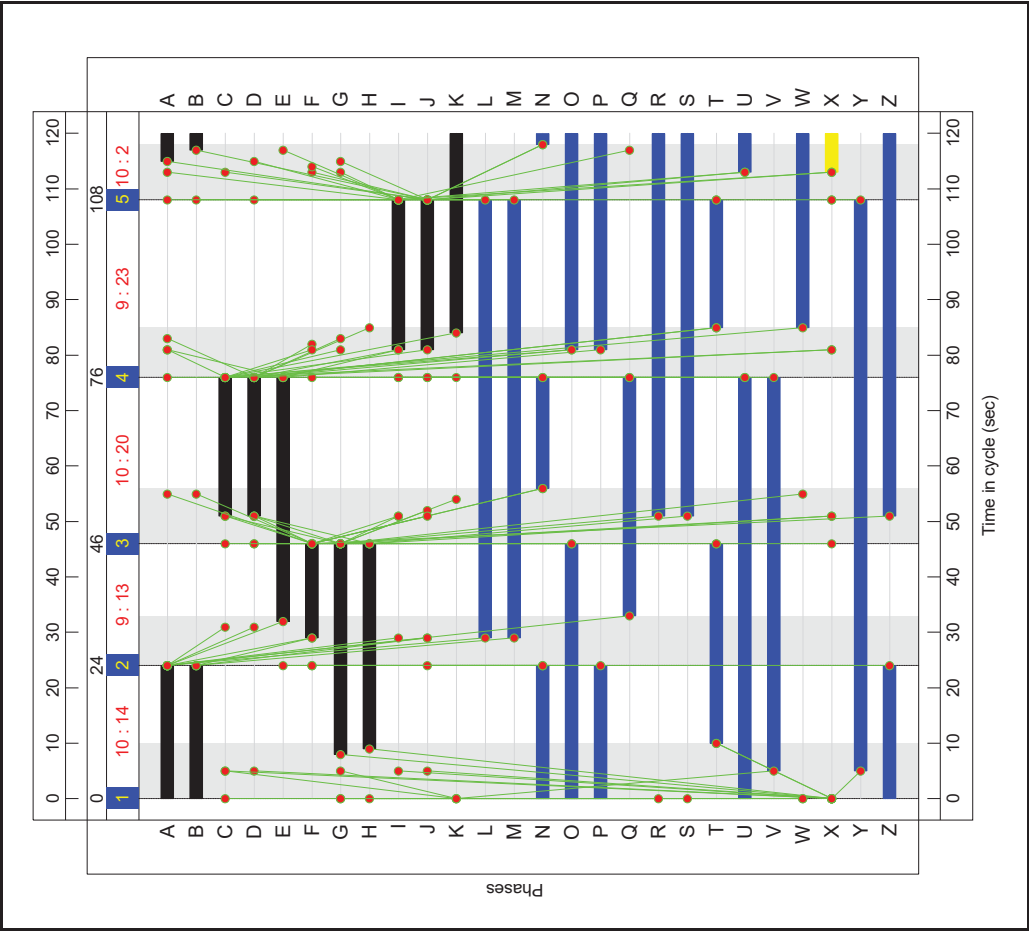
Stage Timings

Stage	1	2	3	4	5
Duration	14	13	20	23	2
Change Point	0	24	46	76	108

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Disposed (pcu)	Turners In (pcu)	Uniform Delay (pcu/hr)	Rand + Oversat Delay (pcu/hr)	Storage Area Uniform Delay (pcu/hr)	Total Delay (pcu/hr)	Avg Delay (s/pcu)	Max. Back of Queue (pcu)	Rand + Max Queue (pcu)	Mean Max Queue (pcu)
Network: A380Coopers Lane Starting	-	-	0	0	0	48.0	23.5	0.0	71.5	-	-	-	-
A380Coopers Lane	-	-	0	0	0	48.0	23.5	0.0	71.5	-	-	-	-
1/2+1/1	687	697	-	-	-	7.6	4.2	-	11.8	60.9	18.6	4.2	22.8
1/3+1/4	611	611	-	-	-	7.1	3.5	-	10.7	62.8	20.3	3.5	23.8
2/2+2/1	331	331	-	-	-	3.3	0.5	-	3.8	41.3	9.4	0.5	9.9
2/3	354	354	-	-	-	3.5	0.5	-	4.1	41.4	10.3	0.5	10.9
2/4+2/5	193	193	-	-	-	3.2	1.3	-	4.5	84.1	3.5	1.3	4.9
3/1	570	570	-	-	-	6.7	4.8	-	11.5	72.6	19.8	4.8	24.6
3/2+3/3	546	546	-	-	-	6.8	3.7	-	10.5	68.9	13.9	3.7	17.6
4/2+4/1	435	435	-	-	-	5.6	3.7	-	9.3	76.9	14.0	3.7	17.8
4/3	320	320	-	-	-	4.2	1.2	-	5.4	60.7	10.7	1.2	11.9
5/1	504	504	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	533	533	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	976	976	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1040	1040	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	353	353	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	348	348	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	305	305	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - 1002										Cycle Time (s): 130			
PRC for Signalised Lanes (%): -2.2										Total Delay for Signalised Lanes (pcu/hr): 71.47			
PRC Over All Lanes (%):										Total Delay Over All Lanes (pcu/hr): 71.47			

Signal Timings Diagram

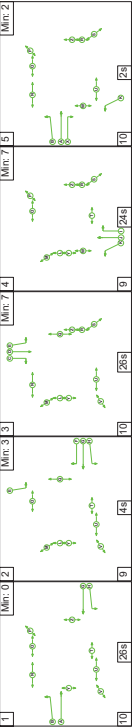


Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position in Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/hr)	Capacity (pcu)	Deg Sat (%)
Network: A580/Coopers Lane Existing													
A580/Coopers Lane	-	-	N/A	-	-	-	-	-	-	-	-	-	86.0%
A580/Coopers Lane	-	-	N/A	-	-	-	-	-	-	-	-	-	86.0%
1/2+1/1	A580 West Ahead Left	U	N/A	N/A	A B		1	29.27	-	673	1945:1919	335+448	86.0% : 86.0%
1/3+1/4	A580 West Ahead Right	U	N/A	N/A	A X		1	29.7	-	444	2095:1835	521+54	77.1% : 77.1%
2/2+2/1	A580 East Ahead Left	U	N/A	N/A	G H		1	38.37	-	620	1950:1976	634+103	84.1% : 84.1%
2/3	A580 East Ahead	U	N/A	N/A	G		1	38	-	564	2080	679	83.0% : 83.0%
2/4+2/5	A580 East Right	U	N/A	N/A	F		1	17	-	483	1972:1826	296+274	84.9% : 84.7%
3/1	Coopers Ln Left	U	N/A	N/A	E		1	44	-	257	1919	720	35.7% : 35.7%
3/2+3/3	Coopers Ln Right Ahead	U	N/A	N/A	D C		1	25	-	422	1985:1898	334+169	83.9% : 83.9%
4/2+4/1	Ormskirk Rd Left Ahead	U	N/A	N/A	J K		1	27.36	-	408	1980:1919	452+37	83.4% : 83.4%
4/3	Ormskirk Rd Right	U	N/A	N/A	I		1	27	-	174	2000	467	37.3% : 37.3%
5/1		U	N/A	N/A	-	-	-	-	-	620	Inf	Inf	0.0% : 0.0%
5/2		U	N/A	N/A	-	-	-	-	-	650	Inf	Inf	0.0% : 0.0%
6/1		U	N/A	N/A	-	-	-	-	-	503	Inf	Inf	0.0% : 0.0%
6/2		U	N/A	N/A	-	-	-	-	-	618	Inf	Inf	0.0% : 0.0%
7/1		U	N/A	N/A	-	-	-	-	-	633	Inf	Inf	0.0% : 0.0%
7/2		U	N/A	N/A	-	-	-	-	-	612	Inf	Inf	0.0% : 0.0%
8/1		U	N/A	N/A	-	-	-	-	-	409	Inf	Inf	0.0% : 0.0%

Full Input Data And Results
Scenario 6: 'PM With Dev 2027' (FG6: 'PM With Dev 2027', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram



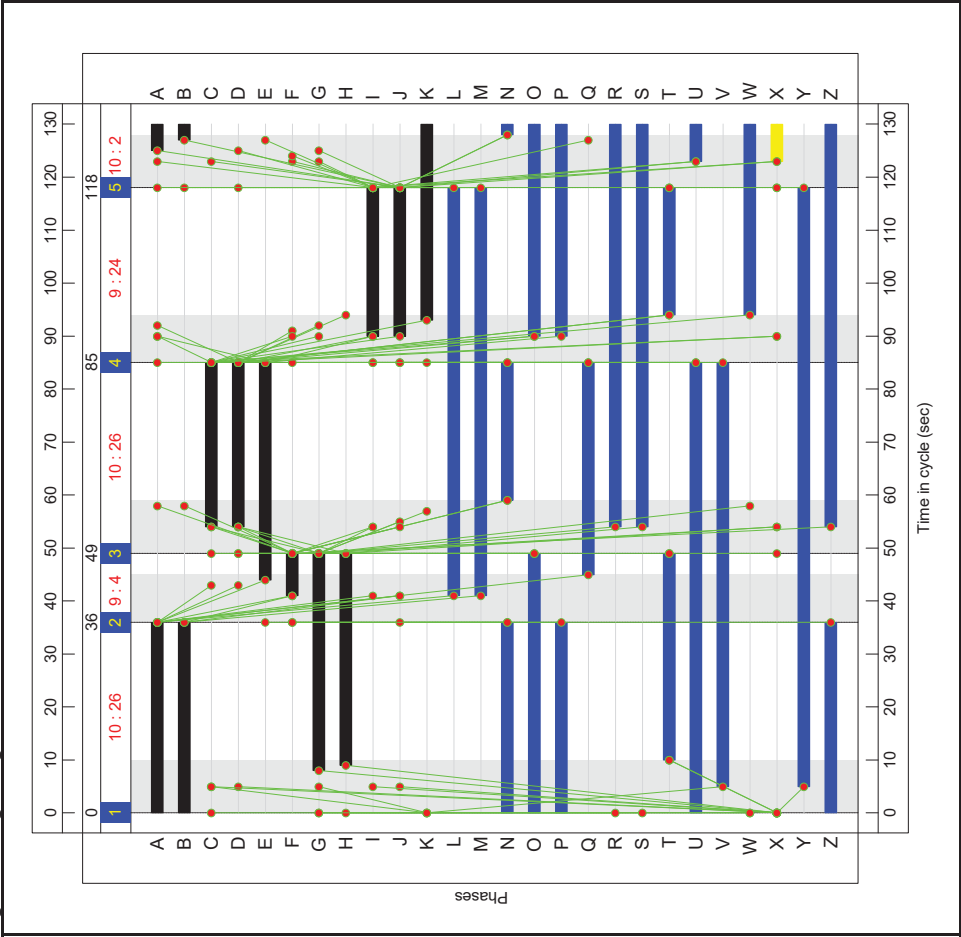
Stage Timings

Stage	1	2	3	4	5
Duration	26	4	4	26	2
Change Point	0	36	49	85	118

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners in Gaps (pcu)	Turners When Proposed (pcu)	Turners in (pcu)	Uniform Delay (pcu/hr)	Random Delay (pcu/hr)	Storage Area (pcu/hr)	Total Delay (pcu/hr)	Avg Delay (sec/pcu)	Max. Back of Queue (pcu)	Random Max. Queue (pcu)	Mean Max. Queue (pcu)
Network: A500Coopers Lane Starting	-	-	0	0	0	45.7	17.5	0.0	63.2	-	-	-	-
A500Coopers Lane Ending	-	-	0	0	0	45.7	17.5	0.0	63.2	-	-	-	-
1/2+1/1	673	673	-	-	-	7.9	2.9	-	10.8	57.8	12.3	2.9	15.2
1/3+1/4	444	444	-	-	-	5.3	1.6	-	6.9	56.3	12.4	1.6	14.0
2/2+2/1	620	620	-	-	-	6.3	2.5	-	8.8	51.2	16.4	2.5	19.0
2/3	564	564	-	-	-	5.9	2.4	-	8.2	52.4	17.2	2.4	19.6
2/4+2/5	483	483	-	-	-	6.7	2.6	-	9.3	69.2	8.1	2.6	10.7
3/1	257	257	-	-	-	1.9	0.3	-	2.2	31.0	6.1	0.3	6.4
3/2+3/3	422	422	-	-	-	5.1	2.5	-	7.5	64.1	10.7	2.5	13.2
4/2+4/1	408	408	-	-	-	4.9	2.4	-	7.2	63.9	12.5	2.4	14.9
4/3	174	174	-	-	-	1.9	0.3	-	2.2	44.8	4.8	0.3	5.1
5/1	620	620	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	650	650	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	503	503	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	618	618	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	633	633	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	612	612	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	409	409	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - 1002										Cycle Time (s): 120			
PRC for Signalized Lanes (%):										63.19			
PRC Over All Lanes (%):										63.19			

Signal Timings Diagram



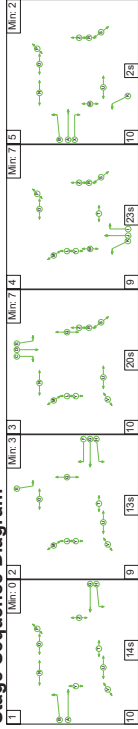
Full Input Data And Results

Network Results													
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/hr)	Capacity (pcu)	Dev Sat (%)
Network: A580/Coopers Lane Existing	-	-	N/A	-	-	-	-	-	-	-	-	-	91.9%
	A580/Coopers Lane	-	N/A	-	-	-	-	-	-	-	-	-	91.9%
1/2+1/1	A580 West Ahead Left	U	N/A	N/A	A B		1	4139	-	607	1945:1919	588+184	90.3 : 90.3%
1/3+1/4	A580 West Ahead Right	U	N/A	N/A	A X		1	417	-	614	2085:1835	672+21	88.6 : 88.6%
2/2+2/1	A580 East Ahead Left	U	N/A	N/A	G H		1	4140	-	335	1950:1976	628+21	51.6 : 51.6%
2/3	A580 East Ahead	U	N/A	N/A	G		1	41	-	353	2080	675	52.3%
2/4+2/5	A580 East Right	U	N/A	N/A	F		1	8	-	193	1972:1826	137+126	73.2 : 73.6%
3/1	Coopers Ln Left	U	N/A	N/A	E		1	41	-	570	1919	620	91.9%
3/2+3/3	Coopers Ln Right Ahead	U	N/A	N/A	D C		1	31	-	546	1985:1898	315+297	88.1 : 89.1%
4/2+4/1	Ormskirk Rd Left Ahead	U	N/A	N/A	J K		1	2837	-	449	1980:1919	374+115	91.8 : 91.8%
4/3	Ormskirk Rd Right	U	N/A	N/A	I		1	28	-	324	2000	446	72.6%
5/1		U	N/A	N/A	-		-	-	-	510	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	538	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	978	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	1042	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	355	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	347	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	311	Inf	Inf	0.0%

Full Input Data And Results

Scenario 7: 'AM With Dev 2027 100% B2' (FG7: 'AM With Dev 2027 100% B2', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



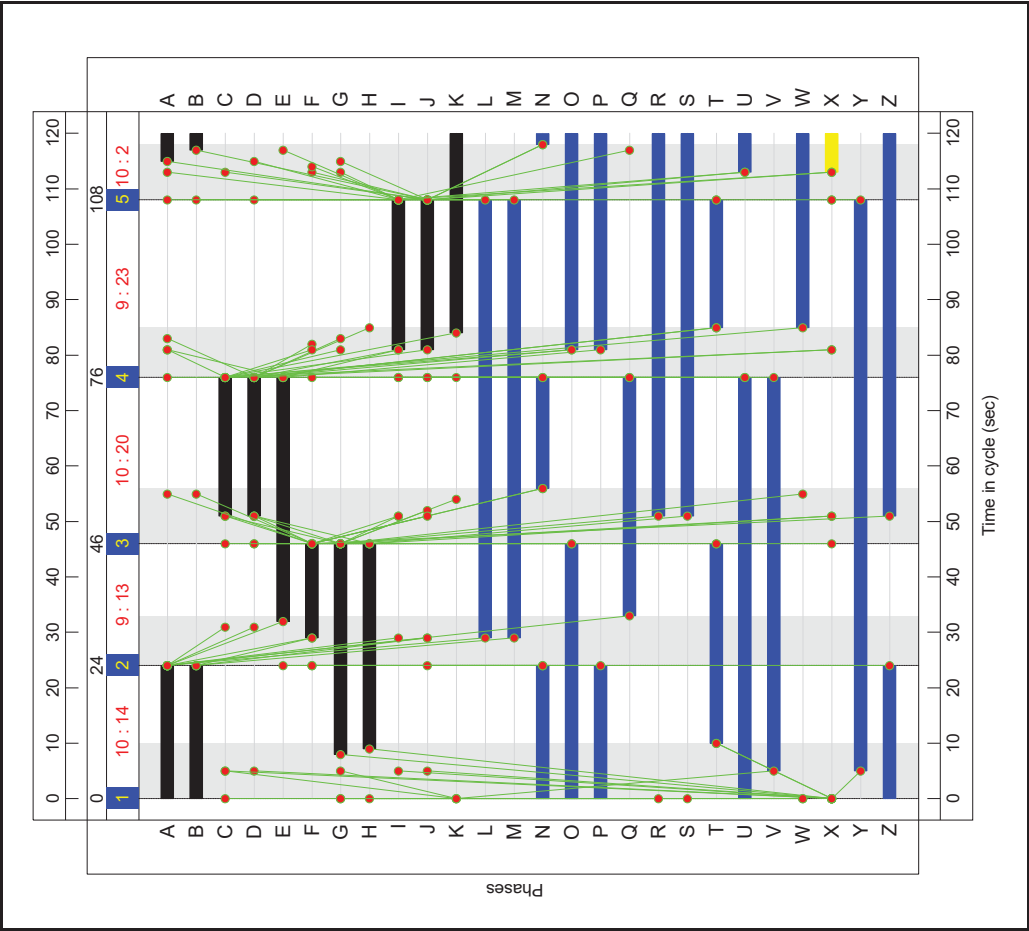
Stage Timings

Stage	1	2	3	4	5
Duration	14	13	20	23	2
Change Point	0	24	46	76	108

Full Input Data And Results

[illegible]

Signal Timings Diagram

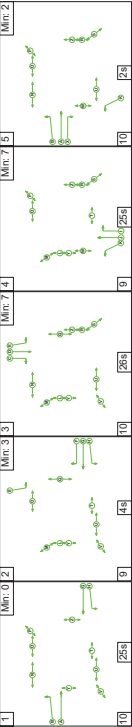


Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position in Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/hr)	Capacity (pcu)	Deg Sat (%)
Network: AS80/Coopers Lane Existing													
AS80/Coopers Lane	-	-	N/A	-	-	-	-	-	-	-	-	-	86.0%
1/2+1/1	AS80 West Ahead Left	U	N/A	N/A	AB		1	2927	-	671	1945:1919	333+448	86.0% : 86.0%
1/3+1/4	AS80 West Ahead Right	U	N/A	N/A	AX		1	297	-	454	2095:1835	521+65	77.5% : 77.5%
2/2+2/1	AS80 East Ahead Left	U	N/A	N/A	GH		1	3837	-	623	1950:1976	634+106	84.3% : 84.3%
2/3	AS80 East Ahead	U	N/A	N/A	G		1	38	-	553	2080	679	82.9% : 82.9%
2/4+2/5	AS80 East Right	U	N/A	N/A	F		1	17	-	483	1972:1826	296+274	84.9% : 84.7%
3/1	Coopers Ln Left	U	N/A	N/A	E		1	44	-	257	1919	720	35.7% : 35.7%
3/2+3/3	Coopers Ln Right Ahead	U	N/A	N/A	DC		1	25	-	425	1985:1898	334+168	84.6% : 84.6%
4/2+4/1	Ormskirk Rd Left Ahead	U	N/A	N/A	JK		1	2736	-	406	1980:1919	454+35	83.1% : 83.1%
4/3	Ormskirk Rd Right	U	N/A	N/A	I		1	27	-	174	2000	467	37.3% : 37.3%
5/1	-	U	N/A	N/A	-	-	-	-	-	620	Inf	Inf	0.0% : 0.0%
5/2	-	U	N/A	N/A	-	-	-	-	-	648	Inf	Inf	0.0% : 0.0%
6/1	-	U	N/A	N/A	-	-	-	-	-	501	Inf	Inf	0.0% : 0.0%
6/2	-	U	N/A	N/A	-	-	-	-	-	620	Inf	Inf	0.0% : 0.0%
7/1	-	U	N/A	N/A	-	-	-	-	-	633	Inf	Inf	0.0% : 0.0%
7/2	-	U	N/A	N/A	-	-	-	-	-	612	Inf	Inf	0.0% : 0.0%
8/1	-	U	N/A	N/A	-	-	-	-	-	422	Inf	Inf	0.0% : 0.0%

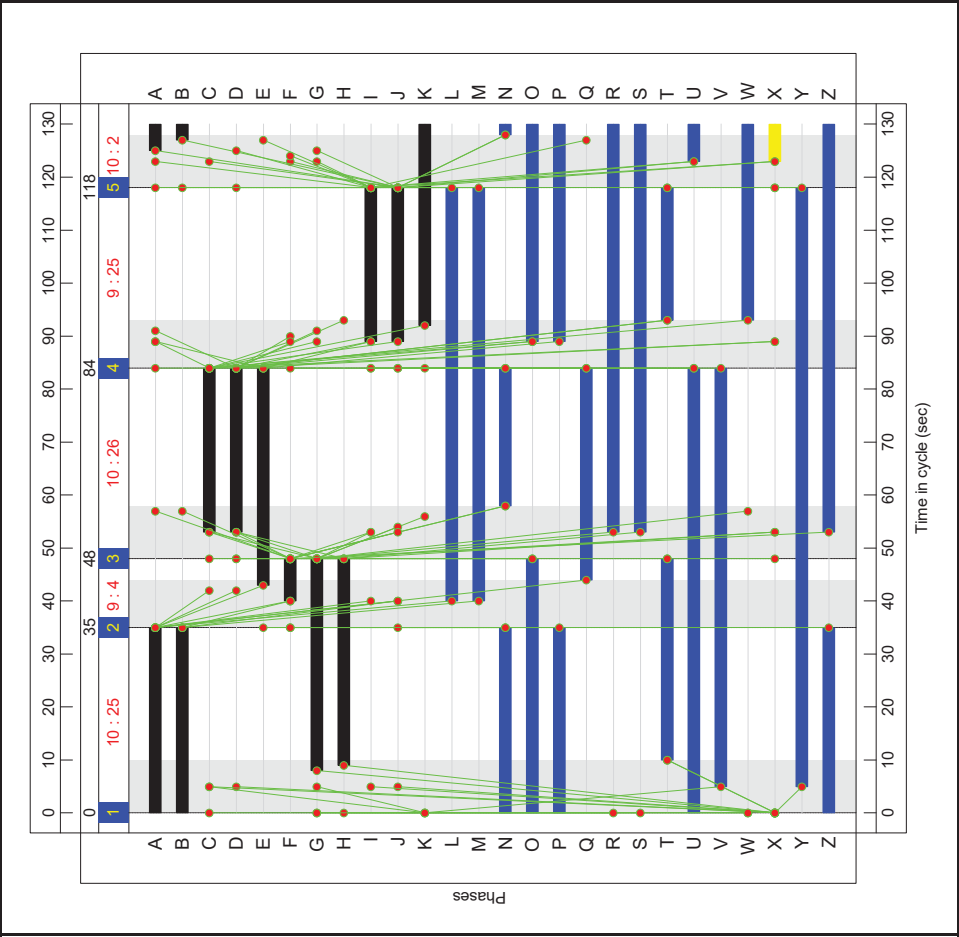
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	25	4	26	25	2
Change Point	0	35	48	84	118

Signal Timings Diagram



Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners in Gaps (pcu)	Turners When Proposed (pcu)	Turners in (pcu)	Uniform Delay (pcu/hr)	Random Delay (pcu/hr)	Storage Area Uniform Delay (pcu/hr)	Total Delay (pcu/hr)	Avg Delay (sec/veh)	Max. Back of Queue (pcu)	Random Max. Back of Queue (pcu)	Mean Max. Queue (pcu)
Network: A800Coopers Lane Starting	-	-	0	0	0	45.9	17.6	0.0	63.5	-	-	-	-
A800Coopers Lane Starting	-	-	0	0	0	45.9	17.6	0.0	63.5	-	-	-	-
1/2+1/1	671	671	-	-	-	7.9	2.9	-	10.8	57.8	12.3	2.9	15.2
1/3+1/4	454	454	-	-	-	5.4	1.7	-	7.1	56.5	12.5	1.7	14.1
2/2+2/1	623	623	-	-	-	6.3	2.6	-	8.9	51.3	16.5	2.6	19.0
2/3	583	583	-	-	-	5.9	2.3	-	8.2	52.3	17.2	2.3	19.5
2/4+2/5	483	483	-	-	-	6.7	2.6	-	9.3	69.2	8.1	2.6	10.7
3/1	257	257	-	-	-	1.9	0.3	-	2.2	31.0	6.1	0.3	6.4
3/2+3/3	425	425	-	-	-	5.1	2.6	-	7.7	65.1	10.8	2.6	13.4
4/2+4/1	406	406	-	-	-	4.8	2.3	-	7.2	63.6	12.5	2.3	14.8
4/3	174	174	-	-	-	1.9	0.3	-	2.2	44.8	4.8	0.3	5.1
5/1	620	620	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	648	648	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	501	501	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	620	620	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	633	633	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	612	612	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	422	422	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - 1002										Cycle Time (s): 120			
PRC for Signalized Lanes (%):										63.48			
PRC Over All Lanes (%):										63.48			
Total Delay for Signalized Lanes (pcu/hr):										63.48			
Total Delay Over All Lanes (pcu/hr):										63.48			

Full Input Data And Results

Network Results													
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/hr)	Capacity (pcu)	Dev Sat (%)
Network: A580/Coopers Lane Existing	-	-	N/A	-	-	-	-	-	-	-	-	-	92.0%
	A580/Coopers Lane	-	N/A	-	-	-	-	-	-	-	-	-	92.0%
1/2+1/1	A580 West Ahead Left	U	N/A	N/A	A B		1	40.38	-	697	1945:1919	577+180	92.0 : 92.0%
1/3+1/4	A580 West Ahead Right	U	N/A	N/A	A X		1	40.7	-	613	2085:1835	657+20	90.6 : 90.6%
2/2+2/1	A580 East Ahead Left	U	N/A	N/A	G H		1	40.39	-	333	1950:1976	615+17	52.7 : 52.7%
2/3	A580 East Ahead	U	N/A	N/A	G		1	40	-	353	2080	659	53.6%
2/4+2/5	A580 East Right	U	N/A	N/A	F		1	8	-	193	1972:1826	137+126	73.2 : 73.6%
3/1	Coopers Ln Left	U	N/A	N/A	E		1	41	-	570	1919	620	91.9%
3/2+3/3	Coopers Ln Right Ahead	U	N/A	N/A	D C		1	31	-	546	1985:1898	315+297	88.1 : 89.1%
4/2+4/1	Ormskirk Rd Left Ahead	U	N/A	N/A	J K		1	29.38	-	461	1980:1919	380+126	91.0 : 91.0%
4/3	Ormskirk Rd Right	U	N/A	N/A	I		1	29	-	327	2000	462	70.9%
5/1		U	N/A	N/A	-		-	-	-	515	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	542	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	979	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	1044	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	356	Inf	Inf	0.0%
7/2		U	N/A	N/A	-		-	-	-	349	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	308	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Disposed (pcu)	Turners In Progress (pcu)	Uniform Delay (pcu/hr)	Rand + Oversat Delay (pcu/hr)	Storage Area Uniform Delay (pcu/hr)	Total Delay (pcu/hr)	Average Delay (s/pcu)	Max. Back of Queue (pcu)	Random Queue (pcu)	Mean Max Queue (pcu)
Network: 4380 Coopers Lane Station	-	-	0	0	0	48.8	25.6	0.0	74.4	-	-	-	-
A380/Coopers Lane	-	-	0	0	0	48.8	25.6	0.0	74.4	-	-	-	-
1/2+1/1	687	687	-	-	-	7.8	5.0	-	12.8	65.9	18.8	5.0	23.8
1/3+1/4	613	613	-	-	-	7.3	4.3	-	11.6	68.1	20.6	4.3	24.9
2/2+2/1	333	333	-	-	-	3.4	0.6	-	3.9	42.4	9.5	0.6	10.1
2/3	353	353	-	-	-	3.6	0.6	-	4.2	42.5	10.5	0.6	11.1
2/4+2/5	193	193	-	-	-	3.2	1.3	-	4.5	84.1	3.5	1.3	4.9
3/1	570	570	-	-	-	6.7	4.8	-	11.5	72.6	19.8	4.8	24.6
3/2+3/3	546	546	-	-	-	6.8	3.7	-	10.5	68.9	13.9	3.7	17.6
4/2+4/1	461	461	-	-	-	5.8	4.3	-	10.1	78.7	14.9	4.3	19.1
4/3	327	327	-	-	-	4.2	1.2	-	5.4	59.1	10.8	1.2	12.0
5/1	515	515	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	542	542	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	979	979	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	1044	1044	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	356	356	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	349	349	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	308	308	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - 1002										Cycle Time (s): 130			
PRC for Signalized Lanes (%): -2.3										Total Delay for Signalized Lanes (pcu/hr): 74.38			
PRC Over All Lanes (%):										Total Delay Over All Lanes (pcu/hr): 74.38			

Junctions 9	
ARCADY 9 - Roundabout Module	
Version: 9.5.1.7462 © Copyright TRL Limited, 2019	
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Filename: J2-Orm-B5202-KilJ9
Path: N:\Projects 2020\IP20066 - Knowsley Lane, Knowsley\6.Technical\Models
Report generation date: 30/03/2022 10:49:09

- »Base 2021, AM
- »Base 2021, PM
- »Without Dev 2027, AM
- »Without Dev 2027, PM
- »With Dev 2027, AM
- »With Dev 2027, PM
- »With Dev 2027 (B2 100%), AM
- »With Dev 2027 (B2 100%), PM

File summary

File Description

Title	Ormskirk Road/B5202/Killing Road
Location	Knowsley
Site number	2
Date	23/03/2022
Version	
Status	Final
Identifier	
Client	Cardick Developments
Jobnumber	P20066
Enumerator	GHCB gaze
Description	Checked by D. Stoddart

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	per-Hour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically
D1	Base 2021	AM	ONE HOUR	07:45	09:15	15	✓
D2	Base 2021	PM	ONE HOUR	16:45	18:15	15	✓
D3	Without Dev 2027	AM	ONE HOUR	07:45	09:15	15	✓
D4	Without Dev 2027	PM	ONE HOUR	16:45	18:15	15	✓
D5	With Dev 2027	AM	ONE HOUR	07:45	09:15	15	✓
D6	With Dev 2027	PM	ONE HOUR	16:45	18:15	15	✓
D7	With Dev 2027 (B2 100%)	AM	ONE HOUR	07:45	09:15	15	✓
D8	With Dev 2027 (B2 100%)	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Base 2021, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ormskirk Road/BS202/Killing Road	Standard Roundabout		1, 2, 3, 4, 5	4.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Ormskirk Road (Northern Arm)	
2	BS202 (North-Eastern Arm)	
3	Ormskirk Road (South-Eastern Arm)	
4	BS202 (South-Western Arm)	
5	Killing Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Ormskirk Road (Northern Arm)	3.80	5.80	8.3	6.3	22.3	16.0	
2 - BS202 (North-Eastern Arm)	3.20	4.10	15.5	10.6	24.0	38.0	
3 - Ormskirk Road (South-Eastern Arm)	2.80	4.10	5.7	14.8	22.4	35.0	
4 - BS202 (South-Western Arm)	3.30	7.00	8.8	9.2	22.2	34.0	
5 - Killing Road	3.50	6.70	9.7	50.3	24.0	32.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final Intercept (PCU/hr)
1 - Ormskirk Road (Northern Arm)	0.591	1397
2 - BS202 (North-Eastern Arm)	0.520	1114
3 - Ormskirk Road (South-Eastern Arm)	0.516	1039
4 - BS202 (South-Western Arm)	0.574	1373
5 - Killing Road	0.642	1567

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)	Run automatically
D1	Base 2021	AM	ONE HOUR	07:45	09:15	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 (%)
1 - Ormskirk Road (Northern Arm)		ONE HOUR	✓	366	100.000
2 - BS202 (North-Eastern Arm)		ONE HOUR	✓	46	100.000
3 - Ormskirk Road (South-Eastern Arm)		ONE HOUR	✓	122	100.000
4 - BS202 (South-Western Arm)		ONE HOUR	✓	496	100.000
5 - Killing Road		ONE HOUR	✓	199	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1 - Ormskirk Road (Northern Arm)	2 - BS202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - BS202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	0	27	17	284	38
2 - BS202 (North-Eastern Arm)	8	0	13	23	2
3 - Ormskirk Road (South-Eastern Arm)	7	9	0	102	4
4 - BS202 (South-Western Arm)	351	26	35	0	64
5 - Killing Road	175	2	3	19	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	1 - Ormskirk Road (Northern Arm)	2 - BS202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - BS202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	10	0	0	16	59
2 - BS202 (North-Eastern Arm)	0	10	0	0	0
3 - Ormskirk Road (South-Eastern Arm)	0	0	0	0	0
4 - BS202 (South-Western Arm)	8	0	0	0	12
5 - Killing Road	9	0	0	0	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Ormskirk Road (Northern Arm)	0.30	4.51	0.5	A	336	504
2 - BS202 (North-Eastern Arm)	0.06	4.30	0.1	A	42	63
3 - Ormskirk Road (South-Eastern Arm)	0.16	5.20	0.2	A	112	168
4 - BS202 (South-Western Arm)	0.41	4.94	0.7	A	455	683
5 - Killing Road	0.17	3.74	0.2	A	183	274

Base 2021, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ormskirk Road/B5202/Killing Road	Standard Roundabout		1, 2, 3, 4, 5	4.31	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)	Run automatically
D2	Base 2021	PM	ONE HOUR	16:45	18:15	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)

Am	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Ormskirk Road (Northern Arm)		ONE HOUR	✓	288	100.000
2 - B5202 (North-Eastern Arm)		ONE HOUR	✓	179	100.000
3 - Ormskirk Road (South-Eastern Arm)		ONE HOUR	✓	55	100.000
4 - B5202 (South-Western Arm)		ONE HOUR	✓	398	100.000
5 - Killing Road		ONE HOUR	✓	396	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	0	1	9	234	44
2 - B5202 (North-Eastern Arm)	13	0	25	128	13
3 - Ormskirk Road (South-Eastern Arm)	21	7	0	23	4
4 - B5202 (South-Western Arm)	316	48	23	0	11
5 - Killing Road	365	5	3	23	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	10	0	0	2	7
2 - B5202 (North-Eastern Arm)	0	10	0	0	0
3 - Ormskirk Road (South-Eastern Arm)	0	0	0	0	0
4 - B5202 (South-Western Arm)	4	0	0	0	0
5 - Killing Road	2	0	0	0	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Ormskirk Road (Northern Arm)	0.24	3.66	0.3	A	284	396
2 - B5202 (North-Eastern Arm)	0.21	4.96	0.3	A	164	246
3 - Ormskirk Road (South-Eastern Arm)	0.08	5.00	0.1	A	50	76
4 - B5202 (South-Western Arm)	0.33	4.28	0.5	A	365	548
5 - Killing Road	0.34	4.42	0.5	A	363	545

Without Dev 2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ormskirk Road/B5202/Killing Road	Standard Roundabout		1, 2, 3, 4, 5	4.77	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)	Run automatically
D3	Without Dev 2027	AM	ONE HOUR	07:45	09:15	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)

Am	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Ormskirk Road (Northern Arm)		ONE HOUR	✓	385	100.000
2 - B5202 (North-Eastern Arm)		ONE HOUR	✓	48	100.000
3 - Ormskirk Road (South-Eastern Arm)		ONE HOUR	✓	129	100.000
4 - B5202 (South-Western Arm)		ONE HOUR	✓	527	100.000
5 - Killing Road		ONE HOUR	✓	208	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	0	29	18	289	39
2 - B5202 (North-Eastern Arm)	8	0	14	24	2
3 - Ormskirk Road (South-Eastern Arm)	7	10	0	108	4
4 - B5202 (South-Western Arm)	375	27	37	0	88
5 - Killing Road	183	2	3	20	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	10	0	0	15	55
2 - B5202 (North-Eastern Arm)	0	10	0	0	0
3 - Ormskirk Road (South-Eastern Arm)	0	0	0	0	0
4 - B5202 (South-Western Arm)	7	0	0	0	11
5 - Killing Road	9	0	0	0	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Ormskirk Road (Northern Arm)	0.32	4.59	0.5	A	353	530
2 - B5202 (North-Eastern Arm)	0.06	4.37	0.1	A	44	66
3 - Ormskirk Road (South-Eastern Arm)	0.17	5.34	0.2	A	118	178
4 - B5202 (South-Western Arm)	0.44	5.15	0.8	A	484	725
5 - Killing Road	0.18	3.84	0.2	A	191	286

Without Dev 2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ormskirk Road/B5202/Killing Road	Standard Roundabout		1, 2, 3, 4, 5	4.46	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 segment length (min)	Run automatically
D4	Without Dev 2027	PM	ONE HOUR	16:45	18:15	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 (%)
1 - Ormskirk Road (Northern Arm)		ONE HOUR	✓	305	100.000
2 - B5202 (North-Eastern Arm)		ONE HOUR	✓	189	100.000
3 - Ormskirk Road (South-Eastern Arm)		ONE HOUR	✓	57	100.000
4 - B5202 (South-Western Arm)		ONE HOUR	✓	423	100.000
5 - Killing Road		ONE HOUR	✓	416	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	0	1	9	249	46
2 - B5202 (North-Eastern Arm)	14	0	26	135	14
3 - Ormskirk Road (South-Eastern Arm)	22	7	0	24	4
4 - B5202 (South-Western Arm)	336	51	24	0	12
5 - Killing Road	384	5	3	24	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	0	0	0	2	7
2 - B5202 (North-Eastern Arm)	0	0	0	0	0
3 - Ormskirk Road (South-Eastern Arm)	0	0	0	0	0
4 - B5202 (South-Western Arm)	4	0	0	0	0
5 - Killing Road	2	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Ormskirk Road (Northern Arm)	0.25	3.74	0.3	A	280	420
2 - B5202 (North-Eastern Arm)	0.23	5.12	0.3	A	173	280
3 - Ormskirk Road (South-Eastern Arm)	0.08	5.13	0.1	A	52	78
4 - B5202 (South-Western Arm)	0.36	4.43	0.6	A	388	562
5 - Killing Road	0.37	4.65	0.6	A	382	573

With Dev 2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ormskirk Road/B5202/Killing Road	Standard Roundabout		1, 2, 3, 4, 5	4.82	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)	Run automatically
D5	With Dev 2027	AM	ONE HOUR	07:45	09:15	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 (%)
1 - Ormskirk Road (Northern Arm)		ONE HOUR	✓	392	100.000
2 - B5202 (North-Eastern Arm)		ONE HOUR	✓	48	100.000
3 - Ormskirk Road (South-Eastern Arm)		ONE HOUR	✓	129	100.000
4 - B5202 (South-Western Arm)		ONE HOUR	✓	533	100.000
5 - Killing Road		ONE HOUR	✓	211	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	0	29	18	300	45
2 - B5202 (North-Eastern Arm)	8	0	14	24	2
3 - Ormskirk Road (South-Eastern Arm)	7	10	0	108	4
4 - B5202 (South-Western Arm)	381	27	37	0	88
5 - Killing Road	186	2	3	20	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	10	0	0	15	60
2 - B5202 (North-Eastern Arm)	0	10	0	0	0
3 - Ormskirk Road (South-Eastern Arm)	0	0	0	0	0
4 - B5202 (South-Western Arm)	7	0	0	0	11
5 - Killing Road	9	0	0	0	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Ormskirk Road (Northern Arm)	0.32	4.66	0.6	A	360	540
2 - B5202 (North-Eastern Arm)	0.06	4.39	0.1	A	44	66
3 - Ormskirk Road (South-Eastern Arm)	0.17	5.37	0.2	A	118	178
4 - B5202 (South-Western Arm)	0.44	5.22	0.8	A	489	734
5 - Killing Road	0.19	3.89	0.3	A	194	290

With Dev 2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ormskirk Road/B5202/Killing Road	Standard Roundabout		1, 2, 3, 4, 5	4.49	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)	Run automatically
D6	With Dev 2027	PM	ONE HOUR	16:45	18:15	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 (%)
1 - Ormskirk Road (Northern Arm)		ONE HOUR	✓	314	100.000
2 - B5202 (North-Eastern Arm)		ONE HOUR	✓	189	100.000
3 - Ormskirk Road (South-Eastern Arm)		ONE HOUR	✓	57	100.000
4 - B5202 (South-Western Arm)		ONE HOUR	✓	424	100.000
5 - Killing Road		ONE HOUR	✓	418	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	0	1	9	255	49
2 - B5202 (North-Eastern Arm)	14	0	26	135	14
3 - Ormskirk Road (South-Eastern Arm)	22	7	0	24	4
4 - B5202 (South-Western Arm)	337	51	24	0	12
5 - Killing Road	386	5	3	24	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	10	0	0	2	9
2 - B5202 (North-Eastern Arm)	0	10	0	0	0
3 - Ormskirk Road (South-Eastern Arm)	0	0	0	0	0
4 - B5202 (South-Western Arm)	4	0	0	0	0
5 - Killing Road	2	0	0	0	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Ormskirk Road (Northern Arm)	0.26	3.79	0.4	A	288	432
2 - B5202 (North-Eastern Arm)	0.23	5.16	0.3	A	173	280
3 - Ormskirk Road (South-Eastern Arm)	0.08	5.16	0.1	A	52	78
4 - B5202 (South-Western Arm)	0.36	4.44	0.6	A	389	584
5 - Killing Road	0.37	4.68	0.6	A	384	575

With Dev 2027 (B2 100%), AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ormskirk Road/B5202/Killing Road	Standard Roundabout		1, 2, 3, 4, 5	4.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period	Traffic profile type	Start time (HH:MM)	Finish time (HH:MM)	Time segment length (min)	Run automatically
D7	With Dev 2027 (B2 100%)	AM	ONE HOUR	07:45	09:15	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 (%)
1 - Ormskirk Road (Northern Arm)		ONE HOUR	✓	388	100.000
2 - B5202 (North-Eastern Arm)		ONE HOUR	✓	48	100.000
3 - Ormskirk Road (South-Eastern Arm)		ONE HOUR	✓	129	100.000
4 - B5202 (South-Western Arm)		ONE HOUR	✓	542	100.000
5 - Killing Road		ONE HOUR	✓	210	100.000

Origin-Destination Data

Demand (PCU/hr)

To					
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	0	29	18	300	41
2 - B5202 (North-Eastern Arm)	8	0	14	24	2
3 - Ormskirk Road (South-Eastern Arm)	7	10	0	108	4
4 - B5202 (South-Western Arm)	360	27	37	0	68
5 - Killing Road	185	2	3	20	0

Vehicle Mix

Heavy Vehicle Percentages

To					
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	10	0	0	15	57
2 - B5202 (North-Eastern Arm)	0	10	0	0	0
3 - Ormskirk Road (South-Eastern Arm)	0	0	0	0	0
4 - B5202 (South-Western Arm)	7	0	0	0	11
5 - Killing Road	9	0	0	0	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Ormskirk Road (Northern Arm)	0.32	4.61	0.5	A	356	534
2 - B5202 (North-Eastern Arm)	0.06	4.38	0.1	A	44	66
3 - Ormskirk Road (South-Eastern Arm)	0.17	5.35	0.2	A	118	178
4 - B5202 (South-Western Arm)	0.45	5.27	0.9	A	487	746
5 - Killing Road	0.19	3.91	0.3	A	193	289

With Dev 2027 (B2 100%), PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Ormskirk Road/B5202/Killing Road	Standard Roundabout		1, 2, 3, 4, 5	4.48	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)	Run automatically
D8	With Dev 2027 (B2 100%)	PM	ONE HOUR	16:45	18:15	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 (%)
1 - Ormskirk Road (Northern Arm)		ONE HOUR	✓	319	100.000
2 - B5202 (North-Eastern Arm)		ONE HOUR	✓	189	100.000
3 - Ormskirk Road (South-Eastern Arm)		ONE HOUR	✓	57	100.000
4 - B5202 (South-Western Arm)		ONE HOUR	✓	424	100.000
5 - Killing Road		ONE HOUR	✓	416	100.000

Origin-Destination Data

Demand (PCU/hr)

To					
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	0	1	9	263	46
2 - B5202 (North-Eastern Arm)	14	0	26	135	14
3 - Ormskirk Road (South-Eastern Arm)	22	7	0	24	4
4 - B5202 (South-Western Arm)	337	51	24	0	12
5 - Killing Road	384	5	3	24	0

Vehicle Mix

Heavy Vehicle Percentages

To					
	1 - Ormskirk Road (Northern Arm)	2 - B5202 (North-Eastern Arm)	3 - Ormskirk Road (South-Eastern Arm)	4 - B5202 (South-Western Arm)	5 - Killing Road
From					
1 - Ormskirk Road (Northern Arm)	10	0	0	2	7
2 - B5202 (North-Eastern Arm)	0	10	0	0	0
3 - Ormskirk Road (South-Eastern Arm)	0	0	0	0	0
4 - B5202 (South-Western Arm)	4	0	0	0	0
5 - Killing Road	2	0	0	0	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Ormskirk Road (Northern Arm)	0.27	3.79	0.4	A	293	439
2 - B5202 (North-Eastern Arm)	0.23	5.18	0.3	A	173	280
3 - Ormskirk Road (South-Eastern Arm)	0.08	5.18	0.1	A	52	78
4 - B5202 (South-Western Arm)	0.36	4.43	0.6	A	389	584
5 - Killing Road	0.37	4.65	0.6	A	382	573

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462
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+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

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Filename: J3-SA-Orm.j9
Path: N:\Projects 2020\IP20066 - Knowsley Lane, Knowsley\6.Technical\Models
Report generation date: 30/03/2022 10:50:12

- »With Dev 2027, AM
- »With Dev 2027, PM
- »With Dev 2027 (B2 100%), AM
- »With Dev 2027 (B2 100%), PM

File summary

File Description	
Title	Proposed Site Access/Omskirk Road
Location	Knowsley
Site number	3
Date	23/03/2022
Version	
Status	Final
Identifier	
Client	Caddick Developments
Jobnumber	P20066
Enumerator	GHClb.gaze
Description	Checked by D. Sloddant

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

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	With Dev 2027	AM	ONE HOUR	07:45	09:15	15	✓
D2	With Dev 2027	PM	ONE HOUR	16:45	18:15	15	✓
D3	With Dev 2027 (B2 100%)	AM	ONE HOUR	07:45	09:15	15	✓
D4	With Dev 2027 (B2 100%)	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

With Dev 2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access/Omskirk Road	T-Junction	Two-way		0.21	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Omskirk Road (North-Western Arm)		Major
B	Proposed Site Access		Minor
C	Omskirk Road (South-Eastern Arm)		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 - Omskirk Road (South-Eastern Arm)	6.20		✓	3.50	180.0	✓	10.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Proposed Site Access	One lane	3.65	180	160

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	653	0.118	0.298	0.188	0.426
B-C	772	0.117	0.296	-	-
C-B	774	0.297	0.297	-	-

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)	Run automatically
D1	With Dev 2027	AM	ONE HOUR	07:45	09:15	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 - Omskirk Road (North-Western Arm)		ONE HOUR	✓	606	100.000
B - Proposed Site Access		ONE HOUR	✓	14	100.000
C - Omskirk Road (South-Eastern Arm)		ONE HOUR	✓	591	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Omskirk Road (North-Western Arm)	B - Proposed Site Access	C - Omskirk Road (South-Eastern Arm)	
From				
A - Omskirk Road (North-Western Arm)	0	24	592	
B - Proposed Site Access	7	0	7	
C - Omskirk Road (South-Eastern Arm)	582	9	0	

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A - Omskirk Road (North-Western Arm)	B - Proposed Site Access	C - Omskirk Road (South-Eastern Arm)	
From				
A - Omskirk Road (North-Western Arm)	10	20	8	
B - Proposed Site Access	40	10	75	
C - Omskirk Road (South-Eastern Arm)	8	13	10	

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.04	13.70	0.1	B	13	19
C-AB	0.02	7.16	0.0	A	8	12
C-A					534	801
AB					22	33
AC					534	801

With Dev 2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access/Ormskirk Road	T-junction	Two-way		0.27	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)	Run automatically
D2	With Dev 2027	PM	ONE HOUR	16:45	18:15	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 - Ormskirk Road (North-Western Arm)		ONE HOUR	✓	762	100.000
B - Proposed Site Access		ONE HOUR	✓	27	100.000
C - Ormskirk Road (South-Eastern Arm)		ONE HOUR	✓	760	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - Ormskirk Road (North-Western Arm)	B - Proposed Site Access	C - Ormskirk Road (South-Eastern Arm)
From			
A - Ormskirk Road (North-Western Arm)	0	6	756
B - Proposed Site Access	18	0	9
C - Ormskirk Road (South-Eastern Arm)	757	3	0

Vehicle Mix

Heavy Vehicle Percentages

	To		
	A - Ormskirk Road (North-Western Arm)	B - Proposed Site Access	C - Ormskirk Road (South-Eastern Arm)
From			
A - Ormskirk Road (North-Western Arm)	10	50	3
B - Proposed Site Access	6	10	13
C - Ormskirk Road (South-Eastern Arm)	3	50	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.10	14.41	0.1	B	25	37
C-AB	0.01	10.36	0.0	B	3	4
C-A					695	1042
AB					6	8
AC					694	1041

With Dev 2027 (B2 100%), AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access/Ormskirk Road	T-Junction	Two-way		0.18	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)	Run automatically
D3	With Dev 2027 (B2 100%)	AM	ONE HOUR	07:45	09:15	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 - Ormskirk Road (North-Western Arm)		ONE HOUR	✓	611	100.000
B - Proposed Site Access		ONE HOUR	✓	8	100.000
C - Ormskirk Road (South-Eastern Arm)		ONE HOUR	✓	595	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - Ormskirk Road (North-Western Arm)	B - Proposed Site Access	C - Ormskirk Road (South-Eastern Arm)
From			
A - Ormskirk Road (North-Western Arm)	0	37	574
B - Proposed Site Access	5	0	3
C - Ormskirk Road (South-Eastern Arm)	578	17	0

Vehicle Mix

Heavy Vehicle Percentages

	To		
	A - Ormskirk Road (North-Western Arm)	B - Proposed Site Access	C - Ormskirk Road (South-Eastern Arm)
From			
A - Ormskirk Road (North-Western Arm)	10	3	8
B - Proposed Site Access	25	10	50
C - Ormskirk Road (South-Eastern Arm)	8	6	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.02	12.40	0.0	B	7	11
C-AB	0.03	6.89	0.0	A	16	23
C-A					530	796
AB					34	51
AC					527	790

With Dev 2027 (B2 100%), PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access/Ormskirk Road	T-junction	Two-way		0.45	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)	Run automatically
D4	With Dev 2027 (B2 100%)	PM	ONE HOUR	16:45	18:15	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 - Ormskirk Road (North-Western Arm)		ONE HOUR	✓	759	100.000
B - Proposed Site Access		ONE HOUR	✓	47	100.000
C - Ormskirk Road (South-Eastern Arm)		ONE HOUR	✓	758	100.000

Origin-Destination Data

Demand (PCU/hr)

	To		
	A - Ormskirk Road (North-Western Arm)	B - Proposed Site Access	C - Ormskirk Road (South-Eastern Arm)
From			
A - Ormskirk Road (North-Western Arm)	0	3	756
B - Proposed Site Access	33	0	14
C - Ormskirk Road (South-Eastern Arm)	757	1	0

Vehicle Mix

Heavy Vehicle Percentages

	To		
	A - Ormskirk Road (North-Western Arm)	B - Proposed Site Access	C - Ormskirk Road (South-Eastern Arm)
From			
A - Ormskirk Road (North-Western Arm)	10	0	3
B - Proposed Site Access	0	10	0
C - Ormskirk Road (South-Eastern Arm)	3	0	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.18	14.85	0.2	B	43	66
C-AB	0.00	6.86	0.0	A	0.92	1
C-A					695	1042
AB					3	4
AC					694	1041