



Link Logistics Park,
Ellesmere Port
Transport Assessment

For Firethorn Developments Limited

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1. INTRODUCTION

1.1 The Planning Application

1.1.1 Hydrock has been instructed by Firethorn Developments Limited to prepare a Transport Assessment [TA] in support of a full planning application for a proposed employment development off North Road, Ellesmere Port.

1.1.2 The application concerns land on the north-eastern part of North Road, with access taken off North Road.

1.1.3 The development proposals comprise 71,663 sqm of B2/B8 land use with ancillary E(g)(i) office space, car and HGV parking facilities, new access arrangements, active travel improvements and associated landscaping within an approximately 45 acre site. A detailed breakdown of land use mix and parking provision is outlined in Section 5.

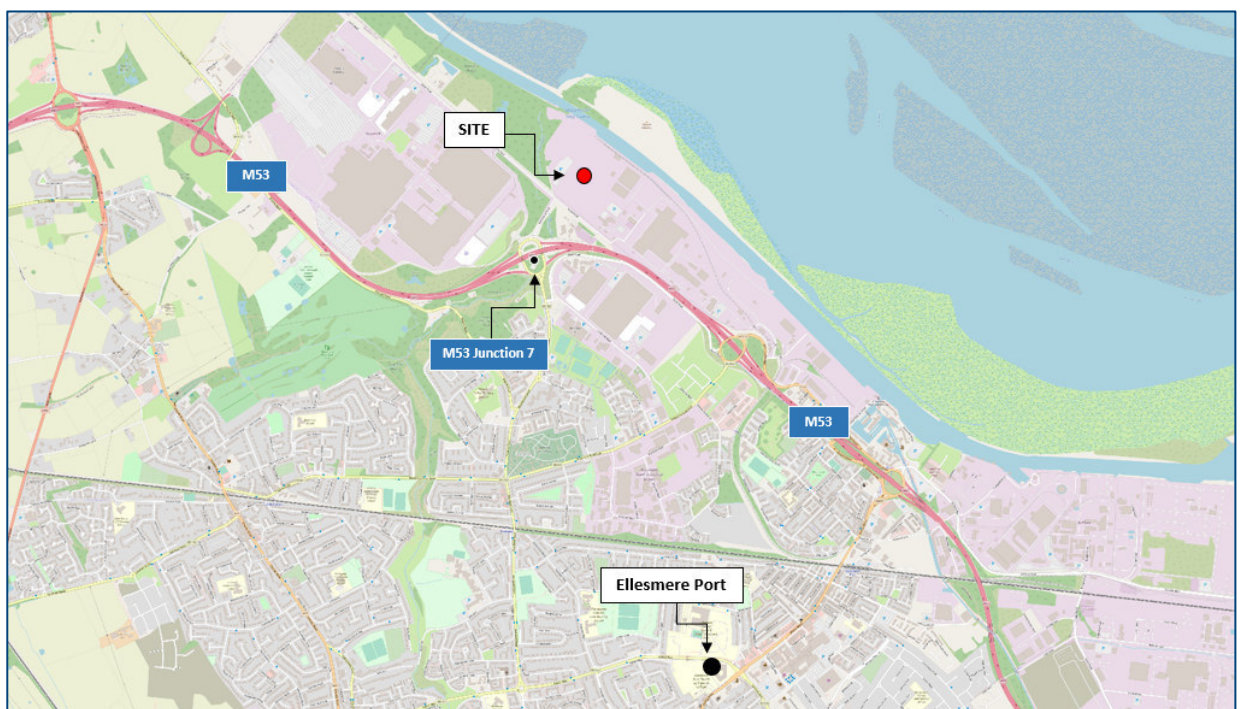
1.1.4 This TA will consider the impact of the proposed development on the local highway network. There are no existing planning permissions associated with the site, and hence it is considered a new site and will require a full assessment.

1.2 Site Location and Background

1.2.1 The development site is situated to the north west of the M35, circa 3.2km from Ellesmere Port Town Centre which is located to the south east. The Pioneer Business Park is located 250m to the south, across the M53 Junction 7 roundabout. The site is bounded by the River Mersey to the north east, Industrial units to the south, west and east and is accessed via North Road.

1.2.2 The site location is illustrated in **Figure 1.1** below.

Figure 1.1: Site Location



Source: OpenStreetMap©

- 1.2.3 The site's locality and its proximity to the Strategic Road Network [SRN] has already been demonstrated as being successful for a distribution development, with the site contiguous with an ever expanding industrial estate. The plot is currently vacant and not in use, and as such the scheme proposals present an opportunity for a high quality development and the delivery of new jobs on a brownfield site.
- 1.2.4 This TA has been developed in accordance with the now superseded DfT document "Guidance on Transport Assessment" [GoTA] (2007) and gives due regard to the NPPG "Transport Evidence in Plan Making" document. It sets out the transport matters relating to the development site and provides details of the development proposals, including an assessment of the predicted traffic flows, the corresponding impact on the surrounding highway network and matters associated with accessibility and connectivity.
- 1.2.5 The report seeks to conclude that the proposed development can be accommodated without detriment to the operational capacity or safety of the local highway network and that it can be suitably accessed on foot, by cycle and by local public transport services.

1.3 Scope of Assessment

- 1.3.1 The scope of assessment has been agreed following email correspondence with Cheshire West and Chester Council [CWCC] and Highways England [HE].
- 1.3.2 While a formal response from HE has not yet been received, the consultation with CWCC identified that due to the site's scale and location, the impact on M53 Junction 7 should be quantified, along with design reconfigurations and detailed capacity assessments at the site access junction off North Road.
- 1.3.3 Additionally, the requirements for enhanced provision for non-motorised users such as pedestrians and cyclists, in particular, were also emphasised and are addressed in this report. To this end, the provision of a cycle link connecting the site with the existing pedestrian underpass was requested.
- 1.3.4 It was agreed with Paul Parry of CWCC that the planning application should be supported by a comprehensive TA document, providing information with respect to the existing conditions, an accessibility audit of the site's location, review of highway and transport aspects of the development proposals and assessment of the anticipated travel demand associated with the proposed scheme. A copy of the scoping discussions is presented in full within **Appendix A**.

1.4 Structure of Report

- 1.4.1 With reference to the agreed scope, this report comprises nine sections, including this introduction:
- **Section 2** offers a site description and review of existing conditions;
 - **Section 3** considers the national and local transport policy;
 - **Section 4** assesses the sustainable accessibility of the site;
 - **Section 5** outlines the development proposals;
 - **Section 6** considers the future growth in traffic including committed developments;
 - **Section 7** presents the trip generation, distribution and assignment methodology;
 - **Section 8** summarises the results of the traffic impact assessment; and
 - **Section 9** sets out the summary and conclusions.

2. EXISTING CONDITIONS

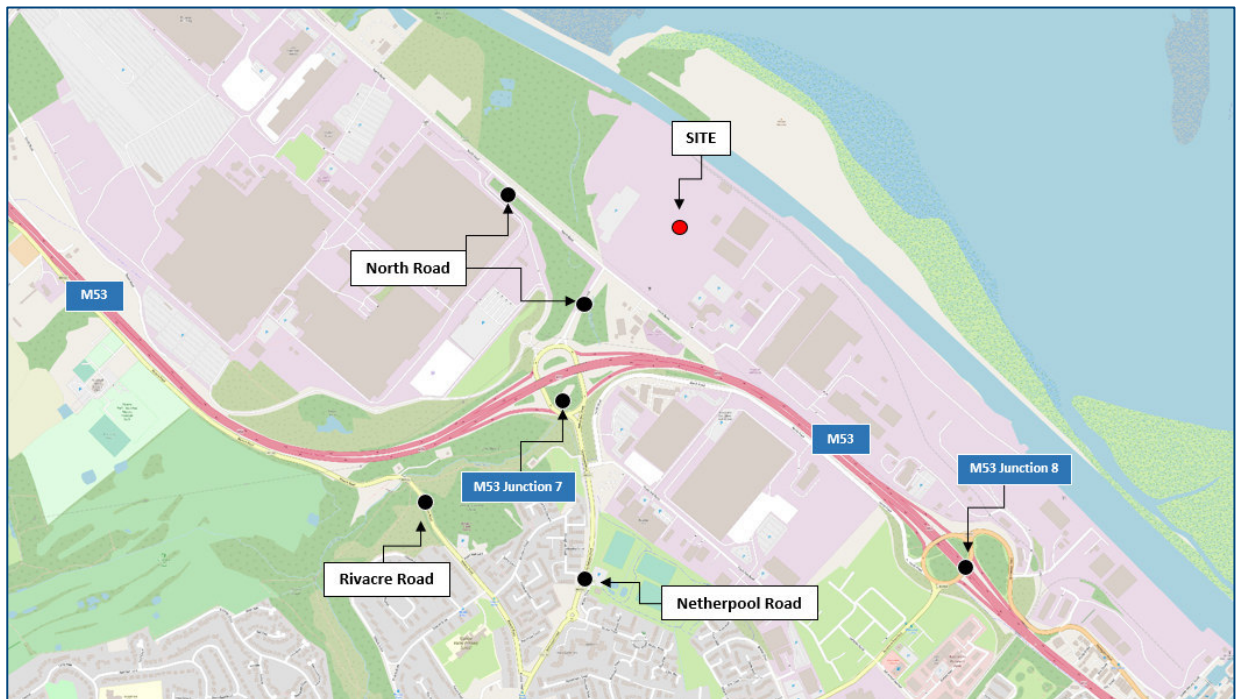
2.1 Site Description

2.1.1 The development site is situated to the north west of the M35, circa 3.2km from Ellesmere Port Town Centre which is located to the south east. The Pioneer Business Park is located 250m to the south, across the M53 Junction 7 roundabout. The site is bounded by the River Mersey to the north east, Industrial units to the south, west and east and is access via North Road.

2.2 Local Highway Network

2.2.1 The site location is illustrated in contrast to the surrounding local highway network in **Figure 2.1** below.

Figure 2.1: Local Highway Network



Source: OpenStreetMap©

2.3 North Road

2.3.1 The site is accessed via North Road which is a single carriageway road primarily serving industrial estates to the north of Ellesmere Port. The road originates at Junction 8 of the M53 motorway and extends on the eastern side of the motorway to meet with Junction 7 of the M53 whereby the road continues on the northern arm of the roundabout to the western side of the motorway to serve the North Road industrial estate.

2.3.2 The road is governed by a 30mph speed limit within the vicinity of the site and has a Traffic Regulation Order [TRO] in place in the form of double yellow lines to restrict vehicular parking. There is also a signalised intersection circa 280m to the west of the site access point which regulates the north-westerly and south-easterly directions on North Road.

2.3.3 North Road facilitates pedestrian movements through a 2.5m wide pedestrian footway on the southern side of the carriageway, regularly spaced street lighting and dropped kerbs.

2.3.4 **Figure 2.2** below illustrates North Road in a north westerly direction.

Figure 2.2: Local Highway Network - North Road



Source: Google Maps© - accessed 22/01/2021

2.4 M53 - Junction 7

2.4.1 The M53 extends for circa 30.0km from the Metropolitan Borough of Wirral and Cheshire to Chester. The primary destinations of the M53 are Wallasey, Birkenhead, Ellesmere Port and Chester. The site is accessed off Junction 7 of the M53 Motorway which leads to a 3-arm roundabout. The M53 is governed by a 70mph national speed limit. The site is access is circa 550m from Junction 7 of the M53.

2.4.2 **Figure 2.3** below illustrates the M53 from a south-easterly direction with Junction 7 to the east of the Figure.

Figure 2.3: Local Highway Network - M53



Source: Google Maps© - accessed 22/01/2021

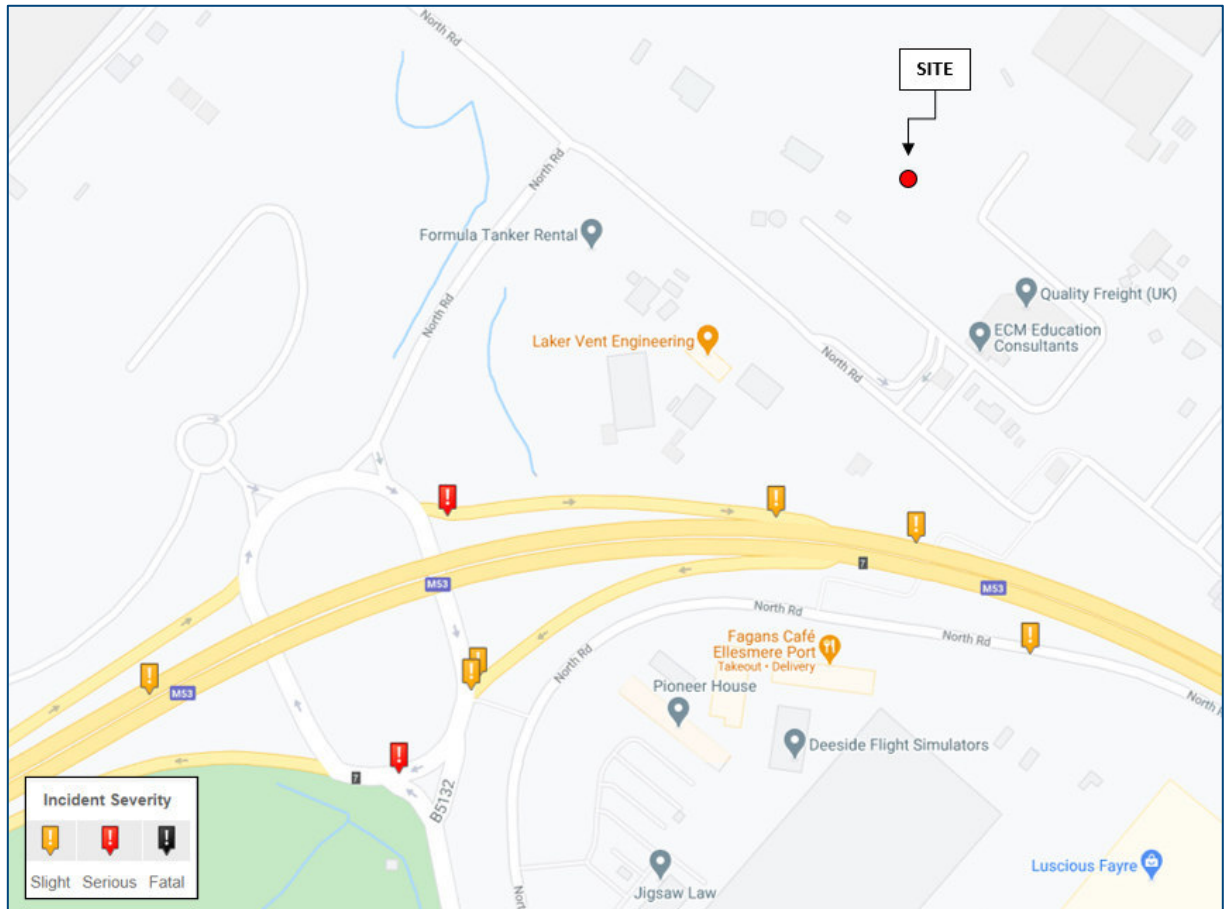
2.5 Network Traffic Flows

- 2.5.1 To ascertain the current traffic conditions on the local highway network, traffic surveys were commissioned in December 2020. The Manual Classified Turning Counts surveys were carried out in wet weather conditions and no incidents likely to affect the output were identified.
- 2.5.2 The surveys were carried out between the hours of 07:30 - 09:30 in the AM and 16:30 - 19:00 in the PM. A copy of the raw traffic survey data is provided in **Appendix B** for the following junctions:
- North Road / North Road 3-arm signalised junction; and
 - North Road / West Road 3-arm roundabout
- 2.5.3 Review of the traffic survey data identified the following network peak hours:
- Morning Peak Hour = 07:30 - 08:30
 - Evening Peak Hour = 16:30 - 17:30
- 2.5.4 Due to the effects of COVID-19 on travel patterns, the traffic counts at North Road / West Road were corroborated with historic data to generate an uplift factor. This was subsequently applied to the North Road / North Road junction along with a TEMPro factor to derive a more realistic estimate of the typical traffic conditions. This approach was agreed with CWCC at scoping stage. The historic data from 2019 is provided in **Appendix B**, while the use of TEMPro is discussed in more detail in Section 6.
- 2.5.5 Finally, traffic flows at M53 Junction 7 were obtained from CWCC from 2010. These were subsequently factored using TEMPro to derive a present-day estimate. Automatic Traffic Count [ATC] data was also obtained for B5132 Netherpool Road from 2020. An initial comparison was undertaken, with the results yielding growth in the region of 50%. An inference was hence made that this is not representative and a robust TEMPro factor used instead. Both sets of data are provided in **Appendix B**, while the TEMPro factor summarised in Section 6. **Traffic Flow Figures 1 and 2** illustrate the 2021 base traffic conditions in vehicles, HGVs and PCUs/hr for AM and PM peak hours respectively.

2.6 Road Safety and Accident Analysis

- 2.6.1 This subsection considers the accident record within the local study network to establish if there are any specific highway safety issues that need to be considered.
- 2.6.2 The DfT document “Guidance on Transport Assessment” states that:
- “Critical locations on the road network with poor accident records should be identified. This is to determine if the proposed development will exacerbate existing problems or, if proposed, where highway mitigation works or traffic management measures will help to alleviate the problems”.*
- 2.6.3 A review of the Personal-Injury Accidents [PIAs] recorded within the surrounding local highway network has been undertaken using the most recently available five-year data (1st January 2015 - 31st December 2019) available from the DfT and included the following junctions:
- Site Access/North Road;
 - North Road/ M53 Junction 7 Roundabout
- 2.6.4 Examination of the PIA data revealed that a total of 6 accidents have occurred within the study network during the five-year period. **Figure 2.4** illustrates the recorded findings and **Table 2.1** summarises the accident record and severity over the last 5 years in more detail.

Figure 2.4: Accident Analysis



Source: Crashmap.co.uk

Table 2.1: Study Area Accident Record Summary

Year/Severity	Slight	Serious	Fatal	Total
2015	1	-	-	1
2016	3	2	-	5
2017	-	-	-	-
2018	-	-	-	-
2019	2	-	-	2
Total	6	2	-	8

2.6.5 **Figure 2.4** and **Table 2.1** demonstrate that no Fatal accidents have occurred within the study area between 2015-2019. However, 2 of the accidents were recorded as serious and associated with Junction 7 of the M53 Motorway. After assessing the detailed reports of the 2 serious accidents, it has been concluded that one of the serious accidents occurred in icy conditions during darkness and the second with a motorcycle impacting the crash barrier. Therefore, this does not indicate any specific highway related issues. The detailed accident report can be found in **Appendix C**.

2.6.6 While the accidents are unfortunate, they do not indicate and specific highways safety issues that warrant consideration. It is Hydrock's view that the occurrences are arbitrary and can be attributed to random fluctuations, circumstantial factors and driver behaviour as the main causes and therefore do not give rise to a material concern.

3. TRANSPORT POLICY CONTEXT

3.1 Preamble

3.1.1 In order to assess the proposals and develop a transport access strategy for the proposed development, it is necessary to review both local and national transport planning guidance. The following sections outline the relevant policy and guidance documents in respect of the proposed development.

3.2 National Planning Policy Framework

- 3.2.1 The NPPF sets out the Government's policies for delivering sustainable development through the planning system. Local authorities are required to take these policies into account when formulating local development plans and when determining planning applications.
- 3.2.2 The most recent NPPF report was published in February 2019 and sets out the Government's planning policies for England and how these are expected to be applied at a local level. The NPPF is a significant material consideration in plan making and decision taking.
- 3.2.3 Paragraph 102 seeks to encourage opportunities to promote walking, cycling and public transport use. This is supplemented by paragraph 103 which states that development should be focused in sustainable locations and offer a genuine choice of transport modes.
- 3.2.4 Development proposals should also give priority to pedestrian and cycle movements and facilitate access to high quality public transport. The needs of people with disabilities and reduced mobility should also be addressed (paragraph 110).
- 3.2.5 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.
- 3.2.6 Priority should be given to walking, cycling and public transport movements; conflicts between vehicles and vulnerable road users should be minimised through effective layout design.
- 3.2.7 Having regard to the above objectives, the proposed site access strategy includes measures to connect the site with the adjacent community and sustainable travel network, including existing public transport services. This TA considers the accessibility of the site by all modes and proposes a layout and access strategy that seeks to maximise the use of sustainable modes.
- #### 3.3 Planning Practice Guidance: Travel Plans, Transport Assessments and Statements in Decision-Making
- 3.3.1 In March 2014, the Department for Communities and Local Government [DCLG] in conjunction with the Department for Transport [DfT], released advice on when transport assessments and transport statements are required and what they should contain, which is intended to assist stakeholders in determining whether an assessment may be required. If an assessment is required, the level and scope of that assessment is then outlined within the document.
- 3.3.2 The advice reflects current Government policy, promoting a shift from the 'predict and provide' approach to transport planning to one more focused on sustainability. The document focuses on encouraging environmental sustainability, managing the existing network and mitigating the residual impacts of traffic from the development proposals.

3.4 Manual for Streets [MfS]

- 3.4.1 Manual for Streets (March 2007 and Sept 2010) supersedes Places Streets & Movement and Design Bulletin 32. Manual for Streets should now be used where 85th percentile monitored traffic speeds are less than 37mph.
- 3.4.2 The Manual deals with first principles in respect of what a street is for. It outlines five principal functions, namely:
- Place;
 - Movement;
 - Access;
 - Parking; and
 - Drainage and utilities.
- 3.4.3 A sense of place encompasses a number of characteristics, namely, local distinctiveness, visual quality and human interaction. Of the five functions, place and movement are the most important in determining the character of streets and should be considered together, as opposed to in isolation.
- 3.4.4 In new developments, Manual for Streets highlights that locations with a relatively high place function would be those where people are likely to gather and interact with each other, such as the town centre.
- 3.4.5 In section 3 of the document, the design process highlights that the design of a scheme should follow the user hierarchy shown in **Table 3.1**:

Table 3.1: User Hierarchy (taken from Table 3.2 of MfS, March 2007)

Consider First	Pedestrians
	Cyclists
	Public transport users
	Specialist service vehicles (e.g. emergency services, waste etc.)
Consider Last	Other motor vehicles

3.5 Guidelines for Providing for Journeys on Foot

- 3.5.1 Various walking distances are quoted in the Chartered Institution of Highways and Transportation’s (CIHT’s) “Guidelines for Providing for Journeys on Foot”. **Table 3.2** (taken from Table 3.2 of the document) sets out the acceptable walking distances in various contexts:

Table 3.2: Acceptable Walking Distances

Criteria	Town Centre (m)	School / Commuters (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1,000	800
Preferred Maximum	800	2,000	1,200

3.6 DfT Circular 02/2013

3.6.1 The document outlines an overarching framework for the assessment of development traffic impact on the SRN, with consideration for sustainable travel, demand management and environmental impact. This includes a suitably agreed assessment methodology for quantifying the traffic impact on the SRN, with particular emphasis on assessment years.

3.6.2 Paragraph 25 of the guidance states the following:

"The overall forecast demand should be compared to the ability of the existing network to accommodate traffic over a period up to ten years after the date of registration of a planning application or the end of the relevant Local Plan whichever is the greater. This is known as the review period."

3.6.3 Advice is also given on the determination of development proposals and under what circumstances they can be deemed to be acceptable. Paragraphs 9 and 10 respectively state the following:

"Development proposals are likely to be acceptable if they can be accommodated within the existing capacity of a section (link or junction) of the strategic road network, or they do not increase demand for use of a section that is already operating at over-capacity levels, taking account of any travel plan, traffic management and/or capacity enhancement measures that may be agreed."

3.6.4 "However, even where proposals would not result in capacity issues, the Highways Agency's prime consideration will be the continued safe operation of its network."

3.6.5 The document establishes a clear hierarchy as far as determining the need for capacity enhancement and mitigation measures, and states that such solutions must only be considered after travel planning and demand management measures have been exhausted and proven to be insufficient.

3.7 The Strategic Road Network – Planning for the Future

3.7.1 The document sets out the approach taken by HE when engaging in the planning system and its collaboration with developers and other stakeholders through effective consultation.

3.7.2 It is further stated in paragraphs 36-38 that the severity of planning applications will be assessed on a case-by-case basis and that the continued safe operation of the SRN remains HE's primary consideration, even where proposals would not result in capacity issues.

3.7.3 The document makes extensive reference to the pre-application and scoping stages and the level of information required to enable HE to make an informed decision.

3.7.4 Chiefly, the guidance reaffirms the recommendations given in Circular with regards to forecast traffic demand, including trip generation and distribution on the SRN. In the same vein, it is suggested that the following assessment periods are considered as part of a traffic impact assessment:

- the development and construction phase;
- the opening year, assuming full build out and occupation, and
- either a date ten years after the date of registration of the associated planning application or the end of the Local Plan period (whichever is the greater).

3.7.5 Capacity enhancements (if required) are then considered in a similar fashion, if it is proven that the development cannot be accommodated by the existing network and after travel planning and demand management measures have been accounted for.

3.8 Cheshire West and Chester Local Plan (Part 1 and Part 2)

- 3.8.1 The Local Plan (Part One) Strategic Policies document was adopted on 29 January 2015 and provides the overall vision, strategic objectives, spatial strategy and strategic policies for the borough to 2030. This includes setting out the level and location of new housing and employment land, as well as the identification of a number of strategic sites.
- 3.8.2 The Local Plan (Part Two) will set out the non-strategic allocations and detailed policies, following on from the strategic framework set out in the Local Plan (Part One). When adopted, both documents will constitute the statutory development plan for Cheshire West and Chester and will replace all of the retained policies from the former district local plans.
- 3.8.3 **Spatial Strategy STRAT1 Sustainable Development** states that the local plan seeks to enable development that improves and meets the economic, social and environmental objectives of the borough in line with the presumption in favour of sustainable development.
- 3.8.4 **Spatial Strategy STRAT 2 Strategic Development** states that the Local Plan will promote strong, prosperous and sustainable communities by delivering ambitious development targets whilst protecting the high- quality environment that contributes to the attractiveness and success of Cheshire West and Chester as a place to live and work. Over the period of 2010 to 2030 the Plan will deliver at least:
- 365 hectares of land for employment development to meet a range of types and sizes of site.
- 3.8.5 **Spatial Strategy STRAT 4 Ellesmere Port** states that development in Ellesmere Port has the potential to deliver substantial economic growth through the availability of significant sites for industrial, manufacturing and distribution purposes. Further housing is planned to complement the town’s role as a key employment location. Ellesmere Port has the potential to deliver a significant amount of economic growth during the Plan period. This policy is intended to guide the level and location of new development in Ellesmere Port to 2030, primarily in relation to new housing and employment development.
- 3.8.6 **Spatial Strategy STRAT 10 Transport and Accessibility** states that in accordance with the key priorities for transport set out in the Local Transport Plan, development and associated transport infrastructure should:
- Provide and develop reliable and efficient transport networks that support sustainable economic growth in the borough and the surrounding area;
 - Reduce carbon emissions from transport and take steps to adapt our transport networks to the effects of climate change;
 - Contribute to safer and secure transport and promote forms of transport that are beneficial to health;
 - Improve accessibility to jobs and key services which help support greater equality of opportunity; and
 - Ensure that transport helps improve quality of life and enhances the local environment.

3.9 Cheshire West and Chester Local Transport Plan 2017-2030

- 3.9.1 Cheshire West and Chester Council’s published its Local Transport Plan (LTP3) in March 2011. This set out the over-arching strategy and objectives for improving local transport in the Borough for the next 15 years.

3.9.2 The key priorities of the Local Transport Plan are as follows:

- Provide and develop reliable and efficient transport networks that support sustainable economic growth in West Cheshire and the surrounding area;
- Reduce carbon emissions from transport and take steps to adapt our transport networks to the effects of climate change;
- Manage a well-maintained transport network;
- Contribute to safer and secure transport in West Cheshire and to promote types of transport which are beneficial to health;
- Improve accessibility to jobs and key services which help support greater equality of opportunity;
- Ensure that transport helps improve quality of life and enhances the local environment in West Cheshire.

3.9.3 The LTP contains a series of proposed short-, medium- and long-term actions that will help us meet goals and objectives. These include:

- An extensive programme of highway and bridge maintenance;
- The continued development of major transport scheme projects to improve our strategic road and rail connections and open up development opportunities;
- Tackling local congestion including the delivery of local pinch point schemes;
- Improving road safety including the further introduction of 20mph speed limits, where appropriate, such as by schools and in certain residential areas;
- Promoting cycling across the Borough and maintaining and improving local cycle networks to help encourage healthy and active lifestyles;
- Improving passenger transport including the introduction of more efficient ticketing technology such as the use of smart cards on local buses and trains;
- Delivering the new car parking strategy for the Borough;
- Dealing with poor air quality associated with transport; and
- A programme of local area-based improvement schemes to meet locally determined priorities.

3.10 Cheshire West and Chester Council Parking Standards

3.10.1 The Cheshire West and Chester Council parking standards are contained within the Parking Standards Supplementary Planning Document 2017. Guidelines have been developed for 4 zones across Chester West and Chester, including the City Centre's of Chester and the Town Centres of Ellesmere Port, Northwich and Winsford and the rest of the borough.

3.10.2 The rationale for the development of zones is to adopt more rigorous parking standards for Chester City Centre and other areas of high demand and public transport accessibility.

3.10.3 The proposed development is not contained within the aforementioned central zones or Town Centres, therefore adheres to the parking standards associated with development in the 'rest of borough' areas.

3.10.4 The provision for servicing, motorcycle parking, parking and pick up and drop off for coach and taxis as part of particular development types will be considered by the Council on individual merit.

3.10.5 **Table 3.3** below illustrates the required parking provision for B8 and B2 land use.

Table 3.3: Cheshire West and Chester Council Parking Standards

Class	Land Use	Rest of Borough (Maximum)	Disabled Bays (up to 200 bays Minimum)	Disabled Bays (over 200 bays) Minimum	Bicycles
B2	General Industry	1 space per 45sqm	Individual bays for each disabled employee plus 2 bays or 5% of total capacity, whichever is greater	6 bays plus 2% of total capacity	1 space per 450sqm (minimum of 2 spaces)
B8	Storage and Distribution	1 space per 100sqm			1 space per 850 sqm (minimum of 2 spaces)

3.10.6 In addition, Policy STRAT 10 of the Local Plan states that proposals should seek to incorporate charging points for electric vehicles where appropriate. The Council will encourage the provision of electric vehicle charging infrastructure in other developments where 10 or more new car parking spaces are to be provided.

3.11 Summary

- 3.11.1 The above policy review summaries the transport policies relevant to the proposed development site. As such it sets out the context in which the proposed development needs to be compliant.
- 3.11.2 The proposed development will be designed to satisfy the key objectives within NPPF by being able to promote more sustainable transport choices and reduce reliance on travel by private car.
- 3.11.3 Access on foot, cycle and public transport is discussed in the following section of this report.

4. SUSTAINABLE ACCESSIBILITY

4.1 Access on Foot

- 4.1.1 Walking is the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly those under 2km. The guidance on the preferred maximum walking distances to amenities is given in the Chartered Institution of Highways and Transportation [CIHT] document "Providing for Journeys on Foot" (2000).
- 4.1.2 In terms of commuting journeys by foot, the desirable distance is 500m, the acceptable distance is 1km and the preferred maximum is 2km. However, the distance that people are prepared to walk depends upon many factors; there are obvious physical factors such as age, health and disabilities, along with factors concerning the quality of the route and the environment.
- 4.1.3 Paragraph 2.3 of TA91/05 Provision for Non-Motorised Users states that 'Walking is used to access a wide variety of destinations including educational facilities, shops, and places of work, normally within a range of up to 2 miles' (3.2km).
- 4.1.4 Paragraph 2.2 of TA91/05 states that 2 miles is 'a distance that could easily be walked by the majority of people' and (at paragraph 2.3) that 'Walking and rambling can also be undertaken as a leisure activity, often over longer distances'.
- 4.1.5 In relation to shorter trips in particular, the CIHT publication Planning for Walking (section 2.1) states that across Britain about '80% of journeys shorter than 1 mile are made wholly on foot'.
- 4.1.6 Manual for Streets [MfS] emphasises this advice, stating that "walkable neighbourhoods" should have a range of facilities available within 800m. However, this distance is not regarded as the upper limit for walking journeys, and MfS uses the principle that walking offers the greatest potential to replace short car trips, particularly those under 2km in length.
- 4.1.7 The location of development, within reach of the public transport network, is particularly important in terms of encouraging travel by this mode and supporting the viability of public transport services.

4.2 Current Local Environment for Walkers

- 4.2.1 Pedestrian movements along the local highway network are facilitated throughout a 2.5m wide footway on the southern side of North Road. On the southwestern end of North Road, there is also a pedestrian subway which extends under the M53 Motorway and crosses to meet North Road on the opposite side at Pioneer Business Park. Footways along Netherpool Road and further afield to the south of the M53 enable convenient pedestrian movements and a logical progression towards the pedestrian traveller's journey.
- 4.2.2 Street lighting is also provided along the highway network within the vicinity of the site likely to further encourage journeys on foot due to increased personal security benefits.
- 4.2.3 Dropped kerbs and tactile paving are provided at major road junctions while a number of pedestrian islands can be located at all major junctions which further facilitate the safe movement of pedestrians and cyclists.
- 4.2.4 Any visitors accompanied by young children, in strollers, are also aided by the aforementioned accessibility features. These measures lead to a logical progression towards the pedestrian traveller's journey towards local amenities and connectivity from the site.

4.2.5 **Figure 4.1** below provides an extract of the indicative 2km walk catchment plan using GIS software - Basemap’s Visography (TRACC) program which generates sustainable travel mapping. A copy of the full 2km walking catchment is provided within Figure 1 of **Appendix D**.

Figure 4.1: 2km Walking Catchment



Source: CC-BY-SA by OpenStreetMap©

4.2.6 As can be seen from **Figure 4.1** above there are bus stops available within the 2km catchment which is still considered to be within the upper limit of reasonable walking distance (based on CIHT’s “Guidelines for Providing for Journeys on Foot” guidance). The relative proximity to local bus network provides opportunities for pedestrians to travel further afield and gain access to a variety of local destinations.

4.3 Local Amenities

4.3.1 There are a number of local amenities within 2km of the site for employees, the following are some examples:

- Overpool Community Centre - approximately 1.5km from the site;
- Costa Coffee - approximately 1.5km from the site;
- Texaco Garage with ATM - approximately 1.5km from the site;
- Green Oak Farm Pub - approximately 1.7km from the site;
- Rivacre Valley Country Park - approximately 1.7km from the site;

4.4 Disabled accessibility

4.4.1 Disabled accessibility is facilitated through a footway for wheelchair users on the southern side of North Road. As part of the development proposals 3.0m wide footways will be provided within the internal layout and along the new site access, along with new and improved crossing facilities featuring tactile paving.

4.4.2 The surrounding local highway network also provides dropped kerbs, tactile paving and pedestrian signalised crossings to assist staff that are visually impaired, travelling to and from the site. This is along with street lighting along the surrounding local highway network, which provides further safety measures.

4.4.3 In summary, the number of pedestrian links in the surrounding area enable employees to travel within 2km of the proposed development. Therefore, this will reduce the requirement to make short distance car journeys to/from the surrounding residential areas.

4.5 Access by Bicycle

4.5.1 It is widely recognised that cycling can act as a substitute for short car journeys, particularly those up to 5km in length. With regard to cycling, TA91/05 states (paragraph 2.11) that 'Cycling is used for accessing a variety of different destinations, including educational facilities shops and places of work, up to a range of around 5 miles. Cycling is also undertaken as a leisure activity, often over much longer distances.' At paragraph 2.9, TA91/05 states that 5 miles (8km) is a distance 'that could easily be cycled by the majority of people'.

4.5.2 This is consistent with the statement in LTN02/08 Cycle Infrastructure Design (paragraph 1.5.1) that 'for commuter journeys, a trip distance of over five miles is not uncommon', and that 'Novice and occasional leisure cyclists will cycle longer distances where the cycle ride is the primary purpose of their journey.'

4.5.3 A round trip on a waymarked leisure route could easily involve distances of 20 to 30 miles. Experienced cyclists will often be prepared to cycle longer distances for whatever journey purpose.'

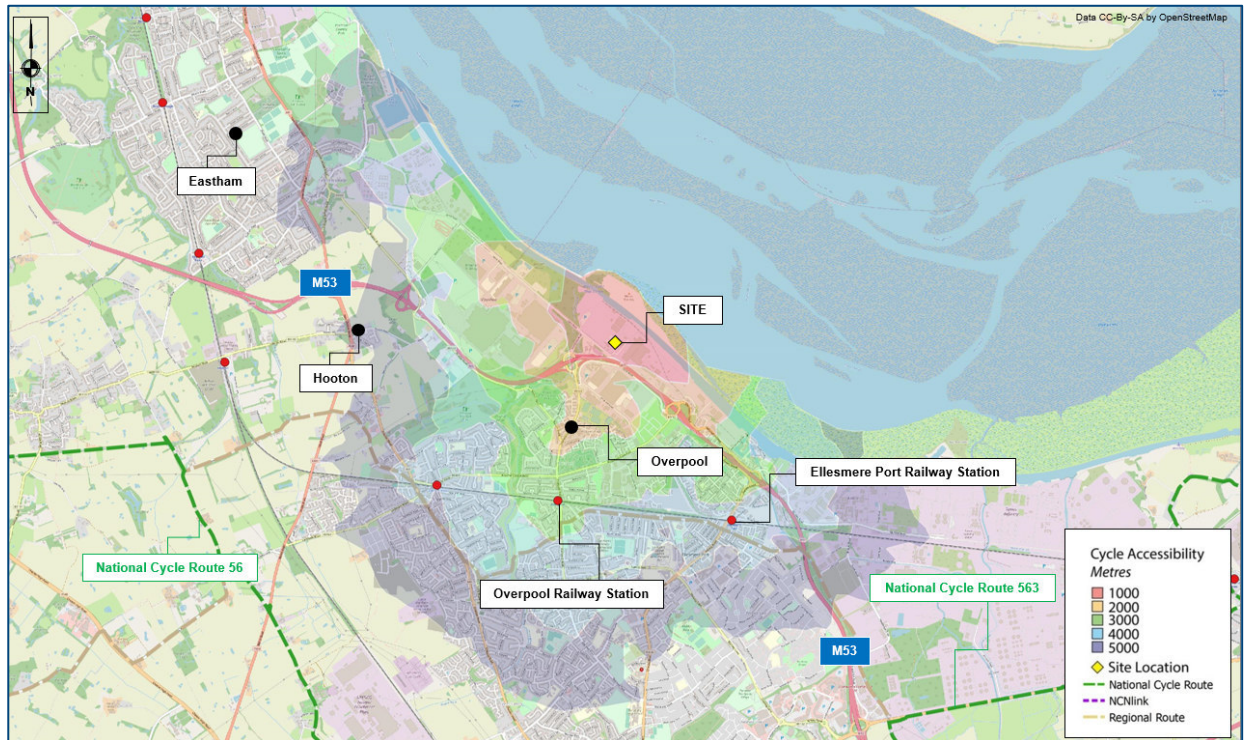
4.6 Current Local Environment for Cyclists

4.6.1 Despite not being within the 5km catchment, there is the availability of National Cycle Route 56 which is an open and signed route from Chester to Wallasey and via the Mersey ferry to Liverpool and National Route 62 - the Trans Pennine Trail.

4.6.2 The relatively wide carriageways within the local highway network are generally conducive to encouraging cycling. The general topography surrounding the proposed development site is reasonably flat which should assist in encouraging employees of the proposed development to travel by cycle.

4.6.3 **Figure 4.2** overleaf presents an extract of the 5km cycling catchment from the development. A copy of the cycling catchment is provided in Figure 2 of **Appendix D**. 5km is equivalent to a typical cycle time of 15-20 minutes, making it an achievable distance for most people.

Figure 4.2: 5km Cycling Catchment



Source: CC-BY-SA by OpenStreetMap©

- 4.6.4 The figure further illustrates that a number of local areas around Ellesmere Town Centre, Overpool and Great Sutton are accessible within a 5km cycle. Additionally, the availability of a national cycling route outside of the 5km catchment provides opportunities for travel further afield using linked trips.
- 4.6.5 Cycling would therefore be a viable mode of transport for employees and visitors at the site commuting to work from these locations.
- 4.6.6 As part of the development proposals a new cycle link will be provided through the site. This is discussed in the following Section.

4.7 Access by Bus

- 4.7.1 The nearest bus stop to the site is located circa 1.3km on Naylor Road. There are additional bus stops on the B5463 Rossmore Road East, circa 1.5km from the site and also on Rivacre Road, approximately 1.5km to the south.
- 4.7.2 All bus stops within the vicinity of the site serve Bus Service Number 7 which is Stagecoach circular route which travels from Ellesmere Port Bus Station through Overpool and through Ellesmere Industrial areas.
- 4.7.3 The frequency of Bus Service No. 7 is summarised in **Table 4.1**. The AM and PM peak for the Weekday are 08:00-09:00 and 17:00-18:00. On Saturday the peak is 12:00-13:00.

Table 4.1: Bus Timetable Summary

Service Number	Route	Monday to Friday					Saturday	
		First	AM Peak	PM Peak	Last	Per Day	Peak	Per Day
7	Ellesmere Port (Circular)	07:34	2	1	18:09	21	2	21
Total		-	2	1	-	21	2	21

Source: Bus Times.org

4.7.4 **Table 4.1** demonstrates that the site is accessible by bus for commuters, with over 20 buses passing the site on weekdays and weekends, providing convenient access across Ellesmere Port. The early start and later finish times are conducive to employees and visitors.

4.7.5 It is also evident that this service links the site to a number of residential areas along with Ellesmere Port Bus Station. There is the potential for these residential areas to provide a significant percentage of the development’s workforce and, as such, be a strong factor in encouraging bus to travel to and from work.

4.7.6 Based on the above, it is concluded that the site benefits from access by bus, offering an alternative mode of transport to single occupancy car journeys.

4.8 Access by Rail

4.8.1 There are three railway stations within the 5km catchment of the site which offer convenient travel across the north-west and major transport interchanges such as Liverpool Lime Street. The closest station is Overpool Railway Station which is circa 2.1km to the south.

4.8.2 Overpool Railway Station has 2 platforms and also situated on the Hooton-Helsby Line. Services operate every 30 minutes between Ellesmere Port and Liverpool and are operated by Mersey Rail.

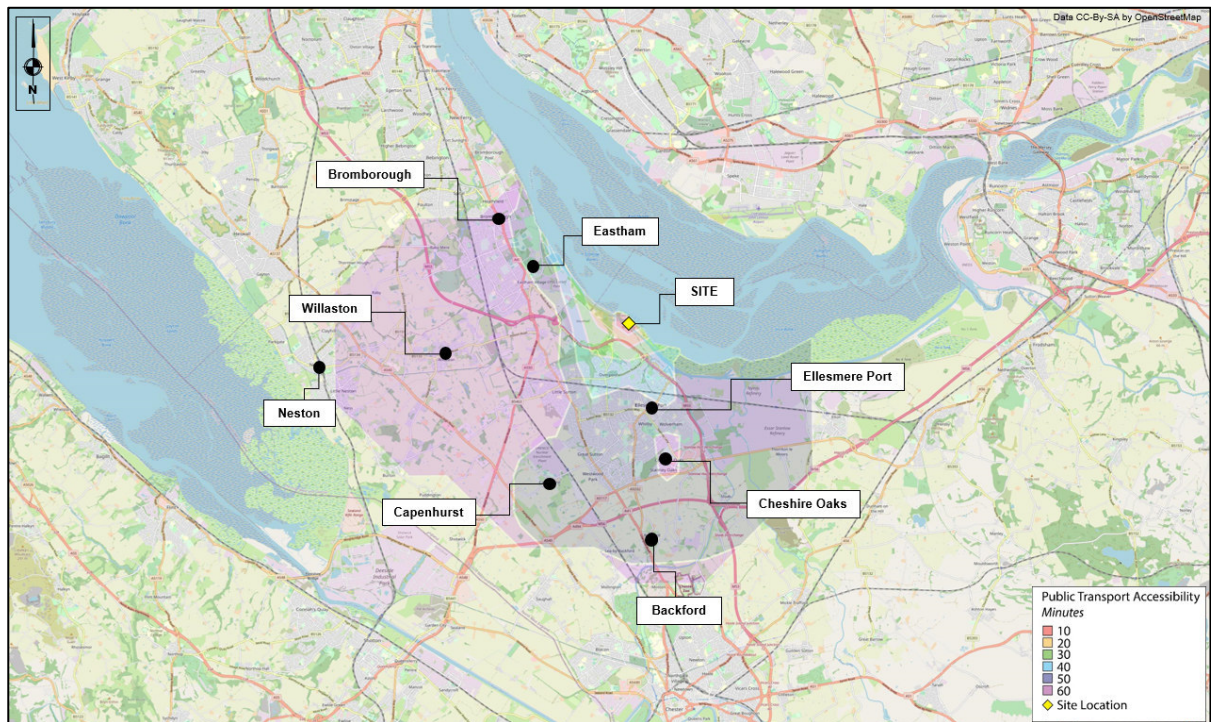
4.8.3 Ellesmere Port Railway Station has 2 platforms and is the terminus station on Wirral Line and an intermediate station on the Hooton-Helsby line. Services operate circa every 30 minutes towards Birkenhead and Liverpool with services increasing during peak hours.

4.9 Accessibility by Public Transport

4.9.1 A calculation has been undertaken, using GIS software - Basemap’s Visography (TRACC) program, to illustrate the distance that can be travelled within 60 minutes by public transport to and from the proposed development site. The time includes the walk to the bus stops or railway station and demonstrates that areas such as Eastham, Neston, Cheshire Oaks, Willaston and Ellesmere Port Town Centre are all within a 60-minute public transport journey.

4.9.2 **Figure 4.3** below provides an extract of the public transport 60-minute catchment area. A copy of the full plan is provided within Figure 3 of **Appendix D**.

Figure 4.3: 60-minute Public Transport Catchment



Source: CC-BY-SA by OpenStreetMap©

4.10 BREEAM Assessment TRA 01 Accessibility Calculator

- 4.10.1 Further to the above, the BREEAM UK New Construction 2018 Tra 01 Public Transport Accessibility Index Calculator has been used to measure the accessibility of the site by public transport according to the BREEAM criteria.
- 4.10.2 The aims of this assessment are to recognise where the proximity of good public transport networks has been reviewed, and encourage the implementation of alternative solutions where the proximity to public transport networks is poor; thus, alleviating transport related congestion and pollution.
- 4.10.3 There are currently no compliant transport nodes located within proximity to the development. A compliant node is defined as a bus service within 650m and a railway station within 1000m.
- 4.10.4 Notwithstanding, the assessment has been carried out with the nodes that are within 5km of the proposed development and the site yields and index score of 2.54 and hence would achieve 1 credit for this class of development. The results of the calculation are summarised in **Appendix E**.

4.11 Conclusions

- 4.11.1 In summary, the proposed development site is located in an accessible location in Ellesmere Port and given the industrial nature of the surrounding area, the site is well located to make use of the existing and proposed sustainable transport provisions.

5. DEVELOPMENT PROPOSALS

5.1 Overview

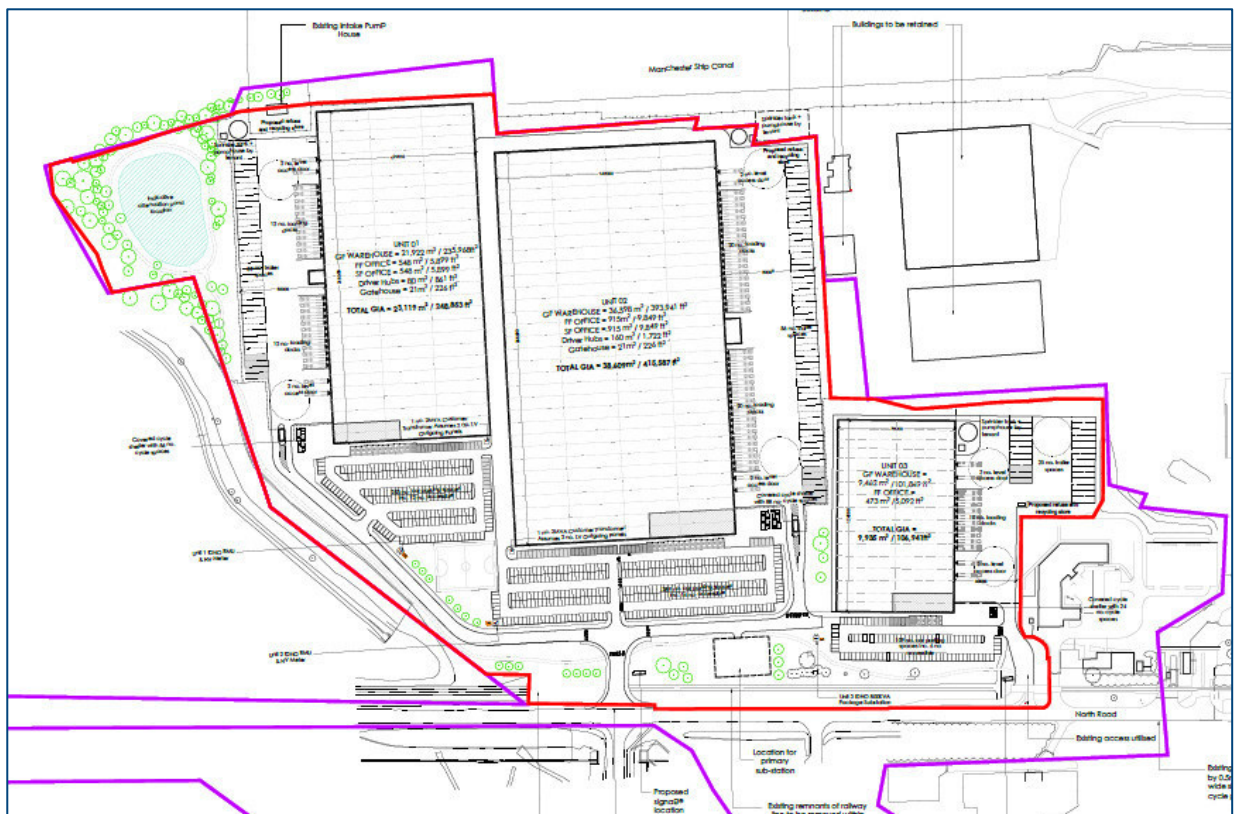
5.1.1 The application proposes the development of the currently derelict 45 acre site along the north-eastern boundary of North Road.

5.1.2 The proposals comprise a full planning permission for 71,663 sqm of floorspace within Class B2 or B8 use of the Town and Country Planning Use Classes Order 1987, with ancillary Class E(g)(i) Offices, specifically featuring the following:

"Erection of 3no. storage and distribution units/general industrial with ancillary offices, associated parking, service yards, landscaping and ancillary structures, and new access from North Road."

5.1.3 The latest site masterplan prepared by scheme architects AEW Architects is illustrated in **Figure 5.1**, with a copy provided in **Appendix F**.

Figure 5.1: Proposed Site Layout Plan



Source: AEW Architects

5.2 Schedule of Accommodation

5.2.1 The following schedule of accommodation in Gross Internal Area [GIA] is proposed at the site:

- Unit 01 - 23,119 sqm
- Unit 02 - 38,609 sqm
- Unit 03 - 9,935 sqm
- Total - 71,663 sqm

- 5.2.2 A more detailed breakdown detailing ground floor, office and gatehouse GIA is provided in **Appendix F**.
- 5.2.3 As part of the proposals, planning flexibility is sought to include a mixture of B2 and B8 use class for all three units. Given the speculative nature of the development, this commitment can serve to apply the uses to any one of the three proposed units.

5.3 Site Access Arrangement

Vehicular Access

- 5.3.1 The development site is to be accessed off North Road via the existing 3-arm signalised junction which will be reconfigured to provide a new arm into the site. The junction has been redesigned according to DMRB CD 123 standards, with the site access arm operating as a full green phase in a separate stage. Geometrically, the access features 3.5m lanes for both entry and exit, a 2m wide traffic island, 15m compound corner radii with 100m radius tapers, two primary signal heads on the nearside and offside of the approach lane and a non-signalised pedestrian crossing featuring blister tactile paving.
- 5.3.2 The new site access arrangements are illustrated in drawing *17876-HYD-XX-XX-DR-TP-0001-P01* within **Appendix G**, detailing the aforementioned geometric features.
- 5.3.3 The new access junction will serve units 01 and 02. Access to Unit 03, on the other hand, will be provided separately via the existing priority access along North Road to the south, which will be retained in its existing arrangement. The access is approximately 12.0m wide and features a layby for inbound traffic.
- 5.3.4 The internal road layout features the main 7.3m wide estate road extending for approximately 400m with additional accesses to the individual units (01 and 02). The accesses measure 12m in carriageway width for Unit 01 and Unit 02 service yards, also featuring a gatehouse, and 7.3m for Unit 03. The accesses to all car parking areas are 6.0m wide with 5m radii. Service yard entries and the 7.3m wide estate road have been designed with generous corner and bend radii to accommodate simultaneous bi-directional access and egress manoeuvres of heavy-duty vehicles.
- 5.3.5 Swept path analysis has been undertaken with a 16.5m articulated vehicle to demonstrate that that the proposed layout is suitable and all access and egress manoeuvres can be performed safely. Particular emphasis is placed on the ability of two vehicles to pass one another at bends and critical pinch points and the ability of the vehicle to negotiate the geometry. The swept path analysis drawings are presented in **Appendix H**.
- 5.3.6 The analysis demonstrates that the proposed site access layout is favourable for heavy goods vehicles, allowing for safe turning movements. It is Hydrock's view that light and heavy vehicle movements can be sufficiently accommodated under the proposed design, with no safety or operational issues identified.

Pedestrian and Cycle Access

- 5.3.7 Pedestrian and cycle access are to be taken off the main new access junction of North Road. Given that high pedestrian flows are not anticipated, it is proposed that redesigned junction retains the informal unsignalized crossings, allowing pedestrians to exploit frequently occurring gaps in the traffic stream without experiencing delay.

- 5.3.8 A 3.0m footway is proposed on the southern side of the access, while a 2.0m continuous footway is proposed on the northern side to connect with the existing provision along North Road. The internal estate road features 3.0m wide footways which extend to provide direct connectivity with the car parks, cycle storage areas and the front entrances of the three units, along with zebra crossings.
- 5.3.9 2.0m footpaths extend through the landscaping enabling safe navigation by non-motorised forms of transport. Pedestrian routes through the car parking areas have been arranged to link safely and conveniently with building entrances, with appropriate lighting.
- 5.3.10 As discussed in Section 4, the addition of a new 4.0m segregated two-way cycle track is proposed to traverse the site along the disused railway on the north-eastern side of North Road. The link extends for approximately 250m parallel to North Road and offers continuity with the internal arrangement and crossing facilities. It has been designed in compliance with LTN 1/20 to satisfy the core design principles and provides road markings and signage according to TSRGD.
- 5.3.11 To the south, a transition point is proposed adjacent to the existing retained access and the provision transferred to a 3.0m wide shared footway/cycleway which has been upgraded through local widening along the existing 2.5m footway. This is necessitated by the lateral extents of the adopted highway and the carriageway width of North Road. Widening the existing footway achieves a 3m wide shared provision which is compliant with standards (for up to 300 pedestrians and 300 cyclists per hour), does not infringe on 3rd party land and maintains a carriageway widths greater than 7.3m along North Road to ensure the movements of HGVs can be accommodated.
- 5.3.12 Given the reasonably low volumes of pedestrians and cyclists expected to use this route, a shared arrangement is considered appropriate to serve the needs of both types of users, with any conflicts negotiated informally. LTN 1/20 states that shared routes without marked separation are appropriate in *"situations where a length of shared use may be acceptable to achieve continuity of a cycle route"*.
- 5.3.13 With the above in mind, the shared arrangement is circa 130m long and serves to connect the proposed cycle track with the existing underpass, thus offering improved connectivity and a safer and more attractive environment for pedestrians and cyclists.
- 5.3.14 The proposed arrangement, as described above, is illustrated in drawing *17876-HYD-XX-XX-DR-TP-0001-PO1* within **Appendix I**.

5.4 Inclusive Access

- 5.4.1 Consistent with the surroundings, all proposed pedestrian crossing locations and transition points with cycle tracks will have dropped kerbs and incorporate contrasting blister and tramline tactile paving to make visually impaired pedestrians aware of the crossing. Additionally, it is proposed that blister tactile paving is introduced at the existing dropped kerb crossings at the North Road signalised junction to ensure consistency of provision and improve safety and facilitate user comprehension.
- 5.4.2 The internal road network will include street lighting to adoptable standards. The lighting scheme will be designed to ensure suitable illumination levels exist across the scheme ensuring a safe provision for all users in particular the visually impaired.
- 5.4.3 Accessible Disability Discrimination Act [DDA] compliant parking has been illustrated adjacent to all building entrances as seen in **Figure 5.1**. The levels provided are considered appropriate to allow safe and convenient access to all.

5.5 Parking

5.5.1 All parking areas are proposed to be accessed off the main estate road, with separate access points serving the staff car parks and service yards. All parking is to be provided at ground level. A detailed breakdown of the parking schedule is summarised below for all three units.

Vehicle

5.5.2 A total of 751 car and 206 HGV parking spaces (inclusive of loading bays and level access doors) will be provided on site. **Table 5.1** summarises the detailed provision for each unit.

Table 5.1: Parking Provision Summary

Unit	Car Parking	Accessible Parking	EV Charging Spaces	HGV Parking
Unit 01	253	12	13	67
Unit 02	389	14	20	100
Unit 03	109	6	6	39
Total	751	32	39	206

5.5.3 Additionally, provision will be made for 39 future EV charging spaces and ducting for 12 HGV parking spaces across the site.

5.5.4 The proposed car parking provision has been reviewed against the CWCC parking standards for B2 and B8 land use, as summarised in Section 3.

5.5.5 Review of the standards has yielded the following calculated levels of provision in line with the maximum car and minimum disabled standards contained in **Table 3.3**. **Table 5.2** illustrates this based on the proposed site area of 71,663 sqm and 15%/85% B2/B8 land use mix. Consistent with general best practice, the standards have been applied to main land uses without accounting for the ancillary proportion.

Table 5.2: Calculated Parking Provision based on Standards

	Recommended Parking Provision			Increase / Decrease			
	Unit 01	Unit 02	Unit 03	Unit 01	Unit 02	Unit 03	Total
Car Parking (Max)	274	457	118	-21	-68	-9	-98
Disabled Parking (Min)	11	14	5	1	0	1	2

5.5.6 From the above table it is evident that for a 15/85 B2/B8 land use mix the parking requirements result in a total shortfall of 98 spaces against the maximum parking standards.

5.5.7 During pre-application scoping discussions with CWCC it was agreed that a shortfall in excess of 150 spaces will not be considered acceptable. The proposed levels of provision are, therefore, consistent with the recommended guidance and offer a degree of flexibility to suit the requirements of any speculative occupier and reflect the institutional requirements demanded by them.

5.5.8 With regards to disabled parking, the proposed 32 spaces result in an excess of 2 spaces against the minimum standards across the whole site and are hence considered compliant.

- 5.5.9 As per the recommendations in the guidance, electric car charging points will be installed in accordance with building specifications as shown in **Figure 5.1**. The proposed electric charging points account for 5% of the total provision and are hence considered appropriate in number and location to be easily accessible and encourage the use of electric vehicles.
- 5.5.10 It is therefore Hydrock's view that this level of vehicle parking is sufficient for this scale of development, taking into consideration its location, intended use and local factors.
- 5.5.11 The HGV loading bays and parking spaces for both units are considered to be specific to the operational requirements of the units and are therefore not included in the assessment.
- 5.5.12 The car parking area is designed to appropriate standards, featuring 5.0m x 2.5m standard bay sizes. There are 6.0m by 3.6m disabled bays and 6.0m wide isles throughout. With regards to the service yard layout, 15.0m by 4.0m spaces are provided for HGVs along with 26m turning circles.
- 5.5.13 Swept path analysis has been undertaken with a 16.5m articulated vehicle to demonstrate that all parking manoeuvres can be performed safely and efficiently. The drawings which illustrate this are presented in **Appendix J**. In all cases the analysis has been carried out for the most onerous bays, with a focus on the suitability of turning circles and the ability of two vehicles to pass each other at critical points. The drawings demonstrate that the proposed layout is suitable and all parking manoeuvres can be safely and efficiently performed.

Cycle

- 5.5.14 168 cycle parking spaces are proposed and are presented on the site layout plan in **Figure 5.1**. These are split between the individual units as follows:
- Unit 01 - 56 spaces;
 - Unit 02 - 88 spaces; and
 - Unit 03 - 24 spaces.
- 5.5.15 This level of provision presents an excess of 60 spaces against the minimum requirements of 108 and it is Hydrock's view that this level of cycle parking is more than sufficient for this scale of development, and will encourage sustainable travel to and from the site.
- 5.5.16 The cycle stands are covered facilities which are conveniently located close to the entrance of each of the buildings in highly visible locations to provide cyclists with a safe, secure, convenient and well-lit facility.

5.6 Servicing

- 5.6.1 The servicing requirements of the development have been considered to ensure that the site can successfully be serviced by refuse vehicles. It is envisaged that waste will be collected from each unit directly from the designated refuse collection points illustrated in **Figure 5.1**, with a refuse vehicle entering the site, manoeuvring within and exiting in forward gear. Due to the nature of the development, the frequency of refuse servicing is expected to be modest.
- 5.6.2 Swept path analysis has been undertaken with a large 4-axle refuse vehicle to demonstrate that the aforementioned manoeuvres can be accommodated by the proposed geometry as seen in Drawing 15696-HYD-XX-XX-DR-TP-0006-P01 within **Appendix J**.

6. FUTURE GROWTH AND COMMITTED DEVELOPMENTS

6.1 Assessment Years and Traffic Growth Factors

6.1.1 Pre-application consultation with CWCC and HE identified the following assessment periods:

- 2021 application year;
- 2026 full build-out (+5 years post registration of application); and
- 2031 future assessment year for the SRN.

6.1.2 To identify the base and future year traffic flows, the National Trip End Model [NTEM] has been interrogated to obtain local traffic growth factors using the TEMPro software, in conjunction with the AF15 NTM dataset. The growth factors take into account the underlying planning information in the local area, such as strategic housing and employment allocations, as well as national projections of population, employment and socioeconomic factors including car ownership.

6.1.3 Thus, applying the derived growth adjustments to the surveyed traffic flows aims to ascertain the increase in background traffic flows in the vicinity of the site. The following parameters have been applied the surveyed and historic traffic flows to ascertain the 2021 background traffic flows and 2026 and 2031 future year flows:

- Cheshire West and Chester 007 area definition;
- Trip end by time period for car drivers; and
- NTM, principal road types.

6.1.4 As discussed in Section 2, the base survey data has been complemented with historic traffic counts undertaken at M53 Junction 7 in 2010. TEMPro does not permit a base year earlier than 2011 to be used and hence a robust set of growth factors were obtained for the period 2011-2021 using the motorway road type parameter.

6.1.5 **Table 6.1** summarises all of the obtained TEMPro growth factors.

Table 6.1: TEMPro AM & PM Weekday Growth Factors

Period	AM Peak	PM Peak
2011 - 2021	1.1595	1.1514
2020 - 2021	1.0141	1.0126
2021 - 2026	1.0579	1.0545
2021 - 2031	1.1037	1.0972

6.1.6 **Traffic Flow Figures 3, 4, 5 and 6** provide the future 2026 and 2031 base flows for the morning and evening peak hours in vehicles, HGVs and PCUs/hr.

6.2 Committed Developments

6.2.1 While traffic growth factors, as derived from TEMPro, encapsulate background traffic increase and assumptions of wider growth, they do not account for all potential trip generators in the locality. Therefore, consistent with best practice it is proposed that committed development traffic is also added to the future scenario forecast to ensure a robust cumulative assessment is undertaken.

- 6.2.2 Committed developments are defined as those having a valid planning consent but which are currently unimplemented or incomplete. Committed development traffic is only taken into account where it would have a material impact on the proposed study area over and above background traffic growth effects.
- 6.2.3 With that in mind, pre-application consultation with CWCC identified five committed development sites that ought to be considered. There are listed below.
1. 19/04561/OUT - North Road Business Park;
 2. 20/04850/OUT - Electricity Generating Plant;
 3. 20/04645/FUL - Soil Processing Plant;
 4. 20/04291/FUL - Change of Use to Ca Sales;
 5. 18/02695/LDO - Hooton;
- 6.2.4 All proposals with the exception of 5 are live applications, but have been included for robustness.
- 6.2.5 For all five sites, the development trips have been extracted from the previous application TA(s) and loaded onto the network in PCUs/hr.
- 6.2.6 Since all assigned committed development flows have been obtained in PCUs/hr units, an assumption has been made with regards to traffic composition and a notional value of 20% entered for HGV percentages to ensure that queue lengths are appropriately captured during any junction capacity assessments (discussed in Section 8). 20% is considered an appropriate figure given the nature of the developments.
- 6.2.7 **Traffic Flow Figures 7 to 18** illustrate the committed development flows separately and combined.
- 6.2.8 **Traffic Flow Figures 19 to 22** illustrate the 2026 base + Committed and 2031 base + Committed scenarios for the AM and PM peaks in PCUs/hr.

7. TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

7.1 Overview

- 7.1.1 This section of the report considers the trip generation levels associated with the proposed development and the proportions assigned along the local highway network. The existing site is not associated with any extant planning permission and as such the B2 and B8 generated traffic will be considered in full. Under the proposed application, the site comprises three employment units with a total GIA of 71,663 sqm.
- 7.1.2 To determine the number of trips generated by the proposed use at the site, a trip generation exercise has been undertaken, for which the weekday morning and weekday evening peak hours have been assessed.

7.2 B2/B8 Trip Generation

- 7.2.1 The Trip Rate Information Computer System [TRICS] version 7.7.4 has been used to derive a predicted vehicle trip generation profile for each of the proposed land uses.
- 7.2.2 The TRICS database is an industry accepted tool for predicting the likely number of trips from a proposed development by comparing the site with existing developments of a similar size and characteristics within the UK. The database has been interrogated to determine the trip rates for the weekday morning and evening peak hours.
- 7.2.3 In order to obtain appropriate and representative trip rates, sites within Greater London and the Republic of Ireland have been omitted from the calculation. Additionally, through the applied selection criteria only industrial and distribution sites with critical characteristics similar to the application site have been utilised. These include 'Edge of Town' or 'Free Standing' location.
- 7.2.4 Through the applied selection criteria for 'Industrial Unit' category, only 20 compatible sites located in an 'Edge of Town' and 'Free Standing' location are revealed since 01/01/08 (consistent with the B8 trip rates). Out of those, 14 are classed as B1 (now E(g)) while one of the remaining six B2 sites has been re-surveyed, yielding a total sample size of five. It was therefore requested by CWCC at scoping stage that as a sensitivity test 85th percentile as well as average trip rates are obtained for the B2 element.
- 7.2.5 The results of the TRICS interrogation are shown in **Table 7.1**, whilst the TRICS outputs are presented in **Appendix K**. In the following table the trip rates are given per 100 sqm.

Table 7.1 B2 & B8 Vehicle Trip Rates

Land Use		AM Peak (07:30 - 08:30)			PM Peak (16:30 - 17:30)		
		Arrivals	Departures	2-Way	Arrivals	Departures	2-Way
B2 Industrial	Total Vehicles	0.202	0.050	0.252	0.018	0.196	0.214
	HGVs	0.008	0.018	0.026	0.002	0.000	0.002
B8 Warehousing	Total Vehicles	0.096	0.059	0.155	0.045	0.099	0.144
	HGVs	0.021	0.023	0.044	0.021	0.011	0.032
<i>B2 Industrial (85th Percentile)</i>	<i>Total Vehicles</i>	<i>0.296</i>	<i>0.070</i>	<i>0.366</i>	<i>0.020</i>	<i>0.240</i>	<i>0.260</i>
	<i>HGVs</i>	<i>0.017</i>	<i>0.035</i>	<i>0.052</i>	<i>0.000</i>	<i>0.000</i>	<i>0.000</i>

- 7.2.6 Given the limited sample size (less than 6), the 85th percentile rates could not be directly obtained from TRICS. Instead the site with the second highest trip rates has been chosen as the 85th percentile.

7.2.7 To determine the total traffic generation associated with the development site, the average trip rates have been applied to a 15%/85% B2/B8 land use mix, consistent with the proposed parking provision. The resultant vehicle trip generation is shown in **Table 7.2**.

Table 7.2 B2 & B8 Vehicle Trip Generation

Land Use		AM Peak (07:30 - 08:30)			PM Peak (16:30 - 17:30)		
		Arrivals	Departures	2-Way	Arrivals	Departures	2-Way
B2 Industrial	Total Vehicles	22	5	27	2	21	23
	HGVs	1	2	3	0	0	0
B8 Warehousing	Total Vehicles	58	36	94	27	60	88
	HGVs	13	14	27	13	7	19
Total	Vehicles	80	41	121	29	81	111
	HGVs	14	16	30	13	7	19
	PCUs	107	71	178	54	94	147

7.2.8 For the PCU conversion an HGV factor of 2.9 has been used. This is as recommended in the TAG guidance for OGV2 vehicle class and is therefore considered robust, particularly considering the nature of the development.

7.2.9 From the table it can be seen from the that the total proposed planning use of the overall site generates the following two-way PCU trips:

- 178 in the AM Peak; and
- 147 in the PM Peak.

7.3 Trip Distribution

7.3.1 To assess the percentage of the development traffic impacting on the local highway network, a trip distribution exercise has been undertaken to route traffic from their likely origin (for inbound trips) and to their likely destination (in the case of outbound trips).

7.3.2 For the study area inbound and outbound distributions have been combined. Separate distributions are not considered necessary due to no overlaps between inbound and outbound traffic occurring at any junctions.

7.3.3 Two distribution profiles have been formed for:

- Home-based commuting to/from work trips (light vehicles); and
- Distribution/Freight trips (HGVs);

7.3.4 For commuter trips, flows for the development site have been distributed along the study network using a distribution profile based on the 2011 Journey to Work Census data. For the employment zone which the development site lies in (Cheshire West and Chester 007), the taken approach resembles a simplified Gravity Model, generating an output in the form of percentage splits for trips produced by surrounding residential zones based on their size and proximity to the development.

7.3.5 The full output is provided in **Appendix L** and shows the percentage splits for all 573 census tracts.

7.3.6 Due to the nature of the development, all HGV traffic has been directed to the strategic road network, which favours HGV freight movements focused on national distribution.

7.4 Traffic Assignment

7.4.1 Following the distribution of development trips, an all-or-nothing assignment has been performed, to assign traffic to/from the development along the minimum cost paths. The measure of cost used is the time taken to travel from the development to each of the aforementioned zones. The route costs have been estimated using the journey planning software from the Google Maps Directions facility. Distance based cost is not considered appropriate in this case due to the varying speed-flow characteristic of the local network. The minimum cost routes have been obtained for a neutral day, with the cost measured from the proposed site access to the zones' centroid. Where the travel time on more than one route is the same, the shorter distance route has been chosen.

7.4.2 With regards to the study network, six routes have been identified for consideration. These are summarised below:

- a. M53 East;
- b. B5132 Netherpool Road;
- c. M53 West;
- d. West Road;
- e. North Road (North); and
- f. North Road (South)

7.4.3 The percentage of trips assigned along the local study network are illustrated in **Table 7.3** based on the above criteria.

Table 7.3: Development Traffic Assignment Proportions

Route	Description	% of Trips Assigned
A	M53 East	35%
B	B5132 Netherpool Rd	23%
C	M53 West	42%
D	West Road	0%
E	North Road (N)	0%
F	North Road (S)	0%
Total		100%

7.4.4 The above table illustrates that the majority of light development trips (77%) would be assigned along the M53, with the remaining 23% anticipated to travel to/from Netherpool Road. All HGV traffic has been assigned along the M53 at Junction 7 using a 50/50 split for the west and eastbound directions.

7.4.5 Additionally the proportion of traffic utilising the retained existing access has been derived based on the proposed parking provision at Unit 03. This revealed that 15% of light traffic and 19% of HGV traffic would be assigned on North Road (S).

7.4.6 **Traffic Flow Figures 23** shows the combined outbound and inbound distribution for both categories of light vehicle trips as well as HGVs, indicating the percentage of development traffic impacting on each junction.

7.4.7 Following the formation of the distribution profile, traffic is assigned according to the obtained percentage turning proportions. This is illustrated in **Traffic Flow Figures 24** and **25**.

8. DEVELOPMENT TRAFFIC IMPACT

8.1 Introduction

8.1.1 With reference to the defined study area, this section concerns the operational assessment of the local highway network with the aim of establishing whether the development traffic has a detrimental impact on traffic operations. The performance of the network is best reflected in the operation of the key junctions identified in the study as this is where queuing and delay are likely to occur.

8.2 Assessment Scenarios

8.2.1 To assess the impact of the development proposals, the following assessment scenarios have been formulated:

1. 2021 Base (Base year scenario);
2. 2026 Base (Future base year scenario);
3. 2031 Base (Future base scenario for the SRN);
4. 2026 Base + Committed Development;
5. 2031 Base + Committed Development;
6. 2026 Base + Committed + Proposed Development;
7. 2031 Base + Committed + Proposed Development;

8.2.2 All traffic flows are expressed in PCUs/hr. **Traffic Flow Figures 26 - 29** illustrate scenarios 6 and 7.

8.2.3 To recap, under the development proposals the existing 3-arm signalised junction of North Road / North Road will be redesigned into a 4-arm signalised crossroads arrangement and the existing access to the south opened up to serve Unit 03 only, as discussed in Section 5.

8.3 Percentage Traffic Impact at Junctions

8.3.1 **Table 8.1** shows the total percentage impact of the development at each of the three junctions within the study network against the future base. i.e. Scenario 4 (2026 Base + Committed Development) and Scenario 5 (2031 Base + Committed Development). A threshold of 5% has been defined as an indication of whether detailed junction modelling is warranted.

Table 8.1: Development Traffic Impact at Junctions

Junction		2021 Base	2026 Base	2031 Base	2026 Base + Com	2031 Base + Com	2026 Base + Com + Dev	2031 Base + Com + Dev	% Impact	
									2026	2031
North Road / North Road	AM	307	325	339	396	410	575	589	45%	44%
	PM	257	271	282	359	370	507	518	41%	40%
North Road / West Road	AM	312	329	345	598	614	598	614	0%	0%
	PM	289	306	317	550	561	550	561	0%	0%
M53 Junction 7	AM	977	1034	1077	1104	1147	1281	1324	16%	15%
	PM	928	978	1016	1066	1104	1221	1259	15%	14%

8.3.2 The table suggests that the site access junction of North Road / North Road and M53 Junction 7 will both experience an impact greater than 5% and will hence require detailed capacity assessments.

8.3.3 To confirm the level of the operational performance, the junctions have been assessed using the industry standard junction modelling packages LinSig3 and Junctions 9 (ARCADY module). The subsequent sub-sections will consider the assessment of the junctions in detail and will consider the capacity of the junctions at the forecast year of 2026 and 2031.

8.4 Site Access / North Road - 4-arm Signalised Junction

8.4.1 For the site access junction, a summary of the modelling results is presented in terms of Degree of Saturation [DoS] and PCU queue lengths.

8.4.2 DoS values between 0.00 and 0.90 are generally accepted as representing stable and acceptable operating conditions. Values between 0.90 and 1.0 represent variable operation (i.e. possible queues building up at the junction and increases in vehicular delay, both queuing and geometric, moving through the junction). Values in excess of 1.0 represent oversaturated conditions (i.e. congestion).

8.4.3 The junction has been modelled for the AM and PM peak hours for the following four scenarios:

1. 2021 Base;
2. 2026 Base;
3. 2026 Base + Committed Development;
4. 2026 Base + Committed + Proposed Development;

8.4.4 **Table 8.2** presents the results summary for the junction. The values presented are the maximum DoS and PCU queue lengths occurring on each arm during the modelled periods. The full modelling report is provided in **Appendix M**.

Table 8.2: Site Access / North Road Modelling Results Summary

Scenario	Arm	AM		PM	
		DoS	Queue Length (PCUs)	DoS	Queue Length (PCUs)
Existing 3-arm Arrangement					
2021 Base	North Road (North-west)	0.08	0.9	0.05	0.4
	North Road (South-east)	0.14	1.4	0.10	1.2
	North Road (South-west)	0.19	2.4	0.19	1.2
2026 Base	North Road (North-west)	0.09	0.9	0.09	0.9
	North Road (South-east)	0.14	1.5	0.14	1.5
	North Road (South-west)	0.20	2.5	0.20	2.5
2026 Base + Committed	North Road (North-west)	0.13	1.4	0.16	1.9
	North Road (South-east)	0.16	1.5	0.12	1.3
	North Road (South-west)	0.23	3.0	0.25	3.3
Proposed 4-arm Arrangement					
2026 Base + Committed + Development	North Road (North-west)	0.18	1.5	0.14	1.8
	North Road (South-east)	0.30	2.1	0.17	2.4
	North Road (South-west)	0.36	5.2	0.36	3.1
	Proposed Site Access	0.34	1.6	0.33	2.1

8.4.5 The analysis indicates that the junction operates with significant spare capacity across all assessment scenarios without and with the development in place.

8.4.6 No operational issues are identified and the proposed design deemed suitable. Critically, the modelling results suggest that any anticipated queuing will not exceed the provided storage length into the site.

8.5 Site Access / North Road - 4-arm Signalised Junction Sensitivity Test

8.5.1 As alluded to in the previous section, a sensitivity test is undertaken at the request of CWCC using the 85th percentile trip rates obtained for B2 land use. Applying these trip rates results in a total two-way trip generation increase of:

- 18 PCUs in the AM peak; and
- 5 PCUs in the PM Peak.

8.5.2 The junction modelling has been re-run, with the results summarised in **Table 8.3**. The full outputs are presented in **Appendix M**.

Table 0.1: Site Access / North Road Sensitivity Test Modelling Results Summary

Scenario	Arm	AM		PM	
		DoS	Queue Length (PCUs)	DoS	Queue Length (PCUs)
Proposed 4-arm Arrangement					
2026 Base + Committed + Development	North Road (North-west)	0.19	1.6	0.15	1.8
	North Road (South-east)	0.32	2.2	0.18	2.5
	North Road (South-west)	0.36	5.4	0.36	3.1
	Proposed Site Access	0.38	1.8	0.32	2.2

8.5.3 The table shows that the application of the 85th percentile B2 trip rates results in no material impact at the junction and it still operates with significant spare capacity.

8.6 M53 Junction 7

8.6.1 The motorway interchange has been modelled as a large roundabout, with the circulating flows for the central 30-minute peak period estimated based on the demand flows and turning proportions using the function in ARCADY. An hourly flow profile has been applied for the selected AM and PM peak hours and the modelling results presented in terms of Ratio of Flow to Capacity (RFC) and PCU queue lengths.

8.6.2 RFC values between 0.00 and 0.85 are generally accepted as representing stable and acceptable operating conditions. Values between 0.85 and 1.0 represent variable operation (i.e. possible queues building up at the junction and increases in vehicular delay, both queuing and geometric, moving through the junction). Values in excess of 1.0 represent oversaturated conditions (i.e. congestion).

8.6.3 The junction has been modelled for the AM and PM peak hours for the following seven scenarios:

1. 2021 Base;
2. 2026 Base;
3. 2031 Base;
4. 2026 Base + Committed Development;
5. 2031 Base + Committed Development;
6. 2026 Base + Committed + Proposed Development; and
7. 2031 base + Committed + Proposed Development

8.6.4 **Table 8.4** presents the results summary for the junction. The values presented are the maximum RFC and PCU queue lengths occurring on each arm during the modelled periods. The full modelling report is provided in **Appendix M**.

Table 0.2: M53 Junction 7 Modelling Results Summary

Scenario	Arm	AM		PM	
		RFC	Queue Length (PCUs)	RFC	Queue Length (PCUs)
2021 Base	Vauxhall Access	0.01	0.0	0.02	0.0
	North Road	0.09	0.1	0.14	0.2
	M53 WB Off slip	0.11	0.1	0.07	0.1
	B5132 Netherpool Road	0.16	0.2	0.12	0.1
	M53 EB Off slip	0.12	0.1	0.11	0.1
2026 Base	Vauxhall Access	0.01	0.0	0.02	0.0
	North Road	0.09	0.1	0.15	0.2
	M53 WB Off slip	0.11	0.1	0.08	0.1
	B5132 Netherpool Road	0.17	0.2	0.13	0.2
	M53 EB Off slip	0.13	0.1	0.11	0.1
2031 Base	Vauxhall Access	0.01	0.0	0.02	0.0
	North Road	0.10	0.1	0.16	0.2
	M53 WB Off slip	0.12	0.1	0.08	0.1
	B5132 Netherpool Road	0.18	0.2	0.14	0.2
	M53 EB Off slip	0.13	0.2	0.12	0.1
2026 Base + Committed Development	Vauxhall Access	0.01	0.0	0.02	0.0
	North Road	0.10	0.2	0.19	0.3
	M53 WB Off slip	0.12	0.2	0.08	0.1
	B5132 Netherpool Road	0.18	0.2	0.14	0.2
	M53 EB Off slip	0.14	0.2	0.12	0.1
2031 Base + Committed Development	Vauxhall Access	0.01	0.0	0.02	0.0
	North Road	0.11	0.2	0.20	0.3
	M53 WB Off slip	0.13	0.2	0.09	0.1
	B5132 Netherpool Road	0.19	0.2	0.14	0.2
	M53 EB Off slip	0.15	0.2	0.12	0.1
2026 Base + Committed + Proposed Development	Vauxhall Access	0.01	0.0	0.02	0.0
	North Road	0.15	0.2	0.26	0.4
	M53 WB Off slip	0.15	0.2	0.10	0.1
	B5132 Netherpool Road	0.19	0.2	0.14	0.2
	M53 EB Off slip	0.17	0.2	0.13	0.2
2031 Base + Committed + Proposed Development	Vauxhall Access	0.01	0.0	0.02	0.0
	North Road	0.15	0.2	0.27	0.4
	M53 WB Off slip	0.15	0.2	0.11	0.1
	B5132 Netherpool Road	0.20	0.3	0.15	0.2
	M53 EB Off slip	0.18	0.2	0.14	0.2

8.6.5 The modelling results suggest that that the junction operates with spare capacity across all arms and assessment scenarios. The impact of the development is shown to be accommodated, resulting in a maximum RFC of 0.27 in the 2031 Base + Committed + Development scenario, occurring in the PM peak and along the North Road arm where 100% of the outbound development traffic is assigned.

8.7 M53 Junction 7 Sensitivity Test

8.7.1 Once again, a sensitivity test is undertaken at the request of CWCC using the 85th percentile trip rates obtained for B2 land use. The results are summarised in **Table 8.5**, with the full outputs presented in **Appendix M**.

Table 0.3: M53 Junction 7 Sensitivity Test Modelling Results Summary

Scenario	Arm	AM		PM	
		RFC	Queue Length (PCUs)	RFC	Queue Length (PCUs)
2026 Base + Committed + Proposed Development	Vauxhall Access	0.01	0.0	0.02	0.0
	North Road	0.15	0.2	0.26	0.4
	M53 WB Off slip	0.15	0.2	0.10	0.1
	B5132 Netherpool Road	0.19	0.2	0.14	0.2
	M53 EB Off slip	0.18	0.2	0.13	0.2

8.7.2 The table shows that the application of the 85th percentile B2 trip rates results in no material impact at the junction and it still operates with significant spare capacity.

8.8 Accident Review

8.8.1 With regards to the accident record of the study network, the proposed development is not envisaged to have a detrimental or severe impact on highway safety. Review of the accident data in Section 2 identified only 8 accidents along the study network in the vicinity of the site. Since this is where the development impact is highest, it is reasonable to assume that the junctions will not suffer significant detriment is not envisaged that the development will exacerbate the current safety record.

8.8.2 Additionally, the capacity analysis has established that both the access junction and M53 Junction 7 operate with significant spare capacity in all scenarios, and the development impact will not result in significant queues and delays. This will reduce the likelihood of aggressive or impatient driver behaviour usually attributed to junction accidents.

8.8.3 It is, therefore, Hydrock's view that the safety implications of the development traffic are acceptable in highways terms.

9. SUMMARY AND CONCLUSION

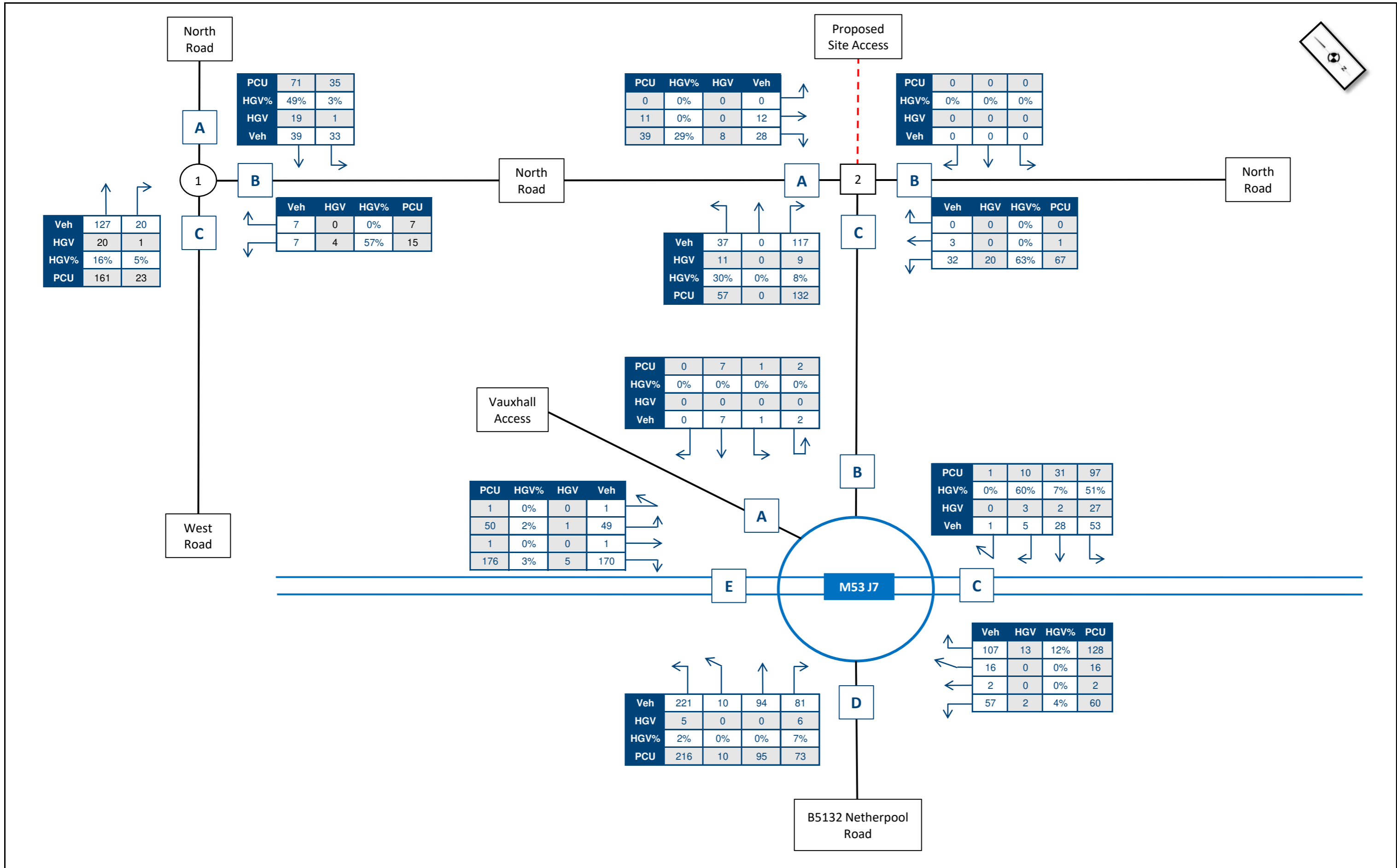
9.1 Summary

- 9.1.1 Hydrock have been instructed by Firethorn Developments Limited to prepare a Transport Assessment [TA] in support of a full planning application for a proposed employment development off North Road, Ellesmere Port.
- 9.1.2 The development proposals comprise 71,663 sqm of B2/B8 land use with ancillary E(g)(i) office space, car and HGV parking facilities, new access arrangements, active travel improvements and associated landscaping within an approximately 45 acre site.
- 9.1.3 The development site is to be accessed off North Road via the existing 3-arm signalised junction which will be reconfigured to provide a new arm into the site. The new access junction will serve units 01 and 02, while access to Unit 03 will be provided separately via the existing priority access along North Road to the south, which will be retained.
- 9.1.4 As part of the proposals a new 4.0m segregated two-way cycle track is proposed through the site along the disused railway and providing continuity with the internal arrangement and the existing provision along North Road which will be upgraded.
- 9.1.5 The sustainability assessment shows that the site is accessible by non-car modes and benefits from facilities for pedestrians and cyclists. The provision of the new cycle track along with ample cycle parking and pedestrian connections will significantly boost the sustainability credentials of the site. The ability to readily access wider destinations by walking and cycling provides a key advantage in offering a real alternative to car travel (e.g. for journeys to work) and as such promotes the aim of reducing car travel.
- 9.1.6 The site layout review and swept path analysis have demonstrated that the proposed arrangement is suitable and all turning, access, egress, parking and servicing manoeuvres can be performed safely.
- 9.1.7 The undertaken accident analysis concluded that the road safety record within the local highway network is modest and does not give rise to material concern. It is therefore Hydrock's view that it will not be exacerbated by the proposed development.
- 9.1.8 The trip generation and traffic impact analysis indicates that the development impact on the identified study network can be suitably accommodated by the existing infrastructure, access junction alterations and proposed car parking supply.
- 9.1.9 The development is considered compliant with national and regional policy including CWCC's Parking Standards, by being suitably located to benefit from existing and proposed walking and cycling routes and according with the recommended parking, highway design and visibility requirements.
- 9.1.10 NPPF (February 2019 - paragraph 109) 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."*
- 9.1.11 The traffic impact assessment shows that the proposed development would not have a "severe" impact on the local highway network.

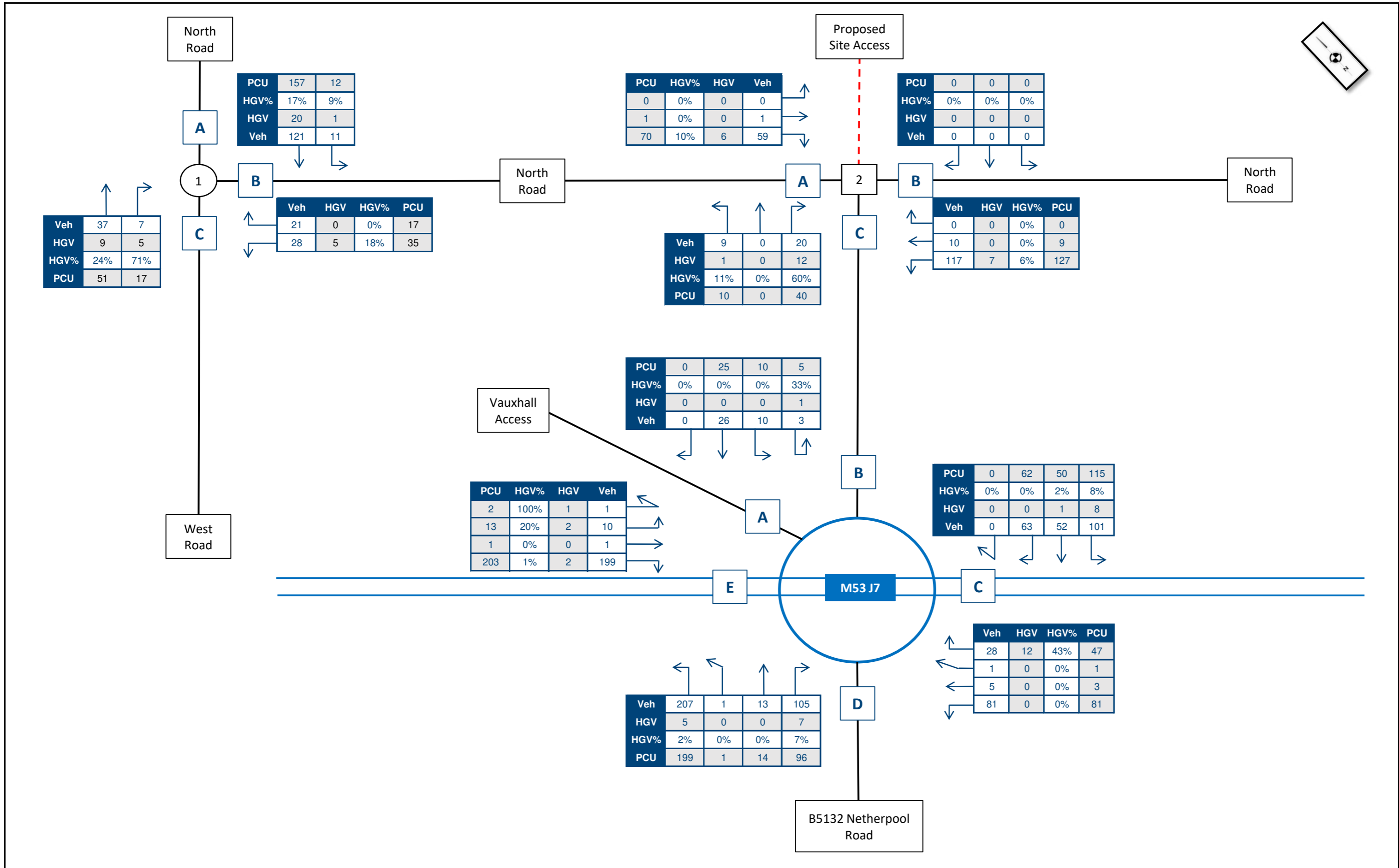
9.2 Conclusion

- 9.2.1 Having undertaken a comprehensive analysis of the development site and after reviewing planning policies, it has been demonstrated by this TS that the proposed development accords with highway access design recommendations and sustainable values and hence there is no basis for highway and transportation objections to the proposals.
- 9.2.2 The impacts of the proposed development are not severe and therefore the presumption in favour of the development is not outweighed by any highways or traffic related issues.

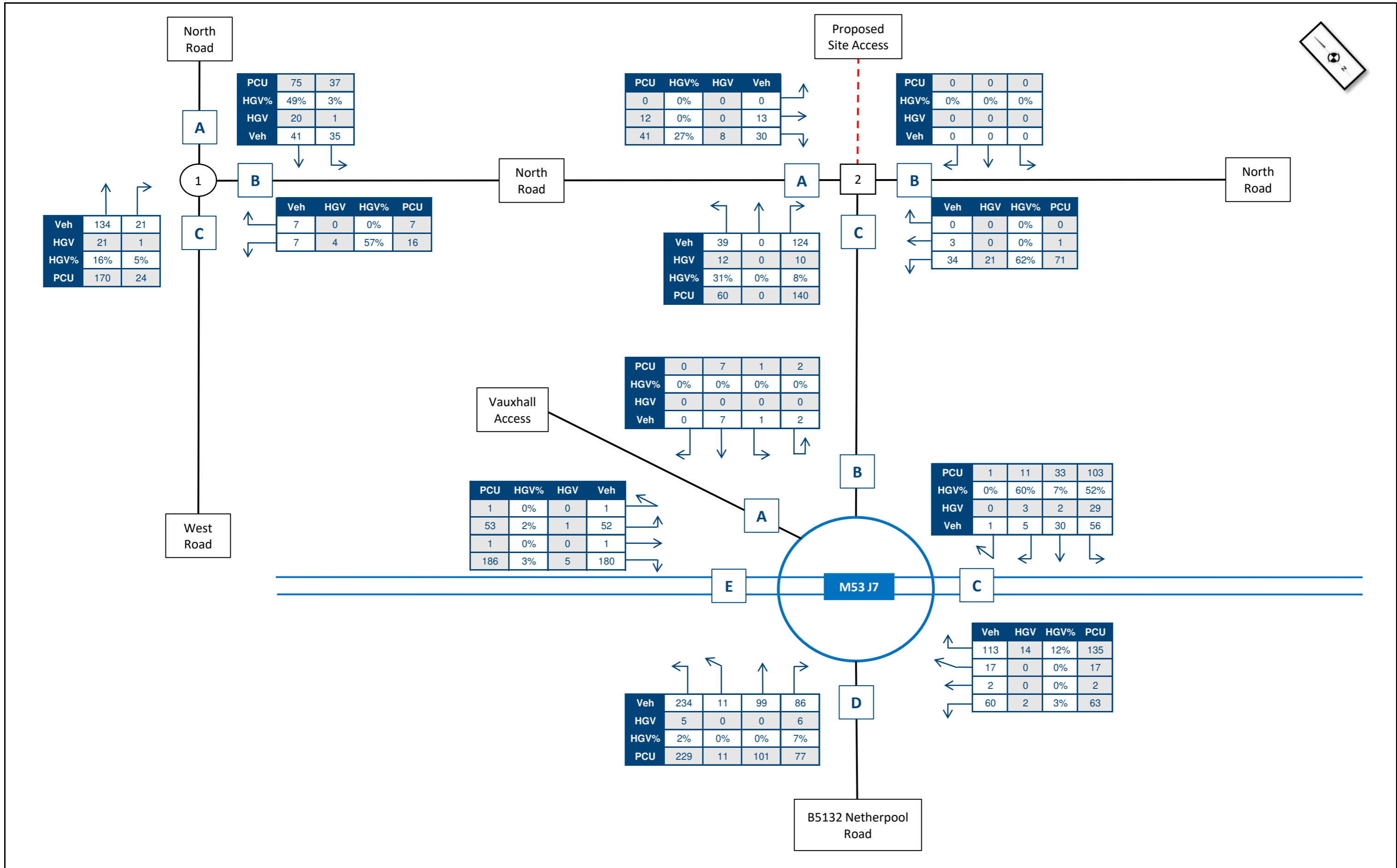
Traffic Flow Figures



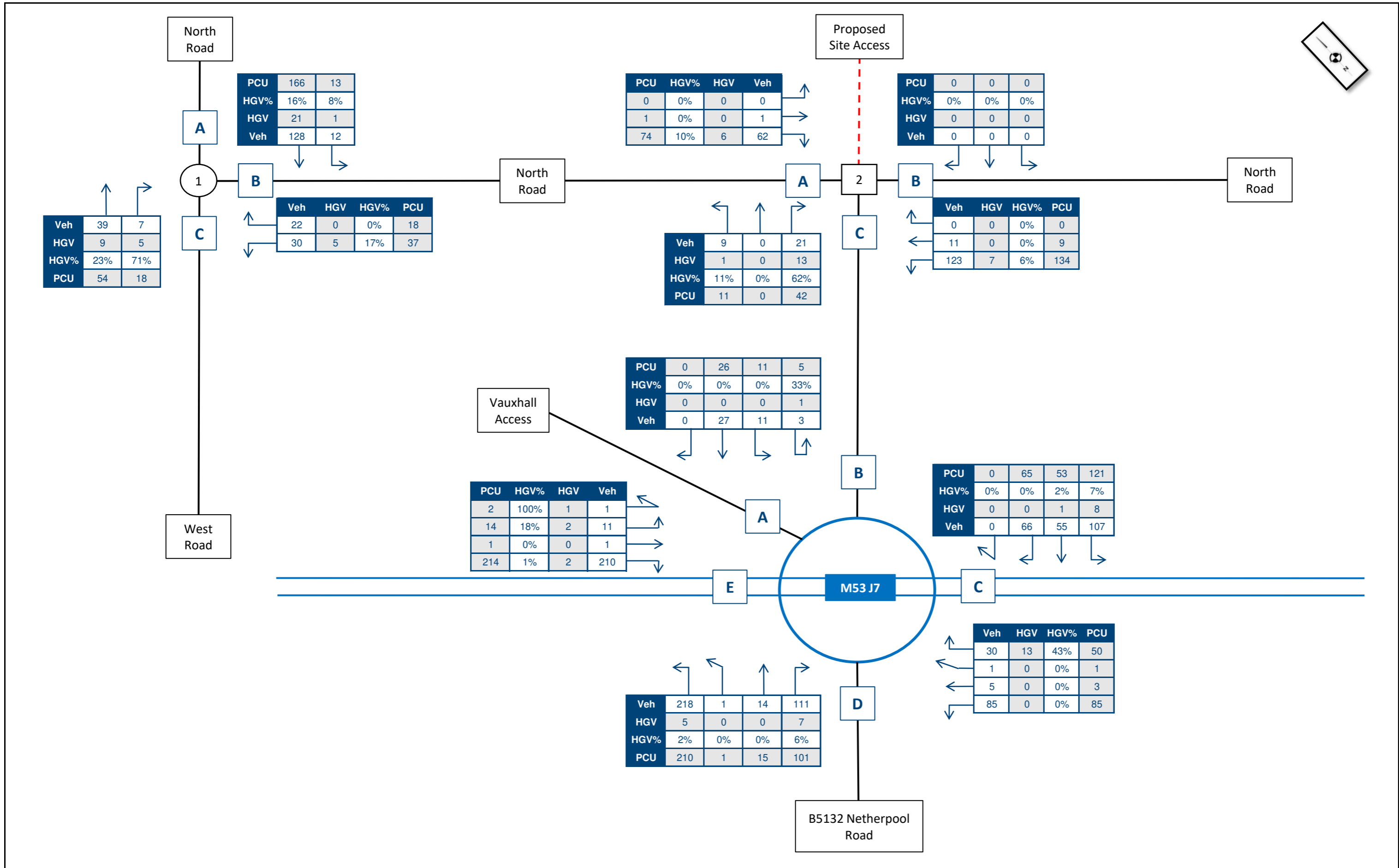
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				Approved by: SD	Figure 01



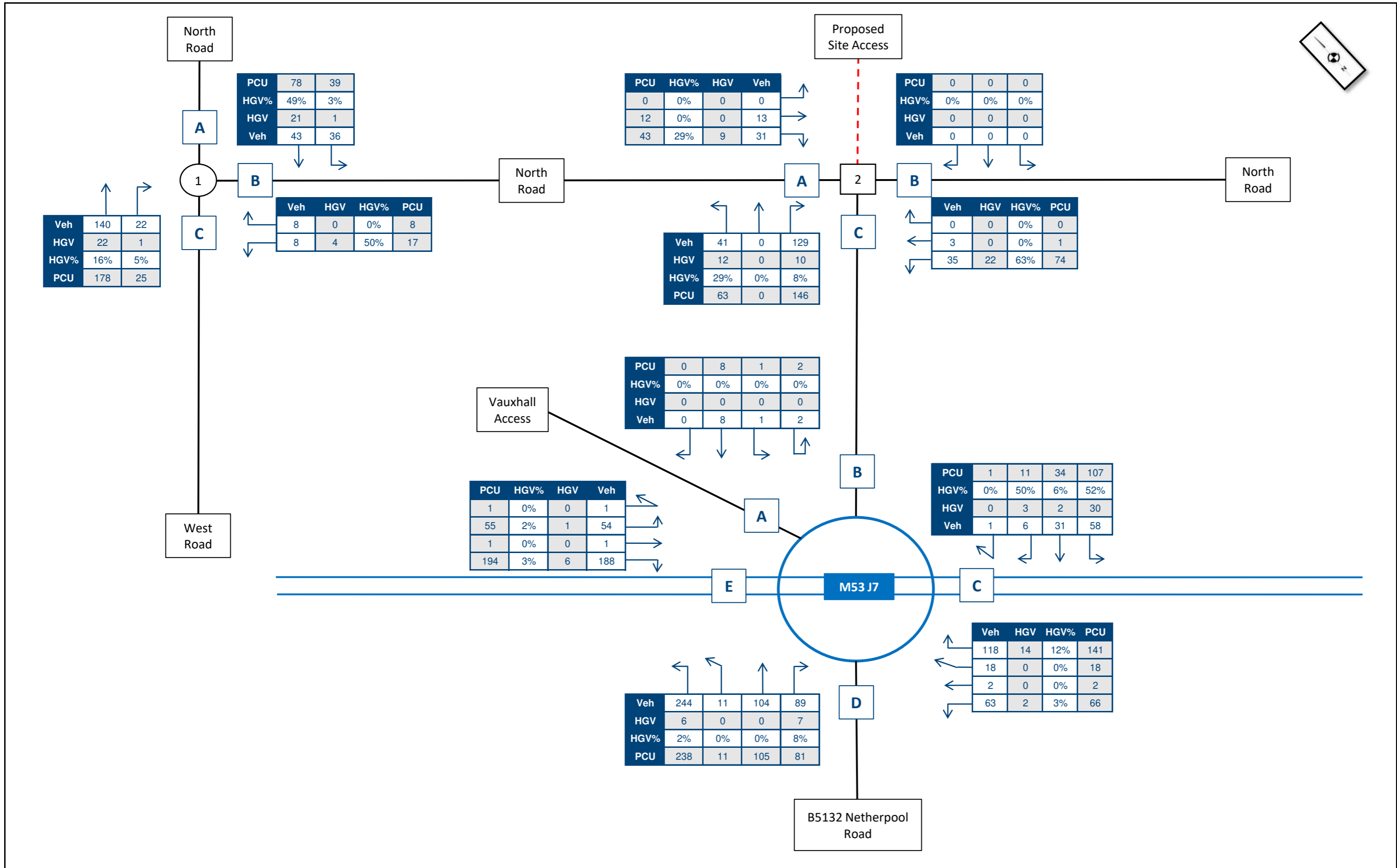
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				Approved by: SD	Figure 02



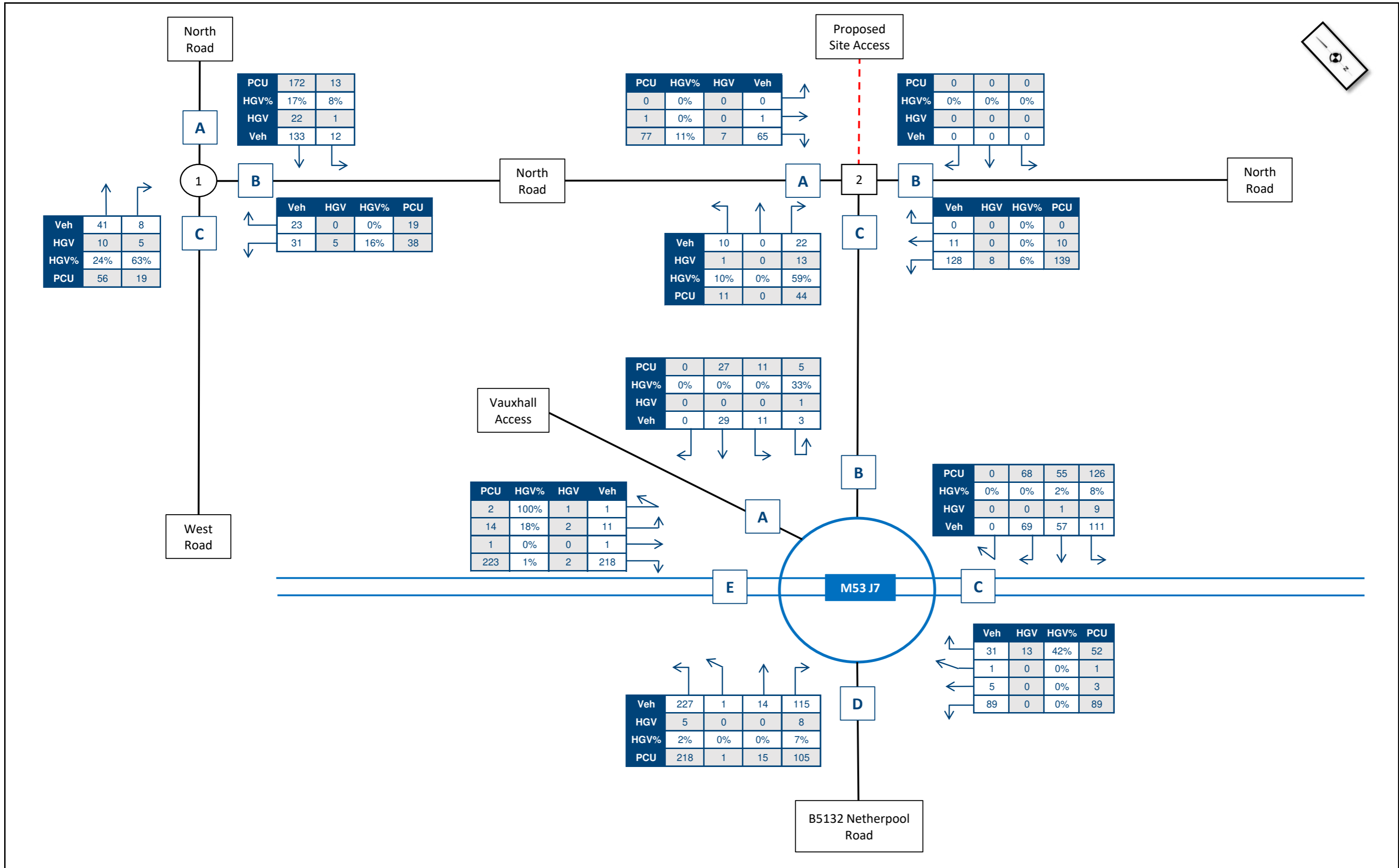
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				Approved by: SD	Figure 03



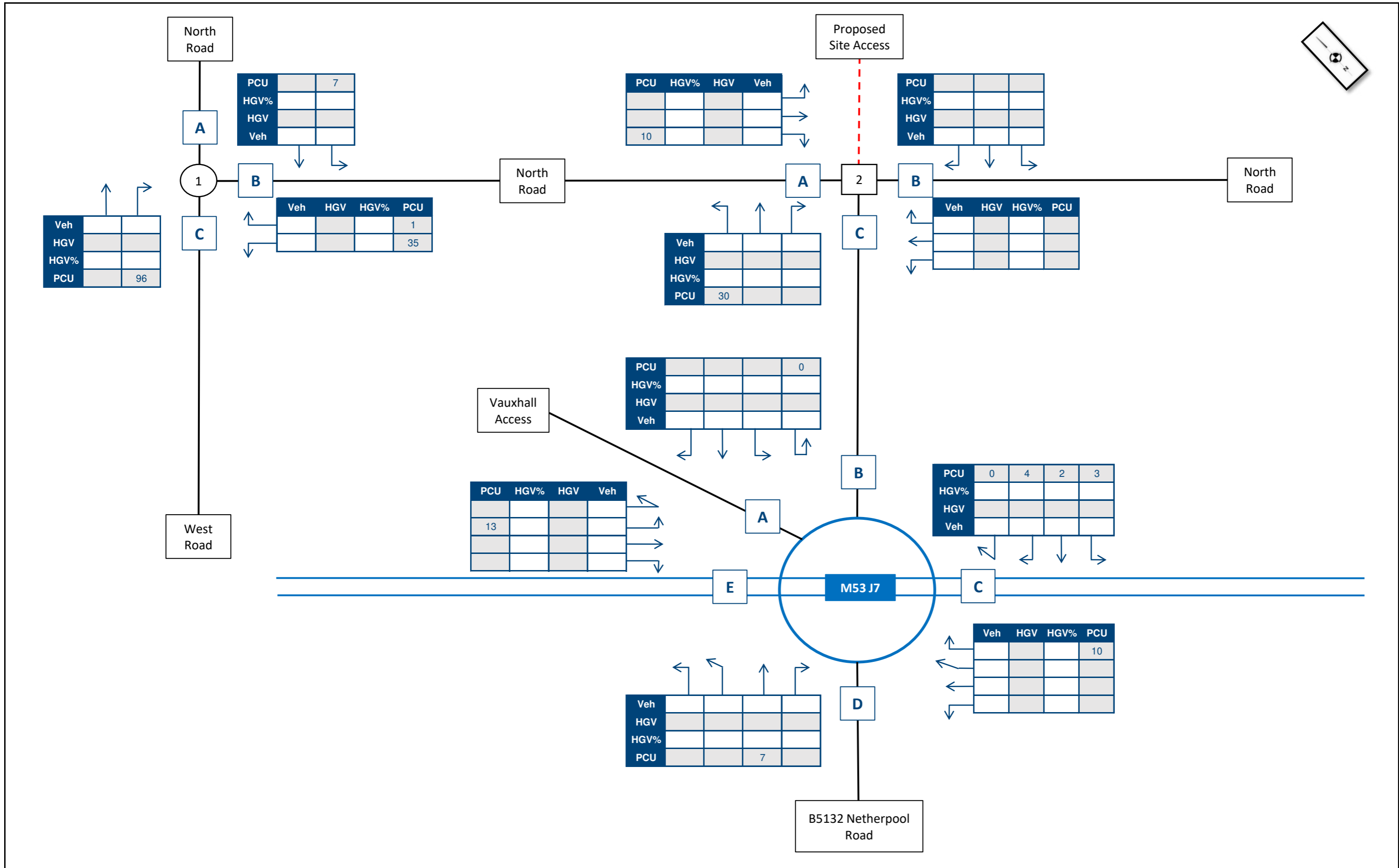
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				Approved by: SD	Figure 04



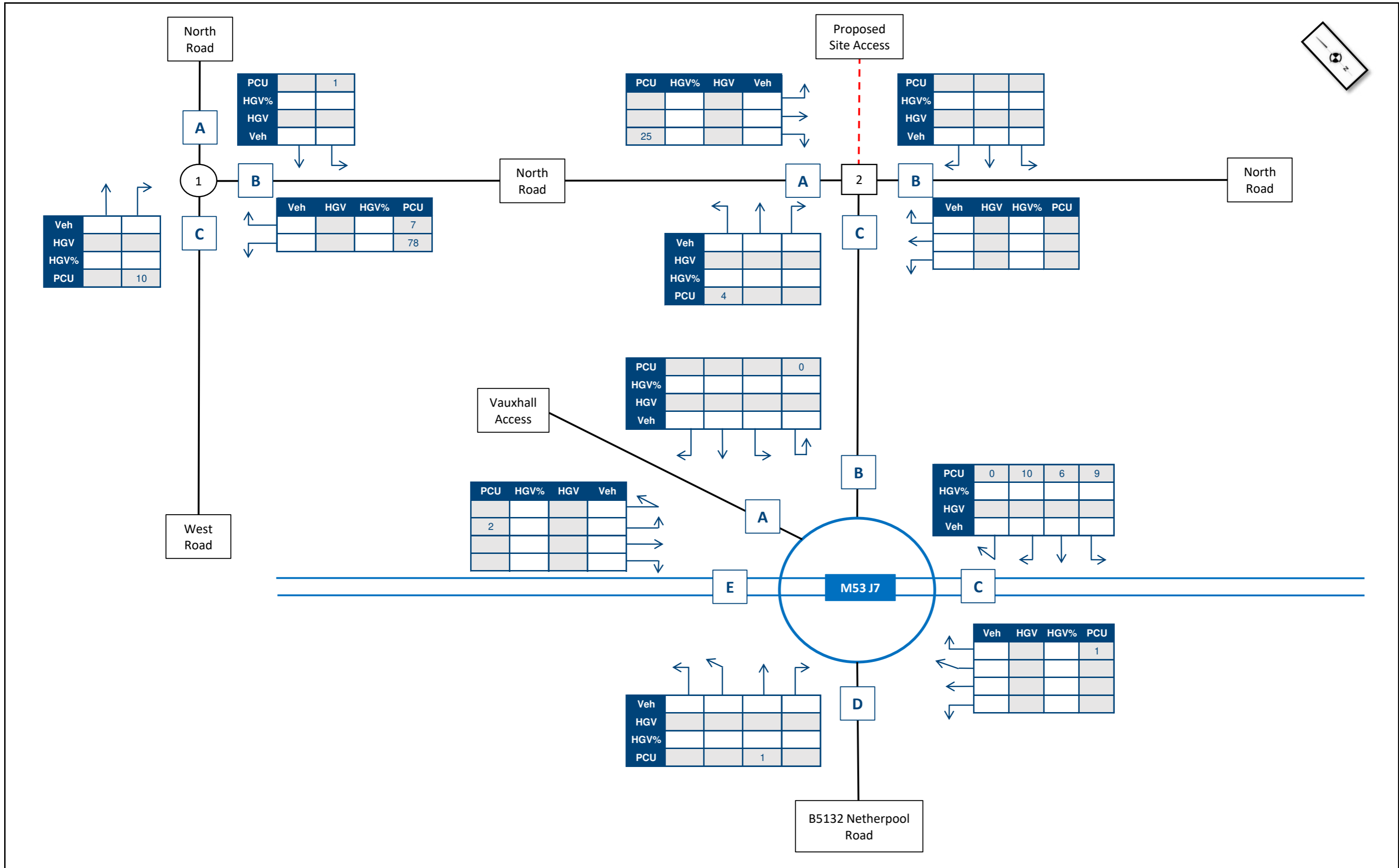
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				Approved by: SD	Figure 05



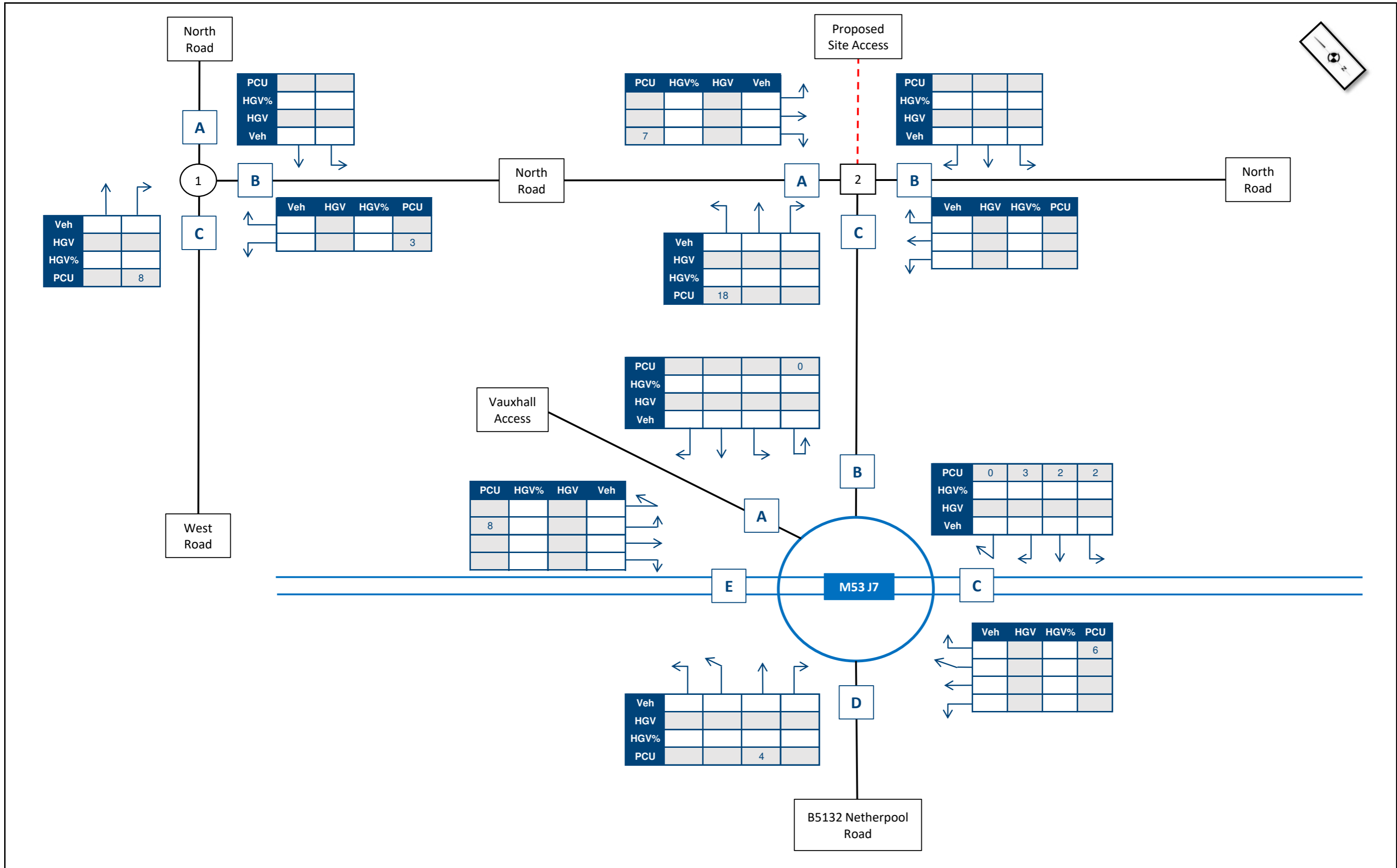
	2026 PM Base	AM Peak: 16:30 - 17:30	Notes TEMPro 2021-2031 Growth Factor 1.097	TFD by: VP	03/03/2021
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				Approved by: SD	Figure 06



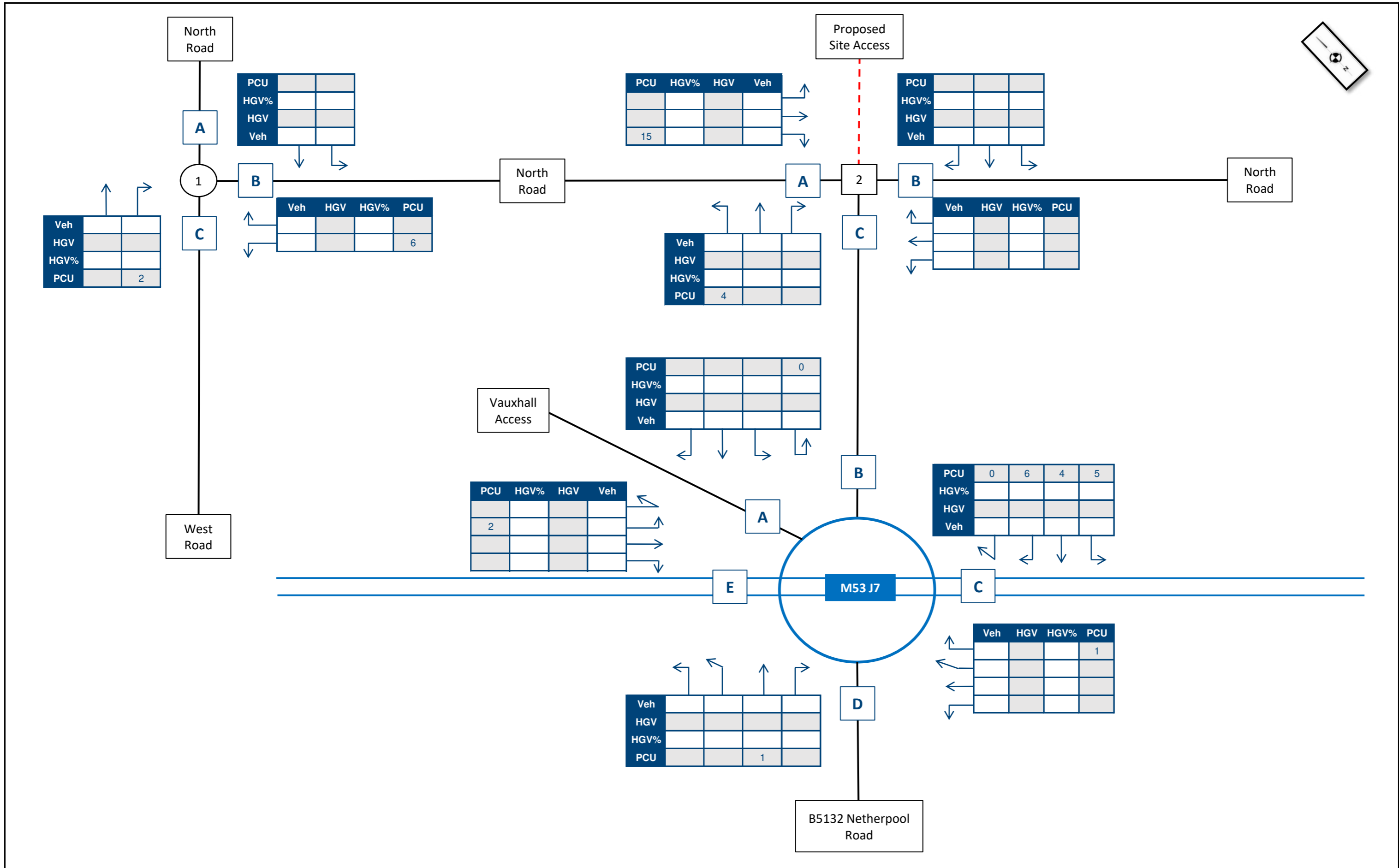
	AM North Road Business Park Development Trips (19/04561/OUT)	AM Peak: 07:30 - 08:30	Notes	TFD by: VP	03/03/2021	
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				Approved by: SD	Figure 07	



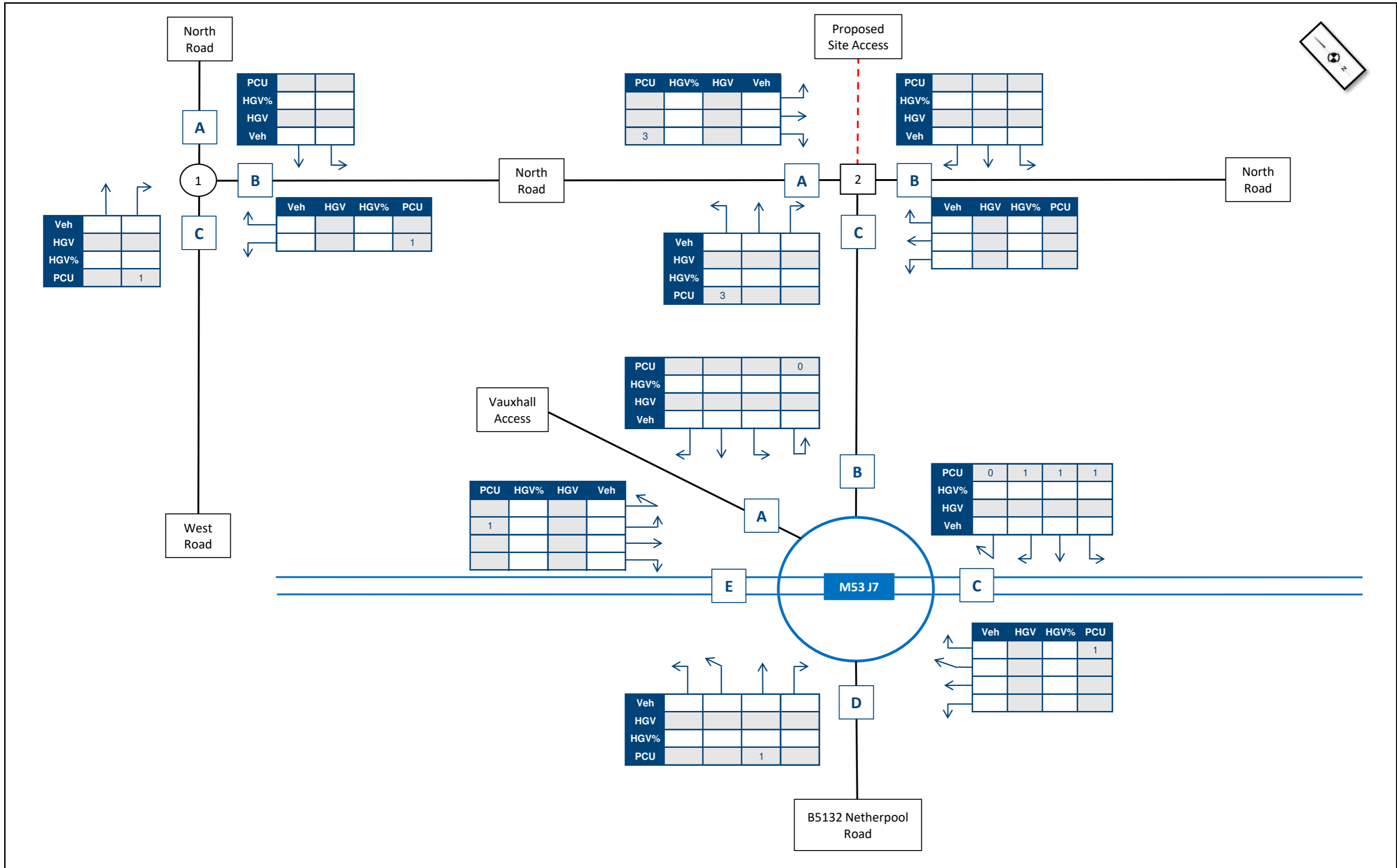
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				Approved by: SD	Figure 08	



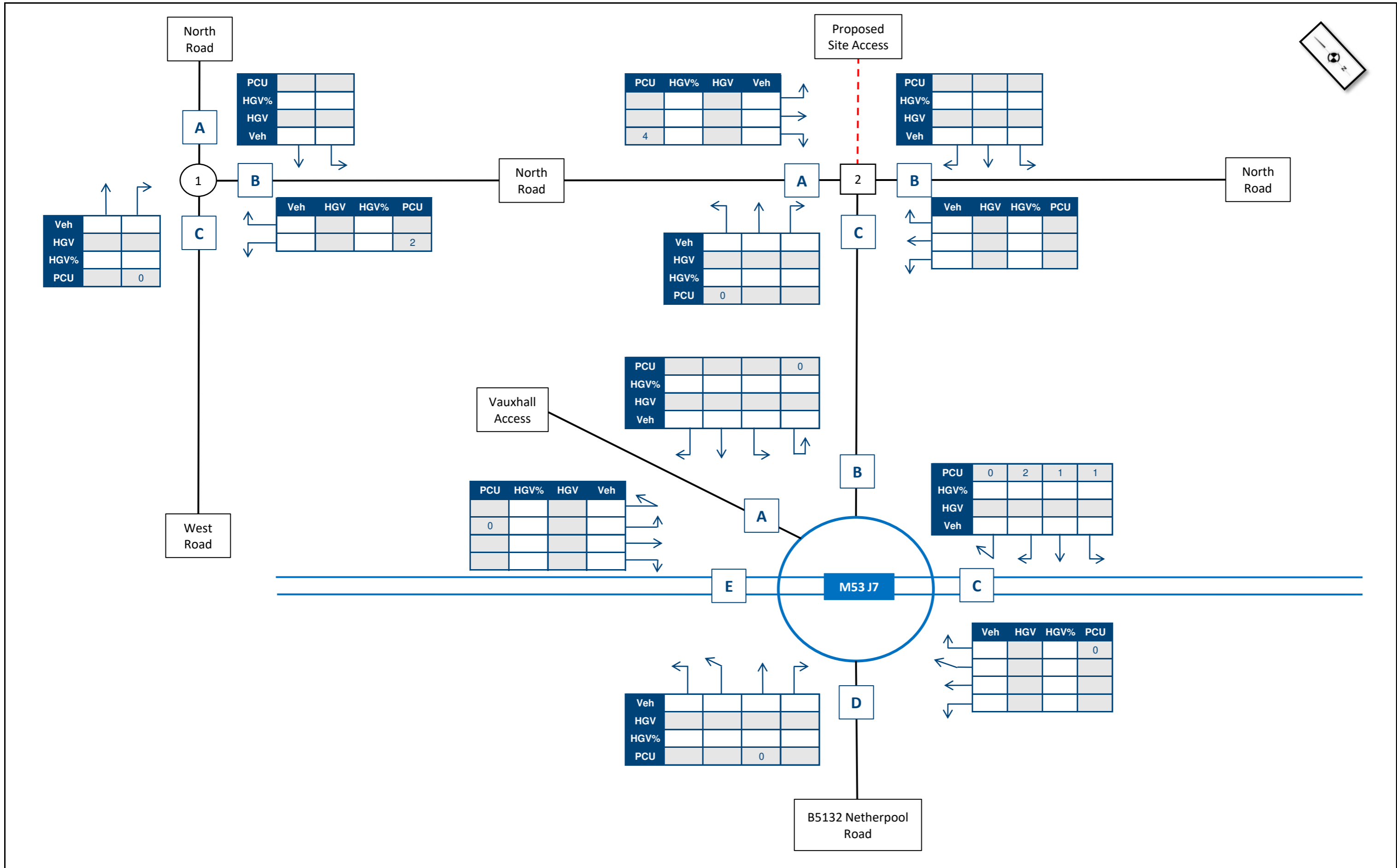
	AM Electricity Generating Plant Trips (20/04850/OUT)	AM Peak: 07:30 - 08:30	Notes	TFD by: VP	03/03/2021	
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876	
				Approved by: SD	Figure 09	



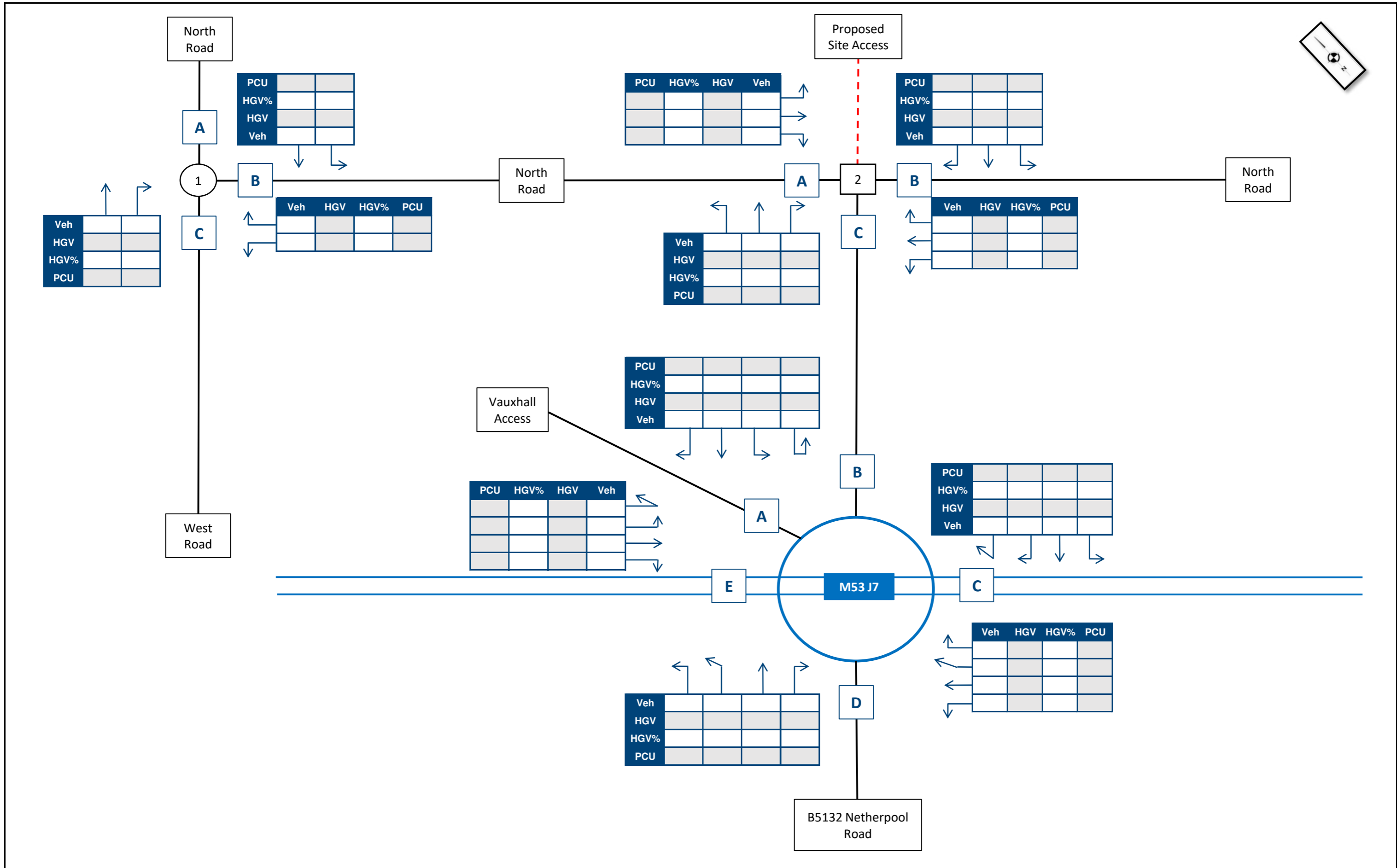
	PM Electricity Generating Plant Trips (20/04850/OUT)	AM Peak: 16:30 - 17:30	Notes	TFD by: VP	03/03/2021	
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876	
				Approved by: SD	Figure 10	



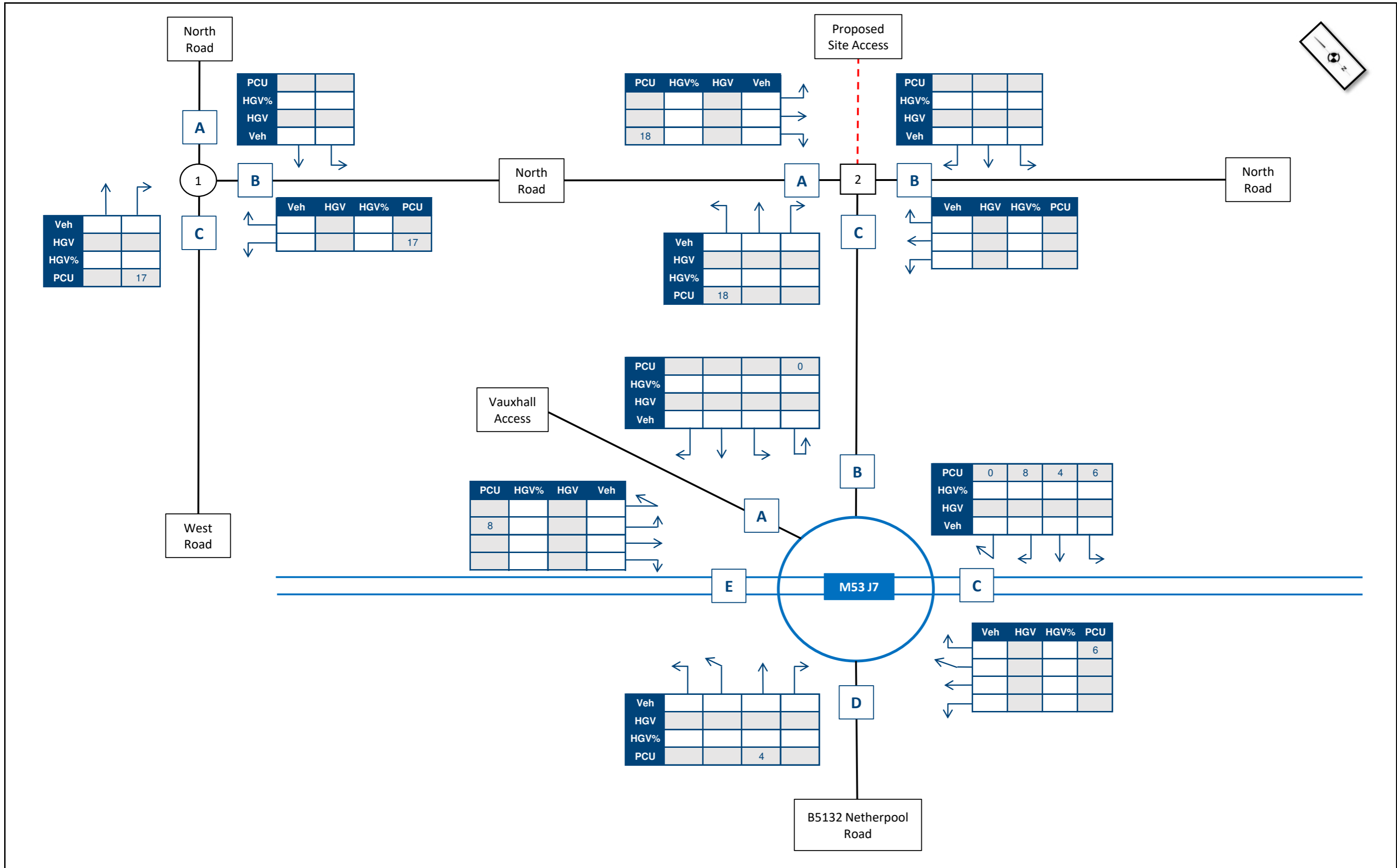
	AM Soil Processing Plant Trips (20/04645/FUL)	AM Peak: 07:30 - 08:30	Notes	TFD by: VP	03/03/2021
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876
				Approved by: SD	Figure 11



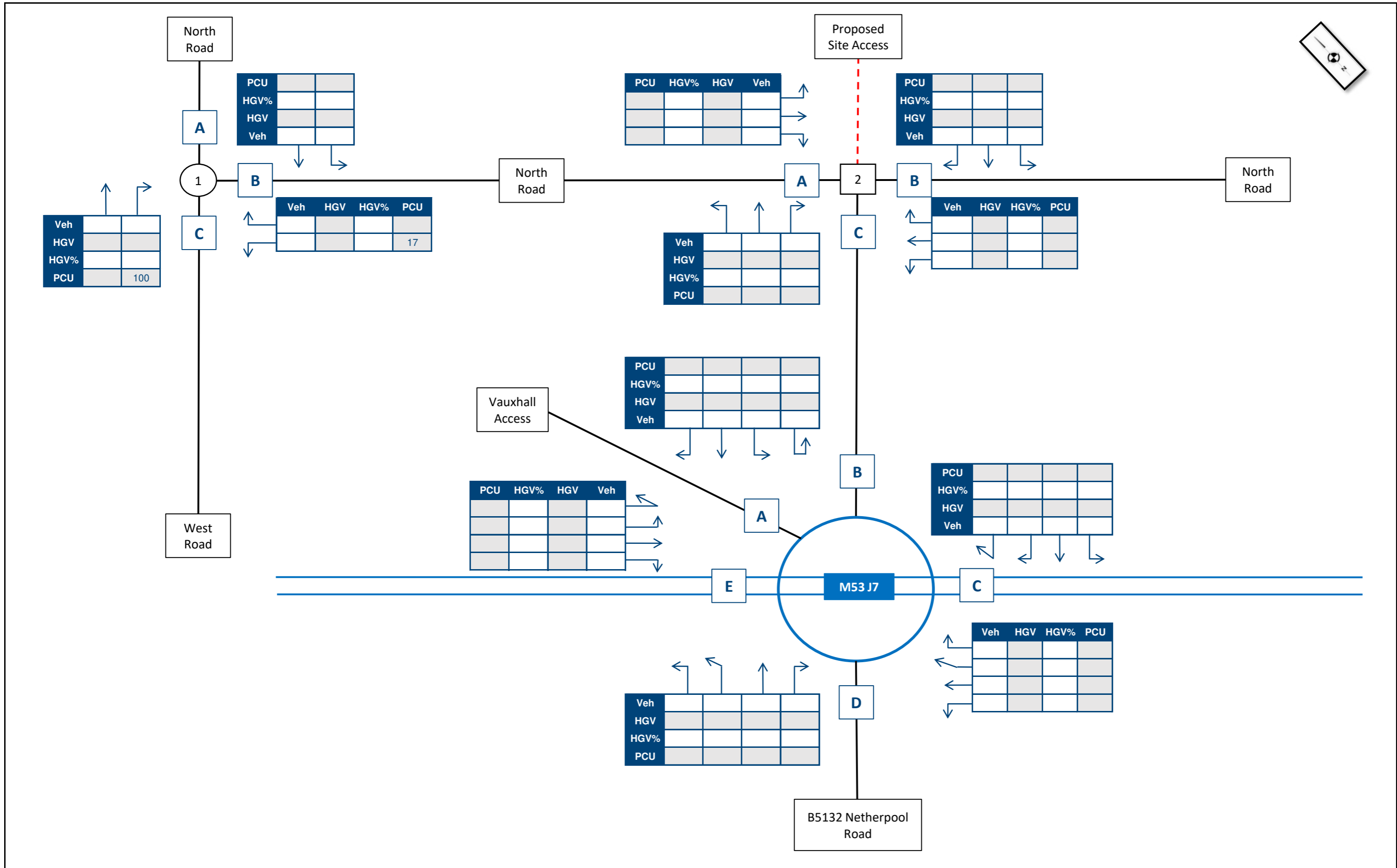
	PM Soil Processing Plant Trips (20/04645/FUL)	AM Peak: 16:30 - 17:30	Notes	TFD by: VP	03/03/2021	
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876	
				Approved by: SD	Figure 12	




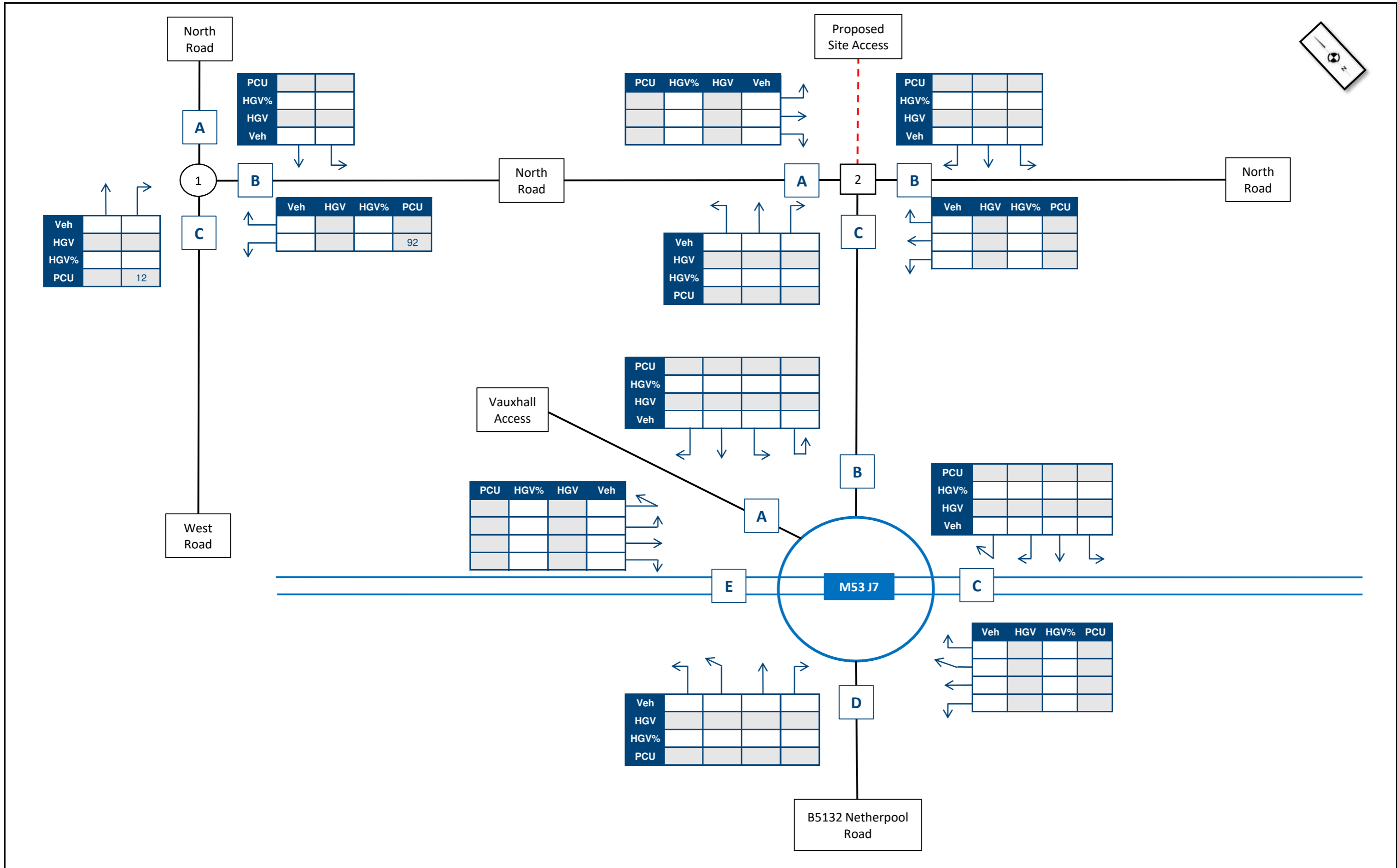
	AM Change of Use to Car Sales Trips (20/04291/FUL)	AM Peak: 07:30 - 08:30	Notes	TFD by: VP	03/03/2021	
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876	
				Approved by: SD	Figure 13	



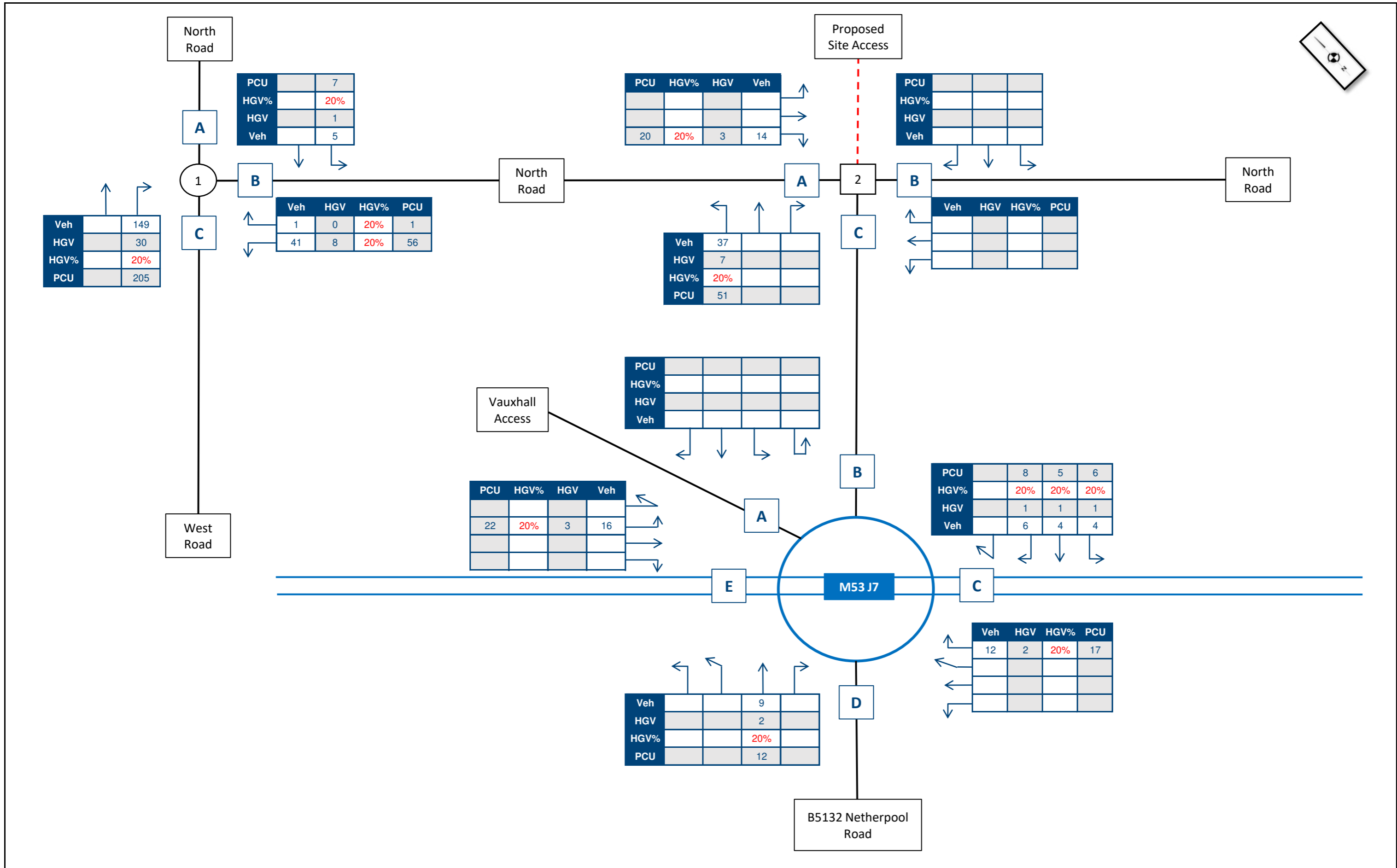
	AM Change of Use to Car Sales Trips (20/04291/FUL)	AM Peak: 16:30 - 17:30	Notes	TFD by: VP	03/03/2021	
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876	
				Approved by: SD	Figure 14	



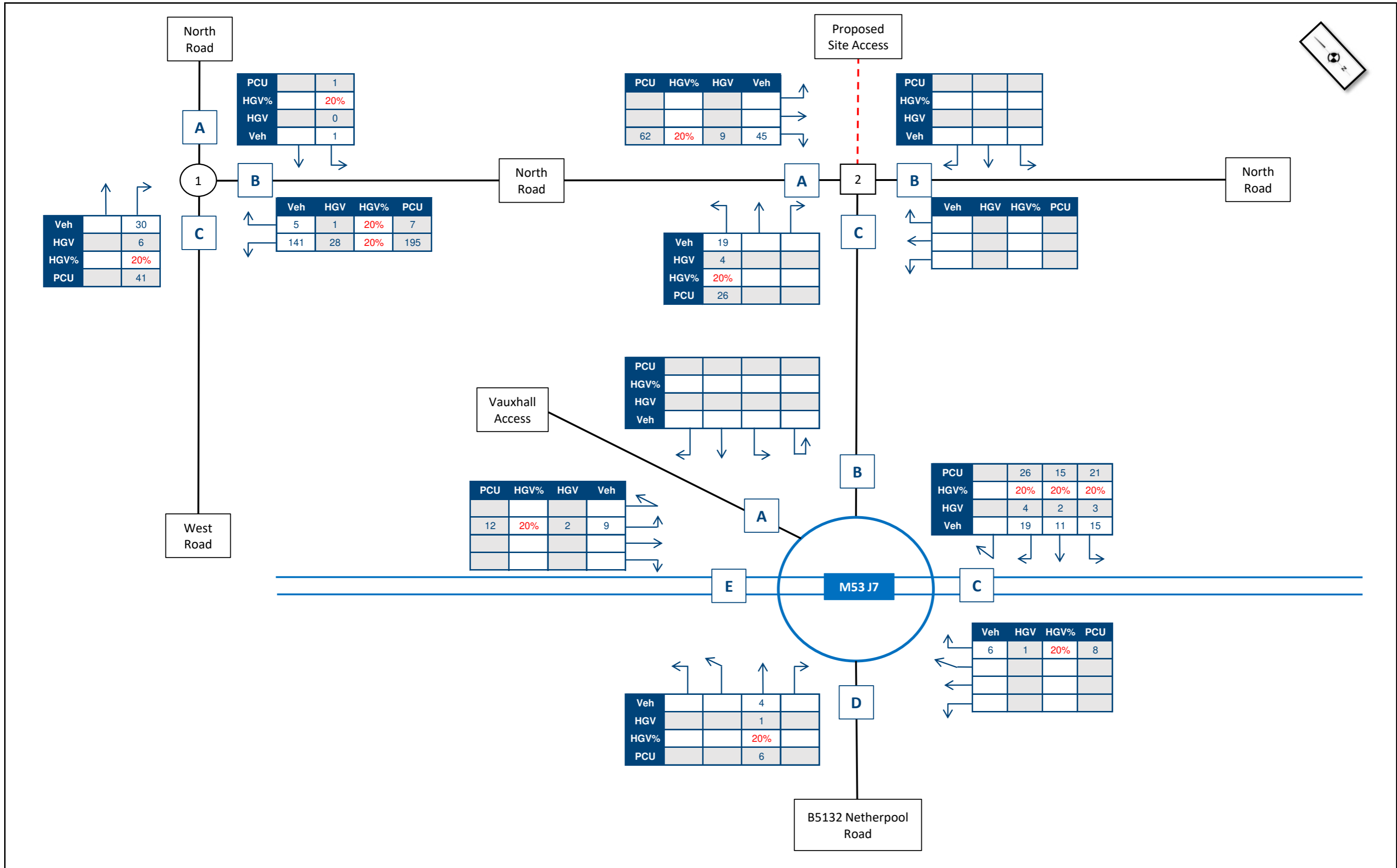
	AM Hooton Trips (18/02695/LDO)	AM Peak: 07:30 - 08:30	Notes	TFD by: VP	03/03/2021
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876
				Approved by: SD	Figure 15



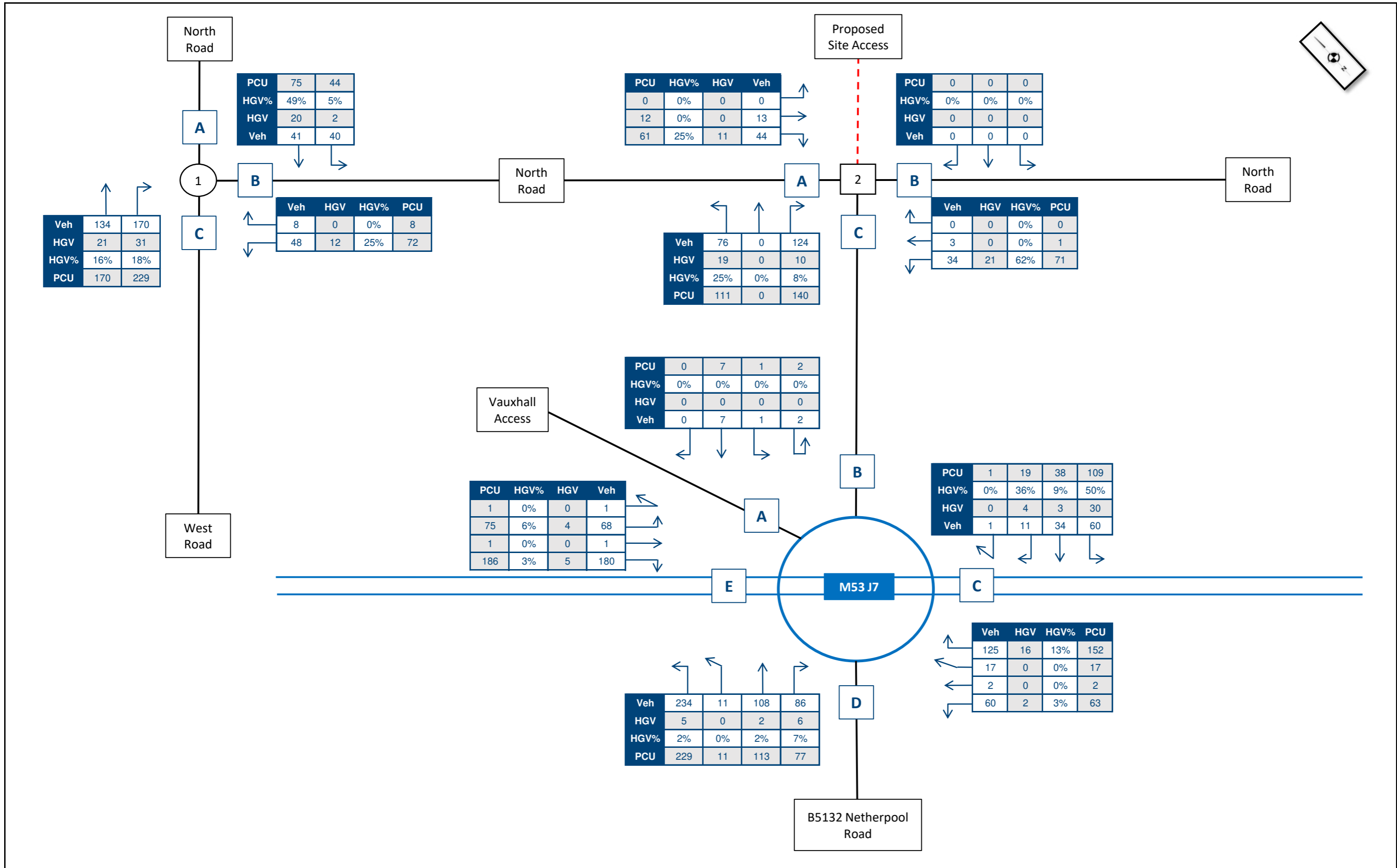
	PM Hooton Trips (18/02695/LDO)	AM Peak: 16:30 - 17:30	Notes	TFD by: VP	03/03/2021
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876
				Approved by: SD	Figure 16



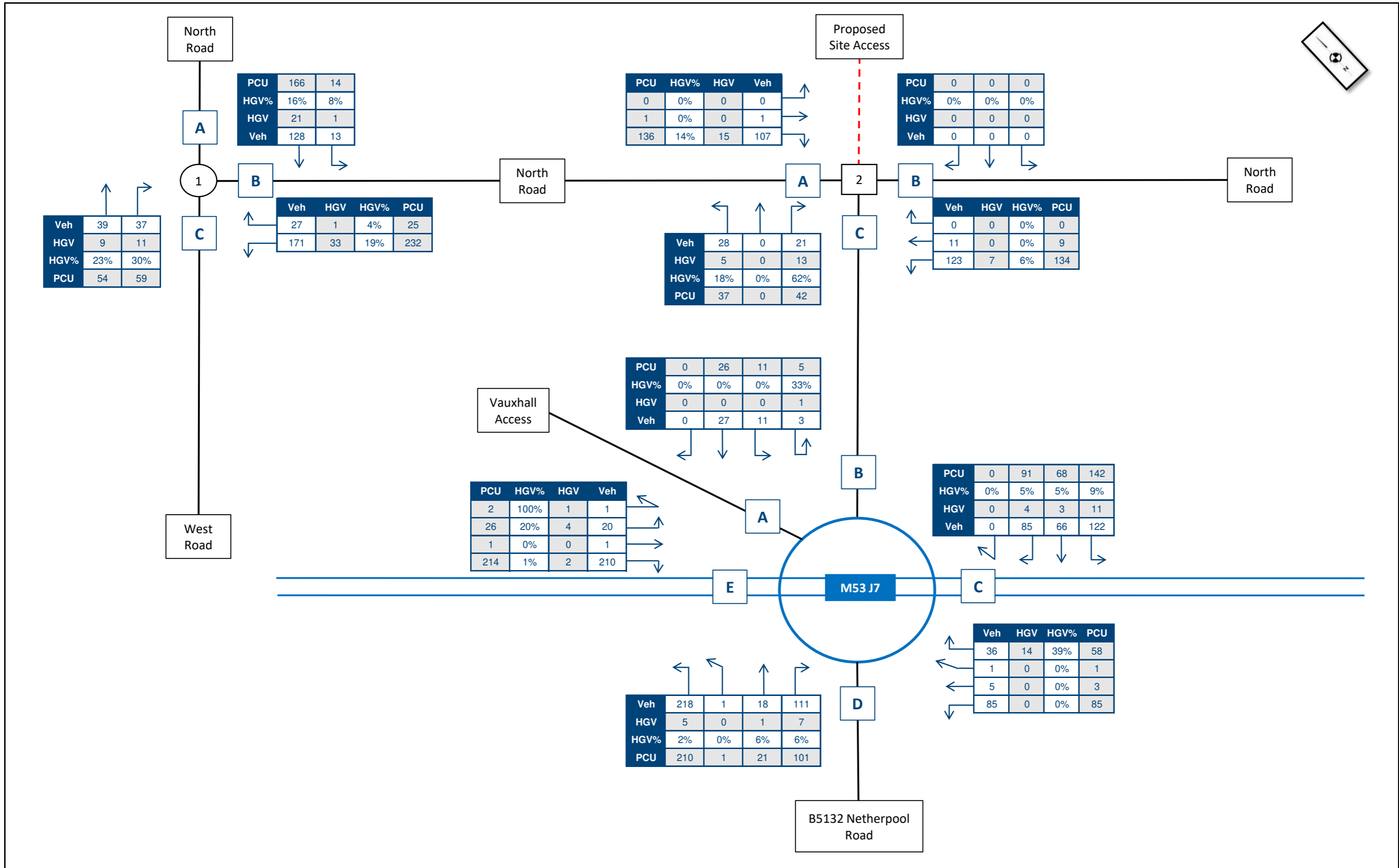
	AM Total Committed Development	AM Peak: 07:30 - 08:30	Notes	TFD by: VP	03/03/2021
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876
				Approved by: SD	Figure 17



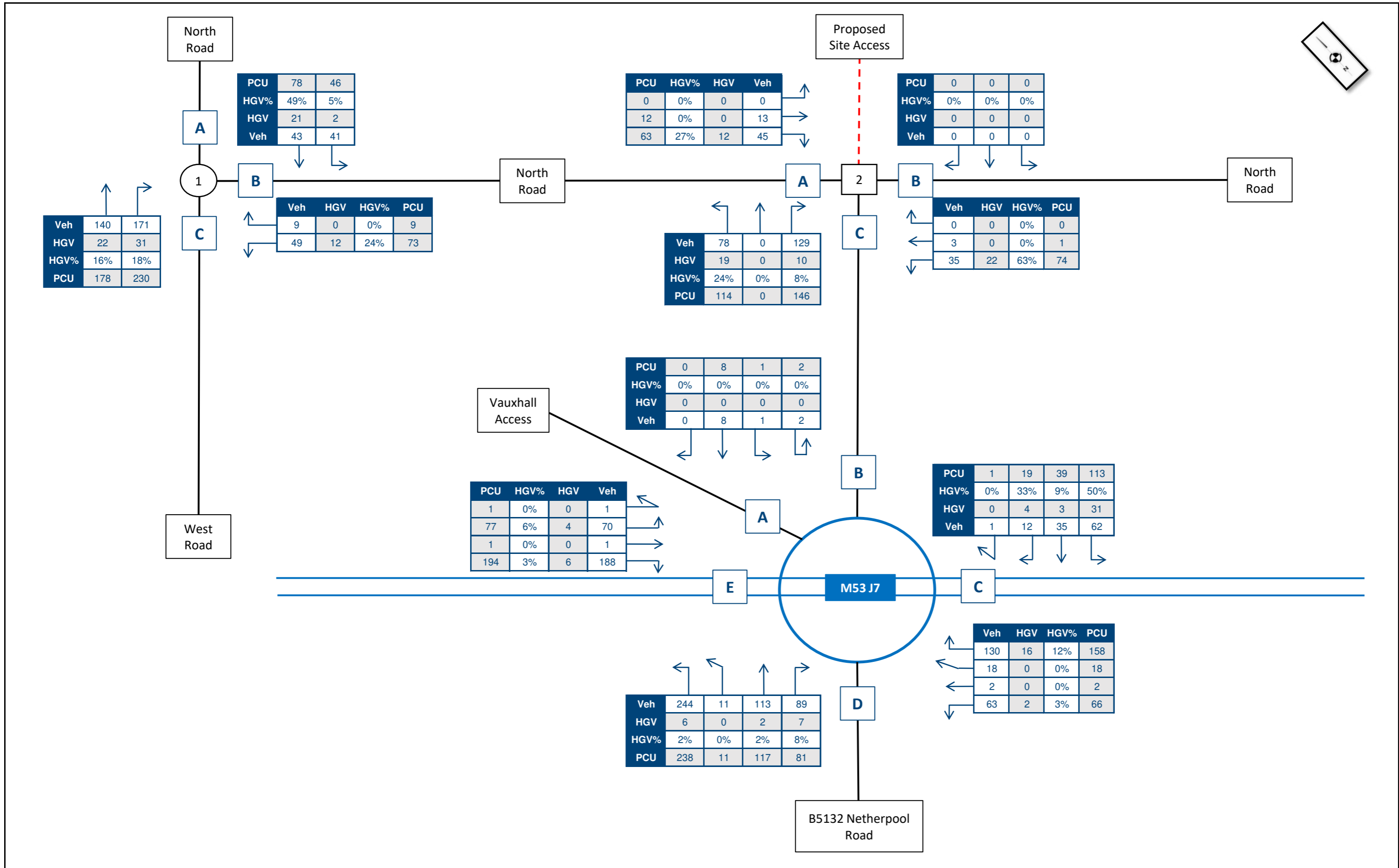
	AM Total Committed Development	AM Peak: 16:30 - 17:30	Notes	TFD by: VP	03/03/2021
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876
				Approved by: SD	Figure 18



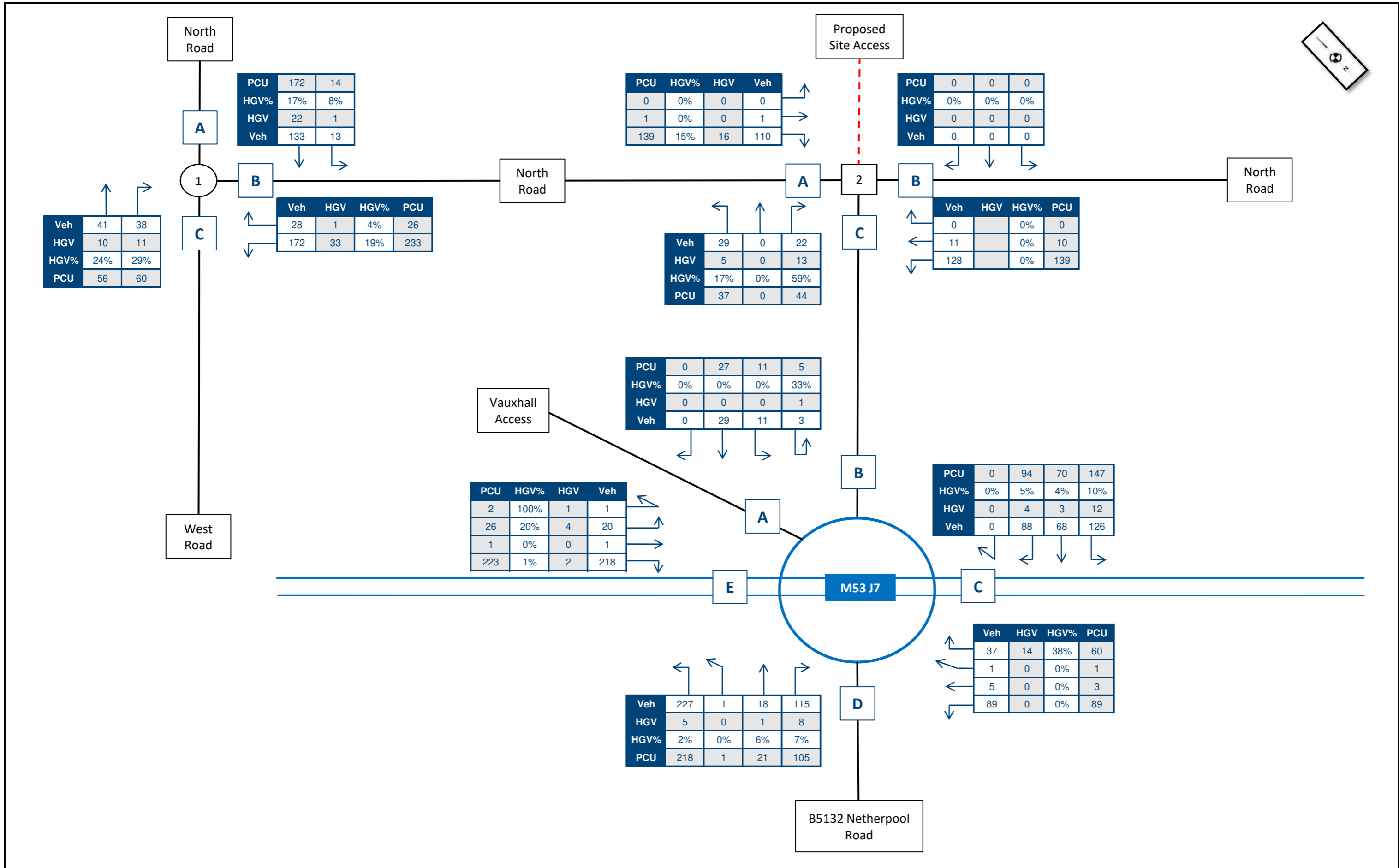
	2026 AM Base + Committed	AM Peak: 07:30 - 08:30	Notes	TFD by: VP	03/03/2021
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876
				Approved by: SD	Figure 19



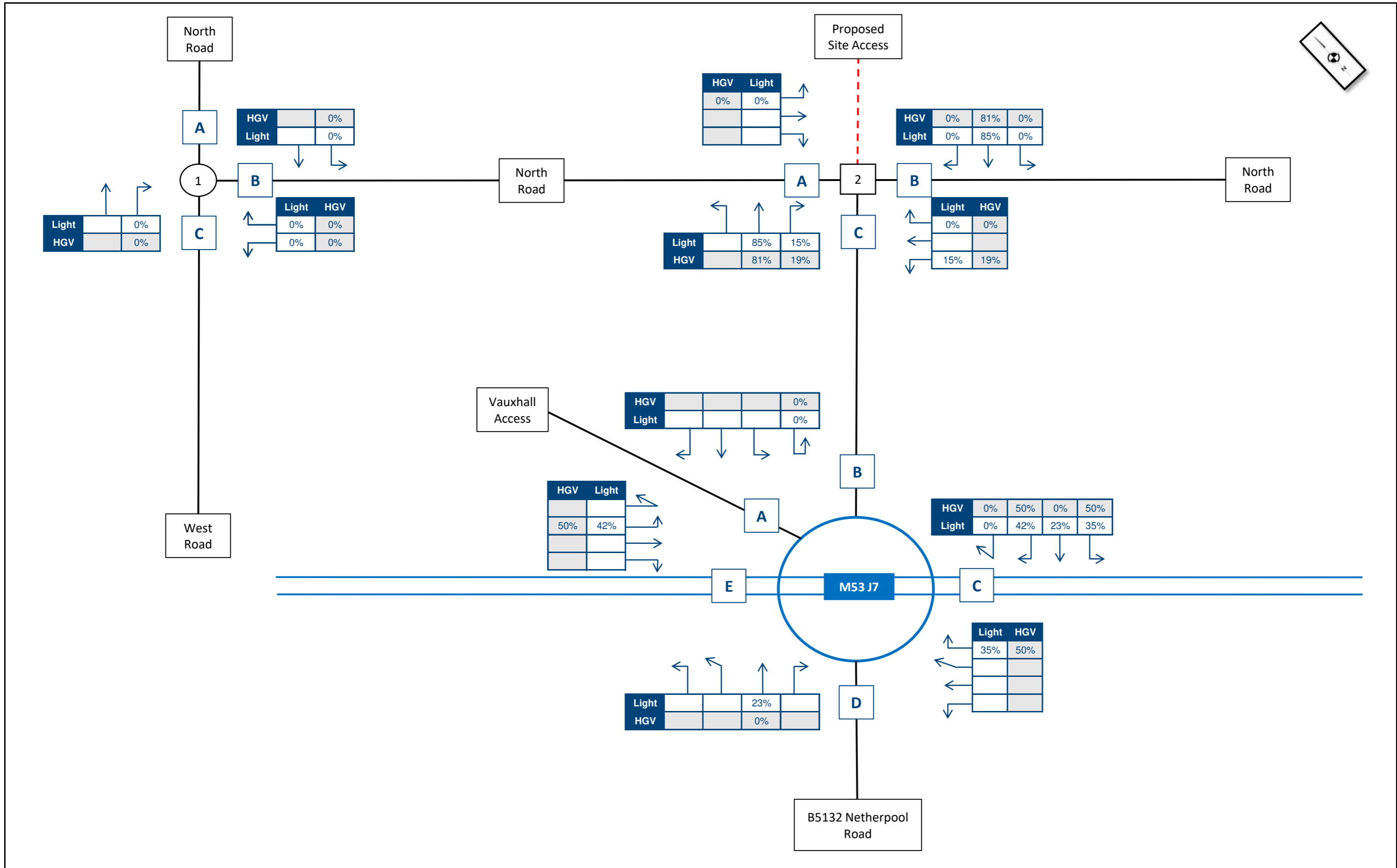
	2026 PM Base + Committed	AM Peak: 16:30 - 17:30	Notes	TFD by: VP	03/03/2021
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876
				Approved by: SD	Figure 20



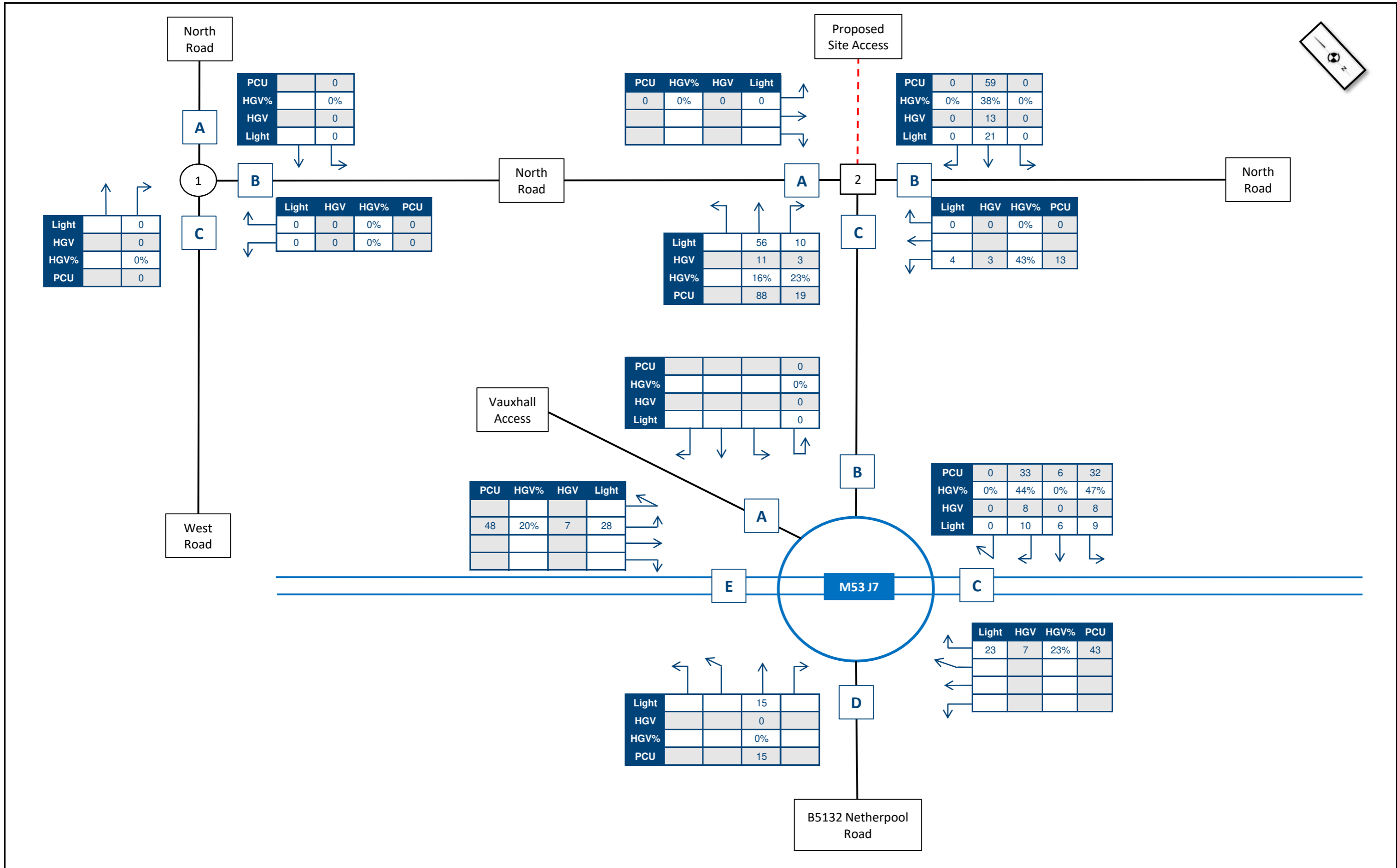
	2031 AM Base + Committed	AM Peak: 07:30 - 08:30	Notes	TFD by: VP	03/03/2021
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876
				Approved by: SD	Figure 21



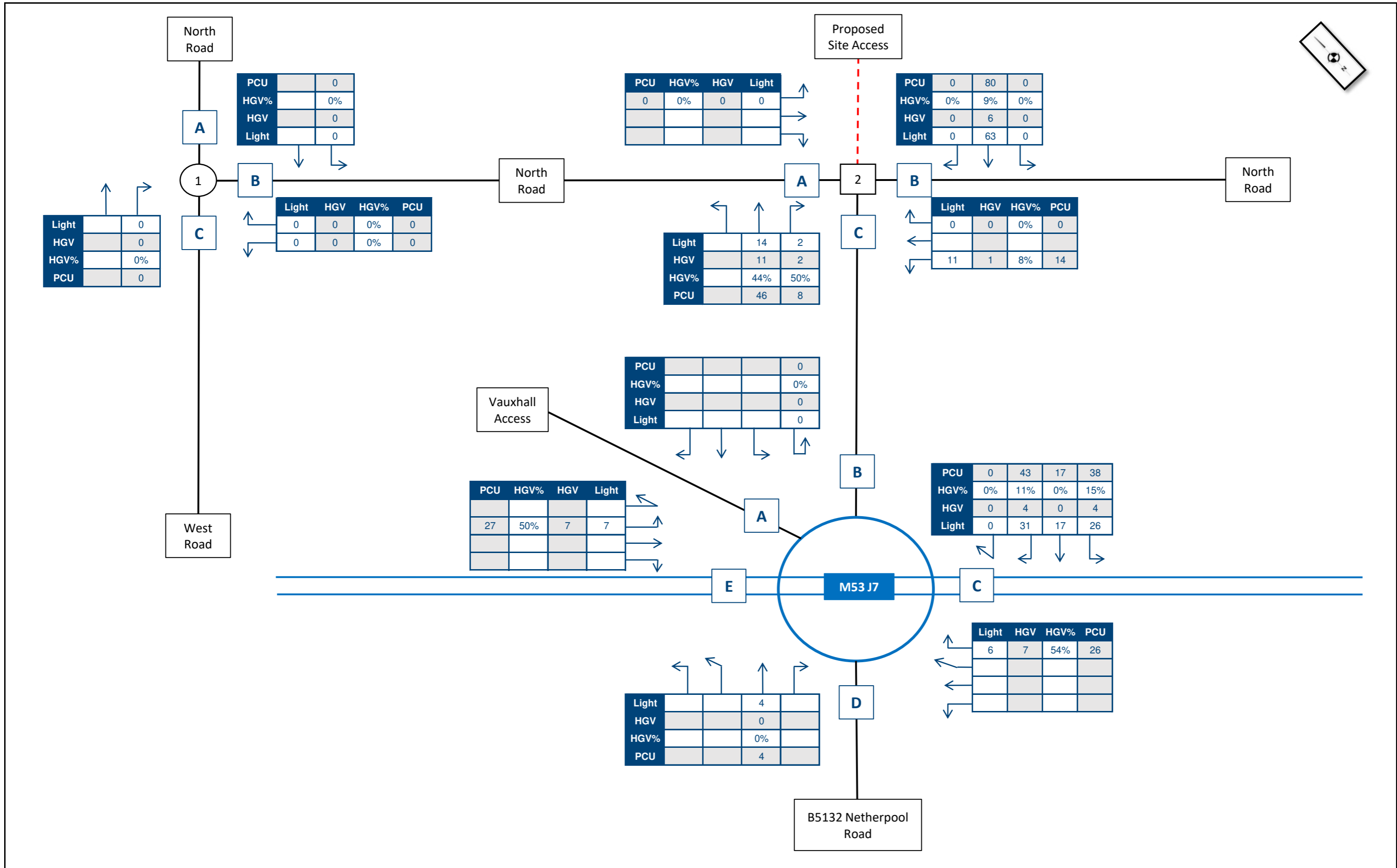
	2026 PM Base + Committed	AM Peak: 16:30 - 17:30	Notes	TFD by: VP	03/03/2021
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876
				Approved by: SD	Figure 22



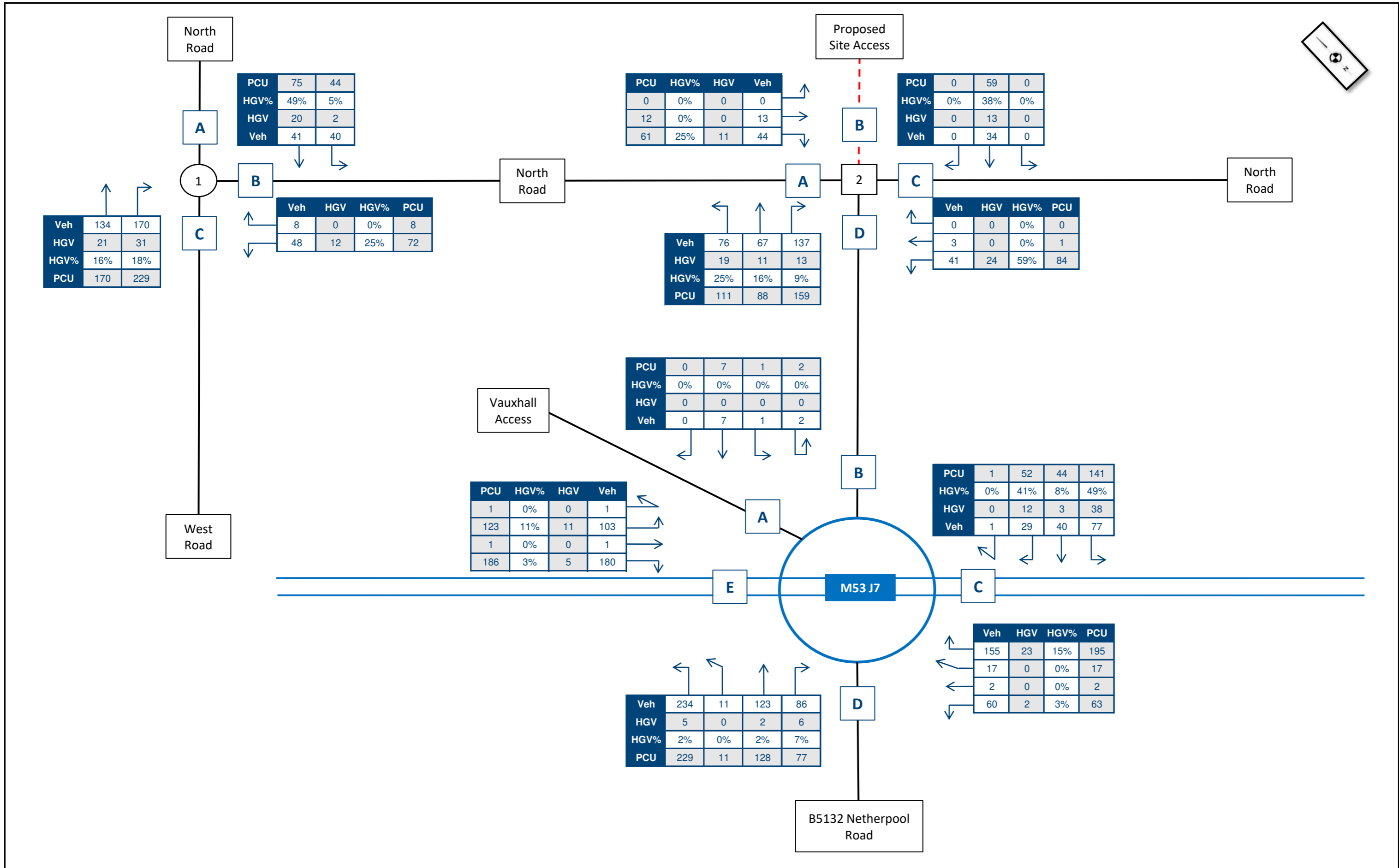
	Trip Distribution and Assignment	AM Peak: N/A	Notes	TFD by: VP	03/03/2021	
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876	
				Approved by: SD	Figure 23	



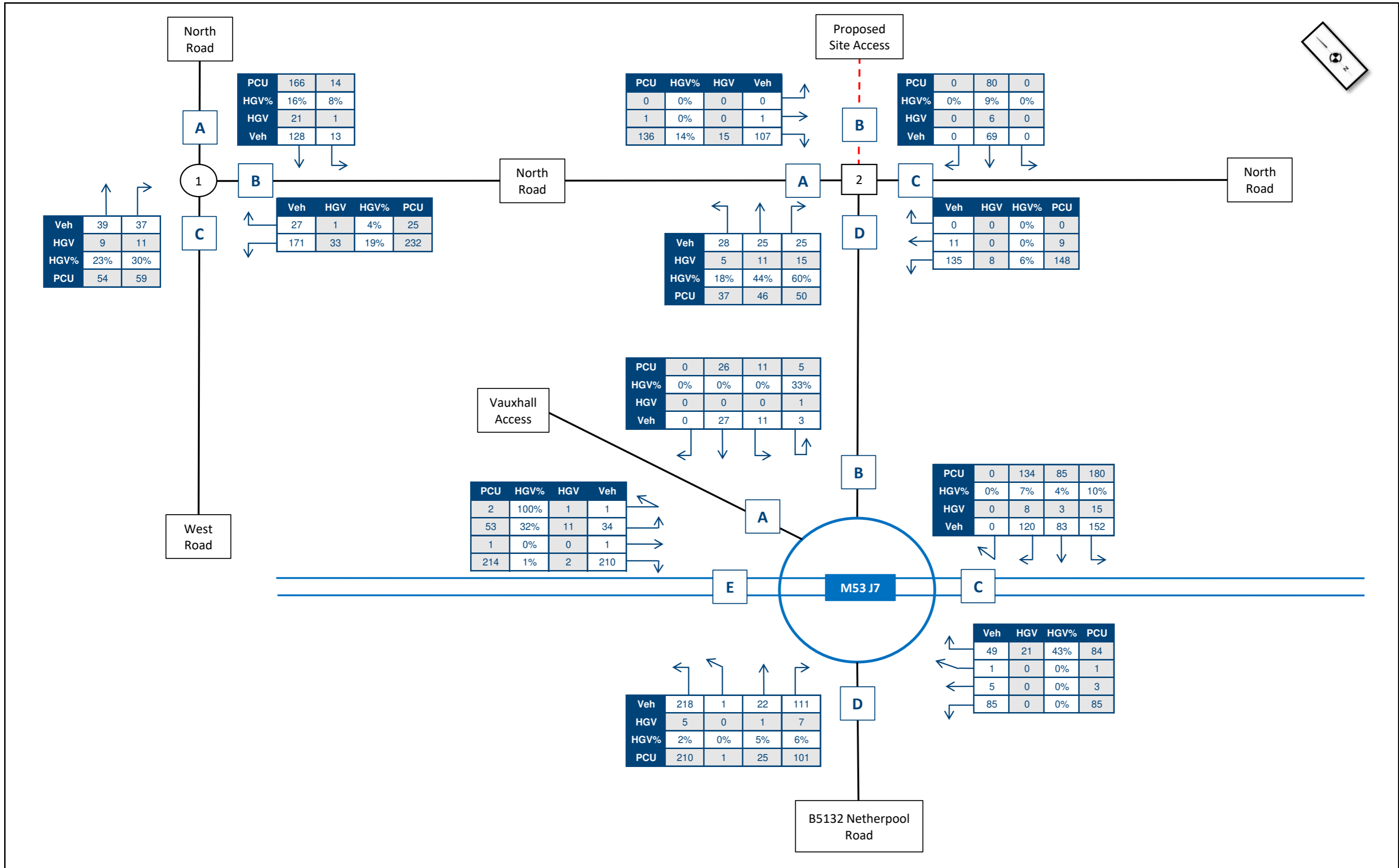
	AM Development Trips	AM Peak: 07:30 - 08:30	Notes Trip Generation <table border="1"> <tr><td></td><td>Arr</td><td>Dep</td><td>2-Way</td></tr> <tr><td>Lights</td><td>66</td><td>25</td><td>91</td></tr> <tr><td>HGVs</td><td>14</td><td>16</td><td>30</td></tr> </table>		Arr	Dep	2-Way	Lights	66	25	91	HGVs	14	16	30	TFD by: VP	03/03/2021
		Arr		Dep	2-Way												
	Lights	66		25	91												
HGVs	14	16	30														
Link Logistics Park, North Road, Ellesmere Port		Checked by: SD	C-17876														
		Approved by: SD	Figure 24														



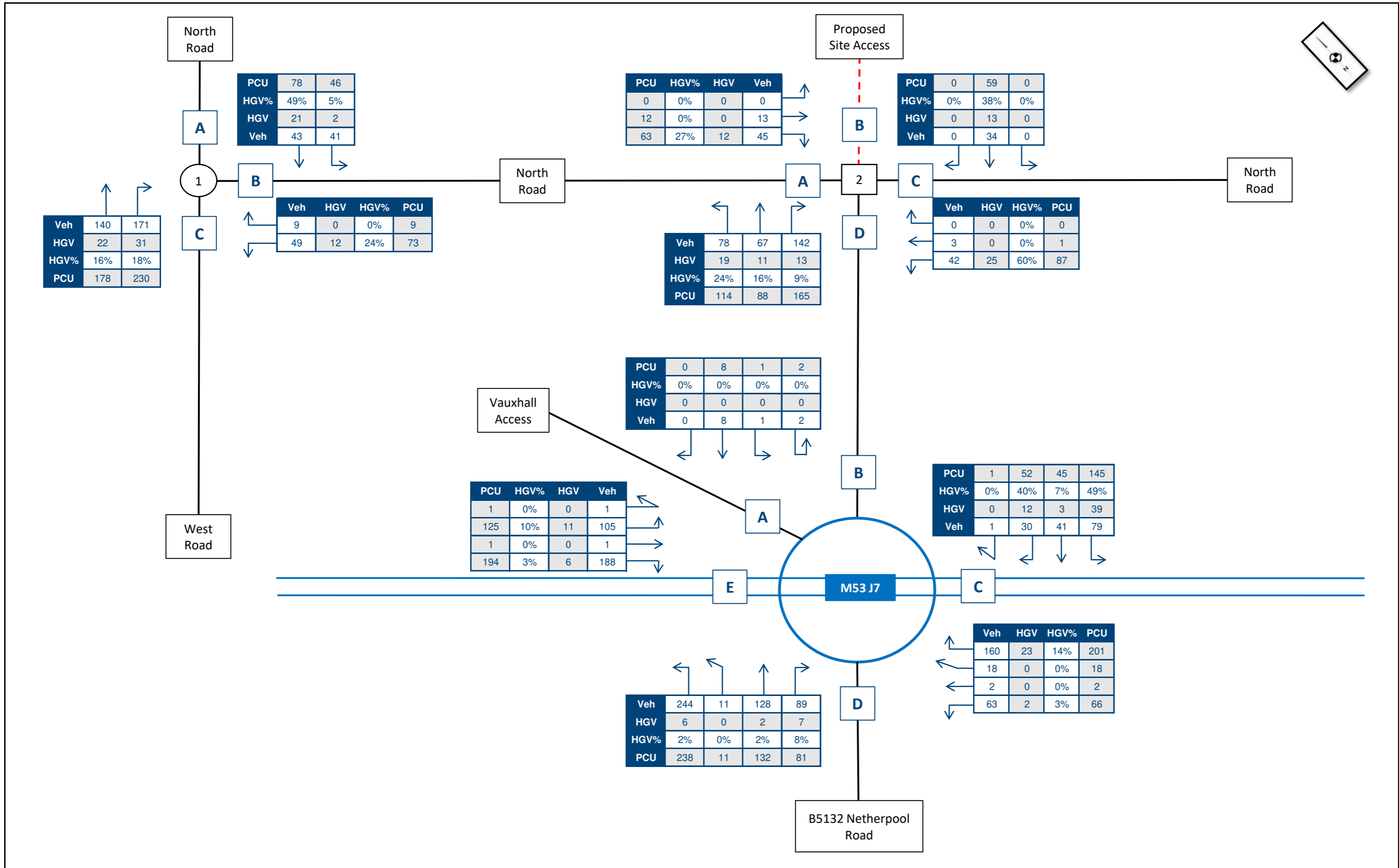
	PM Development Trips	AM Peak: 16:30 - 17:30	Notes Trip Generation <table border="1"> <tr> <td></td> <td>Arr</td> <td>Dep</td> <td>2-Way</td> </tr> <tr> <td>Lights</td> <td>16</td> <td>74</td> <td>92</td> </tr> <tr> <td>HGVs</td> <td>13</td> <td>7</td> <td>19</td> </tr> </table>		Arr	Dep	2-Way	Lights	16	74	92	HGVs	13	7	19	TFD by: VP	03/03/2021
		Arr	Dep	2-Way													
	Lights	16	74	92													
HGVs	13	7	19														
Link Logistics Park, North Road, Ellesmere Port				Checked by: SD	C-17876												
				Approved by: SD	Figure 25												



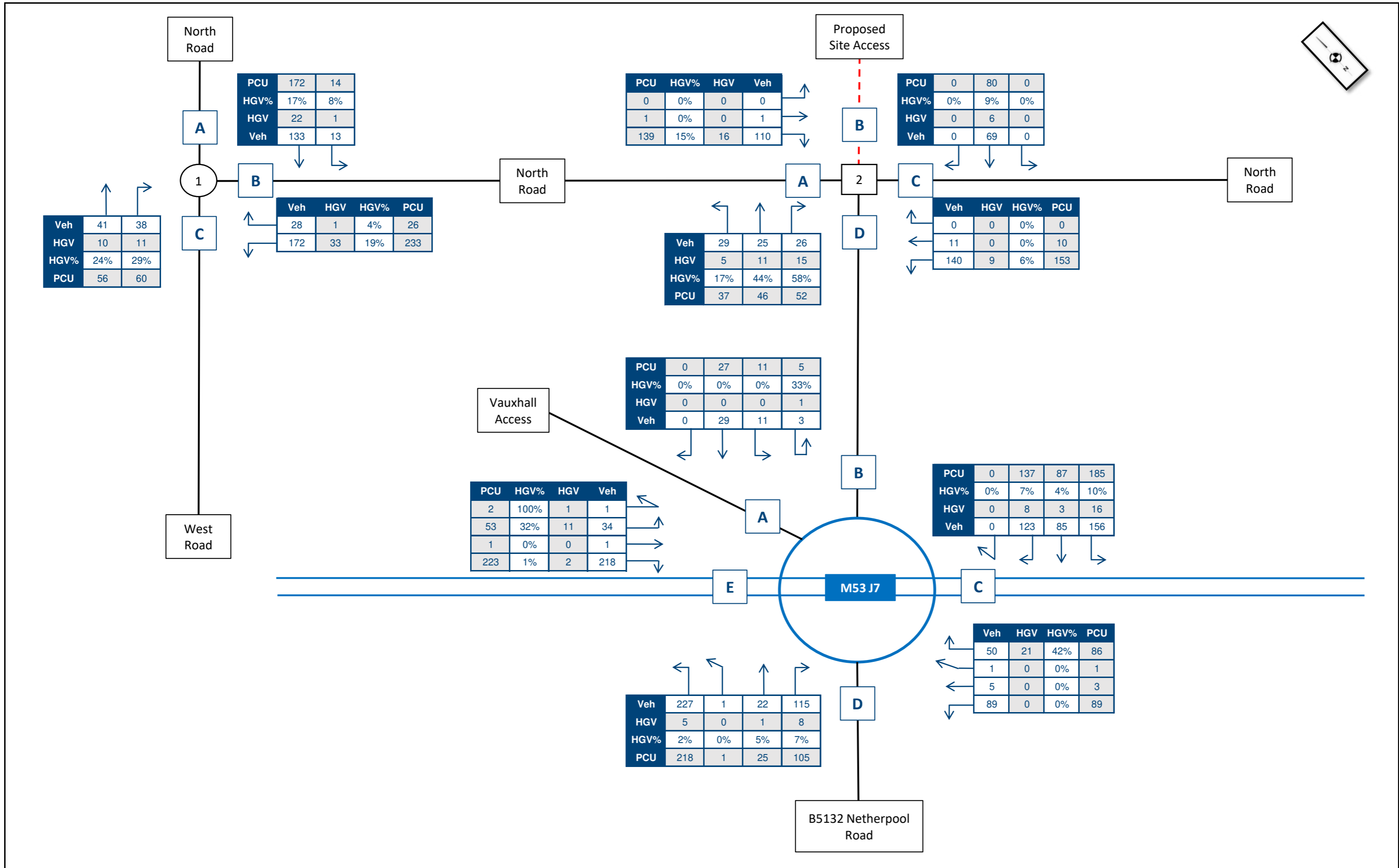
	2026 AM Base + Committed + Proposed Development	AM Peak: 07:30 - 08:30	Notes	TFD by: VP	03/03/2021	
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876	
				Approved by: SD	Figure 26	



	2026 PM Base + Committed + Proposed Development	PM Peak: 16:30 - 17:30	Notes	TFD by: VP	03/03/2021	
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876	
				Approved by: SD	Figure 27	



	2031 AM Base + Committed + Proposed Development	AM Peak: 07:30 - 08:30	Notes	TFD by: VP	03/03/2021	
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876	
				Approved by: SD	Figure 28	



	2031 PM Base + Committed + Proposed Development	AM Peak: 16:30 - 17:30	Notes	TFD by: VP	03/03/2021	
	Link Logistics Park, North Road, Ellesmere Port			Checked by: SD	C-17876	
				Approved by: SD	Figure 29	

Appendices

Appendix A Scoping Discussions with CWCC and HE

Vassil Pavlov

From: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>
Sent: 03 February 2021 11:36
To: Sam Denby
Cc: Vassil Pavlov
Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire Land Uses

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Hi Sam

I think anything much more than 150 shortfall would give me big concerns to be honest.

Paul

[Paul Parry IEng FIHE](#)
Principal Development Officer - Team Leader, Highways Development Management
Cheshire West and Chester Council

Tel: 01244 976136

Email: paul.parry@cheshirewestandchester.gov.uk

Location: Nicholas House, 1 Black Friars, Chester, CH1 2NU

Postal Address: Council Offices, 4 Civic Way, Ellesmere Port, CH65 0BE

Visit: www.cheshirewestandchester.gov.uk

Please note: due to the Coronavirus pandemic the Council has implemented a policy of home working for the majority of its employees. If you need to contact me, please do so via email and I will respond as soon as I can. Thank you for your patience and understanding during this period.

From: Sam Denby <SamDenby@hydrock.com>
Sent: 03 February 2021 09:57
To: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>
Cc: Vassil Pavlov <VassilPavlov@Hydrock.com>
Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire Land Uses

Thanks for getting back to me so quickly Paul.

I understand where you are coming from. In terms of the alternative splits for B2/B8 are presented below. Would you be content with 40% or 30% based on the numbers?

Land Use Split		Parking Provision			Increase/Decrease			Total
B2%	B8%	Unit 01	Unit 02	Unit 03	Unit 01	Unit 02	Unit 03	Difference
0%	100%	237	386	94	30	31	13	74
10%	90%	266	433	106	1	-16	1	-14
20%	80%	294	480	117	-27	-63	-10	-100
30%	70%	323	528	129	-56	-111	-22	-189

40% 60% 352 575 140 -85 -158 -33 -276

Thanks

Kind regards

Sam Denby BA (Hons) MSc CMLT

Technical Director | Transportation

Hydrock

Northern Assurance Buildings, 9-21 Princess St, Albert Square, Manchester M2 4DN

Tel: (0161) 804 5550 Internal Ext: 5014

Mobile: 07584 081 586

Email: SamDenby@hydrock.com

From: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>

Sent: 03 February 2021 09:46

To: Sam Denby <SamDenby@hydrock.com>

Cc: Vassil Pavlov <VassilPavlov@Hydrock.com>

Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire Land Uses

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Hi Sam

I'd have to say that I'd see that level of shortfall as not something I would support.

As for other measures, I'd typically expect to see the things you mention as a given in a Travel Plan for this size of development. I wouldn't see those as being particular additional mitigation for such a shortfall in spaces. I think you could also be looking at shuttle buses and the like.

Regards

Paul

Paul Parry IEng FIHE

Principal Development Officer - Team Leader, Highways Development Management
Cheshire West and Chester Council

Tel: 01244 976136

Email: paul.parry@cheshirewestandchester.gov.uk

Location: Nicholas House, 1 Black Friars, Chester, CH1 2NU

Postal Address: Council Offices, 4 Civic Way, Ellesmere Port, CH65 0BE

Visit: www.cheshirewestandchester.gov.uk

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From: Sam Denby <SamDenby@hydrock.com>
Sent: 02 February 2021 18:56
To: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>
Cc: Vassil Pavlov <VassilPavlov@Hydrock.com>
Subject: [Hydrock: 17876-TMBI] Port Cheshire Land Uses

Hi Paul,

Further to our recent discussions I just wanted to pick up the conversation on parking levels with you again.

To recap the current masterplan has a parking provision of 791 spaces.

Clearly the client is looking for flexibility in terms of a B2/B8 split, but I would be grateful for thoughts if, based on the maximum standards, a 50/50 split would result in the following shortfall in spaces across the site.

Table 1

Land Use Split		Parking Provision			Increase/Decrease			Total
B2%	B8%	Unit 01	Unit 02	Unit 03	Unit 01	Unit 02	Unit 03	Difference
50%	50%	381	622	152	-114	-205	-45	-364

Clearly any shortfall would need to be countered by a strong travel plan. While we discussed the improvement to the bicycle/footway link is there any other options you would be willing to support for the reduced parking numbers. For example car sharing databases, bike to work schemes etc.

Many thanks

Kind regards

Sam Denby BA (Hons) MSc CMLT
Technical Director | Transportation

Hydrock
Northern Assurance Buildings, 9-21 Princess St, Albert Square, Manchester M2 4DN

Tel: (0161) 804 5550 Internal Ext: 5014
Mobile: 07584 081 586
Email: SamDenby@hydrock.com

Following government advice, I am currently working from home. If we need to speak, drop me a line and I'll get straight back to you. For wider information on working with Hydrock during COVID-19 visit hydrock.com/coronavirus.

hydrock.com



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Vassil Pavlov

From: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>
Sent: 10 February 2021 17:09
To: Vassil Pavlov
Cc: Sam Denby; FRISTON, Paul
Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

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Hi Vassil

Thanks for this. I understand the point about the scarcity of comparable sites in TRICs. So I will look at what you have set out with that in mind when we get to the point of assessment. Given the low number of sites, as sensitivity testing can you run 85%ile as well as average rates please?

As for the committed sites, yes I do want you to include the sites I've mentioned that are subject to live applications. In terms of the Redsun sites the latest one was 19/03823/LDO. If you use that as your starting point when searching in our on line planning applications you will be able to search out the other adjacent approved Redsun ones using the map function.

Regards

Paul

Paul Parry IEng FIHE
Principal Development Officer - Team Leader, Highways Development Management
Cheshire West and Chester Council

Tel: 01244 976136

Email: paul.parry@cheshirewestandchester.gov.uk

Location: Nicholas House, 1 Black Friars, Chester, CH1 2NU

Postal Address: Council Offices, 4 Civic Way, Ellesmere Port, CH65 0BE

Visit: www.cheshirewestandchester.gov.uk

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From: Vassil Pavlov <VassilPavlov@Hydrock.com>
Sent: 10 February 2021 15:42
To: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>
Cc: Sam Denby <SamDenby@hydrock.com>; FRISTON, Paul <Paul.Friston@cheshirewestandchester.gov.uk>
Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

Hi Paul,

Many thanks for your response.

As we progress with the assessments, we just wanted to clarify some of the points below.

B2 Trip Rates

We have revisited the TRICS calculations for an ‘Industrial Unit’ category and increased the sample size to five sites. Through the applied selection criteria, there are only 20 compatible sites located in an ‘Edge of Town’ and ‘Free Standing’ location since 01/01/08 (consistent with the B8 trip rates). Out of those 14 are classed as B1 while one of the remaining six B2 sites has been re-surveyed, yielding a total sample size of five. Nevertheless, the updated trip rates are marginally higher and considered more representative. It is also worth mentioning that **these exact trip rates were recently accepted for an application for an employment development in Radway Green, Cheshire East.**

For completeness, please find a summary of the proposed B2 and B8 trip rates, with the TRICS reports attached.

Approved Vehicle Trip Rates		AM (07:30 – 08:30) Trip Rates			PM (16:30 – 17:30) Trip Rates			AM Trip Generation			PM Trip C	
		Arrivals	Departures	2-Way	Arrivals	Departures	2-Way	Arrivals	Departures	2-Way	Arrivals	Dep
B2 industrial	Total Vehicles	0.202	0.050	0.252	0.018	0.196	0.214	29	7	36	3	
	HGVs	0.008	0.018	0.026	0.002	0.000	0.002	1	3	4	0	
B8 Warehousing	Total Vehicles	0.096	0.059	0.155	0.045	0.099	0.144	55	34	89	26	
	HGVs	0.021	0.023	0.044	0.021	0.011	0.032	12	13	25	12	

Can you please confirm if these are acceptable?

Committed Development

Can you please confirm if all of the sites listed below ought to be considered as committed development or just the approved Redsun sites? If possible, can you also please provide the planning reference numbers for those?

I would be most grateful for your response. If you require anything further, please do get in touch.

Many thanks

Kind regards

Vassil Pavlov BEng (Hons) MSc MCIHT
 Consultant | Transportation

Following government advice, I am currently working from home. If we need to speak, please call me on my mobile or alternatively drop me a line and I'll get straight back to you. For wider information on working with Hydrock during COVID-19 please visit hydrock.com/coronavirus.

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 Northern Assurance Buildings, 9-21 Princess St, Albert Square, Manchester M2 4DN

Tel: (0161) 804 5550 Internal Ext: 5004
 Mobile: 07593688461
 Email: VassilPavlov@hydrock.com

From: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>
Sent: 08 February 2021 16:40
To: Vassil Pavlov <VassilPavlov@Hydrock.com>
Cc: Sam Denby <SamDenby@hydrock.com>; FRISTON, Paul <Paul.Friston@cheshirewestandchester.gov.uk>
Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

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Hi Vassil

Thanks or the email etc.

I have added my comments in green under your 'red' questions down in body of the text. I'm generally fine with the principles of what you set out but with the usual caveat of needing to see the full details in due course and take a view at that time.

Hope this is of use.

Regards

Paul

Paul Parry IEng FIHE

Principal Development Officer - Team Leader, Highways Development Management
Cheshire West and Chester Council

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Location: Nicholas House, 1 Black Friars, Chester, CH1 2NU

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From: Vassil Pavlov <VassilPavlov@Hydrock.com>

Sent: 08 February 2021 10:28

To: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>

Cc: Sam Denby <SamDenby@hydrock.com>

Subject: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

Good morning Paul,

I am writing to you regarding a proposed employment development in Ellesmere Port, which I understand you are familiar with.

Following your preliminary pre-application discussions with my colleague Sam Denby, this email is looking to formally scope out a Transport Assessment [TA] and Framework Travel Plan [FTP] in support of the proposals, which are for 71,686 sqm of B2/B8 land use with ancillary B1 Office space within a 45 acre site, accessed off North Road.

Please find the location of the site shown below, along with the latest proposed masterplan attached.



As part of the proposals, 795 car parking spaces and 129 HGV parking spaces are to be provided at ground level.

The following sets out our envisaged scope of assessment.

Transport Assessment [TA]

- Comment on the background / history of the site;
- Provide a full description of the local highway network and existing conditions including analysis of the most recent five-year accident record obtained from Crashmap;
- Consider the national and local transport-related policy documentation;
- Provide a car parking assessment and policy review. As discussed with Sam Denby, the proposed parking provision across the three units is illustrated in the table below, along with the resulting shortfall against the council's maximum car parking standards for different B2/B8 splits;

Land Use Split		Parking Provision			Increase/Decrease			
B2%	B8%	Unit 01	Unit 02	Unit 03	Unit 01	Unit 02	Unit 03	Total
0%	100%	237	386	94	31	33	13	77
10%	90%	266	433	106	2	-14	1	-11
20%	80%	294	480	117	-26	-61	-10	-97
30%	70%	323	528	129	-55	-109	-22	-186
40%	60%	352	575	140	-84	-156	-33	-273
50%	50%	381	622	152	-113	-203	-45	-361

It was agreed that based on the parking provision, a 20%/80% B2/B8 use split will be used so as to not result in a shortfall in excess of 150 spaces, as shown above.

Can you please confirm if this is acceptable in principle?

Yes in principle that should be workable.

- Undertake an assessment of the accessibility of the site by sustainable modes, to include an assessment of the pedestrian, cycling, bus and rail facilities surrounding the site;
- Provide details of the development proposals and undertake a trip generation analysis. Based on the previous site uses and any extant / lawfully permitted and proposed land use(s), we will derive the trip generation levels associated with the site during the weekday morning and evening peak hours; The table below presents the proposed B2 and B8 trip rates to be used in the analysis, with the TRICS outputs attached.

Approved Vehicle Trip Rates		AM (07:30 – 08:30) Trip Rates			PM (16:30 – 17:30) Trip Rates			AM Trip Generation			
		Arrivals	Departures	2-Way	Arrivals	Departures	2-Way	Arrivals	Departures	2-Way	Arriv
B2 industrial	Total Vehicles	0.180	0.046	0.226	0.012	0.201	0.213	26	7	32	2
	HGVs	0.006	0.014	0.020	0.000	0.000	0.000	1	2	3	0
B8 Warehousing	Total Vehicles	0.096	0.059	0.155	0.045	0.099	0.144	55	34	89	26
	HGVs	0.021	0.023	0.044	0.021	0.011	0.032	12	13	25	12

As mentioned, the above trip rates have been applied to a 20%/80% B2/B8 land use mix, consistent with the proposed parking provision, to calculate the resulting trip generation levels associated with the site;

Can you please confirm if the above trip rates and trip generation methodology are acceptable in principle?

The B2 TRICs element is a bit light in number of comparison sites.

- Due to the nature of the development, it is considered appropriate to derive a trip distribution profile based on the 2011 Journey to Work Census data for light development traffic. For HGV trips, it is assumed that all will be assigned along the Strategic Road Network [SRN], with a notional percentage split (such as 50/50) applied to the north and southbound directions;

Can you confirm this is an acceptable approach?

That seems a reasonable assumption for the HGV split.

- Consider any committed developments in the area;
- Can you confirm if there are any committed development sites that would have a material impact on the study area?

The only approved ones are the Redsun sites at the far end of North Road/West Road. However there is the cross border site by West Road (19/04561/OUT) as well and there are 3 newer 'live' applications in along North Road as well. Those 3 are: 20/04850/OUT, 20/04645/FUL and 20/04291/FUL.

- Following pre-app discussions with my colleague Sam Denby, it was agreed that the study network will comprise the junction of North Rd / North Rd. We are consulting Highways England separately with regards to impact on the Strategic Road Network.

Can you confirm if this is acceptable?

You will also need to look at North Road/West Road and the actual roundabout ring at junction 7. As well as whatever HE require in reagrds of the M/way slips and main lines.

- The following years will be assessed:
 - 2020 Base; and
 - 2025 Future Base;
- Illustrate vehicular movements at the site through the use of swept path analysis;
- Develop drawings to illustrate the general arrangement design of the new access junction off North Road and a reconfiguration of the existing signal arrangement. We also understand that the provision of a shared footway/cycleway connecting the site with the existing pedestrian underpass to the southeast is sought. This will be incorporated into the site access drawings and we are in the process of ascertaining the extent to which it is deliverable within the public highway; and

Can you please provide any specific details you consider pertinent to the preliminary design of the footway/cycleway?

You will need to pay regard to the recent Cycle Design note. Ideally I would want to see a segregated facility however you may be able to present a case for making it shared user with no segregation.

- Produce a comprehensive Transport Assessment report detailing the findings of the above and Masterplanning inputs.

Framework Travel Plan [FTP]

Being mindful of the attached Travel Planning Guidance SPD, we propose the following:

- Consider the national and local transport-related policy documentation;
- Undertake an assessment of the accessibility of the site by sustainable modes, to include an assessment of bus, cycling and pedestrian facilities surrounding the site;
- Provide details of the development proposals;
- Identify a range of initiatives for inclusion within the travel plan, to encourage travel by more sustainable modes including car sharing, by public transport, bicycle and on foot, and to reduce the need to travel;
- Provide details of how the travel plan will be managed, outlining the role of the Travel Plan Coordinator and stakeholders;
- Outline the aim, objectives and targets for the travel plan;
- Provide an action plan and marketing strategy to support the implementation of the travel plan at the site; and
- Summarise all of the above within a framework travel plan report.

I would be most grateful if you can confirm if the above scope is appropriate for the scale of development and if there are any additional elements you would require us to consider at this stage.

Many thanks for your assistance and please feel free to get in touch if you have any queries.

Kind regards

Vassil Pavlov BEng (Hons) MSc MCIHT

Consultant | Transportation

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Hydrock

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Vassil Pavlov

From: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>
Sent: 10 February 2021 12:04
To: Sam Denby; BLACKSHAW, Sharon
Cc: Vassil Pavlov
Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

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Hi Sam

It is pretty ancient data being from 2010. So I don't think it could be heavily relied upon and would need to be heavily caveated as such and as simply a piece of work to look to show how the junction has worked previously as opposed to making it out to be of current use, although with a piece of work as a theoretical exercise in applying Tempro etc. to illustrate the situation.

I'd say the most current count on Overpool Road, from 2020 before the pandemic, could be useful as well, as from that you may be able extract, to a certain degree, given that Poole Hall Road and North Road (which has through value) sits between the site roundabout and the count site, what is entering/leaving the roundabout onto Overpool Road and see how that tallies with the info on the roundabout count at 2010 and grewthed up. If that tallies up then that could help give more comfort. And if you then have slip road data from HE then that may give a stab at baseline that could work.

Paul

Paul Parry IEng FIHE
Principal Development Officer - Team Leader, Highways Development Management
Cheshire West and Chester Council

Tel: 01244 976136

Email: paul.parry@cheshirewestandchester.gov.uk

Location: Nicholas House, 1 Black Friars, Chester, CH1 2NU

Postal Address: Council Offices, 4 Civic Way, Ellesmere Port, CH65 0BE

Visit: www.cheshirewestandchester.gov.uk

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From: Sam Denby <SamDenby@hydrock.com>
Sent: 10 February 2021 11:49
To: BLACKSHAW, Sharon <Sharon.Blackshaw@cheshirewestandchester.gov.uk>; PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>
Cc: Vassil Pavlov <VassilPavlov@Hydrock.com>
Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

Hi Sharon,

Many thanks for this.

Paul if we purchased the junction data and uplifted it with TEMpro would this be acceptable to get a feel for the junction operation and our site's impact?

Kind regards

Sam Denby BA (Hons) MSc CMLT

Technical Director | Transportation

Hydrock

Northern Assurance Buildings, 9-21 Princess St, Albert Square, Manchester M2 4DN

Tel: (0161) 804 5550 Internal Ext: 5014

Mobile: 07584 081 586

Email: SamDenby@hydrock.com

From: BLACKSHAW, Sharon <Sharon.Blackshaw@cheshirewestandchester.gov.uk>

Sent: 10 February 2021 11:45

To: Sam Denby <SamDenby@hydrock.com>; PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>

Cc: Vassil Pavlov <VassilPavlov@Hydrock.com>

Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

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Dear Sam

Thanks for the email below. The last survey Cheshire West completed at junction 7 of the M53 was on 09/03/2010 and was a 12 hour survey from 07:00-19:00. I have also attached above some maps with a number of other surveys completed near to junction 7 which may help with your assessment. These surveys are automatic surveys and completed for a week.

A13162 – survey started 09/09/2013

A16487 – survey started 12/12/2016

A20029 – survey started 29/01/2020

If you would like to purchase any of the above surveys please let me know. I would check with Paul Parry that the data is relevant for your assessment as some of them are quite old.

Thanks

Sharon Blackshaw

Engineer

Cheshire West and Chester Council

Tel: 0151 356 6354 / Mob: 07791809804

To report a new service request, please use one of the following methods:

- [Via Cheshire West and Chester reporting app](#)
- [Via the website](#)

You can also check the status of your report or log another fault using our [status checker](#).

From: Sam Denby <SamDenby@hydrock.com>

Sent: 09 February 2021 17:57

To: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>; BLACKSHAW, Sharon

<Sharon.Blackshaw@cheshirewestandchester.gov.uk>

Cc: FRISTON, Paul <Paul.Friston@cheshirewestandchester.gov.uk>; Vassil Pavlov <VassilPavlov@Hydrock.com>
Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

Hi Sharon,

To confirm as Paul says it is the M53 junction 7 we are looking for.

Many thanks

Kind regards

Sam Denby BA (Hons) MSc CMILT
Technical Director | Transportation

Hydrock
Northern Assurance Buildings, 9-21 Princess St, Albert Square, Manchester M2 4DN

Tel: (0161) 804 5550 Internal Ext: 5014
Mobile: 07584 081 586
Email: SamDenby@hydrock.com

From: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>
Sent: 09 February 2021 17:19
To: Sam Denby <SamDenby@hydrock.com>; BLACKSHAW, Sharon <Sharon.Blackshaw@cheshirewestandchester.gov.uk>
Cc: FRISTON, Paul <Paul.Friston@cheshirewestandchester.gov.uk>; Vassil Pavlov <VassilPavlov@Hydrock.com>
Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

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Hi Sam

I've copied in Sharon in. If you let her know where you're looking for data she will let you know what we have, or not, and associated costs.

Hi Sharon – Sam is looking for traffic count data at the M53 junction 7? So looking for data on the roundabout ring itself and anything on the approach roads, well at least the ones that are in our control, as I presume you won't hold data for the M/way slips.

Regards

Paul

Paul Parry IEng FIHE
Principal Development Officer - Team Leader, Highways Development Management
Cheshire West and Chester Council

Tel: 01244 976136
Email: paul.parry@cheshirewestandchester.gov.uk
Location: Nicholas House, 1 Black Friars, Chester, CH1 2NU

Postal Address: Council Offices, 4 Civic Way, Ellesmere Port, CH65 0BE

Visit: www.cheshirewestandchester.gov.uk

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From: Sam Denby <SamDenby@hydrock.com>

Sent: 09 February 2021 17:14

To: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>

Cc: FRISTON, Paul <Paul.Friston@cheshirewestandchester.gov.uk>; Vassil Pavlov <VassilPavlov@Hydrock.com>

Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

Hi Paul,

Are you able to pass on Sharon's contact details?

Kind regards

Sam Denby BA (Hons) MSc CMLT

Technical Director | Transportation

Hydrock

Northern Assurance Buildings, 9-21 Princess St, Albert Square, Manchester M2 4DN

Tel: (0161) 804 5550 Internal Ext: 5014

Mobile: 07584 081 586

Email: SamDenby@hydrock.com

From: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>

Sent: 09 February 2021 14:35

To: Sam Denby <SamDenby@hydrock.com>

Cc: FRISTON, Paul <Paul.Friston@cheshirewestandchester.gov.uk>; Vassil Pavlov <VassilPavlov@Hydrock.com>

Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

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Hi Sam

Yes I will be wanting to see that roundabout ring assessed. I'm not sure what advice I can give you. I don't know if we hold any data but you can ask Sharon to see what we have. I would think that the HE will have slip road data so you should be able to pull something from those sources that give an indication of operation a I f the off slips aren't seeing delays (and I don't think they are) then that should help set the scene. I don't see there being an issue at the ring but it needs to be shown.

Thanks

Paul

Paul Parry IEng FIHE

Principal Development Officer - Team Leader, Highways Development Management
Cheshire West and Chester Council

Tel: 01244 976136

Email: paul.parry@cheshirewestandchester.gov.uk

Location: Nicholas House, 1 Black Friars, Chester, CH1 2NU

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From: Sam Denby <SamDenby@hydrock.com>

Sent: 09 February 2021 14:04

To: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>

Cc: FRISTON, Paul <Paul.Friston@cheshirewestandchester.gov.uk>; Vassil Pavlov <VassilPavlov@Hydrock.com>

Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

Hi Paul,

Many thanks for your comments.

One query I have is on the number of junctions that we need to assess. From your response below it would appear we will need to look at North Road/West Road and the actual roundabout ring at junction 7.

As per our previous discussions (which I attached for ease of reference) we do have the traffic counts for the North Road/West Road, as we obtained these as a sensitivity test to check on any traffic uplift requirements.

We were not however aware we needed to consider the actual roundabout ring from the LHA's perspective and therefore do not have any data in this location. This puts us in predicament given the current lockdown situation.

Are you able to advise please?

Many thanks

Kind regards

Sam Denby BA (Hons) MSc CMLT

Technical Director | Transportation

Hydrock

Northern Assurance Buildings, 9-21 Princess St, Albert Square, Manchester M2 4DN

Tel: (0161) 804 5550 Internal Ext: 5014

Mobile: 07584 081 586

Email: SamDenby@hydrock.com

From: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>

Sent: 08 February 2021 16:40

To: Vassil Pavlov <VassilPavlov@Hydrock.com>

Cc: Sam Denby <SamDenby@hydrock.com>; FRISTON, Paul <Paul.Friston@cheshirewestandchester.gov.uk>

Subject: RE: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

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Hi Vassil

Thanks or the email etc.

I have added my comments in green under your 'red' questions down in body of the text. I'm generally fine with the principles of what you set out but with the usual caveat of needing to see the full details in due course and take a view at that time.

Hope this is of use.

Regards

Paul

Paul Parry IEng FIHE

Principal Development Officer - Team Leader, Highways Development Management
Cheshire West and Chester Council

Tel: 01244 976136

Email: paul.parry@cheshirewestandchester.gov.uk

Location: Nicholas House, 1 Black Friars, Chester, CH1 2NU

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From: Vassil Pavlov <VassilPavlov@Hydrock.com>

Sent: 08 February 2021 10:28

To: PARRY, Paul <Paul.Parry@cheshirewestandchester.gov.uk>

Cc: Sam Denby <SamDenby@hydrock.com>

Subject: [Hydrock: 17876-TMBI] Port Cheshire - Scope of Assessment

Good morning Paul,

I am writing to you regarding a proposed employment development in Ellesmere Port, which I understand you are familiar with.

Following your preliminary pre-application discussions with my colleague Sam Denby, this email is looking to formally scope out a Transport Assessment [TA] and Framework Travel Plan [FTP] in support of the proposals, which are for 71,686 sqm of B2/B8 land use with ancillary B1 Office space within a 45 acre site, accessed off North Road.

Please find the location of the site shown below, along with the latest proposed masterplan attached.



As part of the proposals, 795 car parking spaces and 129 HGV parking spaces are to be provided at ground level.

The following sets out our envisaged scope of assessment.

Transport Assessment [TA]

- Comment on the background / history of the site;
- Provide a full description of the local highway network and existing conditions including analysis of the most recent five-year accident record obtained from Crashmap;
- Consider the national and local transport-related policy documentation;
- Provide a car parking assessment and policy review. As discussed with Sam Denby, the proposed parking provision across the three units is illustrated in the table below, along with the resulting shortfall against the council's maximum car parking standards for different B2/B8 splits;

Land Use Split		Parking Provision			Increase/Decrease			
B2%	B8%	Unit 01	Unit 02	Unit 03	Unit 01	Unit 02	Unit 03	Total
0%	100%	237	386	94	31	33	13	77
10%	90%	266	433	106	2	-14	1	-11
20%	80%	294	480	117	-26	-61	-10	-97
30%	70%	323	528	129	-55	-109	-22	-186
40%	60%	352	575	140	-84	-156	-33	-273
50%	50%	381	622	152	-113	-203	-45	-361

It was agreed that based on the parking provision, a 20%/80% B2/B8 use split will be used so as to not result in a shortfall in excess of 150 spaces, as shown above.

Can you please confirm if this is acceptable in principle?

Yes in principle that should be workable.

- Undertake an assessment of the accessibility of the site by sustainable modes, to include an assessment of the pedestrian, cycling, bus and rail facilities surrounding the site;
- Provide details of the development proposals and undertake a trip generation analysis. Based on the previous site uses and any extant / lawfully permitted and proposed land use(s), we will derive the trip generation levels associated with the site during the weekday morning and evening peak hours; The table below presents the proposed B2 and B8 trip rates to be used in the analysis, with the TRICS outputs attached.

Approved Vehicle Trip Rates		AM (07:30 – 08:30) Trip Rates			PM (16:30 – 17:30) Trip Rates			AM Trip Generation			Arriv
		Arrivals	Departures	2-Way	Arrivals	Departures	2-Way	Arrivals	Departures	2-Way	
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B8 Warehousing	Total Vehicles	0.096	0.059	0.155	0.045	0.099	0.144	55	34	89	26
	HGVs	0.021	0.023	0.044	0.021	0.011	0.032	12	13	25	12

As mentioned, the above trip rates have been applied to a 20%/80% B2/B8 land use mix, consistent with the proposed parking provision, to calculate the resulting trip generation levels associated with the site;
Can you please confirm if the above trip rates and trip generation methodology are acceptable in principle?

The B2 TRICs element is a bit light in number of comparison sites.

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Can you confirm if there are any committed development sites that would have a material impact on the study area?

The only approved ones are the Redsun sites at the far end of North Road/West Road. However there is the cross border site by West Road (19/04561/OUT) as well and there are 3 newer 'live' applications in along North Road as well. Those 3 are: 20/04850/OUT, 20/04645/FUL and 20/04291/FUL.

- Following pre-app discussions with my colleague Sam Denby, it was agreed that the study network will comprise the junction of North Rd / North Rd. We are consulting Highways England separately with regards to impact on the Strategic Road Network.
Can you confirm if this is acceptable?

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Can you please provide any specific details you consider pertinent to the preliminary design of the footway/cycleway?

You will need to pay regard to the recent Cycle Design note. Ideally I would want to see a segregated facility however you may be able to present a case for making it shared user with no segregation.

- Produce a comprehensive Transport Assessment report detailing the findings of the above and Masterplanning inputs.

Framework Travel Plan [FTP]

Being mindful of the attached Travel Planning Guidance SPD, we propose the following:

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- Identify a range of initiatives for inclusion within the travel plan, to encourage travel by more sustainable modes including car sharing, by public transport, bicycle and on foot, and to reduce the need to travel;
- Provide details of how the travel plan will be managed, outlining the role of the Travel Plan Coordinator and stakeholders;
- Outline the aim, objectives and targets for the travel plan;
- Provide an action plan and marketing strategy to support the implementation of the travel plan at the site; and
- Summarise all of the above within a framework travel plan report.

I would be most grateful if you can confirm if the above scope is appropriate for the scale of development and if there are any additional elements you would require us to consider at this stage.

Many thanks for your assistance and please feel free to get in touch if you have any queries.

Kind regards

Vassil Pavlov BEng (Hons) MSc MCIHT

Consultant | Transportation

Following government advice, I am currently working from home. If we need to speak, please call me on my mobile or alternatively drop me a line and I'll get straight back to you. For wider information on working with Hydrock during COVID-19 please visit hydrock.com/coronavirus.

Hydrock

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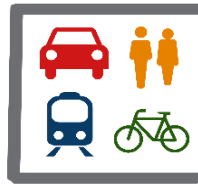
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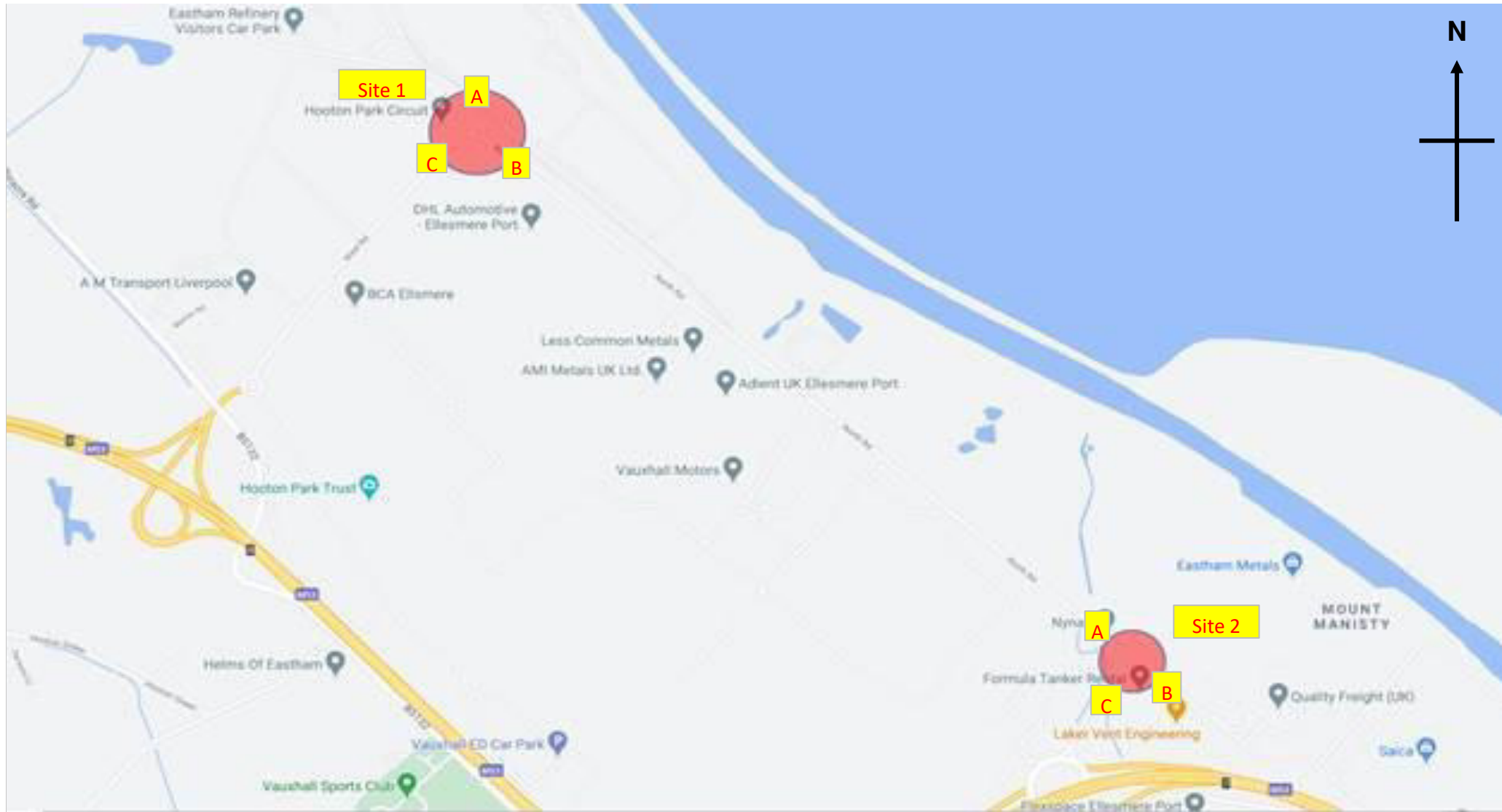
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Appendix B Raw Traffic Data



TOTAL TRAFFIC
SURVEYS LTD
DATA COLLECTION

Job Title: North Road, Ellesmere Port
Job Number: TTS-1223-Dec
Client: Hydrock
Survey Date: Tuesday 8th December 2020
Survey Period: 0730-0930 & 1630-1900
Survey Type: Manual Classified Turning Counts
Comments: There were no incidents likely to affect the outcome of the surveys. Weather - Wet



				 TOTAL TRAFFIC SURVEYS LTD DATA COLLECTION			
SITE / LOCATION:	North Road, Ellesmere Port	JOB NO:	TTS-1223	DWG NO:	TTS-1223-001	DRAWN:	
SURVEY DATE:	Tuesday 8th December 2020	DWG TITLE:		Location Plan and Observed Movements			
SURVEY TIMES:	0730-0930 & 1630-1900	JOB TITLE:		Ellesmere Port			



Job Title:
Job Number:
Survey Date:
Survey Type:

North Road, Ellesmere Port
TTS-1223-Dec
Tuesday 8th December 2020
Manual Classified Turning Counts

Site: 1

Location: North Road / West Road Roundabout - 3arm Roundabout

TIME	A - B							TOT	A - C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	0	5	0	0	0	0	5	0	0	4	0	1	5	0	10
07:45	0	0	6	1	0	0	0	7	0	0	3	0	0	1	0	4
H/TOT	0	0	11	1	0	0	0	12	0	0	7	0	1	6	0	14
08:00	0	1	5	0	0	0	0	6	0	0	3	0	2	1	0	6
08:15	1	0	4	1	0	1	0	7	0	0	4	1	0	4	0	9
08:30	0	0	1	0	0	0	0	1	0	0	3	2	2	5	0	12
08:45	0	0	0	2	1	0	0	3	0	0	1	1	0	1	0	3
H/TOT	1	1	10	3	1	1	0	17	0	0	11	4	4	11	0	30
09:00	0	0	3	0	0	0	0	3	0	0	1	0	0	2	0	3
09:15	0	0	1	0	0	0	0	1	0	0	4	0	2	6	0	12
H/TOT	0	0	4	0	0	0	0	4	0	0	5	0	2	8	0	15
P/TOT	1	1	25	4	1	1	0	33	0	0	23	4	7	25	0	59

TIME	A - B							TOT	A - C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	0	0	1	0	0	0	0	1	0	0	18	2	0	6	0	26
16:45	0	0	1	0	0	1	0	2	0	0	33	1	0	2	0	36
H/TOT	0	0	2	0	0	1	0	3	0	0	51	3	0	8	0	62
17:00	1	0	3	0	0	0	0	4	0	0	19	1	0	2	0	22
17:15	0	0	2	0	0	0	0	2	0	0	7	2	0	6	0	15
17:30	0	0	0	0	0	0	0	0	0	0	20	1	0	1	0	22
17:45	0	0	1	1	0	0	0	2	0	1	12	3	0	0	0	16
H/TOT	1	0	6	1	0	0	0	8	0	1	58	7	0	9	0	75
18:00	0	0	1	1	0	0	0	2	0	0	20	1	0	2	0	23
18:15	1	0	0	0	0	0	0	1	0	0	6	1	0	3	0	10
18:30	0	0	3	0	0	0	0	3	0	0	2	0	0	1	0	3
18:45	0	0	0	0	0	0	0	0	0	0	13	0	0	2	0	15
H/TOT	1	0	4	1	0	0	0	6	0	0	41	2	0	8	0	51
P/TOT	2	0	12	2	0	1	0	17	0	1	150	12	0	25	0	188



Job Title:
Job Number:
Survey Date:
Survey Type:

North Road, Ellesmere Port
TTS-1223-Dec
Tuesday 8th December 2020
Manual Classified Turning Counts

Site: 1

Location: North Road / West Road Roundabout - 3arm Roundabout

TIME	A - A							TOT	B - C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
08:00	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	3
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	4
09:00	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	4
09:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
H/TOT	0	0	0	0	0	0	0	0	0	0	3	1	0	2	0	6
P/TOT	0	0	0	0	0	0	0	0	0	0	5	1	0	5	0	11

TIME	A - A							TOT	B - C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	4
16:45	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
H/TOT	0	0	0	0	0	0	0	0	0	0	6	0	0	1	0	7
17:00	0	0	0	1	0	0	0	1	0	0	8	0	0	1	0	9
17:15	0	0	0	0	0	0	0	0	0	0	4	1	2	0	0	7
17:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
H/TOT	0	0	0	1	0	0	0	1	0	0	16	1	2	1	0	20
18:00	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
18:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
18:30	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2
18:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
H/TOT	0	0	0	0	0	0	0	0	0	0	3	2	0	1	0	6
P/TOT	0	0	0	1	0	0	0	1	0	0	25	3	2	3	0	33



Job Title: North Road, Ellesmere Port
Job Number: TTS-1223-Dec
Survey Date: Tuesday 8th December 2020
Survey Type: Manual Classified Turning Counts

Site: 1

Location: North Road / West Road Roundabout - 3arm Roundabout

TIME	C - A							TOT	C - B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	0	17	5	0	2	0	24	0	0	4	2	0	0	0	6
07:45	0	0	21	2	1	4	0	28	0	0	2	3	0	0	0	5
H/TOT	0	0	38	7	1	6	0	52	0	0	6	5	0	0	0	11
08:00	0	0	14	5	2	0	0	21	0	0	1	0	0	0	0	1
08:15	0	0	13	3	0	6	0	22	0	0	1	1	0	1	0	3
08:30	0	0	9	3	0	3	0	15	0	0	2	3	1	1	0	7
08:45	0	0	5	0	0	6	0	11	0	0	2	1	0	1	0	4
H/TOT	0	0	41	11	2	15	0	69	0	0	6	5	1	3	0	15
09:00	0	0	4	3	1	3	0	11	0	0	1	2	0	0	0	3
09:15	0	0	5	1	0	2	0	8	0	0	1	0	2	0	0	3
H/TOT	0	0	9	4	1	5	0	19	0	0	2	2	2	0	0	6
P/TOT	0	0	88	22	4	26	0	140	0	0	14	12	3	3	0	32

TIME	C - A							TOT	C - B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	0	0	9	1	1	0	0	11	0	0	1	0	0	1	0	2
16:45	0	1	2	2	0	1	0	6	0	0	0	0	0	0	0	0
H/TOT	0	1	11	3	1	1	0	17	0	0	1	0	0	1	0	2
17:00	0	0	5	0	0	4	0	9	0	0	1	0	0	2	0	3
17:15	0	0	3	0	0	1	0	4	0	0	0	0	0	1	0	1
17:30	0	0	4	0	0	3	0	7	0	0	0	0	0	1	0	1
17:45	0	0	5	0	0	2	0	7	0	0	0	0	0	0	0	0
H/TOT	0	0	17	0	0	10	0	27	0	0	1	0	0	4	0	5
18:00	0	0	5	0	0	1	0	6	0	0	0	0	0	0	0	0
18:15	1	0	3	0	0	2	0	6	0	0	1	0	0	0	0	1
18:30	0	0	2	0	0	1	0	3	0	0	1	0	0	0	0	1
18:45	0	0	3	0	0	1	0	4	0	0	0	0	0	0	0	0
H/TOT	1	0	13	0	0	5	0	19	0	0	2	0	0	0	0	2
P/TOT	1	1	41	3	1	16	0	63	0	0	4	0	0	5	0	9

Site: 1

Locatic North Road / West Road Roundabout - 3arm Roundabout

TIME	C - C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0

TIME	C - C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0
18:45	0	0	1	0	0	0	0	1
H/TOT	0	0	1	0	0	0	0	1
P/TOT	0	0	1	0	0	0	0	1



Job Title: North Road, Ellesmere Port
Job Number: TTS-1223-Dec
Survey Date: Tuesday 8th December 2020
Survey Type: Manual Classified Turning Counts

Site: 1

Location: North Road / West Road Roundabout - 3arm Roundabout

TIME	TO ARM A							TOT	FROM ARM A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	0	19	6	0	2	0	27	0	0	9	0	1	5	0	15
07:45	0	0	22	2	1	4	0	29	0	0	9	1	0	1	0	11
H/TOT	0	0	41	8	1	6	0	56	0	0	18	1	1	6	0	26
08:00	0	0	14	5	2	0	0	21	0	1	8	0	2	1	0	12
08:15	0	0	13	4	0	6	0	23	1	0	8	2	0	5	0	16
08:30	1	0	9	3	2	3	0	18	0	0	4	2	2	5	0	13
08:45	0	0	6	2	0	6	0	14	0	0	1	3	1	1	0	6
H/TOT	1	0	42	14	4	15	0	76	1	1	21	7	5	12	0	47
09:00	0	0	4	3	1	3	0	11	0	0	4	0	0	2	0	6
09:15	0	0	6	2	0	2	0	10	0	0	5	0	2	6	0	13
H/TOT	0	0	10	5	1	5	0	21	0	0	9	0	2	8	0	19
P/TOT	1	0	93	27	6	26	0	153	1	1	48	8	8	26	0	92

TIME	TO ARM A							TOT	FROM ARM A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	2	2	14	1	1	0	0	20	0	0	19	2	0	6	0	27
16:45	0	1	7	2	0	1	0	11	0	0	34	1	0	3	0	38
H/TOT	2	3	21	3	1	1	0	31	0	0	53	3	0	9	0	65
17:00	0	0	7	1	0	4	0	12	1	0	22	2	0	2	0	27
17:15	0	0	3	1	0	1	0	5	0	0	9	2	0	6	0	17
17:30	0	0	5	0	0	3	0	8	0	0	20	1	0	1	0	22
17:45	0	1	8	1	0	2	0	12	0	1	13	4	0	0	0	18
H/TOT	0	1	23	3	0	10	0	37	1	1	64	9	0	9	0	84
18:00	0	0	7	0	0	1	0	8	0	0	21	2	0	2	0	25
18:15	1	0	3	0	0	2	0	6	1	0	6	1	0	3	0	11
18:30	0	0	3	1	0	1	0	5	0	0	5	0	0	1	0	6
18:45	0	0	4	0	0	1	0	5	0	0	13	0	0	2	0	15
H/TOT	1	0	17	1	0	5	0	24	1	0	45	3	0	8	0	57
P/TOT	3	4	61	7	1	16	0	92	2	1	162	15	0	26	0	206



Job Title: North Road, Ellesmere Port
Job Number: TTS-1223-Dec
Survey Date: Tuesday 8th December 2020
Survey Type: Manual Classified Turning Counts

Site: 1

Location: North Road / West Road Roundabout - 3arm Roundabout

TIME	TO ARM B							TOT	FROM ARM B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	0	9	2	0	0	0	11	0	0	3	1	0	0	0	4
07:45	0	0	8	4	0	0	0	12	0	0	1	0	0	0	0	1
H/TOT	0	0	17	6	0	0	0	23	0	0	4	1	0	0	0	5
08:00	0	1	6	0	0	0	0	7	0	0	1	0	0	2	0	3
08:15	1	0	5	2	1	2	0	11	0	0	0	1	1	1	0	3
08:30	0	0	3	3	1	1	0	8	1	0	0	0	2	0	0	3
08:45	0	0	2	3	1	1	0	7	0	0	1	2	0	0	0	3
H/TOT	1	1	16	8	3	4	0	33	1	0	2	3	3	3	0	12
09:00	0	0	4	2	0	0	0	6	0	0	1	1	0	2	0	4
09:15	0	0	2	0	2	0	0	4	0	0	3	1	0	0	0	4
H/TOT	0	0	6	2	2	0	0	10	0	0	4	2	0	2	0	8
P/TOT	1	1	39	16	5	4	0	66	1	0	10	6	3	5	0	25

TIME	TO ARM B							TOT	FROM ARM B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	0	0	2	0	0	1	0	3	2	2	8	0	0	1	0	13
16:45	0	0	1	0	0	1	0	2	0	0	8	0	0	0	0	8
H/TOT	0	0	3	0	0	2	0	5	2	2	16	0	0	1	0	21
17:00	1	0	4	0	0	2	0	7	0	0	10	0	0	1	0	11
17:15	0	0	2	0	0	1	0	3	0	0	4	2	2	0	0	8
17:30	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	2
17:45	0	0	1	1	0	0	0	2	0	1	6	1	0	0	0	8
H/TOT	1	0	7	1	0	4	0	13	0	1	22	3	2	1	0	29
18:00	0	0	1	1	0	0	0	2	0	0	3	1	0	0	0	4
18:15	1	0	1	0	0	0	0	2	0	0	1	0	0	0	0	1
18:30	0	0	4	0	0	0	0	4	0	0	2	1	0	1	0	4
18:45	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
H/TOT	1	0	6	1	0	0	0	8	0	0	7	3	0	1	0	11
P/TOT	2	0	16	2	0	6	0	26	2	3	45	6	2	3	0	61



Job Title: North Road, Ellesmere Port
Job Number: TTS-1223-Dec
Survey Date: Tuesday 8th December 2020
Survey Type: Manual Classified Turning Counts

Site: 1

Location: North Road / West Road Roundabout - 3arm Roundabout

TIME	TO ARM C							TOT	FROM ARM C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	0	5	0	1	5	0	11	0	0	21	7	0	2	0	30
07:45	0	0	3	0	0	1	0	4	0	0	23	5	1	4	0	33
H/TOT	0	0	8	0	1	6	0	15	0	0	44	12	1	6	0	63
08:00	0	0	4	0	2	3	0	9	0	0	15	5	2	0	0	22
08:15	0	0	4	1	0	5	0	10	0	0	14	4	0	7	0	25
08:30	0	0	3	2	2	5	0	12	0	0	11	6	1	4	0	22
08:45	0	0	1	1	0	1	0	3	0	0	7	1	0	7	0	15
H/TOT	0	0	12	4	4	14	0	34	0	0	47	16	3	18	0	84
09:00	0	0	2	1	0	4	0	7	0	0	5	5	1	3	0	14
09:15	0	0	6	0	2	6	0	14	0	0	6	1	2	2	0	11
H/TOT	0	0	8	1	2	10	0	21	0	0	11	6	3	5	0	25
P/TOT	0	0	28	5	7	30	0	70	0	0	102	34	7	29	0	172

TIME	TO ARM C							TOT	FROM ARM C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	0	0	21	2	0	7	0	30	0	0	10	1	1	1	0	13
16:45	0	0	36	1	0	2	0	39	0	1	2	2	0	1	0	6
H/TOT	0	0	57	3	0	9	0	69	0	1	12	3	1	2	0	19
17:00	0	0	27	1	0	3	0	31	0	0	6	0	0	6	0	12
17:15	0	0	11	3	2	6	0	22	0	0	3	0	0	2	0	5
17:30	0	0	21	1	0	1	0	23	0	0	4	0	0	4	0	8
17:45	0	1	15	3	0	0	0	19	0	0	5	0	0	2	0	7
H/TOT	0	1	74	8	2	10	0	95	0	0	18	0	0	14	0	32
18:00	0	0	21	2	0	2	0	25	0	0	5	0	0	1	0	6
18:15	0	0	7	1	0	3	0	11	1	0	4	0	0	2	0	7
18:30	0	0	3	0	0	2	0	5	0	0	3	0	0	1	0	4
18:45	0	0	14	1	0	2	0	17	0	0	4	0	0	1	0	5
H/TOT	0	0	45	4	0	9	0	58	1	0	16	0	0	5	0	22
P/TOT	0	1	176	15	2	28	0	222	1	1	46	3	1	21	0	73



Job Title:
Job Number:
Survey Date:
Survey Type:

North Road, Ellesmere Port
TTS-1223-Dec
Tuesday 8th December 2020
Manual Classified Turning Counts

Site: 2

Location: North Road / North Road Traffic signals - 3arm (with Q's)

TIME	A - B							TOT	A - C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	0	2	0	0	0	0	2	0	0	1	0	1	0	1	3
07:45	0	0	2	0	0	0	0	2	0	0	4	1	1	2	0	8
H/TOT	0	0	4	0	0	0	0	4	0	0	5	1	2	2	1	11
08:00	0	0	1	0	0	0	0	1	0	1	5	0	0	0	0	6
08:15	1	0	2	1	0	0	0	4	0	0	3	0	0	1	0	4
08:30	0	0	1	0	0	0	0	1	0	0	1	0	0	2	0	3
08:45	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0	6
H/TOT	1	0	4	1	0	0	0	6	0	1	9	1	2	6	0	19
09:00	0	0	2	0	0	0	0	2	0	0	3	2	0	2	0	7
09:15	0	0	0	0	1	0	0	1	0	0	1	0	0	3	0	4
H/TOT	0	0	2	0	1	0	0	3	0	0	4	2	0	5	0	11
P/TOT	1	0	10	1	1	0	0	13	0	1	18	4	4	13	1	41

TIME	A - B							TOT	A - C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	0	0	0	0	0	0	0	0	0	0	11	2	0	2	0	15
16:45	0	0	1	0	0	0	0	1	0	0	6	0	0	3	0	9
H/TOT	0	0	1	0	0	0	0	1	0	0	17	2	0	5	0	24
17:00	0	0	0	0	0	0	0	0	1	0	9	1	0	0	0	11
17:15	0	0	0	0	0	0	0	0	0	0	12	1	0	0	0	13
17:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
17:45	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	1
H/TOT	0	0	1	0	0	0	0	1	1	0	23	3	0	0	0	27
18:00	0	0	0	0	0	0	0	0	0	0	3	1	1	0	0	5
18:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
18:30	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	3
H/TOT	0	0	0	0	1	0	0	1	0	0	6	1	1	1	0	9
P/TOT	0	0	2	0	1	0	0	3	1	0	46	6	1	6	0	60



Job Title:
Job Number:
Survey Date:
Survey Type:

North Road, Ellesmere Port
TTS-1223-Dec
Tuesday 8th December 2020
Manual Classified Turning Counts

Site: 2

Location: North Road / North Road Traffic signals - 3arm (with Q's)

TIME	B - C							TOT	B - A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	0	1	3	0	2	0	6	0	0	1	0	0	0	0	1
07:45	0	0	0	0	2	0	0	2	1	0	0	0	0	0	0	1
H/TOT	0	0	1	3	2	2	0	8	1	0	1	0	0	0	0	2
08:00	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0
08:15	0	0	2	3	1	7	0	13	0	0	0	0	0	0	0	0
08:30	0	0	0	0	1	3	0	4	0	0	0	0	0	0	0	0
08:45	0	0	2	2	0	2	0	6	0	0	1	1	1	0	0	3
H/TOT	0	0	4	5	2	15	0	26	0	0	1	1	1	0	0	3
09:00	0	0	2	3	0	0	0	5	0	0	0	0	0	0	0	0
09:15	0	0	1	2	2	3	0	8	0	0	0	0	0	0	0	0
H/TOT	0	0	3	5	2	3	0	13	0	0	0	0	0	0	0	0
P/TOT	0	0	8	13	6	20	0	47	1	0	2	1	1	0	0	5

TIME	B - C							TOT	B - A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	0	0	23	1	0	1	0	25	1	1	1	0	0	0	0	3
16:45	0	1	5	4	0	3	0	13	0	0	4	0	0	0	0	4
H/TOT	0	1	28	5	0	4	0	38	1	1	5	0	0	0	0	7
17:00	0	1	33	4	0	0	0	38	0	0	1	0	0	0	0	1
17:15	0	0	15	3	2	0	0	20	0	0	0	0	0	0	0	0
17:30	0	0	12	2	0	1	0	15	0	0	0	0	0	0	0	0
17:45	0	0	10	0	0	0	0	10	0	0	2	1	0	0	0	3
H/TOT	0	1	70	9	2	1	0	83	0	0	3	1	0	0	0	4
18:00	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0
18:15	0	0	8	1	0	0	0	9	0	0	0	0	0	0	0	0
18:30	0	0	3	1	0	2	0	6	0	0	0	0	0	0	0	0
18:45	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
H/TOT	0	0	20	2	0	2	0	24	0	0	1	0	0	0	0	1
P/TOT	0	2	118	16	2	7	0	145	1	1	9	1	0	0	0	12



Job Title:
Job Number:
Survey Date:
Survey Type:

North Road, Ellesmere Port
TTS-1223-Dec
Tuesday 8th December 2020
Manual Classified Turning Counts

Site: 2

Location: North Road / North Road Traffic signals - 3arm (with Q's)

TIME	C - A							TOT	C - B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	0	6	2	0	2	0	10	0	1	17	3	0	2	0	23
07:45	0	0	5	0	0	0	0	5	0	0	25	2	0	0	0	27
H/TOT	0	0	11	2	0	2	0	15	0	1	42	5	0	2	0	50
08:00	0	0	2	0	0	3	0	5	0	0	12	1	0	2	0	15
08:15	0	0	4	1	0	3	0	8	0	1	14	5	1	2	0	23
08:30	1	0	1	5	2	2	0	11	0	0	18	4	0	0	0	22
08:45	0	0	5	0	0	2	0	7	0	1	10	1	1	3	0	16
H/TOT	1	0	12	6	2	10	0	31	0	2	54	11	2	7	0	76
09:00	0	0	4	3	1	1	0	9	0	0	9	2	2	4	0	17
09:15	0	0	4	1	0	3	0	8	0	0	10	1	1	2	0	14
H/TOT	0	0	8	4	1	4	0	17	0	0	19	3	3	6	0	31
P/TOT	1	0	31	12	3	16	0	63	0	3	115	19	5	15	0	157

TIME	C - A							TOT	C - B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	0	1	4	0	0	1	0	6	0	0	0	0	0	3	0	3
16:45	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	3
H/TOT	0	1	4	0	0	1	0	6	0	0	1	0	0	5	0	6
17:00	0	0	0	0	0	0	0	0	0	0	5	0	2	3	0	10
17:15	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
17:30	0	1	1	0	0	0	0	2	0	0	2	1	0	1	0	4
17:45	0	0	1	0	0	0	0	1	0	0	4	0	0	2	0	6
H/TOT	0	1	2	1	0	0	0	4	0	0	11	1	2	6	0	20
18:00	0	0	1	0	0	0	0	1	0	0	1	1	0	2	0	4
18:15	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	1
18:30	0	0	1	1	0	0	0	2	0	0	0	1	0	0	0	1
18:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
H/TOT	0	0	2	1	1	0	0	4	0	0	2	3	0	2	0	7
P/TOT	0	2	8	2	1	1	0	14	0	0	14	4	2	13	0	33



Job Title: North Road, Ellesmere Port
Job Number: TTS-1223-Dec
Survey Date: Tuesday 8th December 2020
Survey Type: Manual Classified Turning Counts

Site: 2

Location: North Road / North Road Traffic signals - 3arm (with Q's)

TIME	TO ARM A							TOT	FROM ARM A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	0	7	2	0	2	0	11	0	0	3	0	1	0	1	5
07:45	1	0	5	0	0	0	0	6	0	0	6	1	1	2	0	10
H/TOT	1	0	12	2	0	2	0	17	0	0	9	1	2	2	1	15
08:00	0	0	2	0	0	3	0	5	0	1	6	0	0	0	0	7
08:15	0	0	4	1	0	3	0	8	1	0	5	1	0	1	0	8
08:30	1	0	1	5	2	2	0	11	0	0	2	0	0	2	0	4
08:45	0	0	6	1	1	2	0	10	0	0	0	1	2	3	0	6
H/TOT	1	0	13	7	3	10	0	34	1	1	13	2	2	6	0	25
09:00	0	0	4	3	1	1	0	9	0	0	5	2	0	2	0	9
09:15	0	0	4	1	0	3	0	8	0	0	1	0	1	3	0	5
H/TOT	0	0	8	4	1	4	0	17	0	0	6	2	1	5	0	14
P/TOT	2	0	33	13	4	16	0	68	1	1	28	5	5	13	1	54

TIME	TO ARM A							TOT	FROM ARM A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	1	2	5	0	0	1	0	9	0	0	11	2	0	2	0	15
16:45	0	0	4	0	0	0	0	4	0	0	7	0	0	3	0	10
H/TOT	1	2	9	0	0	1	0	13	0	0	18	2	0	5	0	25
17:00	0	0	1	0	0	0	0	1	1	0	9	1	0	0	0	11
17:15	0	0	0	1	0	0	0	1	0	0	12	1	0	0	0	13
17:30	0	1	1	0	0	0	0	2	0	0	2	0	0	0	0	2
17:45	0	0	3	1	0	0	0	4	0	0	1	1	0	0	0	2
H/TOT	0	1	5	2	0	0	0	8	1	0	24	3	0	0	0	28
18:00	0	0	1	0	0	0	0	1	0	0	3	1	1	0	0	5
18:15	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1
18:30	0	0	1	1	0	0	0	2	0	0	0	0	1	0	0	1
18:45	0	0	1	0	0	0	0	1	0	0	2	0	0	1	0	3
H/TOT	0	0	3	1	1	0	0	5	0	0	6	1	2	1	0	10
P/TOT	1	3	17	3	1	1	0	26	1	0	48	6	2	6	0	63

Site: 2

Location: North Road / North Road Traffic signals - 3arm (with Q's)

TIME	TO ARM B							TOT	FROM ARM B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	1	19	3	0	2	0	25	0	0	2	3	0	2	0	7
07:45	0	0	27	2	0	0	0	29	1	0	0	0	2	0	0	3
H/TOT	0	1	46	5	0	2	0	54	1	0	2	3	2	2	0	10
08:00	0	0	13	1	0	2	0	16	0	0	0	0	0	3	0	3
08:15	1	1	16	6	1	2	0	27	0	0	2	3	1	7	0	13
08:30	0	0	19	4	0	0	0	23	0	0	0	0	1	3	0	4
08:45	0	1	10	1	1	3	0	16	0	0	3	3	1	2	0	9
H/TOT	1	2	58	12	2	7	0	82	0	0	5	6	3	15	0	29
09:00	0	0	11	2	2	4	0	19	0	0	2	3	0	0	0	5
09:15	0	0	10	1	2	2	0	15	0	0	1	2	2	3	0	8
H/TOT	0	0	21	3	4	6	0	34	0	0	3	5	2	3	0	13
P/TOT	1	3	125	20	6	15	0	170	1	0	10	14	7	20	0	52

TIME	TO ARM B							TOT	FROM ARM B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	0	0	0	0	0	3	0	3	1	1	24	1	0	1	0	28
16:45	0	0	2	0	0	2	0	4	0	1	9	4	0	3	0	17
H/TOT	0	0	2	0	0	5	0	7	1	2	33	5	0	4	0	45
17:00	0	0	5	0	2	3	0	10	0	1	34	4	0	0	0	39
17:15	0	0	0	0	0	0	0	0	0	0	15	3	2	0	0	20
17:30	0	0	2	1	0	1	0	4	0	0	12	2	0	1	0	15
17:45	0	0	5	0	0	2	0	7	0	0	12	1	0	0	0	13
H/TOT	0	0	12	1	2	6	0	21	0	1	73	10	2	1	0	87
18:00	0	0	1	1	0	2	0	4	0	0	8	0	0	0	0	8
18:15	0	0	0	1	0	0	0	1	0	0	8	1	0	0	0	9
18:30	0	0	0	1	1	0	0	2	0	0	3	1	0	2	0	6
18:45	0	0	1	0	0	0	0	1	0	0	2	0	0	0	0	2
H/TOT	0	0	2	3	1	2	0	8	0	0	21	2	0	2	0	25
P/TOT	0	0	16	4	3	13	0	36	1	3	127	17	2	7	0	157



Job Title:
Job Number:
Survey Date:
Survey Type:

North Road, Ellesmere Port
TTS-1223-Dec
Tuesday 8th December 2020
Manual Classified Turning Counts

Site: 2

Location: North Road / North Road Traffic signals - 3arm (with Q's)

TIME	TO ARM C							TOT	FROM ARM C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:30	0	0	2	3	1	2	1	9	0	1	23	5	0	4	0	33
07:45	0	0	4	1	3	2	0	10	0	0	30	2	0	0	0	32
H/TOT	0	0	6	4	4	4	1	19	0	1	53	7	0	4	0	65
08:00	0	1	5	0	0	3	0	9	0	0	14	1	0	5	0	20
08:15	0	0	5	3	1	8	0	17	0	1	18	6	1	5	0	31
08:30	0	0	1	0	1	5	0	7	1	0	19	9	2	2	0	33
08:45	0	0	2	3	2	5	0	12	0	1	15	1	1	5	0	23
H/TOT	0	1	13	6	4	21	0	45	1	2	66	17	4	17	0	107
09:00	0	0	5	5	0	2	0	12	0	0	13	5	3	5	0	26
09:15	0	0	2	2	2	6	0	12	0	0	14	2	1	5	0	22
H/TOT	0	0	7	7	2	8	0	24	0	0	27	7	4	10	0	48
P/TOT	0	1	26	17	10	33	1	88	1	3	146	31	8	31	0	220

TIME	TO ARM C							TOT	FROM ARM C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:30	0	0	34	3	0	3	0	40	0	1	4	0	0	4	0	9
16:45	0	1	11	4	0	6	0	22	0	0	1	0	0	2	0	3
H/TOT	0	1	45	7	0	9	0	62	0	1	5	0	0	6	0	12
17:00	1	1	42	5	0	0	0	49	0	0	5	0	2	3	0	10
17:15	0	0	27	4	2	0	0	33	0	0	0	1	0	0	0	1
17:30	0	0	14	2	0	1	0	17	0	1	3	1	0	1	0	6
17:45	0	0	10	1	0	0	0	11	0	0	5	0	0	2	0	7
H/TOT	1	1	93	12	2	1	0	110	0	1	13	2	2	6	0	24
18:00	0	0	11	1	1	0	0	13	0	0	2	1	0	2	0	5
18:15	0	0	9	1	0	0	0	10	0	0	0	1	1	0	0	2
18:30	0	0	3	1	0	2	0	6	0	0	1	2	0	0	0	3
18:45	0	0	3	0	0	1	0	4	0	0	1	0	0	0	0	1
H/TOT	0	0	26	3	1	3	0	33	0	0	4	4	1	2	0	11
P/TOT	1	2	164	22	3	13	0	205	0	2	22	6	3	14	0	47



Job Title:
Job Number:
Survey Date:
Survey Type:

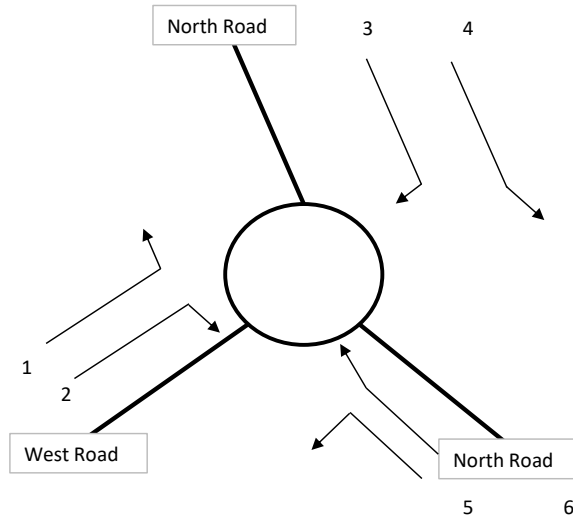
North Road, Ellesmere Port
TTS-1223-Dec
Tuesday 8th December 2020
Queue Length Surveys

Site: 2

Location: North Road / North Road Traffic signals - 3arm (with Q's)

TIME	Arm A		Arm B		Arm C	
	Min	Max	Min	Max	Min	Max
07:30	0	2	0	0	0	0
07:35	0	1	0	0	0	6
07:40	0	0	0	0	0	2
07:45	0	0	0	0	0	1
07:50	0	0	0	0	0	1
07:55	0	1	0	3	0	1
08:00	0	0	0	0	0	0
08:05	0	0.5	0	2	0	1
08:10	0	0	0	0	0	1
08:15	0	0	0	2	0	4
08:20	0	0	0	0	0	3
08:25	0	1	0	0	0	1
08:30	0	2	0	0	0	2
08:35	0	0	0	0	0	0
08:40	0	1	0	0	0	1
08:45	0	0	0	2	0	3
08:50	0	0	0	0	0	2
08:55	0	2	0	0	0	1
09:00	0	3	0	1	0	2
09:05	0	1	0	0	0	2
09:10	0	0	0	0	0	1
09:15	0	2	0	0	0	4
09:20	0	0	0	1	0	1
09:25	0	0	0	0	0	2
09:30	0	0	0	0	0	0
16:30	0	0	0	2	0	0
16:35	0	0	0	1	0	0
16:40	0	0	0	1	0	2
16:45	0	0	0	0	0	0
16:50	0	0	0	1	0	1
16:55	0	0	0	0	0	0
17:00	0	0	0	0	0	2
17:05	0	0	0	0	0	0
17:10	0	1	0	0	0	2
17:15	0	0	0	0	0	1
17:20	0	0	0	0	0	0
17:25	0	0	0	0	0	0
17:30	0	0	0	0	0	0
17:35	0	0	0	0	0	0
17:40	0	0	0	0	0	1
17:45	0	0	0	0	0	1
17:50	0	0	0	0	0	0
17:55	0	0	0	0	0	1
18:00	0	0	0	0	0	0
18:05	0	0	0	0	0	1
18:10	0	1	0	0	0	0
18:15	0	0	0	0	0	0
18:20	0	0	0	0	0	0
18:25	0	0	0	0	0	0
18:30	0	0	0	0	0	1
18:35	0	0	0	0	0	1
18:40	0	0	0	0	0	0
18:45	0	0	0	0	0	0
18:50	0	0	0	0	0	1
18:55	0	0	0	0	0	0
19:00	0	0	0	0	0	0

Location | CH65 1BR
Day | Thursday
Date | 28.02.19
Type | Video



Vehicles

Time	1		2		3		4		5		6	
	L	H	L	H	L	H	L	H	L	H	L	H
7:30	17	10	4	2	5	14	12	0	2	1	1	0
7:45	21	8	3	3	5	7	18	0	2	0	2	1
8:00	8	12	6	1	2	8	10	0	0	3	0	0
8:15	12	3	3	5	1	9	5	0	0	1	3	0
8:30	3	7	0	1	5	4	2	0	3	1	1	1
8:45	5	6	3	1	1	10	3	0	3	0	0	1
9:00	3	9	2	5	6	9	1	0	1	2	6	0
9:15	5	5	2	0	4	11	3	0	1	3	1	0

16:30	4	3	3	1	12	5	0	0	56	1	16	0
16:45	2	0	0	0	11	5	1	0	3	4	6	0
17:00	4	5	1	1	13	1	1	0	19	1	9	0
17:15	3	3	2	2	7	3	0	0	6	3	5	1
17:30	3	0	0	2	12	2	1	0	6	2	3	1
17:45	5	4	3	1	17	2	1	0	4	0	4	0
18:00	6	3	0	1	9	1	2	0	2	1	3	0
18:15	7	5	3	2	5	3	0	0	2	2	1	0

Entry :	Destination : A - South Road									Destination : B - Netherpool Road									Destination : C - M53 (e)									Destination : D - B5132 Netherpool Road									Destination : E - M53 (w)									Arm Totals
	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total						
07:00	10	1	0	0	0	0	0	11	12	2	3	4	0	0	0	21	0	0	0	0	0	0	0	0	6	1	0	1	0	0	0	8	0	0	0	0	0	0	0	40						
07:15	9	0	0	0	0	1	0	10	28	3	2	3	0	0	0	36	0	0	0	0	0	0	0	0	8	0	1	0	0	0	0	9	0	0	0	0	0	0	0	55						
07:30	1	0	0	0	0	0	0	1	25	4	0	0	0	0	29	0	0	0	0	0	0	0	0	5	3	1	0	0	0	0	9	0	0	0	0	0	0	0	39							
07:45	4	0	0	0	0	0	0	4	20	3	0	1	0	0	24	0	0	0	0	0	0	0	0	12	2	0	0	0	0	0	14	1	0	0	0	0	0	1	43							
1 Hr	24	1	0	0	0	1	0	26	85	12	5	8	0	0	110	0	0	0	0	0	0	0	0	31	6	2	1	0	0	0	40	1	0	0	0	0	0	0	177							
<i>Check</i>									<i>110</i>									<i>0</i>									<i>40</i>									<i>1</i>									<i>177</i>	
08:00	5	0	0	0	0	0	0	5	9	4	1	5	0	0	0	19	0	0	0	0	0	0	0	8	2	0	0	0	0	0	10	0	1	0	0	0	0	1	35							
08:15	4	0	0	0	0	0	0	4	15	1	2	2	0	0	0	20	0	0	0	0	0	0	0	11	4	0	1	0	0	0	16	0	0	0	0	0	0	0	40							
08:30	4	0	1	0	0	0	0	5	9	3	0	3	0	0	0	15	0	0	0	0	0	0	0	9	2	0	0	0	0	0	11	0	0	0	0	0	0	0	31							
08:45	2	0	0	0	0	0	0	2	10	1	2	1	0	0	0	14	0	0	0	0	0	0	0	16	2	1	0	0	1	0	20	0	0	0	0	0	0	0	36							
1 Hr	15	0	1	0	0	0	0	16	43	9	5	11	0	0	0	68	0	0	0	0	0	0	0	44	10	1	1	0	1	0	57	0	1	0	0	0	0	1	142							
<i>Check</i>									<i>68</i>									<i>0</i>									<i>57</i>									<i>1</i>									<i>142</i>	
09:00	4	2	0	1	0	0	0	7	10	2	2	4	0	0	0	18	0	0	0	0	0	0	0	3	1	1	0	0	0	0	5	0	0	0	0	0	0	0	30							
09:15	2	0	0	0	0	0	0	2	5	6	0	3	0	0	0	14	0	0	0	0	0	0	0	8	1	0	1	0	0	0	10	1	0	0	0	0	0	1	27							
09:30	1	0	0	0	0	0	0	1	10	2	0	2	0	0	1	15	0	0	0	0	0	0	0	7	2	1	0	0	0	0	10	0	0	0	0	0	0	0	26							
09:45	0	0	0	0	0	0	0	0	7	4	2	3	0	0	0	16	0	0	0	0	0	0	0	8	5	3	0	0	0	0	16	0	0	0	0	0	0	0	32							
1 Hr	7	2	0	1	0	0	0	10	32	14	4	12	0	0	1	63	0	0	0	0	0	0	0	26	9	5	1	0	0	0	41	1	0	0	0	0	0	1	115							
<i>Check</i>									<i>63</i>									<i>0</i>									<i>41</i>									<i>1</i>									<i>115</i>	
10:00	1	0	0	0	0	0	0	1	5	1	2	4	0	0	0	12	0	0	0	0	0	0	0	11	0	3	0	0	0	0	14	0	0	0	0	0	0	0	27							
10:15	1	0	0	0	0	0	0	1	2	5	3	2	0	0	0	12	0	0	0	0	0	0	0	8	2	0	1	0	0	0	11	0	0	0	0	0	0	0	24							
10:30	0	0	0	1	0	0	0	1	7	2	0	5	0	0	0	14	0	0	0	0	0	0	0	7	2	1	0	0	0	0	10	0	0	0	1	0	0	1	26							
10:45	1	0	0	0	0	0	0	1	4	1	0	4	0	0	0	9	0	0	0	0	0	0	0	5	4	1	0	0	0	0	10	0	0	0	0	0	0	0	20							
1 Hr	3	0	0	1	0	0	0	4	18	9	5	15	0	0	0	47	0	0	0	0	0	0	0	31	8	5	1	0	0	0	45	0	0	0	1	0	0	0	97							
<i>Check</i>									<i>47</i>									<i>0</i>									<i>45</i>									<i>1</i>									<i>97</i>	
11:00	0	0	0	0	0	0	0	0	4	5	2	3	0	0	0	14	0	0	0	0	0	0	0	10	2	0	0	0	0	0	12	0	0	0	0	0	0	0	26							
11:15	2	1	0	0	0	0	0	3	3	4	1	5	0	0	0	13	0	0	0	0	0	0	0	4	2	0	0	0	0	0	6	0	0	0	0	0	0	0	22							
11:30	0	0	0	0	0	0	0	0	4	4	2	4	0	0	0	14	0	0	0	0	0	0	0	7	3	0	0	0	0	0	10	0	0	0	0	0	0	0	24							
11:45	0	0	0	0	0	0	0	0	5	4	1	2	0	0	0	12	0	0	0	0	0	0	0	7	2	0	1	0	0	0	10	0	0	0	0	0	0	0	22							
1 Hr	2	1	0	0	0	0	0	3	16	17	6	14	0	0	0	53	0	0	0	0	0	0	0	28	9	0	1	0	0	0	38	0	0	0	0	0	0	0	94							
<i>Check</i>									<i>53</i>									<i>0</i>									<i>38</i>									<i>0</i>									<i>94</i>	
12:00	1	0	0	0	0	0	0	1	2	1	0	0	0	0	0	3	0	0	0	0	0	0	0	6	4	0	0	0	0	0	10	0	0	0	0	0	0	0	14							
12:15	1	0	0	0	0	0	0	1	4	1	3	3	0	0	0	11	0	0	0	0	0	0	0	6	0	1	0	0	0	0	7	0	0	0	0	0	0	0	19							
12:30	3	1	1	0	0	0	0	5	4	1	1	2	0	0	0	8	0	0	0	0	0	0	0	9	1	1	0	0	0	0	11	0	0	0	0	0	0	0	24							
12:45	0	0	0	1	0	0	0	1	7	2	1	4	0	0	0	14	0	0	0	0	0	0	0	10	2	1	1	0	0	0	14	0	0	0	0	0	0	0	29							
1 Hr	5	1	1	1	0	0	0	8	17	5	5	9	0	0	0	36	0	0	0	0	0	0	0	31	7	3	1	0	0	0	42	0	0	0	0	0	0	0	86							
<i>Check</i>									<i>36</i>									<i>0</i>									<i>42</i>									<i>0</i>									<i>86</i>	
6 Hrs	56	5	2	3	0	1	0	67	211	66	30	69	0	0	1	377	0	0	0	0	0	0	0	191	49	16	6	0	1	0	263	2	1	0	1	0	0	0	4	711						
<i>Check</i>									<i>377</i>									<i>0</i>									<i>263</i>									<i>4</i>									<i>711</i>	



Entry : D - B5132 Netherpool Road

Time	Destination : A - South Road								Destination : B - Netherpool Road								Destination : C - M53 (e)								Destination : D - B5132 Netherpool Road								Destination : E - M53 (w)								Arm Totals
	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	
13:00	0	0	0	0	0	0	0	0	7	2	1	0	0	0	0	10	4	6	2	0	0	0	0	12	0	0	0	0	0	0	0	0	11	1	0	0	0	0	0	12	34
13:15	2	0	0	0	0	0	2	9	3	0	0	0	0	12	11	4	1	2	0	0	18	0	0	0	0	0	0	0	0	9	6	0	0	0	0	0	15	47			
13:30	2	0	0	0	0	0	2	5	1	0	0	0	0	6	7	2	1	1	0	0	11	0	0	0	0	0	0	0	0	17	4	0	0	0	0	0	21	40			
13:45	1	0	0	0	0	0	1	7	1	0	0	0	1	9	10	4	1	1	0	0	16	0	0	0	0	0	0	0	0	14	4	0	0	0	0	0	18	44			
1 Hr	5	0	0	0	0	0	5	28	7	1	0	0	1	37	32	16	5	4	0	0	57	0	0	0	0	0	0	0	0	51	15	0	0	0	0	0	66	165			
Check	5								37								57								66								165								
14:00	5	0	0	0	0	0	5	4	1	0	0	0	0	5	14	1	0	1	0	0	16	0	0	0	0	0	0	0	0	13	7	0	0	0	1	0	21	47			
14:15	2	0	0	0	0	0	2	5	1	0	0	0	1	7	10	5	0	0	0	15	0	0	0	0	0	0	0	0	12	3	1	0	0	0	0	16	40				
14:30	3	0	0	0	0	0	3	2	2	0	0	0	0	4	10	0	0	1	0	11	0	0	0	0	0	0	0	0	13	3	0	0	0	1	0	17	35				
14:45	7	0	0	0	0	0	7	2	1	1	0	0	2	6	6	7	0	0	0	13	0	0	0	0	0	0	0	0	10	3	1	0	0	0	0	14	40				
1 Hr	17	0	0	0	0	0	17	13	5	1	0	0	2	22	40	13	0	2	0	55	0	0	0	0	0	0	0	0	48	16	2	0	0	2	0	68	162				
Check	17								22								55								68								162								
15:00	2	0	0	0	0	0	2	1	2	0	0	0	0	3	9	4	0	0	0	13	0	0	0	0	0	0	0	0	16	5	1	1	0	0	0	23	41				
15:15	2	0	0	0	0	0	2	3	2	1	0	0	0	6	10	1	0	0	0	11	0	0	0	0	0	0	0	0	19	6	1	1	0	0	0	27	46				
15:30	1	0	0	0	0	0	1	1	1	0	0	0	0	2	8	1	0	1	0	10	0	0	0	0	0	0	0	0	16	4	0	0	1	0	0	21	34				
15:45	1	0	0	0	0	0	1	0	3	0	0	0	0	4	12	1	0	3	1	17	0	0	0	0	0	0	0	0	22	4	0	0	0	0	0	26	48				
1 Hr	6	0	0	0	0	0	6	5	8	1	0	0	1	15	39	7	0	4	1	51	0	0	0	0	0	0	0	0	73	19	2	2	1	0	0	97	169				
Check	6								15								51								97								169								
16:00	1	0	0	0	0	0	1	0	0	1	0	0	1	2	10	4	0	0	0	14	0	0	0	0	0	0	0	0	30	5	0	0	1	0	0	36	53				
16:15	1	0	0	0	0	0	1	3	0	0	0	0	1	4	10	4	0	0	0	14	0	0	0	0	0	0	0	0	27	6	0	0	0	0	0	33	52				
16:30	0	0	0	0	0	0	0	1	1	0	0	0	0	2	19	1	3	2	0	25	0	0	0	0	0	0	0	0	33	4	0	1	0	0	0	38	65				
16:45	0	0	0	0	0	0	0	1	1	0	0	0	0	2	15	3	0	0	0	18	0	0	0	0	0	0	0	0	44	5	1	1	0	0	0	51	71				
1 Hr	2	0	0	0	0	0	2	5	2	1	0	0	2	10	54	12	3	2	0	71	0	0	0	0	0	0	0	0	134	20	1	2	1	0	0	158	241				
Check	2								10								71								158								241								
17:00	1	0	0	0	0	0	1	0	4	0	0	0	1	5	20	2	0	1	0	23	0	0	0	0	0	0	0	0	50	3	0	0	0	0	0	53	82				
17:15	0	0	0	0	0	0	0	2	1	0	0	0	0	3	17	0	0	0	0	17	0	0	0	0	0	0	0	0	26	4	0	1	0	0	0	31	51				
17:30	0	0	0	0	0	0	0	0	0	1	0	0	0	1	20	2	0	0	0	22	0	0	0	0	0	0	0	0	22	2	0	0	0	0	0	24	47				
17:45	0	1	0	0	0	0	1	0	0	0	0	0	0	0	12	1	0	0	0	14	0	0	0	0	0	0	0	0	20	2	0	1	0	0	0	23	38				
1 Hr	1	1	0	0	0	0	2	2	5	1	0	0	1	9	69	5	0	1	0	76	0	0	0	0	0	0	0	0	118	11	0	2	0	0	0	131	218				
Check	2								9								76								131								218								
18:00	0	0	0	0	0	0	0	0	0	0	0	0	1	1	10	1	1	0	0	12	0	0	0	0	0	0	0	0	29	4	0	0	0	0	0	33	46				
18:15	1	0	0	0	0	0	1	0	0	0	0	0	0	0	7	1	0	0	0	8	0	0	0	0	0	0	0	0	17	3	0	0	0	0	0	20	29				
18:30	0	0	0	0	0	0	0	0	0	0	0	0	2	0	11	0	0	0	0	11	0	0	0	0	0	0	0	0	16	5	0	0	0	0	0	21	34				
18:45	1	0	0	0	0	0	1	2	1	0	0	0	1	4	8	1	0	0	0	9	0	0	0	0	0	0	0	0	20	1	0	0	1	0	0	22	36				
1 Hr	2	0	0	0	0	0	2	2	1	0	0	0	4	7	36	3	1	0	0	40	0	0	0	0	0	0	0	0	82	13	0	0	1	0	0	96	145				
Check	2								7								40								96								145								
6 Hrs	33	1	0	0	0	0	34	55	28	5	0	0	10	2	100	270	56	9	13	1	1	0	350	0	0	0	0	0	0	0	0	506	94	5	6	3	2	0	616	1100	
Total	70	1	0	0	0	0	71	199	65	17	5	3	13	4	306	462	135	24	22	1	1	0	645	0	0	0	0	0	0	0	0	999	185	21	16	3	4	0	1228	2250	
Check	71								306								645								1228								2250								



Client : Chesire West & Chester
Project : Ellesmere Port Traffic Survey
Site : 9 - M53 Junction 7
Date : Tuesday 9th March 2010

AM Weather : Mild / Clear
PM Weather : Mild / Clear
Incidents : None Reported

DESTINATION SUMMARY

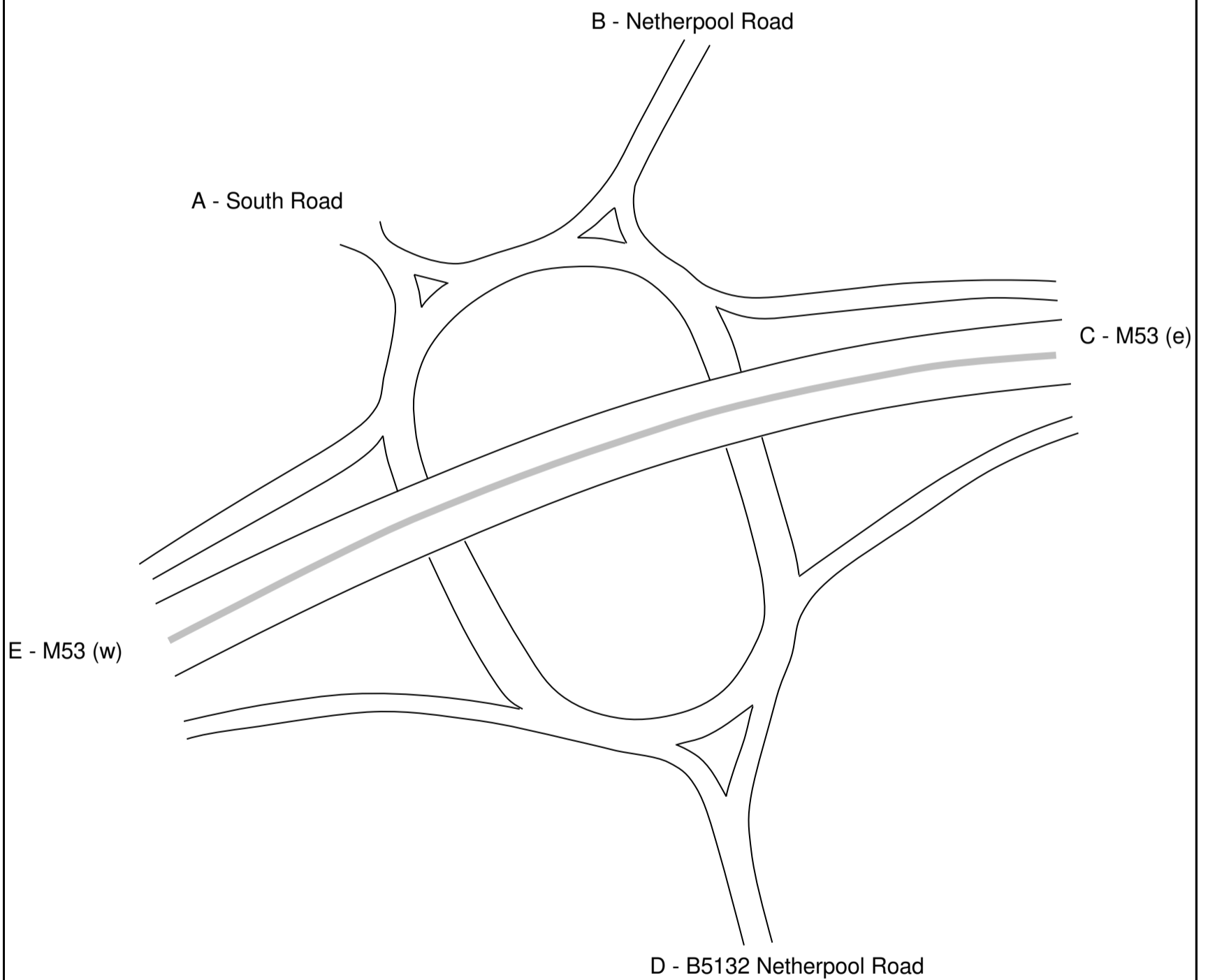
	Destination : A - South Road								Destination : B - Netherpool Road								Destination : C - M53 (e)								Destination : D - B5132 Netherpool Road								Destination : E - M53 (w)								Arm Totals							
	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total	Car	Lgv	Ogv1	Ogv2	Psv	Mc	Pc	Total								
07:00	23	1	0	0	0	0	0	24	19	3	3	4	0	0	0	29	26	0	3	4	0	1	0	34	41	4	0	1	0	0	0	46	35	6	0	1	0	0	0	42	175							
07:15	19	0	0	0	0	1	0	20	49	6	2	3	0	1	1	62	18	4	3	1	0	0	0	26	25	3	1	0	0	0	0	29	22	6	0	2	0	0	0	30	167							
07:30	4	1	0	0	0	0	0	5	48	9	0	0	0	0	1	58	14	4	1	3	0	0	0	22	31	8	1	1	0	1	0	42	31	2	1	1	0	0	0	35	162							
07:45	10	0	0	0	0	0	0	10	59	10	0	1	0	0	0	70	15	3	4	7	0	1	0	30	44	8	0	0	2	0	0	54	38	6	1	2	0	0	0	47	211							
1 Hr	56	2	0	0	0	1	0	59	175	28	5	8	0	1	2	219	73	11	11	15	0	2	0	112	141	23	2	2	2	1	0	171	126	20	2	6	0	0	0	154	715							
Check																																																
08:00	6	0	0	0	0	0	0	6	27	8	2	5	0	0	0	42	17	7	0	4	0	0	0	28	56	9	0	0	1	1	0	67	49	10	1	1	0	0	0	61	204							
08:15	4	0	0	0	0	0	0	4	39	5	2	2	0	0	0	48	19	3	3	6	0	0	0	31	53	7	1	2	0	0	0	63	42	6	0	0	0	1	0	49	195							
08:30	8	1	1	0	0	0	0	10	25	6	2	4	0	0	1	38	13	7	3	6	0	0	0	29	31	4	0	0	0	0	0	35	42	4	2	0	0	0	0	48	160							
08:45	4	2	0	0	0	0	0	6	24	5	2	1	0	0	0	32	11	9	2	5	0	0	0	27	37	7	2	0	0	1	0	47	26	1	2	0	0	0	0	29	141							
1 Hr	22	3	1	0	0	0	0	26	115	24	8	12	0	0	1	160	60	26	8	21	0	0	0	115	177	27	3	2	1	2	0	212	159	21	5	1	0	1	0	187	700							
Check																																																
09:00	5	2	0	1	0	0	0	8	17	11	2	5	0	0	0	35	11	4	1	8	0	0	0	24	38	7	2	0	0	0	0	47	22	4	0	0	0	0	0	26	140							
09:15	3	0	0	0	0	0	0	3	10	7	0	4	0	0	0	21	10	4	3	3	0	0	0	20	29	8	0	1	0	1	0	39	21	7	1	1	0	0	0	30	113							
09:30	1	0	0	0	0	0	0	1	15	5	1	2	0	1	1	25	7	5	0	6	0	0	0	18	30	6	1	1	0	0	0	38	10	3	0	0	0	0	0	13	95							
09:45	0	0	0	0	0	0	0	0	14	7	3	6	0	0	0	30	3	8	1	4	0	0	0	16	31	12	5	0	0	0	1	49	9	5	1	1	0	0	0	16	111							
1 Hr	9	2	0	1	0	0	0	12	56	30	6	17	0	1	1	111	31	21	5	21	0	0	0	78	128	33	8	2	0	1	1	173	62	19	2	2	0	0	0	85	459							
Check																																																
10:00	1	1	0	0	0	0	0	2	9	3	3	4	0	0	0	19	16	7	3	5	0	0	0	31	23	5	7	0	0	0	0	35	15	4	2	2	0	0	0	23	110							
10:15	4	0	0	0	0	0	0	4	3	10	3	2	0	0	0	18	13	5	1	4	0	0	0	23	18	11	0	1	0	0	0	30	9	2	1	3	0	0	0	15	90							
10:30	3	0	0	1	0	0	0	4	11	4	1	7	0	0	0	23	11	5	0	3	0	0	0	19	17	4	2	0	0	1	0	24	21	2	2	2	0	0	0	27	97							
10:45	1	0	0	0	0	0	0	1	7	1	2	4	0	0	0	14	8	6	0	2	0	0	0	16	22	8	5	0	0	1	0	36	16	5	4	0	0	1	0	26	93							
1 Hr	9	1	0	1	0	0	0	11	30	18	9	17	0	0	0	74	48	23	4	14	0	0	0	89	80	28	14	1	0	2	0	125	61	13	9	7	0	1	0	91	390							
Check																																																
11:00	0	0	0	0	0	0	0	0	6	7	2	3	1	0	0	19	9	2	1	3	0	0	0	15	22	6	2	0	0	0	0	30	16	1	2	1	0	0	0	20	84							
11:15	2	1	0	0	0	0	0	3	6	5	2	6	0	1	0	20	10	13	2	6	0	0	0	31	21	7	2	0	0	0	0	30	15	10	1	1	0	0	0	27	111							
11:30	0	0	0	0	0	0	0	0	8	7	2	5	0	0	0	22	16	7	2	3	0	0	0	28	19	10	0	0	0	0	0	29	23	10	2	1	0	0	0	36	115							
11:45	3	0	0	0	0	0	0	3	8	7	7	2	1	0	0	25	13	9	0	4	0	0	0	26	16	9	1	1	0	0	0	27	14	10	0	1	0	0	0	25	106							
1 Hr	5	1	0	0	0	0	0	6	28	26	13	16	2	1	0	86	48	31	5	16	0	0	0	100	78	32	5	1	0	0	0	116	68	31	5	4	0	0	0	108	416							
Check																																																
12:00	3	0	0	0	0	0	0	3	6	2	0	2	0	0	0	10	9	9	1	4	0	0	0	23	21	11	2	3	0	0	0	37	17	1	1	0	0	0	0	19	92							
12:15	5	0	0	0	0	0	0	5	13	3	5	6	1	0	0	28	8	5	1	2	0	0	0	16	24	5	2	0	0	1	0	32	11	1	0	1	0	0	0	13	94							
12:30	4	1	1	1	0	0	0	7	11	2	2	4	0	0	0	19	13	1	0	3	0	0	0	17	29	6	2	0	0	0	0	37	13	4	2	0	0	1	0	20	100							
12:45	1	1	0	1	0	0	0	3	21	4	1	5	0	0	0	31	14	3	4	4	0	0	0	25	20	8	2	3	0	0	0	33	21	5	0	3	0	0	0	29	121							
1 Hr	13	2	1	2	0	0	0	18	51	11	8	17	1	0	0	88	44	18	6	13	0	0	0	81	94	30	8	6	0	1	0	139	62	11	3	4	0	1	0	81	407							
Check																																																
6 Hrs	114	11	2	4	0	1	0	132	455	137	49	87	3	3	4	738	304	130	39	100	0	2	0	575	698	173	40	14	3	7	1	936	538	115	26	24	0	3	0	706	3087							

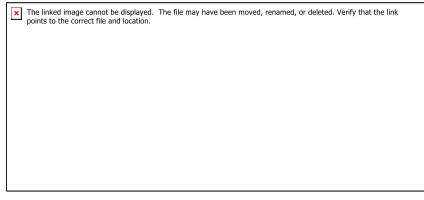


SKY HIGH TRAFFIC SURVEYS

A SUBSIDIARY OF SKY HIGH PLC

Client : Chesire West & Chester
Project : Ellesmere Port Traffic Survey
Site plan for : 9 - M53 Junction 7
Date : Tuesday 9th March 2010





Road Safety
 Northern Lights Business Park
 Rossfield Road
 Ellesmere Port
 CH65 3AW
 Telephone 0151 356 6354

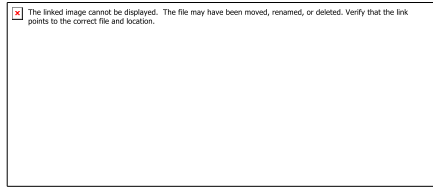
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Site No: 00020029 Grid Reference: 338592,377462
B5132 Netherpool Road, Ellesmere Port From 29/01/2020 To 06/02/2020
 Vehicle Count Summary Channel: Northbound
 Volume ONLY (Speed and Class also available)

Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	5-Day	7-Day	
Begin									Av	Av
00:00	5	31	7	8	4	29	23	11	15	
01:00	8	4	5	7	8	11	17	6	9	
02:00	2	2	2	4	5	12	6	3	5	
03:00	7	6	7	8	6	10	6	7	7	
04:00	25	15	15	21	22	6	7	20	16	
05:00	120	118	122	132	126	35	29	124	97	
06:00	274	307	273	276	268	61	36	280	214	
07:00	375	389	378	399	388	80	56	386	295	
08:00	489	483	487	420	391	160	47	454	354	
09:00	240	230	228	227	229	190	114	231	208	
10:00	168	183	176	169	188	225	172	177	183	
11:00	208	159	167	184	185	278	186	181	195	
12:00	187	182	197	212	222	261	188	200	207	
13:00	286	258	281	261	253	239	227	268	258	
14:00	206	185 -		219	235	201	161	211	203	
15:00	235	244 -		273	306	170	148	265	234	
16:00	316	301	270	289	327	193	130	301	261	
17:00	314	345	290	267	246	170	136	292	253	
18:00	240	243	256	254	197	131	125	238	207	
19:00	167	190	172	158	147	118	86	167	148	
20:00	109	98	90	102	91	78	65	98	90	
21:00	119	104	100	92	86	61	65	100	90	
22:00	30	47	56	61	59	52	25	51	47	
23:00	14	18	25	22	33	37	13	22	23	
12H,7-19	3264	3202 -		3174	3167	2298	1690	3202	2857	
16H,6-22	3933	3901 -		3802	3759	2616	1942	3849	3400	
18H,6-24	3977	3966 -		3885	3851	2705	1980	3920	3469	
24H,0-24	4144	4142 -		4065	4022	2808	2068	4093	3620	
Am Peak	07:45 543	07:45 532	07:45 553	07:30 517	07:30 468	10:45 295	10:45 - 193	- 523	443	
Pm Peak	17:15 320	17:00 - 345 -		16:15 304	16:00 327	12:15 292	13:00 - 227	- 324	306	

Site No: 00020029 Grid Reference: 338592,377462
B5132 Netherpool Road, Ellesmere Port From 29/01/2020 To 06/02/2020
 Vehicle Count Summary Channel: Southbound

Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	5-Day	7-Day	
Begin									Av	Av
00:00	7	37	12	17	13	30	21	17	20	
01:00	0	11	9	2	0	14	19	4	8	
02:00	4	5	3	7	6	12	11	5	7	
03:00	0	3	3	1	1	7	12	2	4	
04:00	10	6	8	8	12	6	12	9	9	
05:00	22	24	26	21	30	13	12	25	21	
06:00	75	108	89	97	86	25	25	91	72	
07:00	171	170	165	185	149	56	26	168	132	
08:00	240	248	256	234	251	101	45	246	196	
09:00	154	153	152	176	157	159	66	158	145	
10:00	154	160	158	163	149	201	113	157	157	
11:00	187	151	171	185	185	240	115	176	176	
12:00	180	214	211	205	226	230	181	207	207	
13:00	218	218	204	209	261	226	210	222	221	
14:00	248	259 -		278	328	183	165	278	248	
15:00	271	217 -		257	270	200	194	254	238	
16:00	445	409	439	481	419	186	173	439	365	
17:00	529	496	482	484	476	170	128	493	395	
18:00	256	262	261	268	203	131	127	250	215	
19:00	167	126	170	173	166	102	84	160	141	
20:00	128	124	112	120	118	83	74	120	108	
21:00	74	80	77	76	93	60	51	80	73	
22:00	102	145	116	102	71	54	43	107	90	
23:00	19	38	20	21	36	44	10	27	27	
12H,7-19	3053	2957 -		3125	3074	2083	1543	3052	2698	
16H,6-22	3497	3395 -		3591	3537	2353	1777	3505	3094	
18H,6-24	3618	3578 -		3714	3644	2451	1830	3639	3211	
24H,0-24	3661	3664 -		3770	3706	2533	1917	3700	3279	
Am Peak	07:45 265	07:45 253	08:00 256	07:45 244	08:00 251	11:00 240	10:15 - 124	- 254	233	
Pm Peak	16:30 596	16:30 - 539 -		16:15 570	16:15 501	12:45 245	12:45 - 214	- 552	459	



Road Safety
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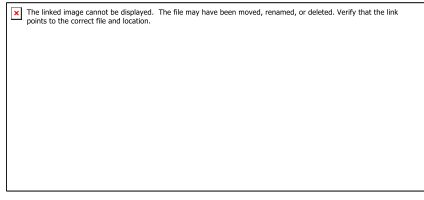
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Site No: 00020029 Grid Reference: 338592,377462
B5132 Netherpool Road, Ellesmere Port From 29/01/2020 To 06/02/2020
 Speed Summary (Mon to Fri)-Limit 30 Mph Channel: Northbound
 Speed ONLY

Time	Total	85th	Mean	Std.	Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8	Bin 9	Bin 10	Bin 11	Bin 12	Bin 13
Begin	Vol.	%ile	Ave.	Dev.	<1Mph	1-<6	6-<11	11-<16	16-<21	21-<26	26-<31	31-<36	36-<41	41-<46	46-<51	51-<56	=>56
00:00	11	38.1	23.3	14.1	0	0	5	1	0	0	0	1	2	0	0	0	0
01:00	6	-	36.2	6.5	0	0	0	0	0	0	0	3	2	0	0	0	0
02:00	2	-	39.8	10.7	0	0	0	0	0	0	0	0	1	0	0	0	0
03:00	8	-	35.9	7.1	0	0	0	0	0	0	1	3	2	0	0	0	0
04:00	19	40.9	35.6	6.1	0	0	0	0	0	0	5	5	5	3	0	0	0
05:00	124	40.2	35	5.4	0	0	0	0	0	0	21	54	32	12	2	0	0
06:00	279	38.6	33.8	5	0	0	0	1	2	1	58	145	56	13	2	0	0
07:00	386	38.6	33.9	4.3	0	0	0	0	0	4	82	195	88	16	1	0	0
08:00	455	39	34.3	4.3	0	0	0	0	0	4	80	231	114	21	2	0	0
09:00	231	39.9	35.1	4.6	0	0	0	0	0	2	30	107	68	17	2	0	0
10:00	176	39.8	34.8	5	0	0	0	0	0	2	32	80	47	13	3	0	0
11:00	180	39.9	35	5	0	0	0	0	0	2	30	82	51	12	3	1	0
12:00	200	39.4	34.7	4.6	0	0	0	0	0	1	33	95	57	10	3	0	0
13:00	268	39.5	34.6	4.6	0	0	0	0	0	2	45	130	69	16	1	0	0
14:00	198	40.2	35.3	5	0	0	0	0	0	0	33	84	61	18	3	0	0
15:00	268	39.6	34.7	4.8	0	0	0	0	0	1	45	126	72	17	3	0	0
16:00	301	39.5	34.7	4.8	0	0	0	0	0	3	48	147	80	18	3	0	0
17:00	293	38.4	33.7	4.4	0	0	0	0	1	4	63	151	61	11	2	0	0
18:00	239	39	34.1	4.6	0	0	0	0	0	2	45	124	50	14	1	0	0
19:00	167	39.3	34.4	4.8	0	0	0	0	0	1	34	79	40	9	2	0	0
20:00	98	39.7	34.4	5.7	0	0	0	1	0	0	19	45	23	7	2	0	0
21:00	101	39.5	34.6	4.6	0	0	0	0	0	0	18	49	23	7	1	0	0
22:00	50	40.1	34.9	6	0	0	0	0	0	0	7	24	13	5	0	0	0
23:00	22	39.9	35.2	4.7	0	0	0	0	0	0	4	9	5	2	0	0	0
12H,7-19	3195	39.4	34.5	4.6	0	0	0	0	1	28	567	1552	819	182	27	2	0
16H,6-22	3840	39.3	34.5	4.6	0	0	0	2	3	30	696	1870	961	218	34	2	0
18H,6-24	3912	39.4	34.5	4.6	0	0	0	2	3	30	707	1903	979	225	34	2	0
24H,0-24	4082	39.4	34.5	4.7	0	0	5	3	3	30	734	1969	1023	240	36	2	0
Am Peak	07:30 - 515	-	02:00 39.8	00:00 14.1	-	07:15 0	00:00 5	04:45 1	06:15 2	07:15 6	07:30 109	07:30 267	07:45 119	08:15 22	11:00 3	11:00 1	09:30 1
Pm Peak	16:15 302	14:15 40.3	14:15 35.5	22:00 6	-	15:30 0	22:00 1	20:00 1	17:30 1	17:15 4	17:15 64	16:15 153	16:00 81	14:30 19	16:00 3	18:45 1	23:00 0

Site No: 00020029 Grid Reference: 338592,377462
B5132 Netherpool Road, Ellesmere Port From 29/01/2020 To 06/02/2020
 Speed Summary (Mon to Fri)-Limit 30 Mph Channel: Southbound

Time	Total	85th	Mean	Std.	Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8	Bin 9	Bin 10	Bin 11	Bin 12	Bin 13
Begin	Vol.	%ile	Ave.	Dev.	<1Mph	1-<6	6-<11	11-<16	16-<21	21-<26	26-<31	31-<36	36-<41	41-<46	46-<51	51-<56	=>56
00:00	18	39.1	27.1	13.5	0	0	3	2	0	0	1	4	3	1	0	0	0
01:00	5	-	31.7	14.1	0	0	1	0	0	0	0	0	0	0	0	0	0
02:00	5	-	35.7	5.8	0	0	0	0	0	0	1	1	1	1	0	0	0
03:00	1	-	32.9	-	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	9	-	35.2	7.5	0	0	0	0	0	0	1	3	2	0	0	0	0
05:00	24	40.7	36	6	0	0	0	0	0	0	4	6	8	3	0	0	0
06:00	90	40.1	34.8	5.1	0	0	0	0	0	2	15	37	28	9	0	0	0
07:00	168	39.5	34.3	4.9	0	0	0	0	0	6	30	77	42	13	0	0	0
08:00	247	39.5	34.5	4.8	0	0	0	0	0	7	38	116	67	15	0	0	0
09:00	159	39.9	34.9	5.2	0	0	0	0	0	3	28	66	47	12	1	0	0
10:00	157	39.9	34.6	5.2	0	0	0	0	0	4	30	61	47	12	2	0	0
11:00	176	40.1	34.7	5.2	0	0	0	0	1	4	33	72	49	16	1	0	0
12:00	208	40.3	35.2	5.1	0	0	0	0	0	4	30	86	63	20	2	0	0
13:00	222	40	35	4.9	0	0	0	0	0	6	35	93	70	17	1	0	0
14:00	264	39.6	34.5	4.8	0	0	0	0	0	6	48	114	76	16	2	0	0
15:00	255	39.8	34.6	5	0	0	0	0	0	6	49	112	65	22	1	0	0
16:00	439	39.3	34.2	5	0	0	1	0	1	7	86	202	114	22	4	1	0
17:00	493	37.2	32.1	5.5	0	0	3	4	5	27	142	217	77	15	2	0	0
18:00	251	39.2	33.9	5	0	0	0	0	0	6	60	106	57	15	0	0	0
19:00	161	39.4	34	5.2	0	0	0	0	1	3	39	66	37	11	2	0	0
20:00	120	39.8	34.6	5.5	0	0	0	0	0	4	23	49	34	8	1	0	0
21:00	80	40.3	35.2	6	0	0	0	0	0	2	14	29	24	7	1	1	0
22:00	107	40.1	34.9	5.9	0	0	0	1	1	2	17	44	30	8	1	1	0
23:00	26	39.5	34.5	5	0	0	0	0	0	0	6	11	7	1	0	0	0
12H,7-19	3039	39.4	34.1	5.1	0	0	4	4	8	86	609	1322	773	196	16	1	0
16H,6-22	3490	39.5	34.2	5.1	0	0	4	4	9	97	700	1503	896	231	20	2	0
18H,6-24	3623	39.5	34.2	5.1	0	0	4	5	10	99	723	1558	933	240	21	3	0
24H,0-24	3685	39.5	34.2	5.2	0	0	8	7	10	99	730	1572	947	245	21	3	0
Am Peak	07:45 - 253	-	02:15 37.2	-	-	-	00:15 4	00:15 2	10:15 1	07:45 8	07:45 43	07:45 121	08:15 67	07:45 16	10:00 2	08:30 1	09:45 1
Pm Peak	16:30 551	21:45 40.3	21:45 35.3	21:45 6.2	-	-	16:30 4	16:30 5	16:45 6	17:00 27	16:30 145	16:15 251	16:00 113	15:30 23	15:45 4	21:45 1	21:30 1



Road Safety
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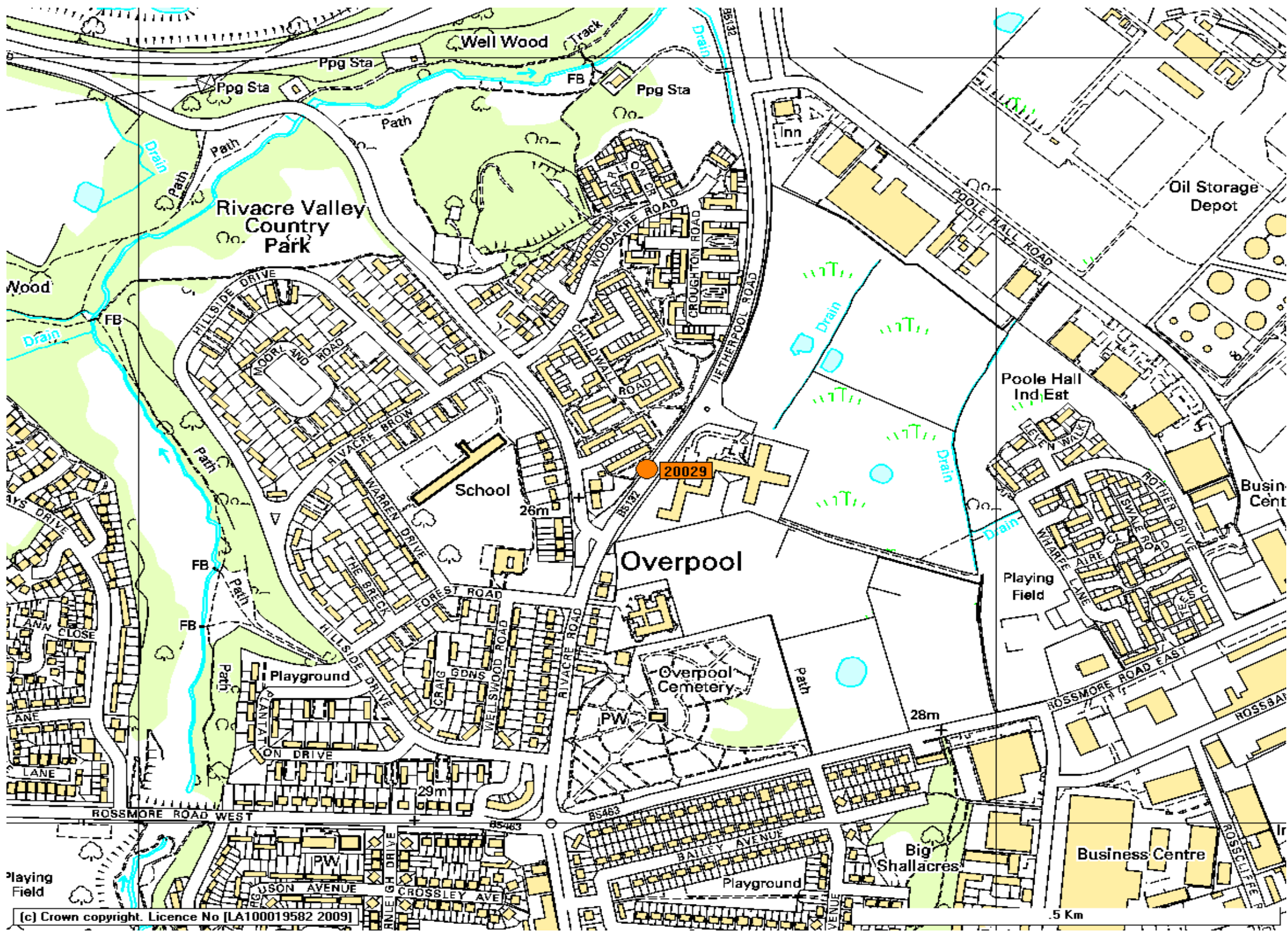
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Site No: 00020029 Grid Reference: 338592,377462
B5132 Netherpool Road, Ellesmere Port From 29/01/2020 To 06/02/2020
 Length Summary (Mon to Fri) Channel: Northbound
 Class ONLY

Time	Total	Bin 1	Bin 2	Bin 3	Bin 4
Begin	Vol.	<=5.2m	5.2-6.5	6.5-11.5	>11.5
00:00	11	9	0	1	0
01:00	6	6	0	1	0
02:00	2	2	0	0	0
03:00	8	5	0	0	0
04:00	19	18	1	0	0
05:00	124	119	4	0	0
06:00	279	260	14	5	0
07:00	386	350	22	11	2
08:00	455	413	24	14	2
09:00	231	197	19	13	3
10:00	176	142	17	16	0
11:00	180	151	15	13	2
12:00	200	167	16	13	3
13:00	268	235	16	13	4
14:00	198	162	20	14	2
15:00	268	230	19	16	3
16:00	301	262	23	13	3
17:00	293	270	15	7	1
18:00	239	221	13	2	1
19:00	167	156	7	4	0
20:00	98	90	6	1	0
21:00	101	96	4	0	0
22:00	50	49	1	0	0
23:00	22	21	0	0	0
12H,7-19	3193	2799	221	144	30
16H,6-22	3838	3401	252	154	31
18H,6-24	3911	3471	254	155	31
24H,0-24	4081	3631	260	159	31
Am	07:30	07:30	07:30	10:00	09:00
Peak	515	471	30	16	3
Pm	16:15	17:00	15:45	14:45	15:30
Peak	302	269	25	17	4

Site No: 00020029 Grid Reference: 338592,377462
B5132 Netherpool Road, Ellesmere Port From 29/01/2020 To 06/02/2020
 Length Summary (Mon to Fri) Channel: Southbound

Time	Total	Bin 1	Bin 2	Bin 3	Bin 4
Begin	Vol.	<=5.2m	5.2-6.5	6.5-11.5	>11.5
00:00	18	13	0	0	3
01:00	5	3	0	0	0
02:00	5	5	0	0	0
03:00	1	1	0	0	0
04:00	9	8	0	1	0
05:00	24	21	3	0	1
06:00	90	76	9	5	1
07:00	168	142	15	9	1
08:00	247	208	24	12	2
09:00	159	125	18	13	3
10:00	157	125	15	15	0
11:00	176	138	22	14	3
12:00	208	173	22	11	2
13:00	222	179	27	13	4
14:00	264	226	26	10	2
15:00	255	213	29	11	2
16:00	439	363	53	18	3
17:00	493	431	49	10	3
18:00	251	216	28	6	1
19:00	161	138	18	5	0
20:00	120	105	13	1	0
21:00	80	69	8	1	0
22:00	107	96	10	1	0
23:00	26	23	3	1	0
12H,7-19	3034	2537	330	141	27
16H,6-22	3486	2925	378	155	28
18H,6-24	3620	3044	391	157	28
24H,0-24	3682	3095	396	159	32
Am	07:45	07:45	08:15	10:00	07:45
Peak	253	215	26	15	3
Pm	16:30	16:30	16:15	16:00	12:45
Peak	551	469	63	18	4



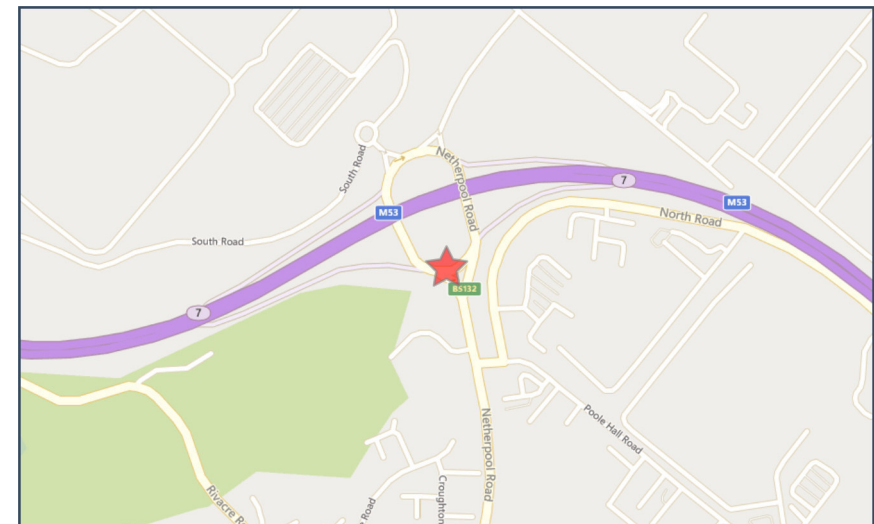
Appendix C Accident Data Reports



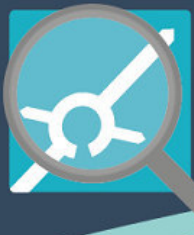
No

Crash Date: Thursday, February 25, 2016 **Time of Crash:** 12:30:00 AM **Crash Reference:** 2016076056389

Highest Injury Severity:	Serious	Road Number:	B5132	Number of Casualties:	1
Highway Authority:	West Cheshire			Number of Vehicles:	1
Local Authority:	Cheshire West and Chester (from 2009)			OS Grid Reference:	338662 378107
Weather Description:	Unknown				
Road Surface Description:	Frost or Ice				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Roundabout				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



No

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	16	Female	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	Kerb	Road sign/Traffic signal

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Female	26 - 35	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

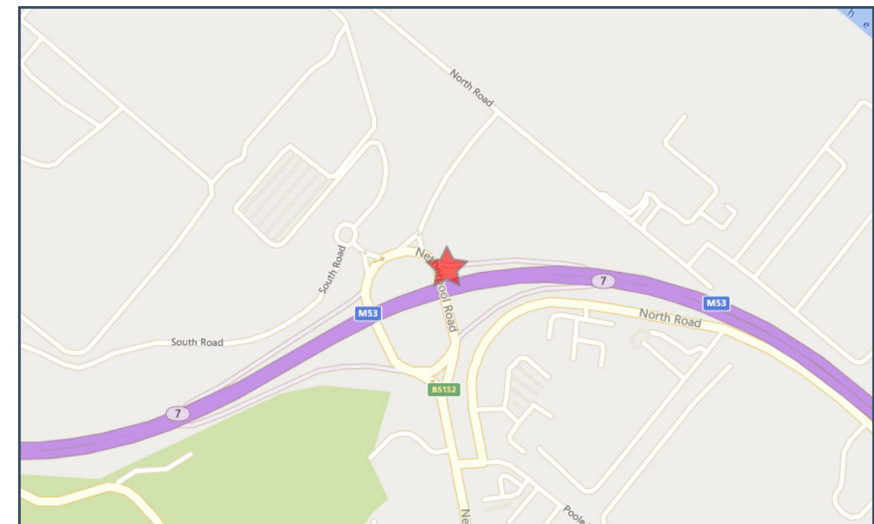
To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



No

Crash Date: Sunday, August 07, 2016 **Time of Crash:** 5:16:00 PM **Crash Reference:** 2016076239343

Highest Injury Severity:	Serious	Road Number:	M53	Number of Casualties:	1
Highway Authority:	West Cheshire	Number of Vehicles:	1	OS Grid Reference:	338695 378269
Local Authority:	Cheshire West and Chester (from 2009)				
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



No

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 500cc	17	Male	26 - 35	Vehicle proceeding normally along the carriageway, on a left hand bend	Offside	Other	None	Nearside or offside crash barrier

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services

Appendix D Accessibility Figures



Walk Accessibility Metres

- 400
- 800
- 1200
- 1600
- 2000

- ◆ Site Location
- Bus Stops
- Railway Stations



Project Title
Link Logistics Park, Ellesmere Port

Drawing Title
Accessibility: 2km Walking Catchment

Job Number	C17876	By	SG
Date	25.01.2020	Checked	VP
Scale	NTS	Status	-

Rev	Description	Date	By
-	-	-	-
-	-	-	-
-	-	-	-

Drawing No.
APPENDIX C

Figure
1



Project Title
Link Logistics Park, Ellesmere Port

Drawing Title
Accessibility: 5km Cycling Catchment

Job Number
C17876

Date
25.01.2020

Scale
NTS

By
SG

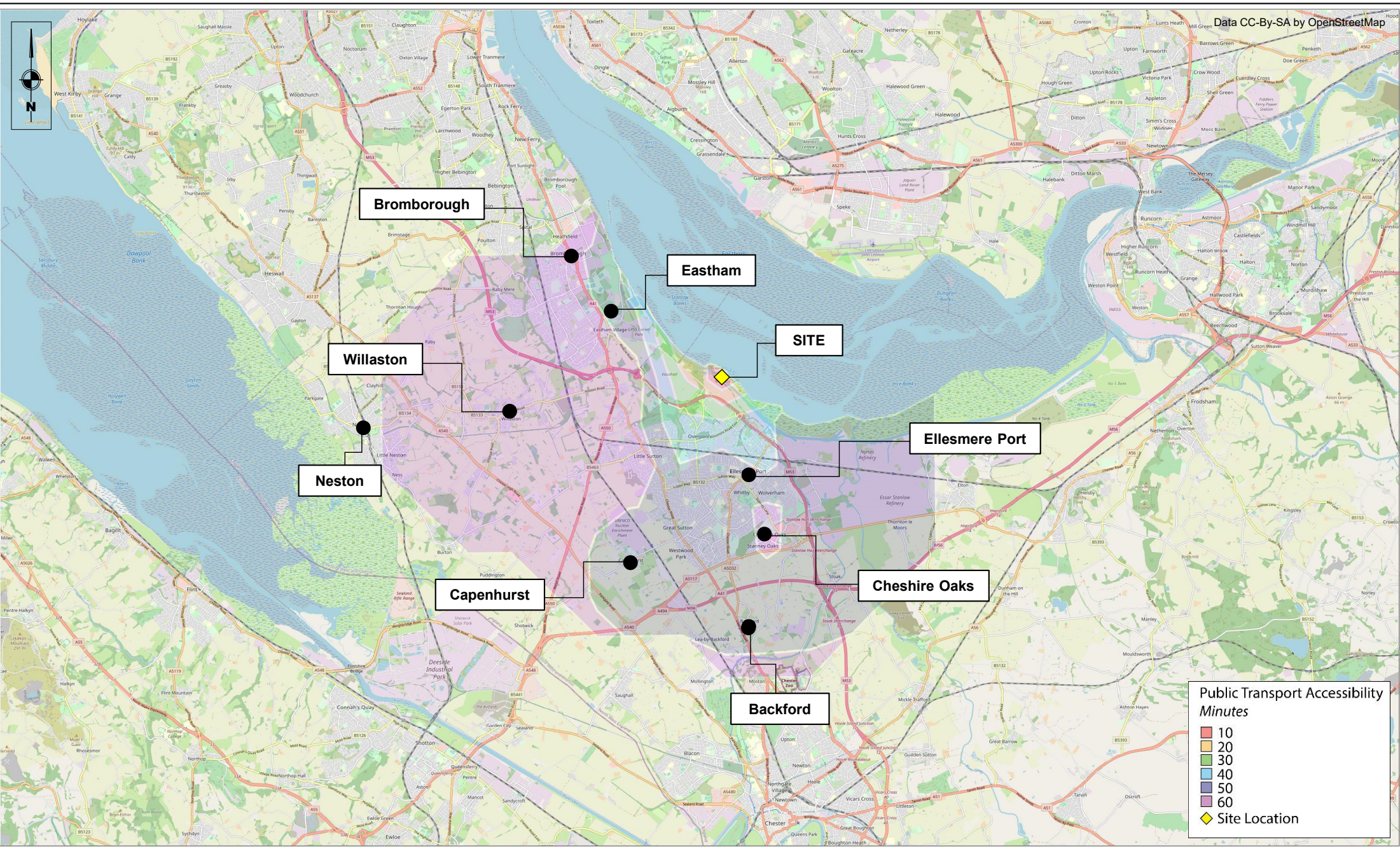
Checked
VP

Status
-

Rev	Description	Date	By
-	-	-	-
-	-	-	-
-	-	-	-

Drawing No.
APPENDIX C

Figure
2



Public Transport Accessibility Minutes

- 10
- 20
- 30
- 40
- 60
- Site Location



Project Title
Link Logistics Park, Ellesmere Port

Drawing Title
Accessibility: 60minute Public Transport Catchment

Job Number
C17876

Date
25.01.2020

Scale
NTS

By	Rev	Description	Date	By
SG	-		-	-
VP	-		-	-
-	-		-	-
-	-		-	-

Drawing No.
APPENDIX C

Figure
3

Appendix E BREEAM Calculator Outputs

Using the drop down boxes make the relevant selections and press the 'Select' button

Building type ▼
 No. nodes required ▼

Select

NODE 1

Public transport type	Bus										
Distance to node (m)	1300										
Average frequency per hour	1.9	Service 1	Service 2	Service 3	Service 4	Service 5	Service 6	Service 7	Service 8	Service 9	Service 10

NODE 2

Public transport type	Rail										
Distance to node (m)	2100										
Average frequency per hour	1	1									

NODE 3

Public transport type	Rail										
Distance to node (m)	3000										
Average frequency per hour	1	1									

NODE 4

Public transport type	Rail										
Distance to node (m)	3100										
Average frequency per hour	1	1									

Accessibility Index	2.54
---------------------	------

Appendix F Proposed Site Layout Plan

- All dimensions and levels are to be checked on site.
- Any discrepancies are to be reported to the architect before any work commences.
- This drawing shall not be scaled to ascertain any dimensions. Work to figured dimensions only.
- This drawing shall not be reproduced without express written permission from AEW.
- Title overlay drawings and ownership boundaries are produced using all reasonable endeavors. AEW cannot be responsible for the accuracy or scale discrepancy of base plans supplied to them.
- All works are to be undertaken in accordance with Building Regulations and the latest British Standards.
- All proprietary materials and products are to be used strictly in accordance with the manufacturers recommendations.

CDM 2015

Client notified of duties:
Principal Designer:
Unless noted below, all known hazards have been highlighted on the drawing:

Note

- Exact boundaries to be confirmed with reference to land registry plans and topographical survey.
- HGV circulation subject to tracking analysis.

— Planning Application Boundary
43.01 acres / 17.40 ha

— LDO Boundary taken from Cheshire West and Chester
Drawing: North Road Industrial Area - LDO Area (DWG required for accuracy)

MP Gas Kiosk

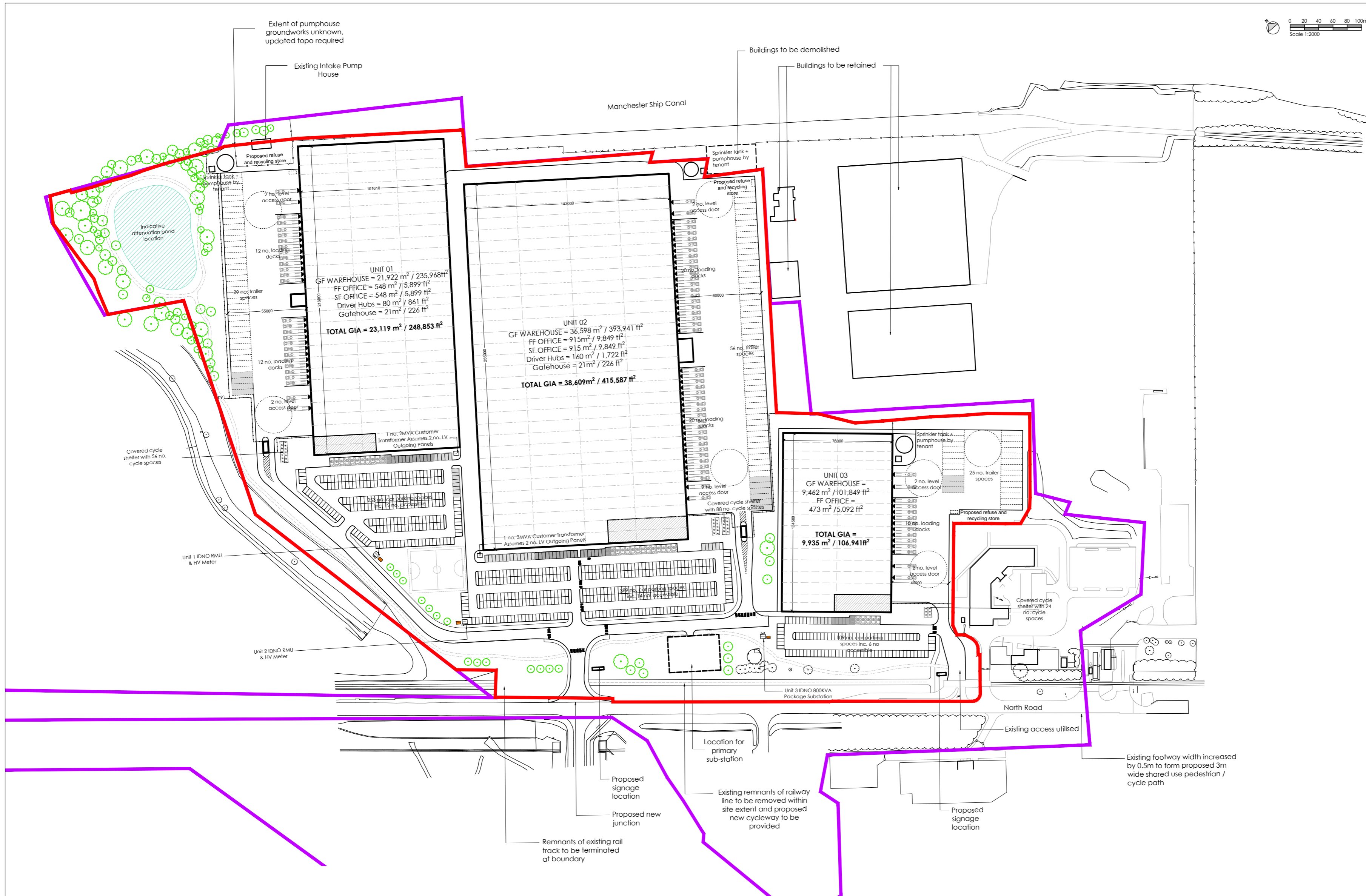
P6	03/03/21	KS	AS
Carriageway width on the bend of the internal road leading to Unit 1 amended.			
P5	02/03/21	KS	AS
Cycle path amended to proposed site access			
P4	25/02/21	KS	AS
Title block updated. Red line boundary updated to the existing site entrance.			
P3	18/02/21	KS	AS
Unit 1 and 2 shared fire track increased to 12.3m and site layout amended to suit. Primary sub-station footprint updated. Proposed site access updated and cycleway added.			
P2	15/02/21	KS	AS
Unit 1 footprint amended to suit updated topo survey. Unit 3 footprint increased to ensure site total GIA remains the same. Parking amended to suit proposed landscape plan			
P1	20/01/21	KS	AS
Initial Issue			
REV	Date	Drawn by: -	Checked by: -
Status Purpose of Issue			
S2	For Comment		
drawing stage	Planning		
client			

Firethorn Developments Ltd

Link Logistics Park
Ellesmere Port

Proposed Site Plan

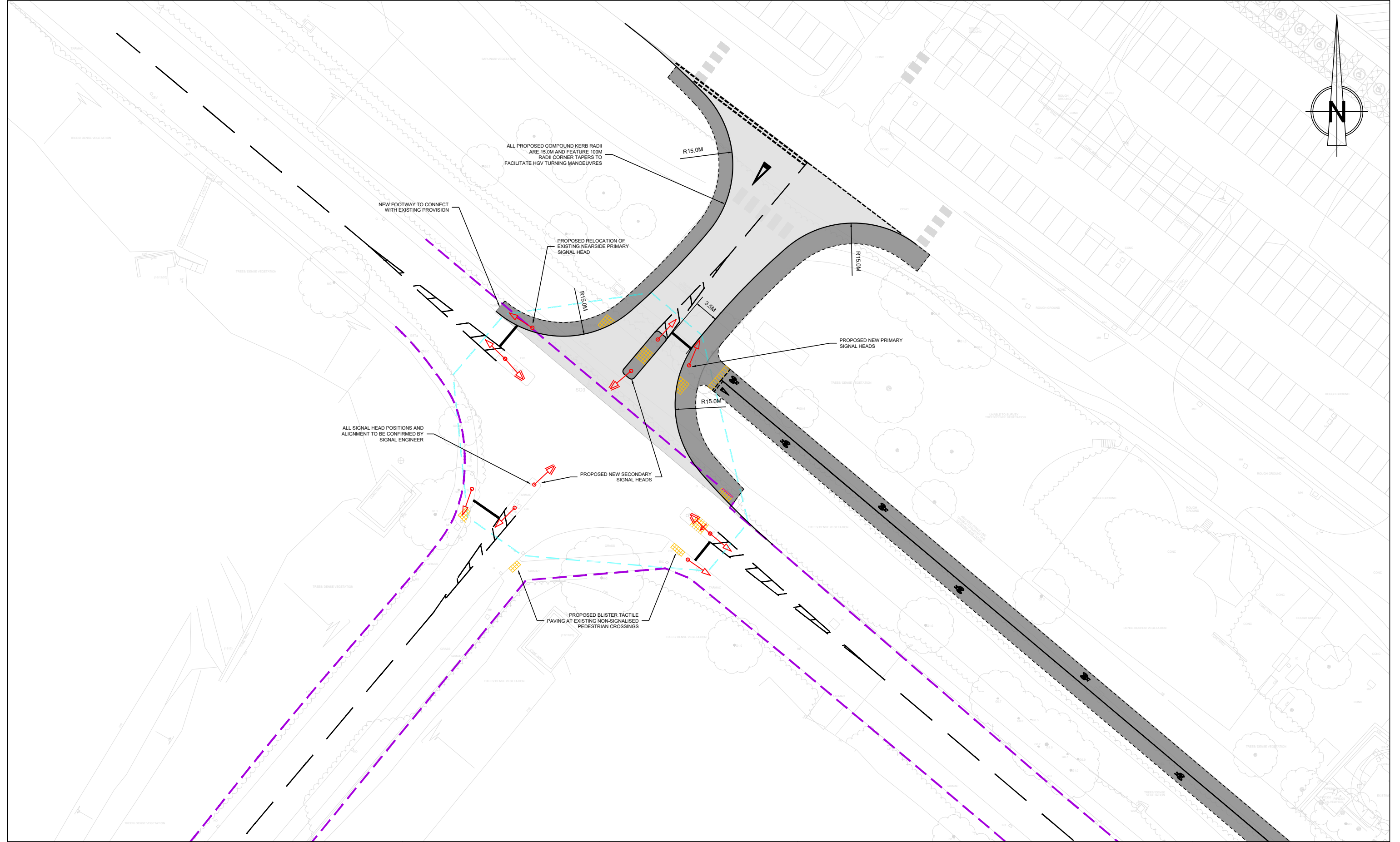
date Nov 2020 drawn DJS
scale@A2 1:2000 checked AS



Schedule of Accommodation

Unit	Ground Floor GIA	Office GIA	Gatehouse	Driver Hubs	TOTAL UNIT GIA	Car Parking (Accessible)	Parking Ratio (/m²)	EV Charging Spaces (Hatched Dark Grey)	Future EV Charging Spaces (Hatched Light Grey)	Ducting for HGV EV Charging (Hatched Light Grey)
Unit 1	21,922m² / 235,968ft²	1,096m² / 11,798ft²	21m² / 226ft²	80m² / 861ft²	23,119m² / 248,853ft²	253 (12)	1:91	13	13	4
Unit 2	36,598m² / 393,941ft²	1,830m² / 19,698ft²	21m² / 226ft²	160m² / 1,722ft²	38,609m² / 402,779ft²	389 (14)	1:99	20	20	6
Unit 3	9,462m² / 101,849ft²	473m² / 5,092ft²	-	-	9,935m² / 106,941ft²	109 (6)	1:92	6	6	3
TOTAL SITE GIA					71,663m² / 771,381ft²	751 (32)		39	39	12

Appendix G Proposed Access Arrangements



KEY PLAN

- PROPOSED NEW KERBLINES
- PROPOSED ROAD MARKINGS
- TACTILE PAVING
- PROPOSED NEW CARRIAGEWAY
- PROPOSED NEW FOOTWAY
- LATERAL EXTENTS OF PUBLIC HIGHWAY
- TRAFFIC SIGNAL HEADS

KEY PLAN (CONTINUED)

- PROPOSED EDGING
- JUNCTION INTERVISIBILITY ZONE

NOTES

- 1) THIS DRAWING IS FOR DISCUSSION PURPOSES ONLY AND NOT FOR CONSTRUCTION
- 2) THE CONTENT OF THIS DRAWING WILL REQUIRE FURTHER WORK SUCH AS A ROAD SAFETY AUDIT AND DETAILED DESIGN
- 3) THIS DRAWING IS BASED ON 3RD PARTY SURVEY INFORMATION

REVISIONS (CONTINUED)

REV	DATE-D	CHKBY	DATE-C	APPBY	DATE-A

REVISIONS

REV	DATE-D	CHKBY	DATE-C	APPBY	DATE-A
P02					
VP	23/03/2021	SD	23/03/2021	SD	23/03/2021
P01					
VP	18/02/2021	SD	18/02/2021	SD	18/02/2021
REVNOTES					

Hydrock

CLIENT
FIRETHORN DEVELOPMENTS LIMITED

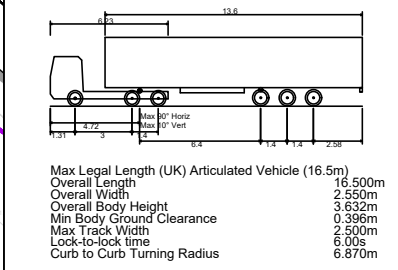
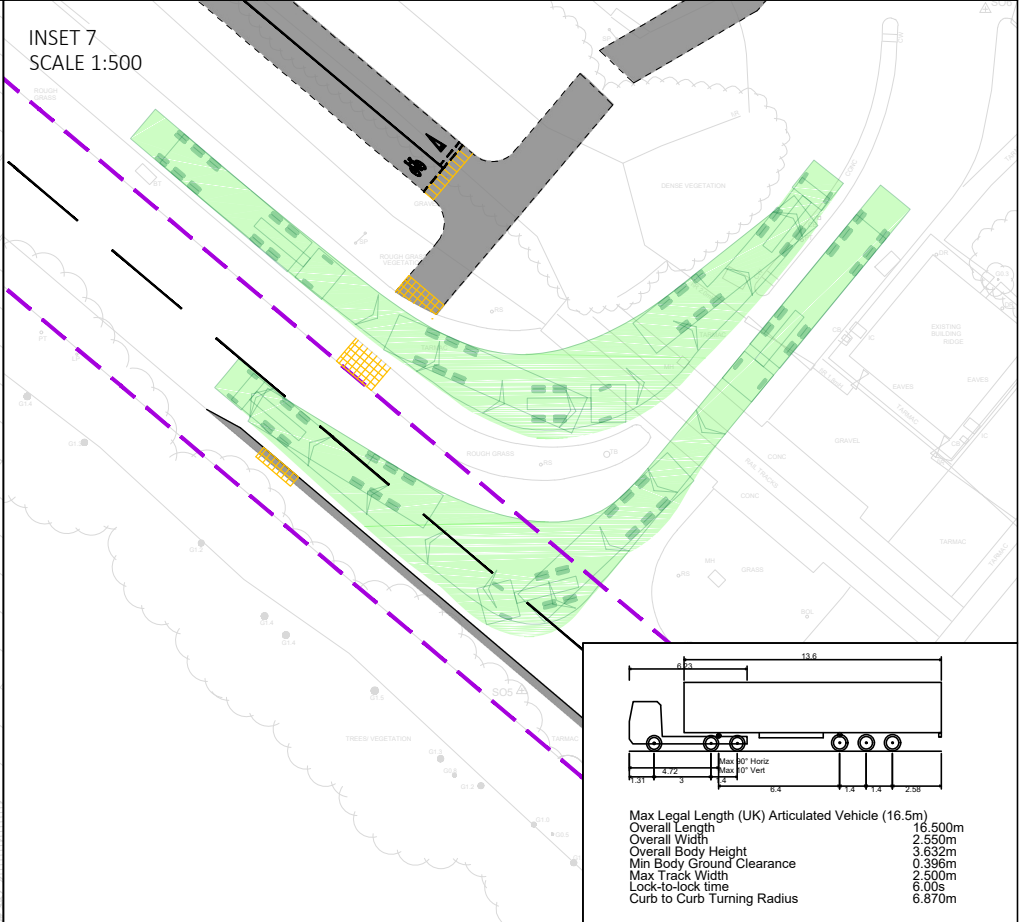
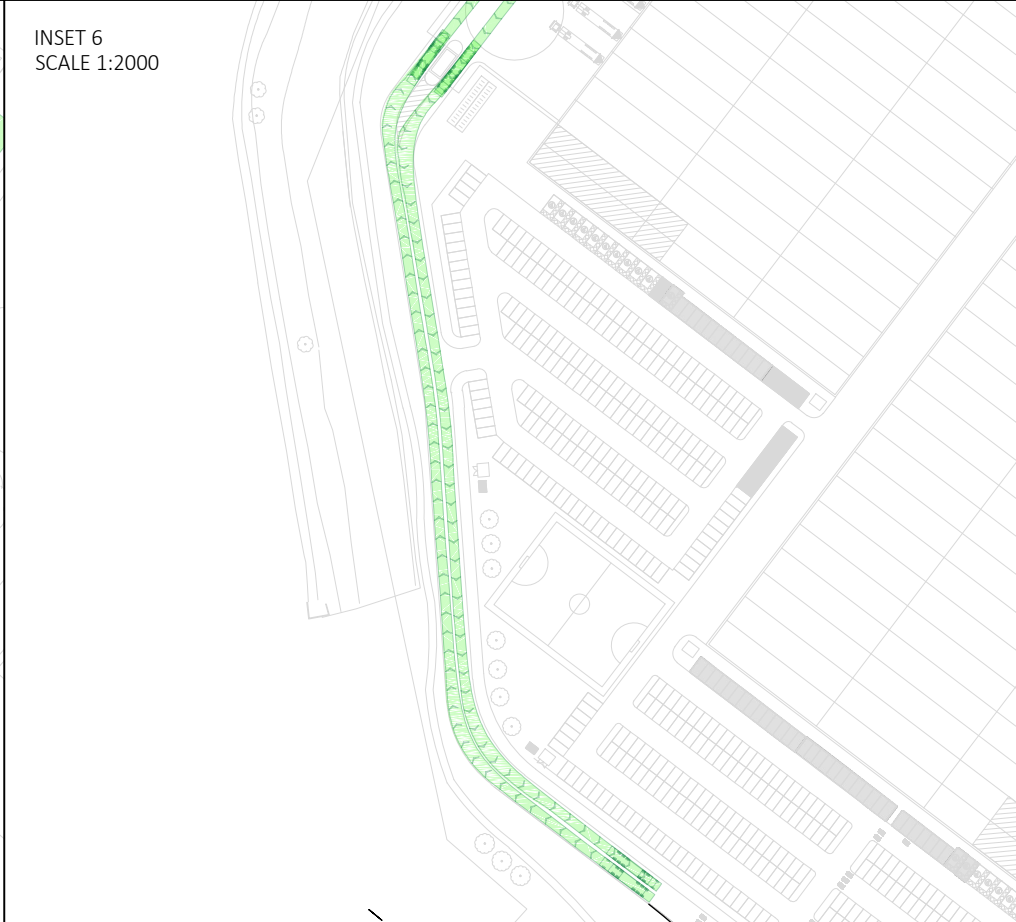
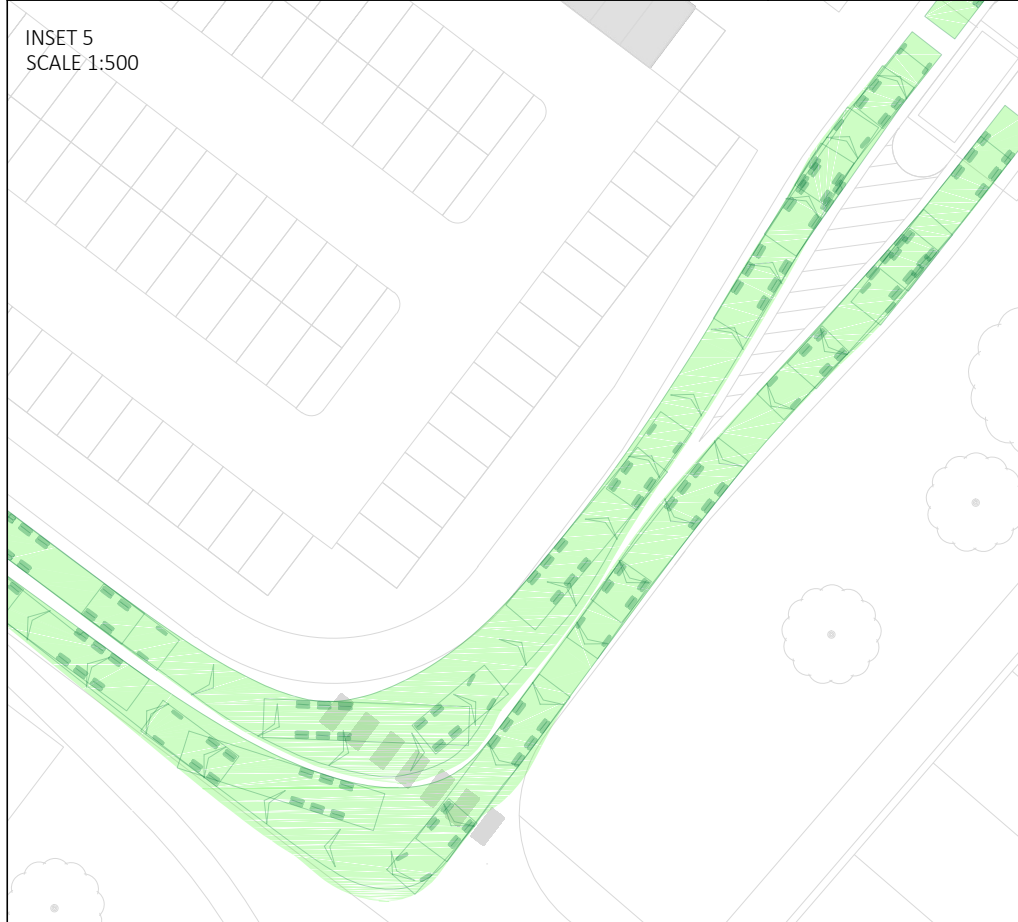
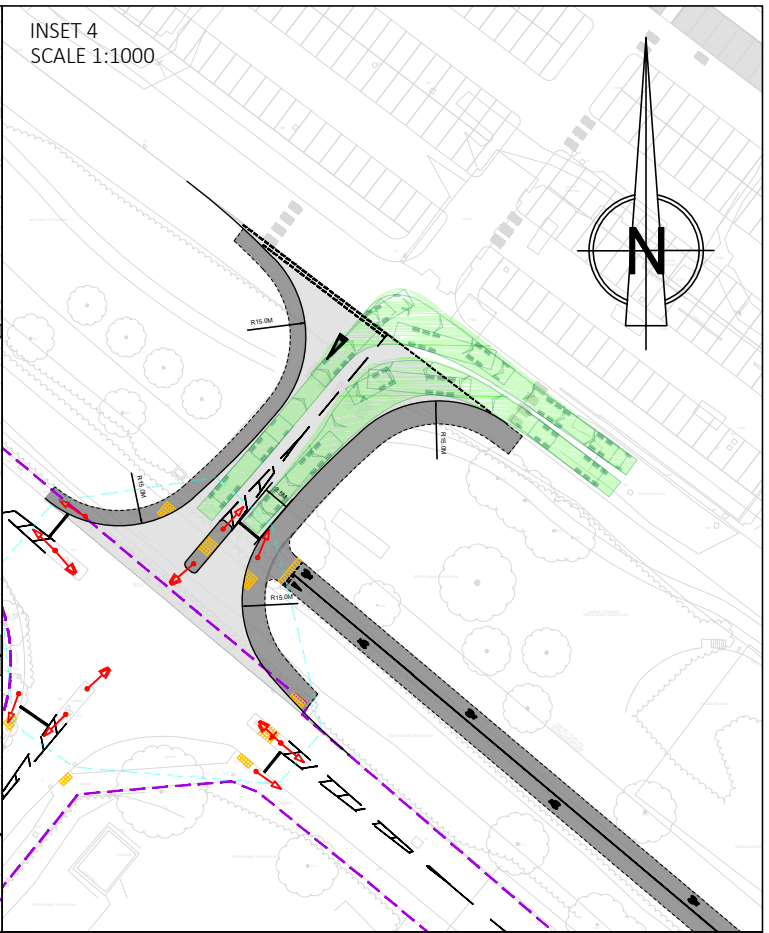
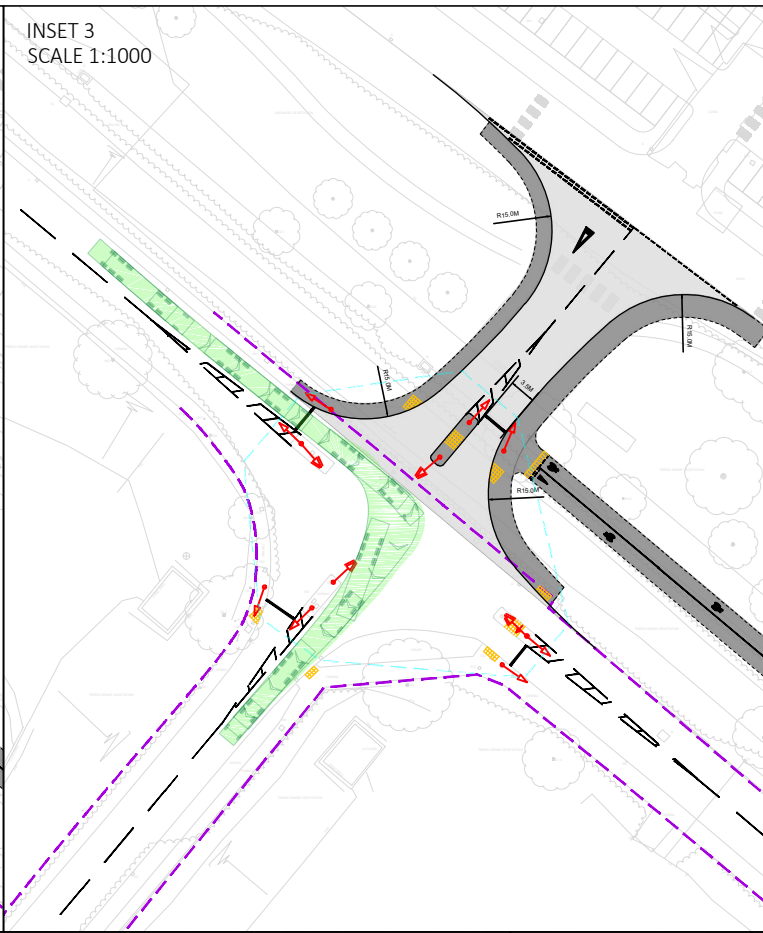
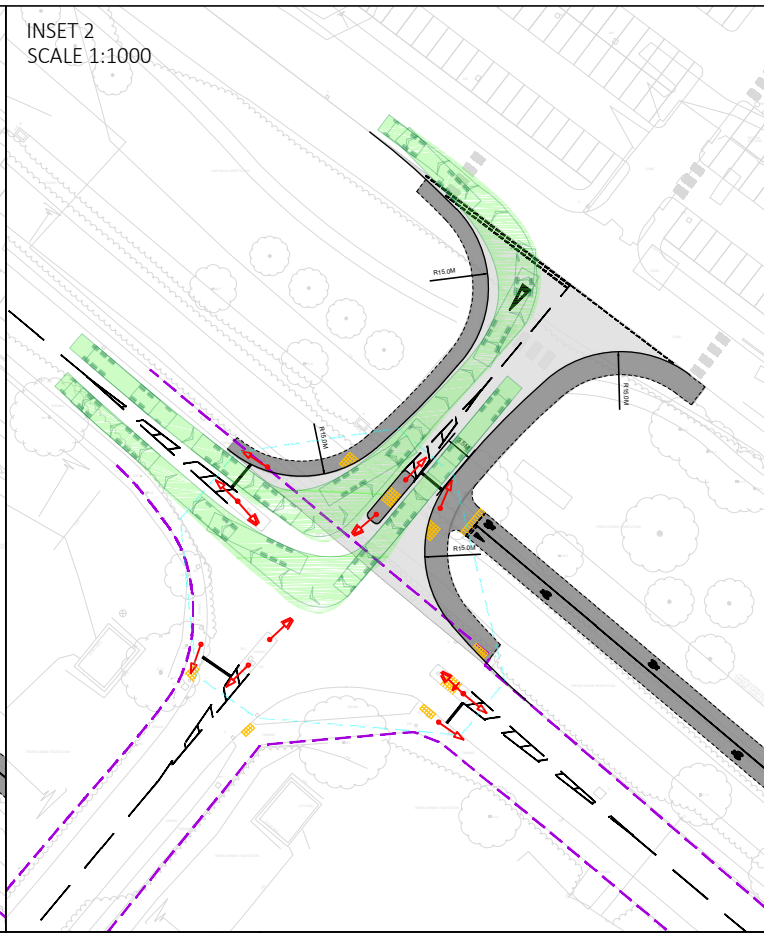
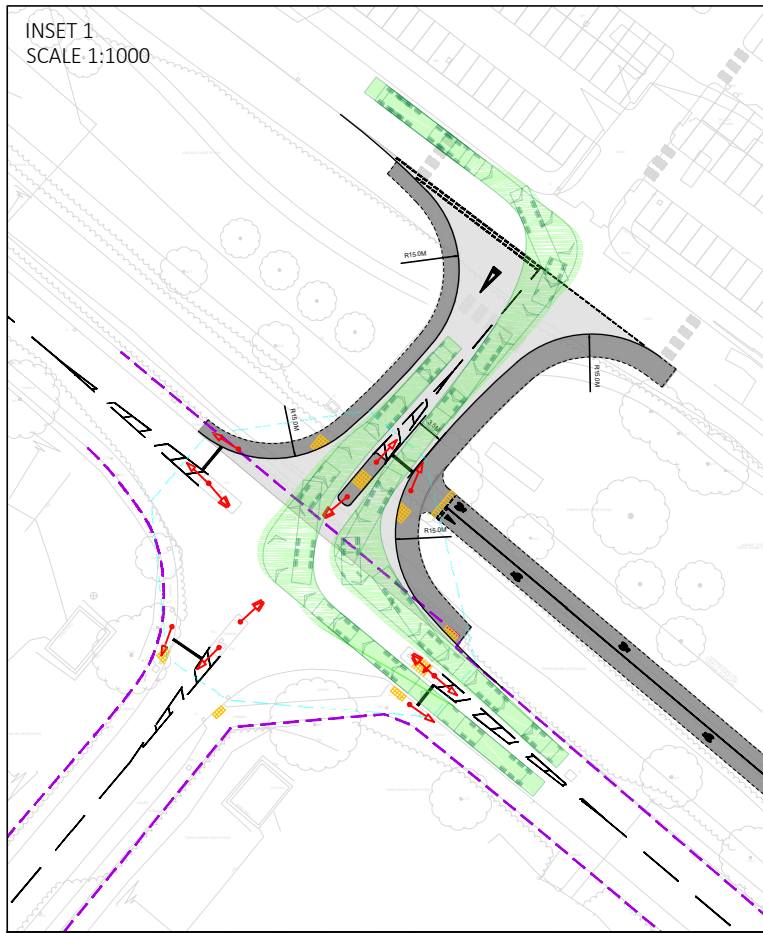
PROJECT
LINKS DISTRIBUTION PARK, ELLESMERE PORT

TITLE

PROPOSED SITE ACCESS JUNCTION
GENERAL ARRANGEMENT DESIGN

HYDROCK PROJECT NO. C-17876	SCALE @ A3 1:500
STATUS DESCRIPTION SUITABLE FOR REVIEW AND COMMENT	STATUS S3
DRAWING NO. 17876-HYD-XX-XX-DR-TP-0001	REVISION P02

Appendix H Swept Path Analysis (Access)



KEY PLAN

■	VEHICLE BODY IN FORWARD GEAR
■	VEHICLE BODY IN REVERSE GEAR
---	VEHICLE CHASSIS IN FORWARD GEAR
---	VEHICLE CHASSIS IN REVERSE GEAR

NOTES

NOTES (CONTINUED)

REVISIONS (CONTINUED)

REVISIONS

SECOND ISSUE					
P02	VP	03/03/2021	SD	03/03/2021	SD
FIRST ISSUE					
P01	VP	18/02/2021	SD	18/02/2021	SD
REVNOTES					
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					DATE-A

Hydrock

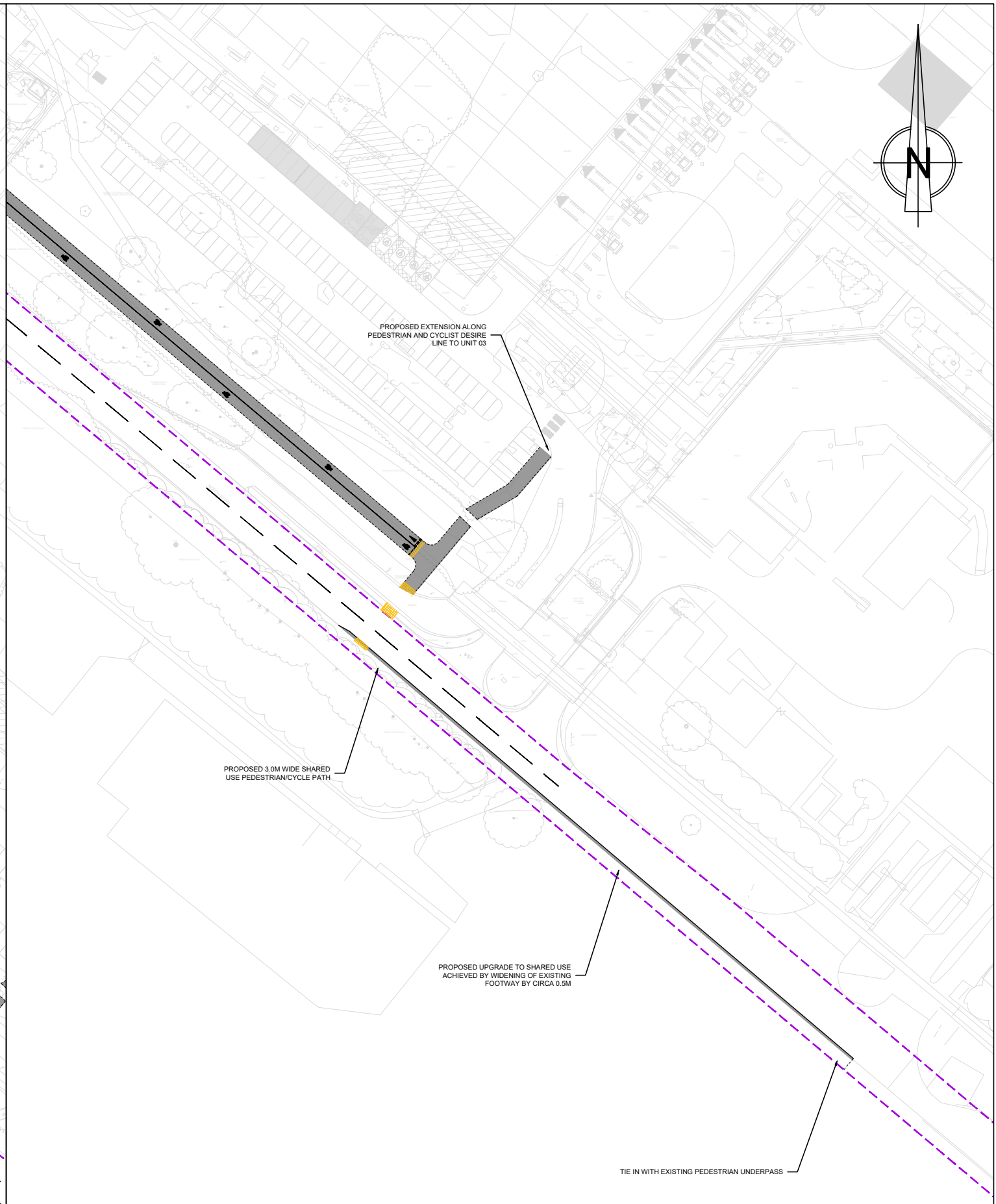
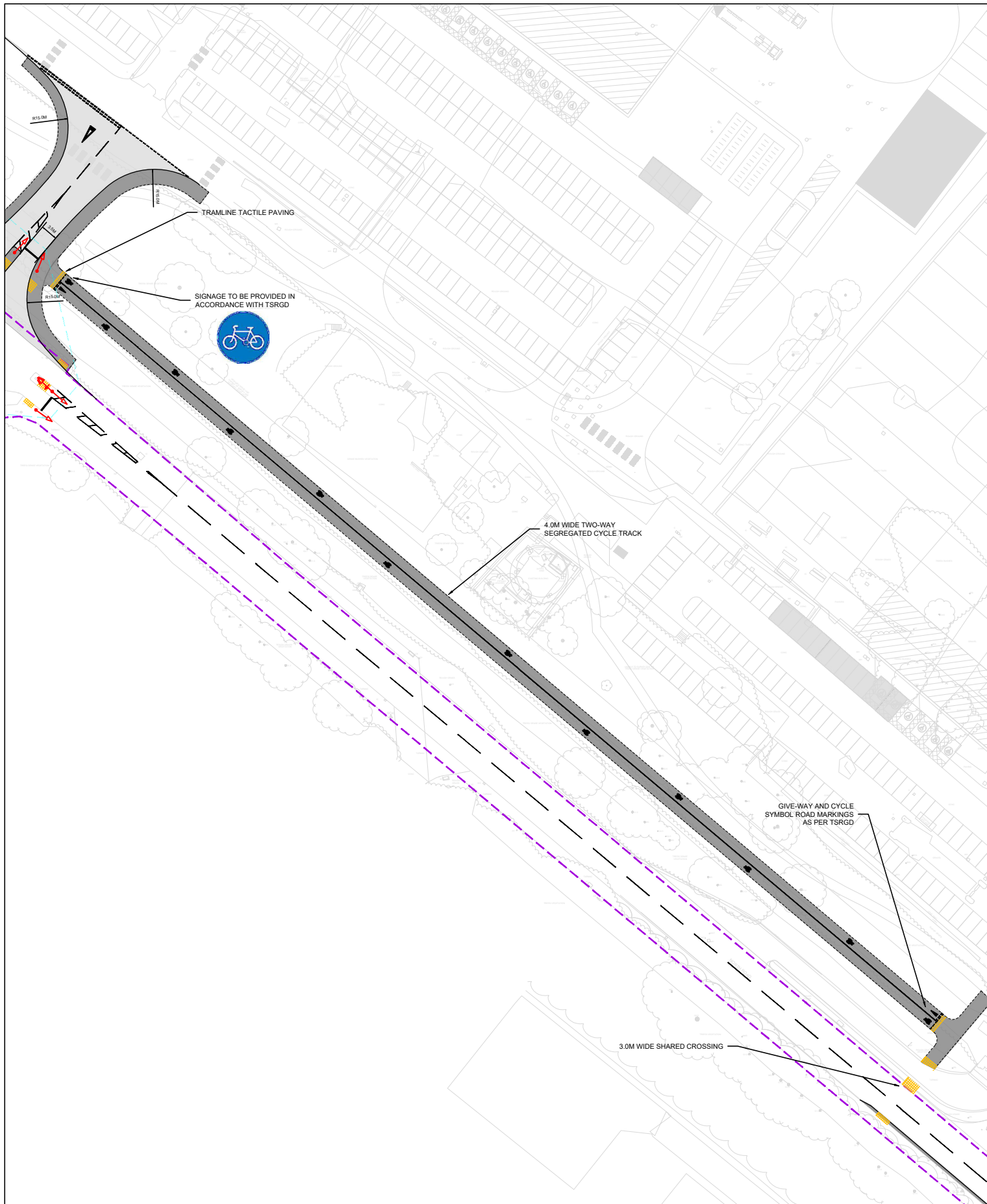
CLIENT
FIRETHORN DEVELOPMENTS LIMITED

PROJECT
LINKS DISTRIBUTION PARK, ELLESMERE PORT

TITLE
SITE ACCESS SWEEP PATH ANALYSIS
16.5M ARTICULATED VEHICLE

HYDROCK PROJECT NO. C-17876	SCALE @ A3 AS STATED
STATUS DESCRIPTION SUITABLE FOR REVIEW AND COMMENT	STATUS S3
DRAWING NO. 17876-HYD-XX-XX-DR-TP-0003	REVISION P02

Appendix I Proposed Active Travel Improvements



KEY PLAN

	PROPOSED NEW KERBLINES
	PROPOSED EDGING
	PROPOSED ROAD MARKINGS
	TACTILE PAVING
	PROPOSED NEW FOOTWAY
	LATERAL EXTENTS OF PUBLIC HIGHWAY

NOTES

- 1) THIS DRAWING IS FOR DISCUSSION PURPOSES ONLY AND NOT FOR CONSTRUCTION
- 2) THE CONTENT OF THIS DRAWING WILL REQUIRE FURTHER WORK SUCH AS A ROAD SAFETY AUDIT AND DETAILED DESIGN
- 3) THIS DRAWING IS BASED ON 3RD PARTY SURVEY INFORMATION

NOTES (CONTINUED)

REVISIONS (CONTINUED)

REVISIONS

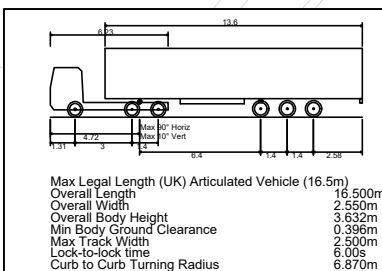
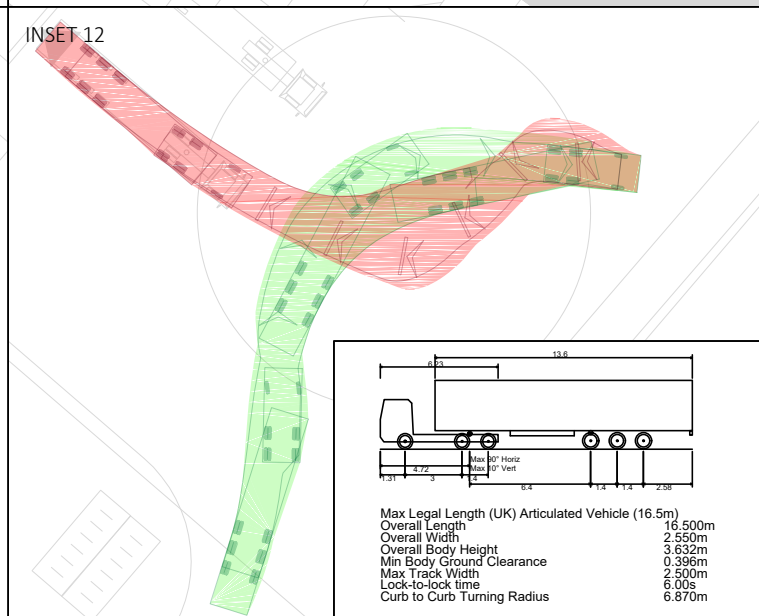
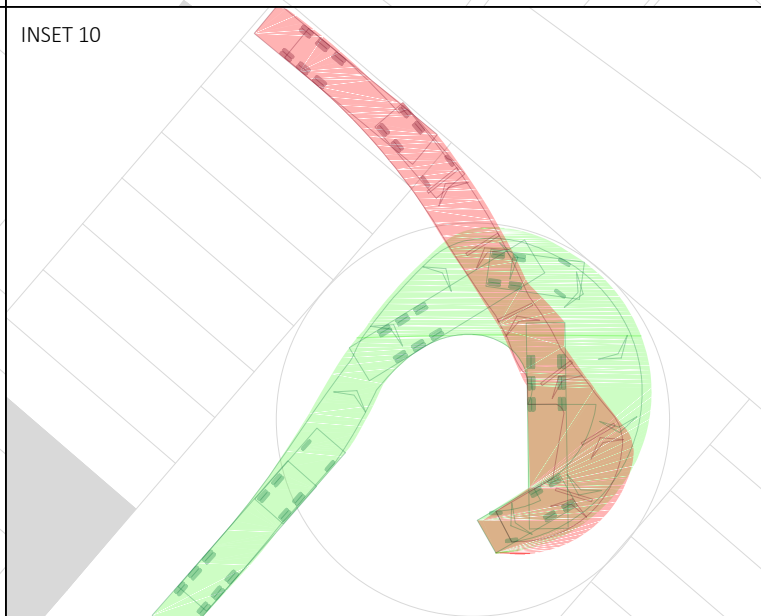
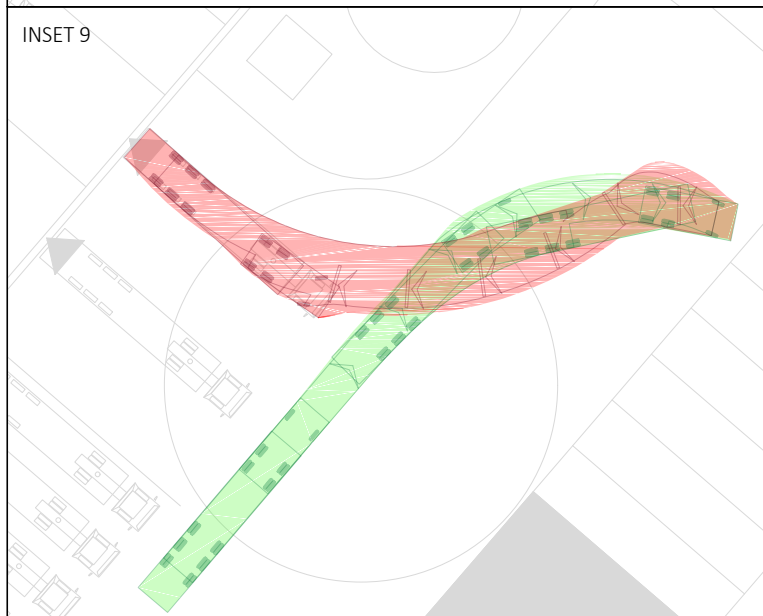
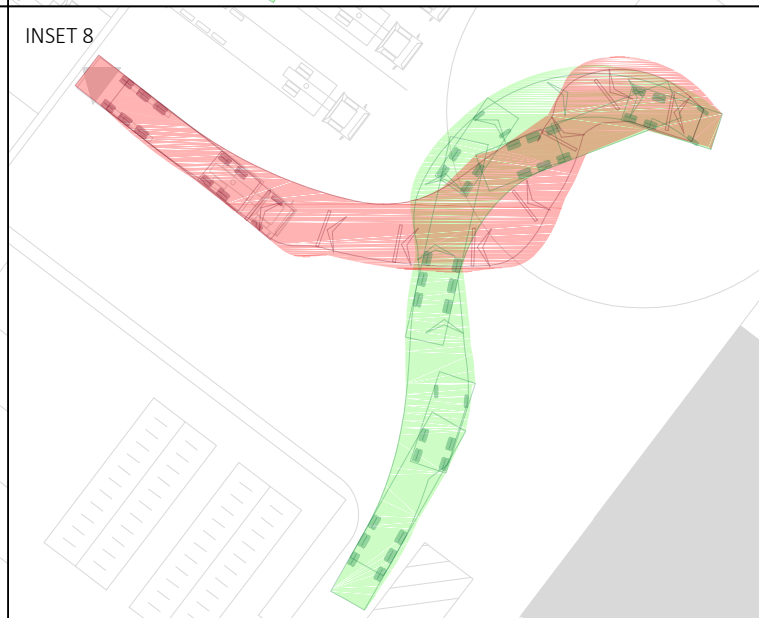
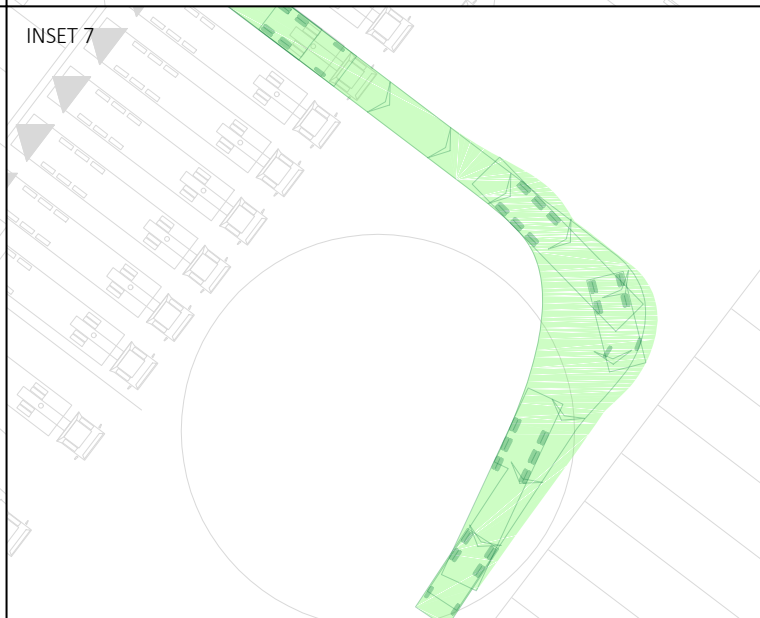
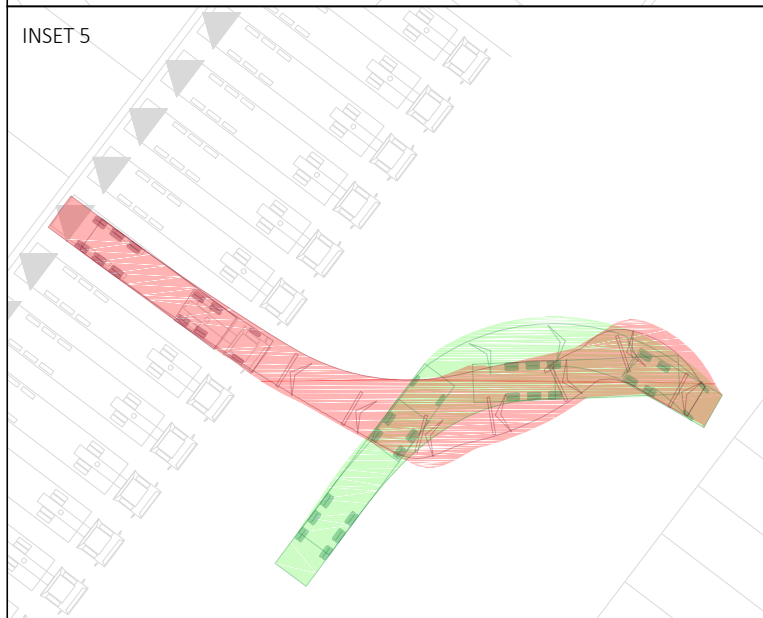
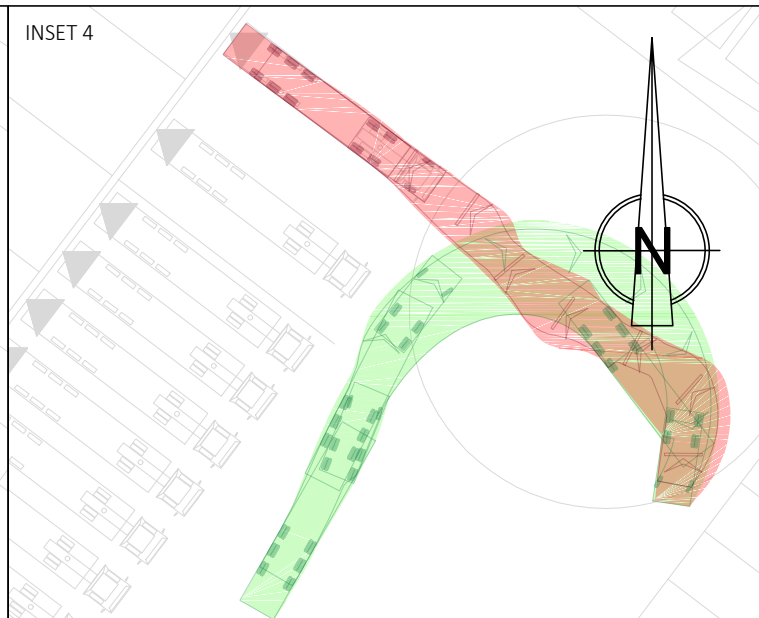
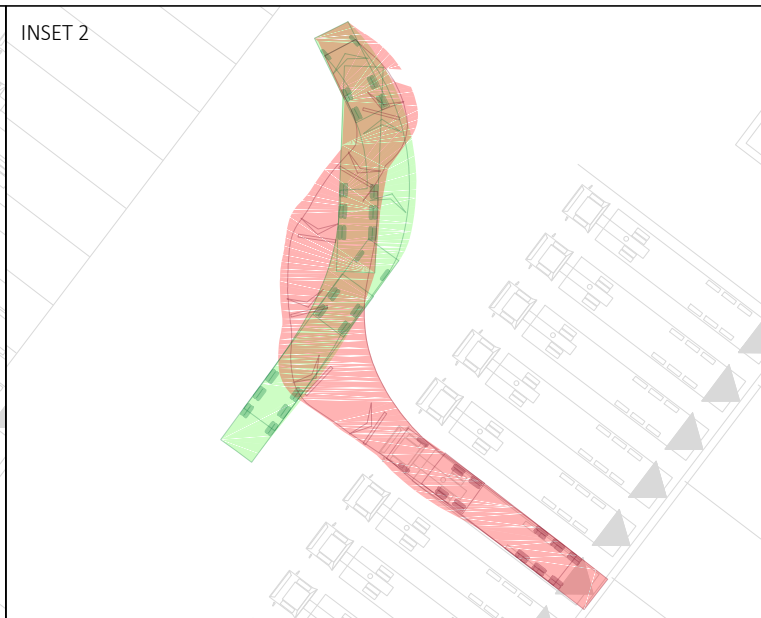
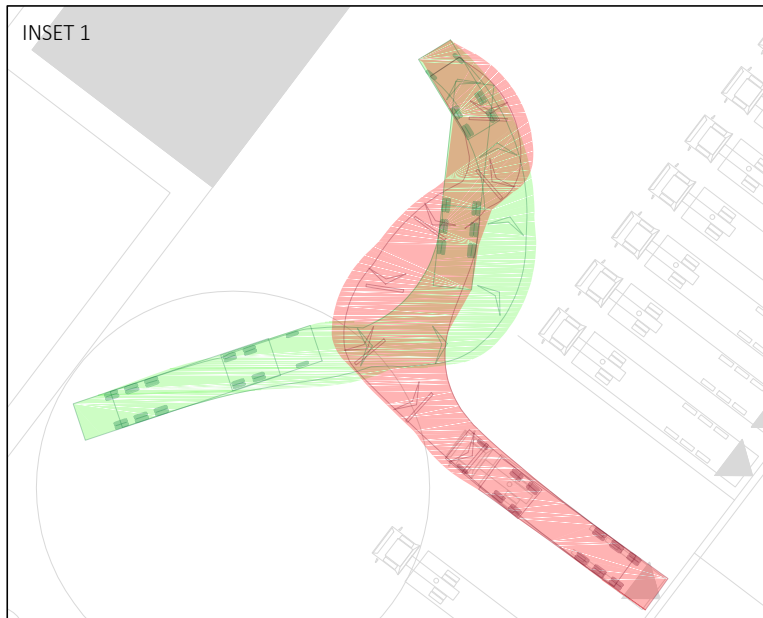
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FIRST ISSUE					
P01	VP	18/02/2021	SD	18/02/2021	SD
REVNOTES					
REV	DRAWNBY	DATE-D	CHKBY	DATE-C	APPBY DATE-A

CLIENT
FIRETHORN DEVELOPMENTS LIMITED

PROJECT
LINKS DISTRIBUTION PARK, ELLESMERE PORT

TITLE PROPOSED CYCLE LINK GENERAL ARRANGEMENT DESIGN	
HYDROCK PROJECT NO. C-17876	SCALE @ A3 1:1000
STATUS DESCRIPTION SUITABLE FOR REVIEW AND COMMENT	STATUS S3
DRAWING NO. 17876-HYD-XX-XX-DR-TP-0002	REVISION P02

Appendix J Swept Path Analysis (Parking)



KEY PLAN

■	VEHICLE BODY IN FORWARD GEAR
■	VEHICLE BODY IN REVERSE GEAR
—	VEHICLE CHASSIS IN FORWARD GEAR
—	VEHICLE CHASSIS IN REVERSE GEAR

NOTES

NOTES (CONTINUED)

REVISIONS (CONTINUED)

REVISIONS

SECOND ISSUE						
P02	VP	03/03/2021	SD	03/03/2021	SD	03/03/2021
FIRST ISSUE						
P01	VP	18/02/2021	SD	18/02/2021	SD	18/02/2021
REVNOTES						
REV	DRAWNBY	DATE-D	CHKBY	DATE-C	APPBY	DATE-A

Hydrock

CLIENT
FIRETHORN DEVELOPMENTS LIMITED

PROJECT
LINKS DISTRIBUTION PARK, ELLESMERE PORT

TITLE
PARKING SWEEP PATH ANALYSIS

16.5M ARTICULATED VEHICLE

HYDROCK PROJECT NO. C-17876	SCALE @ A3 1:500
STATUS DESCRIPTION SUITABLE FOR REVIEW AND COMMENT	STATUS S3
DRAWING NO. 17876-HYD-XX-XX-DR-TP-0004	REVISION P02

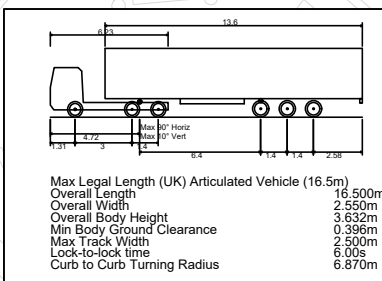
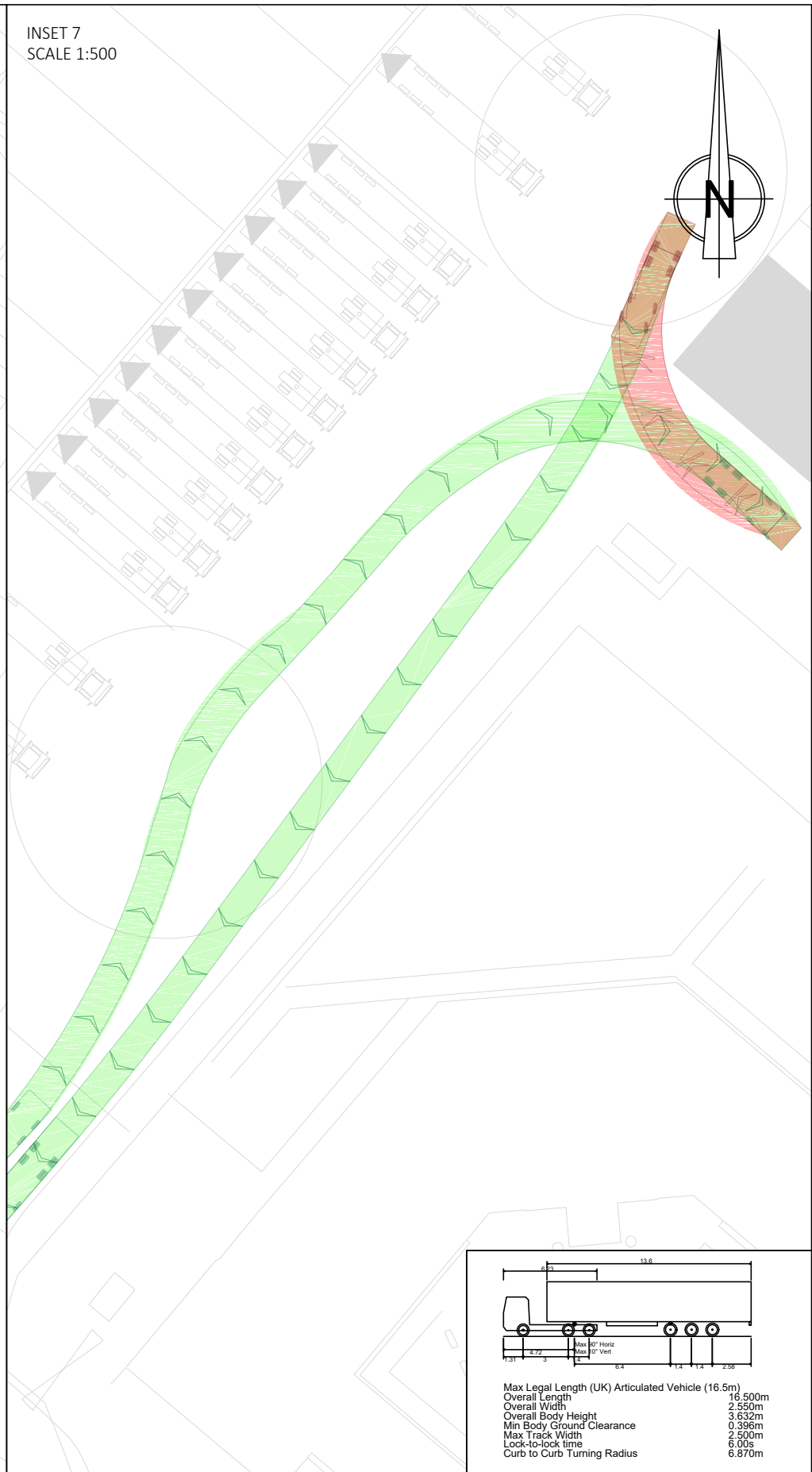
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SCALE 1:500



INSET 6
SCALE 1:2000



INSET 7
SCALE 1:500



KEY PLAN

	VEHICLE BODY IN FORWARD GEAR
	VEHICLE BODY IN REVERSE GEAR
	VEHICLE CHASSIS IN FORWARD GEAR
	VEHICLE CHASSIS IN REVERSE GEAR

NOTES

NOTES (CONTINUED)

REVISIONS (CONTINUED)

REVISIONS

SECOND ISSUE						
P02	VP	03/03/2021	SD	03/03/2021	SD	03/03/2021
FIRST ISSUE						
P01	VP	18/02/2021	SD	18/02/2021	SD	18/02/2021
REVNOTES						
REV	DRAWNBY	DATE-D	CHKBY	DATE-C	APPBY	DATE-A

CLIENT
FIRETHORN DEVELOPMENTS LIMITED

PROJECT
LINKS DISTRIBUTION PARK, ELLESMERE PORT

TITLE SERVICING SWEEP PATH ANALYSIS	
LARGE 4-AXLE REFUSE VEHICLE	
HYDROCK PROJECT NO. C-17876	SCALE @ A3 AS STATED
STATUS DESCRIPTION SUITABLE FOR REVIEW AND COMMENT	STATUS S3
DRAWING NO. 17876-HYD-XX-XX-DR-TP-0005	REVISION P02

Appendix K TRICS Output Reports

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

TOTAL VEHICLESSelected regions and areas:

02 SOUTH EAST		
EX ESSEX		1 days
HF HERTFORDSHIRE		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		
TV TEES VALLEY		1 days
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 80066 (units: sqm)
 Range Selected by User: 190 to 80066 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 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	2 days
Wednesday	1 days
Thursday	2 days
Friday	3 days

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

Selected survey types:

Manual count	9 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	7
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	6
Commercial Zone	1
Out of Town	1
No Sub Category	1

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

Secondary Filtering selection:Use Class:

B8	9 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 Use Class 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	2 days
10,001 to 15,000	3 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
100,001 to 125,000	1 days
125,001 to 250,000	4 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	4 days
1.1 to 1.5	5 days

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

Travel Plan:

Yes	1 days
No	8 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	9 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

Site(1):	DV-02-F-02	Gross floor area:	50000 sqm
Development Name:	LIDL DISTRIBUTION CENTRE	Parking spaces:	549
Location:	NEAR EXETER	No of Employees:	740
Postcode:	EX5 2FU	Survey Date:	03/04/19
Main Location Type:	Free Standing (PPS6 Out of Town)	Survey Day:	Wednesday
Sub-Location Type:	Out of Town		
PTAL:	n/a		
Site(2):	EX-02-F-01	Gross floor area:	6560 sqm
Development Name:	SPORTS SUPPLEMENTS	Parking spaces:	224
Location:	COLCHESTER	No of Employees:	60
Postcode:	CO4 9XP	Survey Date:	18/05/18
Main Location Type:	Edge of Town	Survey Day:	Friday
Sub-Location Type:	Industrial Zone		
PTAL:	n/a		
Site(3):	HF-02-F-03	Gross floor area:	80000 sqm
Development Name:	DISTRIBUTION CEN.	Parking spaces:	592
Location:	HATFIELD	No of Employees:	1200
Postcode:	AL10 9TR	Survey Date:	10/07/08
Main Location Type:	Edge of Town	Survey Day:	Thursday
Sub-Location Type:	Commercial Zone		
PTAL:	n/a		
Site(4):	KC-02-F-02	Gross floor area:	11200 sqm
Development Name:	COMMERCIAL WAREHOUSING	Parking spaces:	70
Location:	AYLESFORD	No of Employees:	131
Postcode:	ME20 7NB	Survey Date:	22/09/17
Main Location Type:	Edge of Town	Survey Day:	Friday
Sub-Location Type:	Industrial Zone		
PTAL:	n/a		
Site(5):	LN-02-F-01	Gross floor area:	32300 sqm
Development Name:	BOOK SERVICE	Parking spaces:	83
Location:	GRANTHAM	No of Employees:	131
Postcode:	NG31 7XQ	Survey Date:	29/11/10
Main Location Type:	Edge of Town	Survey Day:	Monday
Sub-Location Type:	No Sub Category		
PTAL:	n/a		
Site(6):	TV-02-F-02	Gross floor area:	80066 sqm
Development Name:	ARGOS WAREHOUSE	Parking spaces:	832
Location:	DARLINGTON	No of Employees:	510
Postcode:	DL3 0UR	Survey Date:	07/10/08
Main Location Type:	Edge of Town	Survey Day:	Tuesday
Sub-Location Type:	Industrial Zone		
PTAL:	n/a		
Site(7):	TW-02-F-01	Gross floor area:	31000 sqm
Development Name:	ASDA DISTRIBUTION CENTRE	Parking spaces:	432
Location:	WASHINGTON	No of Employees:	700
Postcode:	NE38 8QG	Survey Date:	13/11/15
Main Location Type:	Edge of Town	Survey Day:	Friday
Sub-Location Type:	Industrial Zone		
PTAL:	n/a		
Site(8):	WR-02-F-01	Gross floor area:	9000 sqm
Development Name:	WAREHOUSE	Parking spaces:	24
Location:	NEAR WREXHAM	No of Employees:	19
Postcode:	LL13 9RJ	Survey Date:	18/10/11
Main Location Type:	Free Standing (PPS6 Out of Town)	Survey Day:	Tuesday
Sub-Location Type:	Industrial Zone		
PTAL:	n/a		
Site(9):	WY-02-F-02	Gross floor area:	10446 sqm
Development Name:	DISTRIBUTION COMPANY	Parking spaces:	215
Location:	BRADFORD	No of Employees:	260
Postcode:	BD6 1DW	Survey Date:	14/03/19
Main Location Type:	Edge of Town	Survey Day:	Thursday
Sub-Location Type:	Industrial Zone		
PTAL:	n/a		

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 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	2	30223	0.026	2	30223	0.018	2	30223	0.044
05:30 - 06:00	2	30223	0.055	2	30223	0.028	2	30223	0.083
06:00 - 06:30	2	30223	0.050	2	30223	0.045	2	30223	0.095
06:30 - 07:00	2	30223	0.086	2	30223	0.023	2	30223	0.109
07:00 - 07:30	9	34508	0.042	9	34508	0.026	9	34508	0.068
07:30 - 08:00	9	34508	0.058	9	34508	0.033	9	34508	0.091
08:00 - 08:30	9	34508	0.038	9	34508	0.026	9	34508	0.064
08:30 - 09:00	9	34508	0.043	9	34508	0.024	9	34508	0.067
09:00 - 09:30	9	34508	0.044	9	34508	0.026	9	34508	0.070
09:30 - 10:00	9	34508	0.040	9	34508	0.028	9	34508	0.068
10:00 - 10:30	9	34508	0.025	9	34508	0.029	9	34508	0.054
10:30 - 11:00	9	34508	0.025	9	34508	0.024	9	34508	0.049
11:00 - 11:30	9	34508	0.025	9	34508	0.028	9	34508	0.053
11:30 - 12:00	9	34508	0.027	9	34508	0.029	9	34508	0.056
12:00 - 12:30	9	34508	0.030	9	34508	0.033	9	34508	0.063
12:30 - 13:00	9	34508	0.027	9	34508	0.029	9	34508	0.056
13:00 - 13:30	9	34508	0.042	9	34508	0.035	9	34508	0.077
13:30 - 14:00	9	34508	0.060	9	34508	0.052	9	34508	0.112
14:00 - 14:30	9	34508	0.031	9	34508	0.053	9	34508	0.084
14:30 - 15:00	9	34508	0.036	9	34508	0.042	9	34508	0.078
15:00 - 15:30	9	34508	0.033	9	34508	0.049	9	34508	0.082
15:30 - 16:00	9	34508	0.038	9	34508	0.041	9	34508	0.079
16:00 - 16:30	9	34508	0.037	9	34508	0.052	9	34508	0.089
16:30 - 17:00	9	34508	0.026	9	34508	0.049	9	34508	0.075
17:00 - 17:30	9	34508	0.019	9	34508	0.050	9	34508	0.069
17:30 - 18:00	9	34508	0.018	9	34508	0.038	9	34508	0.056
18:00 - 18:30	9	34508	0.011	9	34508	0.034	9	34508	0.045
18:30 - 19:00	9	34508	0.009	9	34508	0.024	9	34508	0.033
19:00 - 19:30	2	30223	0.017	2	30223	0.041	2	30223	0.058
19:30 - 20:00	2	30223	0.012	2	30223	0.013	2	30223	0.025
20:00 - 20:30	2	30223	0.010	2	30223	0.017	2	30223	0.027
20:30 - 21:00	2	30223	0.031	2	30223	0.017	2	30223	0.048
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			1.071			1.056			2.127

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 - 80066 (units: sqm)
Survey date date range:	01/01/08 - 03/04/19
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	6

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

TRIP RATE for Land Use 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 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30	2	30223	0.008	2	30223	0.012	2	30223	0.020
05:30 - 06:00	2	30223	0.018	2	30223	0.020	2	30223	0.038
06:00 - 06:30	2	30223	0.017	2	30223	0.025	2	30223	0.042
06:30 - 07:00	2	30223	0.026	2	30223	0.018	2	30223	0.044
07:00 - 07:30	9	34508	0.010	9	34508	0.010	9	34508	0.020
07:30 - 08:00	9	34508	0.010	9	34508	0.011	9	34508	0.021
08:00 - 08:30	9	34508	0.011	9	34508	0.012	9	34508	0.023
08:30 - 09:00	9	34508	0.011	9	34508	0.011	9	34508	0.022
09:00 - 09:30	9	34508	0.012	9	34508	0.011	9	34508	0.023
09:30 - 10:00	9	34508	0.013	9	34508	0.010	9	34508	0.023
10:00 - 10:30	9	34508	0.014	9	34508	0.013	9	34508	0.027
10:30 - 11:00	9	34508	0.009	9	34508	0.010	9	34508	0.019
11:00 - 11:30	9	34508	0.010	9	34508	0.014	9	34508	0.024
11:30 - 12:00	9	34508	0.007	9	34508	0.012	9	34508	0.019
12:00 - 12:30	9	34508	0.011	9	34508	0.014	9	34508	0.025
12:30 - 13:00	9	34508	0.007	9	34508	0.009	9	34508	0.016
13:00 - 13:30	9	34508	0.006	9	34508	0.010	9	34508	0.016
13:30 - 14:00	9	34508	0.010	9	34508	0.009	9	34508	0.019
14:00 - 14:30	9	34508	0.009	9	34508	0.006	9	34508	0.015
14:30 - 15:00	9	34508	0.006	9	34508	0.008	9	34508	0.014
15:00 - 15:30	9	34508	0.009	9	34508	0.008	9	34508	0.017
15:30 - 16:00	9	34508	0.012	9	34508	0.007	9	34508	0.019
16:00 - 16:30	9	34508	0.013	9	34508	0.007	9	34508	0.020
16:30 - 17:00	9	34508	0.011	9	34508	0.007	9	34508	0.018
17:00 - 17:30	9	34508	0.010	9	34508	0.004	9	34508	0.014
17:30 - 18:00	9	34508	0.009	9	34508	0.009	9	34508	0.018
18:00 - 18:30	9	34508	0.004	9	34508	0.007	9	34508	0.011
18:30 - 19:00	9	34508	0.004	9	34508	0.005	9	34508	0.009
19:00 - 19:30	2	30223	0.005	2	30223	0.015	2	30223	0.020
19:30 - 20:00	2	30223	0.005	2	30223	0.003	2	30223	0.008
20:00 - 20:30	2	30223	0.008	2	30223	0.010	2	30223	0.018
20:30 - 21:00	2	30223	0.007	2	30223	0.005	2	30223	0.012
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.322			0.332			0.654

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 CALCULATION SELECTION PARAMETERS:

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

TOTAL VEHICLESSelected regions and areas:

03	SOUTH WEST	
	DV DEVON	1 days
05	EAST MIDLANDS	
	NR NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS	
	HE HEREFORDSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 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: 1880 to 20000 (units: sqm)
 Range Selected by User: 150 to 80000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 04/09/20

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
Thursday	1 days

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	5
--------------	---

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	3
Commercial Zone	1
Development Zone	1

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

Secondary Filtering selection:Use Class:

B2 4 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 Use Class Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	1 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	2 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	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 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 5 days

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

LIST OF SITES relevant to selection parameters

Site(1):	CH-02-C-03	Site area:	0.91 hect
Development Name:	OFFICE FURNITURE	Gross floor area:	6658 sqm
Location:	MACCLESFIELD	Parking spaces:	97
Postcode:	SK11 0TA	No of Employees:	122
Main Location Type:	Edge of Town	Survey Date:	19/09/16
Sub-Location Type:	Development Zone	Survey Day:	Monday
PTAL:	n/a		
Site(2):	DV-02-C-01	Site area:	6.13 hect
Development Name:	TUBE MANUFACTURE	Gross floor area:	20000 sqm
Location:	PLYMOUTH	Parking spaces:	185
Postcode:	PL6 7LG	No of Employees:	372
Main Location Type:	Edge of Town	Survey Date:	17/07/12
Sub-Location Type:	Industrial Zone	Survey Day:	Tuesday
PTAL:	n/a		
Site(3):	EB-02-C-02	Site area:	5.44 hect
Development Name:	FOOD PRODUCTION	Gross floor area:	19805 sqm
Location:	EDINBURGH	Parking spaces:	68
Postcode:	EH11 4HN	No of Employees:	600
Main Location Type:	Edge of Town	Survey Date:	25/10/10
Sub-Location Type:	Industrial Zone	Survey Day:	Monday
PTAL:	n/a		
Site(4):	HE-02-C-02	Site area:	0.63 hect
Development Name:	THERMAL PROCESSING	Gross floor area:	1880 sqm
Location:	HEREFORD	Parking spaces:	27
Postcode:	HR1 1JR	No of Employees:	15
Main Location Type:	Edge of Town	Survey Date:	22/10/13
Sub-Location Type:	Commercial Zone	Survey Day:	Tuesday
PTAL:	n/a		
Site(5):	NR-02-C-01	Site area:	4.10 hect
Development Name:	PAPER COMPANY	Gross floor area:	11500 sqm
Location:	NORTHAMPTON	Parking spaces:	142
Postcode:	NN4 7JE	No of Employees:	120
Main Location Type:	Edge of Town	Survey Date:	27/11/08
Sub-Location Type:	Industrial Zone	Survey Day:	Thursday
PTAL:	n/a		

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 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	5	11969	0.060	5	11969	0.017	5	11969	0.077
07:30 - 08:00	5	11969	0.122	5	11969	0.023	5	11969	0.145
08:00 - 08:30	5	11969	0.080	5	11969	0.027	5	11969	0.107
08:30 - 09:00	5	11969	0.082	5	11969	0.015	5	11969	0.097
09:00 - 09:30	5	11969	0.055	5	11969	0.013	5	11969	0.068
09:30 - 10:00	5	11969	0.032	5	11969	0.028	5	11969	0.060
10:00 - 10:30	5	11969	0.027	5	11969	0.015	5	11969	0.042
10:30 - 11:00	5	11969	0.028	5	11969	0.012	5	11969	0.040
11:00 - 11:30	5	11969	0.025	5	11969	0.023	5	11969	0.048
11:30 - 12:00	5	11969	0.012	5	11969	0.020	5	11969	0.032
12:00 - 12:30	5	11969	0.028	5	11969	0.043	5	11969	0.071
12:30 - 13:00	5	11969	0.033	5	11969	0.040	5	11969	0.073
13:00 - 13:30	5	11969	0.055	5	11969	0.072	5	11969	0.127
13:30 - 14:00	5	11969	0.105	5	11969	0.025	5	11969	0.130
14:00 - 14:30	5	11969	0.047	5	11969	0.134	5	11969	0.181
14:30 - 15:00	5	11969	0.040	5	11969	0.028	5	11969	0.068
15:00 - 15:30	5	11969	0.030	5	11969	0.070	5	11969	0.100
15:30 - 16:00	5	11969	0.040	5	11969	0.045	5	11969	0.085
16:00 - 16:30	5	11969	0.017	5	11969	0.042	5	11969	0.059
16:30 - 17:00	5	11969	0.008	5	11969	0.109	5	11969	0.117
17:00 - 17:30	5	11969	0.010	5	11969	0.087	5	11969	0.097
17:30 - 18:00	5	11969	0.010	5	11969	0.074	5	11969	0.084
18:00 - 18:30	5	11969	0.012	5	11969	0.028	5	11969	0.040
18:30 - 19:00	5	11969	0.008	5	11969	0.022	5	11969	0.030
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.966			1.012			1.978

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:	1880 - 20000 (units: sqm)
Survey date date range:	01/01/08 - 04/09/20
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

TOTAL VEHICLESSelected regions and areas:

03	SOUTH WEST	
	DV DEVON	1 days
05	EAST MIDLANDS	
	NR NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS	
	HE HEREFORDSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 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: 1880 to 20000 (units: sqm)
 Range Selected by User: 150 to 80000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 04/09/20

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
Thursday	1 days

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	5
--------------	---

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	3
Commercial Zone	1
Development Zone	1

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

Secondary Filtering selection:Use Class:

B2	4 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 Use Class Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	1 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	2 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	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	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	5 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

1	CH-02-C-03	OFFICE FURNITURE	CHESHIRE
	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
2	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
3	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
4	HE-02-C-02	THERMAL PROCESSING	HEREFORDSHIRE
	COLLEGE ROAD		
	HEREFORD		
	BURCOTT		
	Edge of Town		
	Commercial Zone		
	Total Gross floor area:	1880 sqm	
	Survey date: TUESDAY	22/10/13	Survey Type: MANUAL
5	NR-02-C-01	PAPER COMPANY	NORTHAMPTONSHIRE
	RHOSILI ROAD		
	NORTHAMPTON		
	BRACKMILLS		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	11500 sqm	
	Survey date: THURSDAY	27/11/08	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.

Hydrock Consultants Ltd Tolvaddon Energy Park Camborne

Licence No: 540501

RANK ORDER for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

TOTAL VEHICLES

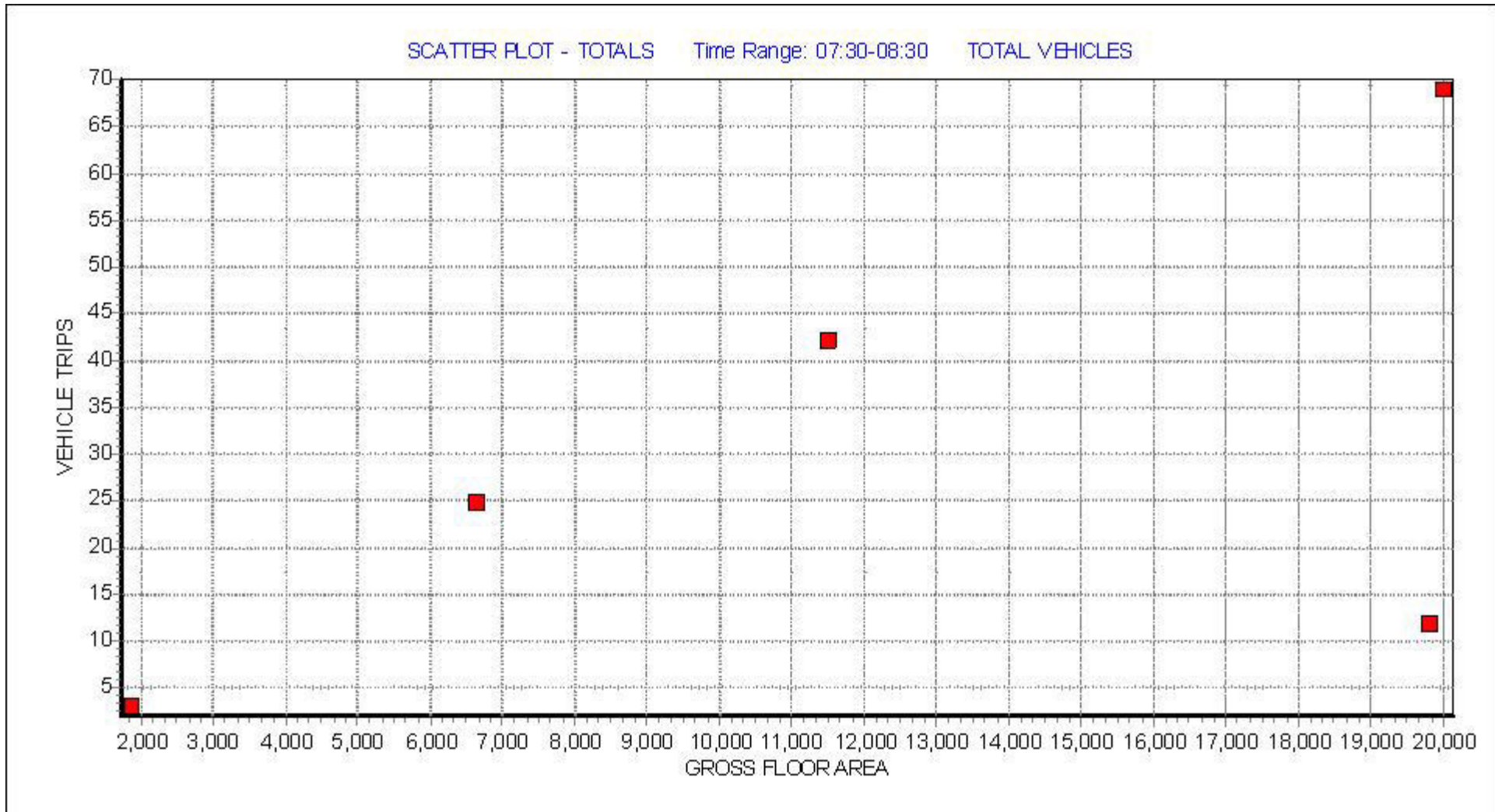
Ranking Type: **TOTALS** Time Range: 07:30-08:30
Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

<u>Median Values</u>		<u>Mean Values</u>	
Arrivals: 0.280		Arrivals: 0.211	
Departures: 0.065		Departures: 0.050	
Totals: 0.345		Totals: 0.261	

Rank	Site-Ref	Description	Town/City	Area	GFA	Day	Date	Trip Rate (Sorted by Totals)		
								Arrivals	Departures	Totals
1	CH-02-C-03	OFFICE FURNITU	MACCLESFIELD	CHESHIRE	6658	Mon	19/09/16	0.270	0.105	0.375
2	NR-02-C-01	PAPER COMPANY	NORTHAMPTON	NORTHAMPTONSHIRE	11500	Thu	27/11/08	0.296	0.070	0.366
3	DV-02-C-01	TUBE MANUFACTU	PLYMOUTH	DEVON	20000	Tue	17/07/12	0.280	0.065	0.345
4	HE-02-C-02	THERMAL PROCES	HEREFORD	HEREFORDSHIRE	1880	Tue	22/10/13	0.160	0.000	0.160
5	EB-02-C-02	FOOD PRODUCTIO	EDINBURGH	CITY OF EDINBURGH	19805	Mon	25/10/10	0.050	0.010	0.060

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.



This graph is a visual representation of the correlation between the selected trip rate calculation parameter and the rank order trip rates generated by each individual survey day in the selected set. The range of the trip rate parameter is shown along the x axis, with the level of trips shown on the y axis. The selected time range used to create the rank order list from which the graph is derived is displayed at the top of the graph (unless the peak period irrespective of time range has been selected). A line of best fit is sometimes displayed in the graph, should it be selected for inclusion by the user.

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

TOTAL VEHICLESSelected regions and areas:

03 SOUTH WEST		
DV	DEVON	1 days
05 EAST MIDLANDS		
NR	NORTHAMPTONSHIRE	1 days
06 WEST MIDLANDS		
HE	HEREFORDSHIRE	1 days
08 NORTH WEST		
CH	CHESHIRE	1 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: 1880 to 20000 (units: sqm)
 Range Selected by User: 150 to 80000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 04/09/20

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
Thursday	1 days

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	5
--------------	---

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	3
Commercial Zone	1
Development Zone	1

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

Secondary Filtering selection:Use Class:

B2 4 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 Use Class Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	1 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	2 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	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 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 5 days

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

LIST OF SITES relevant to selection parameters

1	CH-02-C-03	OFFICE FURNITURE	CHESHIRE
	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
2	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
3	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
4	HE-02-C-02	THERMAL PROCESSING	HEREFORDSHIRE
	COLLEGE ROAD		
	HEREFORD		
	BURCOTT		
	Edge of Town		
	Commercial Zone		
	Total Gross floor area:	1880 sqm	
	Survey date: TUESDAY	22/10/13	Survey Type: MANUAL
5	NR-02-C-01	PAPER COMPANY	NORTHAMPTONSHIRE
	RHOSILI ROAD		
	NORTHAMPTON		
	BRACKMILLS		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	11500 sqm	
	Survey date: THURSDAY	27/11/08	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.

Hydrock Consultants Ltd Tolvaddon Energy Park Camborne

Licence No: 540501

RANK ORDER for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

TOTAL VEHICLES

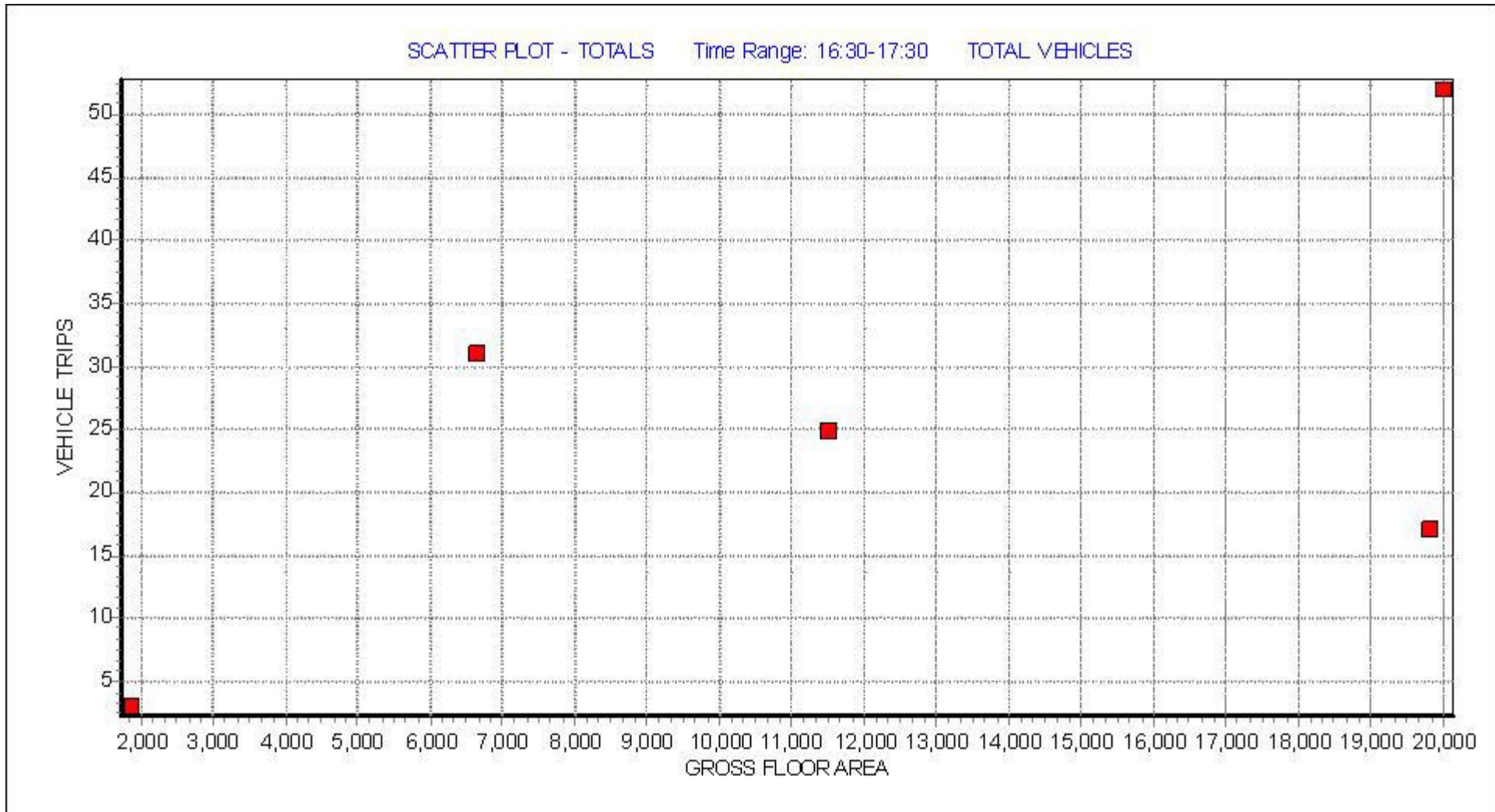
Ranking Type: **TOTALS** Time Range: 16:30-17:30
Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

<u>Median Values</u>		<u>Mean Values</u>	
Arrivals: 0.043		Arrivals: 0.015	
Departures: 0.174		Departures: 0.223	
Totals: 0.217		Totals: 0.238	

Rank	Site-Ref	Description	Town/City	Area	GFA	Day	Date	Trip Rate (Sorted by Totals)		
								Arrivals	Departures	Totals
1	CH-02-C-03	OFFICE FURNITU	MACCLESFIELD	CHESHIRE	6658	Mon	19/09/16	0.000	0.466	0.466
2	DV-02-C-01	TUBE MANUFACTU	PLYMOUTH	DEVON	20000	Tue	17/07/12	0.020	0.240	0.260
3	NR-02-C-01	PAPER COMPANY	NORTHAMPTON	NORTHAMPTONSHIRE	11500	Thu	27/11/08	0.043	0.174	0.217
4	HE-02-C-02	THERMAL PROCES	HEREFORD	HEREFORDSHIRE	1880	Tue	22/10/13	0.000	0.160	0.160
5	EB-02-C-02	FOOD PRODUCTIO	EDINBURGH	CITY OF EDINBURGH	19805	Mon	25/10/10	0.010	0.076	0.086

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.



This graph is a visual representation of the correlation between the selected trip rate calculation parameter and the rank order trip rates generated by each individual survey day in the selected set. The range of the trip rate parameter is shown along the x axis, with the level of trips shown on the y axis. The selected time range used to create the rank order list from which the graph is derived is displayed at the top of the graph (unless the peak period irrespective of time range has been selected). A line of best fit is sometimes displayed in the graph, should it be selected for inclusion by the user.

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

OGVSSelected regions and areas:

03	SOUTH WEST	
	DV DEVON	1 days
05	EAST MIDLANDS	
	NR NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS	
	HE HEREFORDSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 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: 1880 to 20000 (units: sqm)
 Range Selected by User: 150 to 80000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 04/09/20

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
Thursday	1 days

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	5
--------------	---

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	3
Commercial Zone	1
Development Zone	1

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

Secondary Filtering selection:Use Class:

B2	4 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 Use Class Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	1 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	2 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	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	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	5 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

1	CH-02-C-03	OFFICE FURNITURE	CHESHIRE
	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
2	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
3	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
4	HE-02-C-02	THERMAL PROCESSING	HEREFORDSHIRE
	COLLEGE ROAD		
	HEREFORD		
	BURCOTT		
	Edge of Town		
	Commercial Zone		
	Total Gross floor area:	1880 sqm	
	Survey date: TUESDAY	22/10/13	Survey Type: MANUAL
5	NR-02-C-01	PAPER COMPANY	NORTHAMPTONSHIRE
	RHOSILI ROAD		
	NORTHAMPTON		
	BRACKMILLS		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	11500 sqm	
	Survey date: THURSDAY	27/11/08	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.

Hydrock Consultants Ltd Tolvaddon Energy Park Camborne

Licence No: 540501

RANK ORDER for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

OGVS

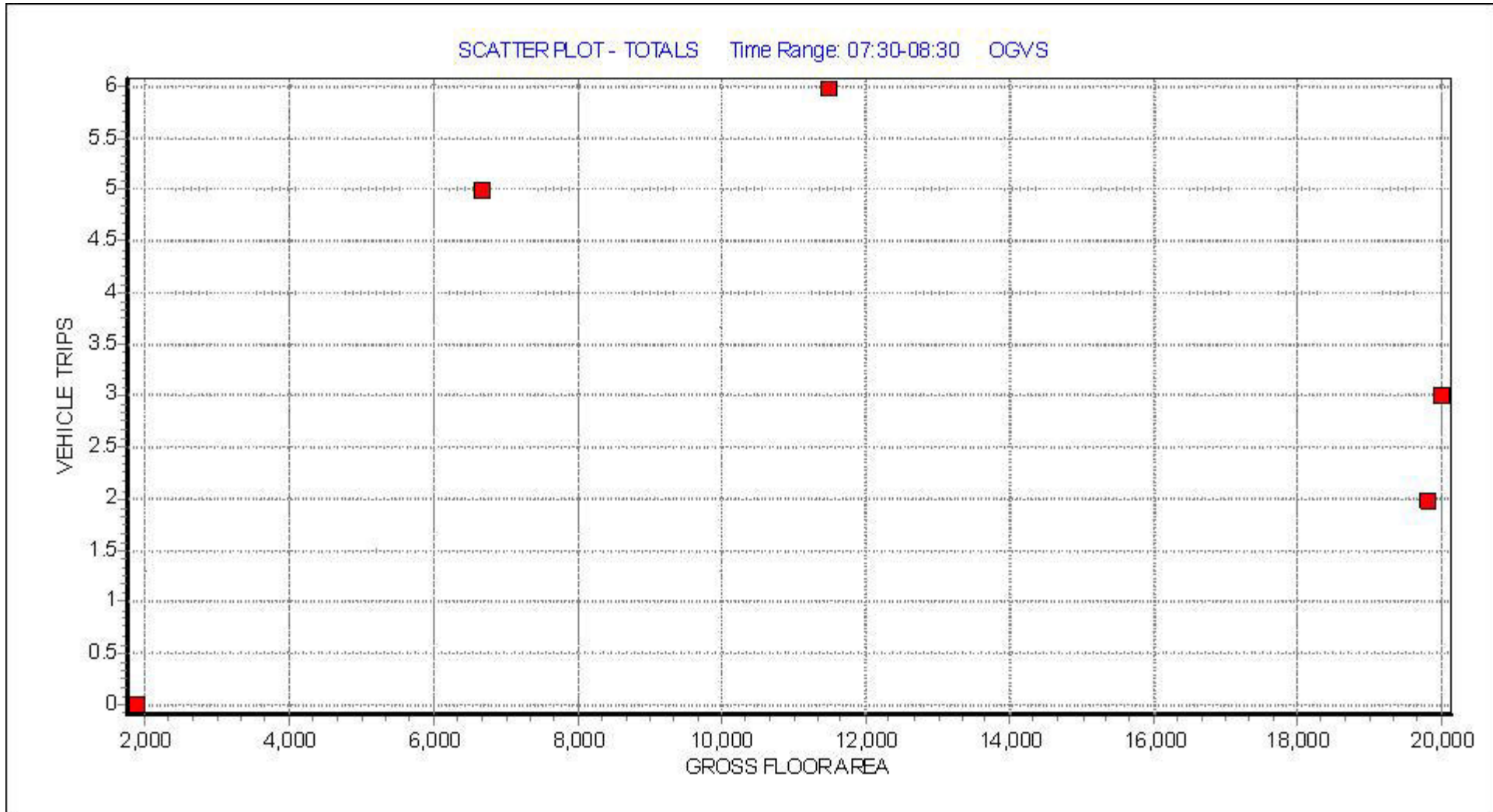
Ranking Type: **TOTALS** Time Range: 07:30-08:30
Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

<u>Median Values</u>		<u>Mean Values</u>	
Arrivals: 0.005		Arrivals: 0.008	
Departures: 0.010		Departures: 0.022	
Totals: 0.015		Totals: 0.030	

Rank	Site-Ref	Description	Town/City	Area	GFA	Day	Date	Trip Rate (Sorted by Totals)		
								Arrivals	Departures	Totals
1	CH-02-C-03	OFFICE FURNITU	MACCLESFIELD	CHESHIRE	6658	Mon	19/09/16	0.015	0.060	0.075
2	NR-02-C-01	PAPER COMPANY	NORTHAMPTON	NORTHAMPTONSHIRE	11500	Thu	27/11/08	0.017	0.035	0.052
3	DV-02-C-01	TUBE MANUFACTU	PLYMOUTH	DEVON	20000	Tue	17/07/12	0.005	0.010	0.015
4	EB-02-C-02	FOOD PRODUCTIO	EDINBURGH	CITY OF EDINBURGH	19805	Mon	25/10/10	0.005	0.005	0.010
5	HE-02-C-02	THERMAL PROCES	HEREFORD	HEREFORDSHIRE	1880	Tue	22/10/13	0.000	0.000	0.000

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.



This graph is a visual representation of the correlation between the selected trip rate calculation parameter and the rank order trip rates generated by each individual survey day in the selected set. The range of the trip rate parameter is shown along the x axis, with the level of trips shown on the y axis. The selected time range used to create the rank order list from which the graph is derived is displayed at the top of the graph (unless the peak period irrespective of time range has been selected). A line of best fit is sometimes displayed in the graph, should it be selected for inclusion by the user.

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

OGVSSelected regions and areas:

03 SOUTH WEST		
DV DEVON		1 days
05 EAST MIDLANDS		
NR NORTHAMPTONSHIRE		1 days
06 WEST MIDLANDS		
HE HEREFORDSHIRE		1 days
08 NORTH WEST		
CH CHESHIRE		1 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: 1880 to 20000 (units: sqm)
 Range Selected by User: 150 to 80000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 04/09/20

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
Thursday	1 days

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	5
--------------	---

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	3
Commercial Zone	1
Development Zone	1

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

Secondary Filtering selection:Use Class:

B2 4 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 Use Class Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	1 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	2 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	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 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 5 days

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

LIST OF SITES relevant to selection parameters

1	CH-02-C-03	OFFICE FURNITURE	CHESHIRE
	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
2	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
3	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
4	HE-02-C-02	THERMAL PROCESSING	HEREFORDSHIRE
	COLLEGE ROAD		
	HEREFORD		
	BURCOTT		
	Edge of Town		
	Commercial Zone		
	Total Gross floor area:	1880 sqm	
	Survey date: TUESDAY	22/10/13	Survey Type: MANUAL
5	NR-02-C-01	PAPER COMPANY	NORTHAMPTONSHIRE
	RHOSILI ROAD		
	NORTHAMPTON		
	BRACKMILLS		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	11500 sqm	
	Survey date: THURSDAY	27/11/08	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.

Hydrock Consultants Ltd Tolvaddon Energy Park Camborne

Licence No: 540501

RANK ORDER for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

OGVS

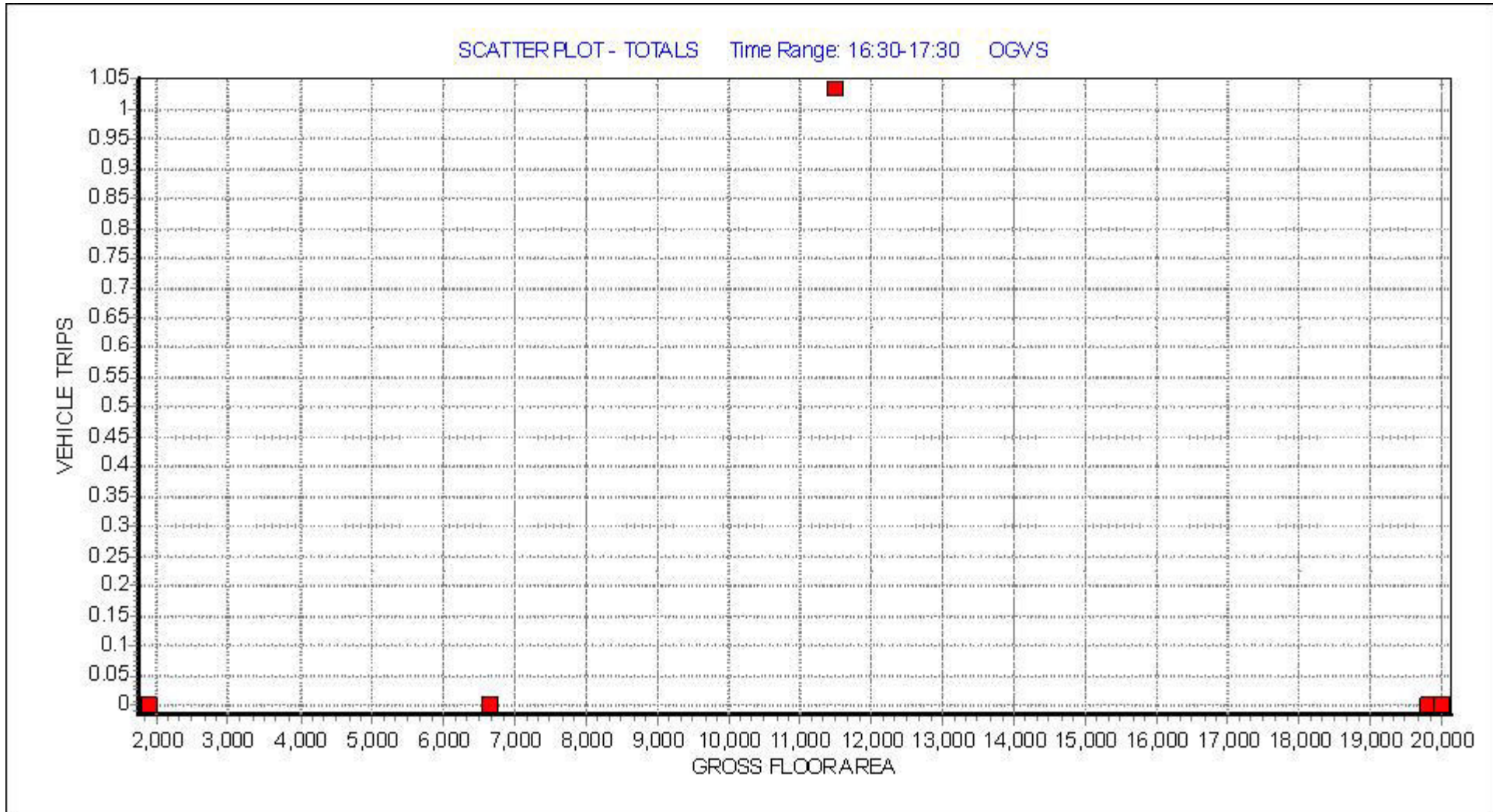
Ranking Type: **TOTALS** Time Range: 16:30-17:30
Under 6 Surveys Included, 15th/85th Percentile Not Highlighted

<u>Median Values</u>		<u>Mean Values</u>	
Arrivals: 0.000		Arrivals: 0.002	
Departures: 0.000		Departures: 0.000	
Totals: 0.000		Totals: 0.002	

Rank	Site-Ref	Description	Town/City	Area	GFA	Day	Date	Trip Rate (Sorted by Totals)		
								Arrivals	Departures	Totals
1	NR-02-C-01	PAPER COMPANY	NORTHAMPTON	NORTHAMPTONSHIRE	11500	Thu	27/11/08	0.009	0.000	0.009
2	HE-02-C-02	THERMAL PROCES	HEREFORD	HEREFORDSHIRE	1880	Tue	22/10/13	0.000	0.000	0.000
3	EB-02-C-02	FOOD PRODUCTIO	EDINBURGH	CITY OF EDINBURGH	19805	Mon	25/10/10	0.000	0.000	0.000
4	DV-02-C-01	TUBE MANUFACTU	PLYMOUTH	DEVON	20000	Tue	17/07/12	0.000	0.000	0.000
5	CH-02-C-03	OFFICE FURNITU	MACCLESFIELD	CHESHIRE	6658	Mon	19/09/16	0.000	0.000	0.000

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.



This graph is a visual representation of the correlation between the selected trip rate calculation parameter and the rank order trip rates generated by each individual survey day in the selected set. The range of the trip rate parameter is shown along the x axis, with the level of trips shown on the y axis. The selected time range used to create the rank order list from which the graph is derived is displayed at the top of the graph (unless the peak period irrespective of time range has been selected). A line of best fit is sometimes displayed in the graph, should it be selected for inclusion by the user.

Appendix L Trip Distribution and Assignment Calculations

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

ONS Crown Copyright Reserved [from Nomis on 8 February 2021]

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

		place of work							
usual residence : 2011 super output area - middle layer		E02003845							
		Cheshire West and Chester 007				Route	Description		
Cheshire West and Chester 009	E02003847	335	5%	B	A	M53 East	35%		
Cheshire West and Chester 007	E02003845	279	4%	A	B	B5132 Netherpool Rd	23%		
Cheshire West and Chester 016	E02003852	270	4%	B	C	M53 West	42%		
Cheshire West and Chester 014	E02003851	224	3%	B	D	West Road	0%		
Cheshire West and Chester 011	E02003849	207	3%	A	E	North Road (N)	0%		
Cheshire West and Chester 005	E02003843	197	3%	B	F	North Road (S)	0%		
Cheshire West and Chester 013	E02003850	186	3%	B		Total	100%		
Cheshire West and Chester 008	E02003846	179	3%	B					
Cheshire West and Chester 010	E02003848	175	3%	B					
Wirral 042	E02001508	119	2%	C					
Wirral 041	E02001507	106	2%	C					
Cheshire West and Chester 022	E02003794	101	2%	A					
Cheshire West and Chester 006	E02003844	85	1%	C					
Wirral 024	E02001490	81	1%	C					
Wirral 039	E02001505	76	1%	C					
Wirral 032	E02001498	74	1%	C					
Wirral 038	E02001504	68	1%	C					
Wirral 036	E02001502	65	1%	C					
Cheshire West and Chester 004	E02003842	62	1%	C					
Wirral 035	E02001501	61	1%	C					
Cheshire West and Chester 028	E02003797	59	1%	A					
Wirral 029	E02001495	59	1%	C					
Wirral 023	E02001489	57	1%	C					
Wirral 004	E02001470	55	1%	C					
Flintshire 013	W02000070	54	1%	C					
Wirral 012	E02001478	52	1%	C					
Wirral 017	E02001483	51	1%	C					
Cheshire West and Chester 001	E02003841	50	1%	C					
Wirral 022	E02001488	49	1%	C					
Wirral 034	E02001500	49	1%	C					
Wirral 033	E02001499	48	1%	C					
Wirral 031	E02001497	47	1%	C					
Wirral 007	E02001473	45	1%	C					
Wirral 030	E02001496	45	1%	C					
Cheshire West and Chester 015	E02003877	44	1%	A					
Wirral 010	E02001476	44	1%	C					
Wirral 015	E02001481	43	1%	C					
Flintshire 015	W02000072	43	1%	A					
Cheshire West and Chester 025	E02003795	42	1%	A					
Cheshire West and Chester 029	E02003798	41	1%	A					
Cheshire West and Chester 027	E02003796	40	1%	A					
Wirral 037	E02001503	40	1%	C					
Flintshire 009	W02000066	40	1%	C					
Wirral 020	E02001486	39	1%	C					
Wirral 025	E02001491	38	1%	C					
Wirral 021	E02001487	37	1%	C					
Cheshire West and Chester 031	E02003799	36	1%	A					
Cheshire West and Chester 036	E02003804	36	1%	A					
Wirral 013	E02001479	35	1%	C					
Wirral 018	E02001484	35	1%	C					
Flintshire 017	W02000074	35	1%	A					
Cheshire West and Chester 033	E02003802	34	1%	A					
Wirral 002	E02001468	33	0%	C					
Wirral 027	E02001493	33	0%	C					
Flintshire 008	W02000065	33	0%	C					
Cheshire West and Chester 032	E02003801	32	0%	A					
Cheshire West and Chester 039	E02003805	32	0%	A					
Cheshire West and Chester 002	E02003874	32	0%	A					
Wirral 040	E02001506	32	0%	C					
Cheshire West and Chester 041	E02003806	31	0%	A					
Wirral 005	E02001471	31	0%	C					
Cheshire West and Chester 046	E02003809	30	0%	A					
Wirral 003	E02001469	30	0%	C					
Cheshire West and Chester 034	E02003803	28	0%	A					
Wirral 026	E02001492	28	0%	C					
Flintshire 010	W02000067	28	0%	C					
Cheshire West and Chester 030	E02003800	26	0%	A					
Cheshire West and Chester 044	E02003808	26	0%	A					
Wirral 009	E02001475	26	0%	C					
Wirral 006	E02001472	25	0%	C					
Wirral 016	E02001482	25	0%	C					
Flintshire 014	W02000071	25	0%	C					
Cheshire West and Chester 043	E02003807	24	0%	A					
Wirral 019	E02001485	24	0%	C					
Wrexham 020	W02000420	24	0%	A					
Wirral 001	E02001467	23	0%	C					
Flintshire 003	W02000060	23	0%	C					
Wirral 008	E02001474	22	0%	C					
Flintshire 012	W02000069	22	0%	C					
Flintshire 016	W02000073	22	0%	C					
Wirral 014	E02001480	21	0%	C					

Wirral 028	E02001494	21	0%	C
Flintshire 004	W02000061	20	0%	C
Flintshire 006	W02000063	20	0%	C
Flintshire 018	W02000075	20	0%	A
Flintshire 005	W02000062	19	0%	C
Cheshire West and Chester 047	E02003810	17	0%	A
Halton 012	E02002585	17	0%	A
Halton 016	E02002589	17	0%	A
Flintshire 007	W02000064	17	0%	C
Flintshire 011	W02000068	17	0%	C
Cheshire West and Chester 045	E02003891	16	0%	A
Wirral 011	E02001477	16	0%	C
Halton 009	E02002582	15	0%	A
Cheshire West and Chester 012	E02003876	14	0%	A
Halton 002	E02002575	13	0%	A
Flintshire 002	W02000059	13	0%	C
Knowsley 014	E02001340	12	0%	A
Cheshire West and Chester 003	E02003875	11	0%	A
Halton 015	E02002588	11	0%	A
Knowsley 005	E02001331	11	0%	A
Cheshire East 051	E02003840	10	0%	A
Halton 010	E02002583	10	0%	A
Halton 011	E02002584	10	0%	A
Knowsley 004	E02001330	10	0%	A
St. Helens 019	E02001424	10	0%	A
Halton 014	E02002587	9	0%	A
Liverpool 003	E02001349	9	0%	C
Liverpool 021	E02001367	9	0%	C
Wrexham 016	W02000093	9	0%	A
Cheshire West and Chester 024	E02003884	8	0%	A
Halton 008	E02002581	8	0%	A
Warrington 023	E02002612	8	0%	A
Liverpool 011	E02001357	8	0%	C
Liverpool 016	E02001362	8	0%	C
Liverpool 023	E02001369	8	0%	C
Liverpool 028	E02001374	8	0%	C
Flintshire 020	W02000077	8	0%	A
Wrexham 008	W02000085	8	0%	A
Cheshire West and Chester 026	E02003885	7	0%	A
Cheshire West and Chester 035	E02003886	7	0%	A
Cheshire West and Chester 037	E02003887	7	0%	A
Warrington 010	E02002599	7	0%	A
Knowsley 002	E02001328	7	0%	A
Liverpool 013	E02001359	7	0%	C
Liverpool 020	E02001366	7	0%	C
Liverpool 025	E02001371	7	0%	C
Liverpool 036	E02001382	7	0%	A
Liverpool 041	E02001387	7	0%	A
Liverpool 051	E02001397	7	0%	A
Liverpool 055	E02001401	7	0%	A
Liverpool 061	E02006933	7	0%	C
Sefton 038	E02001466	7	0%	C
Denbighshire 017	W02000419	7	0%	C
Wrexham 003	W02000080	7	0%	A
Cheshire West and Chester 021	E02003882	6	0%	A
Cheshire West and Chester 038	E02003888	6	0%	A
Halton 001	E02002574	6	0%	A
Halton 006	E02002579	6	0%	A
Halton 013	E02002586	6	0%	A
Warrington 014	E02002603	6	0%	A
Warrington 016	E02002605	6	0%	A
Warrington 018	E02002607	6	0%	A
Warrington 020	E02002609	6	0%	A
Knowsley 019	E02001345	6	0%	A
Knowsley 020	E02001346	6	0%	A
Liverpool 002	E02001348	6	0%	C
Liverpool 008	E02001354	6	0%	C
Sefton 027	E02001455	6	0%	C
Sefton 029	E02001457	6	0%	C
Sefton 031	E02001459	6	0%	C
Sefton 033	E02001461	6	0%	C
Wrexham 005	W02000082	6	0%	A
Wrexham 006	W02000083	6	0%	A
Wrexham 013	W02000090	6	0%	A
Wrexham 015	W02000092	6	0%	A
Wrexham 017	W02000094	6	0%	A
Cheshire West and Chester 017	E02003878	5	0%	A
Cheshire West and Chester 018	E02003879	5	0%	A
Cheshire West and Chester 023	E02003883	5	0%	A
Halton 003	E02002576	5	0%	A
Warrington 003	E02002592	5	0%	A
Warrington 009	E02002598	5	0%	A
Warrington 015	E02002604	5	0%	A
Warrington 019	E02002608	5	0%	A
Warrington 021	E02002610	5	0%	A
Knowsley 009	E02001335	5	0%	A
Knowsley 011	E02001337	5	0%	A
Knowsley 013	E02001339	5	0%	A
Knowsley 017	E02001343	5	0%	A
Liverpool 005	E02001351	5	0%	C
Liverpool 007	E02001353	5	0%	C
Liverpool 017	E02001363	5	0%	C
Liverpool 019	E02001365	5	0%	C
Liverpool 022	E02001368	5	0%	C
Liverpool 044	E02001390	5	0%	C

Liverpool 047	E02001393	5	0%	A
Liverpool 056	E02001402	5	0%	A
Liverpool 062	E02006934	5	0%	C
Sefton 028	E02001456	5	0%	C
Shropshire 003	E02006023	5	0%	A
Conwy 005	W02000031	5	0%	C
Denbighshire 015	W02000056	5	0%	C
Flintshire 001	W02000058	5	0%	C
Flintshire 019	W02000076	5	0%	C
Wrexham 007	W02000084	5	0%	A
Wrexham 009	W02000086	5	0%	A
Wrexham 011	W02000088	5	0%	A
Wrexham 012	W02000089	5	0%	A
Wrexham 014	W02000091	5	0%	A
Wrexham 018	W02000095	5	0%	A
Cheshire East 025	E02003814	4	0%	A
Cheshire East 050	E02003839	4	0%	A
Cheshire East 018	E02003870	4	0%	A
Cheshire West and Chester 020	E02003881	4	0%	A
Cheshire West and Chester 042	E02003890	4	0%	A
Halton 005	E02002578	4	0%	A
Warrington 007	E02002596	4	0%	A
Warrington 017	E02002606	4	0%	A
Trafford 024	E02001282	4	0%	A
Trafford 028	E02001286	4	0%	A
West Lancashire 006	E02005309	4	0%	A
Knowsley 007	E02001333	4	0%	A
Knowsley 012	E02001338	4	0%	A
Knowsley 015	E02001341	4	0%	A
Knowsley 016	E02001342	4	0%	A
Knowsley 018	E02001344	4	0%	A
Liverpool 004	E02001350	4	0%	C
Liverpool 012	E02001358	4	0%	C
Liverpool 015	E02001361	4	0%	C
Liverpool 030	E02001376	4	0%	C
Liverpool 042	E02001388	4	0%	A
Liverpool 046	E02001392	4	0%	A
Liverpool 048	E02001394	4	0%	A
Liverpool 050	E02001396	4	0%	C
Sefton 018	E02001446	4	0%	C
Sefton 025	E02001453	4	0%	C
St. Helens 020	E02001425	4	0%	A
St. Helens 022	E02001427	4	0%	A
Shropshire 001	E02006015	4	0%	A
Denbighshire 002	W02000043	4	0%	C
Denbighshire 003	W02000044	4	0%	C
Cheshire West and Chester 019	E02003880	3	0%	A
Cheshire West and Chester 040	E02003889	3	0%	A
Halton 004	E02002577	3	0%	A
Halton 007	E02002580	3	0%	A
Warrington 005	E02002594	3	0%	A
Warrington 012	E02002601	3	0%	A
Warrington 013	E02002602	3	0%	A
Warrington 025	E02002614	3	0%	A
Trafford 004	E02001262	3	0%	A
Trafford 010	E02001268	3	0%	A
Trafford 026	E02001284	3	0%	A
Wigan 039	E02001325	3	0%	A
West Lancashire 014	E02005317	3	0%	A
Knowsley 001	E02001327	3	0%	A
Knowsley 008	E02001334	3	0%	A
Liverpool 001	E02001347	3	0%	C
Liverpool 009	E02001355	3	0%	C
Liverpool 014	E02001360	3	0%	C
Liverpool 018	E02001364	3	0%	C
Liverpool 027	E02001373	3	0%	C
Liverpool 029	E02001375	3	0%	C
Liverpool 032	E02001378	3	0%	C
Liverpool 034	E02001380	3	0%	C
Liverpool 045	E02001391	3	0%	A
Liverpool 049	E02001395	3	0%	A
Liverpool 052	E02001398	3	0%	A
Liverpool 053	E02001399	3	0%	A
Liverpool 054	E02001400	3	0%	A
Liverpool 058	E02001404	3	0%	A
Sefton 005	E02001433	3	0%	C
Sefton 008	E02001436	3	0%	C
Sefton 019	E02001447	3	0%	C
Sefton 020	E02001448	3	0%	C
St. Helens 004	E02001409	3	0%	A
St. Helens 013	E02001418	3	0%	A
Shropshire 006	E02006024	3	0%	A
Warwick 007	E02006525	3	0%	A
Conwy 003	W02000029	3	0%	C
Conwy 012	W02000038	3	0%	C
Denbighshire 001	W02000042	3	0%	C
Denbighshire 009	W02000050	3	0%	C
Denbighshire 012	W02000053	3	0%	C
Denbighshire 014	W02000055	3	0%	C
Wrexham 010	W02000087	3	0%	A
Redcar and Cleveland 007	E02002521	2	0%	A
South Tyneside 020	E02001787	2	0%	A
Sunderland 029	E02001819	2	0%	A
Cheshire East 036	E02003827	2	0%	A
Cheshire East 047	E02003836	2	0%	A

Cheshire East 048	E02003838	2	0%	A
Cheshire East 009	E02003861	2	0%	A
Cheshire East 010	E02003863	2	0%	A
Cheshire East 017	E02003869	2	0%	A
Cheshire East 020	E02003872	2	0%	A
Warrington 011	E02002600	2	0%	A
Warrington 024	E02002613	2	0%	A
Bolton 031	E02001014	2	0%	A
Bolton 035	E02001018	2	0%	A
Bury 014	E02001032	2	0%	A
Manchester 011	E02001055	2	0%	A
Manchester 044	E02001088	2	0%	A
Manchester 045	E02001089	2	0%	A
Rochdale 023	E02001154	2	0%	A
Rochdale 025	E02001156	2	0%	A
Stockport 019	E02001205	2	0%	A
Stockport 039	E02001225	2	0%	A
Tameside 022	E02001250	2	0%	A
Tameside 027	E02001255	2	0%	A
Trafford 007	E02001265	2	0%	A
Trafford 013	E02001271	2	0%	A
Trafford 015	E02001273	2	0%	A
Trafford 018	E02001276	2	0%	A
Trafford 020	E02001278	2	0%	A
Wigan 003	E02001289	2	0%	A
Wigan 004	E02001290	2	0%	A
Wigan 021	E02001307	2	0%	A
Wigan 029	E02001315	2	0%	A
Wigan 040	E02001326	2	0%	A
West Lancashire 015	E02005318	2	0%	A
Knowsley 003	E02001329	2	0%	A
Knowsley 006	E02001332	2	0%	A
Knowsley 010	E02001336	2	0%	A
Liverpool 006	E02001352	2	0%	C
Liverpool 010	E02001356	2	0%	C
Liverpool 037	E02001383	2	0%	C
Liverpool 038	E02001384	2	0%	C
Liverpool 059	E02001405	2	0%	A
Sefton 010	E02001438	2	0%	C
Sefton 017	E02001445	2	0%	C
Sefton 021	E02001449	2	0%	C
Sefton 026	E02001454	2	0%	C
Sefton 030	E02001458	2	0%	C
Sefton 032	E02001460	2	0%	C
Sefton 035	E02001463	2	0%	C
Sefton 037	E02001465	2	0%	C
St. Helens 001	E02001406	2	0%	A
St. Helens 010	E02001415	2	0%	A
St. Helens 015	E02001420	2	0%	A
St. Helens 018	E02001423	2	0%	A
Shropshire 005	E02006018	2	0%	A
Shropshire 007	E02006025	2	0%	A
Shropshire 012	E02006027	2	0%	A
Telford and Wrekin 006	E02002933	2	0%	A
Telford and Wrekin 018	E02002945	2	0%	A
Newcastle-under-Lyme 012	E02006169	2	0%	A
Portsmouth 011	E02003534	2	0%	A
New Forest 011	E02004789	2	0%	A
Gravesham 006	E02005060	2	0%	A
Bristol 007	E02003018	2	0%	A
Conwy 009	W02000035	2	0%	C
Denbighshire 004	W02000045	2	0%	C
Denbighshire 010	W02000051	2	0%	C
Denbighshire 011	W02000052	2	0%	C
Denbighshire 013	W02000054	2	0%	C
Wrexham 004	W02000081	2	0%	A
Bridgend 009	W02000226	2	0%	A
Darlington 011	E02002569	1	0%	A
Hartlepool 001	E02002483	1	0%	A
Middlesbrough 004	E02002499	1	0%	A
Redcar and Cleveland 002	E02002516	1	0%	A
Redcar and Cleveland 015	E02002529	1	0%	A
Stockton-on-Tees 018	E02002552	1	0%	A
Gateshead 025	E02001706	1	0%	A
Sunderland 032	E02001822	1	0%	A
Blackburn with Darwen 018	E02002632	1	0%	A
Cheshire East 024	E02003813	1	0%	A
Cheshire East 026	E02003815	1	0%	A
Cheshire East 027	E02003816	1	0%	A
Cheshire East 028	E02003817	1	0%	A
Cheshire East 029	E02003818	1	0%	A
Cheshire East 030	E02003819	1	0%	A
Cheshire East 034	E02003825	1	0%	A
Cheshire East 035	E02003826	1	0%	A
Cheshire East 037	E02003828	1	0%	A
Cheshire East 046	E02003835	1	0%	A
Cheshire East 049	E02003837	1	0%	A
Cheshire East 007	E02003859	1	0%	A
Cheshire East 011	E02003862	1	0%	A
Cheshire East 012	E02003864	1	0%	A
Cheshire East 014	E02003866	1	0%	A
Warrington 022	E02002611	1	0%	A
Copeland 004	E02004003	1	0%	A
South Lakeland 011	E02004025	1	0%	A
Bolton 005	E02000988	1	0%	A

Bolton 006	E02000989	1	0%	A
Bolton 008	E02000991	1	0%	A
Bolton 014	E02000997	1	0%	A
Bolton 018	E02001001	1	0%	A
Bolton 019	E02001002	1	0%	A
Bolton 024	E02001007	1	0%	A
Bolton 025	E02001008	1	0%	A
Bolton 030	E02001013	1	0%	A
Bolton 032	E02001015	1	0%	A
Bolton 034	E02001017	1	0%	A
Bury 001	E02001019	1	0%	A
Bury 002	E02001020	1	0%	A
Bury 003	E02001021	1	0%	A
Bury 008	E02001026	1	0%	A
Bury 013	E02001031	1	0%	A
Bury 017	E02001035	1	0%	A
Bury 023	E02001041	1	0%	A
Bury 024	E02001042	1	0%	A
Manchester 020	E02001064	1	0%	A
Manchester 022	E02001066	1	0%	A
Manchester 024	E02001068	1	0%	A
Manchester 025	E02001069	1	0%	A
Manchester 029	E02001073	1	0%	A
Manchester 032	E02001076	1	0%	A
Manchester 034	E02001078	1	0%	A
Manchester 035	E02001079	1	0%	A
Manchester 036	E02001080	1	0%	A
Manchester 037	E02001081	1	0%	A
Manchester 038	E02001082	1	0%	A
Manchester 039	E02001083	1	0%	A
Manchester 040	E02001084	1	0%	A
Manchester 042	E02001086	1	0%	A
Manchester 046	E02001090	1	0%	A
Manchester 050	E02001094	1	0%	A
Manchester 051	E02001095	1	0%	A
Manchester 054	E02006902	1	0%	A
Oldham 006	E02001103	1	0%	A
Oldham 007	E02001104	1	0%	A
Oldham 014	E02001111	1	0%	A
Oldham 019	E02001116	1	0%	A
Oldham 022	E02001119	1	0%	A
Oldham 026	E02001123	1	0%	A
Oldham 029	E02001126	1	0%	A
Oldham 033	E02001130	1	0%	A
Oldham 035	E02006860	1	0%	A
Rochdale 006	E02001137	1	0%	A
Rochdale 020	E02001151	1	0%	A
Salford 001	E02001157	1	0%	A
Salford 005	E02001161	1	0%	A
Salford 008	E02001164	1	0%	A
Salford 009	E02001165	1	0%	A
Salford 013	E02001169	1	0%	A
Salford 015	E02001171	1	0%	A
Salford 027	E02001183	1	0%	A
Salford 030	E02001186	1	0%	A
Stockport 006	E02001192	1	0%	A
Stockport 012	E02001198	1	0%	A
Stockport 018	E02001204	1	0%	A
Stockport 025	E02001211	1	0%	A
Stockport 027	E02001213	1	0%	A
Stockport 030	E02001216	1	0%	A
Stockport 032	E02001218	1	0%	A
Stockport 036	E02001222	1	0%	A
Stockport 041	E02001227	1	0%	A
Tameside 019	E02001247	1	0%	A
Tameside 020	E02001248	1	0%	A
Tameside 023	E02001251	1	0%	A
Trafford 001	E02001259	1	0%	A
Trafford 002	E02001260	1	0%	A
Trafford 006	E02001264	1	0%	A
Trafford 014	E02001272	1	0%	A
Trafford 016	E02001274	1	0%	A
Trafford 017	E02001275	1	0%	A
Trafford 021	E02001279	1	0%	A
Trafford 023	E02001281	1	0%	A
Trafford 025	E02001283	1	0%	A
Wigan 001	E02001287	1	0%	A
Wigan 002	E02001288	1	0%	A
Wigan 007	E02001293	1	0%	A
Wigan 011	E02001297	1	0%	A
Wigan 014	E02001300	1	0%	A
Wigan 015	E02001301	1	0%	A
Wigan 018	E02001304	1	0%	A
Wigan 020	E02001306	1	0%	A
Wigan 026	E02001312	1	0%	A
Wigan 030	E02001316	1	0%	A
Wigan 031	E02001317	1	0%	A
Wigan 034	E02001320	1	0%	A
Wigan 035	E02001321	1	0%	A
Wigan 036	E02001322	1	0%	A
Wigan 037	E02001323	1	0%	A
Chorley 010	E02005198	1	0%	A
Fylde 001	E02005203	1	0%	A
Fylde 005	E02005207	1	0%	A
Hyndburn 005	E02005216	1	0%	A

Lancaster 008	E02005228	1	0%	A
Ribble Valley 007	E02005276	1	0%	A
Rossendale 003	E02005280	1	0%	A
South Ribble 014	E02005300	1	0%	A
West Lancashire 001	E02005304	1	0%	A
West Lancashire 002	E02005305	1	0%	A
West Lancashire 003	E02005306	1	0%	A
West Lancashire 005	E02005308	1	0%	A
West Lancashire 009	E02005312	1	0%	A
West Lancashire 010	E02005313	1	0%	A
West Lancashire 012	E02005315	1	0%	A
West Lancashire 013	E02005316	1	0%	A
Wyre 001	E02005319	1	0%	A
Wyre 008	E02005326	1	0%	A
Liverpool 026	E02001372	1	0%	C
Liverpool 035	E02001381	1	0%	C
Liverpool 040	E02001386	1	0%	A
Liverpool 043	E02001389	1	0%	C
Liverpool 057	E02001403	1	0%	A
Liverpool 060	E02006932	1	0%	C
Sefton 002	E02001430	1	0%	C
Sefton 009	E02001437	1	0%	C
Sefton 011	E02001439	1	0%	C
Sefton 012	E02001440	1	0%	C
Sefton 013	E02001441	1	0%	C
Sefton 014	E02001442	1	0%	C
Sefton 015	E02001443	1	0%	C
Sefton 016	E02001444	1	0%	C
Sefton 023	E02001451	1	0%	C
Sefton 024	E02001452	1	0%	C
St. Helens 003	E02001408	1	0%	A
St. Helens 005	E02001410	1	0%	A
St. Helens 007	E02001412	1	0%	A
St. Helens 008	E02001413	1	0%	A
St. Helens 009	E02001414	1	0%	A
St. Helens 012	E02001417	1	0%	A
St. Helens 014	E02001419	1	0%	A
St. Helens 017	E02001422	1	0%	A
St. Helens 021	E02001426	1	0%	A
St. Helens 023	E02001428	1	0%	A
East Riding of Yorkshire 020	E02002703	1	0%	A
North East Lincolnshire 001	E02002726	1	0%	A
North East Lincolnshire 010	E02002735	1	0%	A
North East Lincolnshire 014	E02002739	1	0%	A
North East Lincolnshire 017	E02002742	1	0%	A
Scarborough 001	E02005795	1	0%	A
Scarborough 002	E02005796	1	0%	A
Barnsley 002	E02001510	1	0%	A
Barnsley 010	E02001518	1	0%	A
Barnsley 013	E02001521	1	0%	A
Rotherham 022	E02001599	1	0%	A
Calderdale 004	E02002247	1	0%	A
Kirklees 009	E02002279	1	0%	A
Kirklees 044	E02002314	1	0%	A
Leeds 056	E02002385	1	0%	A
Derby 020	E02002815	1	0%	A
Leicester 025	E02002851	1	0%	A
Leicester 038	E02006817	1	0%	A
Erewash 010	E02004087	1	0%	A
High Peak 001	E02004093	1	0%	A
High Peak 003	E02004095	1	0%	A
South Derbyshire 013	E02006920	1	0%	A
Blaby 006	E02005338	1	0%	A
Charnwood 001	E02005345	1	0%	A
Charnwood 015	E02005359	1	0%	A
North West Leicestershire 012	E02005408	1	0%	A
Rushcliffe 006	E02005911	1	0%	A
Shropshire 010	E02006021	1	0%	A
Shropshire 028	E02006040	1	0%	A
Stoke-on-Trent 008	E02002958	1	0%	A
Stoke-on-Trent 019	E02002969	1	0%	A
Stoke-on-Trent 033	E02002983	1	0%	A
Telford and Wrekin 014	E02002941	1	0%	A
Telford and Wrekin 021	E02002948	1	0%	A
Lichfield 012	E02006157	1	0%	A
Newcastle-under-Lyme 001	E02006158	1	0%	A
Newcastle-under-Lyme 002	E02006159	1	0%	A
Newcastle-under-Lyme 009	E02006166	1	0%	A
Newcastle-under-Lyme 011	E02006168	1	0%	A
Newcastle-under-Lyme 016	E02006173	1	0%	A
South Staffordshire 006	E02006179	1	0%	A
Stafford 003	E02006190	1	0%	A
Stafford 004	E02006191	1	0%	A
Birmingham 062	E02001888	1	0%	A
Dudley 018	E02002017	1	0%	A
Dudley 037	E02002036	1	0%	A
Sandwell 001	E02002043	1	0%	A
Sandwell 024	E02002066	1	0%	A
Sandwell 029	E02002071	1	0%	A
Sandwell 033	E02002075	1	0%	A
Sandwell 035	E02002077	1	0%	A
Wolverhampton 028	E02002176	1	0%	A
Luton 001	E02003258	1	0%	A
Thurrock 020	E02006926	1	0%	A
Castle Point 001	E02004473	1	0%	A

Dacorum 018	E02004873	1	0%	A
Medway 035	E02003348	1	0%	A
Southampton 002	E02003550	1	0%	A
West Berkshire 005	E02003371	1	0%	A
Shepway 002	E02005103	1	0%	A
Shepway 003	E02005104	1	0%	A
Shepway 013	E02005114	1	0%	A
Stroud 006	E02004656	1	0%	A
Gwynedd 007	W02000016	1	0%	C
Conwy 001	W02000027	1	0%	C
Conwy 004	W02000030	1	0%	C
Conwy 008	W02000034	1	0%	C
Conwy 010	W02000036	1	0%	C
Denbighshire 006	W02000047	1	0%	C
Denbighshire 008	W02000049	1	0%	C
Wrexham 019	W02000096	1	0%	A
The Vale of Glamorgan 013	W02000249	1	0%	A
		6,687	100%	

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies:

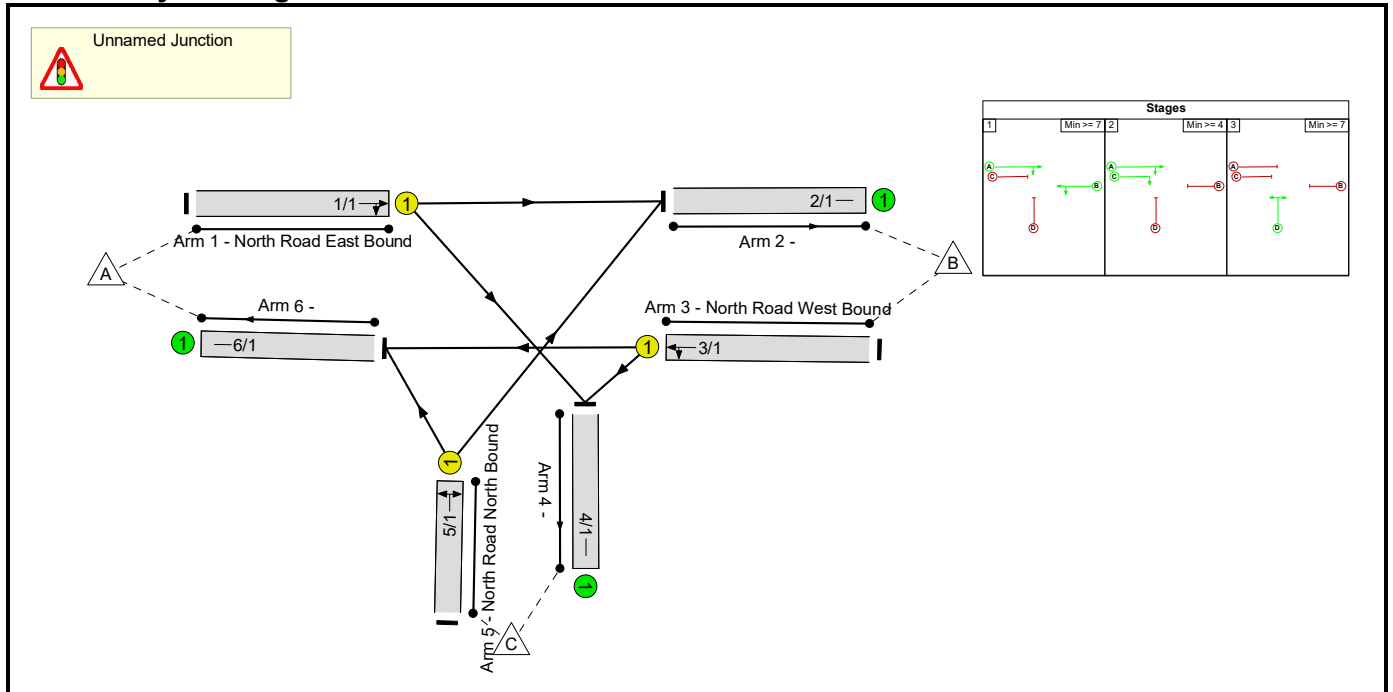
Appendix M Junction Modelling Outputs

Full Input Data And Results
Full Input Data And Results

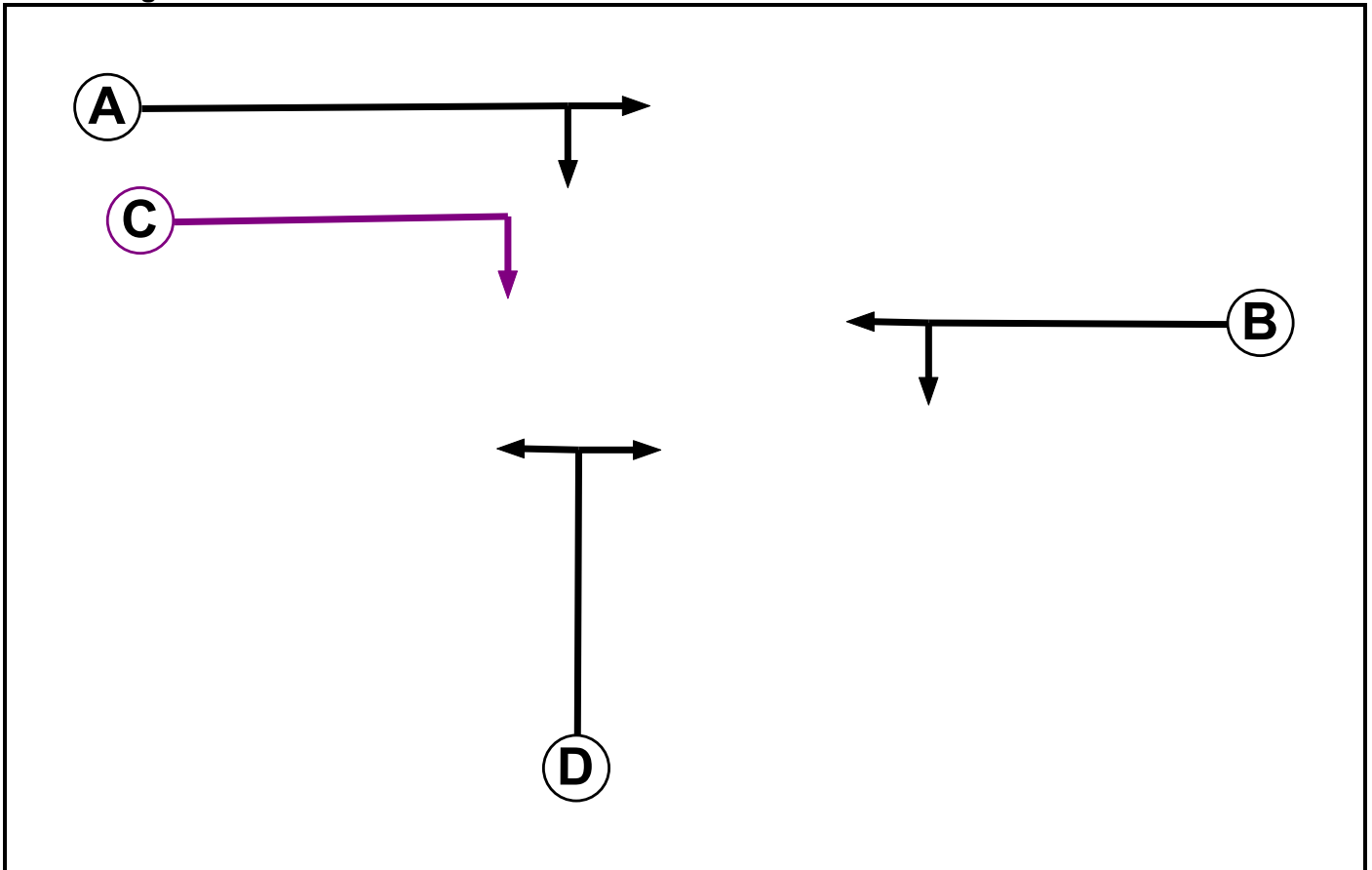
User and Project Details

Project:	
Title:	
Location:	
Checked By:	Sam Denby
Additional detail:	
File name:	North Road_North Road Existing Junction.lsg3x
Author:	Sam Denby
Company:	Hydrock
Address:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Ind. Arrow	A	4	4
D	Traffic		7	7

Phase Intergreens Matrix

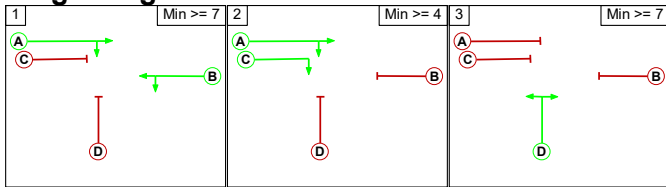
		Starting Phase				
		A	B	C	D	
Terminating Phase	A					5
	B			4	7	
	C		5		5	
	D	5	5	5		

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	A C
3	D

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

		To Stage		
		1	2	3
From Stage	1		4	7
	2	5		5
	3	5	5	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction

There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction												
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 (North Road East Bound)	U	A C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
											Arm 4 Right	12.00
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (North Road West Bound)	U	B	2	3	60.0	Geom	-	3.60	0.00	Y	Arm 4 Left	Inf
											Arm 6 Ahead	Inf
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (North Road North Bound)	U	D	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 2 Right	12.00
											Arm 6 Left	12.00
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM 2021 Base'	07:30	08:30	01:00	
2: 'PM 2021 Base'	16:30	17:30	01:00	
3: 'AM 2026 Base'	07:30	08:30	01:00	
4: 'PM 2026 Base'	16:30	17:30	01:00	
5: 'AM 2026 Base+Com'	07:30	08:30	01:00	
6: ' PM 2026 Base+Com'	16:30	17:30	01:00	

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

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	11	39	50
	B	1	0	67	68
	C	57	132	0	189
	Tot.	58	143	106	307

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: AM 2021 Base
Junction: Unnamed Junction	
1/1	50
2/1	143
3/1	68
4/1	106
5/1	189
6/1	58

Lane Saturation Flows

Junction: Unnamed Junction								
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 (North Road East Bound)	3.50	0.00	Y	Arm 2 Ahead	Inf	22.0 %	1790	1790
				Arm 4 Right	12.00	78.0 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (North Road West Bound)	3.60	0.00	Y	Arm 4 Left	Inf	98.5 %	1975	1975
				Arm 6 Ahead	Inf	1.5 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (North Road North Bound)	4.00	0.00	Y	Arm 2 Right	12.00	69.8 %	1791	1791
				Arm 6 Left	12.00	30.2 %		
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'PM 2021 Base' (FG2: 'PM 2021 Base', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	1	70	71
	B	9	0	127	136
	C	10	40	0	50
	Tot.	19	41	197	257

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: PM 2021 Base
Junction: Unnamed Junction	
1/1	71
2/1	41
3/1	136
4/1	197
5/1	50
6/1	19

Lane Saturation Flows

Junction: Unnamed Junction								
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 (North Road East Bound)	3.50	0.00	Y	Arm 2 Ahead	Inf	1.4 %	1749	1749
				Arm 4 Right	12.00	98.6 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (North Road West Bound)	3.60	0.00	Y	Arm 4 Left	Inf	93.4 %	1975	1975
				Arm 6 Ahead	Inf	6.6 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (North Road North Bound)	4.00	0.00	Y	Arm 2 Right	12.00	80.0 %	1791	1791
				Arm 6 Left	12.00	20.0 %		
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'AM 2026 Base' (FG3: 'AM 2026 Base', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	12	41	53
	B	1	0	71	72
	C	60	140	0	200
	Tot.	61	152	112	325

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: AM 2026 Base
Junction: Unnamed Junction	
1/1	53
2/1	152
3/1	72
4/1	112
5/1	200
6/1	61

Lane Saturation Flows

Junction: Unnamed Junction								
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 (North Road East Bound)	3.50	0.00	Y	Arm 2 Ahead	Inf	22.6 %	1792	1792
				Arm 4 Right	12.00	77.4 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (North Road West Bound)	3.60	0.00	Y	Arm 4 Left	Inf	98.6 %	1975	1975
				Arm 6 Ahead	Inf	1.4 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (North Road North Bound)	4.00	0.00	Y	Arm 2 Right	12.00	70.0 %	1791	1791
				Arm 6 Left	12.00	30.0 %		
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: ' PM 2026 Base' (FG4: 'PM 2026 Base', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	1	74	75
	B	9	0	134	143
	C	11	42	0	53
	Tot.	20	43	208	271

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: PM 2026 Base
Junction: Unnamed Junction	
1/1	53
2/1	151
3/1	72
4/1	112
5/1	199
6/1	61

Lane Saturation Flows

Junction: Unnamed Junction								
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 (North Road East Bound)	3.50	0.00	Y	Arm 2 Ahead	Inf	22.6 %	1792	1792
				Arm 4 Right	12.00	77.4 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (North Road West Bound)	3.60	0.00	Y	Arm 4 Left	Inf	98.6 %	1975	1975
				Arm 6 Ahead	Inf	1.4 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (North Road North Bound)	4.00	0.00	Y	Arm 2 Right	12.00	69.8 %	1791	1791
				Arm 6 Left	12.00	30.2 %		
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: 'PM 2026 Base+Com' (FG5: 'AM 2026 Base+Com', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	12	61	73
	B	1	0	71	72
	C	111	140	0	251
	Tot.	112	152	132	396

Full Input Data And Results

Traffic Lane Flows

Scenario 5: PM 2026 Base+Com	
Junction: Unnamed Junction	
1/1	73
2/1	152
3/1	72
4/1	132
5/1	251
6/1	112

Lane Saturation Flows

Junction: Unnamed Junction								
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 (North Road East Bound)	3.50	0.00	Y	Arm 2 Ahead	Inf	16.4 %	1779	1779
				Arm 4 Right	12.00	83.6 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (North Road West Bound)	3.60	0.00	Y	Arm 4 Left	Inf	98.6 %	1975	1975
				Arm 6 Ahead	Inf	1.4 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (North Road North Bound)	4.00	0.00	Y	Arm 2 Right	12.00	55.8 %	1791	1791
				Arm 6 Left	12.00	44.2 %		
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: 'PM 2026 Base+Com' (FG6: ' PM 2026 Base+Com', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	1	136	137
	B	9	0	134	143
	C	37	42	0	79
	Tot.	46	43	270	359

Full Input Data And Results

Traffic Lane Flows

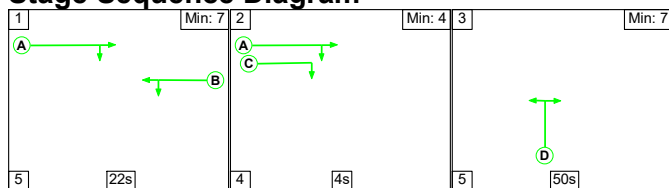
Lane	Scenario 6: PM 2026 Base+Com
Junction: Unnamed Junction	
1/1	115
2/1	151
3/1	72
4/1	174
5/1	225
6/1	87

Lane Saturation Flows

Junction: Unnamed Junction								
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 (North Road East Bound)	3.50	0.00	Y	Arm 2 Ahead	Inf	10.4 %	1767	1767
				Arm 4 Right	12.00	89.6 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (North Road West Bound)	3.60	0.00	Y	Arm 4 Left	Inf	98.6 %	1975	1975
				Arm 6 Ahead	Inf	1.4 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (North Road North Bound)	4.00	0.00	Y	Arm 2 Right	12.00	61.8 %	1791	1791
				Arm 6 Left	12.00	38.2 %		
6/1	Infinite Saturation Flow						Inf	Inf

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

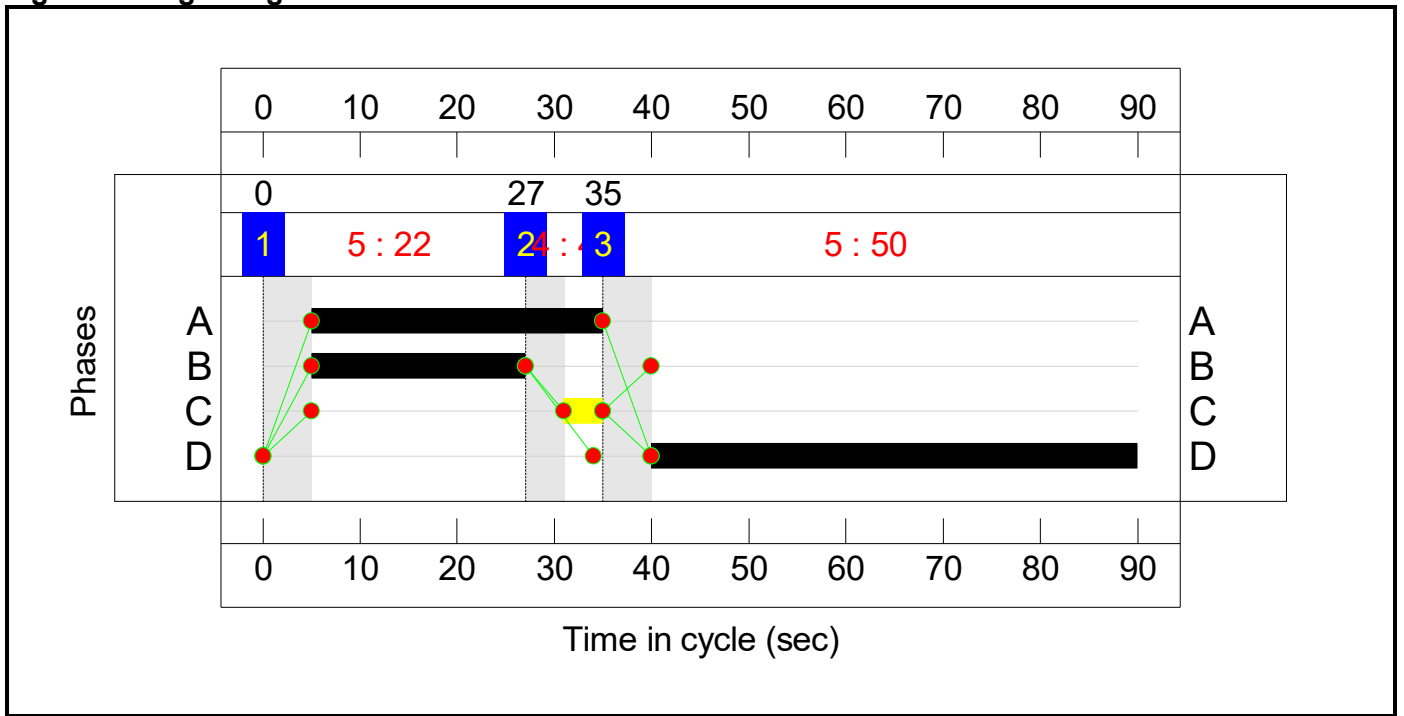
Stage Sequence Diagram




Stage Timings

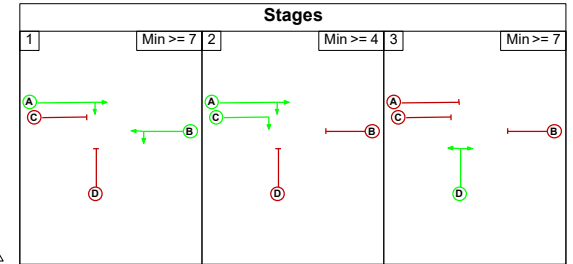
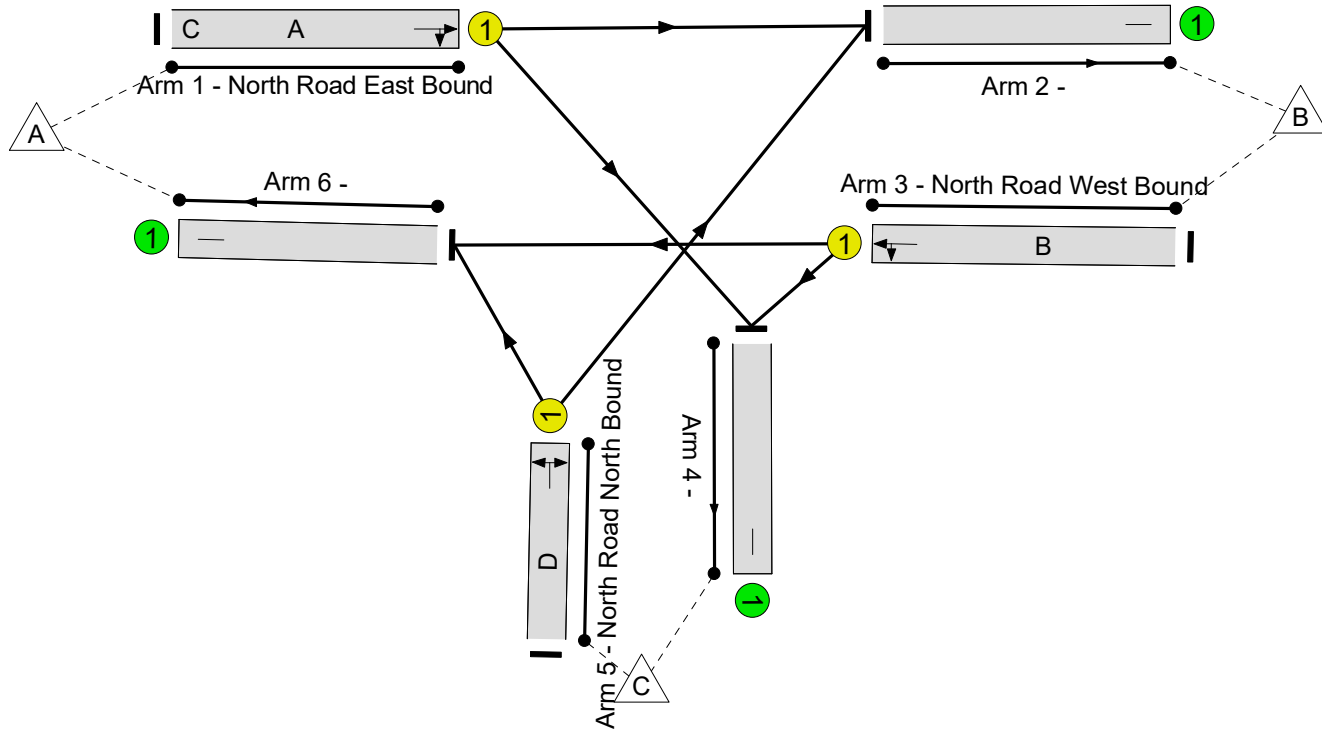
Stage	1	2	3
Duration	22	4	50
Change Point	0	27	35

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


Unnamed Junction
 PRC: 383.3 %
 Total Traffic Delay: 1.5 pcuHr



Full Input Data And Results

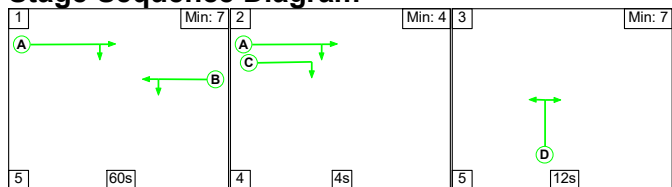
Network Results

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	-	-	N/A	-	-		-	-	-	-	-	-	18.6%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	18.6%
1/1	North Road East Bound Ahead Right	U	N/A	N/A	A	C	1	30	4	50	1790	617	8.1%
2/1		U	N/A	N/A	-		-	-	-	143	Inf	Inf	0.0%
3/1	North Road West Bound Left Ahead	U	N/A	N/A	B		1	22	-	68	1975	505	13.5%
4/1		U	N/A	N/A	-		-	-	-	106	Inf	Inf	0.0%
5/1	North Road North Bound Right Left	U	N/A	N/A	D		1	50	-	189	1791	1015	18.6%
6/1		U	N/A	N/A	-		-	-	-	58	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	1.3	0.2	0.0	1.5	-	-	-	-
Unnamed Junction	-	-	0	0	0	1.3	0.2	0.0	1.5	-	-	-	-
1/1	50	50	-	-	-	0.3	0.0	-	0.3	23.1	0.8	0.0	0.9
2/1	143	143	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	68	68	-	-	-	0.5	0.1	-	0.6	30.0	1.3	0.1	1.4
4/1	106	106	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	189	189	-	-	-	0.5	0.1	-	0.6	11.6	2.3	0.1	2.4
6/1	58	58	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 383.3		383.3		Total Delay for Signalled Lanes (pcuHr): 1.50		1.50		Cycle Time (s): 90		
			PRC Over All Lanes (%):		383.3		Total Delay Over All Lanes(pcuHr):		1.50				

Full Input Data And Results

Scenario 2: 'PM 2021 Base' (FG2: 'PM 2021 Base', Plan 1: 'Network Control Plan 1')

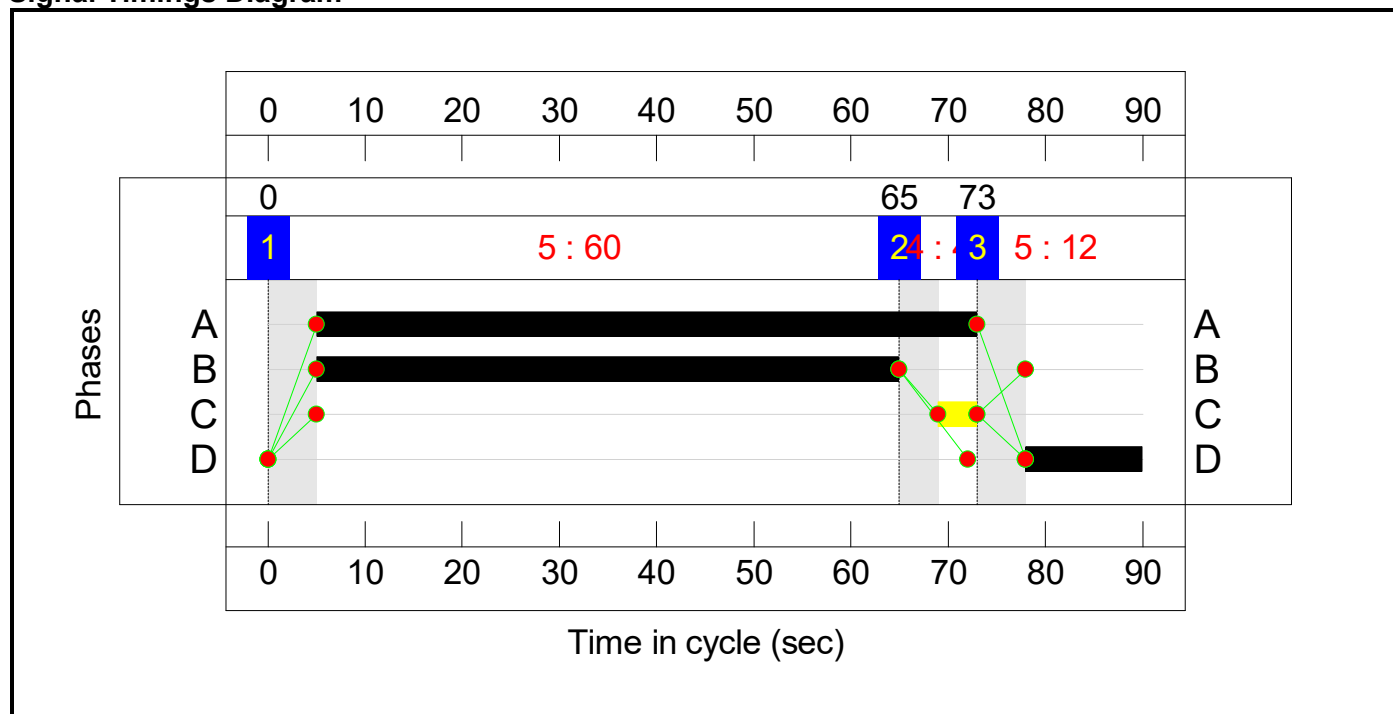
Stage Sequence Diagram




Stage Timings

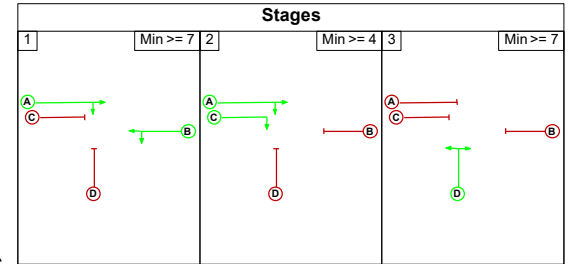
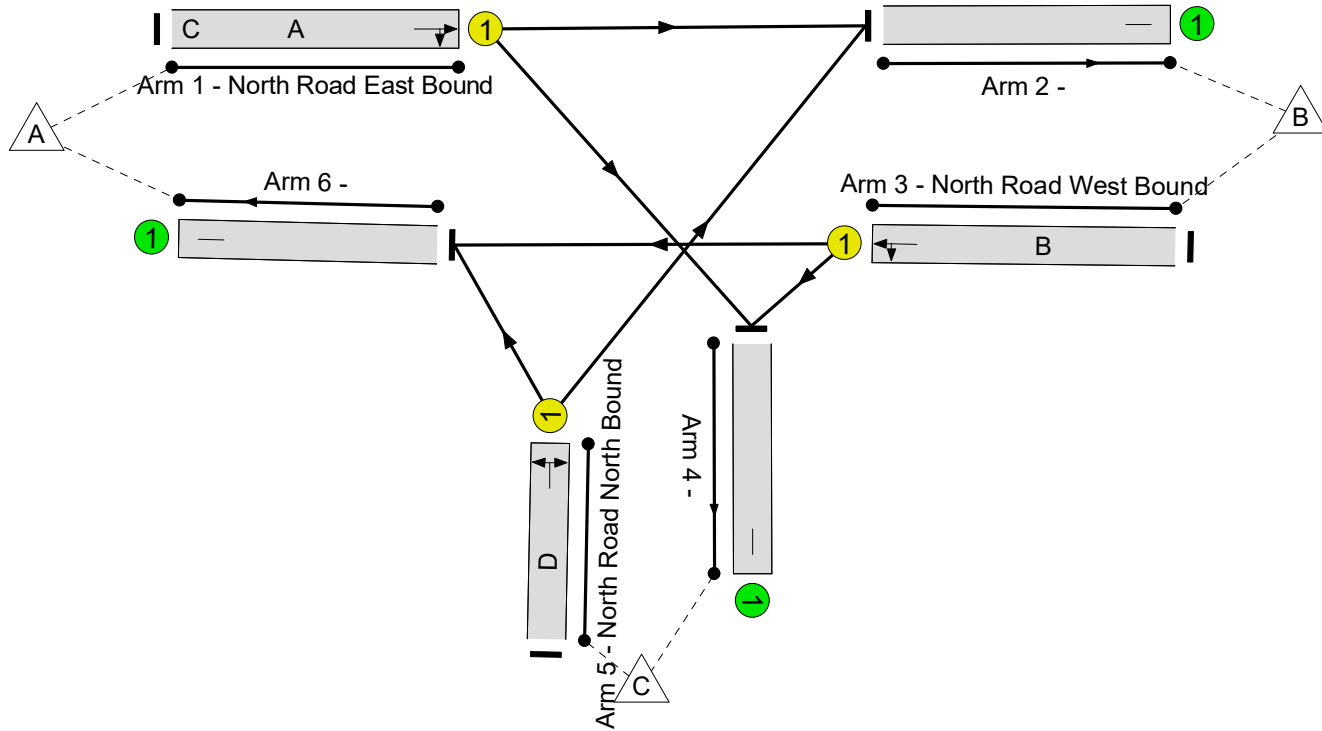
Stage	1	2	3
Duration	60	4	12
Change Point	0	65	73

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


Unnamed Junction
 PRC: 365.7 %
 Total Traffic Delay: 0.9 pcuHr



Full Input Data And Results

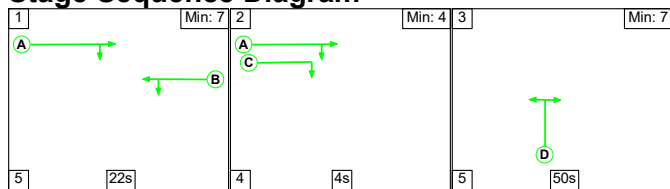
Network Results

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	-	-	N/A	-	-		-	-	-	-	-	-	19.3%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	19.3%
1/1	North Road East Bound Ahead Right	U	N/A	N/A	A	C	1	68	4	71	1749	1341	5.3%
2/1		U	N/A	N/A	-		-	-	-	41	Inf	Inf	0.0%
3/1	North Road West Bound Left Ahead	U	N/A	N/A	B		1	60	-	136	1975	1339	10.2%
4/1		U	N/A	N/A	-		-	-	-	197	Inf	Inf	0.0%
5/1	North Road North Bound Right Left	U	N/A	N/A	D		1	12	-	50	1791	259	19.3%
6/1		U	N/A	N/A	-		-	-	-	19	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	0.7	0.2	0.0	0.9	-	-	-	-
Unnamed Junction	-	-	0	0	0	0.7	0.2	0.0	0.9	-	-	-	-
1/1	71	71	-	-	-	0.1	0.0	-	0.1	4.0	0.4	0.0	0.4
2/1	41	41	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	136	136	-	-	-	0.2	0.1	-	0.2	6.5	1.2	0.1	1.2
4/1	197	197	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	50	50	-	-	-	0.5	0.1	-	0.6	42.5	1.1	0.1	1.2
6/1	19	19	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 365.7		PRC Over All Lanes (%): 365.7		Total Delay for Signalled Lanes (pcuHr): 0.92		Total Delay Over All Lanes(pcuHr): 0.92		Cycle Time (s): 90		

Full Input Data And Results

Scenario 3: 'AM 2026 Base' (FG3: 'AM 2026 Base', Plan 1: 'Network Control Plan 1')

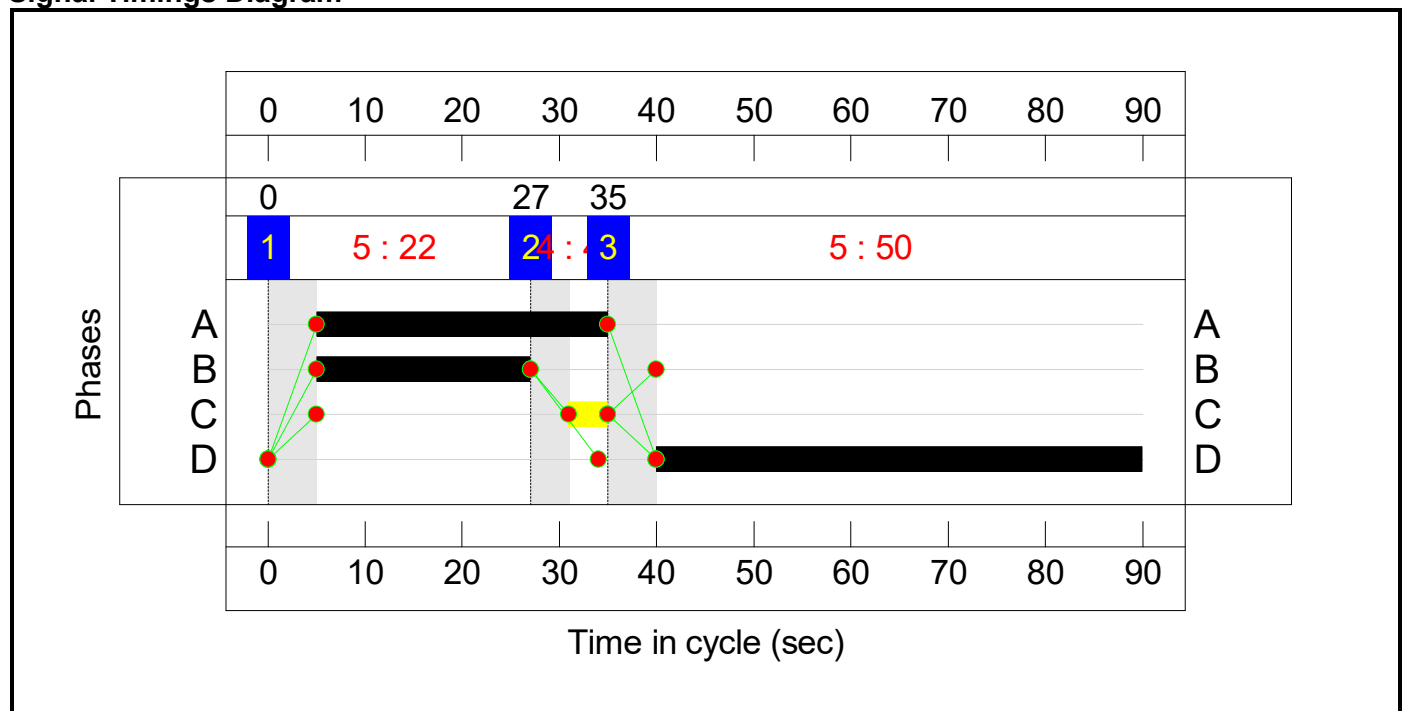
Stage Sequence Diagram




Stage Timings

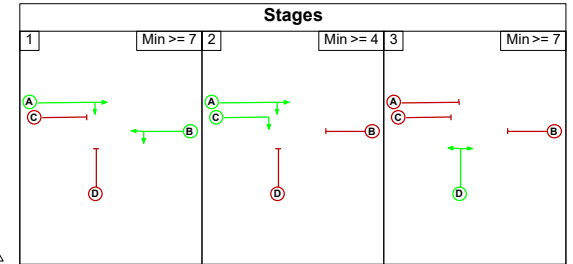
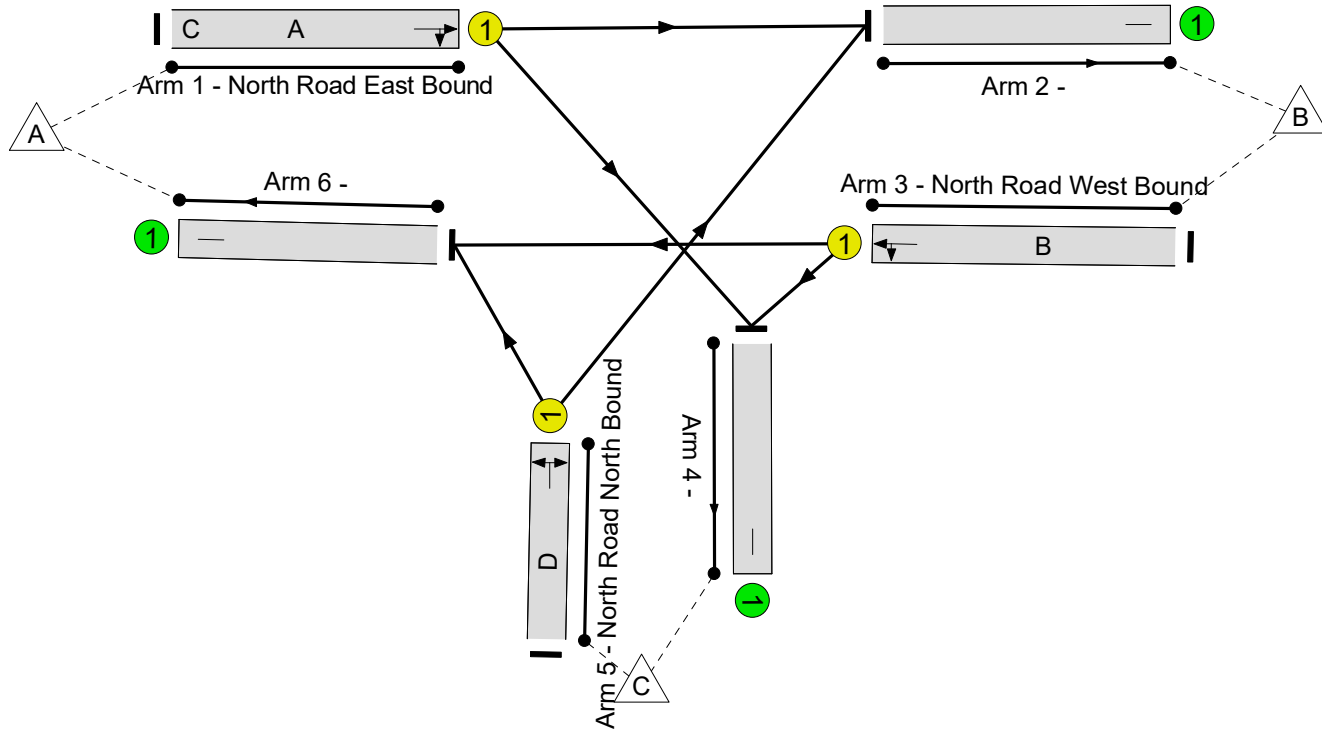
Stage	1	2	3
Duration	22	4	50
Change Point	0	27	35

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


Unnamed Junction
 PRC: 356.7 %
 Total Traffic Delay: 1.6 pcuHr



Full Input Data And Results

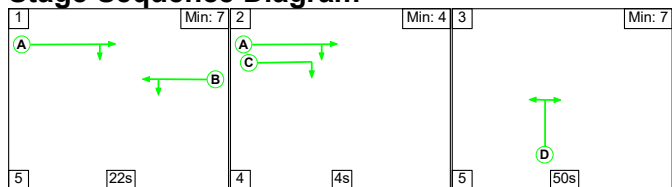
Network Results

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	-	-	N/A	-	-		-	-	-	-	-	-	19.7%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	19.7%
1/1	North Road East Bound Ahead Right	U	N/A	N/A	A	C	1	30	4	53	1792	617	8.6%
2/1		U	N/A	N/A	-		-	-	-	152	Inf	Inf	0.0%
3/1	North Road West Bound Left Ahead	U	N/A	N/A	B		1	22	-	72	1975	505	14.3%
4/1		U	N/A	N/A	-		-	-	-	112	Inf	Inf	0.0%
5/1	North Road North Bound Right Left	U	N/A	N/A	D		1	50	-	200	1791	1015	19.7%
6/1		U	N/A	N/A	-		-	-	-	61	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	1.3	0.3	0.0	1.6	-	-	-	-
Unnamed Junction	-	-	0	0	0	1.3	0.3	0.0	1.6	-	-	-	-
1/1	53	53	-	-	-	0.3	0.0	-	0.3	23.1	0.9	0.0	0.9
2/1	152	152	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	72	72	-	-	-	0.5	0.1	-	0.6	30.1	1.4	0.1	1.5
4/1	112	112	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	200	200	-	-	-	0.5	0.1	-	0.7	11.7	2.4	0.1	2.5
6/1	61	61	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 356.7		PRC Over All Lanes (%): 356.7		Total Delay for Signalled Lanes (pcuHr): 1.59		Total Delay Over All Lanes(pcuHr): 1.59		Cycle Time (s): 90		

Full Input Data And Results

Scenario 4: 'PM 2026 Base' (FG4: 'PM 2026 Base', Plan 1: 'Network Control Plan 1')

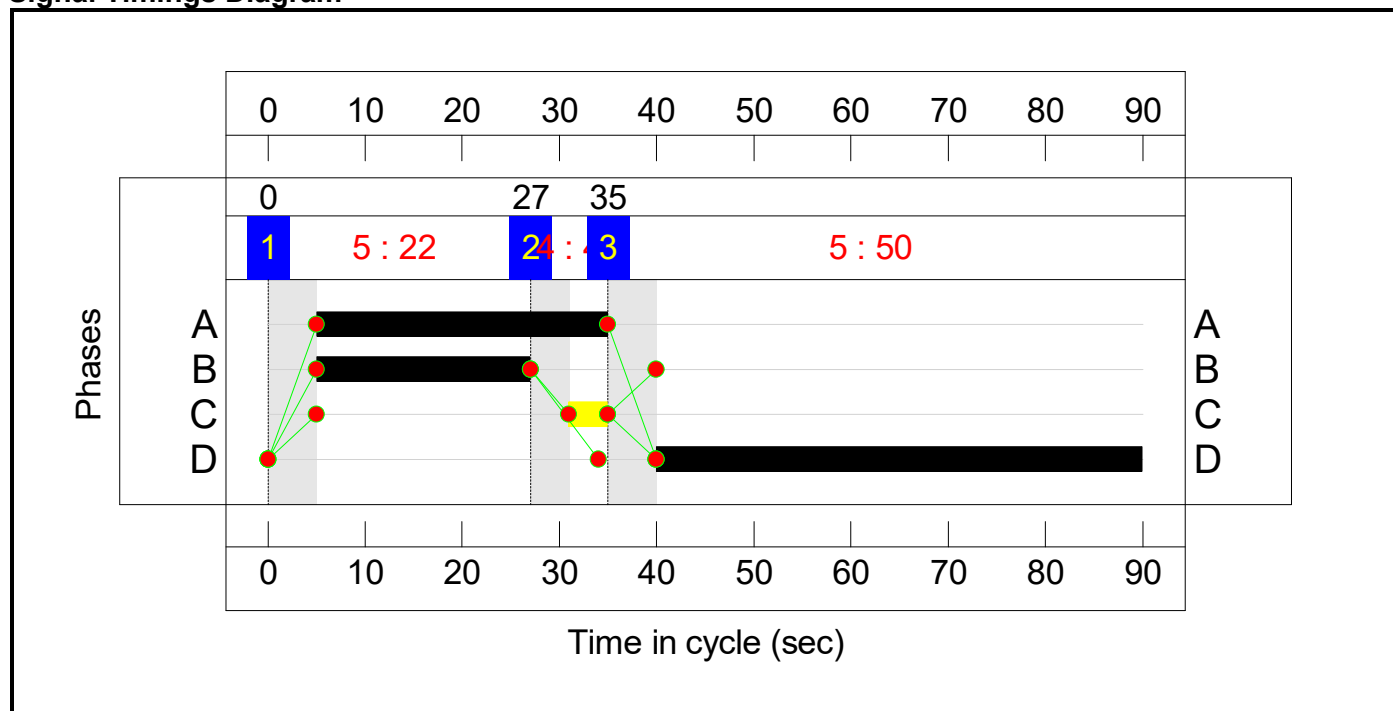
Stage Sequence Diagram




Stage Timings

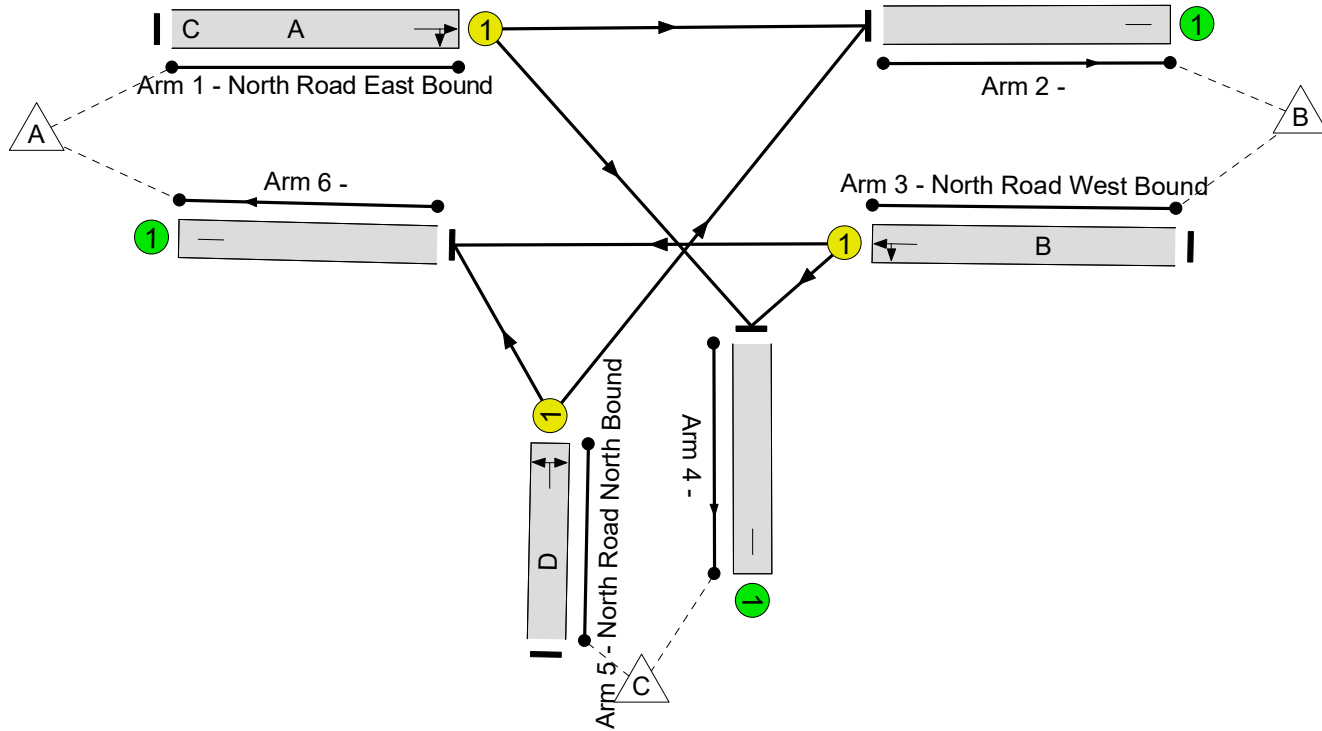
Stage	1	2	3
Duration	22	4	50
Change Point	0	27	35

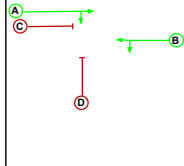
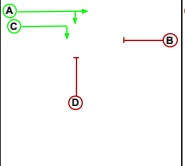
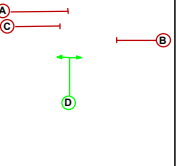
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


Unnamed Junction
 PRC: 359.0 %
 Total Traffic Delay: 1.6 pcuHr



Stages			
1	Min >= 7	2	Min >= 4
			

Full Input Data And Results

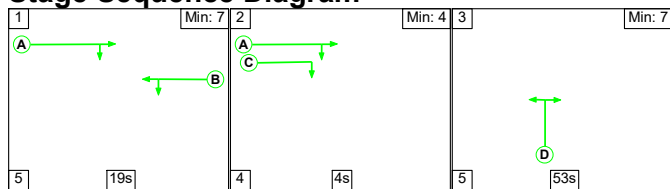
Network Results

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	-	-	N/A	-	-		-	-	-	-	-	-	19.6%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	19.6%
1/1	North Road East Bound Ahead Right	U	N/A	N/A	A	C	1	30	4	53	1792	617	8.6%
2/1		U	N/A	N/A	-		-	-	-	151	Inf	Inf	0.0%
3/1	North Road West Bound Left Ahead	U	N/A	N/A	B		1	22	-	72	1975	505	14.3%
4/1		U	N/A	N/A	-		-	-	-	112	Inf	Inf	0.0%
5/1	North Road North Bound Right Left	U	N/A	N/A	D		1	50	-	199	1791	1015	19.6%
6/1		U	N/A	N/A	-		-	-	-	61	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	1.3	0.3	0.0	1.6	-	-	-	-
Unnamed Junction	-	-	0	0	0	1.3	0.3	0.0	1.6	-	-	-	-
1/1	53	53	-	-	-	0.3	0.0	-	0.3	23.1	0.9	0.0	0.9
2/1	151	151	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	72	72	-	-	-	0.5	0.1	-	0.6	30.1	1.4	0.1	1.5
4/1	112	112	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	199	199	-	-	-	0.5	0.1	-	0.6	11.7	2.4	0.1	2.5
6/1	61	61	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 359.0		359.0		Total Delay for Signalled Lanes (pcuHr): 1.59		1.59		Cycle Time (s): 90		
			PRC Over All Lanes (%):		359.0		Total Delay Over All Lanes(pcuHr):		1.59				

Full Input Data And Results

Scenario 5: 'PM 2026 Base+Com' (FG5: 'AM 2026 Base+Com', Plan 1: 'Network Control Plan 1')

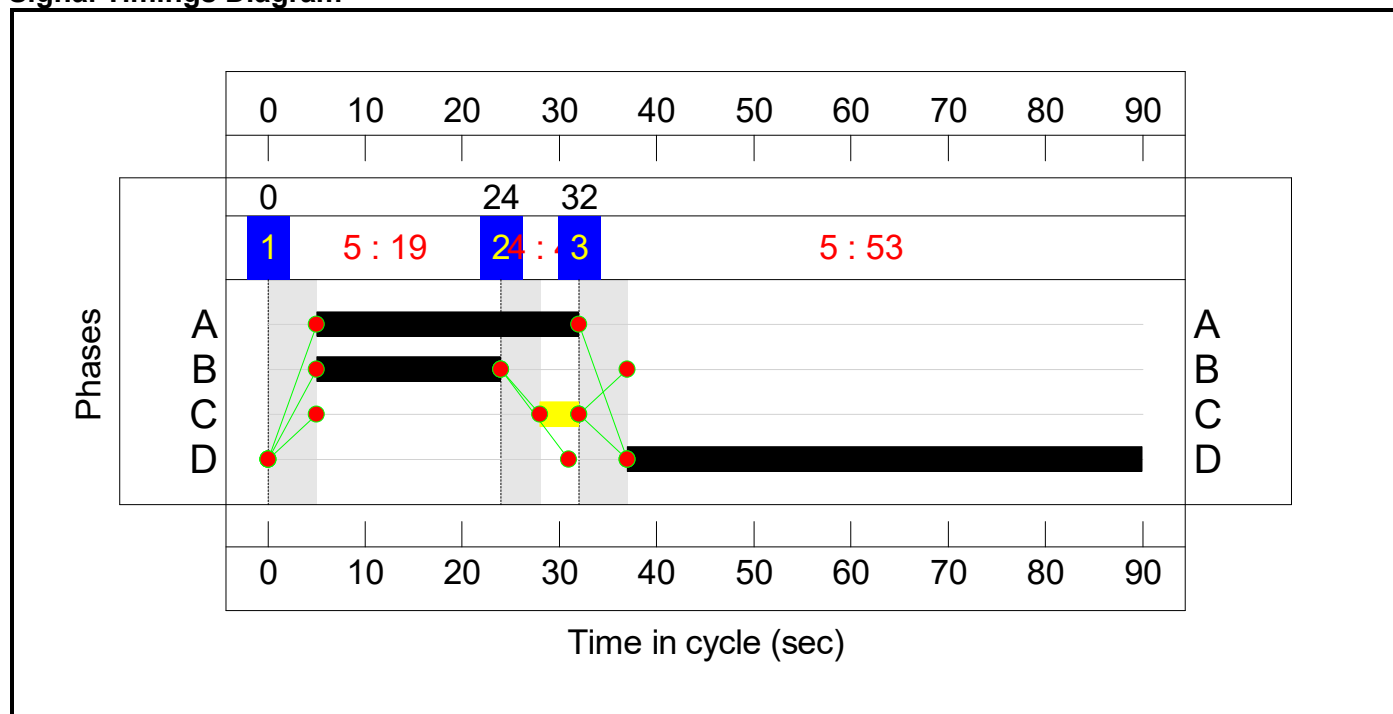
Stage Sequence Diagram




Stage Timings

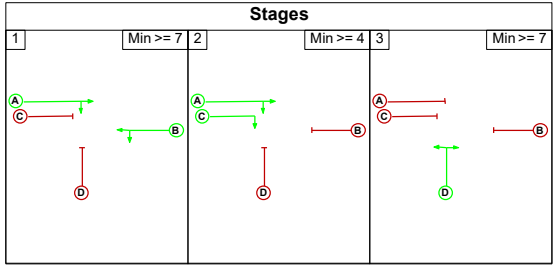
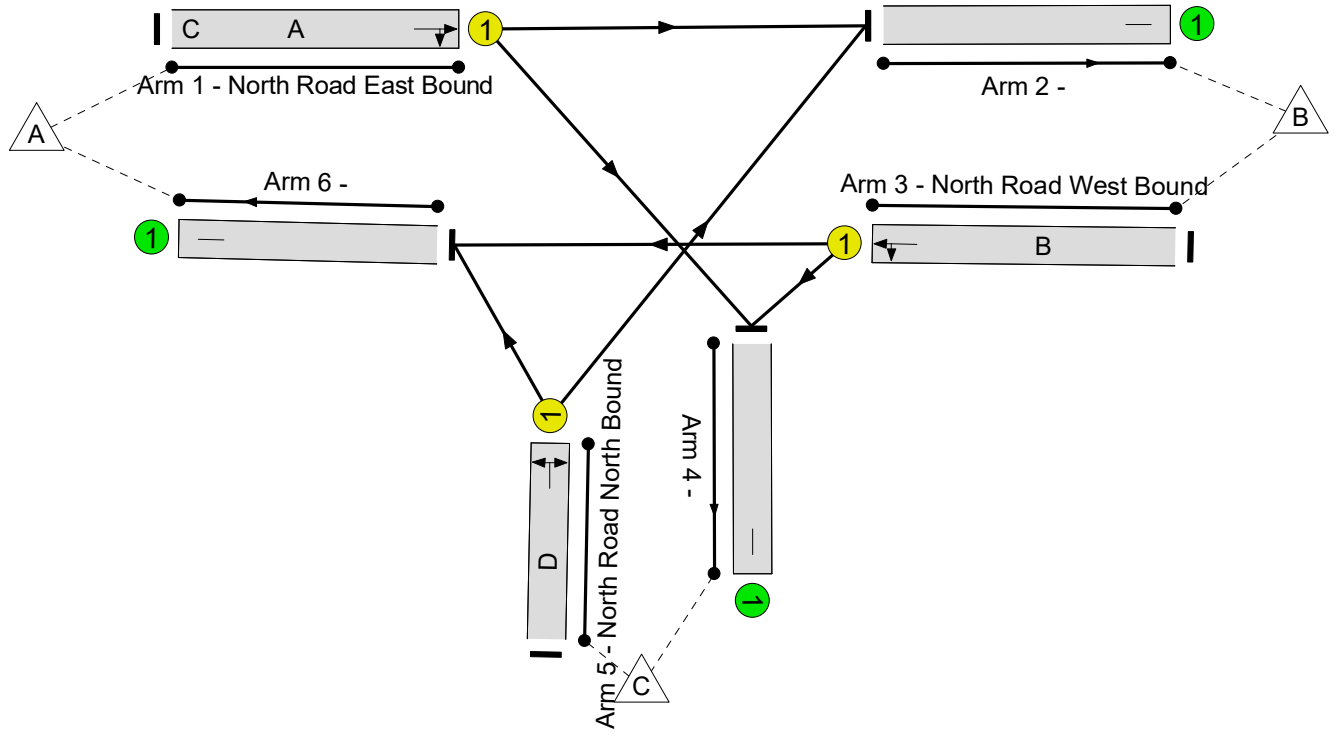
Stage	1	2	3
Duration	19	4	53
Change Point	0	24	32

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


Unnamed Junction
 PRC: 285.3 %
 Total Traffic Delay: 1.9 pcuHr



Full Input Data And Results

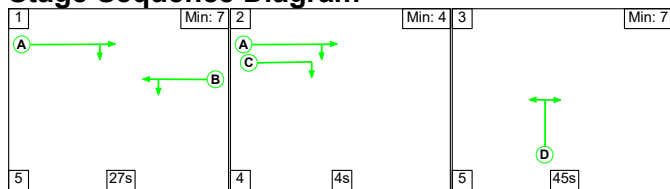
Network Results

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	-	-	N/A	-	-		-	-	-	-	-	-	23.4%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	23.4%
1/1	North Road East Bound Ahead Right	U	N/A	N/A	A	C	1	27	4	73	1779	553	13.2%
2/1		U	N/A	N/A	-		-	-	-	152	Inf	Inf	0.0%
3/1	North Road West Bound Left Ahead	U	N/A	N/A	B		1	19	-	72	1975	439	16.4%
4/1		U	N/A	N/A	-		-	-	-	132	Inf	Inf	0.0%
5/1	North Road North Bound Right Left	U	N/A	N/A	D		1	53	-	251	1791	1075	23.4%
6/1		U	N/A	N/A	-		-	-	-	112	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	1.6	0.3	0.0	1.9	-	-	-	-
Unnamed Junction	-	-	0	0	0	1.6	0.3	0.0	1.9	-	-	-	-
1/1	73	73	-	-	-	0.5	0.1	-	0.5	26.0	1.3	0.1	1.4
2/1	152	152	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	72	72	-	-	-	0.6	0.1	-	0.7	33.2	1.4	0.1	1.5
4/1	132	132	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	251	251	-	-	-	0.6	0.2	-	0.7	10.6	2.9	0.2	3.0
6/1	112	112	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 285.3		285.3		Total Delay for Signalled Lanes (pcuHr): 1.93		1.93		Cycle Time (s): 90		
			PRC Over All Lanes (%):				Total Delay Over All Lanes(pcuHr):						

Full Input Data And Results

Scenario 6: 'PM 2026 Base+Com' (FG6: ' PM 2026 Base+Com', Plan 1: 'Network Control Plan 1')

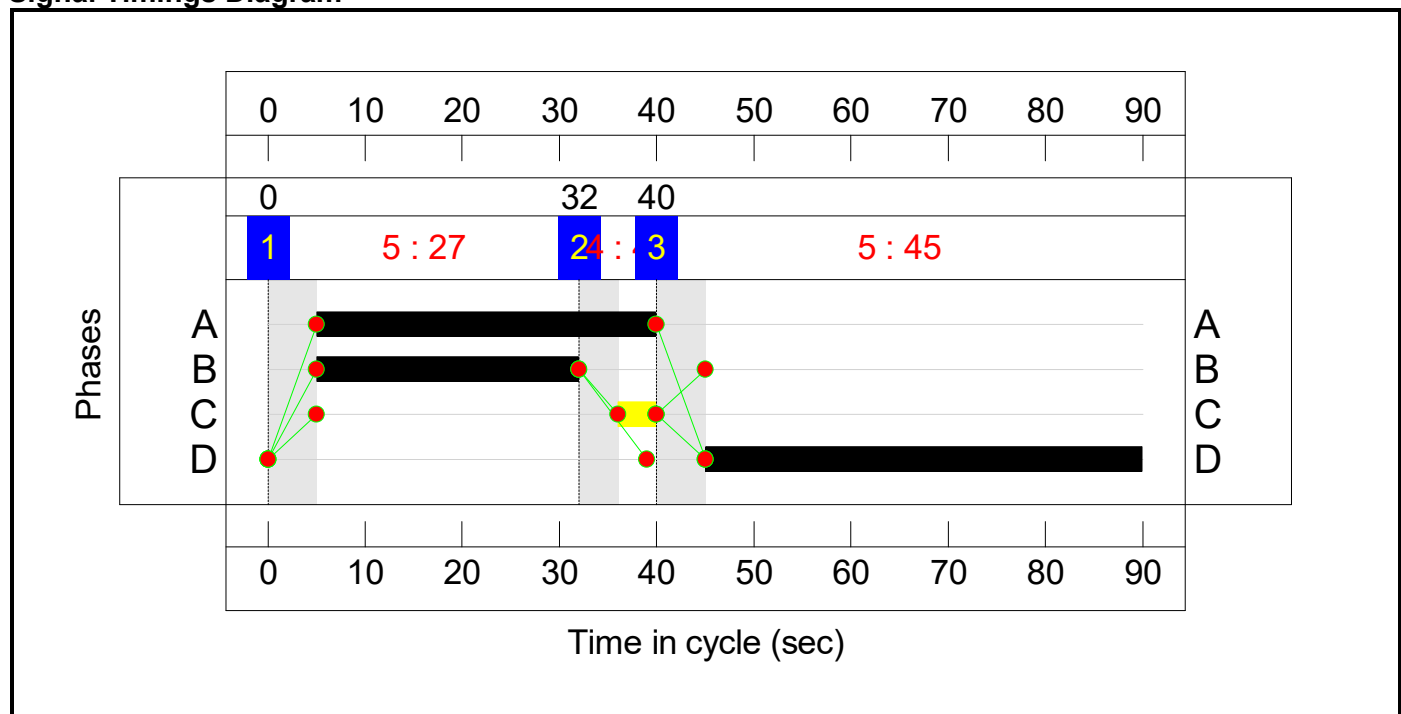
Stage Sequence Diagram




Stage Timings

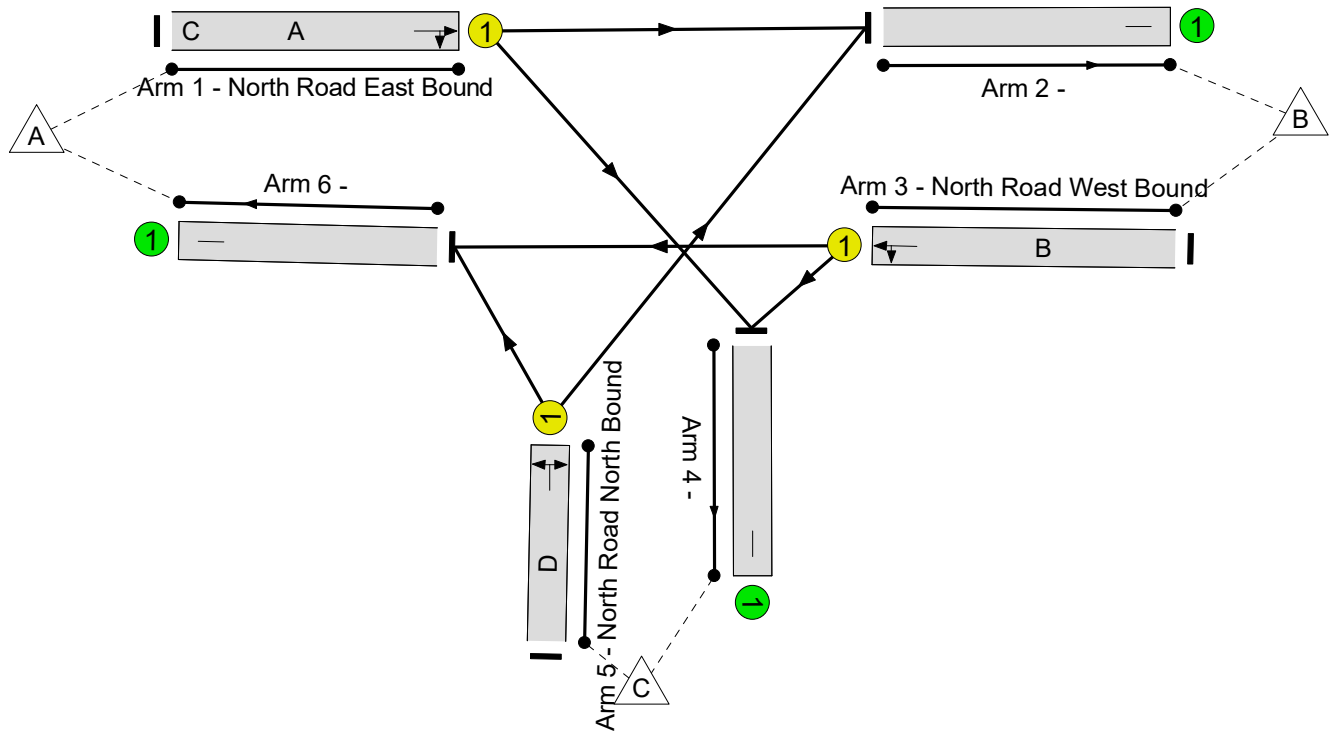
Stage	1	2	3
Duration	27	4	45
Change Point	0	32	40

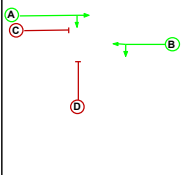
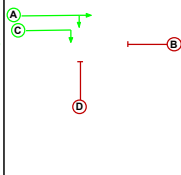
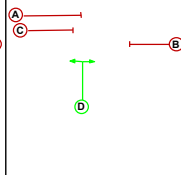

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram


Unnamed Junction
 PRC: 266.2 %
 Total Traffic Delay: 2.1 pcuHr



Stages			
1	Min >= 7	2	Min >= 4
			

Full Input Data And Results

Network Results

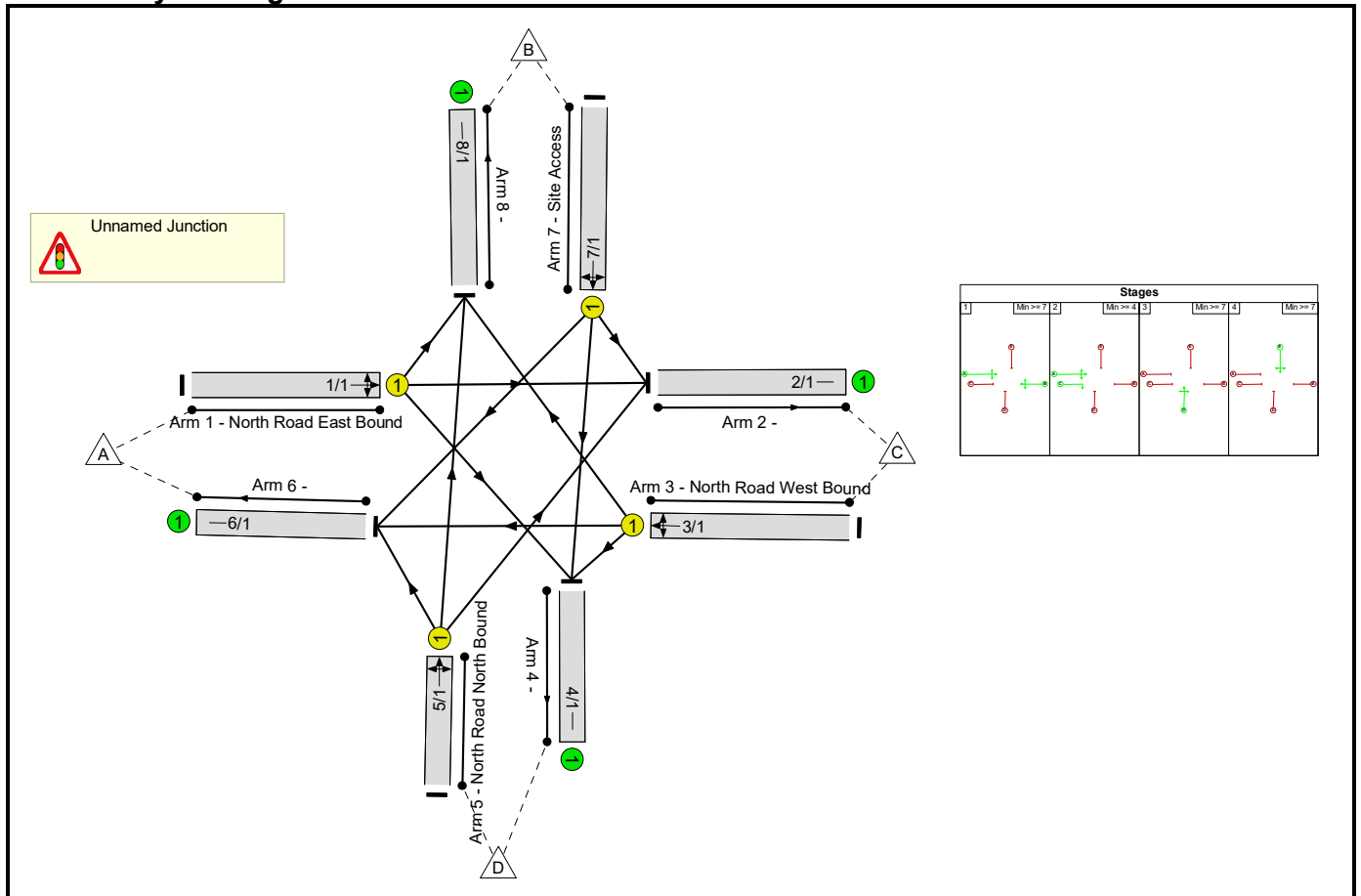
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	24.6%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	24.6%
1/1	North Road East Bound Ahead Right	U	N/A	N/A	A	C	1	35	4	115	1767	707	16.3%
2/1		U	N/A	N/A	-		-	-	-	151	Inf	Inf	0.0%
3/1	North Road West Bound Left Ahead	U	N/A	N/A	B		1	27	-	72	1975	614	11.7%
4/1		U	N/A	N/A	-		-	-	-	174	Inf	Inf	0.0%
5/1	North Road North Bound Right Left	U	N/A	N/A	D		1	45	-	225	1791	915	24.6%
6/1		U	N/A	N/A	-		-	-	-	87	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	1.8	0.3	0.0	2.1	-	-	-	-
Unnamed Junction	-	-	0	0	0	1.8	0.3	0.0	2.1	-	-	-	-
1/1	115	115	-	-	-	0.6	0.1	-	0.7	20.4	1.8	0.1	1.9
2/1	151	151	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	72	72	-	-	-	0.4	0.1	-	0.5	25.5	1.3	0.1	1.3
4/1	174	174	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	225	225	-	-	-	0.8	0.2	-	0.9	14.9	3.1	0.2	3.3
6/1	87	87	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%): 266.2		PRC Over All Lanes (%): 266.2		Total Delay for Signalled Lanes (pcuHr): 2.09		Total Delay Over All Lanes(pcuHr): 2.09		Cycle Time (s): 90		

Full Input Data And Results
Full Input Data And Results

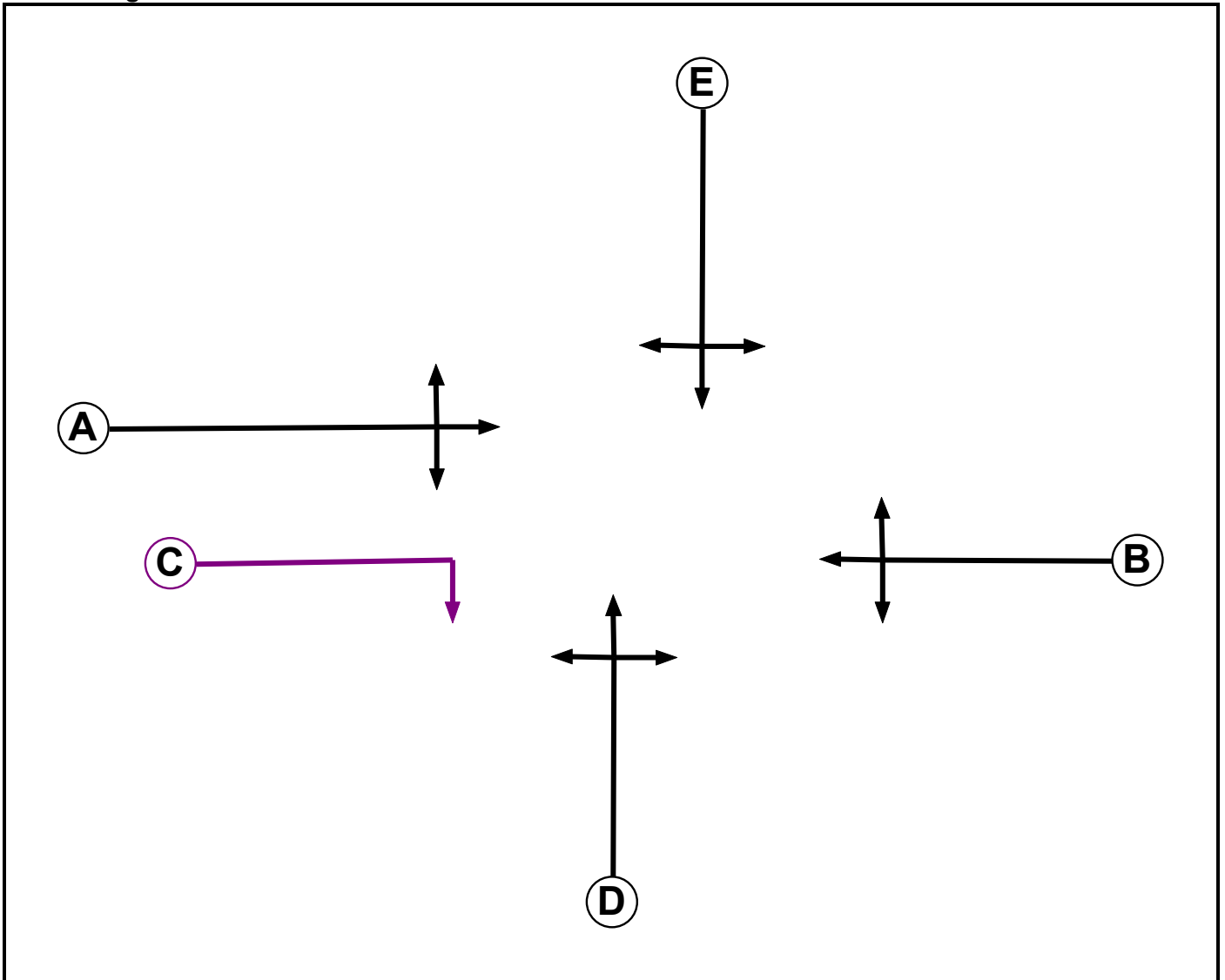
User and Project Details

Project:	
Title:	
Location:	
Checked By:	Sam Denby
Additional detail:	
File name:	North Road_North Road Site Access Junction.lsg3x
Author:	Sam Denby
Company:	Hydrock Manchester
Address:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Ind. Arrow	A	4	4
D	Traffic		7	7
E	Traffic		7	7

Full Input Data And Results

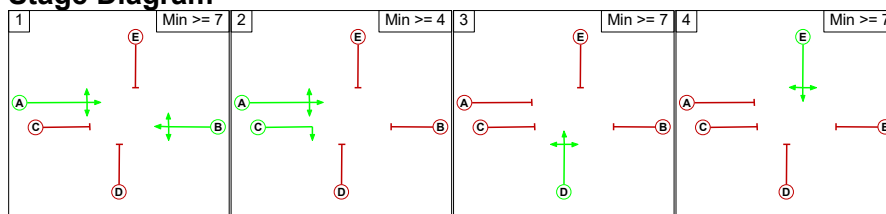
Phase Intergrens Matrix

		Starting Phase				
		A	B	C	D	E
Terminating Phase	A	-	-	5	6	
	B	-	4	7	6	
	C	-	5	5	5	
	D	5	5	5	5	
	E	5	5	5	5	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	A C
3	D
4	E

Stage Diagram



Phase Delays

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

Prohibited Stage Change

		To Stage			
		1	2	3	4
From Stage	1	-	4	7	6
	2	5	-	5	6
	3	5	5	-	5
	4	5	5	5	-

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction

There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction												
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 (North Road East Bound)	U	A C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Ahead	Inf
											Arm 4 Right	12.00
											Arm 8 Left	Inf
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (North Road West Bound)	U	B	2	3	60.0	Geom	-	3.60	0.00	Y	Arm 4 Left	Inf
											Arm 6 Ahead	Inf
											Arm 8 Right	Inf
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (North Road North Bound)	U	D	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 2 Right	12.00
											Arm 6 Left	12.00
											Arm 8 Ahead	Inf
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Site Access)	U	E	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 2 Left	12.00
											Arm 4 Ahead	Inf
											Arm 6 Right	12.00
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM 2026 Base+Com+Dev'	07:30	08:30	01:00	
2: 'PM 2026 Base+Com+Dev'	16:30	17:30	01:00	
3: 'Sensitivity Test AM 2026 Base+Com+Dev'	07:30	08:30	01:00	
4: 'Sensitivity Test PM 2026 Base+Com+Dev'	16:30	17:30	01:00	

Full Input Data And Results

Scenario 1: 'AM 2026 Base+Com+Dev' (FG1: 'AM 2026 Base+Com+Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
Origin		A	B	C	D	Tot.
	A	0	0	12	61	73
	B	0	0	0	59	59
	C	1	0	0	84	85
	D	111	88	159	0	358
	Tot.	112	88	171	204	575

Traffic Lane Flows

Lane	Scenario 1: AM 2026 Base+Com+Dev
Junction: Unnamed Junction	
1/1	73
2/1	171
3/1	85
4/1	204
5/1	358
6/1	112
7/1	59
8/1	88

Full Input Data And Results

Lane Saturation Flows

Junction: Unnamed Junction								
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 (North Road East Bound)	3.50	0.00	Y	Arm 2 Ahead	Inf	16.4 %	1779	1779
				Arm 4 Right	12.00	83.6 %		
				Arm 8 Left	Inf	0.0 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (North Road West Bound)	3.60	0.00	Y	Arm 4 Left	Inf	98.8 %	1975	1975
				Arm 6 Ahead	Inf	1.2 %		
				Arm 8 Right	Inf	0.0 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (North Road North Bound)	4.00	0.00	Y	Arm 2 Right	12.00	44.4 %	1841	1841
				Arm 6 Left	12.00	31.0 %		
				Arm 8 Ahead	Inf	24.6 %		
6/1	Infinite Saturation Flow						Inf	Inf
7/1 (Site Access)	3.50	0.00	Y	Arm 2 Left	12.00	0.0 %	1965	1965
				Arm 4 Ahead	Inf	100.0 %		
				Arm 6 Right	12.00	0.0 %		
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'PM 2021 Base+Com+Dev' (FG2: 'PM 2026 Base+Com+Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	1	136	137
	B	0	0	0	80	80
	C	9	0	0	148	157
	D	37	46	50	0	133
	Tot.	46	46	51	364	507

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: PM 2021 Base+Com+Dev
Junction: Unnamed Junction	
1/1	137
2/1	51
3/1	157
4/1	364
5/1	133
6/1	46
7/1	80
8/1	46

Lane Saturation Flows

Junction: Unnamed Junction								
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 (North Road East Bound)	3.50	0.00	Y	Arm 2 Ahead	Inf	0.7 %	1748	1748
				Arm 4 Right	12.00	99.3 %		
				Arm 8 Left	Inf	0.0 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (North Road West Bound)	3.60	0.00	Y	Arm 4 Left	Inf	94.3 %	1975	1975
				Arm 6 Ahead	Inf	5.7 %		
				Arm 8 Right	Inf	0.0 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (North Road North Bound)	4.00	0.00	Y	Arm 2 Right	12.00	37.6 %	1863	1863
				Arm 6 Left	12.00	27.8 %		
				Arm 8 Ahead	Inf	34.6 %		
6/1	Infinite Saturation Flow						Inf	Inf
7/1 (Site Access)	3.50	0.00	Y	Arm 2 Left	12.00	0.0 %	1965	1965
				Arm 4 Ahead	Inf	100.0 %		
				Arm 6 Right	12.00	0.0 %		
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: 'Sen AM 2026 Base+Com+Dev' (FG3: 'Senitivity Test AM 2026 Base+Com+Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	0	12	61	73
B	0	0	0	66	66	
C	1	0	0	84	85	
D	111	99	160	0	370	
Tot.	112	99	172	211	594	

Traffic Lane Flows

Lane	Scenario 3: Sen AM 2026 Base+Com+Dev
Junction: Unnamed Junction	
1/1	73
2/1	172
3/1	85
4/1	211
5/1	370
6/1	112
7/1	66
8/1	99

Full Input Data And Results

Lane Saturation Flows

Junction: Unnamed Junction								
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 (North Road East Bound)	3.50	0.00	Y	Arm 2 Ahead	Inf	16.4 %	1779	1779
				Arm 4 Right	12.00	83.6 %		
				Arm 8 Left	Inf	0.0 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (North Road West Bound)	3.60	0.00	Y	Arm 4 Left	Inf	98.8 %	1975	1975
				Arm 6 Ahead	Inf	1.2 %		
				Arm 8 Right	Inf	0.0 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (North Road North Bound)	4.00	0.00	Y	Arm 2 Right	12.00	43.2 %	1846	1846
				Arm 6 Left	12.00	30.0 %		
				Arm 8 Ahead	Inf	26.8 %		
6/1	Infinite Saturation Flow						Inf	Inf
7/1 (Site Access)	3.50	0.00	Y	Arm 2 Left	12.00	0.0 %	1965	1965
				Arm 4 Ahead	Inf	100.0 %		
				Arm 6 Right	12.00	0.0 %		
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'Sen PM 2021 Base+Com+Dev' (FG4: 'Sensitivity Test PM 2026 Base+Com+Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	0	1	136	137
	B	0	0	0	85	85
	C	9	0	0	148	157
	D	37	46	50	0	133
	Tot.	46	46	51	369	512

Full Input Data And Results

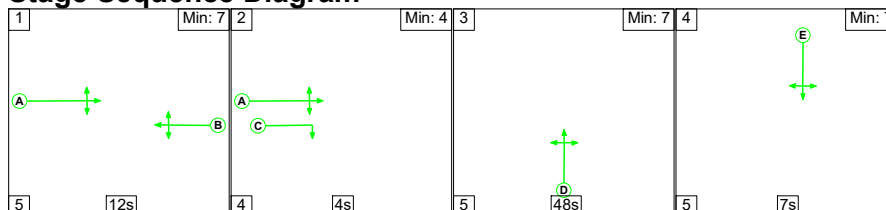
Traffic Lane Flows

Lane	Scenario 4: Sen PM 2021 Base+Com+Dev
Junction: Unnamed Junction	
1/1	137
2/1	51
3/1	157
4/1	369
5/1	133
6/1	46
7/1	85
8/1	46

Lane Saturation Flows

Junction: Unnamed Junction								
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 (North Road East Bound)	3.50	0.00	Y	Arm 2 Ahead	Inf	0.7 %	1748	1748
				Arm 4 Right	12.00	99.3 %		
				Arm 8 Left	Inf	0.0 %		
2/1	Infinite Saturation Flow						Inf	Inf
3/1 (North Road West Bound)	3.60	0.00	Y	Arm 4 Left	Inf	94.3 %	1975	1975
				Arm 6 Ahead	Inf	5.7 %		
				Arm 8 Right	Inf	0.0 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1 (North Road North Bound)	4.00	0.00	Y	Arm 2 Right	12.00	37.6 %	1863	1863
				Arm 6 Left	12.00	27.8 %		
				Arm 8 Ahead	Inf	34.6 %		
6/1	Infinite Saturation Flow						Inf	Inf
7/1 (Site Access)	3.50	0.00	Y	Arm 2 Left	12.00	0.0 %	1965	1965
				Arm 4 Ahead	Inf	100.0 %		
				Arm 6 Right	12.00	0.0 %		
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'AM 2026 Base+Com+Dev' (FG1: 'AM 2026 Base+Com+Dev', Plan 1: 'Network Control Plan 1')

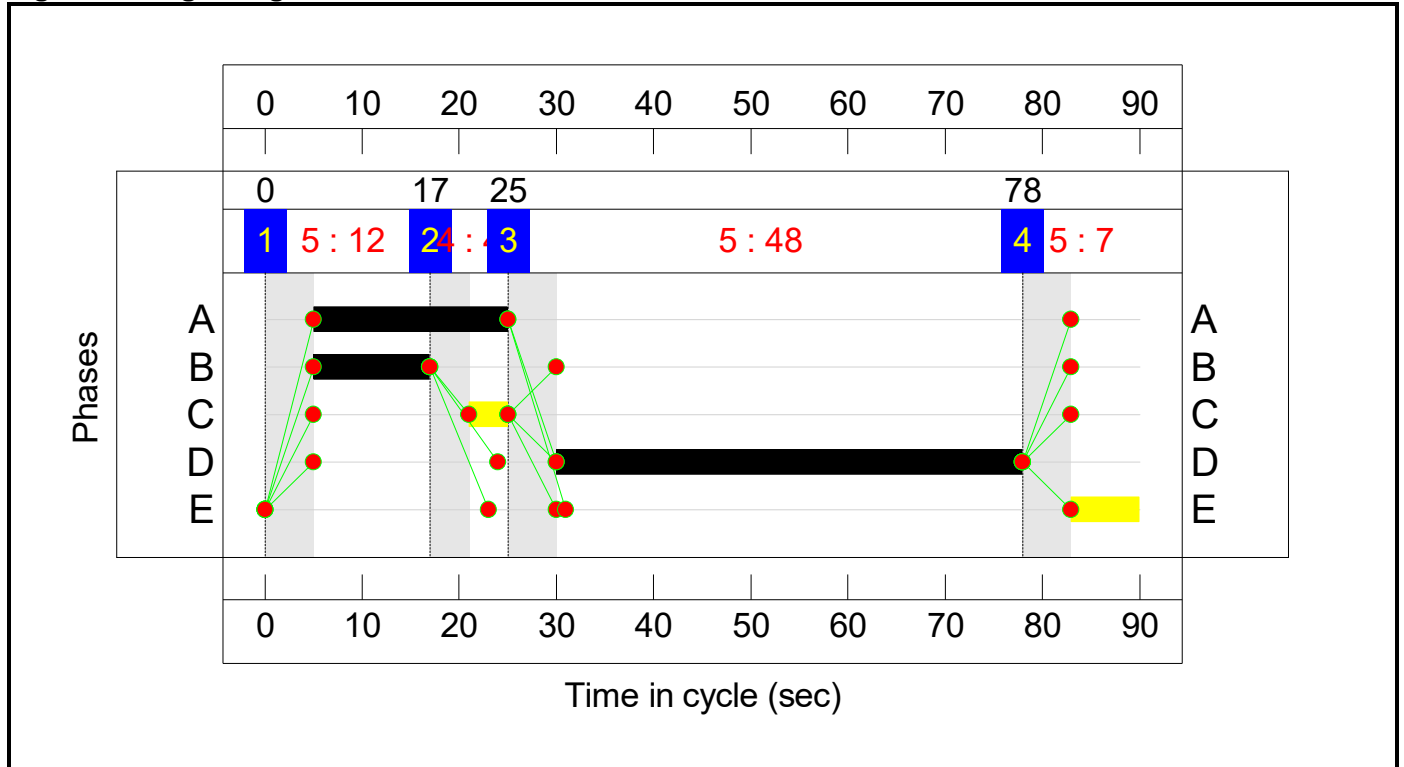


Full Input Data And Results

Stage Timings


Stage	1	2	3	4
Duration	12	4	48	7
Change Point	0	17	25	78

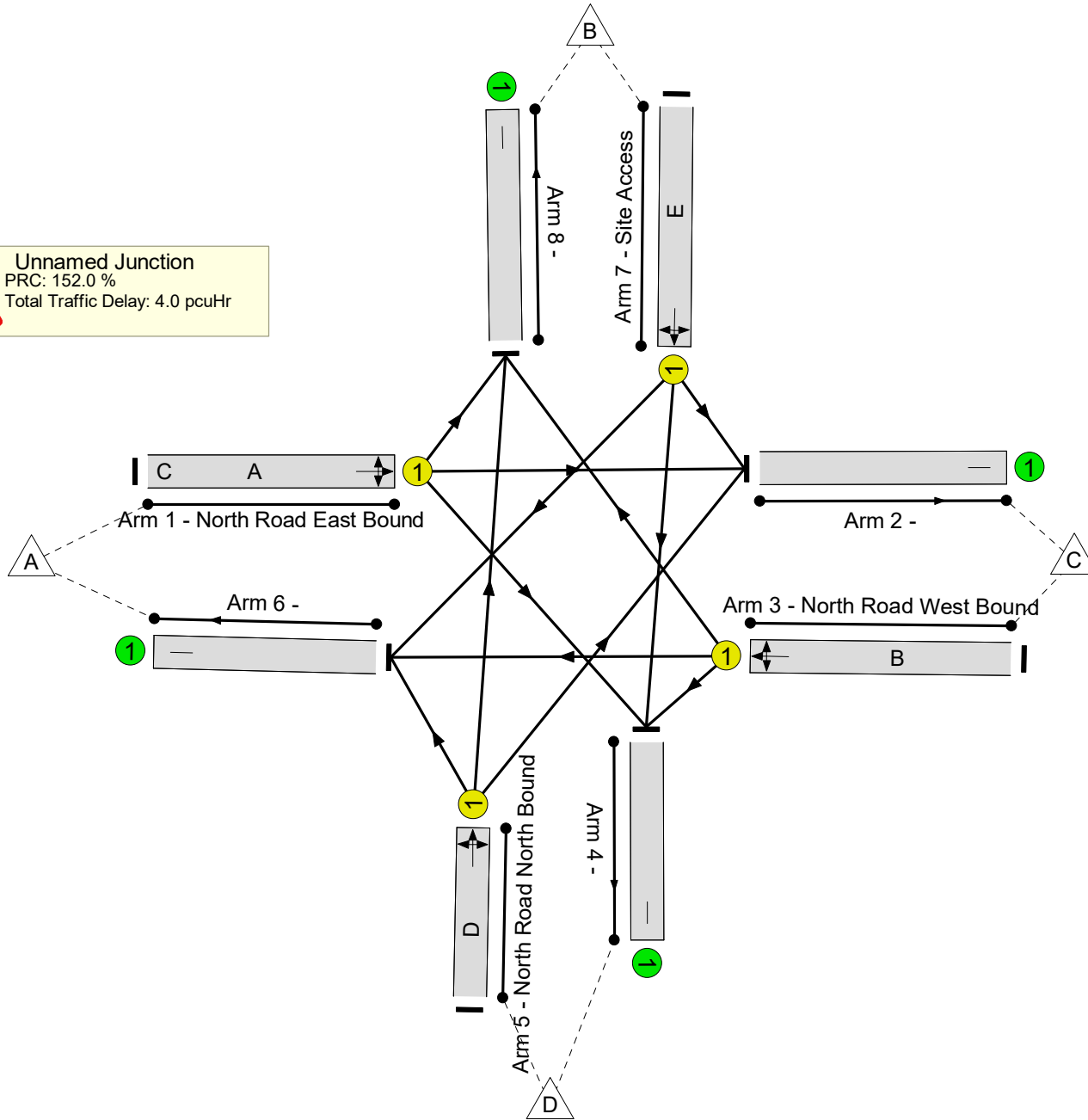
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results


Unnamed Junction
 PRC: 152.0 %
 Total Traffic Delay: 4.0 pcuHr



Stages							
1	Min >= 7	2	Min >= 4	3	Min >= 7	4	Min >= 7

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	-	-	N/A	-	-		-	-	-	-	-	-	35.7%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	35.7%
1/1	North Road East Bound Ahead Right Left	U	N/A	N/A	A	C	1	20	4	73	1779	415	17.6%
2/1		U	N/A	N/A	-		-	-	-	171	Inf	Inf	0.0%
3/1	North Road West Bound Left Ahead Right	U	N/A	N/A	B		1	12	-	85	1975	285	29.8%
4/1		U	N/A	N/A	-		-	-	-	204	Inf	Inf	0.0%
5/1	North Road North Bound Right Left Ahead	U	N/A	N/A	D		1	48	-	358	1841	1002	35.7%
6/1		U	N/A	N/A	-		-	-	-	112	Inf	Inf	0.0%
7/1	Site Access Left Ahead Right	U	N/A	N/A	E		1	7	-	59	1965	175	33.8%
8/1		U	N/A	N/A	-		-	-	-	88	Inf	Inf	0.0%

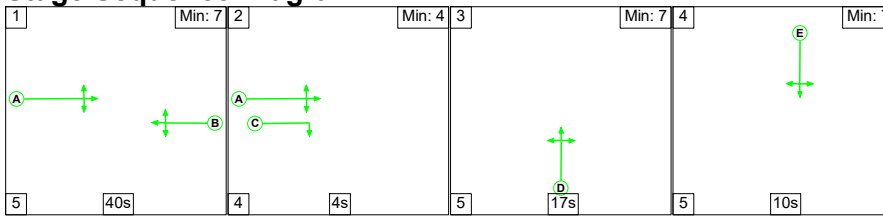
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	3.2	0.8	0.0	4.0	-	-	-	-
Unnamed Junction	-	-	0	0	0	3.2	0.8	0.0	4.0	-	-	-	-
1/1	73	73	-	-	-	0.6	0.1	-	0.7	32.8	1.4	0.1	1.5
2/1	171	171	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	85	85	-	-	-	0.8	0.2	-	1.0	43.4	1.9	0.2	2.1
4/1	204	204	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	358	358	-	-	-	1.2	0.3	-	1.4	14.4	5.0	0.3	5.2
6/1	112	112	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	59	59	-	-	-	0.6	0.3	-	0.9	54.1	1.4	0.3	1.6
8/1	88	88	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
<p>C1 PRC for Signalled Lanes (%): 152.0 Total Delay for Signalled Lanes (pcuHr): 4.01 Cycle Time (s): 90 PRC Over All Lanes (%): 152.0 Total Delay Over All Lanes(pcuHr): 4.01</p>													

Full Input Data And Results

Scenario 2: 'PM 2021 Base+Com+Dev' (FG2: 'PM 2026 Base+Com+Dev', Plan 1: 'Network Control Plan 1')

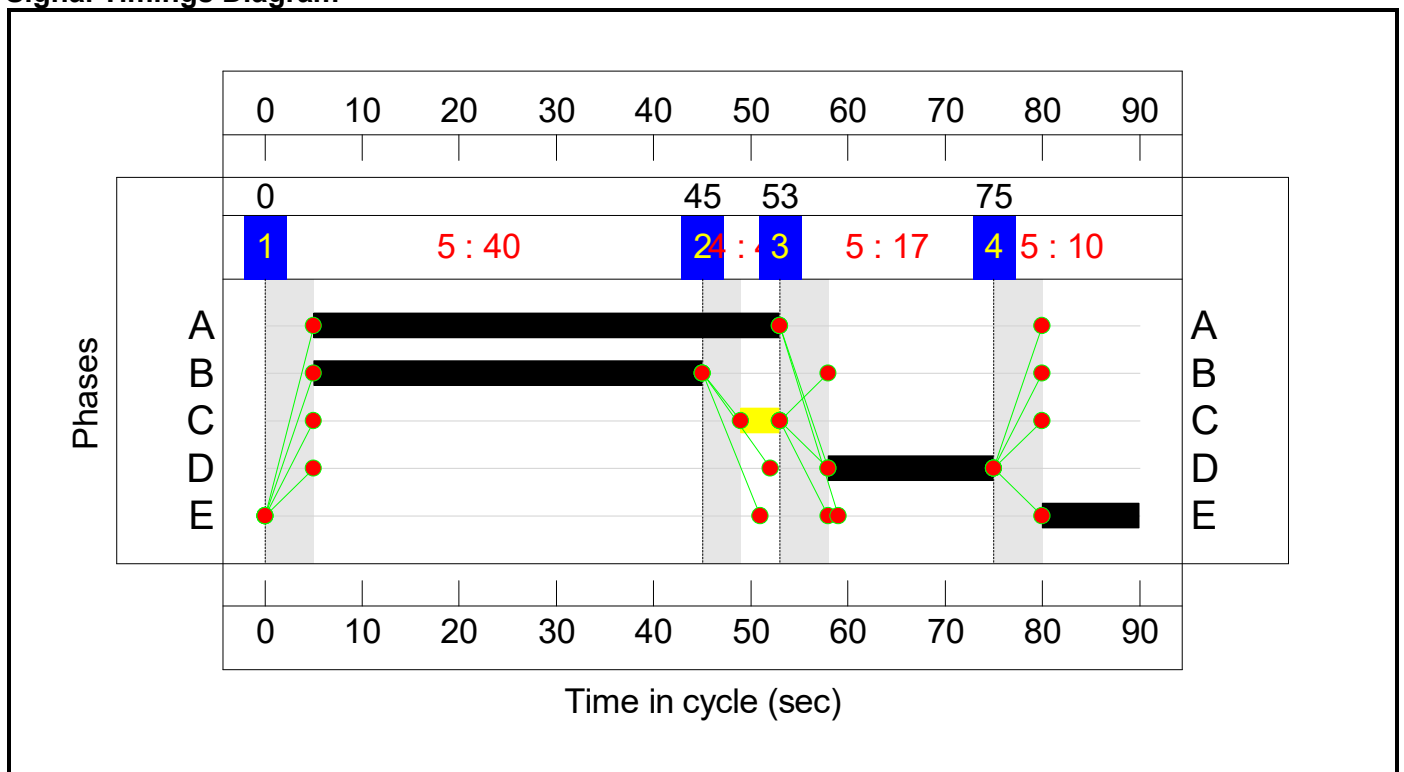
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4
Duration	40	4	17	10
Change Point	0	45	53	75

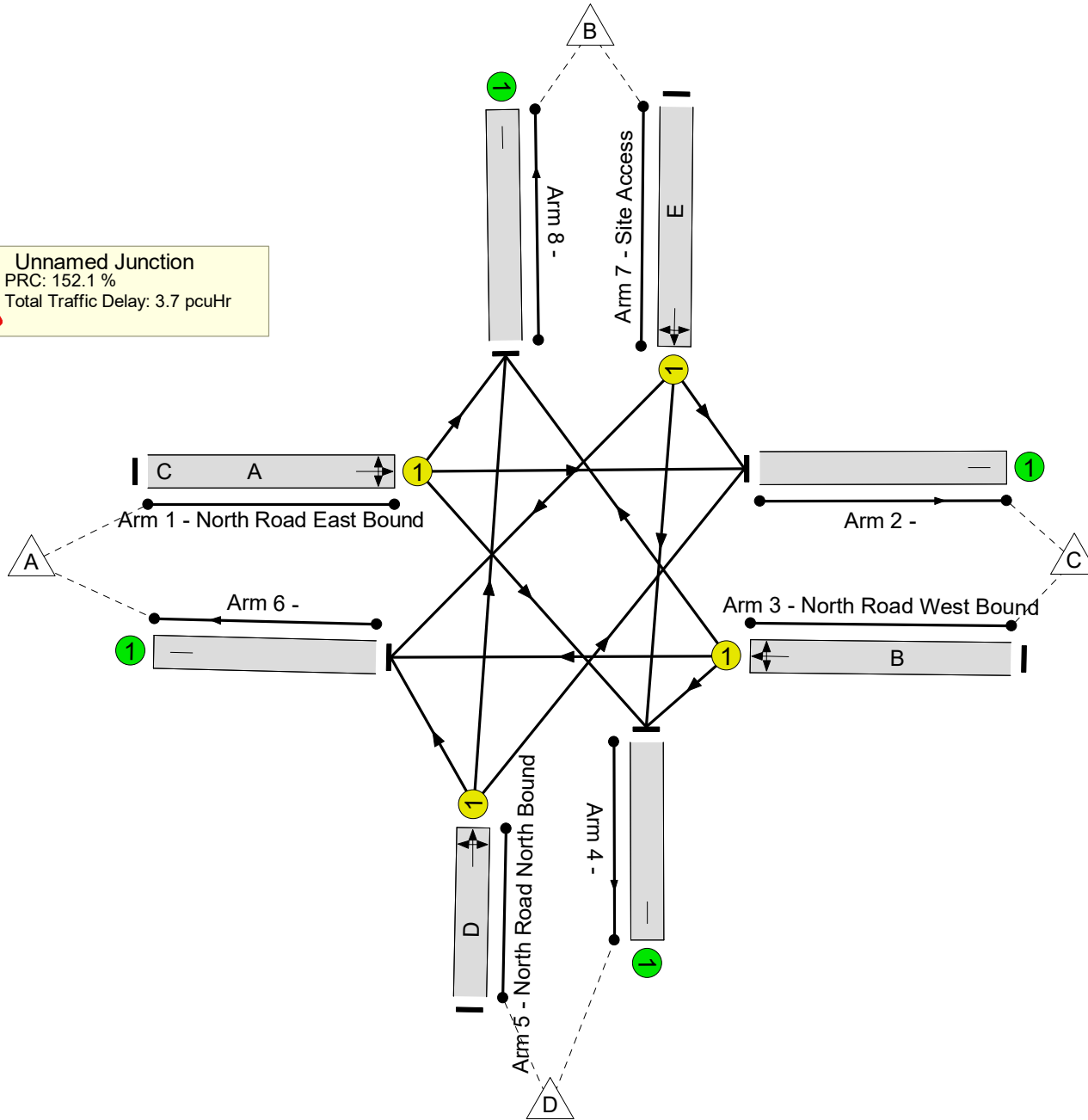
Signal Timings Diagram

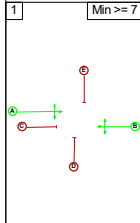
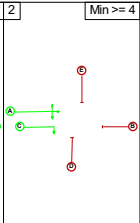
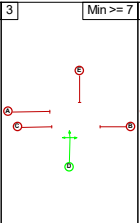
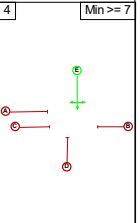
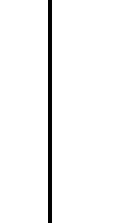



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results


Unnamed Junction
 PRC: 152.1 %
 Total Traffic Delay: 3.7 pcuHr



Stages							
1	Min >= 7	2	Min >= 4	3	Min >= 7	4	Min >= 7
							

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	-	-	N/A	-	-		-	-	-	-	-	-	35.7%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	35.7%
1/1	North Road East Bound Ahead Right Left	U	N/A	N/A	A	C	1	48	4	137	1748	952	14.4%
2/1		U	N/A	N/A	-		-	-	-	51	Inf	Inf	0.0%
3/1	North Road West Bound Left Ahead Right	U	N/A	N/A	B		1	40	-	157	1975	900	17.4%
4/1		U	N/A	N/A	-		-	-	-	364	Inf	Inf	0.0%
5/1	North Road North Bound Right Left Ahead	U	N/A	N/A	D		1	17	-	133	1863	373	35.7%
6/1		U	N/A	N/A	-		-	-	-	46	Inf	Inf	0.0%
7/1	Site Access Left Ahead Right	U	N/A	N/A	E		1	10	-	80	1965	240	33.3%
8/1		U	N/A	N/A	-		-	-	-	46	Inf	Inf	0.0%

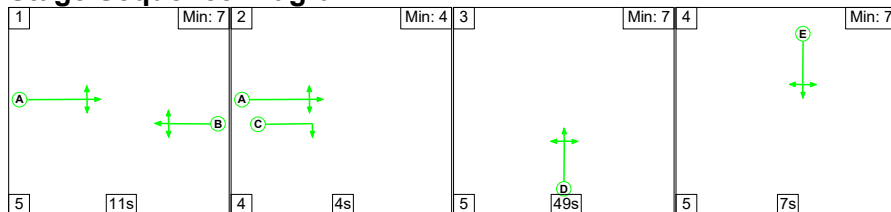
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	3.0	0.7	0.0	3.7	-	-	-	-
Unnamed Junction	-	-	0	0	0	3.0	0.7	0.0	3.7	-	-	-	-
1/1	137	137	-	-	-	0.4	0.1	-	0.5	12.4	1.7	0.1	1.8
2/1	51	51	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	157	157	-	-	-	0.6	0.1	-	0.7	16.9	2.3	0.1	2.4
4/1	364	364	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	133	133	-	-	-	1.1	0.3	-	1.4	38.5	2.8	0.3	3.1
6/1	46	46	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	80	80	-	-	-	0.8	0.2	-	1.1	47.4	1.8	0.2	2.1
8/1	46	46	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
<p>C1 PRC for Signalled Lanes (%): 152.1 Total Delay for Signalled Lanes (pcuHr): 3.68 Cycle Time (s): 90 PRC Over All Lanes (%): 152.1 Total Delay Over All Lanes(pcuHr): 3.68</p>													

Full Input Data And Results

Scenario 3: 'Sen AM 2026 Base+Com+Dev' (FG3: 'Senitivity Test AM 2026 Base+Com+Dev', Plan 1: 'Network Control Plan 1')

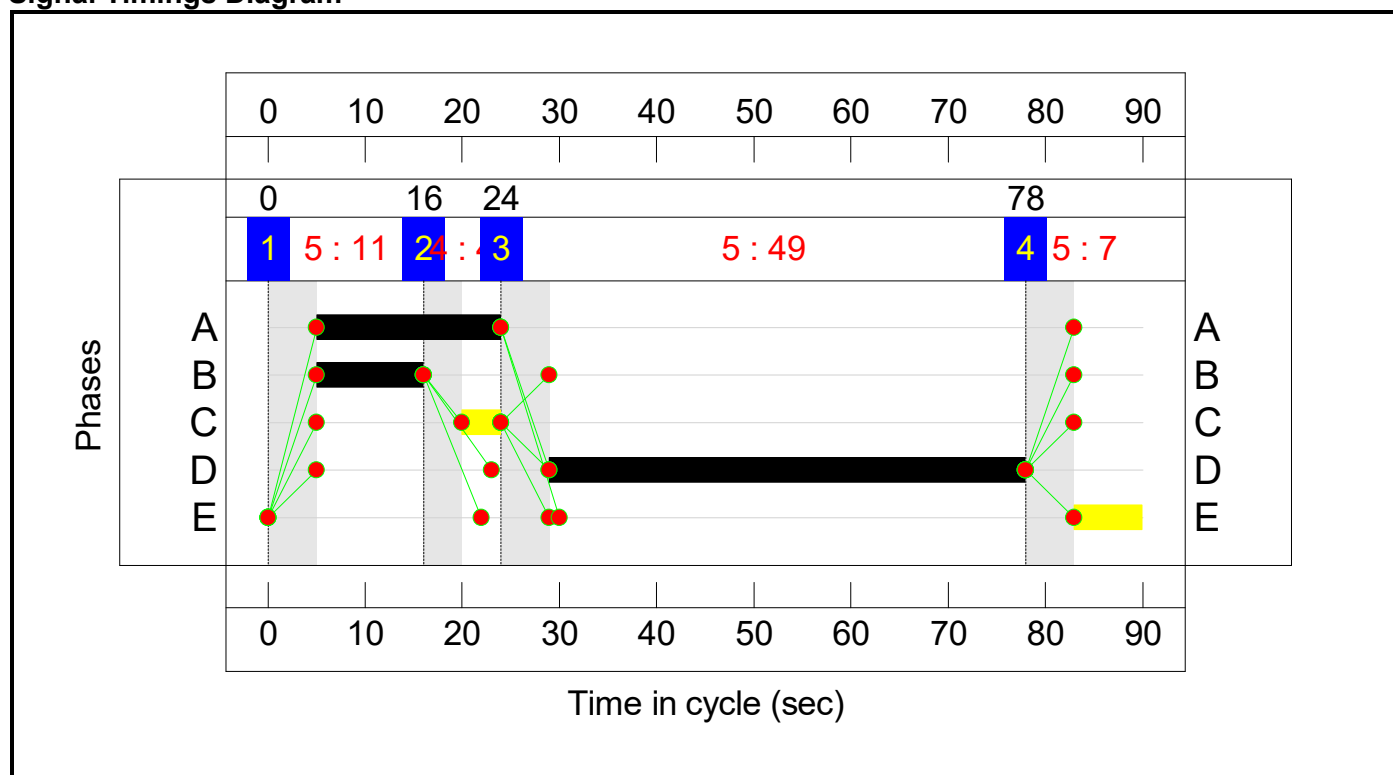
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4
Duration	11	4	49	7
Change Point	0	16	24	78

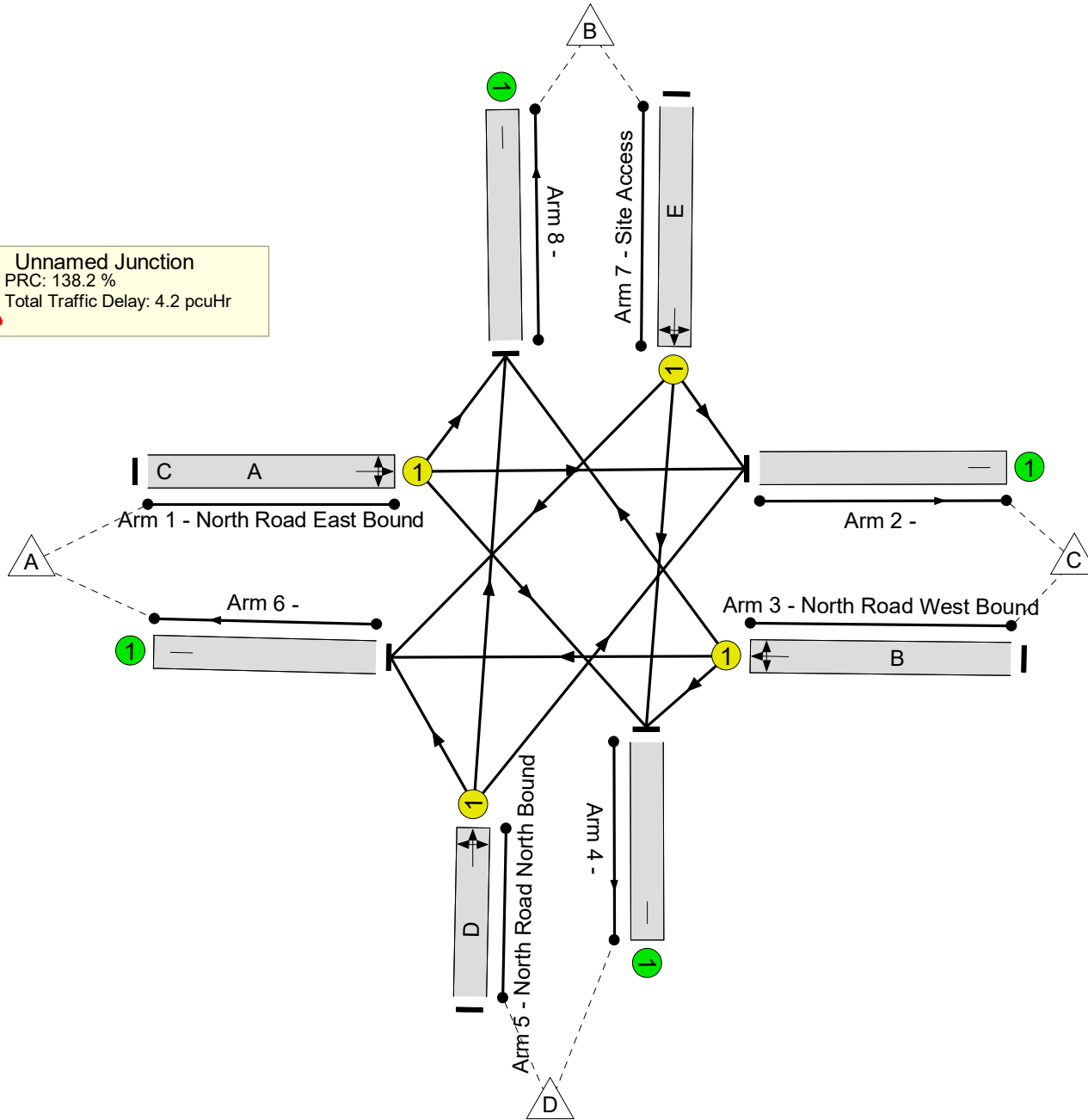
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results


Unnamed Junction
 PRC: 138.2 %
 Total Traffic Delay: 4.2 pcuHr



Stages							
1	Min >= 7	2	Min >= 4	3	Min >= 7	4	Min >= 7

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	-	-	N/A	-	-		-	-	-	-	-	-	37.8%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	37.8%
1/1	North Road East Bound Ahead Right Left	U	N/A	N/A	A	C	1	19	4	73	1779	395	18.5%
2/1		U	N/A	N/A	-		-	-	-	172	Inf	Inf	0.0%
3/1	North Road West Bound Left Ahead Right	U	N/A	N/A	B		1	11	-	85	1975	263	32.3%
4/1		U	N/A	N/A	-		-	-	-	211	Inf	Inf	0.0%
5/1	North Road North Bound Right Left Ahead	U	N/A	N/A	D		1	49	-	370	1846	1026	36.1%
6/1		U	N/A	N/A	-		-	-	-	112	Inf	Inf	0.0%
7/1	Site Access Left Ahead Right	U	N/A	N/A	E		1	7	-	66	1965	175	37.8%
8/1		U	N/A	N/A	-		-	-	-	99	Inf	Inf	0.0%

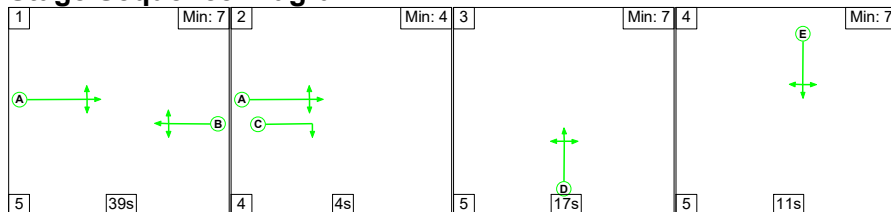
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)														
Network	-	-	0	0	0	3.3	0.9	0.0	4.2	-	-	-	-														
Unnamed Junction	-	-	0	0	0	3.3	0.9	0.0	4.2	-	-	-	-														
1/1	73	73	-	-	-	0.6	0.1	-	0.7	34.0	1.5	0.1	1.6														
2/1	172	172	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
3/1	85	85	-	-	-	0.8	0.2	-	1.1	45.4	1.9	0.2	2.2														
4/1	211	211	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
5/1	370	370	-	-	-	1.1	0.3	-	1.4	13.9	5.1	0.3	5.4														
6/1	112	112	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
7/1	66	66	-	-	-	0.7	0.3	-	1.0	55.1	1.5	0.3	1.8														
8/1	99	99	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0														
<table style="width:100%; border:none;"> <tr> <td style="width:20%;">C1</td> <td style="width:20%;">PRC for Signalled Lanes (%):</td> <td style="width:10%;">138.2</td> <td style="width:20%;">Total Delay for Signalled Lanes (pcuHr):</td> <td style="width:10%;">4.20</td> <td style="width:20%;">Cycle Time (s):</td> <td style="width:10%;">90</td> </tr> <tr> <td></td> <td>PRC Over All Lanes (%):</td> <td>138.2</td> <td>Total Delay Over All Lanes(pcuHr):</td> <td>4.20</td> <td></td> <td></td> </tr> </table>														C1	PRC for Signalled Lanes (%):	138.2	Total Delay for Signalled Lanes (pcuHr):	4.20	Cycle Time (s):	90		PRC Over All Lanes (%):	138.2	Total Delay Over All Lanes(pcuHr):	4.20		
C1	PRC for Signalled Lanes (%):	138.2	Total Delay for Signalled Lanes (pcuHr):	4.20	Cycle Time (s):	90																					
	PRC Over All Lanes (%):	138.2	Total Delay Over All Lanes(pcuHr):	4.20																							

Full Input Data And Results

Scenario 4: 'Sen PM 2021 Base+Com+Dev' (FG4: 'Sensitivity Test PM 2026 Base+Com+Dev', Plan 1: 'Network Control Plan 1')

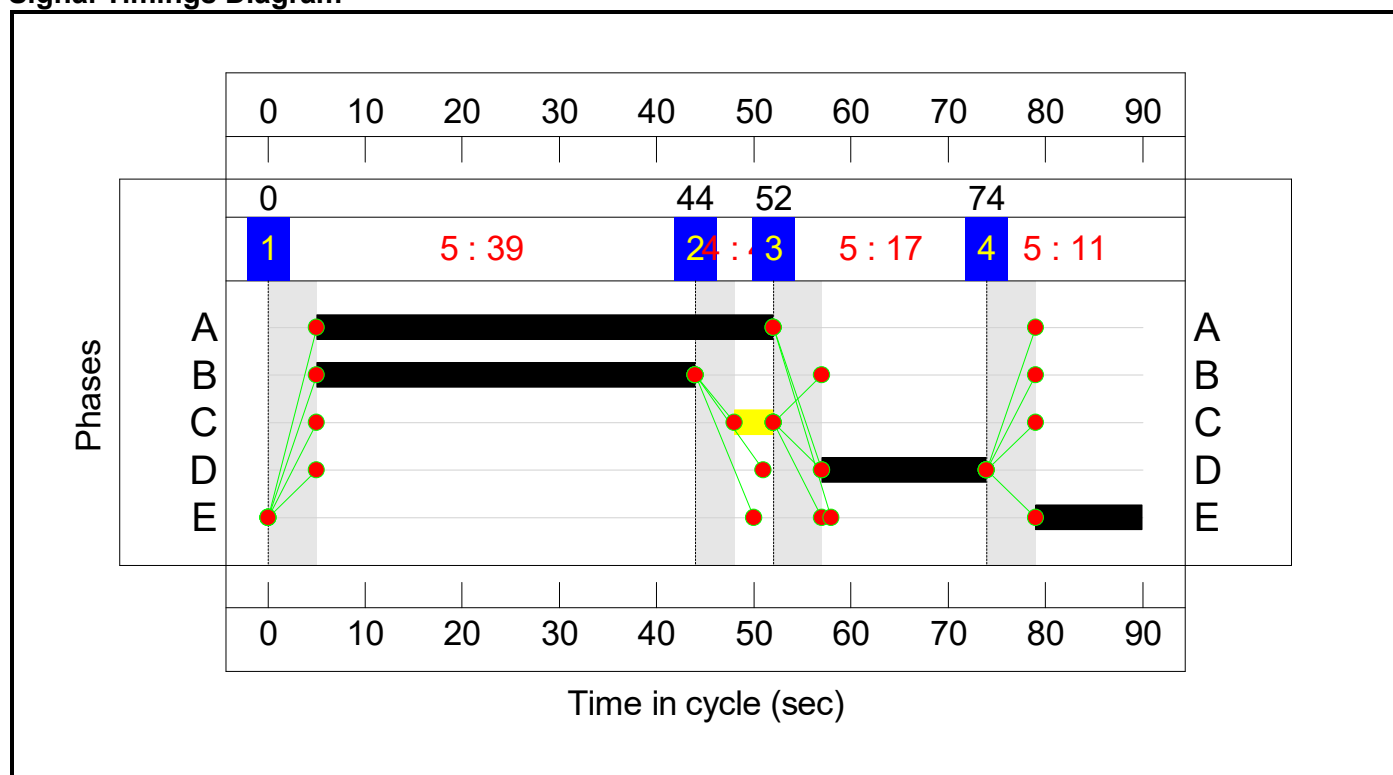
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4
Duration	39	4	17	11
Change Point	0	44	52	74

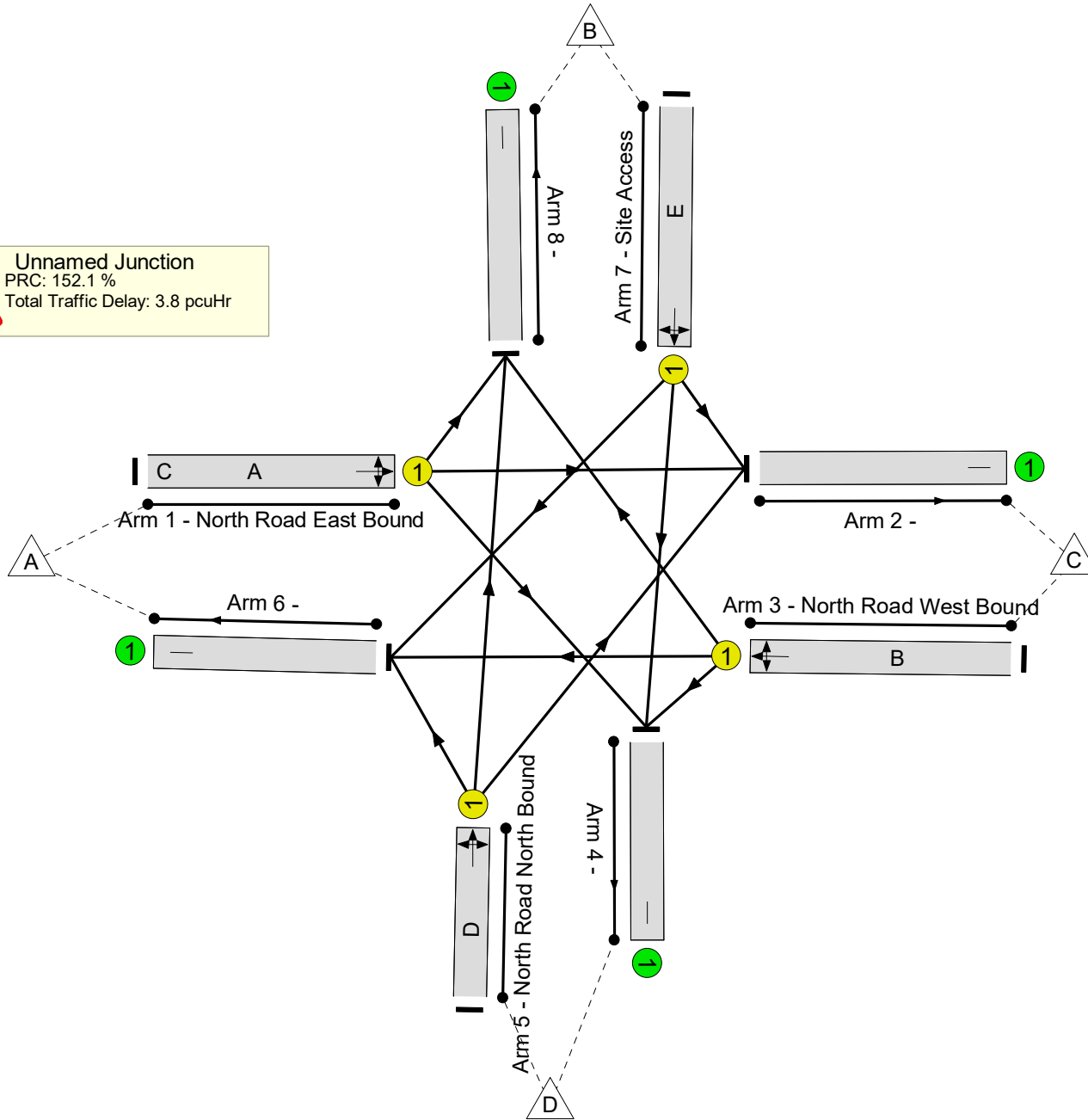
Signal Timings Diagram

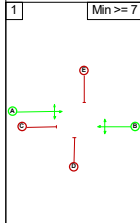
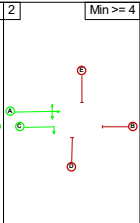
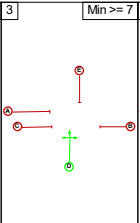
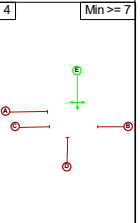
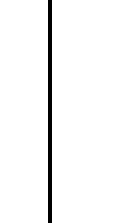



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results


Unnamed Junction
 PRC: 152.1 %
 Total Traffic Delay: 3.8 pcuHr



Stages							
1	Min >= 7	2	Min >= 4	3	Min >= 7	4	Min >= 7
							

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	-	-	N/A	-	-		-	-	-	-	-	-	35.7%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	35.7%
1/1	North Road East Bound Ahead Right Left	U	N/A	N/A	A	C	1	47	4	137	1748	932	14.7%
2/1		U	N/A	N/A	-		-	-	-	51	Inf	Inf	0.0%
3/1	North Road West Bound Left Ahead Right	U	N/A	N/A	B		1	39	-	157	1975	878	17.9%
4/1		U	N/A	N/A	-		-	-	-	369	Inf	Inf	0.0%
5/1	North Road North Bound Right Left Ahead	U	N/A	N/A	D		1	17	-	133	1863	373	35.7%
6/1		U	N/A	N/A	-		-	-	-	46	Inf	Inf	0.0%
7/1	Site Access Left Ahead Right	U	N/A	N/A	E		1	11	-	85	1965	262	32.4%
8/1		U	N/A	N/A	-		-	-	-	46	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	3.0	0.7	0.0	3.8	-	-	-	-
Unnamed Junction	-	-	0	0	0	3.0	0.7	0.0	3.8	-	-	-	-
1/1	137	137	-	-	-	0.4	0.1	-	0.5	12.9	1.7	0.1	1.8
2/1	51	51	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	157	157	-	-	-	0.7	0.1	-	0.8	17.6	2.4	0.1	2.5
4/1	369	369	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	133	133	-	-	-	1.1	0.3	-	1.4	38.5	2.8	0.3	3.1
6/1	46	46	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	85	85	-	-	-	0.8	0.2	-	1.1	45.5	1.9	0.2	2.2
8/1	46	46	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
<p>C1 PRC for Signalled Lanes (%): 152.1 Total Delay for Signalled Lanes (pcuHr): 3.76 Cycle Time (s): 90 PRC Over All Lanes (%): 152.1 Total Delay Over All Lanes(pcuHr): 3.76</p>													

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.0.0.4211 [] © Copyright TRL Limited, 2021
For sales and distribution information, program advice and maintenance, contact TRL: Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk
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Filename: ARCADY_M53_J7_Roundabout.j9

Path: P:\Transportation\17876-TMBI North Road, Ellesmere Port\01_WIP\CA_Calculation\Junctions 9

Report generation date: 02/03/2021 15:37:38

- »2021 Base, AM
- »2021 Base, PM
- »2026 Base, AM
- »2026 Base, PM
- »2031 Base, AM
- »2031 Base, PM
- »2026 Base + Committed, AM
- »2026 Base + Committed, PM
- »2031 Base + Committed, AM
- »2031 Base + Committed, PM
- »2026 Base + Committed + DEV, AM
- »2026 Base + Committed + DEV, PM
- »2031 Base + Committed + DEV, AM
- »2031 Base + Committed + DEV, PM
- »2026 Base + Committed + DEV (SENSI), AM
- »2026 Base + Committed + DEV (SENSI), PM

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2021 Base						
Arm 1	0.0	1.70	0.01	0.0	1.66	0.02
Arm 2	0.1	3.04	0.09	0.2	2.55	0.14
Arm 3	0.1	2.06	0.11	0.1	2.16	0.07
Arm 4	0.2	1.64	0.16	0.1	1.56	0.12
Arm 5	0.1	2.00	0.12	0.1	1.81	0.11
2026 Base						
Arm 1	0.0	1.73	0.01	0.0	1.68	0.02
Arm 2	0.1	3.10	0.09	0.2	2.59	0.15
Arm 3	0.1	2.08	0.11	0.1	2.20	0.08
Arm 4	0.2	1.65	0.17	0.2	1.57	0.13
Arm 5	0.1	2.03	0.13	0.1	1.83	0.11
2031 Base						
Arm 1	0.0	1.75	0.01	0.0	1.69	0.02
Arm 2	0.1	3.11	0.10	0.2	2.64	0.16
Arm 3	0.1	2.10	0.12	0.1	2.22	0.08
Arm 4	0.2	1.69	0.18	0.2	1.59	0.14
Arm 5	0.2	2.07	0.13	0.1	1.84	0.12

2026 Base + Committed						
Arm 1	0.0	1.77	0.01	0.0	1.70	0.02
Arm 2	0.2	3.08	0.10	0.3	2.79	0.19
Arm 3	0.2	2.13	0.12	0.1	2.27	0.08
Arm 4	0.2	1.71	0.18	0.2	1.60	0.14
Arm 5	0.2	2.12	0.14	0.1	1.87	0.12
2031 Base + Committed						
Arm 1	0.0	1.80	0.01	0.0	1.71	0.02
Arm 2	0.2	3.10	0.11	0.3	2.84	0.20
Arm 3	0.2	2.14	0.13	0.1	2.29	0.09
Arm 4	0.2	1.73	0.19	0.2	1.62	0.14
Arm 5	0.2	2.15	0.15	0.1	1.88	0.12
2026 Base + Committed + DEV						
Arm 1	0.0	1.87	0.01	0.0	1.75	0.02
Arm 2	0.2	3.26	0.15	0.4	3.05	0.26
Arm 3	0.2	2.28	0.15	0.1	2.48	0.10
Arm 4	0.2	1.79	0.19	0.2	1.66	0.14
Arm 5	0.2	2.32	0.17	0.2	1.99	0.13
2031 Base + Committed + DEV						
Arm 1	0.0	1.90	0.01	0.0	1.76	0.02
Arm 2	0.2	3.29	0.15	0.4	3.11	0.27
Arm 3	0.2	2.29	0.15	0.1	2.50	0.11
Arm 4	0.3	1.82	0.20	0.2	1.68	0.15
Arm 5	0.2	2.35	0.18	0.2	2.00	0.14
2026 Base + Committed + DEV (SENSI)						
Arm 1	0.0	1.89	0.01	0.0	1.75	0.02
Arm 2	0.2	3.30	0.15	0.4	3.07	0.26
Arm 3	0.2	2.29	0.15	0.1	2.49	0.10
Arm 4	0.2	1.80	0.19	0.2	1.67	0.14
Arm 5	0.2	2.34	0.18	0.2	1.99	0.13

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	25/02/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	HYDROCK"ChrisRushton
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
2021 Base	AM	ONE HOUR	07:15	08:45	15	✓
2021 Base	PM	ONE HOUR	16:15	17:45	15	✓
2026 Base	AM	ONE HOUR	07:15	08:45	15	✓
2026 Base	PM	ONE HOUR	16:15	17:45	15	✓
2031 Base	AM	ONE HOUR	07:15	08:45	15	✓
2031 Base	PM	ONE HOUR	16:15	17:45	15	✓
2026 Base + Committed	AM	ONE HOUR	07:15	08:45	15	✓
2026 Base + Committed	PM	ONE HOUR	16:15	17:45	15	✓
2031 Base + Committed	AM	ONE HOUR	07:15	08:45	15	✓
2031 Base + Committed	PM	ONE HOUR	16:15	17:45	15	✓
2026 Base + Committed + DEV	AM	ONE HOUR	07:15	08:45	15	✓
2026 Base + Committed + DEV	PM	ONE HOUR	16:15	17:45	15	✓
2031 Base + Committed + DEV	AM	ONE HOUR	07:15	08:45	15	✓
2031 Base + Committed + DEV	PM	ONE HOUR	16:15	17:45	15	✓
2026 Base + Committed + DEV (SENSI)	AM	ONE HOUR	07:15	08:45	15	✓
2026 Base + Committed + DEV (SENSI)	PM	ONE HOUR	16:15	17:45	15	✓

2021 Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.01	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Vauxhall Access	
2	North Road	
3	M53 (East)	
4	Netherpool Road	
5	M53 (West)	

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Assume flat start profile	Initial queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00
5	0.00	99999.00		0.00

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	5.79	6.10	14.0	25.0	133.6	21.0	
2	3.55	3.97	19.0	16.8	125.3	18.0	
3	5.89	6.21	1.0	30.0	133.7	30.0	
4	5.03	6.62	24.5	25.0	117.6	14.0	
5	6.09	6.47	1.0	15.0	121.7	22.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.939	2664.200
2	0.773	2008.879
3	0.917	2351.269
4	1.040	2860.563
5	0.982	2452.694

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	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Base	AM	ONE HOUR	07:15	08:45	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		ONE HOUR	✓	10.00	100.000
2		ONE HOUR	✓	139.00	100.000
3		ONE HOUR	✓	206.00	100.000
4		ONE HOUR	✓	394.00	100.000
5		ONE HOUR	✓	228.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	2.000	1.000	7.000	0.000
	2	1.000	0.000	97.000	31.000	10.000
	3	16.000	128.000	0.000	60.000	2.000
	4	10.000	95.000	73.000	0.000	216.000
	5	1.000	50.000	1.000	176.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.20	0.10	0.70	0.00
	2	0.01	0.00	0.70	0.22	0.07
	3	0.08	0.62	0.00	0.29	0.01
	4	0.03	0.24	0.19	0.00	0.55
	5	0.00	0.22	0.00	0.77	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	51	7	60
	3	0	12	0	4	0
	4	0	0	7	0	2
	5	0	2	0	3	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.510	1.070	1.600
	3	1.000	1.120	1.000	1.040	1.000
	4	1.000	1.000	1.070	1.000	1.020
	5	1.000	1.020	1.000	1.030	1.000

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	0.01	1.70	0.0	A	9.18	13.76
2	0.09	3.04	0.1	A	127.55	191.32
3	0.11	2.06	0.1	A	189.03	283.54
4	0.16	1.64	0.2	A	361.54	542.31
5	0.12	2.00	0.1	A	209.22	313.83

Main Results for each time segment

Main results: (07:15-07:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	7.53	1.88	392.98	2295.10	0.003	7.52	21.04	0.0	0.0	1.572	A
2	104.65	26.16	193.87	1859.12	0.056	104.32	206.63	0.0	0.1	2.838	A
3	155.09	38.77	169.02	2196.23	0.071	154.76	129.17	0.0	0.1	1.911	A
4	296.62	74.16	117.94	2737.90	0.108	296.13	205.84	0.0	0.1	1.508	A
5	171.65	42.91	242.71	2214.35	0.078	171.31	171.35	0.0	0.1	1.809	A

Main results: (07:30-07:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.99	2.25	469.99	2222.78	0.004	8.99	25.16	0.0	0.0	1.625	A
2	124.96	31.24	231.85	1829.77	0.068	124.88	247.13	0.1	0.1	2.921	A
3	185.19	46.30	202.18	2165.80	0.086	185.11	154.55	0.1	0.1	1.970	A
4	354.20	88.55	141.08	2713.83	0.131	354.08	246.21	0.1	0.2	1.560	A
5	204.97	51.24	290.26	2167.65	0.095	204.88	204.90	0.1	0.1	1.883	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	11.01	2.75	575.56	2123.62	0.005	11.01	30.81	0.0	0.0	1.703	A
2	153.04	38.26	283.93	1789.54	0.086	152.93	302.64	0.1	0.1	3.043	A
3	226.81	56.70	247.59	2124.15	0.107	226.70	189.26	0.1	0.1	2.057	A
4	433.80	108.45	172.77	2680.87	0.162	433.63	301.52	0.2	0.2	1.638	A
5	251.03	62.76	355.47	2103.62	0.119	250.91	250.93	0.1	0.1	1.996	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	11.01	2.75	575.83	2123.36	0.005	11.01	30.83	0.0	0.0	1.703	A
2	153.04	38.26	284.06	1789.44	0.086	153.04	302.78	0.1	0.1	3.043	A
3	226.81	56.70	247.73	2124.02	0.107	226.81	189.37	0.1	0.1	2.057	A
4	433.80	108.45	172.86	2680.78	0.162	433.80	301.68	0.2	0.2	1.638	A
5	251.03	62.76	355.63	2103.47	0.119	251.03	251.03	0.1	0.1	1.996	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.99	2.25	470.43	2222.35	0.004	8.99	25.19	0.0	0.0	1.628	A
2	124.96	31.24	232.07	1829.60	0.068	125.07	247.36	0.1	0.1	2.921	A
3	185.19	46.30	202.40	2165.60	0.086	185.30	154.73	0.1	0.1	1.972	A
4	354.20	88.55	141.23	2713.68	0.131	354.37	246.48	0.2	0.2	1.560	A
5	204.97	51.24	290.53	2167.40	0.095	205.09	205.07	0.1	0.1	1.884	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	7.53	1.88	393.92	2294.22	0.003	7.53	21.09	0.0	0.0	1.573	A
2	104.65	26.16	194.33	1858.76	0.056	104.72	207.13	0.1	0.1	2.841	A
3	155.09	38.77	169.48	2195.80	0.071	155.16	129.57	0.1	0.1	1.912	A
4	296.62	74.16	118.26	2737.57	0.108	296.74	206.39	0.2	0.1	1.511	A
5	171.65	42.91	243.28	2213.79	0.078	171.73	171.72	0.1	0.1	1.810	A

2021 Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	1.95	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2021 Base	PM	ONE HOUR	16:15	17:45	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		ONE HOUR	✓	40.00	100.000
2		ONE HOUR	✓	227.00	100.000
3		ONE HOUR	✓	132.00	100.000
4		ONE HOUR	✓	310.00	100.000
5		ONE HOUR	✓	219.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	5.000	10.000	25.000	0.000
	2	0.000	0.000	115.000	50.000	62.000
	3	1.000	47.000	0.000	81.000	3.000
	4	1.000	14.000	96.000	0.000	199.000
	5	2.000	13.000	1.000	203.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.13	0.25	0.63	0.00
	2	0.00	0.00	0.51	0.22	0.27
	3	0.01	0.36	0.00	0.61	0.02
	4	0.00	0.05	0.31	0.00	0.64
	5	0.01	0.06	0.00	0.93	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	33	0	0	0
	2	0	0	8	2	0
	3	0	43	0	0	0
	4	0	0	7	0	2
	5	100	20	0	1	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.330	1.000	1.000	1.000
	2	1.000	1.000	1.080	1.020	1.000
	3	1.000	1.430	1.000	1.000	1.000
	4	1.000	1.000	1.070	1.000	1.020
	5	2.000	1.200	1.000	1.010	1.000

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	0.02	1.66	0.0	A	36.70	55.06
2	0.14	2.55	0.2	A	208.30	312.45
3	0.07	2.16	0.1	A	121.13	181.69
4	0.12	1.56	0.1	A	284.46	426.69
5	0.11	1.81	0.1	A	200.96	301.44

Main Results for each time segment

Main results: (16:15-16:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	30.11	7.53	281.05	2400.23	0.013	30.06	3.01	0.0	0.0	1.566	A
2	170.90	42.72	251.75	1814.40	0.094	170.46	59.35	0.0	0.1	2.285	A
3	99.38	24.84	255.44	2116.95	0.047	99.16	166.78	0.0	0.1	1.997	A
4	233.38	58.35	84.87	2772.29	0.084	233.00	269.72	0.0	0.1	1.465	A
5	164.87	41.22	119.49	2335.36	0.071	164.56	198.39	0.0	0.1	1.697	A

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	35.96	8.99	336.10	2348.52	0.015	35.95	3.59	0.0	0.0	1.605	A
2	204.07	51.02	301.06	1776.31	0.115	203.96	70.99	0.1	0.1	2.389	A
3	118.67	29.67	305.53	2071.00	0.057	118.61	199.49	0.1	0.1	2.064	A
4	278.68	69.67	101.54	2754.96	0.101	278.60	322.61	0.1	0.1	1.502	A
5	196.88	49.22	142.89	2312.38	0.085	196.81	237.25	0.1	0.1	1.742	A

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	44.04	11.01	411.61	2277.61	0.019	44.02	4.40	0.0	0.0	1.662	A
2	249.93	62.48	368.69	1724.06	0.145	249.77	86.94	0.1	0.2	2.548	A
3	145.33	36.33	374.16	2008.04	0.072	145.26	244.30	0.1	0.1	2.164	A
4	341.32	85.33	124.34	2731.24	0.125	341.19	395.08	0.1	0.1	1.556	A
5	241.12	60.28	174.99	2280.85	0.106	241.02	290.54	0.1	0.1	1.806	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	44.04	11.01	411.78	2277.44	0.019	44.04	4.40	0.0	0.0	1.662	A
2	249.93	62.48	368.84	1723.95	0.145	249.93	86.98	0.2	0.2	2.548	A
3	145.33	36.33	374.35	2007.87	0.072	145.33	244.43	0.1	0.1	2.164	A
4	341.32	85.33	124.41	2731.16	0.125	341.32	395.27	0.1	0.1	1.556	A
5	241.12	60.28	175.06	2280.78	0.106	241.12	290.67	0.1	0.1	1.806	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	35.96	8.99	336.39	2348.25	0.015	35.98	3.60	0.0	0.0	1.608	A
2	204.07	51.02	301.31	1776.12	0.115	204.23	71.06	0.2	0.1	2.390	A
3	118.67	29.67	305.84	2070.72	0.057	118.74	199.70	0.1	0.1	2.066	A
4	278.68	69.67	101.66	2754.83	0.101	278.81	322.92	0.1	0.1	1.502	A
5	196.88	49.22	143.01	2312.26	0.085	196.98	237.46	0.1	0.1	1.742	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	30.11	7.53	281.69	2399.63	0.013	30.13	3.01	0.0	0.0	1.567	A
2	170.90	42.72	252.31	1813.97	0.094	171.01	59.50	0.1	0.1	2.288	A
3	99.38	24.84	256.10	2116.35	0.047	99.43	167.22	0.1	0.1	1.998	A
4	233.38	58.35	85.12	2772.03	0.084	233.47	270.40	0.1	0.1	1.467	A
5	164.87	41.22	119.75	2335.10	0.071	164.94	198.84	0.1	0.1	1.698	A

2026 Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.04	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2026 Base	AM	ONE HOUR	07:15	08:45	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		ONE HOUR	✓	10.00	100.000
2		ONE HOUR	✓	148.00	100.000
3		ONE HOUR	✓	217.00	100.000
4		ONE HOUR	✓	418.00	100.000
5		ONE HOUR	✓	241.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	2.000	1.000	7.000	0.000
	2	1.000	0.000	103.000	33.000	11.000
	3	17.000	135.000	0.000	63.000	2.000
	4	11.000	101.000	77.000	0.000	229.000
	5	1.000	53.000	1.000	186.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.20	0.10	0.70	0.00
	2	0.01	0.00	0.70	0.22	0.07
	3	0.08	0.62	0.00	0.29	0.01
	4	0.03	0.24	0.18	0.00	0.55
	5	0.00	0.22	0.00	0.77	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	52	7	60
	3	0	12	0	3	0
	4	0	0	7	0	0
	5	0	2	0	3	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.520	1.070	1.600
	3	1.000	1.120	1.000	1.030	1.000
	4	1.000	1.000	1.070	1.000	1.000
	5	1.000	1.020	1.000	1.030	1.000

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	0.01	1.73	0.0	A	9.18	13.76
2	0.09	3.10	0.1	A	135.81	203.71
3	0.11	2.08	0.1	A	199.12	298.68
4	0.17	1.65	0.2	A	383.56	575.35
5	0.13	2.03	0.1	A	221.15	331.72

Main Results for each time segment

Main results: (07:15-07:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	7.53	1.88	415.52	2273.93	0.003	7.52	22.54	0.0	0.0	1.587	A
2	111.42	27.86	204.38	1850.99	0.060	111.07	218.65	0.0	0.1	2.875	A
3	163.37	40.84	178.78	2187.27	0.075	163.02	136.67	0.0	0.1	1.922	A
4	314.69	78.67	124.70	2730.87	0.115	314.17	217.10	0.0	0.1	1.507	A
5	181.44	45.36	256.99	2200.33	0.082	181.07	181.87	0.0	0.1	1.831	A

Main results: (07:30-07:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.99	2.25	496.94	2197.46	0.004	8.99	26.96	0.0	0.0	1.644	A
2	133.05	33.26	244.43	1820.06	0.073	132.97	261.50	0.1	0.1	2.965	A
3	195.08	48.77	213.86	2155.09	0.091	195.00	163.53	0.1	0.1	1.985	A
4	375.77	93.94	149.17	2705.42	0.139	375.65	259.69	0.1	0.2	1.563	A
5	216.65	54.16	307.34	2150.89	0.101	216.56	217.48	0.1	0.1	1.911	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	11.01	2.75	608.57	2092.61	0.005	11.01	33.01	0.0	0.0	1.728	A
2	162.95	40.74	299.33	1777.64	0.092	162.83	320.24	0.1	0.1	3.098	A
3	238.92	59.73	261.90	2111.03	0.113	238.80	200.26	0.1	0.1	2.078	A
4	460.23	115.06	182.67	2670.57	0.172	460.04	318.02	0.2	0.2	1.647	A
5	265.35	66.34	376.38	2083.09	0.127	265.21	266.33	0.1	0.1	2.034	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	11.01	2.75	608.86	2092.34	0.005	11.01	33.03	0.0	0.0	1.728	A
2	162.95	40.74	299.48	1777.53	0.092	162.95	320.40	0.1	0.1	3.098	A
3	238.92	59.73	262.04	2110.89	0.113	238.92	200.38	0.1	0.1	2.078	A
4	460.23	115.06	182.77	2670.47	0.172	460.23	318.19	0.2	0.2	1.647	A
5	265.35	66.34	376.55	2082.92	0.127	265.35	266.45	0.1	0.1	2.034	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.99	2.25	497.43	2197.00	0.004	8.99	26.99	0.0	0.0	1.647	A
2	133.05	33.26	244.67	1819.87	0.073	133.17	261.75	0.1	0.1	2.966	A
3	195.08	48.77	214.10	2154.87	0.091	195.20	163.73	0.1	0.1	1.986	A
4	375.77	93.94	149.33	2705.26	0.139	375.96	259.98	0.2	0.2	1.563	A
5	216.65	54.16	307.62	2150.61	0.101	216.79	217.67	0.1	0.1	1.911	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	7.53	1.88	416.52	2272.99	0.003	7.53	22.60	0.0	0.0	1.588	A
2	111.42	27.86	204.87	1850.61	0.060	111.50	219.18	0.1	0.1	2.876	A
3	163.37	40.84	179.28	2186.81	0.075	163.45	137.10	0.1	0.1	1.925	A
4	314.69	78.67	125.04	2730.52	0.115	314.82	217.69	0.2	0.1	1.507	A
5	181.44	45.36	257.59	2199.74	0.082	181.53	182.27	0.1	0.1	1.832	A

2026 Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	1.97	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2026 Base	PM	ONE HOUR	16:15	17:45	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		ONE HOUR	✓	42.00	100.000
2		ONE HOUR	✓	239.00	100.000
3		ONE HOUR	✓	139.00	100.000
4		ONE HOUR	✓	327.00	100.000
5		ONE HOUR	✓	231.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	5.000	11.000	26.000	0.000
	2	0.000	0.000	121.000	53.000	65.000
	3	1.000	50.000	0.000	85.000	3.000
	4	1.000	15.000	101.000	0.000	210.000
	5	2.000	14.000	1.000	214.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.12	0.26	0.62	0.00
	2	0.00	0.00	0.51	0.22	0.27
	3	0.01	0.36	0.00	0.61	0.02
	4	0.00	0.05	0.31	0.00	0.64
	5	0.01	0.06	0.00	0.93	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	33	0	0	0
	2	0	0	7	2	0
	3	0	43	0	0	0
	4	0	0	6	0	2
	5	100	18	0	1	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.330	1.000	1.000	1.000
	2	1.000	1.000	1.070	1.020	1.000
	3	1.000	1.430	1.000	1.000	1.000
	4	1.000	1.000	1.060	1.000	1.020
	5	2.000	1.180	1.000	1.010	1.000

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	0.02	1.68	0.0	A	38.54	57.81
2	0.15	2.59	0.2	A	219.31	328.97
3	0.08	2.20	0.1	A	127.55	191.32
4	0.13	1.57	0.2	A	300.06	450.09
5	0.11	1.83	0.1	A	211.97	317.95

Main Results for each time segment

Main results: (16:15-16:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	31.62	7.90	296.82	2385.42	0.013	31.56	3.01	0.0	0.0	1.575	A
2	179.93	44.98	265.28	1803.95	0.100	179.47	63.11	0.0	0.1	2.302	A
3	104.65	26.16	268.95	2104.55	0.050	104.41	175.79	0.0	0.1	2.018	A
4	246.18	61.55	89.37	2767.61	0.089	245.78	283.99	0.0	0.1	1.471	A
5	173.91	43.48	126.25	2328.72	0.075	173.58	208.90	0.0	0.1	1.708	A

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	37.76	9.44	354.97	2330.80	0.016	37.74	3.59	0.0	0.0	1.616	A
2	214.86	53.71	317.23	1763.82	0.122	214.74	75.48	0.1	0.1	2.414	A
3	124.96	31.24	321.70	2056.17	0.061	124.90	210.27	0.1	0.1	2.089	A
4	293.97	73.49	106.93	2749.35	0.107	293.88	339.68	0.1	0.1	1.510	A
5	207.66	51.92	150.98	2304.44	0.090	207.59	249.83	0.1	0.1	1.756	A

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	46.24	11.56	434.72	2255.90	0.021	46.22	4.40	0.0	0.0	1.677	A
2	263.14	65.79	388.50	1708.76	0.154	262.96	92.44	0.1	0.2	2.586	A
3	153.04	38.26	393.96	1989.88	0.077	152.96	257.50	0.1	0.1	2.197	A
4	360.03	90.01	130.94	2724.38	0.132	359.90	415.98	0.1	0.2	1.569	A
5	254.34	63.58	184.89	2271.13	0.112	254.23	305.95	0.1	0.1	1.825	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	46.24	11.56	434.90	2255.73	0.021	46.24	4.40	0.0	0.0	1.678	A
2	263.14	65.79	388.66	1708.64	0.154	263.14	92.49	0.2	0.2	2.586	A
3	153.04	38.26	394.16	1989.69	0.077	153.04	257.64	0.1	0.1	2.197	A
4	360.03	90.01	131.02	2724.29	0.132	360.03	416.18	0.2	0.2	1.569	A
5	254.34	63.58	184.97	2271.05	0.112	254.34	306.08	0.1	0.1	1.825	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	37.76	9.44	355.28	2330.51	0.016	37.78	3.60	0.0	0.0	1.617	A
2	214.86	53.71	317.50	1763.61	0.122	215.03	75.56	0.2	0.1	2.416	A
3	124.96	31.24	322.03	2055.86	0.061	125.04	210.50	0.1	0.1	2.092	A
4	293.97	73.49	107.06	2749.22	0.107	294.10	340.02	0.2	0.1	1.511	A
5	207.66	51.92	151.11	2304.31	0.090	207.77	250.05	0.1	0.1	1.756	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	31.62	7.90	297.50	2384.78	0.013	31.63	3.01	0.0	0.0	1.578	A
2	179.93	44.98	265.87	1803.49	0.100	180.05	63.27	0.1	0.1	2.305	A
3	104.65	26.16	269.66	2103.91	0.050	104.70	176.26	0.1	0.1	2.018	A
4	246.18	61.55	89.64	2767.33	0.089	246.27	284.72	0.1	0.1	1.471	A
5	173.91	43.48	126.53	2328.44	0.075	173.98	209.38	0.1	0.1	1.711	A

2031 Base, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.07	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2031 Base	AM	ONE HOUR	07:15	08:45	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		ONE HOUR	✓	11.00	100.000
2		ONE HOUR	✓	153.00	100.000
3		ONE HOUR	✓	227.00	100.000
4		ONE HOUR	✓	435.00	100.000
5		ONE HOUR	✓	251.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	2.000	1.000	8.000	0.000
	2	1.000	0.000	107.000	34.000	11.000
	3	18.000	141.000	0.000	66.000	2.000
	4	11.000	105.000	81.000	0.000	238.000
	5	1.000	55.000	1.000	194.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.18	0.09	0.73	0.00
	2	0.01	0.00	0.70	0.22	0.07
	3	0.08	0.62	0.00	0.29	0.01
	4	0.03	0.24	0.19	0.00	0.55
	5	0.00	0.22	0.00	0.77	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	52	6	50
	3	0	12	0	3	0
	4	0	0	8	0	2
	5	0	2	0	3	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.520	1.060	1.500
	3	1.000	1.120	1.000	1.030	1.000
	4	1.000	1.000	1.080	1.000	1.020
	5	1.000	1.020	1.000	1.030	1.000

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	0.01	1.75	0.0	A	10.09	15.14
2	0.10	3.11	0.1	A	140.40	210.59
3	0.12	2.10	0.1	A	208.30	312.45
4	0.18	1.69	0.2	A	399.16	598.75
5	0.13	2.07	0.2	A	230.32	345.48

Main Results for each time segment

Main results: (07:15-07:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.28	2.07	433.54	2257.00	0.004	8.27	23.29	0.0	0.0	1.600	A
2	115.19	28.80	214.15	1843.45	0.062	114.82	227.66	0.0	0.1	2.875	A
3	170.90	42.72	186.29	2180.38	0.078	170.53	142.68	0.0	0.1	1.936	A
4	327.49	81.87	129.95	2725.40	0.120	326.93	226.86	0.0	0.1	1.538	A
5	188.97	47.24	268.26	2189.27	0.086	188.58	188.63	0.0	0.1	1.848	A

Main results: (07:30-07:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	9.89	2.47	518.50	2177.21	0.005	9.89	27.86	0.0	0.0	1.660	A
2	137.54	34.39	256.11	1811.03	0.076	137.46	272.28	0.1	0.1	2.969	A
3	204.07	51.02	222.84	2146.85	0.095	203.98	170.72	0.1	0.1	2.003	A
4	391.06	97.76	155.46	2698.88	0.145	390.92	271.37	0.1	0.2	1.598	A
5	225.64	56.41	320.81	2137.65	0.106	225.55	225.56	0.1	0.1	1.934	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	12.11	3.03	634.97	2067.81	0.006	12.11	34.11	0.0	0.0	1.750	A
2	168.46	42.11	313.63	1766.59	0.095	168.33	333.45	0.1	0.1	3.109	A
3	249.93	62.48	272.90	2100.94	0.119	249.80	209.07	0.1	0.1	2.102	A
4	478.94	119.74	190.37	2662.56	0.180	478.74	332.32	0.2	0.2	1.689	A
5	276.36	69.09	392.88	2066.89	0.134	276.21	276.23	0.1	0.2	2.065	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	12.11	3.03	635.29	2067.52	0.006	12.11	34.13	0.0	0.0	1.750	A
2	168.46	42.11	313.79	1766.47	0.095	168.46	333.61	0.1	0.1	3.109	A
3	249.93	62.48	273.05	2100.79	0.119	249.93	209.19	0.1	0.1	2.102	A
4	478.94	119.74	190.48	2662.46	0.180	478.94	332.51	0.2	0.2	1.689	A
5	276.36	69.09	393.06	2066.71	0.134	276.36	276.36	0.2	0.2	2.065	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	9.89	2.47	519.02	2176.72	0.005	9.89	27.89	0.0	0.0	1.663	A
2	137.54	34.39	256.37	1810.83	0.076	137.67	272.55	0.1	0.1	2.970	A
3	204.07	51.02	223.10	2146.61	0.095	204.20	170.93	0.1	0.1	2.005	A
4	391.06	97.76	155.62	2698.71	0.145	391.26	271.67	0.2	0.2	1.601	A
5	225.64	56.41	321.12	2137.36	0.106	225.79	225.76	0.2	0.1	1.936	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.28	2.07	434.60	2256.01	0.004	8.28	23.35	0.0	0.0	1.603	A
2	115.19	28.80	214.67	1843.05	0.063	115.27	228.22	0.1	0.1	2.876	A
3	170.90	42.72	186.81	2179.90	0.078	170.98	143.13	0.1	0.1	1.937	A
4	327.49	81.87	130.31	2725.03	0.120	327.63	227.48	0.2	0.1	1.538	A
5	188.97	47.24	268.89	2188.64	0.086	189.06	189.05	0.1	0.1	1.849	A

2031 Base, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.00	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2031 Base	PM	ONE HOUR	16:15	17:45	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		ONE HOUR	✓	43.00	100.000
2		ONE HOUR	✓	249.00	100.000
3		ONE HOUR	✓	145.00	100.000
4		ONE HOUR	✓	339.00	100.000
5		ONE HOUR	✓	240.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	5.000	11.000	27.000	0.000
	2	0.000	0.000	126.000	55.000	68.000
	3	1.000	52.000	0.000	89.000	3.000
	4	1.000	15.000	105.000	0.000	218.000
	5	2.000	14.000	1.000	223.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.12	0.26	0.63	0.00
	2	0.00	0.00	0.51	0.22	0.27
	3	0.01	0.36	0.00	0.61	0.02
	4	0.00	0.04	0.31	0.00	0.64
	5	0.01	0.06	0.00	0.93	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	33	0	0	0
	2	0	0	8	2	0
	3	0	42	0	0	0
	4	0	0	7	0	2
	5	100	18	0	1	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.330	1.000	1.000	1.000
	2	1.000	1.000	1.080	1.020	1.000
	3	1.000	1.420	1.000	1.000	1.000
	4	1.000	1.000	1.070	1.000	1.020
	5	2.000	1.180	1.000	1.010	1.000

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	0.02	1.69	0.0	A	39.46	59.19
2	0.16	2.64	0.2	A	228.49	342.73
3	0.08	2.22	0.1	A	133.05	199.58
4	0.14	1.59	0.2	A	311.07	466.61
5	0.12	1.84	0.1	A	220.23	330.34

Main Results for each time segment

Main results: (16:15-16:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	32.37	8.09	308.09	2374.83	0.014	32.32	3.01	0.0	0.0	1.581	A
2	187.46	46.87	275.80	1795.82	0.104	186.98	64.61	0.0	0.1	2.335	A
3	109.16	27.29	280.22	2094.22	0.052	108.92	182.55	0.0	0.1	2.028	A
4	255.22	63.80	93.13	2763.71	0.092	254.80	296.01	0.0	0.1	1.483	A
5	180.68	45.17	130.76	2324.29	0.078	180.34	217.17	0.0	0.1	1.716	A

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	38.66	9.66	368.45	2318.14	0.017	38.64	3.59	0.0	0.0	1.625	A
2	223.85	55.96	329.81	1754.10	0.128	223.72	77.28	0.1	0.2	2.454	A
3	130.35	32.59	335.18	2043.80	0.064	130.29	218.36	0.1	0.1	2.104	A
4	304.75	76.19	111.42	2744.68	0.111	304.66	354.05	0.1	0.1	1.524	A
5	215.76	53.94	156.37	2299.14	0.094	215.68	259.71	0.1	0.1	1.766	A

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	47.34	11.84	451.22	2240.40	0.021	47.32	4.40	0.0	0.0	1.689	A
2	274.15	68.54	403.91	1696.86	0.162	273.96	94.64	0.2	0.2	2.640	A
3	159.65	39.91	410.47	1974.74	0.081	159.56	267.40	0.1	0.1	2.218	A
4	373.25	93.31	136.44	2718.66	0.137	373.10	433.59	0.1	0.2	1.586	A
5	264.24	66.06	191.49	2264.65	0.117	264.13	318.05	0.1	0.1	1.839	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	47.34	11.84	451.42	2240.22	0.021	47.34	4.40	0.0	0.0	1.689	A
2	274.15	68.54	404.07	1696.73	0.162	274.15	94.69	0.2	0.2	2.640	A
3	159.65	39.91	410.68	1974.54	0.081	159.65	267.55	0.1	0.1	2.218	A
4	373.25	93.31	136.53	2718.57	0.137	373.25	433.80	0.2	0.2	1.586	A
5	264.24	66.06	191.58	2264.57	0.117	264.24	318.19	0.1	0.1	1.839	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	38.66	9.66	368.78	2317.83	0.017	38.68	3.60	0.0	0.0	1.628	A
2	223.85	55.96	330.09	1753.88	0.128	224.04	77.36	0.2	0.2	2.455	A
3	130.35	32.59	335.53	2043.48	0.064	130.44	218.60	0.1	0.1	2.106	A
4	304.75	76.19	111.56	2744.54	0.111	304.89	354.41	0.2	0.1	1.525	A
5	215.76	53.94	156.50	2299.01	0.094	215.87	259.95	0.1	0.1	1.769	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	32.37	8.09	308.80	2374.16	0.014	32.39	3.01	0.0	0.0	1.582	A
2	187.46	46.87	276.41	1795.35	0.104	187.58	64.78	0.2	0.1	2.338	A
3	109.16	27.29	280.96	2093.54	0.052	109.22	183.04	0.1	0.1	2.029	A
4	255.22	63.80	93.41	2763.41	0.092	255.31	296.77	0.1	0.1	1.483	A
5	180.68	45.17	131.05	2324.00	0.078	180.76	217.67	0.1	0.1	1.717	A

2026 Base + Committed, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.10	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2026 Base + Committed	AM	ONE HOUR	07:15	08:45	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		ONE HOUR	✓	10.00	100.000
2		ONE HOUR	✓	167.00	100.000
3		ONE HOUR	✓	234.00	100.000
4		ONE HOUR	✓	430.00	100.000
5		ONE HOUR	✓	263.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	2.000	1.000	7.000	0.000
	2	1.000	0.000	109.000	38.000	19.000
	3	17.000	152.000	0.000	63.000	2.000
	4	11.000	113.000	77.000	0.000	229.000
	5	1.000	75.000	1.000	186.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.20	0.10	0.70	0.00
	2	0.01	0.00	0.65	0.23	0.11
	3	0.07	0.65	0.00	0.27	0.01
	4	0.03	0.26	0.18	0.00	0.53
	5	0.00	0.29	0.00	0.71	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	50	9	36
	3	0	13	0	3	0
	4	0	2	7	0	2
	5	0	6	0	3	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.500	1.090	1.360
	3	1.000	1.130	1.000	1.030	1.000
	4	1.000	1.020	1.070	1.000	1.020
	5	1.000	1.060	1.000	1.030	1.000

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	0.01	1.77	0.0	A	9.18	13.76
2	0.10	3.08	0.2	A	153.24	229.86
3	0.12	2.13	0.2	A	214.72	322.08
4	0.18	1.71	0.2	A	394.58	591.86
5	0.14	2.12	0.2	A	241.33	362.00

Main Results for each time segment

Main results: (07:15-07:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	7.53	1.88	453.82	2237.96	0.003	7.52	22.54	0.0	0.0	1.613	A
2	125.73	31.43	204.37	1851.00	0.068	125.33	256.96	0.0	0.1	2.844	A
3	176.17	44.04	188.53	2178.33	0.081	175.78	141.18	0.0	0.1	1.959	A
4	323.73	80.93	143.47	2711.35	0.119	323.17	220.84	0.0	0.1	1.549	A
5	198.00	49.50	278.77	2178.94	0.091	197.59	187.87	0.0	0.1	1.885	A

Main results: (07:30-07:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.99	2.25	542.76	2154.42	0.004	8.99	26.96	0.0	0.0	1.677	A
2	150.13	37.53	244.42	1820.06	0.082	150.04	307.33	0.1	0.1	2.938	A
3	210.36	52.59	225.54	2144.38	0.098	210.27	168.92	0.1	0.1	2.028	A
4	386.56	96.64	171.63	2682.06	0.144	386.43	264.18	0.1	0.2	1.611	A
5	236.43	59.11	333.39	2125.30	0.111	236.33	224.66	0.1	0.1	1.978	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	11.01	2.75	664.68	2039.92	0.005	11.01	33.01	0.0	0.0	1.773	A
2	183.87	45.97	299.32	1777.65	0.103	183.73	376.36	0.1	0.2	3.078	A
3	257.64	64.41	276.19	2097.91	0.123	257.50	206.86	0.1	0.2	2.131	A
4	473.44	118.36	210.18	2641.96	0.179	473.23	323.51	0.2	0.2	1.705	A
5	289.57	72.39	408.28	2051.76	0.141	289.41	275.13	0.1	0.2	2.120	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	11.01	2.75	665.01	2039.60	0.005	11.01	33.03	0.0	0.0	1.773	A
2	183.87	45.97	299.48	1777.53	0.103	183.87	376.55	0.2	0.2	3.078	A
3	257.64	64.41	276.36	2097.76	0.123	257.64	206.99	0.2	0.2	2.132	A
4	473.44	118.36	210.29	2641.84	0.179	473.44	323.70	0.2	0.2	1.705	A
5	289.57	72.39	408.48	2051.57	0.141	289.57	275.25	0.2	0.2	2.120	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.99	2.25	543.32	2153.90	0.004	8.99	26.99	0.0	0.0	1.680	A
2	150.13	37.53	244.68	1819.86	0.082	150.27	307.64	0.2	0.1	2.941	A
3	210.36	52.59	225.81	2144.13	0.098	210.50	169.13	0.2	0.1	2.030	A
4	386.56	96.64	171.82	2681.86	0.144	386.76	264.48	0.2	0.2	1.614	A
5	236.43	59.11	333.71	2124.99	0.111	236.59	224.87	0.2	0.1	1.980	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	7.53	1.88	454.95	2236.90	0.003	7.53	22.60	0.0	0.0	1.614	A
2	125.73	31.43	204.88	1850.61	0.068	125.82	257.60	0.1	0.1	2.844	A
3	176.17	44.04	189.07	2177.83	0.081	176.26	141.62	0.1	0.1	1.961	A
4	323.73	80.93	143.87	2710.93	0.119	323.86	221.46	0.2	0.1	1.549	A
5	198.00	49.50	279.44	2178.29	0.091	198.11	188.30	0.1	0.1	1.889	A

2026 Base + Committed, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.09	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2026 Base + Committed	PM	ONE HOUR	16:15	17:45	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		ONE HOUR	✓	42.00	100.000
2		ONE HOUR	✓	301.00	100.000
3		ONE HOUR	✓	147.00	100.000
4		ONE HOUR	✓	333.00	100.000
5		ONE HOUR	✓	243.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	5.000	11.000	26.000	0.000
	2	0.000	0.000	142.000	68.000	91.000
	3	1.000	58.000	0.000	85.000	3.000
	4	1.000	21.000	101.000	0.000	210.000
	5	2.000	26.000	1.000	214.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.12	0.26	0.62	0.00
	2	0.00	0.00	0.47	0.23	0.30
	3	0.01	0.39	0.00	0.58	0.02
	4	0.00	0.06	0.30	0.00	0.63
	5	0.01	0.11	0.00	0.88	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	33	0	0	0
	2	0	0	9	5	5
	3	0	39	0	0	0
	4	0	6	6	0	2
	5	100	20	0	1	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.330	1.000	1.000	1.000
	2	1.000	1.000	1.090	1.050	1.050
	3	1.000	1.390	1.000	1.000	1.000
	4	1.000	1.060	1.060	1.000	1.020
	5	2.000	1.200	1.000	1.010	1.000

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	0.02	1.70	0.0	A	38.54	57.81
2	0.19	2.79	0.3	A	276.20	414.30
3	0.08	2.27	0.1	A	134.89	202.33
4	0.14	1.60	0.2	A	305.57	458.35
5	0.12	1.87	0.1	A	222.98	334.47

Main Results for each time segment

Main results: (16:15-16:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	31.62	7.90	316.35	2367.08	0.013	31.56	3.01	0.0	0.0	1.587	A
2	226.61	56.65	265.27	1803.96	0.126	226.00	82.64	0.0	0.2	2.438	A
3	110.67	27.67	299.72	2076.33	0.053	110.42	191.55	0.0	0.1	2.059	A
4	250.70	62.67	114.89	2741.07	0.091	250.28	295.24	0.0	0.1	1.494	A
5	182.94	45.74	136.76	2318.39	0.079	182.59	228.41	0.0	0.1	1.738	A

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	37.76	9.44	378.33	2308.86	0.016	37.74	3.59	0.0	0.0	1.632	A
2	270.59	67.65	317.23	1763.82	0.153	270.43	98.85	0.2	0.2	2.575	A
3	132.15	33.04	358.53	2022.38	0.065	132.09	229.13	0.1	0.1	2.141	A
4	299.36	74.84	137.47	2717.59	0.110	299.26	353.15	0.1	0.1	1.538	A
5	218.45	54.61	163.55	2292.08	0.095	218.37	273.18	0.1	0.1	1.790	A

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	46.24	11.56	463.32	2229.03	0.021	46.22	4.40	0.0	0.0	1.698	A
2	331.41	82.85	388.49	1708.76	0.194	331.15	121.05	0.2	0.3	2.792	A
3	161.85	40.46	439.06	1948.51	0.083	161.76	280.59	0.1	0.1	2.265	A
4	366.64	91.66	168.34	2685.48	0.137	366.50	432.47	0.1	0.2	1.604	A
5	267.55	66.89	200.30	2256.00	0.119	267.43	334.54	0.1	0.1	1.866	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	46.24	11.56	463.53	2228.84	0.021	46.24	4.40	0.0	0.0	1.698	A
2	331.41	82.85	388.66	1708.64	0.194	331.41	121.11	0.3	0.3	2.792	A
3	161.85	40.46	439.31	1948.29	0.083	161.85	280.76	0.1	0.1	2.265	A
4	366.64	91.66	168.46	2685.36	0.137	366.64	432.70	0.2	0.2	1.604	A
5	267.55	66.89	200.39	2255.92	0.119	267.55	334.71	0.1	0.1	1.866	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	37.76	9.44	378.68	2308.54	0.016	37.78	3.60	0.0	0.0	1.632	A
2	270.59	67.65	317.50	1763.60	0.153	270.84	98.95	0.3	0.2	2.576	A
3	132.15	33.04	358.94	2022.01	0.065	132.24	229.41	0.1	0.1	2.141	A
4	299.36	74.84	137.66	2717.39	0.110	299.50	353.52	0.2	0.1	1.539	A
5	218.45	54.61	163.70	2291.94	0.095	218.57	273.46	0.1	0.1	1.790	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	31.62	7.90	317.09	2366.38	0.013	31.63	3.01	0.0	0.0	1.590	A
2	226.61	56.65	265.87	1803.49	0.126	226.77	82.85	0.2	0.2	2.439	A
3	110.67	27.67	300.55	2075.57	0.053	110.73	192.09	0.1	0.1	2.060	A
4	250.70	62.67	115.26	2740.69	0.091	250.80	296.02	0.1	0.1	1.494	A
5	182.94	45.74	137.08	2318.08	0.079	183.02	228.98	0.1	0.1	1.738	A

2031 Base + Committed, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.13	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2031 Base + Committed	AM	ONE HOUR	07:15	08:45	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		ONE HOUR	✓	11.00	100.000
2		ONE HOUR	✓	172.00	100.000
3		ONE HOUR	✓	244.00	100.000
4		ONE HOUR	✓	447.00	100.000
5		ONE HOUR	✓	273.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	2.000	1.000	8.000	0.000
	2	1.000	0.000	113.000	39.000	19.000
	3	18.000	158.000	0.000	66.000	2.000
	4	11.000	117.000	81.000	0.000	238.000
	5	1.000	77.000	1.000	194.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.18	0.09	0.73	0.00
	2	0.01	0.00	0.66	0.23	0.11
	3	0.07	0.65	0.00	0.27	0.01
	4	0.02	0.26	0.18	0.00	0.53
	5	0.00	0.28	0.00	0.71	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	50	9	33
	3	0	12	0	3	0
	4	0	2	8	0	2
	5	0	6	0	3	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.500	1.090	1.330
	3	1.000	1.120	1.000	1.030	1.000
	4	1.000	1.020	1.080	1.000	1.020
	5	1.000	1.060	1.000	1.030	1.000

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	0.01	1.80	0.0	A	10.09	15.14
2	0.11	3.10	0.2	A	157.83	236.75
3	0.13	2.14	0.2	A	223.90	335.85
4	0.19	1.73	0.2	A	410.18	615.26
5	0.15	2.15	0.2	A	250.51	375.76

Main Results for each time segment

Main results: (07:15-07:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.28	2.07	471.84	2221.03	0.004	8.27	23.29	0.0	0.0	1.626	A
2	129.49	32.37	214.13	1843.46	0.070	129.08	265.97	0.0	0.1	2.857	A
3	183.70	45.92	196.03	2171.44	0.085	183.30	147.18	0.0	0.1	1.962	A
4	336.53	84.13	148.73	2705.88	0.124	335.94	230.61	0.0	0.1	1.564	A
5	205.53	51.38	290.04	2167.88	0.095	205.09	194.63	0.0	0.1	1.903	A

Main results: (07:30-07:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	9.89	2.47	564.32	2134.17	0.005	9.89	27.86	0.0	0.0	1.693	A
2	154.62	38.66	256.10	1811.04	0.085	154.53	318.11	0.1	0.1	2.956	A
3	219.35	54.84	234.52	2136.14	0.103	219.26	176.11	0.1	0.1	2.035	A
4	401.84	100.46	177.92	2675.52	0.150	401.70	275.86	0.1	0.2	1.629	A
5	245.42	61.36	346.87	2112.07	0.116	245.31	232.75	0.1	0.1	2.001	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	12.11	3.03	691.08	2015.12	0.006	12.11	34.11	0.0	0.0	1.796	A
2	189.38	47.34	313.62	1766.60	0.107	189.23	389.56	0.1	0.2	3.105	A
3	268.65	67.16	287.19	2087.82	0.129	268.51	215.66	0.1	0.2	2.144	A
4	492.16	123.04	217.88	2633.95	0.187	491.94	337.81	0.2	0.2	1.730	A
5	300.58	75.14	424.79	2035.55	0.148	300.41	285.03	0.1	0.2	2.153	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	12.11	3.03	691.44	2014.78	0.006	12.11	34.13	0.0	0.0	1.796	A
2	189.38	47.34	313.79	1766.47	0.107	189.37	389.76	0.2	0.2	3.105	A
3	268.65	67.16	287.37	2087.66	0.129	268.65	215.80	0.2	0.2	2.144	A
4	492.16	123.04	218.00	2633.83	0.187	492.16	338.01	0.2	0.2	1.730	A
5	300.58	75.14	424.99	2035.35	0.148	300.58	285.16	0.2	0.2	2.153	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	9.89	2.47	564.92	2133.61	0.005	9.89	27.89	0.0	0.0	1.696	A
2	154.62	38.66	256.37	1810.83	0.085	154.77	318.44	0.2	0.1	2.957	A
3	219.35	54.84	234.81	2135.87	0.103	219.49	176.33	0.2	0.1	2.035	A
4	401.84	100.46	178.12	2675.31	0.150	402.06	276.18	0.2	0.2	1.632	A
5	245.42	61.36	347.21	2111.73	0.116	245.59	232.97	0.2	0.1	2.004	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.28	2.07	473.03	2219.92	0.004	8.29	23.35	0.0	0.0	1.626	A
2	129.49	32.37	214.67	1843.04	0.070	129.59	266.64	0.1	0.1	2.858	A
3	183.70	45.92	196.61	2170.91	0.085	183.79	147.65	0.1	0.1	1.964	A
4	336.53	84.13	149.15	2705.44	0.124	336.67	231.26	0.2	0.1	1.566	A
5	205.53	51.38	290.74	2167.19	0.095	205.64	195.08	0.1	0.1	1.904	A

2031 Base + Committed, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.12	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2031 Base + Committed	PM	ONE HOUR	16:15	17:45	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		ONE HOUR	✓	43.00	100.000
2		ONE HOUR	✓	311.00	100.000
3		ONE HOUR	✓	153.00	100.000
4		ONE HOUR	✓	345.00	100.000
5		ONE HOUR	✓	252.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	5.000	11.000	27.000	0.000
	2	0.000	0.000	147.000	70.000	94.000
	3	1.000	60.000	0.000	89.000	3.000
	4	1.000	21.000	105.000	0.000	218.000
	5	2.000	26.000	1.000	223.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.12	0.26	0.63	0.00
	2	0.00	0.00	0.47	0.23	0.30
	3	0.01	0.39	0.00	0.58	0.02
	4	0.00	0.06	0.30	0.00	0.63
	5	0.01	0.10	0.00	0.88	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	33	0	0	0
	2	0	0	10	4	5
	3	0	38	0	0	0
	4	0	6	7	0	2
	5	100	20	0	1	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.330	1.000	1.000	1.000
	2	1.000	1.000	1.100	1.040	1.050
	3	1.000	1.380	1.000	1.000	1.000
	4	1.000	1.060	1.070	1.000	1.020
	5	2.000	1.200	1.000	1.010	1.000

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	0.02	1.71	0.0	A	39.46	59.19
2	0.20	2.84	0.3	A	285.38	428.07
3	0.09	2.29	0.1	A	140.40	210.59
4	0.14	1.62	0.2	A	316.58	474.87
5	0.12	1.88	0.1	A	231.24	346.86

Main Results for each time segment

Main results: (16:15-16:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	32.37	8.09	327.62	2356.49	0.014	32.32	3.01	0.0	0.0	1.594	A
2	234.14	58.53	275.79	1795.83	0.130	233.50	84.14	0.0	0.2	2.465	A
3	115.19	28.80	310.98	2066.00	0.056	114.92	198.30	0.0	0.1	2.068	A
4	259.73	64.93	118.65	2737.16	0.095	259.30	307.26	0.0	0.1	1.506	A
5	189.72	47.43	141.27	2313.97	0.082	189.35	236.68	0.0	0.1	1.746	A

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	38.66	9.66	391.81	2296.20	0.017	38.64	3.59	0.0	0.0	1.641	A
2	279.58	69.90	329.81	1754.10	0.159	279.41	100.64	0.2	0.2	2.613	A
3	137.54	34.39	372.00	2010.02	0.068	137.48	237.22	0.1	0.1	2.154	A
4	310.15	77.54	141.96	2712.92	0.114	310.05	367.52	0.1	0.1	1.553	A
5	226.54	56.64	168.95	2286.79	0.099	226.46	283.06	0.1	0.1	1.800	A

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	47.34	11.84	479.83	2213.53	0.021	47.32	4.40	0.0	0.0	1.710	A
2	342.42	85.60	403.90	1696.86	0.202	342.15	123.25	0.2	0.3	2.845	A
3	168.46	42.11	455.56	1933.38	0.087	168.36	290.49	0.1	0.1	2.286	A
4	379.85	94.96	173.84	2679.76	0.142	379.70	450.08	0.1	0.2	1.622	A
5	277.46	69.36	206.90	2249.52	0.123	277.33	346.64	0.1	0.1	1.880	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	47.34	11.84	480.04	2213.33	0.021	47.34	4.40	0.0	0.0	1.710	A
2	342.42	85.60	404.07	1696.73	0.202	342.42	123.31	0.3	0.3	2.845	A
3	168.46	42.11	455.82	1933.14	0.087	168.46	290.67	0.1	0.1	2.286	A
4	379.85	94.96	173.96	2679.63	0.142	379.85	450.32	0.2	0.2	1.622	A
5	277.46	69.36	206.99	2249.43	0.123	277.46	346.82	0.1	0.1	1.880	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	38.66	9.66	392.17	2295.86	0.017	38.68	3.60	0.0	0.0	1.641	A
2	279.58	69.90	330.10	1753.87	0.159	279.85	100.75	0.3	0.2	2.616	A
3	137.54	34.39	372.44	2009.62	0.068	137.64	237.51	0.1	0.1	2.155	A
4	310.15	77.54	142.16	2712.71	0.114	310.30	367.92	0.2	0.1	1.555	A
5	226.54	56.64	169.10	2286.64	0.099	226.67	283.35	0.1	0.1	1.800	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	32.37	8.09	328.39	2355.77	0.014	32.39	3.01	0.0	0.0	1.594	A
2	234.14	58.53	276.42	1795.35	0.130	234.31	84.36	0.2	0.2	2.470	A
3	115.19	28.80	311.85	2065.20	0.056	115.25	198.87	0.1	0.1	2.069	A
4	259.73	64.93	119.03	2736.77	0.095	259.83	308.08	0.1	0.1	1.506	A
5	189.72	47.43	141.60	2313.64	0.082	189.80	237.27	0.1	0.1	1.746	A

2026 Base + Committed + DEV, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.30	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2026 Base + Committed + DEV	AM	ONE HOUR	07:15	08:45	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		ONE HOUR	✓	10.00	100.000
2		ONE HOUR	✓	238.00	100.000
3		ONE HOUR	✓	277.00	100.000
4		ONE HOUR	✓	445.00	100.000
5		ONE HOUR	✓	311.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	2.000	1.000	7.000	0.000
	2	1.000	0.000	141.000	44.000	52.000
	3	17.000	195.000	0.000	63.000	2.000
	4	11.000	128.000	77.000	0.000	229.000
	5	1.000	123.000	1.000	186.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.20	0.10	0.70	0.00
	2	0.00	0.00	0.59	0.18	0.22
	3	0.06	0.70	0.00	0.23	0.01
	4	0.02	0.29	0.17	0.00	0.51
	5	0.00	0.40	0.00	0.60	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	49	8	41
	3	0	15	0	3	0
	4	0	2	7	0	2
	5	0	11	0	3	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.490	1.080	1.410
	3	1.000	1.150	1.000	1.030	1.000
	4	1.000	1.020	1.070	1.000	1.020
	5	1.000	1.110	1.000	1.030	1.000

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	0.01	1.87	0.0	A	9.18	13.76
2	0.15	3.26	0.2	A	218.39	327.59
3	0.15	2.28	0.2	A	254.18	381.27
4	0.19	1.79	0.2	A	408.34	612.51
5	0.17	2.32	0.2	A	285.38	428.07

Main Results for each time segment

Main results: (07:15-07:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	7.53	1.88	533.40	2163.22	0.003	7.51	22.54	0.0	0.0	1.669	A
2	179.18	44.79	204.35	1851.02	0.097	178.59	336.56	0.0	0.1	2.957	A
3	208.54	52.14	217.77	2151.51	0.097	208.07	165.17	0.0	0.1	2.054	A
4	335.02	83.75	200.51	2652.02	0.126	334.43	225.32	0.0	0.1	1.596	A
5	234.14	58.53	322.32	2136.18	0.110	233.62	212.62	0.0	0.1	2.006	A

Main results: (07:30-07:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.99	2.25	637.99	2064.98	0.004	8.99	26.96	0.0	0.0	1.750	A
2	213.96	53.49	244.41	1820.07	0.118	213.81	402.56	0.1	0.2	3.078	A
3	249.02	62.25	260.56	2112.25	0.118	248.90	197.66	0.1	0.1	2.142	A
4	400.05	100.01	239.91	2611.05	0.153	399.90	269.56	0.1	0.2	1.672	A
5	279.58	69.90	385.50	2074.13	0.135	279.44	254.30	0.1	0.2	2.126	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	11.01	2.75	781.27	1930.40	0.006	11.00	33.01	0.0	0.0	1.874	A
2	262.04	65.51	299.30	1777.67	0.147	261.83	492.98	0.2	0.2	3.262	A
3	304.98	76.25	319.07	2058.58	0.148	304.80	242.05	0.1	0.2	2.276	A
4	489.95	122.49	293.79	2555.01	0.192	489.72	330.09	0.2	0.2	1.790	A
5	342.42	85.60	472.09	1989.10	0.172	342.20	311.42	0.2	0.2	2.317	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	11.01	2.75	781.72	1929.98	0.006	11.01	33.03	0.0	0.0	1.875	A
2	262.04	65.51	299.48	1777.53	0.147	262.04	493.26	0.2	0.2	3.262	A
3	304.98	76.25	319.29	2058.37	0.148	304.98	242.22	0.2	0.2	2.276	A
4	489.95	122.49	293.97	2554.82	0.192	489.95	330.30	0.2	0.2	1.791	A
5	342.42	85.60	472.34	1988.86	0.172	342.42	311.59	0.2	0.2	2.317	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.99	2.25	638.72	2064.29	0.004	9.00	26.99	0.0	0.0	1.750	A
2	213.96	53.49	244.70	1819.85	0.118	214.17	403.02	0.2	0.2	3.082	A
3	249.02	62.25	260.93	2111.92	0.118	249.19	197.94	0.2	0.1	2.143	A
4	400.05	100.01	240.21	2610.73	0.153	400.27	269.91	0.2	0.2	1.675	A
5	279.58	69.90	385.91	2073.73	0.135	279.80	254.58	0.2	0.2	2.127	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	7.53	1.88	534.82	2161.89	0.003	7.53	22.60	0.0	0.0	1.672	A
2	179.18	44.79	204.89	1850.60	0.097	179.32	337.46	0.2	0.1	2.958	A
3	208.54	52.14	218.47	2150.86	0.097	208.66	165.74	0.1	0.1	2.055	A
4	335.02	83.75	201.13	2651.37	0.126	335.17	225.99	0.2	0.1	1.599	A
5	234.14	58.53	323.14	2135.37	0.110	234.28	213.17	0.2	0.1	2.007	A

2026 Base + Committed + DEV, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.31	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2026 Base + Committed + DEV	PM	ONE HOUR	16:15	17:45	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		ONE HOUR	✓	42.00	100.000
2		ONE HOUR	✓	399.00	100.000
3		ONE HOUR	✓	173.00	100.000
4		ONE HOUR	✓	337.00	100.000
5		ONE HOUR	✓	270.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	5.000	11.000	26.000	0.000
	2	0.000	0.000	180.000	85.000	134.000
	3	1.000	84.000	0.000	85.000	3.000
	4	1.000	25.000	101.000	0.000	210.000
	5	2.000	53.000	1.000	214.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.12	0.26	0.62	0.00
	2	0.00	0.00	0.45	0.21	0.34
	3	0.01	0.49	0.00	0.49	0.02
	4	0.00	0.07	0.30	0.00	0.62
	5	0.01	0.20	0.00	0.79	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	33	0	0	0
	2	0	0	10	4	7
	3	0	43	0	0	0
	4	0	5	6	0	2
	5	100	32	0	1	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.330	1.000	1.000	1.000
	2	1.000	1.000	1.100	1.040	1.070
	3	1.000	1.430	1.000	1.000	1.000
	4	1.000	1.050	1.060	1.000	1.020
	5	2.000	1.320	1.000	1.010	1.000

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	0.02	1.75	0.0	A	38.54	57.81
2	0.26	3.05	0.4	A	366.13	549.19
3	0.10	2.48	0.1	A	158.75	238.12
4	0.14	1.66	0.2	A	309.24	463.86
5	0.13	1.99	0.2	A	247.76	371.64

Main Results for each time segment

Main results: (16:15-16:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	31.62	7.90	359.14	2326.89	0.014	31.56	3.01	0.0	0.0	1.615	A
2	300.39	75.10	265.25	1803.97	0.167	299.53	125.45	0.0	0.2	2.575	A
3	130.24	32.56	344.73	2035.04	0.064	129.92	220.05	0.0	0.1	2.212	A
4	253.71	63.43	166.68	2687.20	0.094	253.28	307.97	0.0	0.1	1.528	A
5	203.27	50.82	159.29	2296.28	0.089	202.86	260.68	0.0	0.1	1.827	A

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	37.76	9.44	429.54	2260.76	0.017	37.74	3.59	0.0	0.0	1.667	A
2	358.69	89.67	317.22	1763.82	0.203	358.46	150.06	0.2	0.3	2.757	A
3	155.52	38.88	412.42	1972.95	0.079	155.44	263.26	0.1	0.1	2.319	A
4	302.96	75.74	199.45	2653.12	0.114	302.85	368.41	0.1	0.1	1.582	A
5	242.72	60.68	190.51	2265.62	0.107	242.63	311.80	0.1	0.1	1.890	A

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	46.24	11.56	526.03	2170.14	0.021	46.22	4.40	0.0	0.0	1.745	A
2	439.31	109.83	388.48	1708.77	0.257	438.92	183.77	0.3	0.4	3.052	A
3	190.48	47.62	505.03	1888.00	0.101	190.35	322.37	0.1	0.1	2.482	A
4	371.04	92.76	244.23	2606.55	0.142	370.89	451.15	0.1	0.2	1.664	A
5	297.28	74.32	233.30	2223.60	0.134	297.13	381.83	0.1	0.2	1.986	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	46.24	11.56	526.29	2169.90	0.021	46.24	4.40	0.0	0.0	1.745	A
2	439.31	109.83	388.66	1708.64	0.257	439.30	183.87	0.4	0.4	3.052	A
3	190.48	47.62	505.37	1887.69	0.101	190.48	322.60	0.1	0.1	2.483	A
4	371.04	92.76	244.42	2606.35	0.142	371.04	451.42	0.2	0.2	1.664	A
5	297.28	74.32	233.42	2223.48	0.134	297.27	382.05	0.2	0.2	1.986	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	37.76	9.44	429.97	2260.36	0.017	37.78	3.60	0.0	0.0	1.668	A
2	358.69	89.67	317.52	1763.59	0.203	359.08	150.23	0.4	0.3	2.759	A
3	155.52	38.88	412.97	1972.44	0.079	155.65	263.62	0.1	0.1	2.320	A
4	302.96	75.74	199.76	2652.80	0.114	303.11	368.85	0.2	0.1	1.585	A
5	242.72	60.68	190.70	2265.43	0.107	242.87	312.17	0.2	0.1	1.893	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	31.62	7.90	360.04	2326.04	0.014	31.63	3.01	0.0	0.0	1.618	A
2	300.39	75.10	265.88	1803.49	0.167	300.63	125.79	0.3	0.2	2.578	A
3	130.24	32.56	345.78	2034.08	0.064	130.32	220.73	0.1	0.1	2.215	A
4	253.71	63.43	167.25	2686.61	0.094	253.81	308.85	0.1	0.1	1.531	A
5	203.27	50.82	159.68	2295.89	0.089	203.37	261.39	0.1	0.1	1.827	A

2031 Base + Committed + DEV, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.32	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2031 Base + Committed + DEV	AM	ONE HOUR	07:15	08:45	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		ONE HOUR	✓	11.00	100.000
2		ONE HOUR	✓	243.00	100.000
3		ONE HOUR	✓	287.00	100.000
4		ONE HOUR	✓	462.00	100.000
5		ONE HOUR	✓	321.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	2.000	1.000	8.000	0.000
	2	1.000	0.000	145.000	45.000	52.000
	3	18.000	201.000	0.000	66.000	2.000
	4	11.000	132.000	81.000	0.000	238.000
	5	1.000	125.000	1.000	194.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.18	0.09	0.73	0.00
	2	0.00	0.00	0.60	0.19	0.21
	3	0.06	0.70	0.00	0.23	0.01
	4	0.02	0.29	0.18	0.00	0.52
	5	0.00	0.39	0.00	0.60	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	49	7	40
	3	0	14	0	3	0
	4	0	2	8	0	2
	5	0	10	0	3	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.490	1.070	1.400
	3	1.000	1.140	1.000	1.030	1.000
	4	1.000	1.020	1.080	1.000	1.020
	5	1.000	1.100	1.000	1.030	1.000

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	0.01	1.90	0.0	A	10.09	15.14
2	0.15	3.29	0.2	A	222.98	334.47
3	0.15	2.29	0.2	A	263.36	395.03
4	0.20	1.82	0.3	A	423.94	635.91
5	0.18	2.35	0.2	A	294.56	441.83

Main Results for each time segment

Main results: (07:15-07:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.28	2.07	551.42	2146.29	0.004	8.27	23.29	0.0	0.0	1.683	A
2	182.94	45.74	214.11	1843.47	0.099	182.34	345.58	0.0	0.2	2.967	A
3	216.07	54.02	225.28	2144.62	0.101	215.58	171.18	0.0	0.1	2.057	A
4	347.82	86.95	205.77	2646.55	0.131	347.20	235.08	0.0	0.2	1.611	A
5	241.67	60.42	333.59	2125.11	0.114	241.13	219.38	0.0	0.1	2.018	A

Main results: (07:30-07:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	9.89	2.47	659.55	2044.73	0.005	9.88	27.86	0.0	0.0	1.768	A
2	218.45	54.61	256.09	1811.05	0.121	218.30	413.34	0.2	0.2	3.093	A
3	258.01	64.50	269.54	2104.01	0.123	257.89	204.85	0.1	0.2	2.149	A
4	415.33	103.83	246.19	2604.51	0.159	415.17	281.23	0.2	0.2	1.692	A
5	288.57	72.14	398.98	2060.90	0.140	288.43	262.39	0.1	0.2	2.144	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	12.11	3.03	807.67	1905.61	0.006	12.11	34.11	0.0	0.0	1.900	A
2	267.55	66.89	313.60	1766.62	0.151	267.32	506.18	0.2	0.2	3.286	A
3	315.99	79.00	330.07	2048.49	0.154	315.81	250.85	0.2	0.2	2.289	A
4	508.67	127.17	301.49	2547.00	0.200	508.43	344.39	0.2	0.3	1.817	A
5	353.43	88.36	488.59	1972.90	0.179	353.19	321.32	0.2	0.2	2.346	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	12.11	3.03	808.15	1905.17	0.006	12.11	34.13	0.0	0.0	1.900	A
2	267.55	66.89	313.79	1766.47	0.151	267.55	506.47	0.2	0.2	3.286	A
3	315.99	79.00	330.30	2048.27	0.154	315.99	251.03	0.2	0.2	2.290	A
4	508.67	127.17	301.68	2546.80	0.200	508.67	344.62	0.3	0.3	1.817	A
5	353.43	88.36	488.85	1972.64	0.179	353.43	321.50	0.2	0.2	2.347	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	9.89	2.47	660.32	2044.01	0.005	9.89	27.89	0.0	0.0	1.768	A
2	218.45	54.61	256.40	1810.81	0.121	218.67	413.82	0.2	0.2	3.097	A
3	258.01	64.50	269.93	2103.66	0.123	258.19	205.14	0.2	0.2	2.151	A
4	415.33	103.83	246.51	2604.18	0.159	415.57	281.61	0.3	0.2	1.692	A
5	288.57	72.14	399.41	2060.48	0.140	288.80	262.68	0.2	0.2	2.147	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.28	2.07	552.90	2144.90	0.004	8.29	23.35	0.0	0.0	1.684	A
2	182.94	45.74	214.68	1843.03	0.099	183.09	346.50	0.2	0.2	2.970	A
3	216.07	54.02	226.01	2143.95	0.101	216.19	171.77	0.2	0.1	2.059	A
4	347.82	86.95	206.41	2645.89	0.131	347.98	235.79	0.2	0.2	1.614	A
5	241.67	60.42	334.44	2124.28	0.114	241.81	219.95	0.2	0.1	2.020	A

2031 Base + Committed + DEV, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.34	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2031 Base + Committed + DEV	PM	ONE HOUR	16:15	17:45	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		ONE HOUR	✓	43.00	100.000
2		ONE HOUR	✓	409.00	100.000
3		ONE HOUR	✓	179.00	100.000
4		ONE HOUR	✓	349.00	100.000
5		ONE HOUR	✓	279.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	5.000	11.000	27.000	0.000
	2	0.000	0.000	185.000	87.000	137.000
	3	1.000	86.000	0.000	89.000	3.000
	4	1.000	25.000	105.000	0.000	218.000
	5	2.000	53.000	1.000	223.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.12	0.26	0.63	0.00
	2	0.00	0.00	0.45	0.21	0.33
	3	0.01	0.48	0.00	0.50	0.02
	4	0.00	0.07	0.30	0.00	0.62
	5	0.01	0.19	0.00	0.80	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	33	0	0	0
	2	0	0	10	4	7
	3	0	42	0	0	0
	4	0	5	7	0	2
	5	100	32	0	1	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.330	1.000	1.000	1.000
	2	1.000	1.000	1.100	1.040	1.070
	3	1.000	1.420	1.000	1.000	1.000
	4	1.000	1.050	1.070	1.000	1.020
	5	2.000	1.320	1.000	1.010	1.000

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	0.02	1.76	0.0	A	39.46	59.19
2	0.27	3.11	0.4	A	375.31	562.96
3	0.11	2.50	0.1	A	164.25	246.38
4	0.15	1.68	0.2	A	320.25	480.37
5	0.14	2.00	0.2	A	256.02	384.02

Main Results for each time segment

Main results: (16:15-16:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	32.37	8.09	370.41	2316.30	0.014	32.31	3.01	0.0	0.0	1.622	A
2	307.92	76.98	275.77	1795.85	0.171	307.03	126.95	0.0	0.2	2.602	A
3	134.76	33.69	355.99	2024.71	0.067	134.43	226.81	0.0	0.1	2.219	A
4	262.75	65.69	170.43	2683.30	0.098	262.30	319.98	0.0	0.1	1.541	A
5	210.05	52.51	163.79	2291.85	0.092	209.62	268.94	0.0	0.1	1.833	A

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	38.66	9.66	443.02	2248.11	0.017	38.64	3.59	0.0	0.0	1.676	A
2	367.68	91.92	329.80	1754.11	0.210	367.43	151.86	0.2	0.3	2.795	A
3	160.92	40.23	425.89	1960.59	0.082	160.83	271.34	0.1	0.1	2.331	A
4	313.74	78.44	203.94	2648.45	0.118	313.64	382.78	0.1	0.1	1.597	A
5	250.82	62.70	195.90	2260.32	0.111	250.71	321.68	0.1	0.1	1.899	A

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	47.34	11.84	542.53	2154.64	0.022	47.32	4.40	0.0	0.0	1.758	A
2	450.32	112.58	403.89	1696.87	0.265	449.91	185.97	0.3	0.4	3.108	A
3	197.08	49.27	521.52	1872.86	0.105	196.95	332.27	0.1	0.1	2.503	A
4	384.26	96.06	249.73	2600.83	0.148	384.10	468.75	0.1	0.2	1.682	A
5	307.18	76.80	239.90	2217.11	0.139	307.03	393.92	0.1	0.2	1.999	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	47.34	11.84	542.80	2154.38	0.022	47.34	4.40	0.0	0.0	1.758	A
2	450.32	112.58	404.07	1696.73	0.265	450.31	186.07	0.4	0.4	3.109	A
3	197.08	49.27	521.88	1872.54	0.105	197.08	332.51	0.1	0.1	2.504	A
4	384.26	96.06	249.93	2600.62	0.148	384.26	469.03	0.2	0.2	1.682	A
5	307.18	76.80	240.02	2216.99	0.139	307.18	394.16	0.2	0.2	1.999	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	38.66	9.66	443.47	2247.68	0.017	38.68	3.60	0.0	0.0	1.677	A
2	367.68	91.92	330.11	1753.86	0.210	368.09	152.03	0.4	0.3	2.797	A
3	160.92	40.23	426.47	1960.06	0.082	161.05	271.73	0.1	0.1	2.334	A
4	313.74	78.44	204.27	2648.11	0.118	313.90	383.25	0.2	0.1	1.598	A
5	250.82	62.70	196.10	2260.12	0.111	250.97	322.07	0.2	0.1	1.903	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	32.37	8.09	371.34	2315.43	0.014	32.39	3.01	0.0	0.0	1.625	A
2	307.92	76.98	276.42	1795.34	0.172	308.17	127.30	0.3	0.2	2.608	A
3	134.76	33.69	357.08	2023.71	0.067	134.85	227.51	0.1	0.1	2.221	A
4	262.75	65.69	171.02	2682.69	0.098	262.85	320.90	0.1	0.1	1.543	A
5	210.05	52.51	164.20	2291.45	0.092	210.15	269.67	0.1	0.1	1.834	A

2026 Base + Committed + DEV (SENSI), AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.32	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2026 Base + Committed + DEV (SENSI)	AM	ONE HOUR	07:15	08:45	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		ONE HOUR	✓	10.00	100.000
2		ONE HOUR	✓	245.00	100.000
3		ONE HOUR	✓	283.00	100.000
4		ONE HOUR	✓	448.00	100.000
5		ONE HOUR	✓	317.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	2.000	1.000	7.000	0.000
	2	1.000	0.000	144.000	44.000	56.000
	3	17.000	201.000	0.000	63.000	2.000
	4	11.000	131.000	77.000	0.000	229.000
	5	1.000	129.000	1.000	186.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.20	0.10	0.70	0.00
	2	0.00	0.00	0.59	0.18	0.23
	3	0.06	0.71	0.00	0.22	0.01
	4	0.02	0.29	0.17	0.00	0.51
	5	0.00	0.41	0.00	0.59	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	50	8	42
	3	0	15	0	3	0
	4	0	2	7	0	2
	5	0	11	0	3	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.500	1.080	1.420
	3	1.000	1.150	1.000	1.030	1.000
	4	1.000	1.020	1.070	1.000	1.020
	5	1.000	1.110	1.000	1.030	1.000

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	0.01	1.89	0.0	A	9.18	13.76
2	0.15	3.30	0.2	A	224.82	337.22
3	0.15	2.29	0.2	A	259.69	389.53
4	0.19	1.80	0.2	A	411.09	616.64
5	0.18	2.34	0.2	A	290.88	436.33

Main Results for each time segment

Main results: (07:15-07:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	7.53	1.88	544.66	2152.64	0.004	7.51	22.54	0.0	0.0	1.677	A
2	184.45	46.11	204.35	1851.02	0.100	183.84	347.83	0.0	0.2	2.986	A
3	213.06	53.26	220.76	2148.76	0.099	212.57	167.42	0.0	0.1	2.064	A
4	337.28	84.32	208.02	2644.21	0.128	336.68	225.31	0.0	0.1	1.603	A
5	238.65	59.66	329.08	2129.54	0.112	238.12	215.62	0.0	0.1	2.019	A

Main results: (07:30-07:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.99	2.25	651.46	2052.33	0.004	8.99	26.96	0.0	0.0	1.760	A
2	220.25	55.06	244.41	1820.07	0.121	220.10	416.04	0.2	0.2	3.110	A
3	254.41	63.60	264.15	2108.96	0.121	254.29	200.36	0.1	0.2	2.154	A
4	402.74	100.69	248.89	2601.70	0.155	402.59	269.55	0.1	0.2	1.681	A
5	284.98	71.24	393.59	2066.19	0.138	284.83	257.89	0.1	0.2	2.143	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	11.01	2.75	797.77	1914.91	0.006	11.00	33.01	0.0	0.0	1.889	A
2	269.75	67.44	299.30	1777.67	0.152	269.52	509.48	0.2	0.2	3.300	A
3	311.59	77.90	323.47	2054.54	0.152	311.40	245.35	0.2	0.2	2.292	A
4	493.26	123.31	304.79	2543.57	0.194	493.02	330.09	0.2	0.2	1.803	A
5	349.02	87.26	481.99	1979.38	0.176	348.79	315.82	0.2	0.2	2.342	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	11.01	2.75	798.24	1914.47	0.006	11.01	33.03	0.0	0.0	1.890	A
2	269.75	67.44	299.48	1777.53	0.152	269.75	509.77	0.2	0.2	3.300	A
3	311.59	77.90	323.70	2054.33	0.152	311.59	245.53	0.2	0.2	2.292	A
4	493.26	123.31	304.98	2543.36	0.194	493.26	330.30	0.2	0.2	1.803	A
5	349.02	87.26	482.25	1979.13	0.176	349.02	315.99	0.2	0.2	2.342	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	8.99	2.25	652.22	2051.61	0.004	9.00	26.99	0.0	0.0	1.764	A
2	220.25	55.06	244.70	1819.85	0.121	220.47	416.52	0.2	0.2	3.112	A
3	254.41	63.60	264.53	2108.61	0.121	254.59	200.64	0.2	0.2	2.155	A
4	402.74	100.69	249.21	2601.37	0.155	402.98	269.91	0.2	0.2	1.682	A
5	284.98	71.24	394.01	2065.78	0.138	285.20	258.18	0.2	0.2	2.144	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	7.53	1.88	546.12	2151.27	0.004	7.53	22.60	0.0	0.0	1.681	A
2	184.45	46.11	204.89	1850.60	0.100	184.60	348.76	0.2	0.2	2.987	A
3	213.06	53.26	221.49	2148.09	0.099	213.18	168.00	0.2	0.1	2.066	A
4	337.28	84.32	208.67	2643.54	0.128	337.43	226.00	0.2	0.2	1.606	A
5	238.65	59.66	329.92	2128.72	0.112	238.80	216.18	0.2	0.1	2.022	A

2026 Base + Committed + DEV (SENSI), PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M53 J7	Large Roundabout	1,2,3,4,5	2.32	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Capacity Options

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	526.29	0.00
2	388.66	0.00
3	509.77	121.00
4	246.63	0.00
5	233.42	130.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2026 Base + Committed + DEV (SENSI)	PM	ONE HOUR	16:15	17:45	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		ONE HOUR	✓	42.00	100.000
2		ONE HOUR	✓	405.00	100.000
3		ONE HOUR	✓	173.00	100.000
4		ONE HOUR	✓	337.00	100.000
5		ONE HOUR	✓	270.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0.000	5.000	11.000	26.000	0.000
	2	0.000	0.000	182.000	87.000	136.000
	3	1.000	84.000	0.000	85.000	3.000
	4	1.000	25.000	101.000	0.000	210.000
	5	2.000	53.000	1.000	214.000	0.000

Proportions

		To				
		1	2	3	4	5
From	1	0.00	0.12	0.26	0.62	0.00
	2	0.00	0.00	0.45	0.21	0.34
	3	0.01	0.49	0.00	0.49	0.02
	4	0.00	0.07	0.30	0.00	0.62
	5	0.01	0.20	0.00	0.79	0.00

Vehicle Mix

Heavy Vehicle proportion

		To				
		1	2	3	4	5
From	1	0	33	0	0	0
	2	0	0	10	4	7
	3	0	43	0	0	0
	4	0	5	6	0	2
	5	100	32	0	1	0

Average PCU Per Veh

		To				
		1	2	3	4	5
From	1	1.000	1.330	1.000	1.000	1.000
	2	1.000	1.000	1.100	1.040	1.070
	3	1.000	1.430	1.000	1.000	1.000
	4	1.000	1.050	1.060	1.000	1.020
	5	2.000	1.320	1.000	1.010	1.000

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	0.02	1.75	0.0	A	38.54	57.81
2	0.26	3.07	0.4	A	371.64	557.45
3	0.10	2.49	0.1	A	158.75	238.12
4	0.14	1.67	0.2	A	309.24	463.86
5	0.13	1.99	0.2	A	247.76	371.64

Main Results for each time segment

Main results: (16:15-16:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	31.62	7.90	359.14	2326.89	0.014	31.56	3.01	0.0	0.0	1.615	A
2	304.91	76.23	265.25	1803.97	0.169	304.03	125.45	0.0	0.2	2.582	A
3	130.24	32.56	347.73	2032.29	0.064	129.92	221.55	0.0	0.1	2.215	A
4	253.71	63.43	168.18	2685.64	0.094	253.28	309.47	0.0	0.1	1.529	A
5	203.27	50.82	159.29	2296.28	0.089	202.86	262.18	0.0	0.1	1.827	A

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	37.76	9.44	429.54	2260.76	0.017	37.74	3.59	0.0	0.0	1.667	A
2	364.09	91.02	317.22	1763.82	0.206	363.84	150.06	0.2	0.3	2.768	A
3	155.52	38.88	416.01	1969.66	0.079	155.44	265.06	0.1	0.1	2.323	A
4	302.96	75.74	201.25	2651.25	0.114	302.85	370.20	0.1	0.1	1.584	A
5	242.72	60.68	190.51	2265.62	0.107	242.63	313.60	0.1	0.1	1.890	A

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	46.24	11.56	526.03	2170.14	0.021	46.22	4.40	0.0	0.0	1.745	A
2	445.91	111.48	388.48	1708.77	0.261	445.52	183.77	0.3	0.4	3.068	A
3	190.48	47.62	509.43	1883.96	0.101	190.35	324.57	0.1	0.1	2.488	A
4	371.04	92.76	246.43	2604.26	0.142	370.89	453.35	0.1	0.2	1.665	A
5	297.28	74.32	233.30	2223.60	0.134	297.13	384.02	0.1	0.2	1.986	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	46.24	11.56	526.29	2169.90	0.021	46.24	4.40	0.0	0.0	1.745	A
2	445.91	111.48	388.66	1708.64	0.261	445.91	183.87	0.4	0.4	3.068	A
3	190.48	47.62	509.77	1883.65	0.101	190.48	324.80	0.1	0.1	2.489	A
4	371.04	92.76	246.63	2604.06	0.142	371.04	453.62	0.2	0.2	1.665	A
5	297.28	74.32	233.42	2223.48	0.134	297.27	384.25	0.2	0.2	1.986	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	37.76	9.44	429.97	2260.36	0.017	37.78	3.60	0.0	0.0	1.668	A
2	364.09	91.02	317.52	1763.59	0.206	364.48	150.23	0.4	0.3	2.770	A
3	155.52	38.88	416.57	1969.14	0.079	155.65	265.43	0.1	0.1	2.326	A
4	302.96	75.74	201.57	2650.92	0.114	303.11	370.65	0.2	0.1	1.587	A
5	242.72	60.68	190.70	2265.43	0.107	242.87	313.97	0.2	0.1	1.893	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	31.62	7.90	360.04	2326.04	0.014	31.63	3.01	0.0	0.0	1.618	A
2	304.91	76.23	265.88	1803.49	0.169	305.15	125.79	0.3	0.2	2.588	A
3	130.24	32.56	348.79	2031.32	0.064	130.32	222.24	0.1	0.1	2.217	A
4	253.71	63.43	168.76	2685.04	0.094	253.81	310.35	0.1	0.1	1.530	A
5	203.27	50.82	159.68	2295.89	0.089	203.37	262.89	0.1	0.1	1.830	A