

Appendix 9 TN4: Scope of Highway Design Work Technical Note

**Northampton Gateway
Strategic Rail Freight Interchange
Scope of highway design work prior to DCO submission – Technical Note 4**

NGW-BWB-HGN-XX-RP-D-01-S3-P6

Introduction

The purpose of this short paper is to set out the level to which highway design will be developed prior to and for submission with the DCO application.

The output of the design and assessment work will take the form of drawings, explanatory notes and reports.

Design standards

The design standards are agreed to be:

Highway Authority	Route	Design standards
Highways England (HE)	All trunk road works including, for the avoidance of doubt, any changes to the M1 motorway	DMRB including all relevant Interim Advice Notes
Northamptonshire County Council (NCC)	A508 corridor i.e. Roade Bypass and Site Access Roundabout & associated A508 dualling.	DMRB
	All other local highway works	DMRB and elements of Manual for Streets where applicable.

Proposed assessment, design and design outputs for DCO submission

The following assessment, design and design outputs will be provided:-

Highway options reporting

Two reports will be provided, one for Roade Bypass (including junctions) and one for the Junction 15 alterations and the SRFI site access. These will detail options for the highway works that have been considered and rejected in favour of the proposals for submission and the reasons for their rejection. They will include where appropriate options for dealing with local access as well as for the major road proposals. The options reports will be closely related to the Transport Assessment for the SRFI.

Assessment of options for non-motorised users (NMUs) will be included in the NMU reports (see below) and assessment of options for public transport will be included within the Transport Assessment for the SRFI.

Geometric design

Detailed horizontal and vertical alignment design will be undertaken and presented on general arrangement, long and cross section drawings. Progressing design to this level is important for understanding of land take and future highway boundaries. These will identify the departures from geometric standards that will be required for the scheme. The geometric design will also identify the footprint of the earthworks (embankments and cuttings, including any reinforced earthworks or retaining walls) required for the scheme.

A list of departures will be compiled in order for HE and, where appropriate, NCC to provide feedback. Whilst departures could simply be authorised by the DCO itself it is intended that applications to HE and NCC for departures from geometric standards will be made as soon as possible after they have been identified, and for HE this would use the Departure Approval System (DAS).

The design will also include, where appropriate, facilities for NMUs and these will be shown on the general arrangement drawings referred to above.

Drawings showing stopping up, diversion and creation of new highways, along with stopping up and creation of any private means of access, will be included with the DCO application.

Drainage

A detailed drainage strategy will be prepared for submission with the DCO application and this will include a Highways Agency Water Risk Assessment Tool (HAWRAT) assessment for the trunk road and motorway components of the proposals. It will take on board the findings of the environmental assessment for issues such as run off rates, impact on flood plain and spillage risk. The drainage strategy will also identify features such as swales, ponds and outfalls.

HE and NCC drainage networks shall be kept separate as far as is reasonably practicable.

The Environment Agency together with NCC, as Lead Local Flood Authority, will be consulted on the drainage proposals.

Geotechnical certification

Prior to submission of the DCO application it is envisaged that the Statement of Intent (Sol) and Preliminary Sources Study Report (PSSR) will be completed (HD22/08 Key Stage 2). An element of intrusive site investigation may also be carried out prior to submission but the aim will be to avoid any site investigation that would require traffic management.

Signage, speed limits and Traffic regulation orders

A strategy for directional signage will be developed for both local and trunk road networks, which will also confirm whether or not gantry structures are required.

Drawings showing any proposed changes to Speed Limits and Traffic Regulation Orders will be included with the DCO application.

Traffic signals

LinSig will be used as the primary traffic signals design tool and the key parameters and results shall be recorded in the Transport Assessment. The level of design will then be advanced to include the linked MOVA control strategy which will be demonstrated using a VISSIM microsimulation model with PCMOVA.

The potential need for cantilever mast or gantry mounted signals will be reviewed and if these are required they will be shown on the general arrangement drawings and considered in the environmental assessment.

Locations of feeder pillars and signal controllers will be established and the general arrangement drawings will show locations of maintenance hardstandings.

Street lighting

A strategy will be prepared identifying the sections of the scheme that will be illuminated and what level they will be illuminated to in accordance with BS5489-1. Maximum column heights will be identified and a review of high-mast versus standard lighting (J15 only) will be undertaken including maintenance implications. This strategy will be used in the environmental assessment.

Locations of feeder pillars will be established and the general arrangement drawings will show locations of maintenance hardstandings.

Motorway communications

A drawing identifying any required changes to motorway communications equipment will be prepared if necessary. We anticipate that this will be limited in nature due to the J13-16 Smart Motorway Project which will include wholesale upgrading of motorway communications.

Structures

Any new or altered structure will be categorised according to DMRB standards and a general arrangement drawing will be prepared. Whilst approvals for the structures can be dealt under the DCO it is the intention that, with the exception of Category 0 structures, Approval in Principle documentation will be issued prior to submission of the DCO application.

Utilities

The scheme may necessitate the diversion and protection of utilities and if so the scope of alterations will be identified on the scheme drawings. The need for utility companies to access their plant and equipment will be reviewed and incorporated into the proposals.

Non-motorised user Audit

Prior to submission of the DCO application an NMU Context Report and a 'Stage 1' NMU audit will be carried out in accordance with DMRB HD42 for the wider development including the highway works. This will include assessment of effects on the public rights of way network.

Drawings showing changes to public rights of way will be included with the DCO application.

Road Safety Audit

Following the completion of the NMU Audit a Stage 1 Road Safety Audit will be carried out for the highway works in accordance with DMRB HD19.

Environmental Assessment

The Environmental Statement (ES) for the scheme will include a transport chapter with Transport Assessment appended and DMRB assessment standards will be followed for the highway elements of the scheme.

Any environmental mitigation measures that affect the highway works (noise fencing for example) will be shown on the scheme design drawings.

Interface with M1 J13-J16 Smart Motorway Project

The M1 J13-J16 Smart Motorway Project (SMP) is programmed to commence in 2018 and is a committed scheme for the purposes of the assessment work being undertaken for Northampton Gateway. However, until the SMP has passed through all of its approval "gateways" it is possible that it could be delayed to a future Road Investment Strategy (RIS) period. If this were to occur, then for the Northampton Gateway scheme to be fully implementable, an alternative design for the M1 J15 merges and diverges would be required.

It is therefore proposed that, whilst the primary proposal would connect the Northampton Gateway J15 improvement to the works being constructed as part of the SMP, an alternative layout will be developed that will show how the Northampton Gateway J15 improvement would connect to the M1 in its current layout.

Design process following the DCO application

It is currently envisaged that the detailed design will not commence until at least the end of the Examination process, and possibly not before the Secretary of State's Decision is announced.

The detailed design of any highway works will be in accordance with the general arrangement plans and will be audited and agreed by NCC and or HE (as appropriate) under the relevant provisions of the DCO prior to commencement of works, with all costs (including commuted sums) payable in accordance with the provisions of the DCO



The DCO will be granted on the basis of the submitted general arrangement drawings and the subsequent technical approval process would not revisit any areas of design defined by them.

BWB Consulting Ltd

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