Intermodal Logistics Park North Ltd

INTERMODAL LOGISTICS PARK NORTH (ILPN)

Intermodal Logistics Park North (ILPN) Strategic Rail Freight Interchange (SRFI)

Project reference TR510001

Preliminary Environmental Information Report (PEIR)

Appendix 7.3: Strategic Modelling Analytical Requirements Report and Strategic Traffic Model Specification Report

October 2025

Planning Act 2008

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

This document forms a part of a Preliminary Environmental Information Report (PEIR) for the Intermodal Logistics Park North (ILPN) project.

A PEIR presents environmental information to assist consultees to form an informed view of the likely significant environmental effects of a proposed development and provide feedback.

This PEIR has been prepared by the project promoter, Intermodal Logistics Park North Ltd. The Proposed Development is described in Chapter 3 of the PEIR and is the subject of a public consultation.

Details of how to respond to the public consultation are provided at the end of Chapter 1 of the PEIR and on the project website:

https://www.tritaxbigbox.co.uk/our-spaces/intermodal-logistics-park-north/

This feedback will be taken into account by Intermodal Logistics Park North Ltd in the preparation of its application for a Development Consent Order for the project.

Revision	Description	Author	Date	Quality Check	Date	Independent Review	Date
V1.0	First Draft	JP	22/08/24	AB	23/08/24	AR	28/08/24
V2.0	First Issue	JP	29/08/24	AB	29/08/24	AR, SD	29/08/24
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V4.0	Final	JP	18/10/24	AB	22/10/24	AR	22/10/24

The conclusions in the Report titled Technical Note 001 - Strategic Modelling Analytical Requirements are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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Acronyms / Abbreviations

AADT	Average Annual Daily Traffic
AAWT	Average Annual Weekday Traffic
ATC	Automatic Traffic Count
CAS	Department for Transport's Common Analytical Scenarios
CUBE Voyager	A Strategic Modelling software by Bentley Systems
DCO	Development Consent Order
DfT	Department for Transport
DIADEM	Dynamic Integrated Assignment and Demand Modelling software
EMME	Transport modelling software by Bentley
HGV	Heavy Goods Vehicles
ILP	Intermodal Logistic Park
LCRTM	Liverpool City Region Transport Model
LGV	Light Goods Vehicles
LMVR	Local Model Validation Report
MCC	Manual Classified Count
MSR	Model Specification Report
NH	National Highways
NTEM	Department for Transport's National Trip End Model
PT	Public Transport
SATURN	Simulation and Assignment of Traffic to Urban Road Networks strategic modelling software
SHMBC	St. Helens Metropolitan Borough Council
SRN	Strategic Road Network
TA	Transport Assessment
TAG	Department for Transport's Transport Appraisal Guidance
TPS RTM2	Trans Pennine South Regional Transport Model, 2nd Generation
VDM	Variable Demand Modelling
WebTRIS	National Highways Web-based Traffic Information Service
WMMTM16	Warrington Multi Model Transport Model 2016

1 Introduction

1.1 Overview

1.1.1 Stantec have been appointed via Hydrock, now Stantec, to determine the analytical requirements for the strategic modelling that will underpin the DCO application documentation for Tritax's proposed Intermodal Logistic Park (ILP) North near St Helens.

*Figure 1: ILP North Main Site Red Line Boundary**
**Note: Main Site Order Limits shown correct at the time of preparation of this document but have since been updated as shown in PEIR Figure 1.1*

1.1.2 This Report outlines the analytical requirements for the strategic modelling that will underpin and support the DCO application.

1.1.3 This includes:

- A review of existing modelling that covers the scheme area
- Recommendations for the requirements for the DCO strategic modelling
- Any exclusions from this strategic modelling

2 Review of Existing Modelling

2.1 Overview

2.1.1 This section outlines the findings of the review of the existing strategic modelling available in the area of influence of the proposed Intermodal Logistic Park (ILP) North. The following models were reviewed as part of this assessment:

- Parkside Link Road Model
- St Helens SATURN Model
- Warrington Multi Model Transport Model 2016 (WMMTM16)
- Liverpool City Region Transport Model (LCRTM)
- Trans Pennine South Regional Traffic Model (2nd Generation) (TPS RTM2)

2.1.2 Only the base year modelling was reviewed in each case where it is expected that this will require updates and bespoke future year traffic forecasts will be required.

2.2 Parkside Link Road Model

2.2.1 The Parkside Link Road Model was built by Ramboll on behalf of St. Helens Metropolitan Borough Council (SHMBC) to support the Full Business Case for the Parkside Link Road project In St. Helens. The traffic model was developed using SATURN strategic modelling software. There is no public transport and variable demand model functionality.

2.2.2 It is noted that in the Mott MacDonald review of trip generation and modelling considerations for SHMBC, they recommended that the Parkside Link Road Model be considered as a starting point for a strategic modelling base for the ILP North.

2.2.3 The base year of the model is 2016, which is relatively dated and would require updates to change this to a post COVID base year.

2.2.4 Figure *2* shows that the model has good coverage in the area in the vicinity of the proposed ILP North site and includes all the major routes including the M6, A roads and other major local roads. This includes the major junctions in the Lane Head area. Network outside of the figure area is less detailed which could limit the capture of longer distance freight trips and would preclude the application of Variable Demand Modelling (VDM) in the ‘as is’ state.

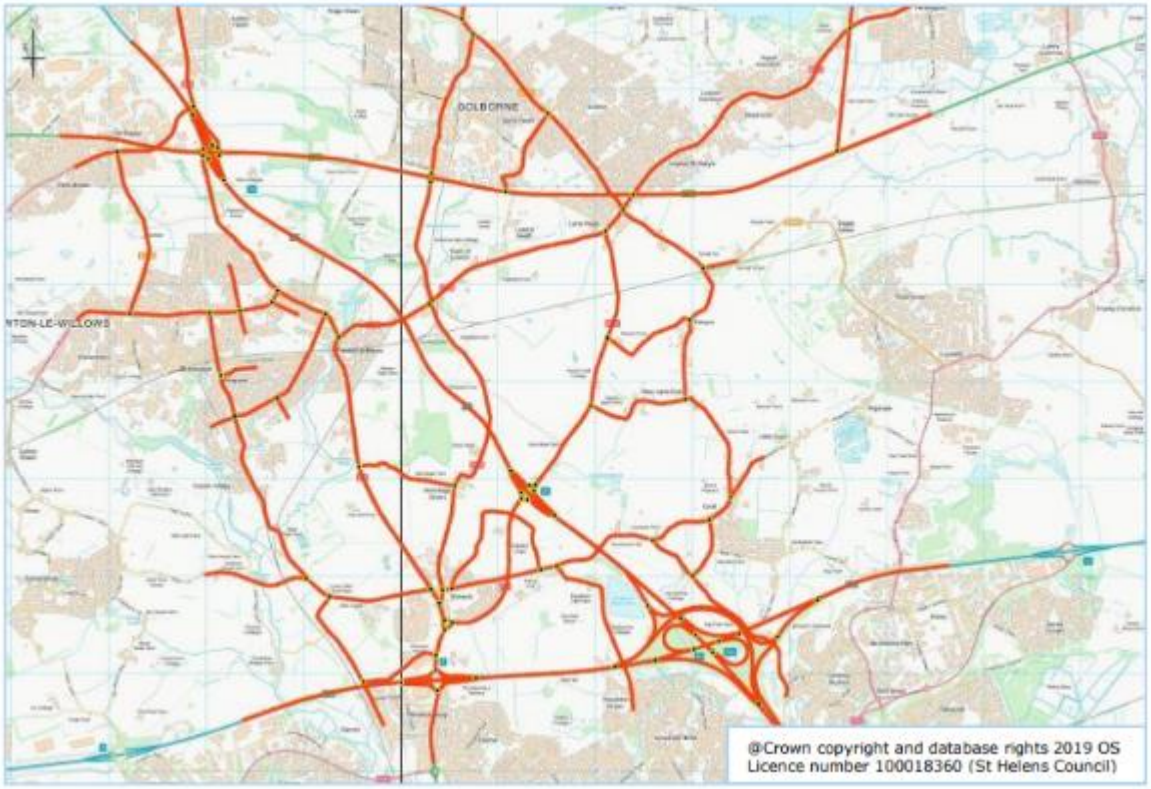

Figure 2: Parkside Link Road Model network coverage (source: Figure 3.2 of Parkside Link Road Local Model Validation report, Ramboll, 2020)

2.2.5 The Parkside Link Road Model dimensions and segmentation are summarised below:

- weekday morning, interpeak, and evening modelled peak hours
- car, LGV, and HGV vehicle classes
- car in-work, non-work commute, and non-work other journey purposes

2.2.6 Table 1 provides an overview of the advantages and disadvantages for potential use of the Parkside Link Road Model.

Table 1: Overview of the review of the Parkside Link Road Model

Advantages for use	Disadvantages for use
Good network and zone coverage in the scheme area	Base year update required
Previously used to support schemes and planning applications in the local area	Network extension may be required to build on existing model, for example parts of Warrington and/or Wigan depending on development impacts and Transport Assessment area of influence
Model use supported by the Mott MacDonald review undertaken for SHMBC	2016 model base is relatively dated with risk that original datasets may not be available for model updates (specifically trip matrices) with requirement for additional data collection or alternative model development approaches

2.3 St Helens SATURN Model

2.3.1 The St Helens SATURN Model was developed by WSP on behalf of St Helens Council. The model has no Variable Demand Model or public transport modelling functionality.

2.3.2 The model has a 2017 base year, which would require updates to change this to a post COVID base year.

2.3.3 The extent of the model was to create a tool that would allow assessment of schemes and developments within the district and as such the model has good coverage of the district as show in Figure 3.

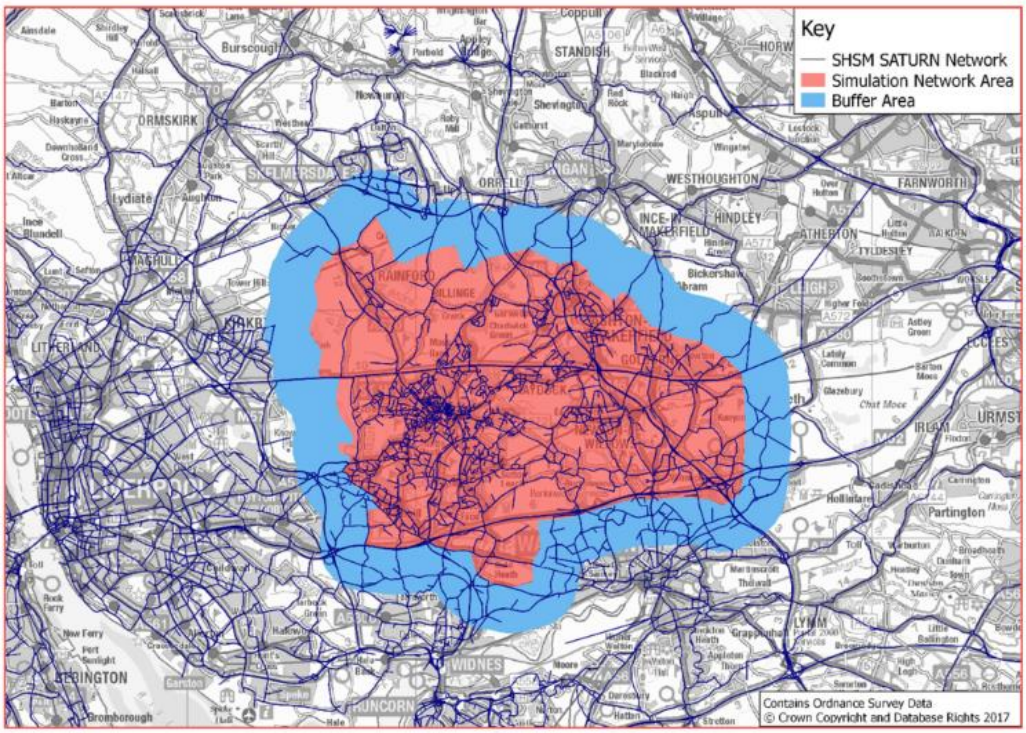

Figure 3: St Helens SATURN Model Study Area (source: Fig 41 of St Helens SATURN Model Local Model Validation Report, WSP, 2018)

2.3.4 The ILP North site is located on the eastern edge of the model simulation area. There may be a need for local enhancement in this area to provide appropriate network detail in the area of influence of the site. However, it may also be prudent to reduce the level of detail in central St Helens as this is unlikely to be required to for the DCO assessments and potentially may create model noise.

2.3.5 The St Helens SATURN Model dimensions and segmentation are summarised below:

- weekday morning, interpeak, and evening modelled peak hours
- car, LGV, and HGV vehicle classes
- car in-work, non-work commute, and non-work other journey purposes

2.3.6 Table 2 provides an overview of the advantages and disadvantages for potential use of the St Helens SATURN Model.

Table 2: Overview of the review of the St Helens SATURN Model

Advantages for use	Disadvantages to use
Good Coverage of site area and key routes in this location	Base year update required
	Local network enhancements would be required
	Local zone enhancements required
	Possible requirement to reduce detail in central St Helens
	2017 model base is relatively dated with risk that original datasets may not be available for model updates (specifically trip matrices) with requirement for additional data collection or alternative model development approaches

2.4 Warrington Multi Model Transport Model 2016 (WMMTM16)

2.4.1 The Warrington Multi Model Transport Model 2016 (WMMTM16) is a strategic model that combines a SATURN highway assignment model with an EMME public transport and demand model element.

2.4.2 The model has a 2016 base year, which would require updates to change this to a post COVID base year.

2.4.3 The extent of the model was to create a tool that would allow assessment of schemes and developments within the district and as such the model has good coverage of the district as show in Figure 4.

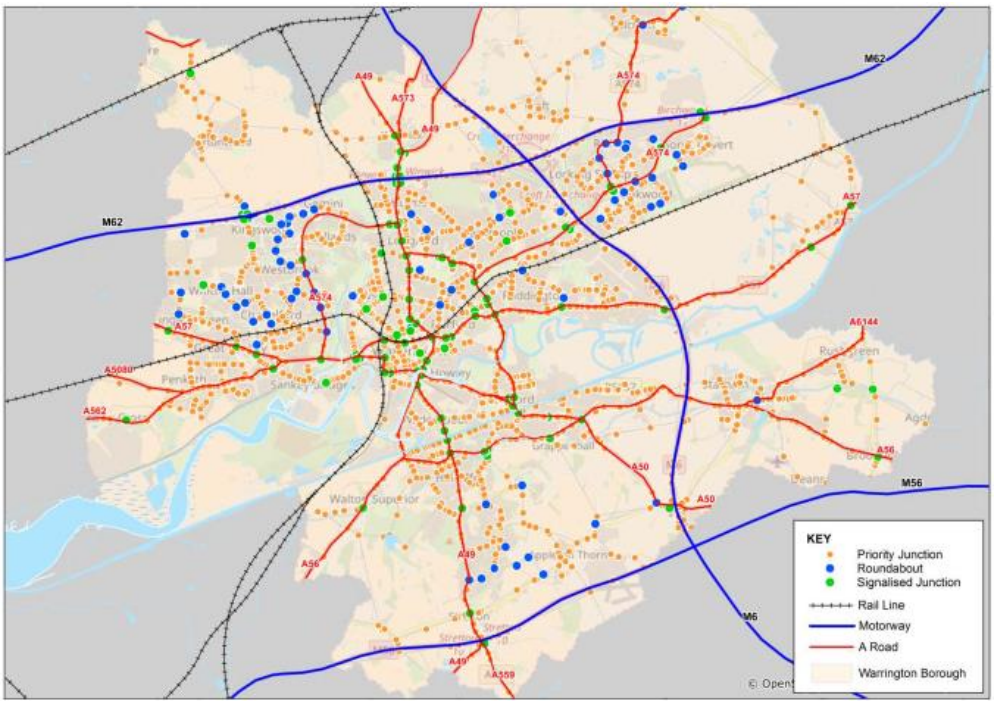

Figure 4: WMMTM16 network (source: Fig 3 of WMMTM16 LMVR, Aecom (on behalf of Warrington Council), 2017)

2.4.4 The network in the vicinity of the ILP North would likely need to be enhanced as the site is located on the northern edge of the WMMTM16 simulation network area. The network in the St Helens and Wigan areas would require significant additions and enhancement. In contrast, the network within Warrington is likely to be too detailed for the purposes of assessing the ILP North.

2.4.5 The WMMTM16 dimensions and segmentation are summarised below:

- weekday morning, interpeak, evening peak hours
- car, LGV, and HGV vehicle classes
- full Public Transport model including all bus and rail services stopping within the borough
- car business, commute, and other journey purposes

2.4.6 Table 3 provides an overview of the advantages and disadvantages for potential use of the WMMTM16.

Table 3: Overview of the review of the WMMTM16

Advantages for use	Disadvantages to use
Full Public Transport element	Base year update required
	Local network and zone enhancements would be required in St Helens and Wigan areas
	Possible reduction in detail in the Warrington area required
	Does not necessarily capture local trip patterns well in areas that require enhancement

2.5 Liverpool City Region Model (LCRTM)

2.5.1 The Liverpool City Region Transport Model was developed by Mott MacDonald for the Liverpool City Region Combined Authority. It comprises of a highway assignment model (the subject of this review), a public transport model, and a variable demand model (all in CUBE Voyager software).

2.5.2 The highways assignment element of the LCRTM has a base year of 2019. This would need to be updated to a post COVID year.

2.5.3 Figure 5 shows that the ILP North site area falls on the boundary between the detailed model study area and the buffer area. This would require network and model zone enhancements in the local area including any potential network highlighted as sensitive to stakeholders.

Figure 5: LCRTM Study Area (source: Fig 1:1 of LCRTM Local Model Validation Report, Mott Macdonald, 2023)

2.5.4 The LCRTM dimensions and segmentation are summarised below:

- weekday morning, interpeak, evening and off-peak modelled peak hours
- car, LGV, and HGV vehicle classes plus bus and rail passengers
- car in-work, non-work commute, and non-work other journey purposes

2.5.5 Table 4 provides an overview of the advantages and disadvantages for potential use of the LCRTM.

Table 4: Overview of the review of the LCRTM

Advantages for use	Disadvantages to use
Separate PT element could be useful for rail element of assessment	Base year update required
Model is actively maintained with expectation that model development datasets would be available	Local network enhancements would be required
	Local zone enhancements required
	Possible requirement to reduce detail in Merseyside area

2.6 Trans Pennine South Regional Traffic Model (2nd Generation) (TPS RTM2)

2.6.1 The Trans Pennine South Regional Traffic Model (2nd Generation) is a SATURN highway assignment model developed and maintained by National Highways. This model is part of a suite of five models that, together, provide strategic modelling coverage of the whole country. The model includes variable demand modelling and representation of public transport focussed on strategic passenger rail movements.

2.6.2 As with all the models reviewed in this assessment, the base year of this model would require updating from the existing base year of 2019 to allow a robust assessment for the DCO for the ILP North.

2.6.3 Figure 6 shows the TPS RTM2 has very good regional coverage at a strategic level. This is supplemented by the representation of key national network and zones outside the model study area which allows for the capture of longer distance trips and Variable Demand Modelling.

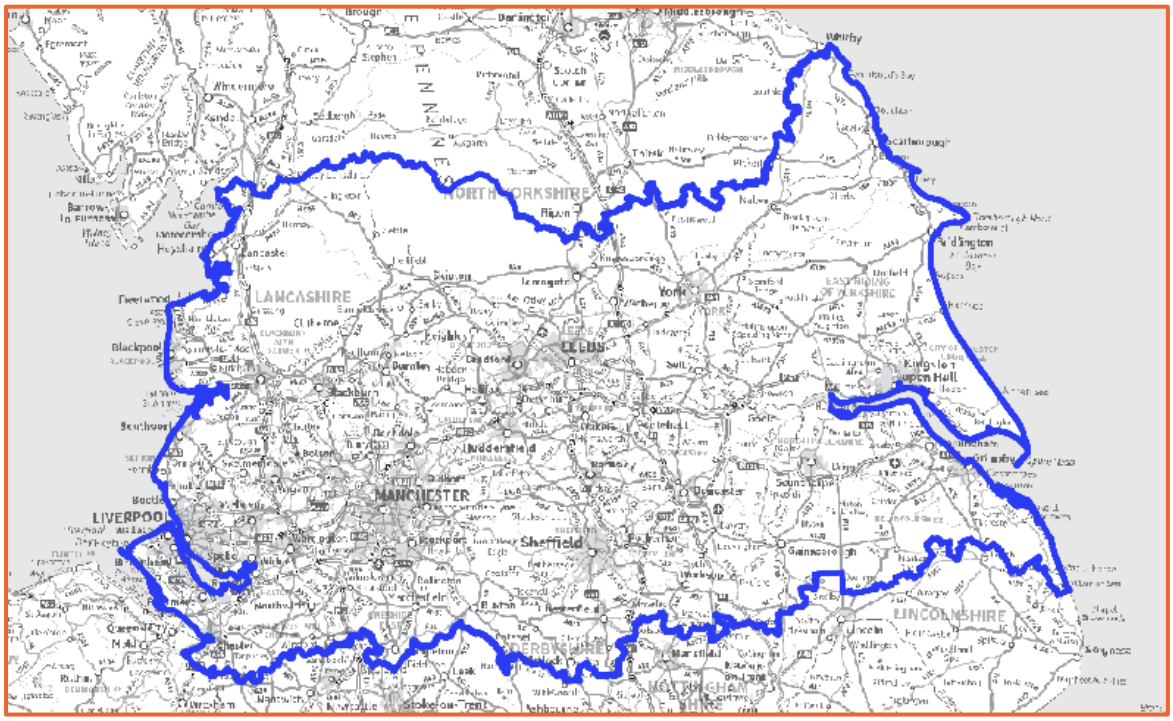

Figure 6: TPS RTM2 Study Area (source: Fig 2-1 of TPS RTM2 Model Development Report, National Highways, 2022)

2.6.4 The network in the vicinity of the ILP North would likely need to be enhanced as the RTM2s are designed to capture strategic trips well. Previous experience with the RTMs has shown that significant work can be required to accurately capture local trip patterns. This is particularly true when updating to a post COVID base year. Additionally, large parts of the model would need to be converted into less detailed network (buffer network) as the full regional coverage is likely not necessary for the assessment of the site.

2.6.5 The TPS RTM2 dimensions and segmentation are summarised below:

- weekday morning, interpeak, and evening modelled peak hours
- car, LGV, and HGV vehicle classes
- car in-work, non-work commute, and non-work other journey purposes
- special zones representing key ports and airports and related trips

2.6.6 Table 5 provides an overview of the advantages and disadvantages for potential use of the TPS RTM2.

Table 5: Overview of the review of the TPS RTM2

Advantages for use	Disadvantages to use
Network and zoning allows for VDM	Base year update required
Captures long distance movements	Local network and zone enhancements would be required
Model is actively maintained with expectation that model development datasets would be available	Large network coverage would require conversion of large parts to less detailed buffer
	Does not necessarily capture local trip patterns well

2.7 Summary of Existing Modelling

2.7.1 Table 6 summarises the review of existing models and ranks them in terms of which is recommended as a starting point for the ILP North DCO strategic transport modelling. An overview of the ranking rational is also provided.

Table 6: Summary and ranking of existing models

Rank	Model	Software	Rational
1	Parkside Link Road Model	SATURN	The model provides good coverage in the scheme area and has been used (and accepted by the LA) as evidence for recent planning application in the scheme area. It was also the recommended modelling base in the Mott MacDonald review undertaken for SHMBC. As a SATURN model, there are possible efficiencies in being able to use network and zoning from other SATURN doner models on this list.
2	St Helens SATURN Model	SATURN	The site is on the edge of the modelled area and the model is likely to require significant changes to the network and zoning.
3	Trans Pennine South RTM2	SATURN	The model is actively maintained and captures long distance trips. However, it is more focused on strategic regional traffic, with zoning and network modifications required for local applications. From experience, there is often the need for significant work to robustly represent local trip patterns to a sufficient standard where they meet TAG requirements.
4	Liverpool City Region Model	CUBE Voyager	While the model is actively maintained, it would require significant changes to the network and zoning. It would also not be compatible with other highway network models in the area as it is a CUBE Voyager model.
5	Warrington Multi Modal Model 2016	SATURN / EMME	While the model provides a good representation of the Warrington area and has a full public transport element, the network coverage is not appropriate for the ILP North assessment.

3 Strategic Modelling Analytical Requirements

3.1.1 This section provides an overview of the strategic modelling analytical requirements based on initial liaison between Tritax, St Helens Council (as the planning authority) and Mott MacDonald (SHC's consultants).

3.1.2 These are the key areas that will need to be considered and agreed for a detailed scope to be written at a later stage. These have been broken down into areas with information provided around the requirements and details alongside whether these are viewed as critical to include or possibly areas that could be descoped. Additionally, exclusions are presented with details provided as to the reasoning for their exclusion.

3.2 Analytical Requirements

3.2.1 Based on the DCO application requirements and the emerging Transport Assessment scoping, as outlined above, the following assessments will be required to be supported by strategic transport modelling:

- Calculation of ILP North development trip generation and distribution including workers and visitors, LGV movements, and HGV movements.
- Scoping of the network 'area of influence' based on assignment of development trips on the network and proportion of total traffic flow, for example using threshold analysis.
- Preparation of forecast year scenarios representing the development opening year and a horizon year with land-use and infrastructure assumptions based on an Uncertainty Log:
    - 'Without Development' including consented development and other future schemes agreed in consultation with key stakeholders
    - 'With Development' with addition of development trips
- Representation of car, light goods, and heavy goods development trip vehicles on the highway network in the ILP 'area of influence' in a strategic traffic model.
- Assessment of Weekday peak period impacts – it is anticipated that only weekday modelled time periods (AM, Interpeak and PM) will be required in the strategic model with separate analysis (e.g. local models) of other periods if required.
- Extraction of assessment traffic data, including background growth and development trips, for detailed operational assessment using local and/or microsimulation models.
- Forecast year traffic data for appraisal of environmental impacts including climate change (greenhouses gases), local air quality, and noise.
- Sensitivity testing of key assumptions and parameters including traffic growth, behavioural change, and traffic generation/distribution, if required.

3.2.2 Based on these transport assessment requirements, Table 7 outlines the required strategic transport modelling.

Table 7: Strategic Modelling Analytical Requirements

Area	Requirement	Details	Critical?
Guidance	Modelling will be undertaken in line with industry standard DfT Transport Appraisal Guidance (TAG)	TAG guidance around model performance will be sought to be achieved to ensure a robust model in both the base year and forecast scenarios	Yes
Data Collection	Various traffic data collection - including Automatic Traffic Counts (ATCs), Journey Time data and Manual Classified Counts (MCCs) to obtain traffic flow, queue, and travel time data.	It is likely it would need to cover a large area given the stakeholder interest. Where possible, National Highways WebTRIS counts (freely available) will be used for the SRN.	Yes
Model Type	Strategic level Highways assignment model – likely SATURN software based in line with identified possible donor models	Based upon the Parkside Link Road model with enhancements to the existing network as required.	Yes
Trip Generation and Distribution	Development of trip matrices based on agreed TA approach	A spreadsheet model will be developed to distribute development trips in line with the TA scoping	Yes
Network Extent	TA 'area of influence' determined based on observed data, background traffic growth assumptions, and assigned development trips	May require extension of Parkside Link Road model, however, it is anticipated this will not be extensive	Yes
Modelled Time Periods	AM Peak Hour – 08:00-09:00 Interpeak – Average hour between 10:00-16:00 PM Peak Hour – 17:00-18:00 Peak hours to be confirmed from analysis of traffic survey data.	As per the Parkside Link Road Model subject to observed data analysis. These may need to be revised if splicing with the NH Regional Transport Models	Yes
Vehicle Types and Trip Purposes	Car (Business, Commute and Other), Lights and HGVs	As per the Parkside Link Road Model	Yes
Base Year	2024	2024 Base year would require recalibration and validation using new data collection and historic model datasets.	Yes
Forecast Years	Opening Year – TBC 15yrs post opening - TBC	Forecast years require liaison with Tritax around when the site is expected to be built out.	Yes
Core Growth Scenario	Core – Based upon Department for Transport NTEMv8 Reference Case scenario	Specific local developments and infrastructure schemes will be informed via an uncertainty log agreed with the Local Authorities. Growth would be constrained using growth factors from the National Trip End Model (NTEM) v8. This is in line with DfT guidance on forecasting future traffic growth.	Yes – Core
Primary Reporting	MSR, LMVR, Forecasting Report	Economic Reporting not relevant for this development	Yes

Area	Requirement	Details	Critical?
Operational Modelling	Local Junction and/or Microsimulation modelling where required	Key junctions to be agreed with stakeholders and modelling approaches agreed on a junction-by-junction basis	Yes – informed by the strategic modelling but undertaken as part of TA workstream
Model Output for other disciplines	Link Flows Link Speeds AADT/AAWT Factors Link Capacities	Link Flows and speeds required for disciplines including Greenhouse Gases, Air Quality, and Noise. AADT/AAWT factors will be required to be calculated for these disciplines too, which will be based on observed traffic data in the area.	Yes

3.3 Exclusions

Table 8: Strategic Modelling Exclusions

Exclusion	Details
Economic Appraisal	Given the nature of the site, transport economic appraisal is not required. Value for Money is outside the scope of a DCO
Variable Demand Modelling	Based on anticipated traffic impacts relating to the proposed site, multi-modal effects are expected to be relatively minor. Therefore, there is no anticipated requirement for VDM in line with a proportionate approach. If required, it is expected that this would be undertaken in DIADEM software in line with identified possible donor models. This would require additions to the existing Parkside Link Road model network to allow for full UK trips to be captured. This would require donor components from the TPS RTM2.
Rail Passenger Modelling	From discussions with Tritax it is understand that rail passenger modelling is not required and, therefore, has been excluded from the scope of this exercise and does not form part of the analytical requirements. This will be confirmed following further liaison with Tritax, drawing on previous DCO experience, and discussion with key stakeholders.
Alternative Scenarios	DfT Common Analytical Scenarios (CAS) are a series of Government produced possible future growth scenarios. Confirmed with LAs and NH that alternative forecast scenarios are not required for Transport Assessment.

4 Conclusions

4.1 Recommended Strategic Modelling Approach

4.1.1 Based on the review of existing models (section 2.7) and the identified strategic modelling analytical requirements (section 3.2) the following strategic modelling approach is recommended to support ILP North DCO:

- update of the Parkside Link Road Model highway model using latest version of SATURN software
- update base year to 2024 with representation of weekday morning, interpeak, and evening peak hours
- potential extension of model area based on definition of an Area of Influence as part of the Transport Assessment (TA)
- data collection including highway link and junction surveys providing observed traffic flow, queue, and journey time data
- calibration and validation of base model in line with DfT Transport Appraisal Guidance (TAG)
- traffic forecasting for ILP North opening year plus horizon year based on local authority planning data and National Trip End Model (NTEM)
- spreadsheet model to distribute ILP North development trips in line with the TA

4.1.2 The model forecast will be used to assess the strategic highway impacts of the proposed development including the assessment of mitigation requirements. Strategic modelling outputs will be used for environmental assessment and, potentially, other assessments.

4.1.3 The strategic modelling may be supplemented with local junction and/or microsimulation modelling where required for specific operational assessment requirements identified as part of the TA. These local models could use strategic modelling forecast traffic growth data and/or assigned development trip data as appropriate.

4.2 Next Steps

4.2.1 The following key steps will be completed to specify the transport assessment and modelling approach for the ILP North DCO:

- Seek agreement of recommended strategic modelling approach with Transport Working Group (TWG) **during September and October 2024** and commence discussions on data collection, area of influence, and specific model development methodologies
- Specification and commissioning of data collection to be undertaken **in October 2024**
- Definition of the TA Area of Influence based on observed traffic counts and predicted development traffic **in November 2024**
- Preparation of Model Specification Report (MSR) including definition of strategic model network extent and detailing transport modelling methodologies with reference to available data
- TWG review of proposed approach as outlined in MSR during **November and December 2024**
- Confirmation of modelling approach / tool(s) with TWG and commencement of base year model development in **December 2024**

4.2.2 To complete these steps we will engage with the TWG and other key stakeholders to discuss and agree key points at each stage.

Stantec

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Intermodal Logistic Park (ILP) North, St Helens

Strategic Traffic Model Specification Report

On behalf of **Tritax**

Project Ref: 332611765 | Rev: P02.0 | Date: February 2024

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P01	11/11/24	Draft	JP	AB	SD
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Glossary of Terms

Acronym	Description
AADT	Average Annual Daily Traffic
AAWT	Average Annual Weekday Traffic
AQAP	Air Quality Action Plan
ARR	Analytical Requirements Report
ATC	Automatic Traffic Count
DCO	Development Consent Order
DfT	Department for Transport
GIA	Gross Internal Area
GIS	Geographical Information Software
HGV	Heavy Goods Vehicle
ILP	Intermodal Logistic Park
LCRTM	Liverpool City Region Transport Model
LGV	Light Goods Vehicle
MCC	Manual Classified Count
MRN	Major Road Network
MSOA	Middle layer Super Output Area
MSR	Model Specification Report
NH	National Highways
NIA	Noise Important Area
NRTP22	DfT National Road Traffic Projections 2022
NTEM	DfT National Trip End Model
OD	Origin/Destination
OGV	Other Goods Vehicles (typically HGVs)
OS	Ordnance Survey
PLRM	Parkside Link Road Model
PSV	Passenger Service Vehicle
SATURN	Strategic traffic modelling software by Atkins
SHILPM	St Helens Intermodal Logistics Park Model
SRN	Strategic Road Network
TAG	Department for Transport's Transport Analysis Guidance
TEMPro	DfT National Trip End Model front end
TGM	Trip Generation Model
VDM	Variable Demand Modelling
VOC	Vehicle Operating Costs
WebTRIS	National Highways count data for permanent SRN counters

1 Introduction

1.1 The Purpose of the Model Specification Report

1.1.1 This Model Specification Report (MSR) describes the strategic traffic modelling approach that will support the Transport Assessment (TA) for the Development Consent Order (DCO) application for a proposed Intermodal Logistic Park North (ILP North) near St Helens.

1.1.2 The purpose of the MSR is to inform stakeholders on how the strategic traffic modelling requirements related to traffic and environment set out within the Analytical Requirements Report (ARR) will be met, taking account of budgetary, programme, political, environmental and spatial constraints. The version of ARR, which provided the basis for this MSR is Version 4 (Stantec, October 2024).

1.1.3 The aim of this report is to:

- Define the scope, methodology, assumptions and risks associated with strategic traffic modelling.
- Identify data for the model development and application and any outstanding survey requirements.
- Demonstrate how inputs for the TA and environmental assessments will be supported by the strategic traffic modelling.

1.1.4 Methodologies have been developed in accordance with the Department for Transport's Transport Analysis Guidance (TAG).

1.2 Background

1.2.1 Stantec have been appointed by Tritax via Hydrock, now Stantec, to provide transport modelling support in respect of the proposed development of an intermodal freight interchange near St Helens, England.

1.2.2 The Main Site (Figure 1-1) lies within the jurisdiction of St Helens Council. It is located to the east of Newton-le-Willows on the eastern edge of the M6 motorway.

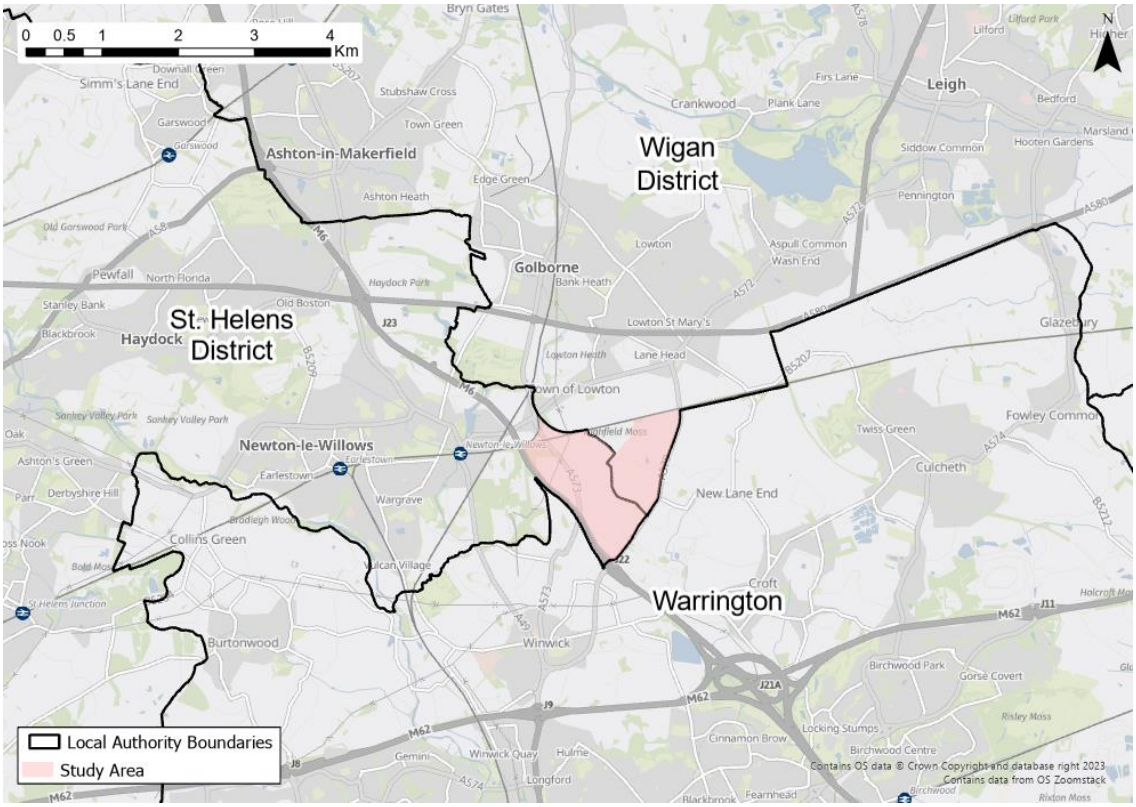

Figure 1-1: St Helens Main Site Red Line Boundary*

*Note: Main Site Order Limits shown correct at the time of preparation of this document but have since been updated as shown in PEIR Figure 1.1

1.2.3 The proposed development will connect with the M6 at Junction 22 with local road connections through to the A580 (as illustrated in Figure 1-1). The modelling will seek to assess development traffic impacts at a strategic level including parts of the road network operated and managed by St Helens Borough Council, Warrington Borough Council, Wigan Metropolitan Borough Council, and National Highways.

1.2.4 Existing Situation

1.2.5 The existing site is currently comprised of agricultural land and the Kenyon Hall Farm Airstrip. There are a small number of residential dwellings to the north of the railway in the north west corner of the site.

1.2.6 There is another large employment site proposed in the area, Parkside West. This is expected to be a large commercial site with a mix of industrial and commercial uses. The site is located at the old Parkside Colliery. There is currently a consultation on the proposals for Phase 2 of this site.

1.2.7 Proposed Development

1.2.8 The development proposal is for a new major intermodal logistics hub at the site that will accommodate road and rail freight and the interchange of freight between these modes. The site will have accesses onto both the rail network and the road network.

1.3 Scale of Impacts

1.3.1 To understand the scale of impacts of the proposed development, an exercise to estimate the volume and distribution of trips from the ILP North development site has been undertaken in advance of the more detailed TA. This has informed the required extent of the strategic modelling, taking account of available data and donor models (see Section 2.4).

1.4 Summary of Risks Added to the Project Risk Register

1.4.1 Traffic modelling forms part of the critical path for the TA and the development application. Delay to completion of the strategic modelling forecast assessment would have a knock-on impact on the programme by delaying the Air Quality and Noise assessments and other DCO related activities. Mitigation of risks will require regular updates and communication between the relevant parties, identifying any delays at an early stage.

1.5 Transport Working Group

1.5.1 A Transport Working Group (TWG) has been formed to provide a forum to evolve the scope and detail of transport workstreams, as the ILP North project progresses. This includes representatives from St Helens Borough Council, Warrington Borough Council, Wigan Metropolitan Borough Council, Transport for Greater Manchester and National Highways.

1.5.2 Detail of the ILP North assessments will be recorded in a Preliminary Environmental Information Report, with a transport chapter (early-stage Transport Assessment), which will go to Statutory Consultation at the end of 2025 for 8 weeks.

1.5.3 The ARR has been shared with the TWG, with broad agreement of the strategic traffic modelling approach reached prior to the preparation of this MSR.

1.5.4 Agreement of this MSR is requested from the TWG prior to commencement of the strategic traffic model development in early 2025.

2 Strategic Traffic Modelling Approach

2.1 Introduction

2.1.1 This Chapter describes the strategic traffic modelling approach for the St Helens ILP North development TA.

2.2 Existing Traffic Models

2.2.1 A review of existing traffic models was undertaken as part of the ARR. The following models were reviewed as part of this exercise:

- Parkside Link Road Model
- St Helens SATURN Model
- Warrington Multi Model Transport Model 2016
- Liverpool City Region Transport Model
- Trans Pennine South Regional Traffic Model (2nd Generation)

2.2.2 Based on the review of existing models and the identified requirements in the ARR the following strategic modelling approach is recommended to support ILP North DCO:

- update of the Parkside Link Road Model (PLRM) using latest version of SATURN software
- update base year to 2024 with representation of weekday morning, interpeak, and evening peak hours
- limited extension of model area based on threshold analysis of estimated ILP North development trips relative to October 2024 observed traffic flows
- data collection including highway link and junction surveys providing observed traffic flow, queue, and journey time data
- calibration and validation of base model in accordance with DfT's Transport Analysis Guidance (TAG)
- traffic forecasting for ILP North opening year plus horizon year based on local authority planning data, the National Trip End Model (NTEM), and the Liverpool City Region Transport Model (LCRTM)
- spreadsheet model to distribute ILP North development trips in line with the TA

2.2.3 The model forecast scenarios will be used to assess the strategic highway impacts of the proposed development including the assessment of mitigation requirements. Strategic traffic modelling outputs will be used for environmental assessment and, potentially, other assessments.

2.2.4 As outlined in Section 2.4, the ILP North strategic traffic modelling will be supplemented with local junction and/or microsimulation modelling where required for specific operational assessment requirements identified as part of the TA. These local models will use strategic modelling forecast traffic growth data and/or assigned development trip data as appropriate.

2.3 Overview of Strategic Modelling Approach

2.3.1 The PLRM will be used to develop a traffic model for the St Helens ILP North site. This model will be referred to as the **St Helens Intermodal Logistics Park Model (SHILPM)**.

2.3.2 Modifications and extensions will be made to the PLRM network and zone detail to prepare a 2024 base model.

2.4 ILP North Model Hierarchy

2.4.1 The ILP North development will be assessed using a suite of models to support the TA. These models will have specific purposes, for example the strategic model will assess wider routing impacts of the site, while microsimulation and junction modelling will provide operational impact assessments at specific locations on the local and strategic networks.

2.4.2 These models fit into a hierarchy, shown in Figure 2-1, that shows how the models will be used together including feedback loops for the mitigation assessment. This also shows the key data inputs for background growth and development traffic.

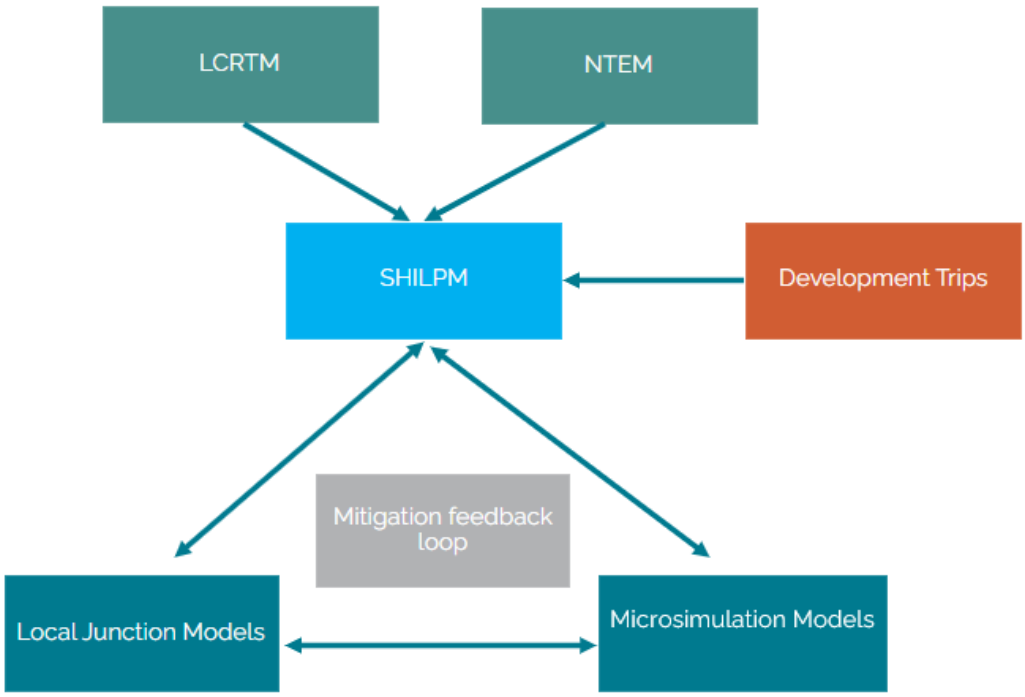

Figure 2-1: ILP North Model Hierarchy

2.5 Definition of Model Extent

2.5.1 The PLRM network will be extended to include junctions at edge of the existing model area based on:

- discussions with the TWG
- threshold analysis of estimated ILP North development trips relative to October 2024 observed traffic flows.

Threshold analysis

2.5.2 An estimate of the volume and distribution of trips from the ILP North development site has been undertaken in advance of the more detailed scoping exercise as part of the Transport Assessment (TA) workstream.

2.5.3 An initial indicative trip forecasting exercise was undertaken to determine the need for any model extensions beyond the existing PLRM. The adopted methodology for this was based on

the simplified approach presented at the TWG meeting on 20th November 2024. Assuming a simplified version of the vision-led approach to commuting trip, an indicative trip generation, distribution and assignment profile were calculated and were considered sufficient for model scoping purposes.

2.5.4 The indicative forecast is based on the Hinckley vehicle trip rates presented in the Hydrock, now Stantec, original trip generation note, dated 14th June 2024, and using a total GIA of 741,000 sqm, as per the latest masterplan (December 2024). The resulting trip generation volumes are summarised in Table 2-1.

Table 2-1: ILP North Provisional Trip Generation Potential

	AM Peak (08:00 - 09:00)			PM Peak (17:00 - 18:00)			Daily (24 hour)		
	Arr	Dep	Total	Arr	Dep	Total	Arr	Dep	Total
Light	785	104	889	304	800	1,104	7,165	7,069	14,235
HGV	148	163	311	163	185	348	3,327	3,327	6,654
Total	**934**	**267**	**1,200**	**467**	**986**	**1,452**	**10,493**	**10,396**	**20,889**

2.5.5 At this time, the operational characteristics of the site are unknown, meaning that the dispersion of HGV trips throughout the network cannot be established. As such, the forecast is based on light commuting trips only, with HGV volumes excluded. HGV movements to/from the ILP North site are expected to route via the SRN and MRN, principally the M6, M62, and A580, with limited local dispersion. Therefore, the threshold analysis conclusions are unlikely to be materially affected by the exclusion of HGVs.

2.5.6 For the trip distribution element, a preliminary catchment area comprising 620 MSOAs was defined based on a 30-minute drive time isochrone (measured in neutral traffic conditions). Peak hour journey time and distance were calculated to the population weighted centroid of each MSOA. Planning data for each MSOA was obtained from TEMPro for a forecast year of 2030, with the total number of workers taken as the measure of zonal size.

2.5.7 A simple gravity model was built using the planning data, travel time costs, and a log normal deterrence function with a light-touch calibration to observed Census travel to work trip length distributions.

2.5.8 The indicative routing of commuting vehicle trips was derived based on an All or Nothing assignment along the minimum cost paths to each MSOA, enabling the total two-way trip volumes through each surveyed junction outside the PLRM to be estimated. Where a cluster of junctions was located within a trip production zone, it was assumed that the trips produced by that zone go through all junctions, given the unknown levels of dispersion within the MSOA and other variables.

2.5.9 The all or nothing assignment was compared to the relevant MCC entry arms at each junction and compared with October 2024 observed traffic flows.

2.5.10 An initial threshold of 30 two-way development trips through each junction was set. Junctions exceeding this threshold were reviewed in more detail as outlined below. This was considered a robust initial threshold in line with the threshold the majority of Local Authorities use for establishing junctions to be scoped into TA assessment.

2.5.11 Figure 2-2 shows the locations of the MCC junction sites.

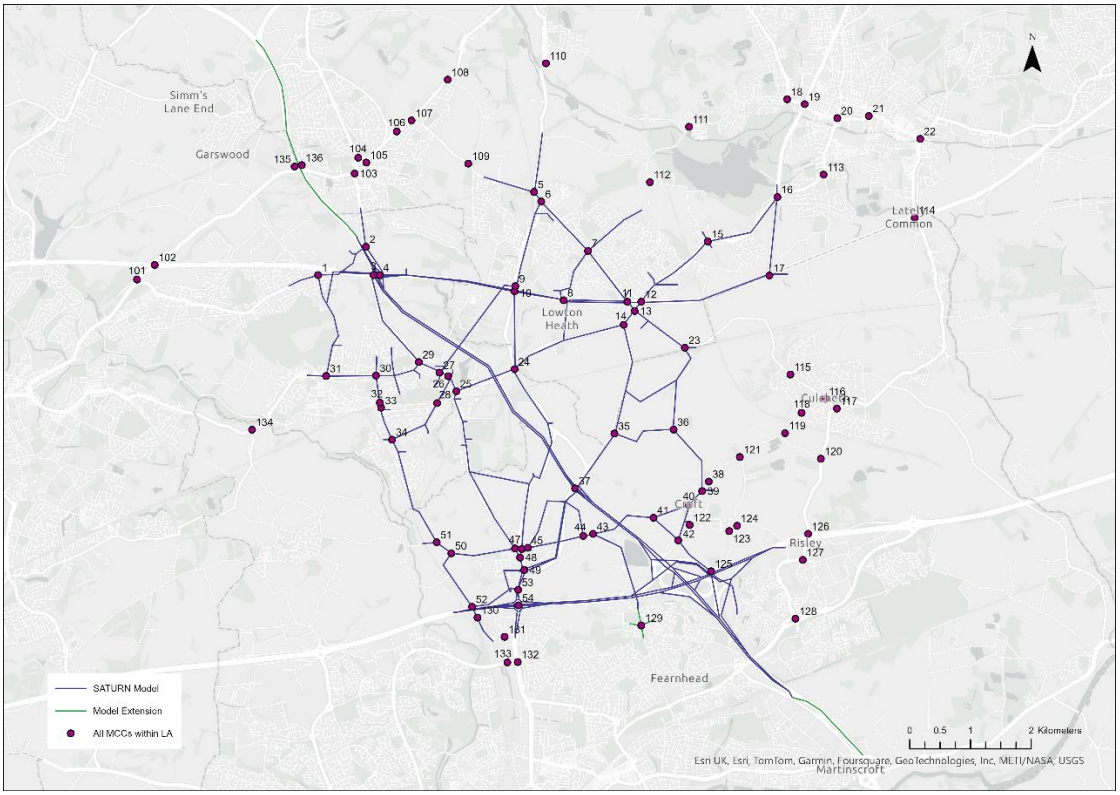

Figure 2-2: St Helens Intermodal Logistics Park Model – MCC junction sites

2.5.12 Table 2-2 presents the model extent threshold analysis.

Table 2-2: Model Extent Threshold Analysis

Junction	Assigned Trips						Entry Arm		Survey Count Trips						Flow Change					
	AM			PM					AM			PM			AM			PM		
	Arr	Dep	Tot	Arr	Dep	Tot	Arr	Dep	Arr	Dep	Tot	Arr	Dep	Tot	Arr	Dep	Tot	Arr	Dep	Tot
18	6	1	**7**	2	6	**9**	**A**	**B**	377	641	1018	433	836	1269	**2%**	**0%**	**1%**	**1%**	**1%**	**1%**
19	10	1	**11**	4	10	**14**	**A**	**C**	722	671	1393	747	932	1679	**1%**	**0%**	**1%**	**0%**	**1%**	**1%**
20	4	0	**4**	1	4	**5**	**B**	**D**	479	338	817	497	289	786	**1%**	**0%**	**1%**	**0%**	**1%**	**1%**
22	3	0	**4**	1	4	**5**	**A**	**B**	678	675	1353	567	914	1481	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**
101	8	1	**9**	3	8	**11**	**C**	**A**	622	495	1117	668	795	1463	**1%**	**0%**	**1%**	**0%**	**1%**	**1%**
102	36	5	**41**	14	37	**51**	**D**	**B**	1398	1155	2553	1303	1524	2827	**3%**	**0%**	**2%**	**1%**	**2%**	**2%**
103	9	1	**10**	3	9	**13**	**A**	**C**	392	280	672	264	483	747	**2%**	**0%**	**2%**	**1%**	**2%**	**2%**
106	12	2	**14**	5	12	**17**	**C**	**A**	873	345	1218	869	554	1423	**1%**	**0%**	**1%**	**1%**	**2%**	**1%**
110	14	2	**16**	5	14	**19**	**A**	**C**	629	302	931	391	558	949	**2%**	**1%**	**2%**	**1%**	**3%**	**2%**
113	16	2	**19**	6	17	**23**	**A**	**C**	264	523	787	279	639	918	**6%**	**0%**	**2%**	**2%**	**3%**	**3%**
114	28	4	**32**	11	29	**40**	**B**	**D**	1140	1306	2446	1492	1250	2742	**2%**	**0%**	**1%**	**1%**	**2%**	**1%**
115	23	3	**26**	9	23	**32**	**A**	**C**	150	457	607	269	197	466	**15%**	**1%**	**4%**	**3%**	**12%**	**7%**
127	7	1	**8**	3	7	**10**	**D**	**A**	615	1159	1774	596	387	983	**1%**	**0%**	**0%**	**0%**	**2%**	**1%**
129	28	4	**32**	11	28	**39**	**C**	**A**	231	517	748	352	353	705	**12%**	**1%**	**4%**	**3%**	**8%**	**6%**
132	30	4	**34**	12	31	**43**	**C**	**A**	1333	1786	3119	2020	1595	3615	**2%**	**0%**	**1%**	**1%**	**2%**	**1%**
134	2	0	**2**	1	2	**3**	**C**	**A**	408	871	1279	570	627	1197	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**

Arr=Arrival Dep=Depart Tot=Total

2.5.13 The threshold analysis shows that five sites exceed the junction threshold of 30 two-way development trips in either the AM and/or PM peaks.

2.5.14 These sites were reviewed to consider the level of estimated development trips on the entry arms most likely to be routed via with consideration of potential ILP North HGV trip levels and routing. The review of each site is outlined below:

- While not over the 5% threshold, **Site 102** was identified for inclusion following discussion with the TWG and based on absolute traffic levels and potential HGV trips on the strategic A580 corridor to/from Liverpool region. This will require the addition of simulation network along the A580 to the west of M6 J23, and the A58 to the west of M6 J24. Zoning in this area will be refined following analysis of land-use and network traffic loading in this area. Traffic count data from recent planning applications has been identified to support model calibration and validation in this area.
- **Site 114** will be excluded from the strategic modelling where it was less than the 5% threshold. This junction at A580 Lately Common is located on the edge of the modelled area.
- **Site 115** will be excluded from the strategic modelling where it is located on a minor road in Culcheth. Inspection of the existing PLRM zoning shows Culcheth is modelled as a single zone just outside the modelled area. If this junction was added, it would not provide sufficient aggregation to capture wider impacts within Culcheth, particularly local traffic routing and loading. If required, Culcheth local network impacts will be assessed via local microsimulation and/or junction modelling, as part of the ILP North Model Hierarchy, following review of the ILP North trip generation and assignment.
- **Site 129,** just south of the model extents on Mill Lane, was identified for inclusion with 'route' zones split to load onto the arms of the junction.
- While not over the 5% threshold, **Site 132** on the A49 corridor (plus adjacent Site 133) was identified for inclusion following discussion with Warrington Council. This junction is on the A49 corridor that connects Warrington and the St Helens ILP North site.

Proposed model extents

2.5.15 SHILPM will partially cover three Local Authorities; St Helens, Wigan and Warrington as well as parts of the Strategic Road Network managed and operated by National Highways. The model area will cover main roads in the areas including the M6, M62 and the A580, which will be coded as simulation network within SATURN.

2.5.16 The SHILPM network and zoning will be based on the PLRM. The zoning and network in the areas of model extension (as outlined above) will be disaggregated and enhanced in terms of network detail and zoning.

2.5.17 As Variable Demand Modelling (VDM) is not required, there is no requirement for buffer network representing wider routes to/from the SHILPM with 'route' zones used to assign traffic entering / exiting the modelled area.

2.5.18 The SHILPM highway network, including proposed extensions (shown as green links), is presented in Figure 2-3.

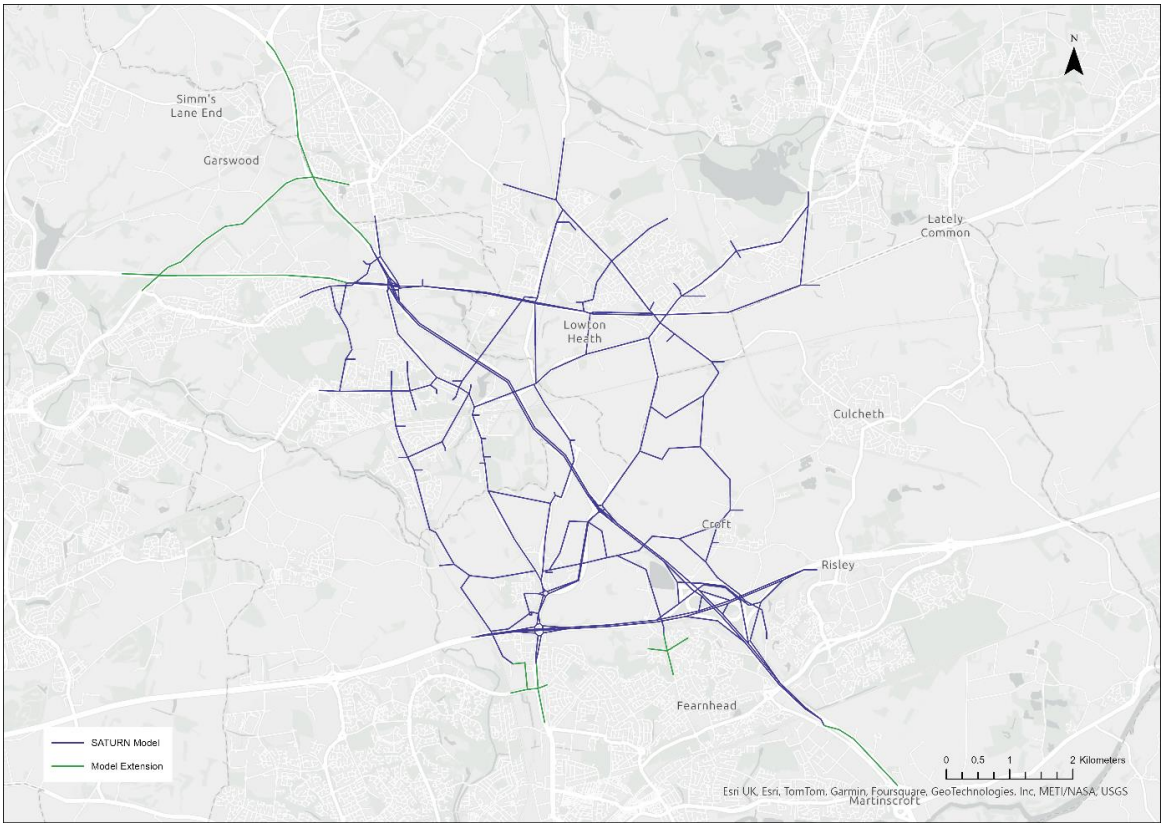

Figure 2-3: SHILPM Network

2.6 Data

Existing Data

2.6.1 The existing data relevant to the model development and application is National Highways WebTRIS count data on the SRN, which is a live data feed.

2.6.2 The data available from WebTRIS has been assessed and there are significant gaps on the M6 between J21a and J25 due to the enhancement scheme being constructed in this area and the presence of extensive traffic management.

2.6.3 Figure 2-4 shows the WebTRIS traffic count sites in PLRM modelled area highlighting the availability of data in October 2024. Data from October 2024 will be extracted for available sites to provide weekday hourly volumetric counts for model calibration and validation. Where October 2024 data is not available for key locations, data from other neutral months will be extracted with adjustment for seasonality, as appropriate, based on trend analysis of other sites with full data availability.

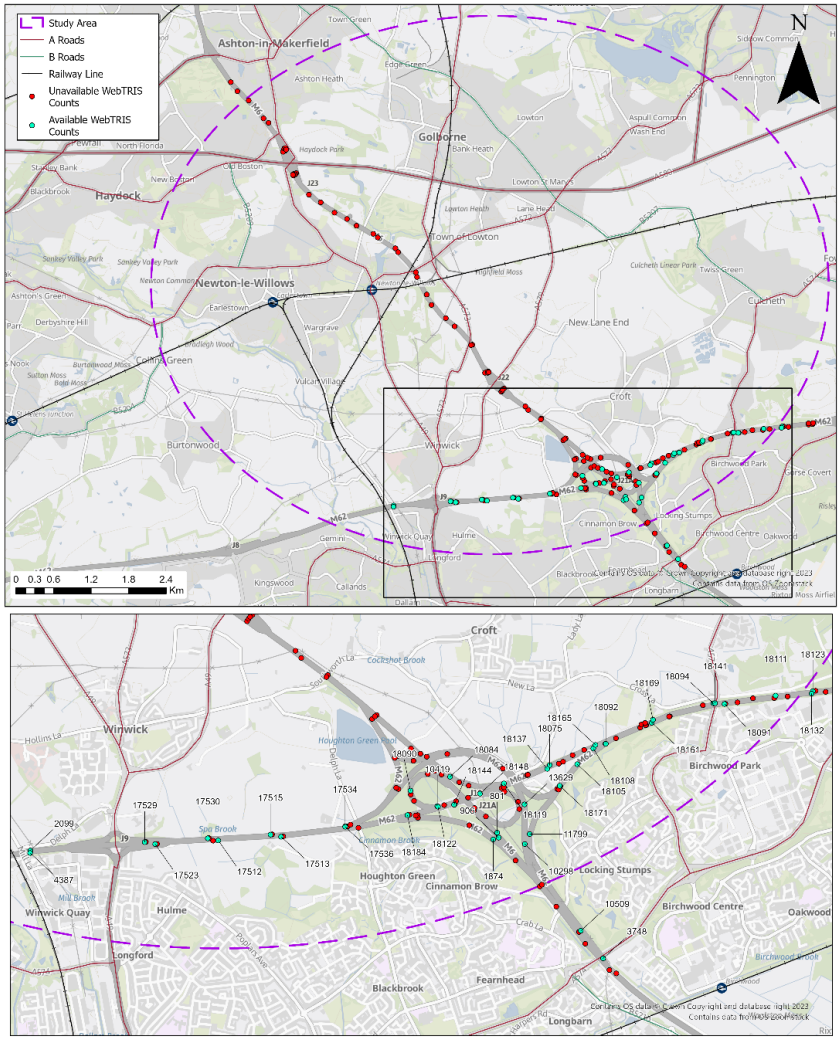

Figure 2-4: WebTRIS locations in the modelled area

2.6.4 The WebTRIS data will be combined with survey data (see below) to form screenlines and cordons.

Data Collection Surveys

2.6.5 New data collection has been commissioned as part of the study to complement the existing data sources. The survey data focussed on the area in and around the PLRM and the surrounding area.

2.6.6 The surveys were undertaken in October 2024, ensuring data was collected avoiding the mid-term holidays. The data collection is shown in Figure 2-5 and consisted of:

- Automatic Traffic Counts (ATC) to provide volumetric counts collected consistently over at least two weeks.
- Manual Classified Counts (MCC) to provide volumetric data, information about the type of vehicles, and to inform the split of vehicle classifications to be applied to the ATC data.

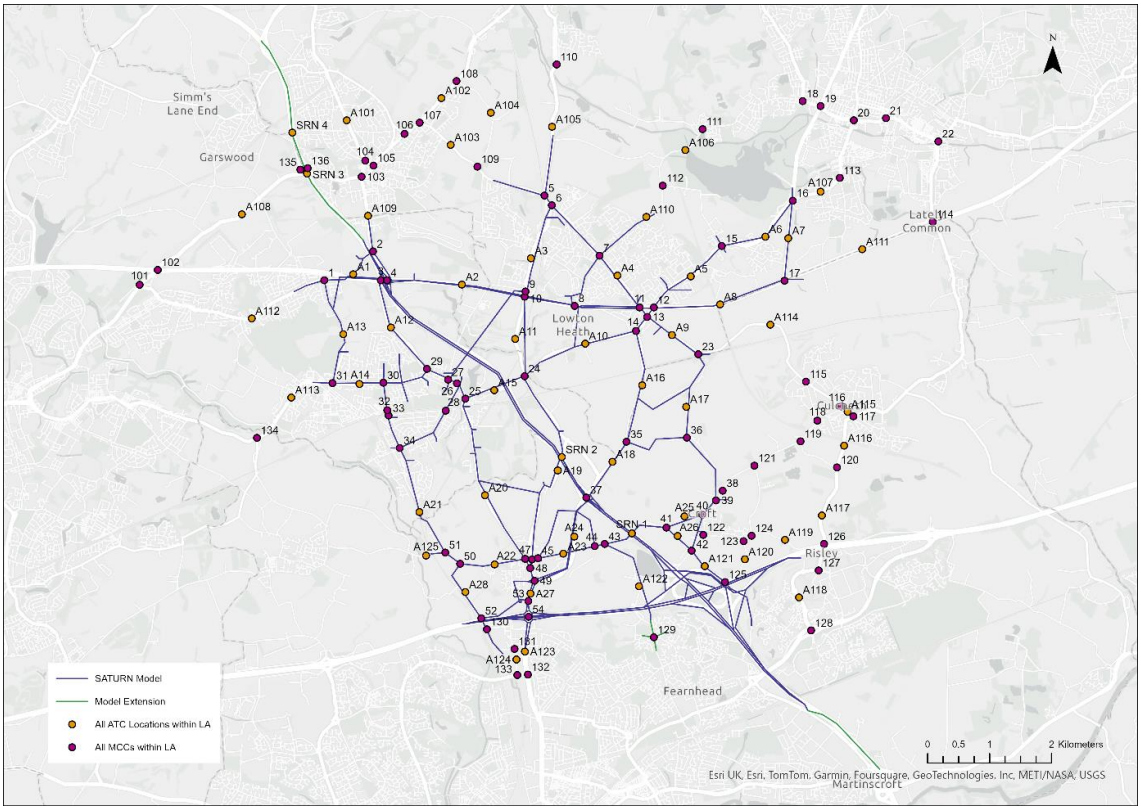

Figure 2-5: Survey Locations

A580 and A58 Survey Data (West of M6)

2.6.7 Following the TWG on 18/12/24, and agreement to include the A580 and A58 west of the M6 within the SHILPM extent, St Helen's Council provided references to two planning applications (P/2023/0512/FUL and P/2024/0045/FUL) in the area. This area was not included as part of the initial data collection so count data undertaken as part of these applications will be used to support calibration and validation of the SHILPM in this area. The traffic count survey locations are shown in Figure 2-6.

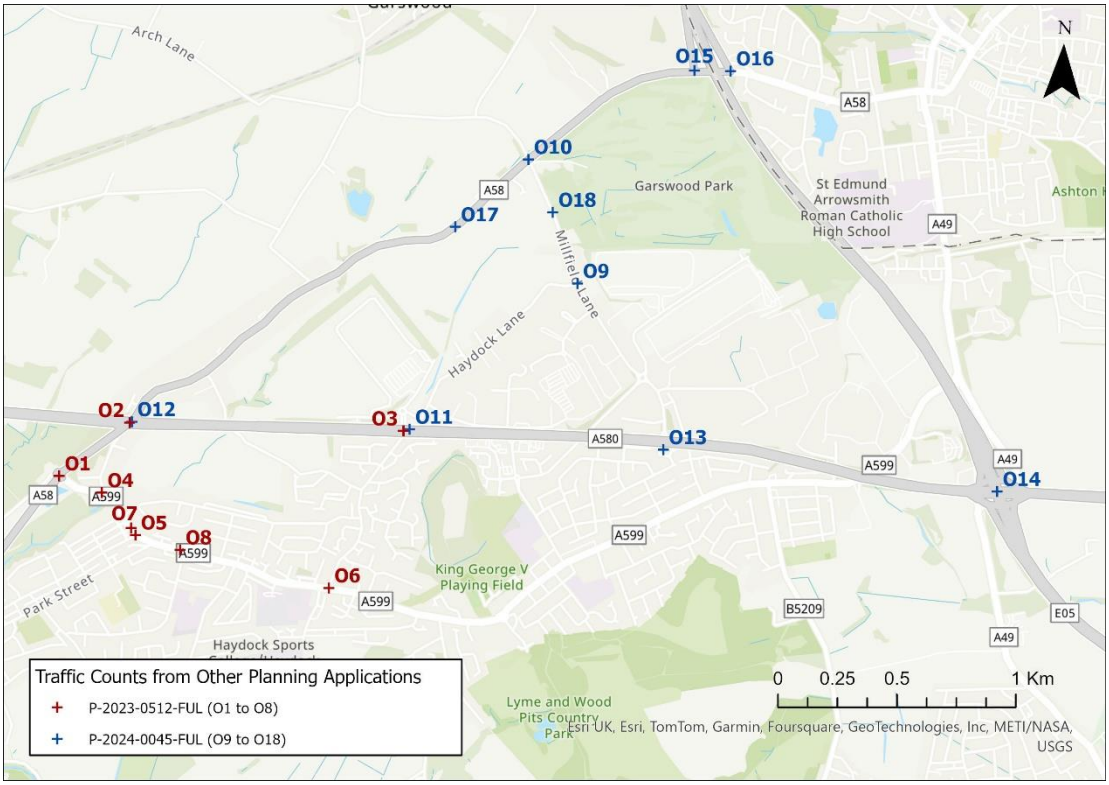

Figure 2-6: Planning Application Traffic Count Locations

2.6.8 Following a review of the data, the following counts were identified for potential use as part of the SHILPM calibration and validation:

- O1 – MCC – October 2022
- O2 – MCC – October 2022
- O3 - MCC – October 2022
- O9 – MCC – July 2022
- O10 – MCC – July 2022
- O11 – MCC – July 2022
- O12 – MCC – July 2022
- O13 – MCC – November 2023
- O17 – ATC – July 2022
- O18 – ATC – July 2022

2.6.9 All the counts listed were undertaken outside of school holiday periods.

Journey Times

2.6.10 TomTom data was collated as part of the data collection exercise will be combined into journey time routes. The TomTom data will be analysed to extract weekday peak journey times with a robust sample of general traffic. TomTom data has been extracted for Tuesdays-Thursday for the date range 9th September 2024 to 17th October 2024.

2.6.11 Figure 2-7 shows the extents of the journey time data extracted for model validation. These routes will be reported at full route and between interim points at key junctions.

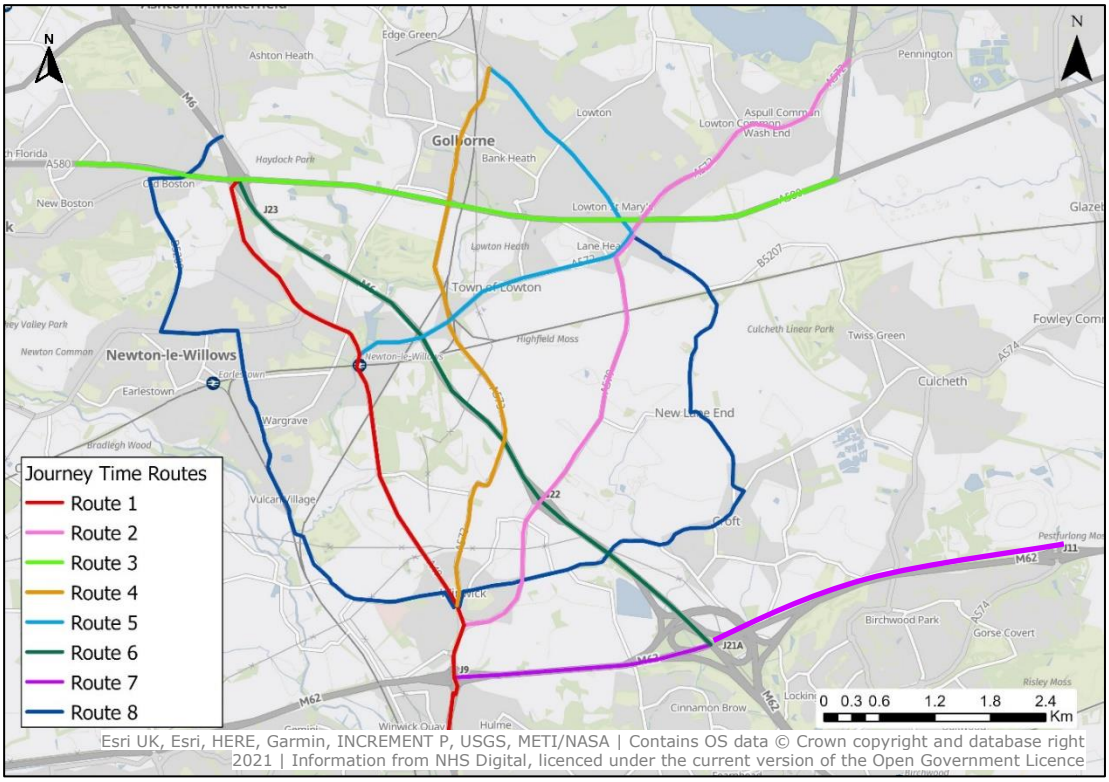

Figure 2-7: Journey Time Proposed Routes

Liverpool City Region Transport Model

2.6.12 The Liverpool City Region Transport Model was developed by Mott MacDonald for the Liverpool City Region Combined Authority. It comprises of a highway assignment model (the subject of this review), a public transport model, and a variable demand model (all in CUBE Voyager software).

2.6.13 The highways assignment element of the LCRTM has a base year of 2019 with forecast years of 2030 and 2040. The LCRTM dimensions and segmentation are summarised below:

- weekday morning, interpeak, evening and off-peak modelled peak hours
- car, LGV, and HGV vehicle classes plus bus and rail passengers
- car in-work, non-work commute, and non-work other journey purposes

2.6.14 Figure 2-8 shows that the ILP North site area falls on the boundary between the detailed model study area and the buffer area.

Figure 2-8: LCRTM Study Area (source: Fig 1:1 of LCRTM Local Model Validation Report, Mott Macdonald, 2023)

2.6.15 The LCRTM will be used to capture longer-distance through-trips including the key strategic routes of the M6, M62 and A580. Traffic flows on these routes will be extracted from the LCRTM using highway network cordon analysis to calculate External to External trips growth factors.

2.6.16 The model has a recent update to the base year (2019). The regional coverage is sufficient for SHILPM requirements. Stantec have been advised that forecast models should be available with sign off from St Helens Council, who contribute to the LCRTM model.

2.6.17 National Road Traffic Predictions (NRTP) will also be considered as an alternative data source to capture HGV and LGV growth.

Additional Data Requirements

2.6.18 No other traffic data is proposed to be collected apart from that described in the above sections.

2.6.19 To support the development of traffic forecasts, local development and infrastructure scheme data will be sourced from St Helens, Wigan and Warrington District Councils. Scheme data will also be sought from National Highways, particularly relating to the M6 J21a-J26 Motorway Upgrade scheme.

2.6.20 Other data will include NTEM/TEMPro trip end forecasts and the Liverpool City Region Model (LCRTM) for LGV and HGV growth. Build out and phasing of the ILP North site will be obtained from Tritax.

2.7 Base Model Development Methodology

Network and Zoning Development

2.7.1 As outlined above, the SHILPM network and zoning will be based on the PLRM with limited extensions. Proposed network updates include:

- Update of the model base to represent any changes to the network between 2016-2024 including review and update of:
  - speed and weight restrictions
  - traffic signal coding
  - coded bus routes and preloads
  - M6 J21a-J26 roadworks
- Addition of zone and network detail for model extension including:
  - J24 of the M6
  - A580 between M5 J23 and A58 junction
  - A58 between M3 J24 and A580
  - A49 / A574 Cromwell Avenue roundabout and adjacent A574 / Calver Road junction
  - Mill Lane / Enfield Park Road roundabout
- PLRM zones will be disaggregated for this purpose, splitting the trips based upon the proportion of trips from junction turning counts and/or land-use data
- Dummy zones for the ILP North site will be added with zero trips in the base year

Base Year

2.7.2 The SHILPM will have a base year of 2024, which represents a post COVID year.

Time Periods

2.7.3 The SHILPM will cover the weekday peak hours listed below.

- Peak hour of the morning (AM) peak period (08:00-09:00 TBC).
- Average hour of the inter-peak (IP) period (10:00-16:00).
- Peak hour of the evening (PM) peak period (17:00-18:00 TBC).

2.7.4 The SHILPM peak hours will be determined based on the network modelled area peaks, with separate analysis of mainline flows on the M6 and M62. Time period analysis will be documented in the Local Model Validation Report.

2.7.5 Weekend and off-peak time periods will not be modelled in the SHILPM. Traffic levels in these periods, which is required for environmental and safety assessments, will be estimated based on the modelled peaks using factors derived from observed time-series traffic data analysis.

Model Parameters

2.7.6 The latest TAG Databook will be used for the model parameters (currently TAG Databook v1.24, November 2024). This include parameters such as Vehicle Operating Costs and Values of Time amongst others.

User Classes

2.7.7 The SHILPM will include the following user classes:

- User Class 1 (Car Business)
- User Class 2 (Car Commute)
- User Class 3 (Car Other)
- User Class 4 (LGV)
- User Class 5 (HGV)

2.7.8 Additionally, ILP North development traffic will be modelled as separate user classes to support assessment of development impacts:

- User Class 6 (Car Business – ILP North)
- User Class 7 (Car Commute – ILP North)
- User Class 8 (LGV – ILP North)
- User Class 9 (HGV – ILP North)

Matrix Development

2.7.9 The PLRM prior matrices will form the basis of the SHILPM trip matrices. These will be growthed to 2024 levels and enhanced as part of the model calibration.

2.7.10 Updating the PLRM matrices from their current 2016 base year to a 2024 base year is considered the most appropriate and proportionate approach for the SHILPM trip matrices based on the review of existing models.

- THE PMRM prior matrices were derived from cordoned trip matrices from the Warrington Transport Model, based on Telefonica mobile phone observations throughout the PLRM area.
- The PLRM provides the most robust existing coverage in the area of the ILP North scheme and will not require as many network and trip matrix changes as cordoning from other larger model(s).
- The ILP North site is located on the edges of many of these models so additional work would be needed to provide a robust basis for the SHILPM trip matrices, for example combining data from several models which would be disproportionate considering the PLRM is available.
- All existing models have pre-Covid base years, hence the trip matrix updates to represent a 2024 base year would require similar approaches.

2.7.11 The following data sources will be used to growth the 2016 prior matrices to 2024 levels:

- **NTEMv8** - Internal trips within, originating in or finishing in, the area of detailed modelling
- **LCRTM** – External through trips

2.7.12 The prior matrices for any disaggregated zones will be based on splitting the trips in the PLRM based on land-use data. This will ensure that the overall trip levels in the initial prior matrices are consistent with the PLRM.

2.7.13 Any new 'route' zones on the edge of the model that are created as part of the network expansion will be disaggregated from the growthed PLRM prior and controlled to surveyed traffic volumes.

2.7.14 Targeted matrix adjustments will be made based on count data where necessary, as part of the model calibration.

Calibration and Validation

2.7.15 Model calibration and validation of the SHILPM will focus on key routes on the SRN and local network. Traffic counts and journey time data will be used for the model calibration and validation. The criteria set out in TAG[1] Unit M3.1 will be used when evaluating and reporting the base model development.

- The model calibration will focus on:
- calibration of the network
- infilling any gaps in trips that may be identified in the prior matrices
- matrix estimation which will focus on the key routes and junctions within the study area and seek to meet the criteria outlined in TAG unit M3.12
- screenline and cordon flow comparisons
- key link flow comparisons
- The validation of the model will focus on:
- link flow comparisons at locations not used in calibration
- junction turning flow comparisons at key locations, not some relaxation of TAG criteria may be appropriate
- journey time comparisons
- route choice

Parkside Link Road Verification Test

2.7.16 The Parkside Link Road is not yet open (as of October 2024 base year surveys) and will therefore only be included in forecast modelling.

2.7.17 A verification test will be undertaken post the Parkside Link Road opening to ensure that observed and modelled behaviours are within reasonable ranges. This will require further data at a suitable time collection (likely in late 2025) post the opening of the Parkside Link Road. The proposed time will ensure that traffic patterns have returned to near normal.

2.8 Development Assessment Methodology

2.8.1 The development will be assessed in three SHILPM forecast years:

- Opening year (to be confirmed).
- Full Build Out Year (to be confirmed).
- 15 years Post Full Opening (to be confirmed – after 15 years).

[1] Transport Analysis Guidance (TAG), UK Department for Transport: https://www.gov.uk/guidance/transport-analysis-guidance-tag

[2] Transport Analysis Guidance (TAG) Unit M3.1, UK Department for Transport: TAG unit M3.1 highway assignment modelling

2.8.2 The 'With Development' scenario in each year will be modelled and compared against a 'Without Development' scenario(s) and provide outputs for the Transport Assessment and environmental assessment.

2.8.3 Based on the forecast years, the following 'With Development' scenarios are anticipated:

- Opening Year - Partial ILP North build out to the point the rail freight terminal is opened
- Opening Year – With full build out (as requested by National Highways Spatial Planning)
- Full Build Out Year - With full ILP North development
- 15 year Post Full Opening – With Full ILP North development (for Environmental assessments)

Development Assessment

2.8.4 Analysis of the model runs will include the use of Key Performance Indicators (KPIs) which will be determined as part of the TA scoping and agreed with the TWG prior to the development application. The KPIs will be used to determine the impact of the development scenarios on the transport network in a consistent and meaningful way. These KPIs could include:

- traffic flow analysis (at key locations)
- journey time analysis (for key routes including observed routes for comparative purposes)
- key junction performance analysis and capacity issues

2.8.5 In addition to the core scenario, mitigation scenarios may be required, which are not defined at this time. These will be defined upon review of the core scenario modelling local junction modelling (the latter undertaken by the TA workstream).

2.9 Development of Forecast Scenarios

2.9.1 SHILPM traffic forecasts will provide inputs into operational assessments undertaken as part of the Transport Assessment and inform a revised environmental assessment.

Reference Case Forecasts

2.9.2 Reference case forecasts will be prepared with the use of an Uncertainty Log. The Uncertainty Log will cover the following information:

- planned housing and employment land developments in the districts of St Helens, Wigan, and Warrington
- planned roads schemes in the SHILPM area

Trip Generation Model

2.9.3 A bespoke trip generation model (TGM) will be developed to prepare forecast travel demand matrices based on local development data identified from the Uncertainty Log and national land-use/travel growth data from NTEM (National Trip End Model).

2.9.4 NTEM includes a central assumption of growth in travel demand based on forecast land-use (households and employment) and changes in travel behaviour. The NTEM version 8.0 Core scenario will be applied.

2.9.5 Population and employment data identified in the Uncertainty Log will be added to the base planning data. Resulting growth factors will be compared with NTEM data at Local Authority level to determine planning data adjustment factors. Zones that are predicted to experience

exceptional growth, which will be determined based on review of the Uncertainty Log, will use a different forecasting method to ensure that greenfield zones with new development(s) are treated appropriately. This will use donor data from zones with similar land use data with application of implied trip rates and trip distribution and/or use of custom data where the forecast trip data (generation and distribution) is prepared separately.

2.9.6 The forecast trip ends will be calculated using the local planning data growth and the corresponding NTEM trip rate growth. Exceptional zones will be seeded with planning and trip data from donor zones or custom data from which forecast trips are calculated.

2.9.7 In line with TAG Unit 2-2, NTEM will be used as the overall control to ensure that the SHILPM forecast scenarios are consistent with regional and national level predictions of travel demand. The TGM control area, for which overall changes in demand between the base and forecast year will be made equal to NTEM, will be defined based on review of the Uncertainty Log planning data and is expected to control to Local Authority level (St Helens Borough Council, Warrington Borough Council, and Wigan Metropolitan Borough Council). This will in effect assume that land-use in a defined study area is delivered taking up some of the population or jobs contained in the NTEM growth factors, and so the level of growth elsewhere in the control area could be lower depending on the NTEM planning data.

2.9.8 Car trips between external 'route' zones, where planning data is not relevant, will be growthed based on LCRTM highway network cordon analysis.

2.9.9 The forecasts of LGV and HGV traffic growth will also be based on the LCRTM.

Forecast Year Scenarios

2.9.10 The Without Development scenario will present a view of what is likely to happen in the absence of the ILP North proposals. The key consideration will be to robustly represent the changes to the modelled network that could potentially have an impact on the travel cost both in terms of time and cost. The other schemes to be included in the 'without development' forecast scenarios will be informed by the information gathered as part of the Uncertainty Log in accordance with TAG.

Development Scenarios

2.9.11 The ILP North development will be coded as new zones. The reason for using multiple zones is due to the large nature of the site and allowing for potential multiple accesses and possible phasing of the site.

2.9.12 Trips generation and distribution data from the Transport Assessment workstream will provide trip data for these zones by user class. These will be allocated to internal and external 'route' zones where development trips will extend beyond the SHILPM extent.

2.10 Convergence and Sensitivity Tests

Convergence

2.10.1 TAG Unit M3-1 and M2 set out convergence requirements for highway assignment models. SHILPM will aim to achieve adequate convergence and provide a robust basis for the ILP North assessment.

2.11 Risks

2.11.1 The following initial risks have been identified in relation to the transport modelling:

- The operational details of the site have yet to be finalised. This information is expected to be received from Tritax prior to the base model being started. This information is required

to inform the TA trip generation exercise and detailed trip distribution which will be used as the basis for the strategic model site zone trips.

- The detailed modelling approach has yet to be agreed with all stakeholders including Transport Working Group.
- Access to data from the LCRTM is required to undertake the preferred methodology. Stantec have received the GIS files for the LCRTM network and zones and are in ongoing liaison with the Liverpool City Region Modelling & Appraisal team to obtain access to the model.

2.11.2 A full modelling risk register will be maintained as part of this project.

2.12 Change Log

2.12.1 A change log is presented in Table 2-3. The change log will be maintained throughout the project lifecycle. The change log will outline any changes made to the strategic traffic modelling methodologies following comments from the Stakeholder Working Group.

Table 2-3: Change Log (Transport Modelling)

Report Version	Status	Date	Author
P01	Draft	23/11/24	JP
P02	Final Draft	07/02/25	JP