Appendix 4
TN1: Transport Modelling Methodology Technical Note

M1J15 NORTHAMPTON GATEWAY STRATEGIC RAIL FREIGHT INTERCHANGE

TECHNICAL NOTE 1: TRANSPORT MODELLING METHODOLOGY

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1.0 INTRODUCTION

1.1 ADC Infrastructure Ltd is commissioned by Roxhill (Junction 15) Ltd to provide Transport advice with regards to their Nationally Significant Infrastructure Project (NSIP) for the development of a Strategic Rail Freight Interchange (SRFI) facility adjacent to M1 Junction 15 in Northamptonshire (known as Northampton Gateway SRFI).

1.2 It was agreed at the Transport Working Group[1] meeting held on 07 July 2016 that the transport impacts of the Northampton Gateway SRFI development be modelled using the Northamptonshire Strategic Transport Model (NSTM). A copy of the meeting notes is provided at **Appendix A**.

1.3 The NSTM is maintained on Northamptonshire County Council's (NCC's) behalf by WSP-PB and the purpose of this Technical Note is to set out the modelling methodology and NSTM assessment requirements in order that WSP-PB can prepare a NSTM development modelling brief setting out the scope of the required modelling work. This Technical Note is structured as follows:

- Section 2 describes the development proposals.
- Section 3 sets out the modelling assessment methodology
- Section 4 sets out the NSTM assessment requirements and anticipated outputs
- Section 5 provides a short summary.

[1] The Transport Working Group comprises Highways England and their consultants Aecom, Northamptonshire County Council (NCC), ADC Infrastructure Ltd, Lawrence Walker Engineering, and BWB Consulting Ltd.

2.0 PROPOSED DEVELOPMENT

Site location

2.1 The site is located to the west of M1 Junction 15, approximately 6km from Northampton Town Centre. It is bounded to the east by the M1 Motorway, to the south by the A508, to the north by Collingtree Road, and by the Northampton Loop line of the West Coast Mainline railway to the west. The general site location is shown in **Figure 1**.

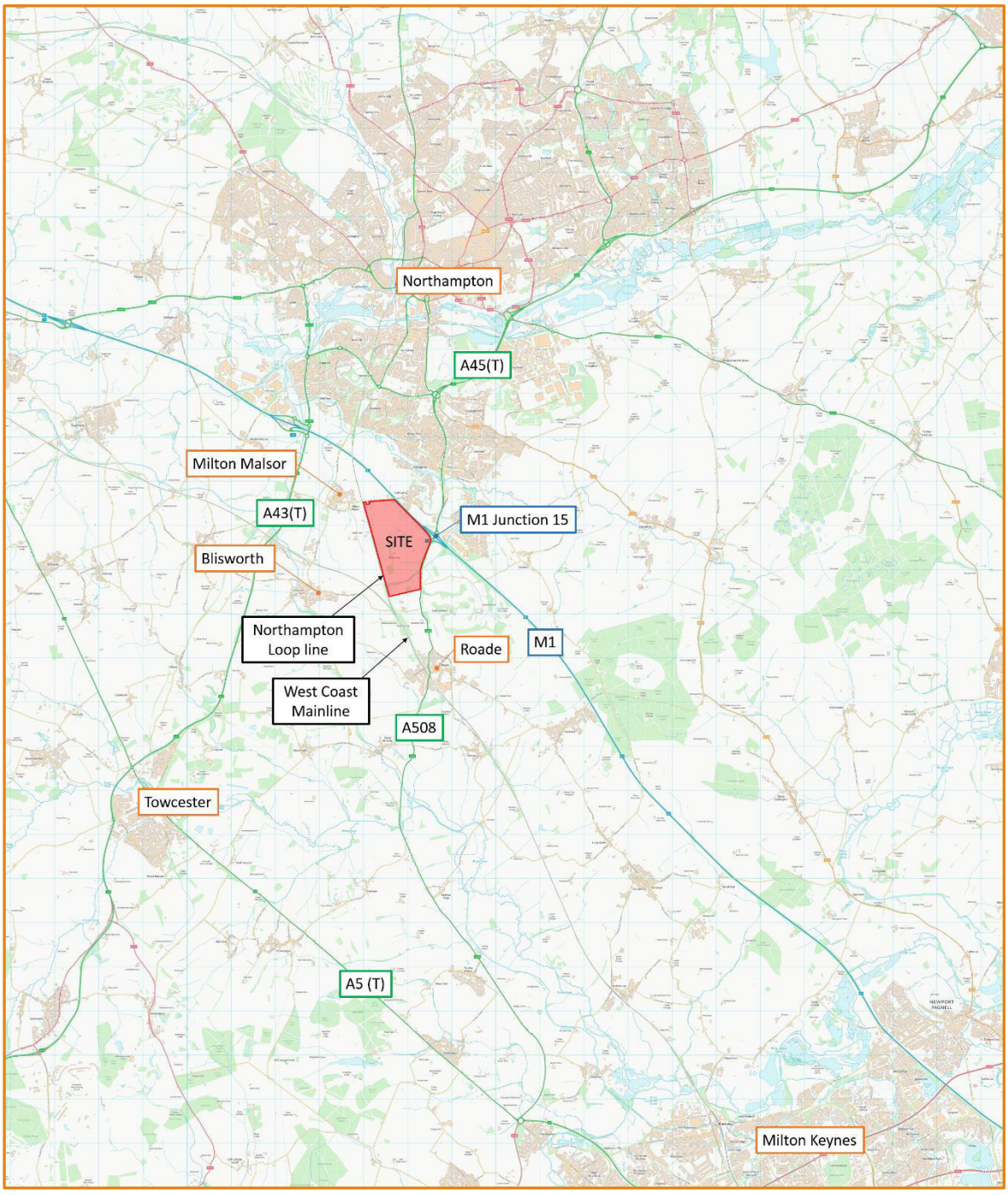

Figure1: general site location

Development proposals

2.2 The Northampton Gateway SRFI would take the form of a number of large scale warehousing and distribution units and an intermodal rail freight terminal. The site would include provision for rail sidings to serve individual buildings.

2.3 It is not anticipated that small units would make up a significant part of the development as few B8 occupiers require small scale facilities in the modern era, due to the economies afforded by scale. The proposed warehousing and distribution area comprises 5.269 million sqft of B8 use with ancillary B1 (office) use.

2.4 The draft illustrative masterplan contained in **Appendix B** shows the proposed units, and the table below summarises the gross internal floor area of each unit and the development as a whole. As shown, B1 office use would comprise less than 5% of the total area and is therefore ancillary to the predominant B8 use.

unit number	warehouse	offices	total
unit 1	580,000sqft	25,000sqft	605,000sqft
unit 2	515,000sqft	30,000sqft	545,000sqft
unit 3	653,000sqft	30,000sqft	683,000sqft
unit 4	790,000sqft	40,000sqft	830,000sqft
unit 5	707,000sqft	37,000sqft	744,000sqft
unit 6	525,000sqft	25,000sqft	550,000sqft
unit 7	1,263,000sqft	49,000sqft	1,312,00sqft
freight terminal	-	20,000sqft	20,000sqft
total	**5,033,000sqft**	**256,000sqft**	**5,289000sqft**
%	95.16%	4.84%	100%

2.5 The masterplan is illustrative only at this stage. However, the maximum development floorspace will be set by the parameters plan. This caps the maximum warehouse and distribution floor space to 5,269,000sqft (approx. 489,502sqm). Hence this is the floor space of warehousing and distribution B8 use that will be assessed.

2.6 The intermodal rail freight terminal would take the form of an independent facility designed to have the capacity to accommodate up to 16 trains per day of up to 775 metres length. This is in order to accommodate the largest planned intermodal trains. It would provide container storage. There will also be capability to provide a 'rapid rail freight'[2] facility as part of the intermodal freight terminal.

2.7 The rail freight terminal would be connected with the existing Northampton Loop rail line of the West Coast Mainline railway.

Proposed transport infrastructure

2.8 The site was recently subject to a now withdrawn planning application for the development of just under 2.7 million sqft of B8 warehouse and distribution uses. As part of the Transport Assessment undertaken to support that scheme, an existing capacity constraint was identified at M1 Junction 15, and accordingly a highway mitigation scheme for the junction was agreed in principle with Highways England.

[2] Rapid Rail Freight uses 'standard' passenger trains to carry lightweight freight loads, allowing the ability to move freight at 100-125mph. Loading occurs at the platform, direct from HGV.

2.9 Given that the Northampton Gateway SRFI will comprise a significantly greater amount of floor space, the need for improvement works at M1 Junction 15 is a prerequisite.

2.10 ADC Infrastructure Ltd have undertaken a high level assessment of the available capacity headroom associated with the previously identified improvement scheme for M1 Junction 15 and associated works. This suggests that the scheme would provide headroom capable of meeting the demand of the proposed SRFI. Therefore, that scheme forms the starting point for assessment of the transport mitigation package that will be associated with the Northampton Gateway SRFI.

2.11 Hence based on the above, the following package of transport mitigation works, which will be assessed and finalised in the Transport Assessment, is also proposed as part of the scheme:

- new roundabout on the A508 to provide access to the development
- dualling of the section of the A508 between the new site access roundabout and M1 Junction 15
- substantial improvements to Junction 15 of the M1
- a bypass on the A508 for Roade village
- enhancement of bus services to serve the site.

2.12 The public rights of way KX17 and KX13 that cross the site would be diverted and extended.

3.0 MODELLING ASSESSMENT METHODOLOGY

3.1 At the TWG meeting of 07 July 2016 NCC confirmed that they would require the transport impacts of Northampton Gateway SRFI to be modelled using the NSTM. Highways England confirmed that this was also acceptable to them.

3.2 The NSTM is currently undergoing a major model update, which is due to be completed in September / October 2016. NCC have advised that in addition to the major model update work, the model is also likely to require some calibration and re-validation to the areas to the south of the M1. The latter is required to ensure that the NSTM is fit for the purpose of assessing Northampton Gateway SRFI. The calibration and re-validation exercise will require new traffic surveys and, as detailed later within this Technical Note, WSP-PB will advise on the need and scope of these surveys as part of their detailed NSTM development modelling brief.

3.3 Nevertheless, the time required to complete the on-going model update and localised re-validation work means that traffic flow outputs from the NSTM, pertaining to the Northampton Gateway SRFI development, are unlikely to be available prior to Q1/Q2 2017.

3.4 It was therefore agreed at the TWG meeting that the development would be tested using the NSTM and that this testing would await the updated and re-validated model. However, in advance of the NSTM being available for use, it was also agreed that ADC Infrastructure Ltd would undertake a traditional assessment of the development traffic impact, using trip rates to be agreed with the TWG and an employee trip distribution extracted from the NSTM model in its current form. A separate trip distribution for HGVs would be agreed with the TWG.

3.5 This approach will allow work on the main transport impacts and the identification and refinement of the proposed highway mitigation to be progressed while the NSTM is being updated. As part of this work an initial study area for detailed assessment would be agreed with the TWG.

3.6 The proposed approach to the assessment of the transport impacts would therefore have four main work stages, as set out at the table over the page.

	description	objectives	required inputs (by who)	timescales
Stage 1	manual traffic flow assessment and detailed junction modelling (ADC)	to develop and refine the M1J15, site access and Roade bypass highway mitigation works	trip generation (ADC) HGV distribution (ADC) light vehicle distribution (WSP-PB)	by end November 2016, therefore, all inputs required by end September 2016
		identify potential wider traffic impacts and consider mitigation requirements and options	above	ongoing to Q2 2017
Stage 2a	base case NSTM re-validation and calibration (WSP-PB)	to ensure that the base case NSTM meets the required DMRB assessment criteria and is fit for purpose	traffic survey scope (WSP-PB) traffic survey data (ADC) base data 'sense' check (WSP)	asap, to allow surveys to be commissioned and undertaken prior to October half term school holidays (which are w/c 24th October 2016)
Stage 2b	reference case NSTM development (WSP-PB)	development of the 2021 and 2031 reference case models	reference case assumptions (WSP-PB/TWG)	by end November 2016
Stage 2c	with development case NSTM development (WSP-PB)	development of the 2021 and 2031 development case models	M1 J15 and site access mitigation works (ADC/BWB)	by end of December 2016
Stage 3a	NSTM modelling and outputs (WSP-PB): S1. reference case S2. development case no mitigation S3. development case with mitigation	to produce peak hour assessment traffic flows for Stage 4	all of above, excluding assessment of potential wider traffic impacts	tbc by WSP-PB, during Q1 2017
		to produce ADDT and AAWT assessment traffic flows for the Environmental Assessment		
Stage 3b	Roade bypass modelling (WSP-PB)	inform bypass options appraisal		
Stage 3c	Phasing (WSP-PB)	inform trigger points for mitigation works		
Stage 4	detailed junction modelling using peak hour traffic flows from Stage 3 (ADC)	confirm study area and demonstrate need for highway mitigation using NSTM output from modelling S1 and S2	all of above	to follow above, during Q2 2017
		demonstrate suitability of highway mitigation, using NSTM output from modelling S2		
		demonstrate suitability of highway mitigation once any reassignment effects are taken into account, using NSTM output from modelling S3		
		consider any off-site impacts that are not identified at Stage 1 but are indicated by the NSTM modelling S2 or S3.		

4.0 NSTM ASSESSMENT REQUIREMENTS

Introduction

4.1 This section sets out the anticipated assessment requirements based on following the assessment methodology that is set out in Section 3 of this Technical Note. This is provided in order to inform the NSTM development modelling brief to be prepared by WSP-PB for agreement with the TWG. The modelling brief should set out the scope of work to be undertaken during each of the stages, and the required inputs, along with the timescales and costs.

Stage 1 requirements – manual traffic flow assessment

4.2 Stage 1 will require WSP-PB to provide an initial trip distribution for the light (i.e. employee) vehicle trips associated with the development. This will then be used by ADC Infrastructure Ltd to undertaken a manual assessment of the development impacts. In order to allow this work to proceed without undue delay, it has been agreed with the TWG that this initial trip distribution assessment would be undertaken using the NSTM in its current form, and need not await the model update.

4.3 However, the Northampton Gateway SRFI development site is not currently coded within the NSTM and therefore it will first need to be added in, in order to allow the trip distribution to be determined.

4.4 It is anticipated that the WSP-PB output for Stage 1 will be an origin/destination table, with an accompanying diagram showing the origin/destination locations, that detail the trip distribution. Accompanying this should be a note explaining how the trip distribution has been determined (it is presumed that this is based on journey to work census data). It should be noted that it is the distribution of light vehicle trips, and not the trip assignment, that is required at this stage. Assignment will be undertaken by manual assessment at this stage. This thereby avoids any issues associated with supressed demand within the NSTM effecting the trip assignment.

4.5 Although not required to allow WSP-PB to undertake the Stage 1 initial trip distribution for the light vehicles, ADC Infrastructure Ltd will prepare a technical note for agreement with the TWG that sets out the trip generation for Northampton Gateway SRFI. This will set out light and HGV vehicle trips, along with the expected total number of person trips. As part of this work the peak hour periods for assessment purposes would be agreed with the TWG. Once agreed, the peak hour development flows will be used in the traditional assessment work to be undertaken by ADC Infrastructure Ltd, but the flows will also be provided to WSP-PB for incorporation into the NSTM as part of the Stage 3 work.

4.6 As part of the Stage 1 work ADC Infrastructure Ltd will prepare a technical note for agreement with the TWG that sets out the distribution for HGV trips associated with the proposed development. This will be used in the manual assessment, but also provided to WSP-PB for incorporation into the NSTM as part of the Stage 3 work.

Stage 2a requirements – base case NSTM re-validation and calibration

4.7 NCC have advised that the base case NSTM will require some calibration and re-validation in order to ensure that it is fit for the purpose of assessing the Northampton Gateway SRFI development traffic impact. It is understood that this calibration and re-validation work is most probably required in the areas to the south of the M1 and around Roade village.

4.8 It is understood that this process will likely require new survey data and WSP-PB will advise on this as part of their NSTM development modelling brief. ADC Infrastructure Ltd would then

source the required data, either from existing counts or via commissioning new surveys. This data would be provided to WSP-PB.

4.9 NCC wish to understand the potential impact of a new Roade Bypass on 'rat-running' from the east and south of Roade, particularly through Hartwell from the Milton Keynes direction. Therefore, additional network coding within the NSTM around the Roade area may also be required.

4.10 It is anticipated that the WSP-PB output from Stage 2a will be a Local Model Validation Report that confirms the base case NSTM is fit for purpose, and forms an appropriate base from which to develop the future reference and development case scenarios. As part of this work Highways England have requested that a 'sense check' of the new survey data is undertaken by comparing the new traffic survey data with available ATC records to confirm that the new data is representative of typical conditions. It is expected that this would be undertaken by WSP-PB as part of the re-validation exercise.

4.11 During the TWG meeting on 17 August 2016, NCC suggested that it would be helpful to prepare a more detailed brief for Stage 2a, this is therefore included at **Appendix C** of this Technical Note.

Stage 2b requirements – reference case NSTM development

4.12 It has been agreed with the TWG that the following future assessment years will be examined:

- 2021 opening year
- 2031 future assessment year, consistent with the end of the Local Plan period.

4.13 Two scenarios will be required for the 2021 opening year. These are:

- Circular 02/2013[3] compliant scenario for assessment of the traffic impacts on the strategic road network (SRN), subsequently referred to as the '2021 SRN assessment year'
- opening year scenario, for assessment of the environmental impacts of the proposed development, subsequently referred to as the '2021 opening year'

4.14 In accordance with Circular 02/2013 it has been agreed with Highways England that the 2031 future assessment year will also be the forward planning year for the SRN.

4.15 In addition, NSTM outputs from the base year (assumed to be 2016) will be required to allow the Air Quality and Noise environmental effects to be assessed.

4.16 The NSTM currently has a reference case scenario for 2031. Therefore, as part of the Stage 2 work, WSP-PB will need to prepare new 2021 reference case models for the two opening year scenarios. The assumptions regarding the committed and allocated developments and infrastructure schemes to be included within the reference case scenarios will be agreed with the TWG.

4.17 For example, in accordance with paragraph 25 of Circular 02/2013, the overall forecast demand in the 2021 SRN assessment year reference case scenario, will be the existing flow plus traffic likely to be generated by development already committed. This does not include allocated development, which for the purposes of Highways England, is examined via the forward planning year assessment. In addition, the Circular requires that 100% of the forecast demand from the development is assessed within the opening year. Whereas in reality the development will open with a first phase and take a number of years to be fully operational. The development scenarios are discussed further in the Stage 2c requirements, below.

[3] DfT Circular 02/2013 'The Strategic Road Network and the Delivery of Sustainable Development', 10 September 2013

4.18 Therefore, whilst the 2021 SRN assessment year scenario represents an appropriate reference case for assessment of the traffic impacts on the SRN, it does not represent a realistic scenario for assessment of environmental impacts. In the case of environmental impacts, the greatest impact will generally be when the development traffic is the largest proportion of the total flow. Hence the 2021 opening year reference case scenario will need to adopt different assumptions regarding committed and allocated development. For example, only including those committed developments and infrastructure schemes that have a realistic prospect of being delivered by 2021.

4.19 In this regard, at the TWG meeting of 07 July 2016, Highways England confirmed that the M1 J13 to J16 Smart Motorway scheme continues to be a committed infrastructure scheme. The design is to be completed in 2017, with work on site commencing in 2018, followed by a 32-month construction programme. Hence completion is likely in 2020. These works will therefore be treated as a committed scheme with respect to the all three reference case scenarios, and NCC have confirmed the inclusion of such within the NSTM on-going model update work.

4.20 It is expected that overall traffic growth for the reference case scenarios will be constrained to current DfT TEMPRO 7.0 levels. Confirmation of this and an explanation of the methodology that will be used to develop the reference case scenarios should be provided as part of the NSTM development modelling brief.

4.21 It is anticipated that the WSP-PB output from Stage 2b will be a Technical Note setting out the development of each of the reference case scenarios, including details of the growth assumptions included within the modelling and details of the infrastructure and development commitments included within each of the reference case scenarios.

4.22 Roxhill are currently seeking advice from PINS regarding the assessment of cumulative impacts and whether this should include the proposed Rail Central SRFI that is located adjacent to the site. Should there be a requirement to include the Rail Central site as part of the cumulative assessment work, this will most likely be examined via sensitivity testing, the parameters of which would need to be agreed.

Stage 2c requirements – development case NSTM development

4.23 Based on the above, the following development case scenarios will be required:

- 2021 opening year
- 2021 SRN assessment year
- 2031 future assessment year.

4.24 These development case scenarios will need to be modelled both without and with the proposed transport infrastructure improvements in place. The development scenarios to be tested will be agreed in advance with the TWG, but at this stage the table below summarises the anticipated requirements.

scenario name	development assumptions	with mitigation assumptions
2021 development case opening year	first phase of development only (sqft tbc)	M1J15 improvements Roade bypass not in place
2021 development case SRN assessment year	100% of development, including rail terminal operating at full capacity	M1J15 improvements and Roade bypass
2031 development case future assessment year	100% of development, including rail terminal operating at full capacity	M1J15 improvements and Roade bypass

4.25 These scenarios will need to be coded appropriately within the NSTM, along with the HGV distribution that will be provided by ADC Infrastructure Ltd following agreement with the TWG.

4.26 It has been agreed with the TWG that the multi-modal facility in the NSTM will not be used. Instead, a separate Public Transport Strategy will be developed working with NCC, and a modal split for public transport and other sustainable travel modes agreed with the TWG.

4.27 As referred to a paragraph 4.5, as part of the Stage 1 work, ADC Infrastructure Ltd will prepare a Technical Note on the development trip generation. This will be agreed with the TWG and provided to WSP-PB for input into the NSTM.

Stage 3a requirements – NSTM modelling and outputs

4.28 Stage 3a will comprise running the NSTM to obtain the required outputs. The anticipated outputs are summarised in the table below.

ref	scenario name	to be used for
A	2016 base year	- base year traffic flows for ES
B	2021 reference case opening year	- opening year traffic flows for assessment of environmental effects within ES and first phase of development
C	2021 reference case SRN assessment year	- background traffic flows for assessment of the requirement for highway mitigation on the SRN
D	2031 reference case future assessment year	- background traffic flows for assessment of the requirement for highway mitigation on the County road network - the forward planning year for the SRN
E	2021 development case opening year	- opening year traffic flows for assessment of the first phase of development
F	2021 development case SRN assessment year	- total traffic flows for assessment of the requirement for highway mitigation on SRN - total traffic flows for design of SRN highway mitigation, where a requirement for mitigation is identified
G	2031 development case future assessment year	- total traffic flows for assessment of the requirement for highway mitigation on County roads - assessment of development traffic impacts in the forward planning year on the SRN - total traffic flows for design of County road highway mitigation, where a requirement for mitigation is identified
H	2021 with transport mitigation development case opening year	- opening year traffic flows for assessment of environmental effects within ES
I	2021 with transport mitigation development case SRN assessment year	- demonstrate suitability of highway mitigation once any reassignment effects are taken into account
J	2031 with transport mitigation development case	- future year traffic flows for assessment of environmental effects within ES - demonstrate suitability of highway mitigation once any reassignment effects are taken into account

4.29 Depending of the timing of the Stage 1 work and the timing of the NSTM update work, it may be that scenarios are tested in two batches, with scenarios B to G forming the first batch, and then scenarios H to J following these, once the mitigation strategy has been finalised.

4.30 Based on the output from scenarios C, D, F and G, the initial study area determined in Stage 1 would be confirmed and amended if required.

4.31 It is anticipated that the WSP-PB output for Stage 3a will be a report, or reports, describing the modelling process and presenting and comparing the NSTM results for the various scenarios. Peak hour link flows and turning counts at junctions will need to be provided for scenarios B to J for the study area. Based on our experience of the approach taken by PINS on the East Midlands Gateway SRFI, the link flows and turning counts will need to be provide in both diagrammatical and tabulated form. The traffic flows should be presented as total vehicles and HGVs.

4.32 Annual Average Daily Traffic (AADT) and Annual Average Weekday Traffic (AAWT) traffic flows will be required for all study area road links, for all scenarios. The %HGV and average vehicle speeds on the road links should also be provided. For single carriageway links, the data should be presented as two-way flows. For dual carriageway and motorway links the data should be presented as one-way directional flows.

4.33 It is understood that the ADDT and AAWT flow data will be calculated from the NSTM peak hour traffic data for the base and reference case scenarios, using conversation factors derived from daily count data. In presenting the methodology for this process, WSP-PB should be mindful that the development traffic will have a difference daily profile to the background traffic and therefore the calculation of the AADT and AAWT flow data for the with development traffic scenarios will need to take this into account.

Stage 3b requirements – Roade bypass modelling

4.34 The package of mitigation measures includes a bypass for Roade village, which is located to the south of the development site on the A508. An Options Appraisals of potential alignments for the bypass and its connections with Roade village will be undertaken. Some of the potential options that may be considered are shown in the drawing at **Appendix D**. Other alignments may also be examined.

4.35 It is anticipated that the impact of different bypass alignment options and potential connections with Roade Village will be examined using the NSTM. Output from this work will for part of the Options Appraisal and evidence base for selection of the preferred bypass design. Allowance with the NSTM modelling brief should therefore be made for this element of work.

Stage 3c requirements – phasing

4.36 The proposed package of highway improvements, including the site access roundabout, dualling of the A508 between the site access and M1 Junction 15, improvements to Junction 15 itself, and the Roade bypass will be delivered in accordance with a phasing programme, which will be agreed and formalised with the TWG. However, the general approach will be to construct the site access roundabout, A508 dualling and M1 Junction 15 improvements as one package and therefore these will be in place from the first phase of the development.

4.37 Additional runs of the NSTM may be required to help inform the scale of development that would trigger the requirement for any other off-site highway improvements that are identified as part of the Transport Assessment.

4.38 Allowance with the NSTM modelling brief should therefore be made for this element of work.

Stage 4 requirements – detailed junction modelling

4.39 Stage 3d will involve detailed junction modelling of the study area junctions using industry standard software. This will use the NSTM peak hour traffic flows output as part of the Stage 3a work stream. This work will be undertaken by ADC Infrastructure Ltd.

5.0 SUMMARY

5.1 ADC Infrastructure Ltd is commissioned by Roxhill (Junction 15) Ltd to provide Transport advice with regards to their Nationally Significant Infrastructure Project for the development of a Strategic Rail Freight Interchange (SRFI) facility adjacent to M1 Junction 15 in Northamptonshire.

5.2 It has been agreed with the Transport Working Group that the transport impacts of the Northampton Gateway SRFI development be modelled using the Northamptonshire Strategic Transport Model (NSTM).

5.3 The NSTM is maintained on Northamptonshire County Council's behalf by WSP-PB and the purpose of this Technical Note is to set out the modelling methodology and NSTM assessment requirements in order that WSP-PB can prepare a NSTM development modelling brief setting out the scope of work for the required modelling work.

5.4 The modelling methodology has been set out, along with the anticipated assessment requirements. This is provided in order to inform the NSTM development modelling brief to be prepared by WSP-PB for agreement with the TWG. The modelling brief should set out the scope of work to be undertaken during each of the stages, and the required inputs, along with the timescales and costs.

APPENDIX A

NOTES FROM TRANSPORT WORKING GROUP 07 JULY 2016 MEETING

J15 NORTHAMPTON GATEWAY SRFI
TRANSPORT WORKING GROUP MEETING 1
NOTES AND ACTIONS

Date: 07 July 2016 @ 1400

Venue: Aecom,
Colmore Plaza
Colmore Circus Queensway
Birmingham,
B4 6AT

Attendees:

Aoife O'Toole (AO)	Aecom
Matthew Jopp (MJ)	Aecom
Martin Seldon (MS)	Highways England
Rob Sim-Jones (RSJ)	Northamptonshire County Council
Jethro Punter (JP)	Northamptonshire County Council
Stuart Dunhill (SD)	ADC Infrastructure Ltd
Mark Higgins (MH)	ADC Infrastructure Ltd
Steve Johnstone (SJ)	Lawrence Walker Ltd
Ian Rigby (IR)	Roxhill Developments Ltd
Steve Harley (SH)	Oxalis Planning
Simon Hilditch(SH)	BWB Consulting Ltd

Item		Action
1.0	**Introduction**	
1.1	Roxhill intend to submit a planning application for a Development Consent Order (DCO) via the Nationally Significant Infrastructure Project (NSIP) process for a Strategic Rail Freight Interchange (SRFI) on land to the southwest of M1 J15.	
1.2	Roxhill has formed a similar team to that which delivered the DCO for East Midlands Gateway SRFI. ADC are leading on transport, with BWB undertaking the infrastructure design work. LWL providing overview and experience from the now withdrawn Howdens planning application that was made for part of the site in 2014. Geoff Bounds is the rail adviser. Morag Thomson from Eversheds is providing legal advice.	
1.3	Key outcome of first meeting is to establish the transport modelling methodology.	
2.0	**Working group objectives**	
2.1	Purpose of TWG to work towards agreement on the key inputs and outputs for the transport chapter of the ES, which will include the Transport Assessment and Travel Plan, enabling Statements of Common Ground to be signed ahead of the DCO submission.	
2.2	All agreed that the TWG approach would be helpful. Discussion regarding attendee's and decision to hold off inviting Milton Keynes Borough Council to join the TWG at this stage, as it was considered that traffic impacts would be confined to Northamptonshire County Council's and the Strategic Road Network (SRN). This can be reviewed at a later date, if required.	

3.0	**Project overview**	
3.1	IR summarised the development proposals, which at this stage are: • an intermodal freight terminal accommodating up to 16 trains per day of up to 775m long, and including container storage and HGV parking, with new rail sidings within the site to serve individual buildings; • capability to provide a 'rapid rail freight' facility as part of the intermodal freight terminal; • up to 5,727,000sqft of warehousing and ancillary buildings; • strategic landscaping and tree planting, including retained diverted public rights of way; • earthworks and demolition of existing structures on-site.	
4.0	**Anticipated transport mitigation**	
4.1	ADC explained that the transport mitigation requirements will be assessed and developed as part of the Transport Assessment and Travel Plan, but at this stage an initial package of transport mitigation measures is proposed based on our understanding of the local area.	
4.2	The site would be accessed via a new roundabout on the A508, similar to that proposed for the Howdens scheme. The section of the A508 between the site access roundabout and M1 Junction 15 would be dualled.	
4.3	An improvement scheme for M1 Junction 15 was agreed in principle with Highways England as part of the previous work for the Howdens planning application. ADC have undertaken a high level assessment of the available capacity headroom associated with that proposed improvement to accommodate the additional development traffic associated with the SRFI. This was based on a comparison of traffic flows in the LWL 2026 assessment for the Howdens scheme and Aecom's 2018 sensitivity check (as contained within Aecom's Technical Note 4 for the Howdens planning application). This suggests there will be headroom capable of meeting the demand of the proposed SRFI scheme.	
4.4	The proposal for a Roade bypass was discussed and a drawing showing the potential corridor for a bypass to the west of Roade was tabled. The key points of an earlier meeting on the bypass between NCC, Roxhill and LWL were also summarised: • although NCC agreed that a bypass to the west of Roade was likely to be preferable over a route to the east of the village, assessment work would be required to support this. • NCC noted potential concern that a bypass might facilitate traffic reaching existing PIA 'hotspots' on the A508 to the south of Roade at faster speeds. The potential for this to occur and/or be addressed via minor highway realignment should be examined. • consideration of 'rat-running' from the East and South of Roade (particularly through Hartwell) from the Milton Keynes direction; and what the proposed by-pass will do to these flows.	BWB/ ADC BWB/ ADC BWB/ ADC
4.5	Two public rights of way (KX17 and KX13) that pass through the site would be diverted and enhanced to form a circulate loop.	
4.6	A potential maintenance access issued was flagged with regard to where PRoW KX13 passes over the M1via an existing bridge. Steve Harley to check position with reference to Howdens scheme.	Steve Harley

4.7	New pedestrian and cycle links to be provided along A508 and across M1 at Junction 15 (similar to Howdens proposals).	
4.8	A Public Transport Strategy would be developed, the starting point for this was identified as per the Howdens proposals, which will include new bus stops on the A508 and extending and diverting Stagecoach Service 7 into the site. The Public Transport Strategy will need to cover shift change times and given the large size of the site, will include an onsite shuttle service.	
5.0	**Transport modelling methodology**	
5.1	NCC confirmed that they require the transport impacts of the development to be modelled using the Northamptonshire Strategic Traffic Model (NSTM).	
5.2	NCC confirm that the base NSTM is currently undergoing a major update due to be completed in Sept/Oct 2016. There would then be a lead in time associated with using the model (as other sites may also be in the queue to use it) and time to run the model. Hence outputs may not be available until Q1/Q2 2017. The model is held and maintained on NCC's behalf by WSP (Basingstoke office). There will be a charge for using the model.	
5.3	NCC advised that the model is also likely to require some addition calibration and re-validation (to the south of the M1) to ensure that it is fit for the purpose of assessing the SRFI. The major model update works is currently on-going. As it is unlikely that any surveys required specifically for the calibration / validation of the model for the SRFI can be carried out in advance of the school holidays, this will likely have to be carried out as a subsequent process to the main body of the major model update work.	
5.4	It was agreed that the development would be tested using the NSTM and that this testing should await the updated model. However, in advance of that it was agreed that ADC undertake a manual assessment, using trip rates to be agreed with the TWG and an employee trip distribution extracted from the model in its current form. This will allow impacts to be identified and demonstration of the suitability of the proposed mitigation using industry standard software to be progressed while the NSTM is being updated. A separate trip distribution for HGVs would be agreed with the TWG. The impact of the development would then be modelled in the NSTM for the 'reference case', 'with development no mitigation' and 'with development and mitigation' scenarios.	
5.5	An opening year of 2021 was agreed, this is based on allowing 2 years for the DCO process, and then a 2 to 3 year period to commence the infrastructure and construct the first building. At this stage it is anticipated that the site access roundabout, A508 dualling and M1 Junction 15 improvements will be delivered in the first phase of works.	
5.6	In accordance with Circular 02/2013 it was agreed that the assessment of the SRN be undertaken for the 2021 opening year. The highway mitigation on the SRN will be assessed against the opening year.	
5.7	NCC require assessment at the end of the Local Plan period, which is 2031. Hence assessment of the County road network will be undertaken in 2031.	

5.8	Circular 02/2013 also requires assessment in forward planning year, to allow Highways England plan for future traffic conditions. It was agreed that the 2031 assessment year would therefore also serve as the forward planning year.	
5.9	NCC confirmed that the NSTM currently has 2026 and 2031 reference case years but that a 2021 reference case year could be produced as part of WSPs work. The reference case models include all committed development and infrastructure and Local Plan allocations.	
5.10	Highways England confirmed that the M1 J13 to J16 Smart Motorway scheme is progressing (notwithstanding the Select Committee findings) with the design to be completed in 2017, on site in 2018, with a 32-month construction programme. Hence completion likely in 2020.	
5.11	NCC confirmed that the SMP scheme will be in the NSTM reference case model.	
5.12	The potential cumulative impact of the Roxhill scheme with Rail Central scheme was discussed. However, there is no commercial prospect of both site coming forward and hence it is not proposed that the cumulative impacts will be examined. Post meeting note: NCC will be looking for confirmation of any legal advice / advice received from the Planning Inspectorate on this before confirming this point.	
5.13	AADT and AAWT traffic flow data will be required for the ES, in particular for the Noise assessment and Air Quality assessment. NCC to confirm whether these can be produced directly from the NSTM, or that there is potential for this. It was noted that the M1 along the northern site boundary is an AQMA. Post meeting note: NCC have confirmed that whilst the model does not directly output AADT / AAWT flows, the modelling team can produce AADT / AAWT flows by factoring peak hour flows using conversion factors obtained from local surveys.	NCC
5.14	ADC to prepare a NSTM brief setting out the modelling requirements for WSP, to be first agreed with the TWG.	ADC
5.15	ADC to prepare technical notes on trip generation and HGV distribution for agreement with the TWG. It was agreed that this work would be based on that undertaken for the EMG SRFI DCO, appropriately adapted for this site.	ADC
5.16	RSJ commented that recent research has shown that rail served B8 units have lower employment density compared to standard large scale B8 units. RSJ to provide information for ADC to consider in trip generation assessment work.	RSJ
5.17	JP to provide employee trip distribution from NSTM model to allow ADC to use this in manual assessment of traffic impacts. Post meeting note: NCC have confirmed that the site is not currently modelled within the NSTM and therefore some initial modelling work will be required to determine the trip distribution. This can be undertaken using the NSTM in its current form, but a modelling scope will need to be agreed with NCC/WSP.	JP ADC
6.0	**Date of next meeting**	
6.1	Focus of the next TWG meeting to be on the NSTM modelling brief and trip generation. Likely to be mid-August due to holiday season. ADC to circulate dates.	ADC

7.0	**AOB**	
7.1	MS raised the issue of lorry parking. Discussion confirmed that there would be sufficient capacity on site and therefore no lorry parking on the off-site road network.	

APPENDIX B

DRAFT ILLUSTRATIVE DEVELOPMENT MASTERPLAN

FOOTPATH KEY

- Footpath existing
- Footpath existing
- Footpath Proposed

GROSS INTERNAL AREAS

UNIT 1	
Warehouse	580,000 ft²
Office	25,000 ft²
TOTAL	605,000 ft²
UNIT 2	
Warehouse	515,000 ft²
Office	30,000 ft²
TOTAL	545,000 ft²
UNIT 3	
Warehouse	653,000 ft²
Office	30,000 ft²
TOTAL	683,000 ft²
UNIT 4	
Warehouse	790,000 ft²
Office	40,000 ft²
TOTAL	830,000 ft²
UNIT 5	
Warehouse	707,000 ft²
Office	37,000 ft²
TOTAL	744,000 ft²
UNIT 6	
Warehouse	525,000 ft²
Office	25,000 ft²
TOTAL	550,000 ft²
UNIT 7	
Warehouse	1,263,000 ft²
Office	49,000 ft²
TOTAL	1,312,000 ft²

FREIGHT TERMINAL

Offices	20,000 ft²

GRAND TOTAL	5,289,000 ft²

Revision:		Date/Checked	
P3	Units replanned, areas adjusted	20may2016	PL
P4	Unit 4 split into 2 units, Units 1, 2 and 3 resized	25may2016	PL
P5	preliminary gross and net site areas added	27may2016	PL
P6	net and gross site area noted, unit areas table adjusted	28may2016	PL
P7	REA rail design added, Unit 6 shown rail served, bunds adjusted to suit	31may2016	PL
P8	Building areas adjusted following rail design, net site area line adjusted.	06jun2016	PL
P9	Gross Site area adjusted, rail design revised to Unit 6	08jun2016	PL
P10	App redline adjusted, exg footpath shown, unit areas adjusted	15jun2016	PL
P11	Footpaths adjusted and Key added, bund shown to South, M1 shaded, notes tided	22jun2016	PL
P12	All 55m yards added back in, Areas adjusted to suit	22jun2016	PL
P13	RRF, Loop Line and Terminal layout adjusted	30jun2016	PL
P14	Bund reshaped, rail design added, red line altered to suit rail	01jul2016	PL
P15	Units updated, existing hedges/trees to retain shown	15jul2016	PL

M1 Junction 15 West Northampton

ROXHILL

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INDICATIVE MASTERPLAN
-

Drawing Status:	PRELIMINARY
CAD Reference:	4054-R003a
Drawn:	RM/SH/PL
Date:	Jun2016
Scale @A0:	1/2500

Project No:	Drawing No:	Rev:
4054	R001	P15

APPENDIX C

DETAILED BRIEF FOR STAGE 2A

1.0 STAGE 2A – BASE CASE NSTM RE-VALIDATION AND CALIBRATION

1.1 Stage 2a is the base case NSTM re-validation and calibration, and is summarised in the table below.

	description	objectives	required inputs (by who)	timescales
Stage 2a	base case NSTM re-validation and calibration (WSP-PB)	to ensure that the base case NSTM meets the required DMRB assessment criteria and is fit for purpose	traffic survey scope (WSP-PB) traffic survey data (ADC) base data 'sense' check (WSP)	asap, to allow surveys to be commissioned and undertaken prior to October half term school holidays (which are w/c 24th October 2016)

1.2 NCC have advised that the base case NSTM will require some calibration and re-validation in order to ensure that it is fit for the purpose of assessing the Northampton Gateway SRFI development traffic impact. It is understood that this calibration and re-validation work will be required in the areas to the south of the M1 and around Roade village.

1.3 This process will require new survey data and WSP-PB will advise on this as part of their NSTM development modelling brief. ADC Infrastructure Ltd would then source the required data, either from existing counts or via commissioning new surveys. This data would be provided to WSP-PB.

1.4 NCC wish to understand the potential impact of a new Roade Bypass on 'rat-running' from the east and south of Roade, particularly through Hartwell from the Milton Keynes direction. NCC have provided a copy of the existing NSTM network around the Roade area, **Figure C1**.

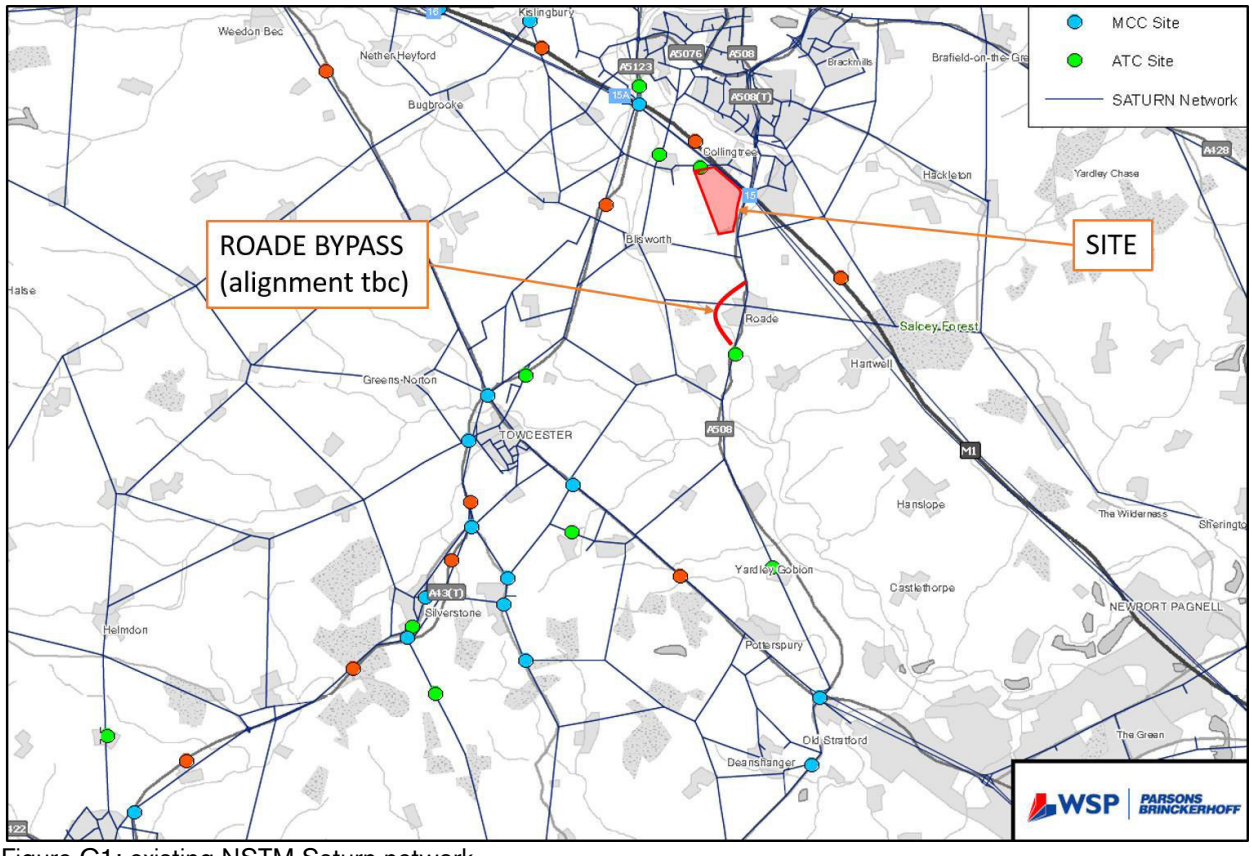


Figure C1: existing NSTM Saturn network

1.5 As shown in **Figure C1**, the model network to the southeast of the site, through and to the east of Roade is fairly course. WSP-PB should advise on the additional coding that they consider should be undertaken to improve the model coverage in this area.

1.6 However, based on a review of the existing road network, **Figure C2** highlights the potential area that we consider would benefit from additional coding in order that any reassignment effects of the proposed Roade Bypass can be understood and to allow the testing of the impact of the different Bypass alignments and connecting junctions. Detail of the suggested network for Roade is shown at **Figure C3**.

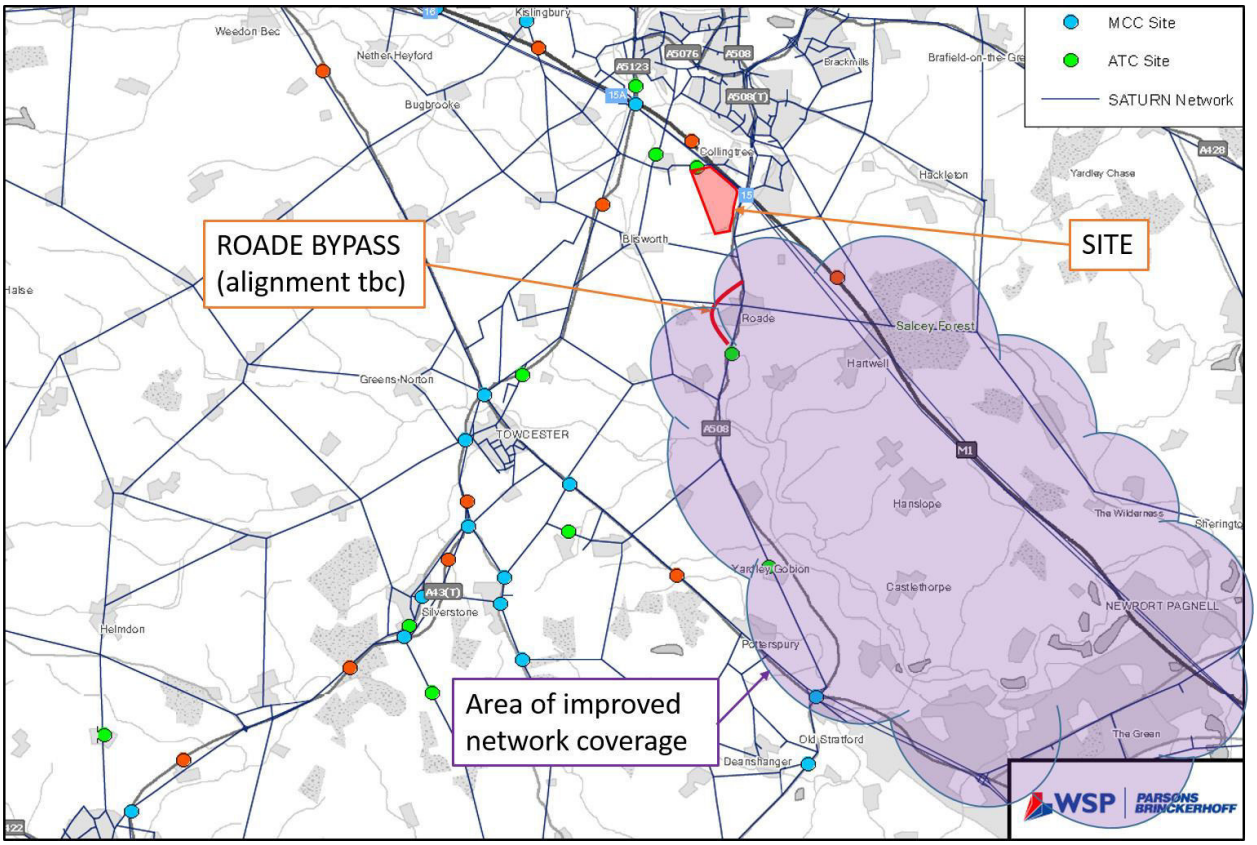


Figure C2: existing NSTM Saturn network

1.7 Likewise, it is considered that local roads within the shaded area shown at **Figure C2** should be coded. In particular, the roads linking Roade with Aston and Hartwell and the onwards connections to Hanslop, Castlethorpe.

1.8 In updating the model WSP-PB should ensure that existing weight limit restrictions are modelled, thereby ensuring that HGV traffic is assigned to appropriate routes.

1.9 The additional network coding within the NSTM may in turn influence the traffic surveys that are required for the model re-validation and calibration work and WSP-PB should advise on this as part of their brief.

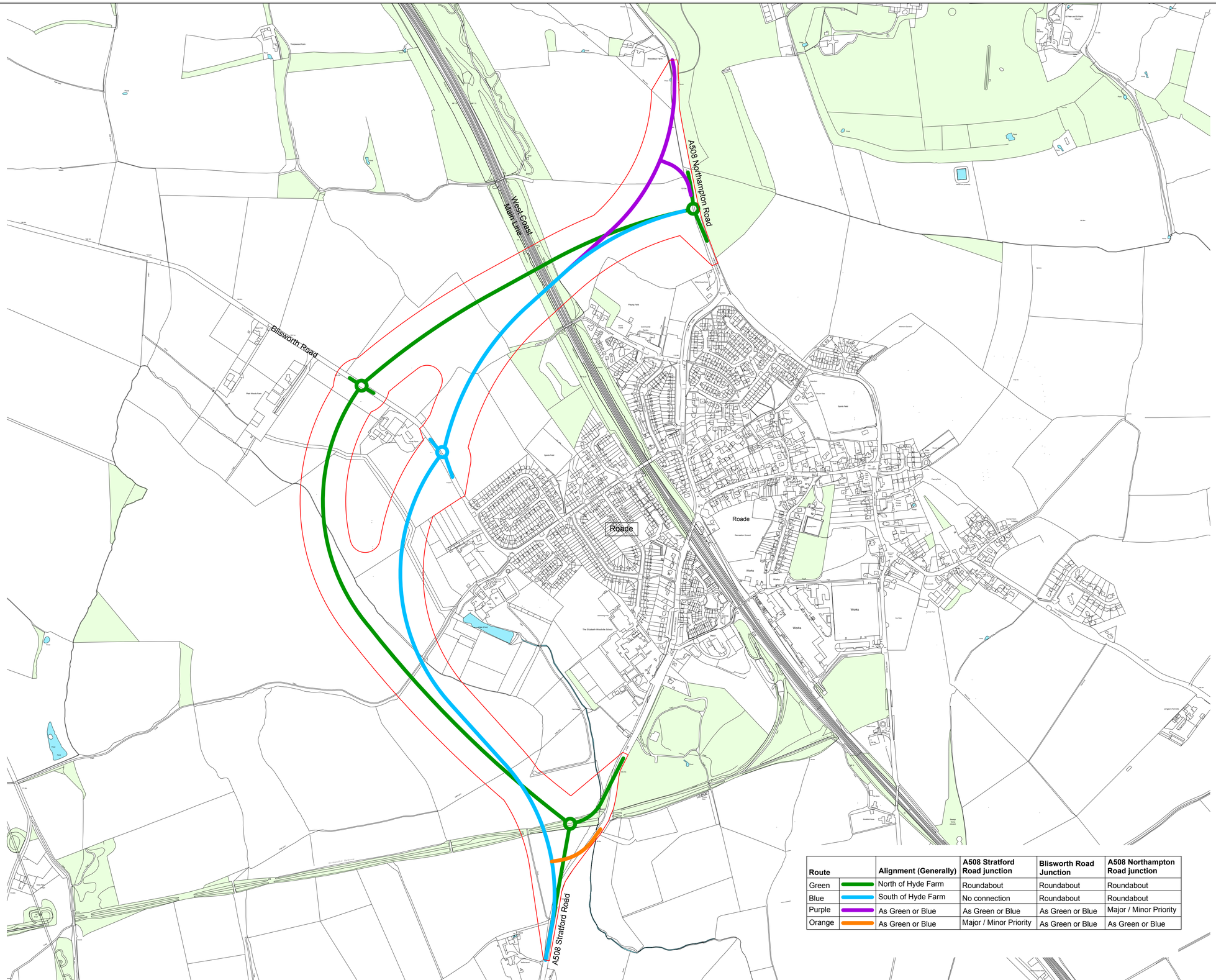
1.10 It is anticipated that the WSP-PB output from Stage 2a will be a Local Model Validation Report that confirms the base case NSTM is fit for purpose, and forms an appropriate base from which to develop the future reference and development case scenarios.

1.11 As part of this work Highways England have requested that a 'sense check' of the new survey data is undertaken by comparing the new traffic survey data with available ATC records to confirm that the new data is representative of typical conditions. It is expected that this would be undertaken by WSP-PB as part of the re-validation exercise.

Figure C3: suggested network coding in Roade

APPENDIX D

INITIAL ROADE BYPASS OPTIONS



Route		Alignment (Generally)	A508 Stratford Road junction	Blisworth Road Junction	A508 Northampton Road junction
Green		North of Hyde Farm	Roundabout	Roundabout	Roundabout
Blue		South of Hyde Farm	No connection	Roundabout	Roundabout
Purple		As Green or Blue	As Green or Blue	As Green or Blue	Major / Minor Priority
Orange		As Green or Blue	Major / Minor Priority	As Green or Blue	As Green or Blue

Design Principles for Bypass

- Single 7.3m Carriageway plus 1m Hardstrips
- 100kph Design Speed
- Designed to the Design Manual for Roads and Bridges
- Footway / Cycleway provision along the route

Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.
5. Refer to Appendix 7/1 of the contract specification for details of proposed Pavement Types and restrictions.

Legend

Proposed limits of bypass works for purposes of screening

ISSUES & REVISIONS

Rev	Date	Details of issue / revision	Drw	Rev
P1	24.06.16	Preliminary Issue	SRH	SRH

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Client: ROXHILL

Project Title: **M1 J15 NORTHAMPTON RAIL FREIGHT INTERCHANGE**

Drawing Title: **A508 ROADE BYPASS OPTIONS**

Drawn:	S. Hilditch	Reviewed:	S. Hilditch
BWB Ref:	NTH 2315	Date:	24.06.16
Scale@A1:	1:5000		

Drawing Status: **PRELIMINARY**

Project - Originator - Zone - Level - Type - Role - Number: **J15-BWB-GEN-XX-SK-D-SK01**

Status: **S1** Rev: **P1**