A18 - A180 LINK

Major Scheme Business Case

January 2009

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A18-A180 Link
Major Scheme Business Case
North East Lincolnshire Council

Key Transport Objective:

To improve the southern access to the Port of Immingham

Key Information

Quantified Cost Estimate:	**£7.75 million**
Estimated Cost to DfT:	**£6.98 million**
Benefit to Cost Ratio:	**9.7**

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Executive Summary

Introduction

North East Lincolnshire Council (NELC) is applying for Department for Transport (DfT) Major Scheme Funding to finance the construction of a new link road between the B1210 and A180 to improve links to Immingham docks from the A18.

The Current Situation

The Port of Immingham is the largest port operation in the UK and is one of Britain's fastest growing ports. Access to the port from the A18 to the south is poor with no direct link between the A18 and A180. This results in dock bound traffic from the south using Pelham Road, which passes through the town centre and residential areas of Immingham, causing safety and environmental nuisance to the local residents. This dock traffic is largely due to agricultural produce such as grain being transported to the port and fuel oil going to rural areas.

Objectives of the Scheme

The key transport objective for the scheme is the provision of good access from rural Lincolnshire to the docks and other industrial areas in Immingham and vice versa including improved journey times for commercial traffic. The key environmental objective is the removal of heavy goods vehicles from Pelham Road in Immingham resulting in significant environmental benefits and a reduction in severance. Objectives also include the removal of through traffic (cars and Light Goods Vehicles [LGV]) from the village of Stallingborough resulting in significant environmental benefits and a reduction in severance.

Description of the Scheme

The route between the A18 and the docks is severed by a gap in the A1173, which ends at the B1210 and continues to the north of the A180, giving access to the industrial area to the east of Immingham and, through it to the eastern entrance of the port of Immingham. This relatively simple scheme provides a connection between the B1210 just to the north of the Sheffield to Grimsby railway line and the A180 Stallingborough Interchange. This will enable a HGV ban to be introduced on Pelham Road through Immingham. This option offers a connection that avoids the archaeological heritage site, minimises the impact on Stallingborough village and overall has a low visual impact on the relatively flat landscape. The scheme relies on the continued use of the level crossing of the Sheffield to Grimsby railway line which is currently provided with a 'half-barrier' system. The option requires culverting and minor diversion of an existing watercourse adjacent to the A180 Stallingborough Interchange.

Scheme Cost

The estimated cost of the scheme is £7.75 million (outturn price) including a Quantified Risk Allowance of £2.02 million which was derived from the quantified risk analysis. An estimated total 60-year maintenance cost of £1.278million was also included (2002 prices).

Economic Appraisal

The Net Present Value (NPV) of the scheme, taking a 60-year project life which is consistent with latest guidance and a real discount rate of 3.5% over the first 30 years and 3% thereafter, is expected to be £67.313 million. This gives a benefit-cost ratio of 9.722 for the preferred scheme.

Required Level of DfT support

The total outturn cost of the scheme following Programme Entry is £7.75million. Accounting for guidance from the DfT on the funding of preparatory costs between Programme Entry and Full Approval, the level of support requested from the DfT is £6.98million, with the details for each financial year being presented below.

	Prep Costs between Programme Entry and Full Approval	Costs after Full Approval		Total £
		2010-11 £	2011-12 £	
Total Scheme Cost	**733,838**	**1,310,584**	**5,708,857**	**7,753,279**
Local Contribution	366,919	0	480,409	775,328
DfT Funding Bid	**366,919**	**1,310,584**	**5,228,448**	**6,977,951**

Scheme Website

Details of the scheme and a copy of this document can be found at the following website:

http://www.nelincs.gov.uk/transportstreets/A18+A180+Link+Road.htm

Major Scheme Business Case Checklist

Scheme Description

Item	Section/Page
A detailed physical description of the scheme, and the other appraised option(s), including maps, scale diagrams and a written commentary.	Section 52.1-2.3 Annex B

Strategic Case

Item	Section/Page
The objectives of the scheme	Section 3.9
A description of the process by which the scheme came to be identified as the preferred option for meeting those objectives	Sections 3.10-3.26
How the objectives of the scheme align with wider local objectives, particularly those of the relevant Local Transport Plan.	Sections 3.27-3.32
How the objectives of the scheme align with sub-regional and regional objectives, (except for schemes of predominantly local significance)	Sections 3.33-3.52
Written endorsement from regional bodies	Annex N

Value For Money

Cost Benefit Analysis

Item	Section/Page
A clear explanation of the underlying assumptions used in the Cost Benefit Analysis.	Sections 4.71-4.77
Information on local factors used. For example the derivation of growth factors, M factors in COBA and annualisation factors in TUBA (to include full details of any calculations).	Sections 4.64 and 4.72
A diagram of the network (if COBA used).	Annex G
Information on the number of junctions modelled (if COBA used), for both the do-minimum and the do-something.	Section 4.63
Details of assumptions about operating costs and commercial viability (e.g. public transport, park and ride, etc.).	Section 4.75
Full appraisal inputs/outputs (when used, COBA and/or TUBA input and output files should be supplied).	Annex G Annex L
Details of the maintenance delay costs/savings.	Not included
Details of the delays during construction.	Not included

NATA Assessment

Item		Section/Page
Evidence of consultation with key stakeholders (including any NGOs consulted and responses).		Sections 4.106-4.117 Annex N
Assessment of Environmental impacts, to include an environmental constraints map.		Sections 4.1- 4.59 Figure 4-2
Assessment of Safety impacts and the assumed accident rates presented (COBA output should be provided if an accident only COBA has been run).		Sections 4.61-4.67
Assessment of Economic impacts.		Sections 4.68-4.91
Assessment of Accessibility impacts.		Sections 4.92-4.95
Assessment of Integration impacts.		Sections 4.96-4.99
A comprehensive Appraisal Summary Table.		Table 4-15
The following supporting analyses:		
	Distribution and Equity.	Section 4.100
	Affordability and Financial Sustainability.	Section 4.101
	Practicality and Public Acceptability (Evidence of public consultation supplied).	Sections 4.102-4.119
	Contribution to 10 year plan targets.	Table 4-14
NATA worksheets.		Annex M

Modelling

Item		Section/Page
An Existing Data and Traffic Surveys Report to include:		
	Details of the sources, locations (illustrated on a map), methods of collection, dates, days of week, durations, sample factors, estimation of accuracy, etc.	Annex I Section 3
	Details of any specialist surveys (e.g. stated preference).	N/A
	Traffic and passenger flows; including daily, hourly and seasonal profiles, including details by vehicle class where appropriate.	Annex H
	Journey times by mode, including variability if appropriate.	Annex I Appendix B
	Details of the pattern and scale of traffic delays and queues.	Annex I Appendix B
	Desire line diagrams for important parts of the network.	Annex H pg7
	Diagrams of existing traffic flows, both in the immediate corridor and other relevant corridors.	Annex I
An Assignment Model Validation Report to include:		
	Description of the road traffic and public transport passenger assignment model development, including model network and zone plans, details of treatment of congestion on the road system and crowding on the public transport system.	Annex I Sections 4 and 5
	Description of the data used in model building and validation with a clear distinction made for any independent validation data.	Annex I Section 3
	Evidence of the validity of the networks employed, including range checks, link length checks, and route choice evidence.	Annex I Section 5.5

	Details of the segmentation used, including the rationale for that chosen.	Annex I Section 6.1
	Validation of the trip matrices, including estimation of measurement and sample errors.	Annex I Section 7.9-7.11
	Details of any 'matrix estimation' techniques used and evidence of the effect of the estimation process on the scale and pattern of the base travel matrices.	Annex I Section 6.10-6.11, Response to DfT Queries and Sector Analysis spreadsheet
	Validation of the trip assignment, including comparisons of flows (on links and across screenlines/cordons) and, for road traffic models, turning movements at key junctions.	Annex I Section 8
	Journey time validation, including, for road traffic models, checks on queue pattern and magnitudes of delays/queues.	Annex I Section 8
	Detail of the assignment convergence.	Annex I Section 7.12-7.13
	Present year validation if the model is more than 5 years old.	Annex I Section 8
	A diagram of modelled traffic flows, both in the immediate corridor and other relevant corridors.	Annex I
A Demand Model Report to include:		
	Where no Variable Demand Model has been developed evidence should be provided to support this decision (e.g. follow guidance in WebTAG Unit 3.10.1 Variable Demand Modelling - Preliminary Assessment Procedures).	Section 4.78
	Description of the demand model.	N/A
	Description of the data used in the model building and validation.	N/A
	Details of the segmentation used, including the rationale for that chosen. This should include justification for any segments remaining fixed.	N/A
	Evidence of model calibration and validation and details of any sensitivity tests.	N/A
	Details of any imported model components and rationale for their use.	N/A
	Validation of the supply model sensitivity in cases where the detailed assignment models do not iterate directly with the demand model.	N/A
	Details of the realism testing, including outturn elasticities of demand with respect to fuel cost and public transport fares.	N/A
	Details of the demand/supply convergence.	N/A
A Forecasting Report to include:		
	Description of the methods used in forecasting future traffic demand.	Section 4.70
	Description of the future year demand assumptions (e.g. land use and economic growth - for the do minimum, core and variant scenarios).	Section 4.70
	Description of the future year transport supply assumptions (i.e. networks examined for the do minimum, core scenario and variant scenarios).	Section 4.70
	Description of the travel cost assumptions (e.g. fuel costs, PT fares, parking).	N/A

	Comparison of the local forecast results to national forecasts, at an overall and sectoral level.	Section 4.7
	Presentation of the forecast travel demand and conditions for the core scenario and variant scenarios including a diagram of forecast flows for the do-minimum and the scheme options for affected corridors.	Annex D Appendix C
	If the model includes very slow speeds or high junction delays evidence of their plausibility.	Section 4.84
	An explanation of any forecasts of flows above capacity, especially for the do-minimum, and an explanation of how these are accounted for in the modelling/appraisal.	Section 4.84
	Presentation of the sensitivity tests carried out (to include optimistic and pessimistic tests).	Section 4.80-4.87

Delivery

Item		Section/Page
Governance		
	Named Senior Responsible Owner (SRO)	Section 5.4
	Proposed Governance Structure	Figure 5.1
	Composition of Project Board	Table 5.1
	Details of resourcing level for the scheme	Section 5.7
Project Planning		
	Project Plan (e.g. in GANNT chart form)	Figure 5.2
	List of key milestones and dates	Section 5.18
	Clear critical path and dependencies	Figure 5.2
Risk Management		
	Risk Register with likelihood, probability and mitigation measures, including Quantified Risk Assessment.	Sections 5.25- 5.31 and 7.3 Appendix Q
	Description of proposed Risk Management process and escalation procedures.	Section 5.32-5.34
Stakeholder Management		
	Identification and analysis of key stakeholders and their interests.	Table 5.4
	Description of public consultation already carried out.	Sections 4.102-4.103
	Plans for future consultation and stakeholder management.	Sections 5.35-5.40 Annex P
	Evidence of consultation with Statutory Bodies (Natural England, English Heritage and Environment Agency) and their responses.	Sections 4.105-4.116 Annex N
Evaluation		
	Statement of core evaluation objectives	Section 5.41
Assurance (schemes with gross cost of £50m or more)		
	Confirmation of date Gateway Review carried out (or planned).	N/A

Commercial

Item	Section/Page
Preferred procurement route with rationale for choice	Sections 6.2-6.4
For ECI proposals, contract type and risk sharing arrangement	N/A
Details of proposed risk sharing approach (for other than traditional procurement)	Sections 6.5-6.7

Financial

Item	Section/Page
Detailed cost breakdown	Table 7.1 summary and Annex S, Appendix B
Evidence of how cost estimates have been derived	Annex S
Independent surveyor's report verifying cost estimates	Annex S
Details of and justification for inflation assumption used.	Sections 7.5-7.7
Costing for risk based on QRA	Section 7.3
Estimate of eligible preparatory costs	Table 7.3
Details of measures to secure necessary third party contributions, if applicable	N/A
Description and estimate of any ongoing revenue liability (other than routine maintenance) and proposals to meet it	N/A
Section 151 Officer sign-off for cost estimates	Annex T

1 Introduction

Background

1.1 This Major Scheme Business Case (MSBC) is submitted by North East Lincolnshire Council in support of the A18 – A180 Link Road. A link between the A180 and the B1210 has long been planned. Earthworks to receive the road were incorporated in the construction of the A180 Stallingborough Interchange. The scheme has considerable local and political support and was included in the longer term programme of major schemes within the 2006 Second Local Transport Plan. Subsequently the scheme was submitted to the Regional Transport Board (RTB) to be considered for inclusion into the region's priorities for the 10 year Regional Funding Allocation (RFA) programme. On the 15th June 2007 the scheme was included within these priorities.

1.2 A Briefing Note was submitted to the Department for Transport (DfT) in October 2007 which set out the background to the scheme and a proposed methodology for developing the MSBC. Subsequently a meeting was held with the DfT on 29th October 2007 to discuss the scheme and the proposed methodology. The notes from this meeting, which have been agreed with the DfT, are included as **Annex A**.

1.3 The DfT requested further clarification on the proposed methodology for updating the North East Lincolnshire SATURN model. A Modelling Scoping report was submitted to the DfT in December 2007. A subsequent meeting was held with the DfT and it was agreed that this methodology would be acceptable depending upon where the main benefits were occurring, see minutes of meeting in **Annex A**.

1.4 On 10th June a site visit of the A18-A180 Link was held with DfT, GOYH and NELC in attendance. Following the site visit, a short informal meeting was held to discuss progress on the MSBC. The discussions confirmed the option of combining the conditional and full approval stages, and the governance arrangements that were expected to support a successful MSBC and major scheme. NELC outlined the governance arrangements that were in place and, as an outcome of the discussions, appointed a dedicated resource to the MSBC in the form of an Interim Project Manager.

Scope of the Report

1.5 This report is set out in accordance with the required structure of the MSBC as identified in latest Major Scheme Guidance[1] published by the DfT in 2007. Therefore the following sections set out the five cases as follows:

- Section 2 – Scheme Description;
- Section 3 – The Value for Money Case;
- Section 4 – The Delivery Case;
- Section 5 – The Commercial Case; and
- Section 6 – The Financial Case.

[1] Guidance for Local Authorities seeking Government funding for major transport schemes: Main document, DfT, 2007

2 Scheme Description

Preferred Scheme

2.1 This is a relatively simple scheme and provides a connection between the B1210 just to the north of the Sheffield to Grimsby railway line and the A180 Stallingborough Interchange. This option offers a connection that avoids the archaeological heritage site, minimises the impact on Stallingborough village and has overall a low visual impact on the relatively flat landscape. The scheme relies on the continued use of the level crossing of the Sheffield to Grimsby railway line which is currently provided with a 'half-barrier' system. Network Rail are going to upgrade this level crossing to a 'full barrier' system. The option requires culverting and minor diversion of an existing watercourse adjacent to the A180 Stallingborough Interchange.

2.2 An initial traffic impact assessment identified that the completion of this scheme would significantly decrease traffic levels on Pelham Road in Immingham and on Station Road in Stallingborough but slightly increase existing traffic flows on the A1173, both to the north and south of the A180. The layout of the preferred scheme is shown in **Annex B**.

2.3 The scheme also includes the introduction of a HGV ban through Immingham plus minor complementary improvement works to Pelham Road through Immingham as well as the B1210 and A1173.

Low Cost Alternative

2.4 There are two principal objectives of the scheme, one to improve access to the port, the second to remove HGV traffic from residential areas in Immingham.

2.5 The preferred link road scheme presents the lowest cost of the feasible highway options. Therefore, the only alternative low cost scheme would be a series of HGV bans through the residential areas of Immingham and Stallingborough, and other settlements on the routes which diverted traffic would otherwise take. This results in very long diversion routes. Whilst this low cost alternative satisfies the second objective, it is directly counter to the first with significant disbenefits to HGVs. It was therefore, agreed with the DfT at the meeting on 29th October 2007 (minutes included as **Annex A**), that there was no realistic low cost alternative to be appraised.

Public Transport Alternative

2.6 Guidance places great importance on consideration of non-road building options, but recognises there are not always practical alternatives. As the key objective of this scheme is to improve access to the ports for port related traffic, there are no public transport alternatives to the preferred scheme. It was therefore, agreed with the DfT at the meeting on 29th October 2007 (minutes included as **Annex A**), that there was no realistic public transport alternative to be appraised.

3 The Strategic Case

Problems

3.1 The Port of Immingham is the largest port operation in the UK and is one of Britain's fastest growing ports. Access to the port from the A18 to the south is poor with no direct link between the A18 and A180 as shown in **Figure 3-1.** This results in dock bound traffic from the south using Pelham Road, a residential road in Immingham, causing safety and environmental nuisance to the local residents, as shown in **Figure 3-2.**

Figure 3-1 A18-A180 Link Road Location

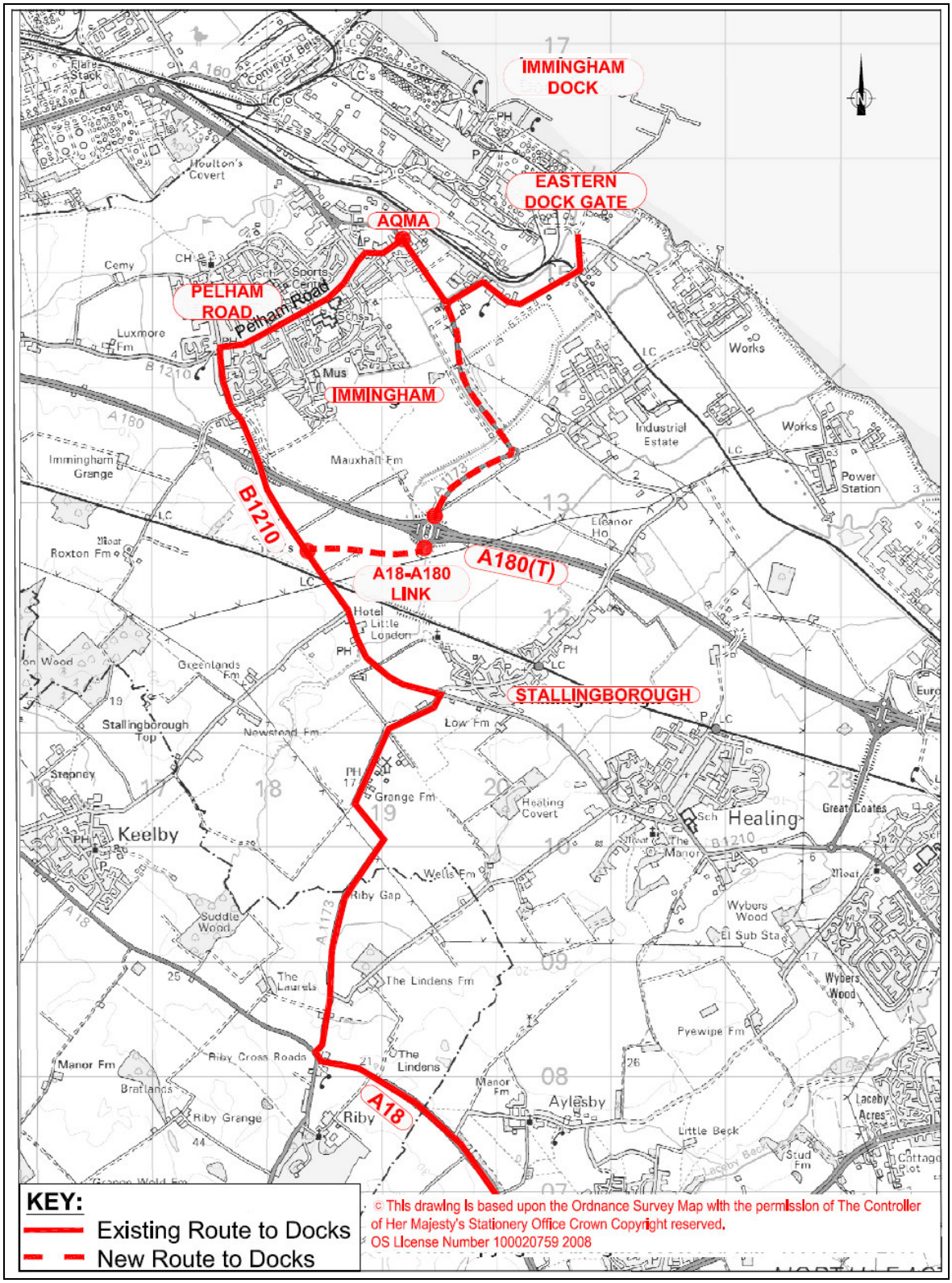
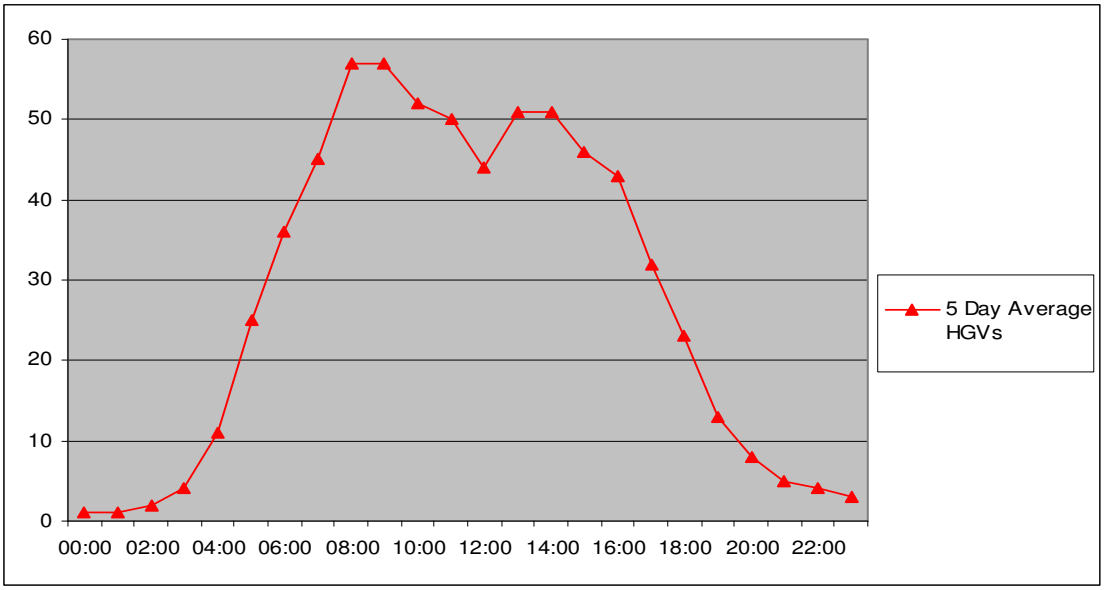


Figure 3-2 Pelham Road, Immingham

3.2 **Figure 3-3** shows that around 50 to 60 Heavy Goods Vehicles (HGVs) per hour use Pelham Road throughout the day which equates to around one HGV per minute on a residential road.

Figure 3-3 HGV Flows on Pelham Road



3.3 Since 1981, there have been 209 accidents on Pelham Road, 3 of which were fatal and 59 of which were serious. These have resulted in a total of 326 casualties. There were 3 fatalities, 64 serious casualties and 259 slight casualties.

3.4 There are high levels of pedestrian movements across this road at several locations and these have increased due to the opening of the new health centre. This results in a large number of pedestrian casualties, 21 serious and 50 slight casualties since 1981. The Immingham Academy, a new school currently in development on Pelham Road, will cater for over 700 pupils. Despite the addition of pedestrian facilities at several locations there remain high numbers of pedestrian accidents each year. A reduction in overall traffic and particularly HGV traffic will inevitably bring about a reduction in accidents and allow for installation of traffic calming at necessary locations.

3.5 Also the poor access to the docks from the south is acting as a barrier limiting the economic growth of the docks and the surrounding industrial area. Access to the port has been consistently highlighted by businesses using the port and local people as one of the most important transport issues to address. Over the last few years, the Freight Quality Partnership and local people have consistently identified port access as an issue.

3.6 From the point of view of businesses and the HGV operators trying to access the port facilities, the inadequacy of road links to the port has been highlighted. Also weight restrictions on the route through the rural village of Stallingborough make port access for those arriving from or leaving towards the south more difficult. These restrictions force alternative routes to be used that have similar adverse affects on other communities, particularly Immingham.

3.7 Port access traffic has significant impact on the residents of Immingham and typical views have been identified in letters to MPs and the council, and include:

> *"the current practice for HGV traffic ….. is to plough through the town centre in order to access a minor road cross country route. This action is caused by the fact that the junction from the A180 which should form a direct route to the docks has never been built. This is a short stretch of road, less than a mile in length. As a resident of the main road through Immingham these current practices not only offer a substantial health and safety risk and substantial noise nuisance, they also damage our main road surface and our properties themselves"*

(Immingham resident to Deputy Prime Minister, 2004)

> *"complete the missing part of A1173 from Stallingborough interchange on the A180 across to the Stallingborough roundabout on [the B1210]. This would relieve the trouble caused in several villages and Immingham"*

(Immingham resident)

> *"a road needs to be constructed between Stallingborough roundabout to Immingham Dock (East Gate), so relieving congestion and heavy traffic through Immingham"*

(Immingham resident)

3.8 The creation of a new link between the B1210 and the A180 will remove traffic from Immingham Town Centre and is designed to address these problems.

Scheme Objectives

3.9 There are a number of transport and non transport objectives for the scheme, which are set out below.

Transport Objectives

- The provision of good access from rural Lincolnshire to the docks and other industrial areas in Immingham and vice versa;
- Improved journey times for commercial traffic;

Environmental Objectives

- The removal of heavy goods vehicles from Pelham Road in Immingham resulting in significant environmental benefits and a reduction in severance;
- The reduction of traffic (cars and Light Goods Vehicles [LGV]) in Stallingborough resulting in environmental benefits and a reduction in severance.

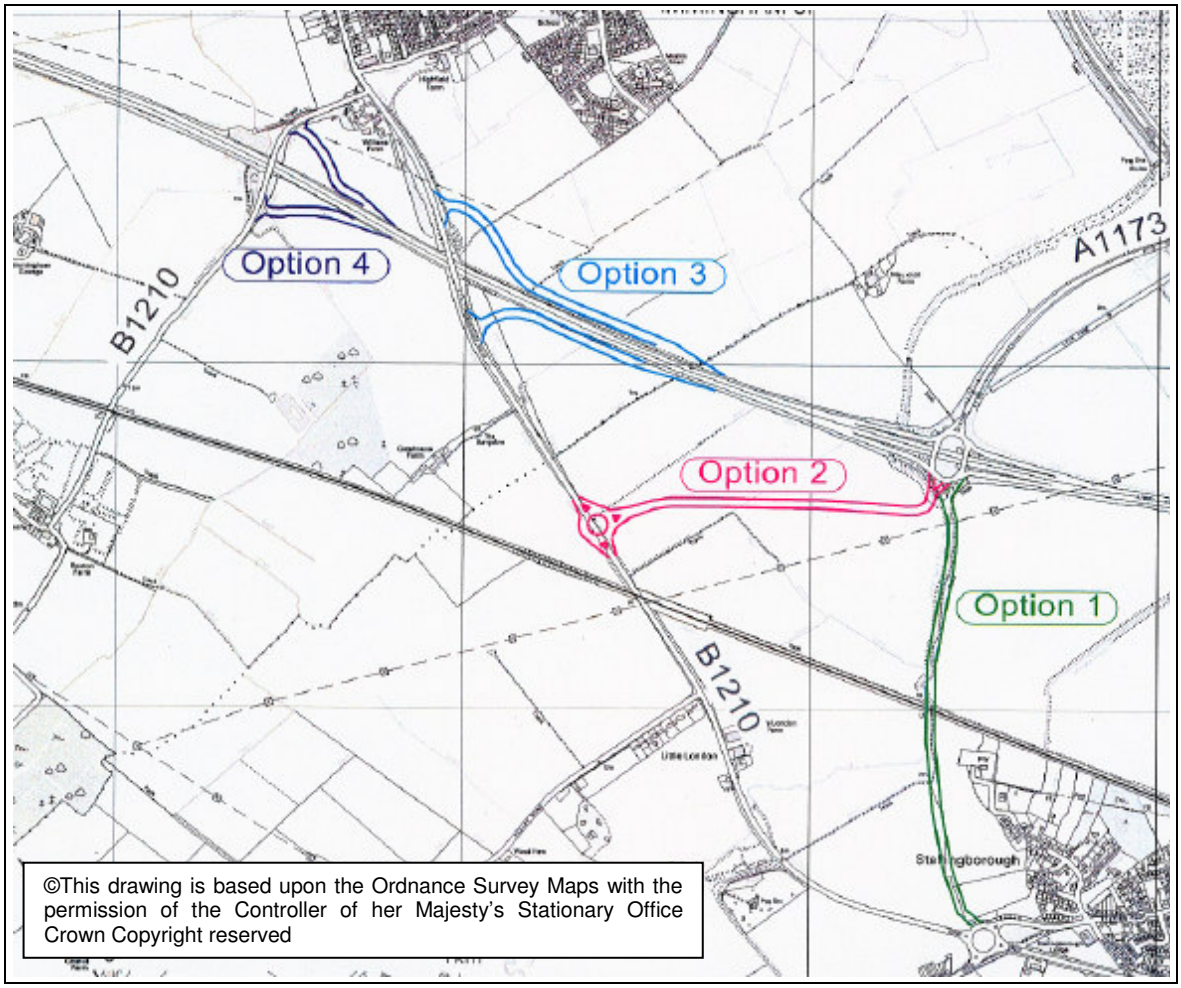
Alternatives Considered

3.10 As a result of initial investigation four options were developed to a sufficient level of detail to allow public consultation to take place. In brief the four options considered were:

- Option 1 - A single carriageway link from the A1173 at the Stallingborough Interchange on the A180 to the A1173/B1210 roundabout – estimated cost £11.1m;
- Option 2 - A single carriageway link from the B1210 just to the north of the Little London level crossing to the Stallingborough Interchange on the A180 – estimated cost £5.8m;
- Option 3 - The creation of slip roads from the B1210 overbridge onto the A180 and the construction of parallel lanes (making this section of the A180 a 3 lane dual carriageway) – estimated cost £6.1m;
- Option 4 - The creation of a new split level junction with the A180 to the west of the B1210 – estimated cost £9.7m.

3.11 The locations of these options are shown in **Figure 3-4.**

Figure 3-4 Link Road Alternatives



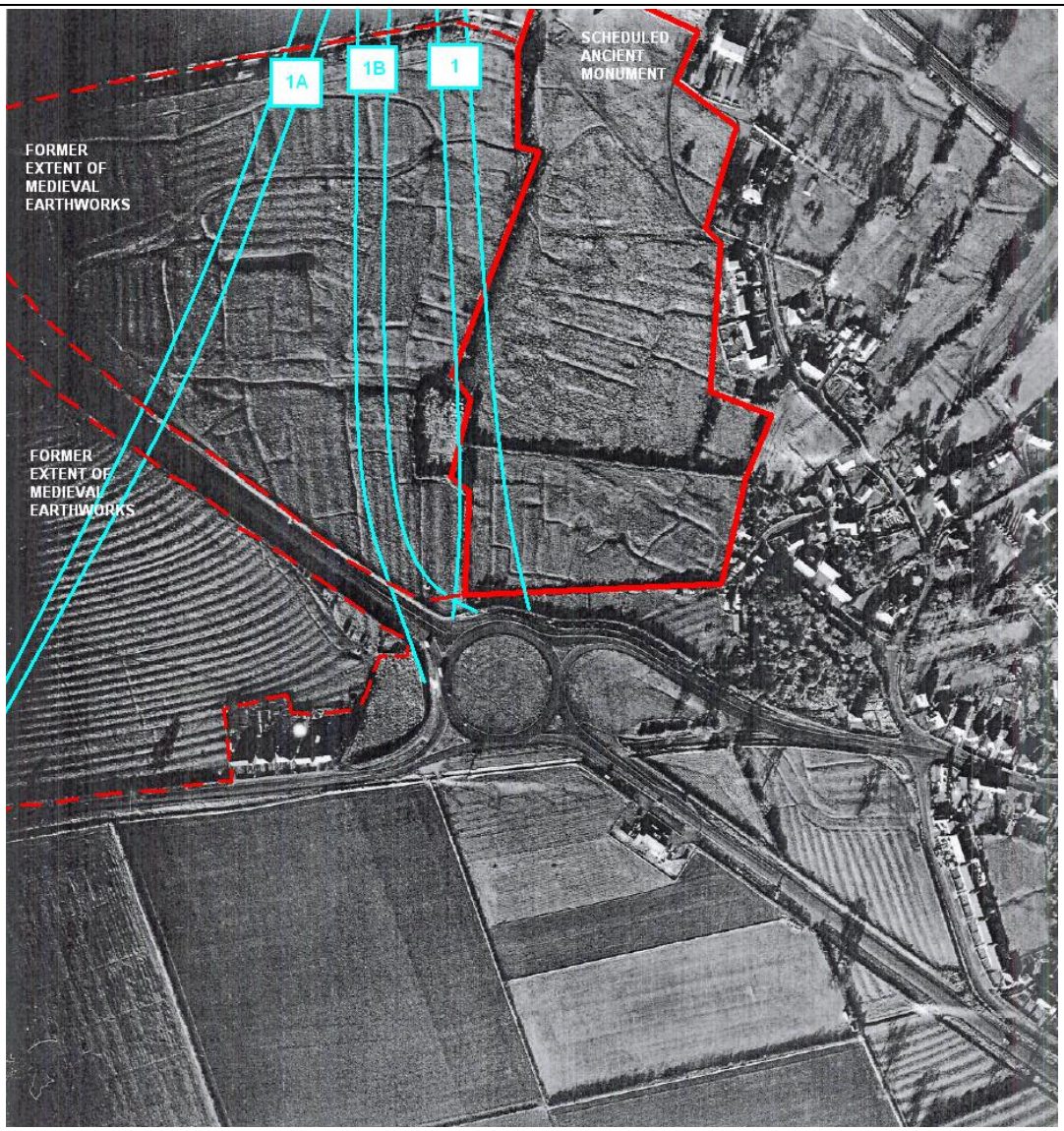
3.12 Public consultation events were held in January 2007. All of the land owners which could potentially be affected by the scheme were invited along to the events. The Public Consultation Report concluded that there was no clear publicly preferred option, with roughly equal numbers of the public indicating preferences for Options 1, 2 or 3. Only a small number of respondents indicated a preference for Option 4. Most of the support for Options 2 and 3 came from Stallingborough residents. Evidence from public meetings suggests that this should be taken as demonstrating strong opposition to Option 1 which is nearest the village.

3.13 It is to be noted that the Highways Agency have made representation over the potential adoption of Option 3 since this scheme would have a direct impact on the operation of the Trunk Road network. They have indicated that adoption of this proposal is not preferred.

3.14 Network Rail has indicated that they would not object to Option 2 provided that it allowed adequate lane length on the approach from the level crossing to the junction on the B1210.

3.15 English Heritage has indicated that should Option 1 proceed they would object because of the existence of a Scheduled Ancient Monument covering a large part of the area through which the route would pass. The extent of The Scheduled Ancient Monument and the alignment of option 1 are shown in **Figure 3-5.**

Figure 3-5 Impact on Scheduled Ancient Monument



3.16 Following a study of the Public Consultation responses a number of mitigating measures were considered in order to alleviate the issues that the public identified as being of importance. As a result of these comments further options were developed in outline and these are as follows:

Option 1a

3.17 Realign the proposed Option 1 at its southern end to continue over the B1210, Little London Road, introducing a staggered crossroads and tie the carriageway into the A1173 south of the existing roundabout at the location of the existing lay-bys. This would allow the carriageway to be moved clear of the heritage site as shown in **Figures 3-5 and 3-6**. The road is also moved slightly further from Stallingborough which would allow additional noise control measures to be introduced including additional banking to the village side of the carriageway. Landscaping to the embankments, which would help disguise the carriageway would also have the effect of hiding the industrial areas of Immingham from the view of the village creating an increased sense of a rural setting.

3.18 This option would incur additional works expenditure over the original Option 1. It is anticipated that this would be at an additional cost of approximately £3,000,000 to the proposed scheme cost. However the benefits for the project would also be likely to increase given that the carriageway is improved over a greater distance, and the Stallingborough roundabout would no longer need to be negotiated.

Figure 3-6 Options 1a and 1b

Opus

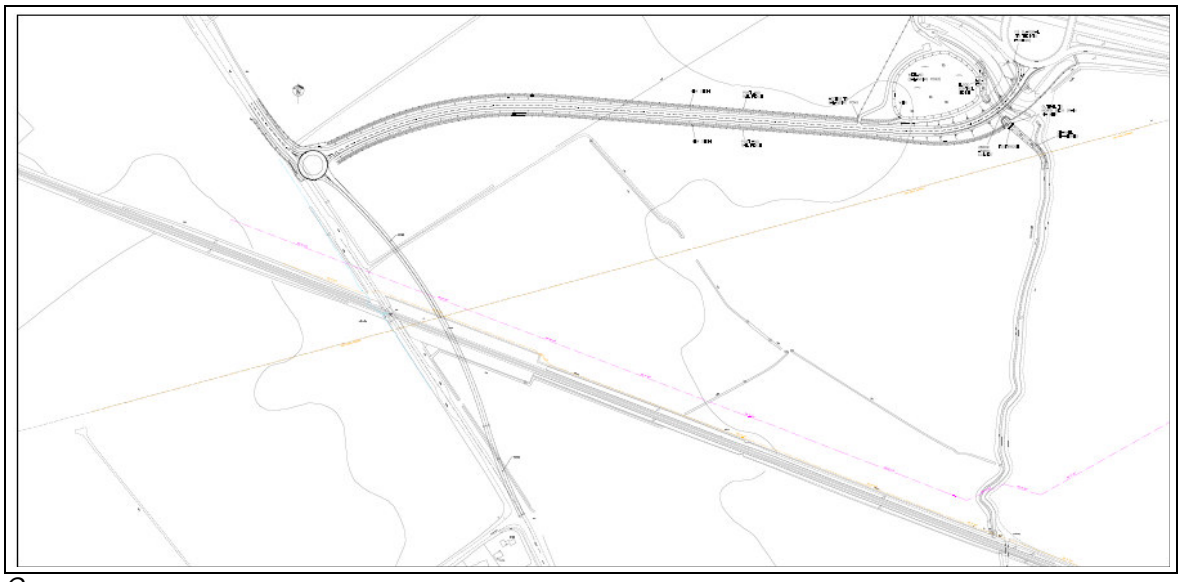
Option 1b

3.19 Realign the proposed Option 1 alignment to tie into the B1210, Little London Road, to the west of the existing roundabout, as shown in **Figure 3-6**. The B1210, Little London Road, would be realigned to join the new A1173 (Option 1) approximately 100m north of the Stallingborough roundabout. This Option would allow the bridge to be squared up slightly to the rail lines resulting in a slight cost saving. It would also allow the carriageway to be moved slightly further from the village of Stallingborough and moved clear of the site of the Medieval village. This additional clearance would allow more space in which to construct any required sound barriers and increased planting to help disguise the embankments would be possible. This would not only serve to obscure the view of the Link Road from the residents of Stallingborough, but also screen the residents further from the industrial areas of Immingham. This Option would be likely to incur an additional cost of approximately £1,000,000 over the original proposed Option 1.

Option 2a

3.20 This variation to Option 2 would have the level crossing on the B1210, Little London Road, being bridged by realigning the B1210 carriageway to the north of the existing crossing and tying in to the proposed Option 2 alignment, as shown in **Figure 3-7**. This would allow the removal of the level crossing. To be able to tie into the B1210 to the south east of the railway before Little London would require extensive embankments. It should also be noted that the new bridge would be considerably more expensive than the one proposed in Option 1. The span would be longer with the deck being vertically and horizontally curved and also in super-elevation. Due to the alignment of the new road and the overhead cables the completed bridge deck would not attain an acceptable clearance to the existing overhead power lines that cross at this point. A minimum clearance of 8.1m between the carriageway surface and the overhead lines has been indicated as the requirement by National Grid. With the bridge deck likely to be at a level of 16.5m and a minimum sag level of the power cables of 23.7m and between the next two pylons in the run, clearance has been calculated as being 7.2m available for the road to go under the 400,000 volt overhead cables. This would not be acceptable and would require the cables to be raised by increasing the height of the adjacent electricity pylons.

Figure 3-7 Option 2a



Opus

3.21 Including raising the power cables, increasing the height of the associated pylons and the construction of a new bridge, this scheme would cost of the order of approximately £6-6.5 million in addition to the current projected costs of Option 2.

3.22 The benefits and disbenefits of each of the schemes were identified. These are presented in **Table 3-1** along with preliminary Benefit Cost ratios for the 4 core options.

3.23 Option 1 has been rejected because of the impact on the heritage site and the impact on the residents of Stallingborough.

3.24 Option 3 has been rejected as the Highways Agency would oppose any new access onto the trunk road network. Option 4 has been rejected on the same grounds as Option 3.

3.25 Option 2a is rejected as it is more than twice the cost of Option 2 with no added benefit. Options 1a and 1b have also been rejected because of the significant additional cost, the risks associated with crossing the gas main and the impact on the setting of the Scheduled Ancient Monument.

Table 3-1 Summary of Option Appraisal

Option	Description	Benefits	Disbenefits	Risk/ Opportunity	Estimated Cost (un-discounted)	Benefit to Cost Ratio (BCR)
1	A single carriageway link road from the Stallingborough Interchange on the A180 to the roundabout junction of the A1173 with the B1210 and Station Road just to the south west of Stallingborough.	1. Provides the shortest connecting link. 2. Significantly reduces traffic flows on Station Road in Stallingborough. 3. Reduces traffic flows on Pelham Road in Immingham.	1. Has a potential noise impact on the residents of Stallingborough. 2. Crosses a Scheduled Ancient Monument. 3. Has a visual impact for residents on the western side of Stallingborough. 4. Increases traffic flows on the B1210 Healing Road between Stallingborough and the A1136.	Risks associated with the Scheduled Ancient Monument and the impact on Stallingborough village.	£11.1 million	>2
1a	As option 1 but extending to join the A1173 some 300 metres to the south of the B1210 roundabout.	1. Significantly reduces traffic flows on Station Road in Stallingborough. 2. Reduces traffic flows on Pelham Road in Immingham.	1. Has a potential noise impact on the residents of Stallingborough. 2. Has a visual impact for residents on the western side of Stallingborough. 3. Increases traffic flows on the B1210 Healing Road between Stallingborough and the A1136. 4. Impact on the setting of a Scheduled Ancient Monument. 5. Increased cost.	Risks associated with the setting of the Ancient Scheduled Monument and the impact on Stallingborough Village.	£14.1 million	Not available
1b	As Option 1 but avoids the Heritage site by tying into the existing B1210 just to the west of the Stallingborough Roundabout. The B1210 would join the new link at a T-junction just to the north of the Stallingborough roundabout.	1. Significantly reduces traffic flows on Station Road in Stallingborough. 2. Reduces traffic flows on Pelham Road in Immingham.	1. Has a potential noise impact on the residents of Stallingborough. 2. Has a visual impact for residents on the western side of Stallingborough. 3. Increases traffic flows on the B1210 Healing Road between Stallingborough and the A1136. 4. Impact on the setting of a Scheduled Ancient Monument. 5. Increased cost.	Risks associated with the setting of the Ancient Scheduled Monument and the impact on Stallingborough Village.	£12.1 million	Not available

Option	Description	Benefits	Disbenefits	Risk/ Opportunity	Estimated Cost (un-discounted)	Benefit to Cost Ratio (BCR)
2	A single carriageway link from the A180 Stallingborough Interchange to join the B1210 to the north west of the Little London railway level crossing at a new roundabout.	1. Significantly reduces traffic flows on Pelham Road in Immingham. 2. Reduces traffic flows on the B1210 Healing Road between Stallingborough and the A1136. 3. Provides shorter more direct access to port. 4. Most simple and deliverable Option	1. Longer route than options 1, 1a and 1b		£5.8 million	>2
2a	As Option 2 but with the B1210 diverted to cross the railway on an overbridge	1. Significantly reduces traffic flows on Pelham Road in Immingham. 2. Reduces traffic flows on the B1210 Healing Road between Stallingborough and the A1136. 3. Removes the 'conflict' between road and rail users.	1. Has significantly increased costs. 2. Has a visual impact for residents on the B1210, Stallingborough Road at Little London. 3. Requires modifications to the overhead power cables.		£12.3 million	Not available
3	Construction of a partial interchange at the point where the B1210 crosses the A180 in conjunction with construction of parallel widening of the a180 to provide a 3 lane section of dual carriageway.	1. Significantly reduces traffic flows on Pelham Road in Immingham. 2. Reduces traffic flows on the B1210 Healing Road between Stallingborough and the A1136.	1. Potentially requires upgrading of the existing Level crossing. 2. Requires extensive work on the trunk Road network. 3. Much longer route	Risks associated with the need to work on the Trunk Road network.	£6.1 million	>2
4	Construction of a partial interchange at the point where the minor road to the west of the B1210 crosses the A180. This would also involve reconstruction of the existing bridge together with the section of the minor road leading to the B1210.	1. Significantly reduces traffic flows on Pelham Road in Immingham. 2. Reduces traffic flows on the B1210 Healing Road between Stallingborough and the A1136.	1. Potentially requires upgrading of the existing level crossing. 2. Requires works on the Trunk Road network. 3. Requires reconstruction of the existing minor road and sub standard overbridge at its western end. 4. Would result in increased noise and intrusion at properties on the southern edge of Immingham. 5. Much longer route	Risks associated with the need to work on the Trunk Road network and with the impact on residents on the southern edge of Immingham.	£9.7 million	Not available

Fit with Wider Local Objectives

Community Strategy

3.26 The Local Strategic Partnership's Community Strategy is focused on regeneration and urban renaissance. It includes a vision for the year 2022:

> *By improving the physical appearance of the area, and the quality of life for its residents, make North East Lincolnshire a place in which we are proud to live, work and welcome visitors.*

3.27 In order to successfully deliver the ambitious urban renaissance agenda and local transport improvements the Council is entering into a strategic partnership for the delivery of highways and engineering works. Set out below are some of the Strategy's aspirations which the A18-A180 Link Road will help to deliver:

- **Competitive And Vibrant Economy**: Expand existing businesses; new businesses; entrepreneurship by improving links to Immingham Docks;
- **Thriving Town Centres – Immingham**: The removal of HGVs on Pelham Road will provide opportunity to improve the town centre pedestrian environment;
- **Safe and Clean Environment**: The removal of HGVs on Pelham Road will improve the air quality and will produce a safer environment.

The Council's Corporate Plan – "Progressing with Pride"

3.28 The Council's vision reflects that of the Community Strategy. Articulated within the Corporate Plan "Progressing with Pride", it is:

> *North East Lincolnshire Council will be recognised for delivering good and improving services. These services will support economic, environmental and the social wellbeing of local communities and visitors, generating local pride and confidence in the area.*

3.29 The A18-A180 Link Road will contribute towards two of the five key service priorities which underpin the Council's vision. These include:

- Priority 1: Neighbourhood Improvement – to have neighbourhoods that are safe, clean and green;
- Priority 2: Regeneration – to have a competitive and vibrant economy.

Local Transport Plan 2

3.30 The A18-A180 Link is specifically referred to in North East Lincolnshire's LTP2.

3.31 In March 2004 workshops involving Council Members agreed to adopt, subject to consultation, the following transport objectives:

- Reduce Congestion;
- Improve Safety;
- Encourage Regeneration;
- Reduce Crime and Fear of Crime;
- Improve Accessibility;

- Improve the Environment;
- Support and Improve the Local Economy.

3.32 The A18-A180 Link Road will support and improve the local economy by improving the transport links to the docks from the A18. It will also improve the environment by improving the air quality in Immingham which has an AQMA by removing HGVs through Immingham. Finally, it will improve safety by removing HGVs in an area of high pedestrian activity. The scheme was therefore included in the longer term programme of major schemes within the second Local Transport Plan.

Fit with Sub-Regional and Regional Objectives

The Hull and Humber Ports City Region

3.33 The City Region Transport Board recently endorsed the A18-A180 Link as an "Urgent Scheme of a 'High' priority".

3.34 The development programme for the city region identifies a number of key clusters and sectors for development in the City Region and the focus of public sector funding, namely: Logistics and Ports; Renewables (Energy/Environmental) and Chemicals; and Healthcare and Bioscience. All these clusters are represented in and around the Port of Immingham and by improving access to this key Humber port and industrial area, the new link will capitalise on the growth potential of these business sectors.

The Northern Way

3.35 "Moving Forward: The Northern Way", which was launched in September 2004 is a strategy for the North of England that represents a direct recognition from central government that unlocking the potential of the North is critical to the ongoing growth of the UK economy. There are 10 investment priorities outlined in the Moving Forward document:

- C1: Bringing more people into employment;
- C2: Strengthen the North's knowledge base: Drive innovation;
- C3: Build a more entrepreneurial North;
- C4: Capture a larger share of Global trade: Key clusters;
- C5: Meet employer skills needs;
- C6: Prepare a Northern Airports priorities plan and improve surface access to key Northern Airports;
- C7: Improve access to the North's seaports;
- C8: Create premier transit systems in each City Region and stronger linkages between City Regions;
- C9: Truly sustainable communities;
- C10: Market the North to the world.

3.36 The A18-A180 Link Road contributes towards investment priority C7 by improving access to Immingham Dock. The port of Grimsby and Immingham is the largest port facility in the UK accounting for 66.3 million tonnes of freight in 2007, over 10% of the national total. In 2006, a year of major investment in facilities and infrastructure, the Port of Grimsby and Immingham opened the £59.5 million Humber International Terminal 2, as well as the £35 million Immingham Outer Harbour project. Volume increases in the port's key coal, dry bulks and ro-ro trades, which were

driven by ye commissioning of these new facilities, has underpinned recent growth and will be key in preparing the port for future growth. These expansion schemes will add significantly to the need for additional highway capacity, especially during peak hours. The A18-A180 Link is needed to accommodate the predicted traffic flows associated with the expansion of the Humber ports.

Regional Spatial Strategy (RSS)

3.37 The RSS sets out key spatial priorities for the region which include the priority to "optimise the opportunities provided by the Humber Ports as an international trade gateway for the region and the country". North East Lincolnshire is part of the Humber Estuary sub area. It is now widely acknowledged that the Humber Estuary sub region is a growing asset not only for the region but for the UK as a whole. Key issues from the RSS for North East Lincolnshire include "Ports and their associated activities could support significant regeneration and growth in the sub region."

3.38 In line with this regional policy, North East Lincolnshire's 2006 Second Local Transport Plan identified the need to improve access to the port and subsequently commenced work on the development of a major scheme bid for the A18-A180 Link

Regional Transport Strategy (RTS)

3.39 The RTS supports the wider RSS but also provides a strategic steer on transport investment and management in a more operational setting. The key elements of the RTS include:

- Promote movement of goods by water and rail whilst encouraging the key role road has to play in moving freight;
- Support expansion of ports and waterways and improve surface access to them;
- Support a range of transport and investment priorities that underpin the wider spatial strategy.

3.40 Furthermore the RTS identifies the specific need to increase road capacity and capability to the south Humber ports.

3.41 The RTS is particularly pertinent to North East Lincolnshire, not least because of its focus on the movement of freight and the expansion of ports. The plans for the A18-A180 Link seek to support the expansion of the Humber ports by improving access to the Port of Immingham.

3.42 Policy T7, which relates to ports and waterways, identifies that plans should support the implementation of schemes at the earliest opportunity to improve freight movements to and from the ports. The waterway of the North Sea, combined with the port facilities in the Humber, allows traffic to be diverted away from the congested south of England. The A18-A180 Link is one of a number of schemes which aim to improve access to the Humber ports. The South Humber Bank Transport Study considers the joint approach required to overcome the transport constraints around the Port of Immingham and the wider South Humber Bank. The A18-A180 Link and the A160 Improvements have both been considered within the above study and both schemes offer complimentary support of growth of the port and related industry. The A18-A180 Link will improve access from the south and east of Lincolnshire, alongside A160 Improvements, which will improve the main western access to the rest of the UK.

3.43 This policy also states that plans should protect land close to ports for logistics, transport and port related development. The scheme will achieve this policy outcome by ensuring that the land corridor, which is situated less than 3 miles from the port, will be safeguarded for the use of transport. Associated British Ports (ABP) and other port related industries have acknowledged that the new road link will be an important transport asset. The scheme will ensure that the expansion of infrastructure will support future economic growth in the port area.

3.44 The priorities for transport investment and management, set out in the RTS, are ranked in three tiers, the priorities of particular relevance to North East Lincolnshire are:

First Tier

- Increase road and rail capacity to the South Humber ports;

Second tier

- Further improve accessibility of regeneration priority areas including public transport links to ensure sustainable access to employment opportunities;
- Improve connectivity to and between the main centres on the South Humber Bank;
- Strategic approach to regional demand management strategy for main centres and strategic road links;

Third tier

- Improvements to strategic links to key market and coastal towns to improve accessibility;

3.45 The scheme addresses a first tier priority by addressing the critical issue of access to the Humber ports with measures to manage and accommodate freight movements.

Regional Economic Strategy (RES)

3.46 The Humber ports city region is highlighted in the RES as the freight gateway to Europe. The ports are not only the city region's biggest asset but they are also nationally significant representing critical assets in increasing UK prosperity through world trade. Economic activity in the Humber will focus upon better utilisation of the Humber ports' regional assets, with the development of the Humber Trade Zone being a key mechanism in this. At a local level priority will be given to tackling land and infrastructure issues that enable the trade zone to act as a focus for development activity. This is illustrated in North East Lincolnshire with the major scheme proposal for the A18-A180 link designed to facilitate congestion free journeys for port traffic in line with the expansion of the port.

3.47 "Transport, Infrastructure and Environment" covers how the economy links with housing and planning and how utilising environmental assets and reducing greenhouse gas emissions supports success. One of the key actions for this objective is to improve rail and road access to the Humber ports as this is considered an economic priority for the region. This can again be seen in the major scheme plans to shorten journey times through the creation of a new A18-A180 Link.

Regional Freight Strategy (RFS)

3.48 The RFS priorities have been developed to complement the infrastructure and transport policies of the RSS. Of particular relevance to North East Lincolnshire are the following policies:

- Lorry routing restrictions should be considered within the context of the regional lorry routing strategy and seek to fairly balance the interests of residents, commuters, the environment and efficient freight movements through a consistent, robust and standardised assessment process. This is particularly important in North East Lincolnshire, as Grimsby and Immingham have one of the highest concentrations of road freight operators in the region. Lorry routing will be improved to the benefit of both residents and hauliers by the construction of the A18-A180 Link;
- Promote the use of shipping and the future development of facilities in the region's ports to maintain the prominent position that the region enjoys of having Britain's busiest port;

- Support improved road and rail links to the region's ports and multi-modal terminals recognising the need for practical support for sustainable transport objectives;
- Local authorities should view freight as an integral part of their transport and economic responsibilities and ensure active co-operation between departments in order to more effectively manage freight transport.

3.49 Currently most of the port traffic follows the east west routes via North Lincolnshire, along the A180. However a proportion travels through Immingham town centre. North East Lincolnshire Council recognises the importance that freight traffic plays in supporting the regional and local economy. However there are problems associated with this traffic particularly passing through residential areas. The council works closely with freight operators and resident groups to overcome these concerns.

3.50 The RFS priorities are crucial to North East Lincolnshire. The plans for a Freight Quality Partnership, improved information for HGV drivers and detailed monitoring and study of HGV activity in the area form part of the Local Transport Plan. The need to minimise the impact of freight traffic on the local communities in North East Lincolnshire is also a vital issue in the quality of life element of the plan.

Regional Sustainable Development Framework

3.51 Sustainable development means finding a way to improve quality of life now and in the future by breaking the link between economic growth and environmental damage and social exclusion. It means developing the economy in a way that avoids pollution, protects and enhances natural habitats, uses resources efficiently and tackles social inequalities.

3.52 The framework has 15 aims, 5 of which the A18-180 link will contribute towards, including:

- Conditions enabling business success, economic growth and investment;
- Safety and security for people and property;
- A transport network maximising access whilst minimising detrimental impacts;
- Minimal pollution levels;
- Minimal greenhouse gas emissions and a managed response to the effects of climate change;

National Policy

Towards a Sustainable Transport System

3.53 This document has three aims. Firstly, it describes how the Government is responding to the recommendations made in the Eddington study to improve transport's contribution to economic growth and productivity, and how it is ensuring that transport will play its part in delivering the overall level of reductions in carbon emissions recommended by the Stern Review of the Economics of Climate Change. Secondly, it sets out the Department for Transport's ambitious policy and investment plans for the period to 2013-14. And finally, it proposes a new approach to longer term transport strategy, building on the model recommended by Sir Rod Eddington, and explains how DfT will engage with passengers, users, the transport industry and other stakeholders as we develop and implement that process.

3.54 The Government's agenda can be summarised in five broad goals:

- Goal 1 is to maximise the competitiveness and productivity of the economy;

- Goal 2 is to address climate change, by cutting emissions of carbon dioxide (CO_2) and other greenhouse gases;
- Goal 3 is to protect people's safety, security and health;
- Goal 4 is to improve quality of life, including through a healthy natural environment;
- Goal 5 is to promote greater equality of opportunity.

3.55 The A18-A180 Link will address a number of these goals by improving the competitiveness of the Immingham Docks by improving access from the A18 (Goal 1). It will improve the quality of life (Goals 3 and4) for people in Immingham by reducing traffic flows and removing HGVs, particularly in the Air Quality Management Area (AQMA), and remove vehicles from a residential route where a significant number of traffic accidents occur.

4 The Value for Money Case

Environmental Impact

Noise

4.1 In accordance with the WebTAG guidance, an assessment has been undertaken to quantify the noise impact of the proposed new Link Road for the opening year (2012) with and without scheme, and for fifteen years post opening (2027) both with and without scheme. A copy of the Noise Assessment Report is included as **Annex C.**

4.2 The A18-A180 Link Road to the south of Immingham will introduce a new noise source to the area. It is considered likely that, as a result of the new Link Road, noise levels at a number of sensitive receptors will increase. However, it is also considered likely that, as a result of the new Link Road, noise levels at a number of other sensitive receptors will decrease.

4.3 The estimated population 15 years after the identified opening year for the scheme that will be annoyed by transport noise without the scheme is 596 people. The estimated population at this time that will be annoyed by transport noise with the scheme is 564 people. This represents a decrease in people annoyed by noise.

4.4 The likely net Present Value of Benefits for transport related noise of the scheme proposal is expected to be in excess of £1.1m. The positive value reflects a net benefit, that is to say a noise reduction.

Local Air Quality

4.5 In accordance with the WebTAG guidance, an assessment has been undertaken to quantify the local air quality impact of the proposed new Link Road for the do something (DS) and do minimum (DM) scenario for the year of opening 2012 and the future forecast year, 2027, as well as the existing baseline conditions. A copy of the Local Air Quality and Greenhouse Gas Assessment Report is included as **Annex D.**

4.6 The WebTAG assessment has been limited to transport-related pollutants nitrogen dioxide (NO_2) and particles (PM_{10}) as these are noted to be of greatest concern throughout the UK and any issues would be likely to be exacerbated by an increase in traffic arising from the proposed Link Road.

4.7 The baseline scenario assessments indicated that National Air Quality Strategy (NAQS) Objectives for the key pollutants have been met at all twelve receptor locations. The results from the do something (DS) scenarios indicate that change in traffic volume and composition arising from the proposed Link Road will not lead to a breach in the NAQS Objectives (or EU limit values) at any of the twelve key sensitive receptor locations modelled. Indeed, the assessment results indicate that most of the receptors will experience an improvement in local air quality as a result of the proposed new Link Road.

4.8 The assessment indicates that, overall, the proposed new Link Road generates an improvement in air quality as it indicates a negative appraisal value for both pollutants.

Greenhouse Gases

4.9 In accordance with the WebTAG guidance, an assessment has been undertaken to quantify the greenhouse gas impact of the proposed new Link Road for the do something (DS) and do minimum (DM) scenario for each year of the appraisal period (2012 to 2071). This has been done using CO_2 emissions as the key indicator for the purposes of assessing the impacts of transport options on climate change. A copy of the Local Air Quality and Greenhouse Gas Assessment Report is included as **Annex D.**

4.10 The Greenhouse Gas Assessment indicates that the proposed new Link Road will lead to a reduction in carbon emissions in the DS scenario compared to the DM over the whole appraisal period and generate an overall net benefit.

4.11 Total change in tonnes of carbon emitted between 'with scheme' and 'without scheme' for the whole appraisal period is -1947 and for the opening year is -3. The net present value of the total change in carbon emissions over the whole appraisal period is £56,000.

Landscape

4.12 The study area lies within the Outmarsh sub-area of the Lincolnshire Coast and Marshes Character Area. This is a flat coastal plain with a predominantly open, medium-scale agricultural landscape, draining towards the Humber Estuary through a network of ditches, small (often now straightened) streams and larger drains. Woodland and hedge cover is sparse. In the past there has been a tendency to smaller farm units with pasture, but more recently agricultural intensification has led to farm amalgamation and an increase in field size. Much of the northern Outmarsh is under the direct influence of built environment.

4.13 The link road runs entirely through the intensively managed arable farmland between the A180 and the railway line to the south, with fields divided mainly by shallow ditches. In this area the only landscape features, other than a small number of existing trees, are associated with the roads.

4.14 The study area is visible from the Lincolnshire Wolds Area of Outstanding Natural Beauty (AONB) which lies some 10km away to the east of the A18, but at this distance it merges into the local landscape of settlements among flat agricultural land linked by road and rail corridors.

4.15 The initiative will have an adverse impact on the landscape. However, providing the existing mature trees and hedges are retained or replaced and additional planting is introduced, the initiative will only have a **slight adverse** impact on the existing natural environment.

Townscape

4.16 Although the scheme is in a rural location, it does impact on the townscape of Immingham by reducing the traffic flow, particularly HGVs along Pelham Road.

4.17 A Healthcheck Report for Immingham was produced for the Immingham Partnership which includes a discussion on the townscape of Immingham which is summarised below.

4.18 The urban design of the town is a legacy to its rapid change from a rural village to an industrial town with the construction of dock area on the shores of the Humber Estuary that now hosts one of the fastest growing ports in the country.

4.19 Modern day Immingham consists of a main road (Pelham Road) that runs straight through the heart of the town. The town's general appearance is a legacy to its adaptation to meeting the demand following the town becoming a major port when the dock was built at the turn of the last century and the many buildings that where constructed in the 1960s and 1970s.

4.20 The town has a number of key features that are important either in the sense of landmarks or distinctive buildings.

4.21 The northern gateway to the town can be identified by the County Hotel on Pelham Road, which is located at the Dock side of the town. The County Hotel is a large distinctive building that was originally built in 1913 and is currently under new ownership and has undergone major refurbishments.

4.22 The two gateways to the town, both on Pelham Road, are unmarked but signify the stages of development from a village to a town at the turn of the century. Both gateways have a selection of retail outlets and their own post office. Despite the apparent similarities the two ends of the town are architecturally distinct as the photographs in **Figure 4-1** illustrate.

Figure 4-1 Pelham Road Gateways

4.23 There is a War Memorial at the northern gateway located near the Police Station, originally constructed from asbestos and sited in front of the County Hotel until in 1925 when it was replaced with a granite memorial.

4.24 Most buildings are in an average to good state of repair or are in the process of being refurbished. Although many of the retail outlets at the northern gateway are in need of renovation, trade is in decline.

4.25 Half way along Pelham Road is a shopping precinct called Kennedy Way built in the 1970s. This retail walkway is in need of modernisation and is perceived to be an eyesore by the local community. It is located next to the Civic Centre, public library and indoor market area. The town has natural focal points that draw people depending on activities and time of day. The main areas during the day are the shopping areas within Kennedy Way, Kwik Save on Washdyk Lane and the two post offices at each end of Pelham Road. The educational, business and community activities at The Immingham Resource Centre in Margaret Street attract local people both on the day and at night as does the Civic Centre. At night the local pubs are a focus and for young people the Jacksons Grocery store on Pelham Road, the Youth Centre and Kennedy Way provide congregation points. There seems to be little variation from these patterns.

Figure 4-2 Kennedy Way Shopping Precinct

4.26 The area does not currently benefit from any townscape or heritage initiatives although a consultation exercise is taking place to develop a 30 Year Urban Design Vision for North East Lincolnshire commissioned by Yorkshire Forward that includes Immingham.

4.27 WebTAG Unit 3.3.8 states that it is important to appraise how social interactions and their relationship with townscape may be changed by the implementation of a transport proposal. As the scheme will result in a reduction in traffic, particularly HGVs, along Pelham Road, this will improve the opportunity for social interactions between the facilities on either side of Pelham Road.

4.28 Small scale improvement works will be aimed at enforcing the weight limit by discouraging HGVs from using Pelham Road. This will improve pedestrian accessibility and reduce severance, improve social interactions, and therefore deliver a slight beneficial impact on Townscape.

Heritage of Historic Resources

4.29 A Historical, Cultural and Archaeological study was undertaken in order to asses the impact on historic resources of the various road options which were initially considered. The report of the findings is included as **Annex E.**

4.30 Evidence of archaeological remains within the vicinity of the A18-A180 Link Road, is limited to undated crop marks, at least one of which is probably post-medieval, on the periphery of the Assessment Area. However, it is possible that this reflects a lack of earlier archaeological investigations rather than an absence of buried remains. It is also possible that earlier remains lay deeply buried beneath later alluvium which may be present although geotechnical investigations would be required to establish this. A circular contour shown on late 19th century OS maps in close proximity to Route Option 2 may be of archaeological origin.

4.31 There is potential for the road construction to impact upon previously unknown buried remains and deposits and the presence and nature of any such deposits will need to be determined.

4.32 In order to determine the potential archaeological impact of the scheme, staged evaluations should be undertaken, in accordance with the standards and guidelines of the Institute of Field Archaeologists. The exact nature of the evaluation will be determined by the requirements of North East Lincolnshire Council, although it is anticipated that this may involve field-walking, geophysical survey and/ or earthwork survey in the first instance, followed, if appropriate by field evaluation.

4.33 No scheduled monuments or listed buildings are located within the vicinity of A18-A180 Link Road, however, there is evidence of archaeological remains within the vicinity of the A18-A180 Link Road. Therefore, it is considered that the scheme could potentially have a **slight adverse** impact on heritage of historical resources. However it is recommended that an archaeological watching brief is implemented during construction.

Biodiversity

4.34 An ecological baseline study of land north-west of Stallingborough was undertaken in order to assess the ecological impacts of the various option which were initially being considered. A copy of the report of this study is included as **Annex F.**

4.35 A data search was carried out to identify both designated sites of international and national importance for biodiversity, and non-statutory sites of local importance and also records of rare, scarce, protected or locally important species, including those for which a Biodiversity Action Plan (BAP) has been produced. Data sources approached were:

- Natural England (www.natureonthemap.org.uk)
- The National Biodiversity Network
- The Lincolnshire Environmental Records Centre
- The Lincolnshire Bird Club database
- North East Lincolnshire Council was approached for details of relevant Tree Protection Orders.

4.36 The UK and Lincolnshire Biodiversity Action Plans and reports and other local publications on the flora and fauna, including avifauna, were also consulted. Treatment of records of protected species was discussed with the Natural England local team and with relevant country recorders. This was followed by a walk-over of the entire block of land in order to identify and map all habitats, search for signs of protected and otherwise important species and assess all habitats for their potential use by such species.

4.37 All the plant communities present within the survey area are of low conservation concern and can be considered common and widespread both nationally and locally. Drainage dykes and becks are Broad Habitats listed in the Lincolnshire BAP due to their importance in serving as wildlife corridors through large expanses of arable. This is particularly the case where hedgerows are very limited, as in the area surveyed.

4.38 None of the hedges anywhere in the entire survey area meet the criteria in the Hedgerow Regulations 1997.

4.39 None of the plants recorded are Nationally Rare or Nationally Scarce and all fall into the category of least concern in the Red Data List of vascular plants. None have either UK or local BAPs

4.40 Water vole is a Priority Species listed in the National BAP and has a specific Species Action Plan (SAP) within the Lincolnshire BAP aimed at maintaining the nationally important water vole population of Lincolnshire at current levels. The Outmarsh is one of the heartlands for this species and it will be important to ensure that there is no net loss of good water vole habitat.

4.41 The area within the route envelope comprises almost entirely arable. A small section of North Bank Drain occupied by water voles, close to the A180 roundabout, would be affected but as the drain at this point has already been subject to culverting and reinforcement works any negative impacts to wildlife would be minimal. Only one linear feature will be cut, a seasonally wet drain not used by

water voles. Prints found during the survey show that badger and fox use the drain as a pathway and an underpass would therefore be required.

4.42 No statutorily designated site or site of local importance for biodiversity would be affected by the initiative. The most important habitats in a local context are the existing mature trees, especially where they incorporated standing dead wood, a rare feature in a heavily managed landscape, although none of these carry Tree Preservation Orders. The North Beck Drain is heavily managed at present but does provide a wildlife corridor and has the potential for enhancement to provide locally significant wetland habitat. The scheme will include measures to protect the water vole populations in existing wet drains, but the potential would exist to enhance and extend this habitat within scheme design. Measures to protect the badger population will also be included. The scheme has the potential to provide biodiversity enhancement, and providing that existing mature trees are retained, the scheme would have a **slight beneficial** impact.

Water Environment

4.43 The new link road crosses two drains, drains 4 and 5 as referenced in the ecological baseline study which is included as **Annex F.**

4.44 Drain 4 divides the large central block of arable and terminates at a culvert into North Beck Drain (drain 5). At its north-west end it is shallow and choked with grasses, ruderals and bramble and is probably only seasonally wet. The section passing under an electricity pylon is culverted after which the banks increase in height to 2-3m and the channel becoming deeper and more open as it approaches North Beck Drain.

4.45 North Beck Drain (drain 5) was surveyed between the B1173 in the south-east, and a point approximately 50m north of the A180. From the B1173, this watercourse meanders eastwards and has an open channel with a water depth of 200-400mm and steep banks 4m high which have slumped in many places.

4.46 Close to Stallingborough the drain turns north, runs under the railway and continues to meander northwards. The banks remain high and steep. When it reaches the A180 it turns west, here running in a concrete channel, and is then culverted below the road beyond which it widens and continues northwards.

4.47 The northern end of the link road, adjacent to the Stallingborough interchange, is in an area liable to flooding. The new link road will result in an increase in surface run off. The scheme includes ditches to capture this surface run off, and channel it to a balancing pond. A flood risk assessment will be undertaken once the scheme has gained Programme Entry to ensure that there is no impact adverse impact on flood risk and the water environment.

4.48 Two current licensed abstraction points are located withinin 2km of the site. One is owned by Anglian Water (AW) and is at Little London, about 1 km from the site. AW have 4 boreholes on the site at licensed for public water supply. Anther licensed abstraction point is within 2km north east of the site and is used for industrial purposes and there are two boreholes. There are two deregulated licences within 1.5km and located south west of the site. At the two deregulated sites the water can still be used.

4.49 The geology of the Immingham area is chalk with very low lying land and high groundwater. The study area is an aquifer. There is a Groundwater Source Protection Zones SPZ 1 (inner zone) just outside the boundary of the study area. The study area is outer zone (SPZ 2).

4.50 Therefore, the scheme will be designed to ensure that there will be a **neutral** impact on the water environment.

Physical Fitness

4.51 The scheme does not promote or discourage walking or cycling therefore, the scheme is considered to have a **neutral** impact.

Journey Ambience

4.52 Journey ambience considers three factors:

- traveller care;
- travellers' views; and
- traveller stress.

Traveller Care

4.53 For road users, journey ambience can be affected by whether facilities and information are provided along a route and by their spacing and quality. The scheme includes directional signage, however, this will not result in a net improvement in signage.

Travellers' Views

4.54 A transport improvement can affect the extent to which travellers can see the surrounding landscape and townscape and have an impact on the attractiveness of the general travelling environment. For those transferring from Pelham Road to the link road will be afforded a far reaching rural view as part of the scheme is on embankment, rather than an urban landscape. Therefore, there is an improvement in travellers' views.

Traveller Stress

4.55 Traveller stress is the adverse mental and physiological effects experienced by travellers. Three main factors influence traveller stress:

- frustration;
- fear of potential accidents; and
- route uncertainty

4.56 The introduction of a new junction on the B1210 may result in an increase in driver frustration as a result of having to slow down.

4.57 The opportunity for drivers not having to pass through the centre of Immingham to access the docks will reduce the fear of potential accidents, particularly for HGV drivers as they will be using a route which is more suitable for HGVs rather than having to use a local road where there is high pedestrian activity. There will also be a reduction in fear of potential accidents to pedestrians on Pelham Road as the number of HGVs will be significantly reduced.

4.58 Improved route signs should reduce the proportion of people who get lost and improve journey quality. The introduction of a new junction on the B1210 will include new route signs, therefore should reduce the number of people who get lost.

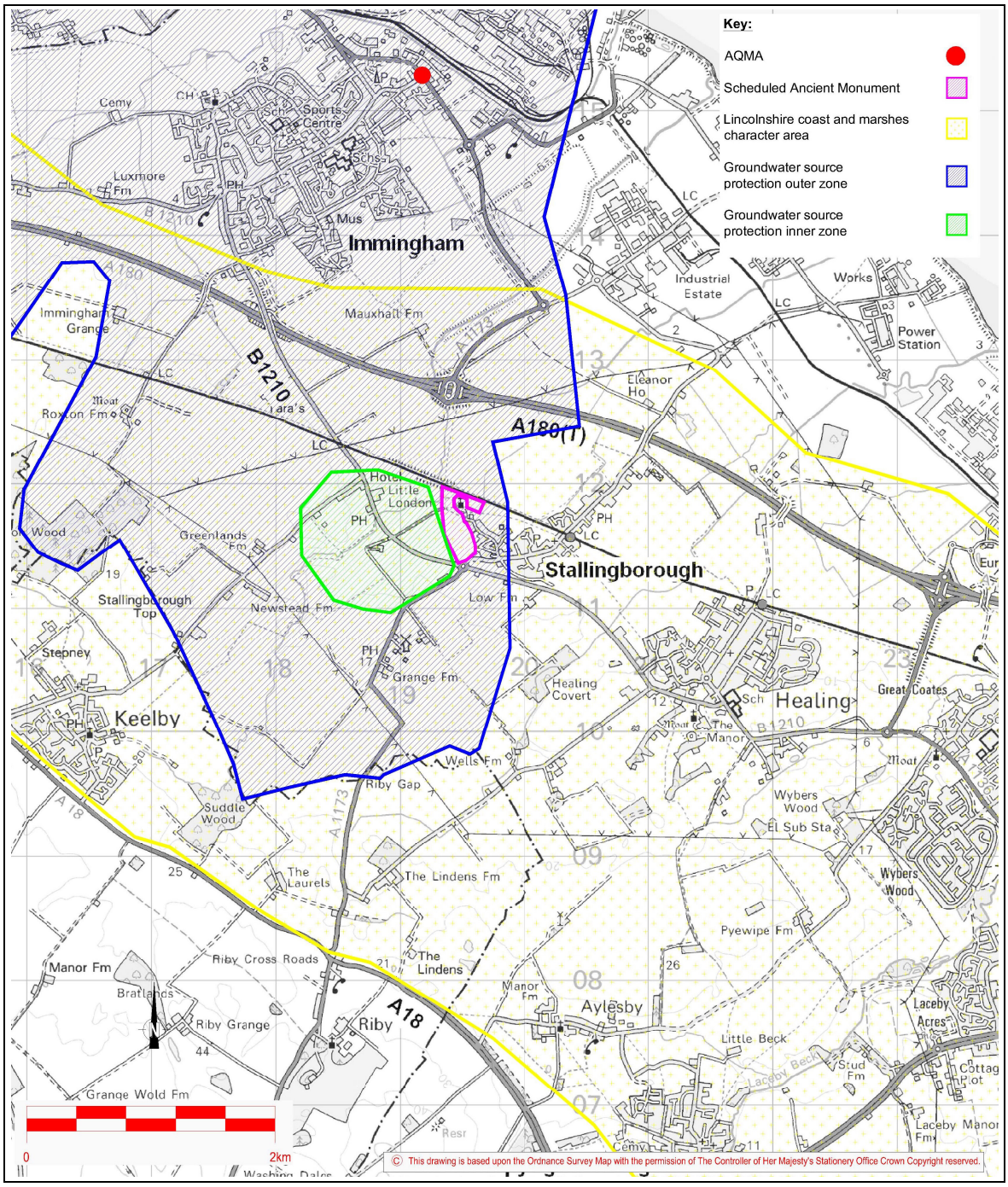
Overall Impact

4.59 Overall there is a benefit to Journey Ambience. As the scheme should benefit between 500 and 10,000 people per day including pedestrians and drivers no longer having to go through Immingham, it is considered that the scheme would have a **moderate beneficial** impact on journey ambience.

Environmental Constraints Summary

4.60 **Figure 4-3** summarises the main environmental constraints in the study area.

Figure 4-3 Environmental Constraints Summary



Safety

Accidents

4.61 The introduction of the proposed link road is forecast to lead to a re-assignment of traffic. Such a re-assignment can lead to road safety benefits, as traffic re-assigns from roads with relatively poor safety records, such as residential streets with high levels of pedestrian activity, to roads with lower accident rates, such as the proposed link road.

4.62 The Department for Transport's COBA program was used to estimate the number of accidents that could occur in the modelled network both with and without the proposed road. The program uses observed accidents rates for different types of roads to estimate the number of accidents likely to occur on each link of the network, given the forecast traffic flows.

4.63 The 'Combined Accidents' mode of the COBA program was used, whereby the accident rates for each type of road are assumed to include an allowance for accidents that occur at junctions. This removes the need to forecast junction accidents separately and, therefore, no junctions were modelled in COBA.

4.64 Predicted AM Peak, Inter-Peak and PM Peak opening-year traffic flows from the traffic model were used to derive 12-hour (7am to 7pm) weekday flows using cordoned network, by applying factors derived from the long-term Automatic Traffic Counter located on Pelham Road. Data from the same counter for the year of 2006 provided the following factors required by the COBA program; E-factor=1.15, M-Factor=380, Seasonality Index=0.96.The COBA program predicts the number of accidents that would occur on each link of the network, taking into account the user-supplied traffic flows, the observed accident rates, forecast changes in traffic flows and forecast changes in accident rates, to derive an estimate of the number of accidents that would occur over the sixty-year appraisal period. The number and types of casualties are also predicted, along with the monetary value of the accidents.

4.65 The results from the COBA program are summarised in **Table 4-1** below. The full COBA inputs and outputs are included in **Annex G** along with a COBA network diagram.

Table 4-1 Accident Numbers, Severity Split and Costs (from COBA)

	Do-Minimum	Do-Something	Benefits
Number of Accidents	9,086	8,578	508
Fatal Casualties	125	118	6
Serious Casualties	1,146	1,071	75
Slight Casualties	12,071	11,411	660
Accident Costs (2002 prices and values)	£391,316,000	£369,305,000	£22,011,000

4.66 The COBA program predicts that provision of the proposed road will lead to a reduction of 508 in the number of accidents across the cordoned network over the sixty-year appraisal period. The value placed on such a reduction is £22.011 million (2002 prices and values).

Security

4.67 The scheme does not include any specific measures to improve the sense of security for road users, therefore the scheme is considered to have a **neutral** impact.

Economy

Economic Appraisal

4.68 This section outlines the cost benefit analysis (CBA) undertaken as part of this MSBC submission. In developing the appraisal methodology a key objective has been to demonstrate consistency with DfT assessment criteria, to ensure that the appraisal guidelines are met, whilst maintaining a degree of proportionality due to the size of the scheme. The methodology makes best use of available information as discussed with DfT, see minutes of meeting in **Annex A.** The NELC model was updated and future year models produced. TUBA was used to undertake the initial economic assessment of the scheme. As TUBA does not include accident benefits, COBA was used to assess the main accident disbenefits associated with the introduction of the new junction on the B1210 as discussed above.

Base Model Update

4.69 The existing NELC SATURN model was reviewed and updated to a 2007 base using journey to work data and new HGV survey data. This method was set out in the Model scoping report, which is included as **Annex H**. Also the coding of the network in the Immingham area was checked to ensure that it did not include any coding errors and included any network changes. The model was calibrated using matrix estimation techniques and was validated in accordance with DMRB. Details of how the model was updated, calibrated and validated are presented in the Local Model Validation Report (LMVR), see **Annex I**. This Annex also includes the response to the DfT's comments on the LMVR and diagrams showing the base year modelled traffic flows..

Future Year Models

4.70 Future year models were produced for the year of opening 2012 and a future year of 2027. TEMPRO growth factors for North East Lincolnshire were applied to the light vehicles matrix and NRTF central growth factors applied to the HGV matrix. TEMPRO growth factors were obtained from version 54 which was released in July 2008. The HGV factors have been derived from a combination of the Rigid and Artic HGV growth factors. Traffic count data for the area shows that approximately 40% of HGVs are rigid and 60% are articulated. The growth factors applied for the Base Case are summarised in **Table 4-2**. Factors for optimistic and pessimistic growth scenarios have also been derived and these are presented in **Table 4-3** and **Table 4-4**. The only committed transport scheme to be included in the Do Minimum model was the upgrade if the Little London Level crossing which results in additional delay of 2.5 minutes 4 times an hour on the B1210. This was therefore modelled as a set of signals with a long cycle time of 900 seconds and an intergreen of 150 seconds.

Table 4-2 Future Year Growth Factors – Base Case

	Light Vehicles			HGVs
	AM	IP	PM	
2007-2012	1.07	1.07	1.06	1.09
2007-2026	1.20	1.24	1.21	1.44

Table 4-3 Future Year Growth Factors – Optimistic Scenario

	Light Vehicles			HGVs
	AM	IP	PM	
2007-2012	1.08	1.07	1.07	1.11
2007-2026	1.24	1.26	1.23	1.53

Table 4-4 Future Year Growth Factors – Pessimistic Scenario

	Light Vehicles			HGVs
	AM	IP	PM	
2007-2012	1.06	1.06	1.06	1.08
2007-2026	1.16	1.19	1.16	1.34

Tuba

4.71 Economic appraisal of the base case, optimistic and pessimistic scenarios was carried out using the DfT's multi-modal appraisal software, TUBA version 1.7a. This applies the methodology outlined in WebTAG Unit 3.5 to derive a benefit-cost ratio and net present value for the scheme.

4.72 The standard TUBA economic file, representing the economic parameters outlined in WebTAG 3.5.6, was used throughout the analysis.

4.73 The TUBA scheme parameters file contains scheme-specific control data. The following summarises the scheme-specific parameters used in the analysis:

- First year – 2012
- Horizon year - 2071
- Modelled years - 2012, 2027
- Time-slices – Based on the NELC SATURN modelled periods of AM peak hour, PM peak hour and average inter-peak hour, three time-slices were defined for the TUBA analysis. TUBA requires the use of annualisation factors to convert benefits from the modelled time periods to annual benefits. With the assumption of 253 working days per annum and an expansion factor of 2.5 from peak hour to 3-hour peak period, annualisation factors of 633 were applied for both the AM and PM peak hour periods. Again based on an assumption of 253 working days, an annualisation factor of 633 was applied to the average hour inter-peak period to represent the full 6 hour inter-peak from 1000 to 1600. No further contribution to benefits was claimed for the non-modelled weekend or weekday overnight periods.
- User classes - Five user classes were defined for the vehicle types Car, LGV Personal, LGV Freight, OGV1 and OGV2. Default journey purpose and person types were assumed.

4.74 Demand, time and distance matrices for each of the light and HGV vehicle classes, modelled year and time slice were skimmed from the NELC SATURN model to form inputs to the TUBA analysis. Factors to convert the input demand matrices based on the modelled light and HGV vehicle classes to the five defined TUBA user classes were derived from automated traffic count data collected on Pelham Road.

4.75 Scheme costs totalling £6.262 million (2007 prices) were defined as outlined in Chapter 7, with a further 44% uplift applied to represent optimism bias. It was assumed that 10% of total costs would be incurred by local government with the remainder allocated to central government. An estimated total 60-year maintenance cost of £1.278 million was also included (2002 prices).

4.76 **Table 4-5** presents the Transport Economic Efficiency table for the base case. **Table 4-6** shows the Public Accounts table and **Table 4-7** the Analysis of Monetised Costs and Benefits Table, including accident disbenefits derived from COBA as described above. The NPV of the scheme, taking a 60-year project life which is consistent with latest guidance and a real discount rate of 3.5% over the first 30 years and 3% thereafter, is expected to be £67.313 million. This gives a benefit-cost ratio of 9.722 for the preferred scheme.

4.77 The TUBA output file for the preferred option is contained in **Annex L**.

Table 4-5 Economic Efficiency of the Transport System (TEE) for the Appraisal of Major Highway Schemes (Preferred Option) £000

Consumer User Benefits				
User benefits	**TOTAL**	**CARS AND PRIVATE LGVS**	**GOODS VEHICLES AND BUSINESS LGVS**	**BUS AND COACH**
Travel time	18,169	18,169		
Vehicle operating costs	704	704		
Travel time and vehicle operating costs:				
During construction				
During maintenance				
NET CONSUMER BENEFITS	**18,873**	**18,873**		
Business				
User benefits				
Travel time	28,637	17,610	11,027	
Vehicle operating costs	5,451	892	4,559	
Travel time and vehicle operating costs:				
During construction				
During maintenance				
Subtotal	**34,088**	**18,502**	**15,586**	
Private sector provider impacts				
Operating costs				
Other business impacts				
Developer and other contributions				
NET BUSINESS IMPACT	**34,088**			
TOTAL				
Present Value of Transport Economic Efficiency Benefits	**52,961**			

Table 4-6 Public Accounts (Preferred Option) £000

	ROAD INFRASTRUCTURE TOTAL £
Local Government Funding	
Operating Costs	
Investment Costs	698
Developer and Other Contributions	
NET IMPACT	**698**
Central Government Funding	
Operating costs	469
Investment Costs	6,143
Developer and Other Contributions	
Indirect Tax Revenues	408
NET IMPACT	**7,020**
Present Value of Costs (PVC)	**7,718**

Table 4-7 Analysis of Monetised Costs and Benefits – Preferred Option £000

Noise		
Local Air Quality		
Greenhouse Gases	59	
Journey Ambience		
Accidents	22,011	
Consumer Users	18,873	
Business Users and Providers	34,088	
Reliability		
Option Values		
Present Value of Benefits (see notes) (PVB)	75,031	
Public Accounts	7,718	
Present Value of Costs (see notes) (PVC)	7,718	
Overall Impacts		
Net Present Value (NPV)	**67,313**	*NPV=PVB-PVC*
Benefit to Cost Ratio (BCR)	**9.722**	*BCR=PVB/PVC*

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Variable Demand

4.78 WebTAG Unit 3.10.1 provides a methodology for determining whether the effects of induced traffic are likely to undermine the economic assessment of a scheme. The appraisal of the scheme was undertaken initially using a fixed-matrix approach, where the future-year matrix is assigned to the Do-Minimum and Do-Something schemes. Subsequently, the appraisal was repeated with elastic demand, whereby trips can be induced or suppressed. WebTAG states that a fixed-demand assessment can be used if the difference in scheme benefits between the two appraisals is less than 10% in the opening year, or 15% in a forecast year 10 to 15 years after opening. The change in scheme benefits is summarised in **Table 4-8**.

Table 4-8 Variable Demand Test

Future Year	Fixed Demand	Elastic Demand	% Difference
2012	£822,568	£831,134	1.0%
2027	£1,189,043	£1,195,565	0.5%

4.79 As the percentage difference in benefits in the year of opening is less than 10% and in a forecast year is less than 15%. Induced demand does not therefore need to be taken into account in the economic assessment of the scheme.

Scenario Testing

4.80 The Optimistic and Pessimistic Scenarios investigate alternative future growth in traffic. Growth factors are presented above in **Table 4-3** and **Table 4-4** A summary of the differences in benefits for the base case, optimistic and pessimistic scenario is given in **Table 4-9.**

Table 4-9 Analysis of Benefits – Optimistic and Pessimistic Growth Scenarios £000

	Base Case	Optimistic Scenario	Pessimistic Scenario
Consumer User Benefits			
Travel Time	18,169	21,787	13,278
Vehicle Operating Costs	704	1,022	553
Business User Benefits			
Travel Time	28,637	34,194	22,516
Vehicle Operating Costs	5,451	5,897	4,940
Public Accounts			
Indirect Tax	408	747	209
Greenhouse Gases	59	108	25

4.81 **Table 4-10** compares the analysis of monetised costs and benefits for the optimistic and pessimistic growth scenarios. With the optimistic growth assumption, the NPV increases to £76.962 million and the BCR to 10.522. With the pessimistic growth assumption, the NPV is reduced to £55.804 million and the BCR to 8.422.

Table 4-10 Scenario Test Results

Scenario Test	NPV (£million)	BCR
Base Case	67.313	9.722
Optimistic Scenario	76.962	10.552
Pessimistic Scenario	55.804	8.422

4.82 Copies of the economic appraisal spreadsheets for each of the scenario tests are contained in **Annex K** and the TUBA output files are contained in **Annex L**.

Sensitivity Analysis

4.83 The following sensitivity tests were performed compared with the Base Case:

- Sensitivity Test 1 – Present value of costs + 10%
- Sensitivity Test 2 – Present value of costs + 25%
- Sensitivity Test 3 – Present value of costs + 50%
- Sensitivity Test 4 – Present value of benefits - 10%
- Sensitivity Test 5 – Present value of benefits - 25%
- Sensitivity Test 6 – Present value of benefits - 50%
- Sensitivity Test 7 – The level of increase in the present value of costs at which the NPV of the scheme becomes zero.
- Sensitivity Test 8 – The level of decrease in the present value of benefits at which the NPV of the scheme becomes zero.
- Sensitivity Test 9 – Excluding all journey time benefits related to the B1210/Healing junction.

4.84 Sensitivity Test 9, excluding journey time benefits at the B1210/Healing junction, was included as in the 2027 Do-minimum. A large delay was observed for vehicles travelling to and from Healing. This produced a correspondingly large journey time benefit in the do-something, not directly related to the scheme. **Table 4-11** shows that even without these benefits the BCR is robust and would accommodate increases in cost or any further reduction in benefit.

4.85 The results of the sensitivity tests are shown in **Table 4-11**. These tests show that there is a decrease in Net Present Value and benefit-cost ratio in each case compared with the central case. However, the BCR remains well in excess of 2.0, demonstrating high value for money and providing evidence for the robustness of the scheme.

Table 4-11 Sensitivity Tests

Sensitivity Test	NPV (£million)	BCR
Base Case	67.313	9.722
Sensitivity Test 1 – Present value of costs + 10%	66.541	8.838
Sensitivity Test 2 – Present value of costs + 25%	65.384	7.777
Sensitivity Test 4 – Present value of costs + 50%	63.454	6.481
Sensitivity Test 4 – Present value of benefits - 10%	62.017	9.035
Sensitivity Test 5 – Present value of benefits - 25%	54.073	8.006
Sensitivity Test 6 – Present value of benefits - 50%	40.833	6.291
Sensitivity Test 9 – Excluding B1210/Healing Junction	47.717	6.715

4.86 For sensitivity tests 7 and 8, the degree in change of costs and benefits which would make the net present value of the scheme zero has been assessed. The proportional changes required are:

- Increase in the present value of costs: 872%
- Decrease in the present value of benefits: 90%

4.87 A copy of the economic appraisal spreadsheets for each of the sensitivity tests is contained in **Annex K**.

Reliability

4.88 Analysis of any change in journey time reliability was carried out using a stress based approach, as defined in WebTAG Unit 3.5.7.This method is applicable for journeys predominantly on single carriageways outside urban areas. The assessment of reliability is based on changes in 'stress', the ratio of the annual average daily traffic (AADT) to the Congested Reference Flow (a definition of capacity). 'Stress' acts as a proxy for reliability, which is seen to decline as flows approach capacity.

4.89 The difference in percentage stress was calculated for the existing route from the Port along Pelham Road (for the do-minimum and do-something), and the new route along the proposed link road. In each case, stress values were below 75%, the minimum value considered to be significant by the assessment methodology. This implies no significant change in stress, and hence reliability, between the two routes. A copy of the Reliability worksheet is contained in **Annex M.**

4.90 In addition to the assessment using the stress based approach, consideration was also given to the impact of the introduction of a new roundabout on the B1210. This will produce an element of journey time unreliability due to delay encountered at this junction. The ARCADY junction analysis shows that delays on the B1210 varies by a few seconds depending on which quarter hour is taken within the peak hour. Therefore, overall the scheme is considered to have a **slight adverse** impact on reliability.

Wider Economic Benefits

4.91 Wider Economic Benefits have not been assessed as the scheme is not in a regeneration area.

Accessibility

Option Values

4.92 WebTAG Unit 3.6.1 states that it is particularly important to consider option values if the strategies or plans which are being appraised include measures which will substantially change the availability of transport services within the study area (e.g. the opening or closure of a rail service, or the introduction or withdrawal of weekend buses serving a particular rural area). As the scheme does not involve the introduction or withdrawal of a transport services, this scheme is considered to have a **neutral** impact on option values.

Severance

4.93 WebTAG Unit 3.6.2 states that this sub-objective is concerned with those using non-motorised modes, especially pedestrians. Cyclists and equestrians are less susceptible to severance because they can travel more quickly than people on foot, although there may still be significant impacts on these groups.

4.94 The new link road, itself, will not have an impact on the severance sub objective as there is no pedestrian activity in this area. However, there is a reduction in traffic on Pelham Road of between 15% and 25% in the AM and Inter peaks. Pelham Road is an area of high pedestrian activity due to schools and local shops located along its length, therefore this reduction in traffic will make it slightly easier for people to cross. The population of the main residential area of Immingham which could benefit from a reduction in traffic on Pelham Road is around 8,500. Therefore, this scheme is considered to have a **slight beneficial** on severance.

Access to the Transport System

4.95 Access to the Transport System relates to access to public transport for those without a car. As this scheme does not impact on the public transport system, it is considered to have a **neutral** impact.

Integration

Transport Interchange

4.96 The scheme does not impact on either passenger or freight interchange therefore it is considered to have a **neutral** impact.

Land Use Policy

4.97 WebTAG Unit 3.7.2 states that this sub-objective relates to the extent to which the proposal is integrated with land use proposals and policies and with proposals and policies concerning transport (all modes) in the context of national, regional, strategic and detailed local planning policies. **Table 4-12** shows how much the scheme contributes towards the various objectives on a three point scale.

Table 4-12 Fit with Land Use and Transport Policy

Policy Document	Relevant Objectives	Policy Fit
Local		
Community Strategy	• Competitive And Vibrant Economy; • Thriving Town Centres – Immingham; • Safe and Clean Environment.	✓✓
NELC Corporate Plan	• Priority 1: Neighbourhood Improvement – to have neighbourhoods that are safe, clean and green; • Priority 2: Regeneration – to have a competitive and vibrant economy.	✓✓
LTP2	• Reduce Congestion; • Improve Safety; • Encourage Regeneration; • Reduce Crime and Fear of Crime; • Improve Accessibility; • Improve the Environment; • Support and Improve the Local Economy.	✓✓
Regional		
Northern Way	• C7: Improve access to the North's seaports;	✓✓
Regional Spatial Strategy	• Ports and their associated activities could support significant regeneration and growth in the sub region.	✓
Regional Transport Strategy	• **Policy T7-** Support expansion of its ports and waterways and improve surface access to them • **First Tier Priority** - Increase road and rail capacity to the South Humber ports; • **Second Tier Priority**- Improve connectivity to and between the main centres on the South Humber Bank.	✓✓
Regional Economic Strategy	• Tackle land and infrastructure issues that enable the trade zone to act as a focus for development activity; • To improve rail and road access to the Humber ports.	✓✓
Regional Freight Strategy	• Lorry routing restrictions should be considered within the context of the regional lorry routing strategy; • Promote the future development of facilities in the region's ports; • Support improved road and rail links to the region's ports.	✓✓
Regional Sustainable Development Framework	• Conditions enabling business success, economic growth and investment; • A transport network maximising access whilst minimising detrimental impacts; • Minimal pollution levels.	✓✓✓

Table 4-12 ctd: Fit with Land Use and Transport Policy

Policy Document	Relevant Objectives	Policy Fit
National		
Towards a Sustainable Transport System	• Goal 1 is to maximise the competitiveness and productivity of the economy; • Goal 2 is to address climate change, by cutting emissions of carbon dioxide (CO_2) and other greenhouse gases; • Goal 3 is to protect people's safety, security and health; • Goal 4 is to improve quality of life, including through a healthy natural environment; • Goal 5 is to promote greater equality of opportunity.	✓✓

4.98 The scheme contributes significantly to a number of local, regional and national land use and transport policy documents, therefore, it is considered to have a **moderate beneficial** impact.

Other Government Policies

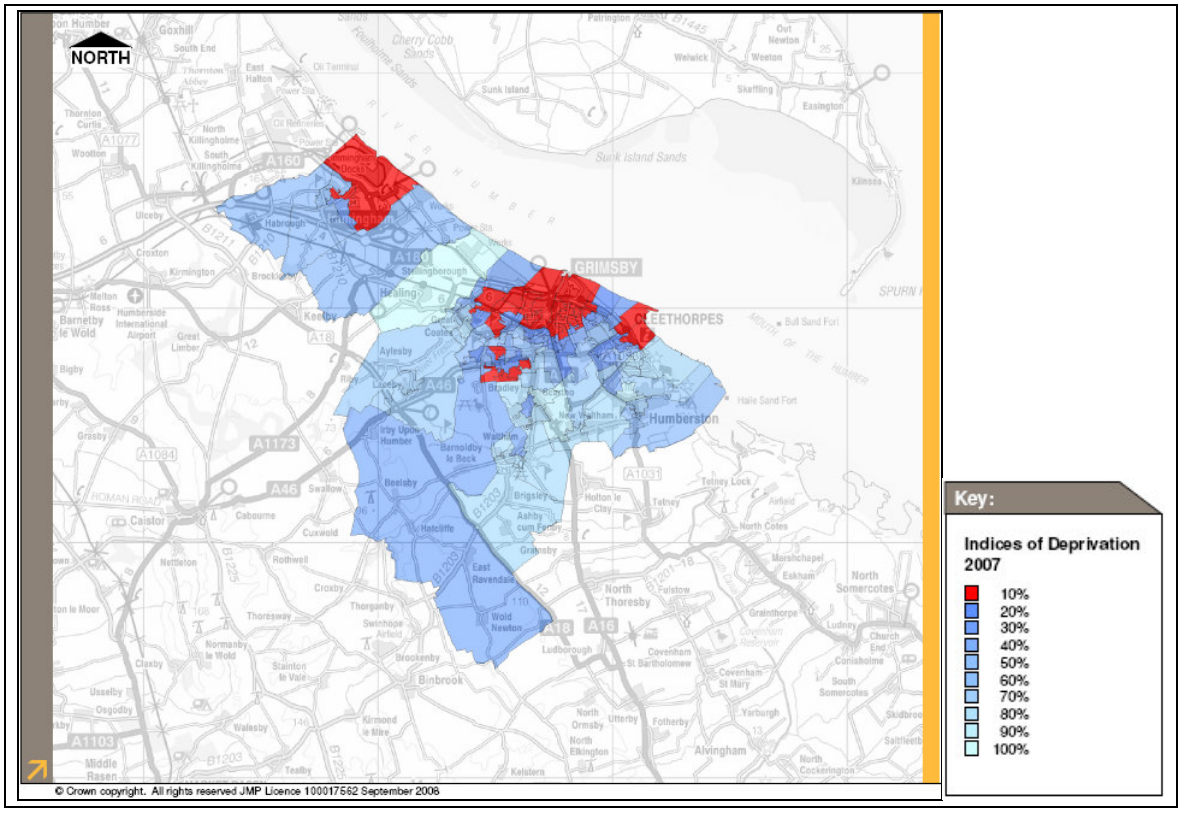
4.99 The scheme will have to comply with Planning Policy Statement 25 Development and Flood Risk produced by Communities and Local Government as the northern end of the link road lies within an area liable to flooding. The aims of this planning policy are to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk. Where new development is, exceptionally, necessary in such areas, policy aims to make it safe without increasing flood risk elsewhere and where possible, reducing flood risk overall. Everything will be done throughout the development of the scheme to manage and reduce the risks and ensure it complies with this policy, therefore it is assumed that the scheme will have a **neutral** impact

Supporting Analysis

Distribution and Equity

4.100 **Figure 4-4** shows the index of multiple deprivation 2007 for North East Lincolnshire. The 10% most deprived areas are shown in red. This shows that two of the Lower Layer Super Output Areas (LSOA) in Immingham are within the 10% most deprived areas in the country.

Figure 4-4 Index of Deprivation 2007



Affordability and Financial Sustainability

4.101 The Council believes that the A18-A180 Link is affordable because of its high cost benefit ratio, and because it is a solution to the transport related problems experienced for the residents of Immingham. In addition, it will provide a much needed direct route for HGVs to Immingham Docks from the rural areas of Lincolnshire, producing operating cost savings to goods vehicle operators.

Practicality and Public Acceptability

Practicality

4.102 The A18-A180 link road proposal is a relatively straightforward and simple scheme within the context of transport schemes, which are often complex and multi-faceted. The proposal has significant local support and little or no opposition. It stands alone as a measure to tackle the identified objectives, and indeed is a much simpler solution to providing improved port access and the protection of local communities than would be a series of weight restrictions and diversionary routes, with all of the knock on effects that these would entail.

4.103 The proposed scheme is relatively limited in both its geographical extent and impact on the range of parties affected. There is an impact on a range of statutory consultees, which is in some cases significant and has required mitigation and revision to the scheme to be included in the proposal, but not withstanding this, this scheme remains a proposal whose impacts are relatively limited in comparison to many transport proposals. The proposal stands alone, and does not conflict with other measures or strategies to improve access to the port and the environment for local communities.

Public Acceptability

4.104 In February 2007 a public consultation was held with exhibitions in both Immingham and in Stallingborough to gain feedback on the three potential options for a link road. The consultation exercise was advertised widely using local media and the NELC website. Stakeholders were invited to the exhibitions and encouraged to complete questionnaires indicating particular preferences or issues of concern. Following completion of the exhibitions the display materials were placed in Immingham library for public viewing with forms to be completed and sent to a free post address. Where stakeholders were unable to attend the exhibitions they were invited to visit a project website and complete an on-line questionnaire. In support of this hard copy of the consultation documentation and documentation on electronic media was also available and sent out when requested.

4.105 The consultation responses clearly identified that traffic levels through Immingham were unacceptable and that there was a strong desire to move heavy goods traffic onto a more suitable route. In addition to this there was representation from Stallingborough indicating a preference for a route that did not pass too close to the village. Overall, there was no clearly preferred route with roughly equal preference for Options 1, 2 and 3.

4.106 The scheme has been subject to extensive press coverage over the past 5 years which demonstrate the public acceptability and support for the scheme. These are included in **Annex N.** Headlines include:

"Lorries are ruining our quality of life"- August 2003

"Accident will happen , say residents" – March 2004

"Lorry problem is making life unbearable for couple" – March 2005

"Residents blockade road to protest over increase in HGVs" – June 2005

"Residents call for ban" – November 2008

Consultees

4.107 Various bodies will be affected by the scheme and have been consulted as well as the statutory consultees. A summary of their responses are provided below and a copy of their responses provided in **Annex N.**

4.108 **Associated British Ports** lend their support to the scheme as it will benefit not just the port and port users but also residents of Immingham. Whilst the port has well established links to the west in the form of A180/M180, it has long been recognised that this kind of infrastructure does not exist from the agricultural heartland of Lincolnshire. Agribulks, most of which originate from Lincolnshire, are a long established trade at the port. Presently the only direct link to and from these areas is through Immingham. Therefore, the proposed link road would remove the vast majority of the HGV traffic from Immingham, part of which is an AQMA. ABP are working closely with NELC in the development of an Air Quality Management Plan for this area.

4.109 **Network Rail** have notified the Council that the crossing is to be converted to manually controlled full-barriers as part of their Future Renewals Programme, funded by Network Rail, with a planned commissioning date between December 2011 and February 2012.

4.110 Network Rail had previously raised concerns with the new roundabout on the B1210 due to its proximity with the level crossing. Traffic flows with and without the link road from the SATURN

model were submitted to Network Rail along with outputs from ARCADY analysis of the junction. Network Rail ran this information through their Risk Software which demonstrated that the increase in traffic on the B1210 as a result of the new link road does not increase the risk level. Also the The ARCADY analysis demonstrated that the queues produced by the roundabout would not block back on to the level crossing. Therefore, the level crossing does not need upgrading as a result of the scheme. However, Network Rail have requested that full consideration is given to reducing the road speed limit on both approaches to the level crossing as a lowering of the speed limit would improve safety at the level crossing.

4.111 **HMRI** had expressed concerns about the level crossing and its position relative to the new roundabout on the B1210. Although the ALCRM risk model showed no increase in the level of risk, HMRI felt some concern for this type of unmanned crossing in the event of queues developing as result of an accident occurring at the roundabout some 190m away.

4.112 A meeting of HMRI with officers of NELC on site at the Little London Level Crossing on 7th October 2008 saw the matter discussed further. HMRI maintained that ideally a bridge would be the preferable option in every case, as it prefers to avoid level crossings close to roundabouts. HMRI has noted that if a bridge cannot be constructed, then efforts must be made to ensure that road traffic cannot block back onto the level crossing.

4.113 NELC appreciates this concern and will continue its dialogue with HMRI and Network Rail regarding the programme of Network Rail's level crossing works and any accompanying highway works.

4.114 The **Highways Agency** (HA) was consulted on the four options. Traffic counts and assessments demonstrate that there will be significantly increased flows at the Stallingborough Interchange, and the HA has requested that the impact of this should formally be tested through the use of an appropriate model (ARCADY or similar model). Furthermore, there is a concern over the potential for the level crossing to result in queues stretching back to the interchange and interfering with the free flow of traffic off the junction. The HA has approved the ARCADY analysis of Stallingborough Interchange which demonstrates that no significant queues develop which would impact on their network.

4.115 Options 1 and 2 were the preferred options of the Highways Agency, and there are therefore no objections in principle to option 2 being further pursued. There remain a number of areas of detail that have been identified which are to be addressed to ensure full support through the statutory processes.

4.116 **Natural England** and its predecessor agencies has advised that the proposed works lie close to the Humber Estuary SSSI, the Humber Estuary potential SPA, the Humber Estuary proposed Ramsar site and the Humber Estuary possible SAC, and has provided guidance on how to proceed with the project to ensure that it remains an acceptable proposal.

4.117 The **Environment Agency** has been consulted both in 2006, and again in the autumn of 2008. Whilst the Agency's initial views were more supportive of options that are not preferred for other reasons, and the Agency has expressed concerns with regard to flood risk, pollution prevention and biodiversity impacts, the Environment Agency supports the requirements to produce a Flood Risk Assessment, provide details on land drainage, and install pollution prevention measures. The Agency has provided guidance on how to proceed to ensure that their support is not withdrawn.

4.118 **English Heritage** has been consulted in 2006 and again in 2008, and is pleased to note that the Council now wishes to pursue Option 2, which both avoids the Scheduled Ancient Monument site

and will minimise any impact upon the setting of the Listed Church. As a result, from the route shown on the plans, English Heritage has confirmed that Option 2 would be unlikely to have any significant adverse effect upon any designated historic assets in the area.

4.119 **Local Schools** support the proposal. Expressions of support have been received from Immingham head teachers at Canon Peter Hall C.E. Primary School, Coomb Briggs Primary School, Allerton Primary School, and the Oasis Academy Immingham and from the head teacher of Stallingborough C.E. Primary School.

Contribution to 10 year Plan Targets

4.120 The contribution of the scheme to the 10 year plan targets are presented in **Table 4-14**.

Table 4-13 Contribution to 10 Year Plan Targets

Target	Assessment
Reducing congestion on the inter urban network and in large urban areas	
Increase in rail use	No impact
Increase bus use	No impact
Double light rail use	No impact
Improving air quality	Improvement expected at the AQMA on Kings Road / Pelham Road junction
Reducing Greenhouse Gases	Total change in tonnes of carbon emitted between 'with scheme' and 'without scheme' for the whole appraisal period is -1,947 and for the opening year is -3.
Reducing Accidents	A reduction of 508 accidents over the 60 year appraisal period. Including 81 KSI over the same period

Summary

4.121 The Appraisal Summary Table (AST) for the preferred Option shown in **Table 4-15** A copy of the supporting NATA worksheets are included at **Annex M.**

Table 4-15 Appraisal Summary Table

Option A18-A180 Link Road		**Description** New link road between the B1210 and the A180 at Stallingborough Interchange	**Problems** HGVs for the port passing through Immingham causing safety and environmental nuisance	**Present Value of Costs to Public Accounts** £7.718 m
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE ASSESSMENT	ASSESSMENT
Environment	Noise	It is considered that improvements in the noise environment are due to the re- routing of road traffic as a result of the New Link Road. Montessori School, Stallingborough is within the 600m band of Station Road. The assessment results indicate that any increases in noise levels are unlikely to be significant here. It is not known whether there are other potential noise sensitive non- residential receptors both nearer and further than the 600m band from the affected roads. However, if this is the case, the assessment results indicate that any increases in noise levels are unlikely to be significant.	Population annoyed without the scheme is 596. Population annoyed with the scheme is 564.	The net difference in population likely to be annoyed with scheme in the 15th year is -32 people. The likely net Present Value of Benefits for transport- related residential noise of the proposal (60 year period) is £1,1million
	Local Air Quality	Benefits are due to improved traffic flow and movement of through traffic away from areas with high numbers of relevant receptors. Improvement expected at the AQMA on Kings Road / Pelham Road junction	Air Quality Improvements at 2529 properties for NO2 and 2,529 for PM10. No worsening of Air Quality at any properties.	A significant overall improvement in air quality NO2 = -946.5 PM10 = -197.34
	Greenhouse Gases	Benefits are due to improved traffic flows and journey times and reduction in total fuel consumption.	Total change in tonnes of carbon emitted between 'with scheme' and 'without scheme' for the whole appraisal period is -1,947 and for the opening year is -3.	The net present value of the total change in carbon emissions over the whole appraisal period is: £55,926.
	Landscape	Introduction of a new road in a rural area. Mitigation measures will reduce the visual impact on the landscape		Slight Adverse
	Townscape	Small scale improvement works on Pelham Road, improving pedestrian accessibility and reducing severance and improving social interactions		Slight Beneficial
	Heritage of Historic Resources	No scheduled monuments or listed buildings are located within the vicinity of link road		Neutral
	Biodiversity	The scheme has the potential to provide biodiversity enhancement, and providing that existing mature trees are retained		Slight Beneficial
	Water Environment	Scheme will be designed to ensure minimal impact on the water environment and the risk of flooding.		Neutral
	Physical Fitness	The scheme does not promote or discourage walking or cycling		Neutral
	Journey Ambience	The main impact will be the reduction in the fear of accidents		Moderate Beneficial
Safety	Accidents	Introduction of the new road is forecast to lead to a re-assignment of traffic away from roads with poor accidents records, such as the residential roads in Immingham.	A reduction of 508 accidents over the appraisal period.	PVB £22.011m
	Security	No impact on security		Neutral
Economy	Public Accounts		Central Govt PVC = £7.020m Local Govt PVC = £0.698m	PVC £7.718m
	Transport Economic Efficiency: Business Users & Transport Providers		Users PVB = £34.088m Transport Providers PVB = £0 Other PVB = £0	PVB £34.088m
	Transport Economic Efficiency: Consumers		Users PVB = £18.873m	PVB £18.873m
	Reliability	No significant impact on 'stress'. Introduction of new roundabout on B1210 results in delays which vary by a few seconds	Do-minimum Stress = 41.9% Do-something Stress = 56.3%	Slight Adverse
	Wider Economic Impacts	Not assessed as scheme not in a regeneration area		Not assessed
Accessibility	Option values	Scheme does not involve the introduction or withdrawal of a transport services		PVB £0
	Severance	15-25% reduction in traffic on Pelham Road an area of high pedestrian activity		Slight Beneficial
	Access to the Transport System	Scheme does not impact on the public transport system		Neutral
Integration	Transport Interchange	Scheme does not impact on either passenger or freight interchange		Score
	Land-Use Policy	Scheme contributes significantly to a number of local, regional and national land use and transport policies		Moderate Beneficial
	Other Government Policies	Scheme will comply with PPS 25 Development and Flood Risk		Neutral

5 The Delivery Case

Governance

Introduction

5.1 The governance of the project delivery will be broadly based on North East Lincolnshire's approach to project management, which is closely linked to PRINCE2 and set out in the Council's Framework(s) for Successful Projects. This has been adapted to take account of the implementation arrangements contained in the Council's LTP2 in which the proposed A18 - A180 Link Road plays a significant part. A copy of the Framework is included at **Annex O.**

Project Initiation

5.2 The project has been formally commenced following the Project Initiation Documentation, which sets out the scope and governance of the project. The document is primarily based on the report to Cabinet in July 2007, when Option 2 was formally accepted as the Council's preferred scheme after being accepted by the Regional Transport Board. This was followed by a further Cabinet Report in September 2008, when the Council's financial obligations for the scheme were accepted. As part of the scheme governance, the project Initiation Document sets out the project organisation, including regular project team meetings and regular reporting to the Project Board.

Project organisation

5.3 To complete the project, a management structure has been set up which defines various roles and responsibilities:

- The *LTP Steering Group* comprises Members and officers of the Council giving direction to the project;
- The *A18-A180 Link Project Board* is made up of three key roles:
  1. *Project Executive* which is ultimately responsible for the project and for any management decisions and ownership of the Business Case.
  2. *Senior User* for whom the project will achieve its objectives.
  3. *Senior Supplier* responsible for designing and developing the project;
- The *Project Manager* is given the authority to run the project on a day to day basis on behalf of the *Project Board* and is responsible for:
  4. Planning and monitoring the scheme.
  5. Producing the *Project Initiation Document* (PID).
  6. Managing the delivery of the project.
  7. Managing and supporting the *Project Team.*
  8. Keeping the *Project Board* updated on progress;
- The *Project Team* together with *Project Sup*port have been set up to assist the *Project Manager.*

5.4 **Table 5-1** below shows these roles and who will carry them out:

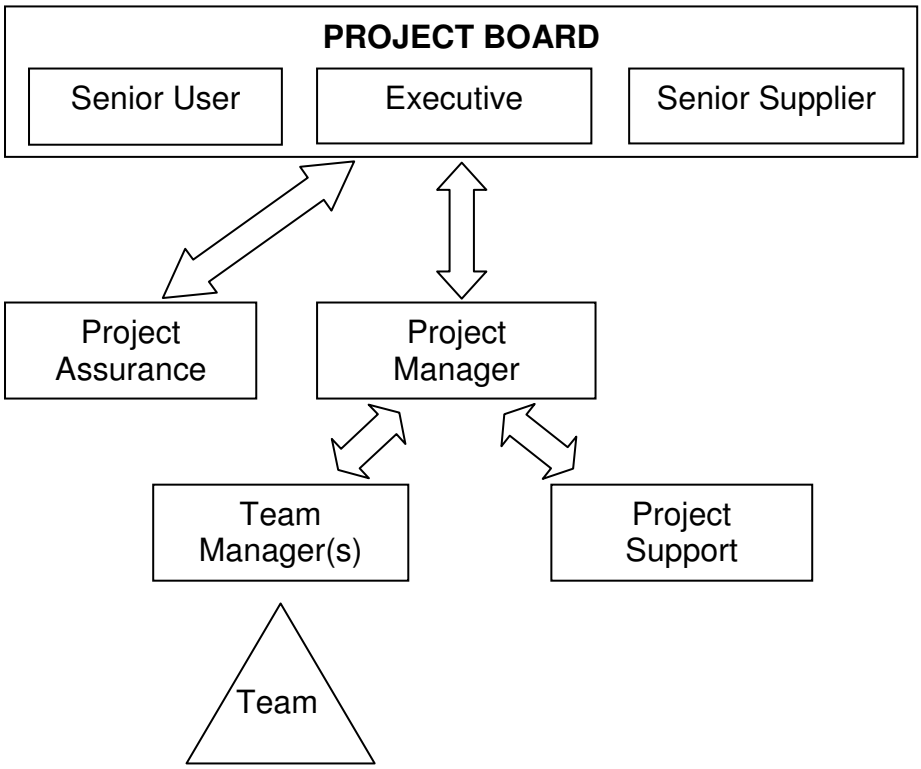
Table 5-1 Roles of individuals within the Project Team

Role	Name
Project Executive	Stuart Greaves (Network Management)
Senior User	Dick Crump (Transport Strategy)
Senior Supplier	Steve Redfearn
Project Manager	Bob Keld
Project Assurance	Tony Brumfield (BSF Project Director)
Project Support	Consultants to be appointed
Team Managers / Representatives	Simon Moss (Transport Policy) John Drinkall (Highway Design) Luke Allwood (Finance) Damien Janes-White (Valuation and Estates) Dick Marshal (Legal) Chris Holliday (Planning) Julie Collins (Procurement) Nathan Vear (Environmental Improvement) Sarah Mainprize (Communications) Malcom Towle (Insurance and Risk) David Poucher (Traffic Management)

5.5 Stuart Greaves will act as the Senior Responsible Officer.

5.6 **Figure 5-1** below shows the relationship of these roles:

Figure 5-1 Project Management Organisational Chart



Project Resource

5.7 A dedicated project management resource has been allocated to the project who will coordinate the various elements of work. NELC resources are directed through the project team, with representation across all appropriate service areas. The Resource Plan in **Annex O** identifies the resources identified for each of the key tasks that comprise the design and delivery of the scheme, and identifies where additional resources are required through external consltants.

Project Assurance

5.8 A Gateway Review is an assessment of a project carried out at crucial stages of its development so as to focus on whether the project can progress successfully to the next stage and is normally recommended by the Office for Government Commerce (OGC) for schemes with a total cost of £50million or more.

5.9 For schemes below this level, a Gateway Review is still advised in order to determine whether a 4ps Gateway Review would be warranted.

5.10 The Risk Potential Assessment (RPA), which is the first step in the OGC Gateway process, provides a standard set of high-level criteria for assessing the degree of complexity of a project.

5.11 The RPA overall score of 25 for the A18 – A180 Link Road is less than the adopted threshold of 30, and indicates that in-house Gateway Reviews would be the recommended course of action (see below) with further discussions with the 4ps and the Council's Project Assurance specialist to confirm that this would be the best way forward.

5.12 The RPA scores fall into the following three criteria:

- Total score of 30 or less indicates that the programme/project is relatively low risk. An internal Centre of Excellence (CoE) or Departmental Gateway Coordinator (DGC) will manage OGC Gateway Reviews.
- Total score in the range of 31-40 indicates that the programme/project is medium risk. OGC Gateway Reviews will require a Review Team Leader nominated by the OGC Gateway Directorate and independent of the department. The Review Team Members are sourced by the CoE or DGC.
- Total Score of 41 or more indicates that the programme/project is high risk and will require a Review Team Leader and Review Team Members nominated by the OGC Gateway Directorate and independent of the department.

Source: OGC Risk Potential Assessment Guidance (Version 08)

5.13 Gateway Reviews can be broadly linked to the DfT's three stage approval process with Gateway 1 and 2 being carried out between Programme Entry and Conditional Approval, with Gateway 3 being carried out prior to Full Approval.

Project Plan

5.14 A detailed Project Plan is presented in **Figure 5-2**.

5.15 This assumes that the scheme can go straight to the Full Approval stage without going through Conditional Approval, as discussed at the meeting with the DfT on 29th October 2007, see notes of meeting in **Annex A**.

5.16 The principal of moving from Programme Entry to Full Approval is established in Section 3.1.8 of the Major Scheme guidance and was suggested as a possibility by DfT due to the relative simplicity and small scale of the scheme.

5.17 Moving directly from Programme Entry to Full Approval offers a significant reduction in the timescale, bringing forward the construction period by a number of months. The time saved would be partly due to the omission of the Conditional Application process (one month to prepare application and 3 months for the decision), and partly due to the ability to conduct the procurement process in parallel with the processes for obtaining statutory powers. Eliminating this delay creates a corresponding cost saving which is significant in relation to the scale of the scheme.

5.18 The project plan demonstrates the completion of the procurement process at the same time as obtaining statutory powers. This is largely due to the simplicity of the scheme. However, it is envisaged that the Council's Towards Top Performance (TTP) programme will provide a partnering organisation (see section 6.4), which will enable Early Contractor Involvement and ensure early completion of the procurement process.

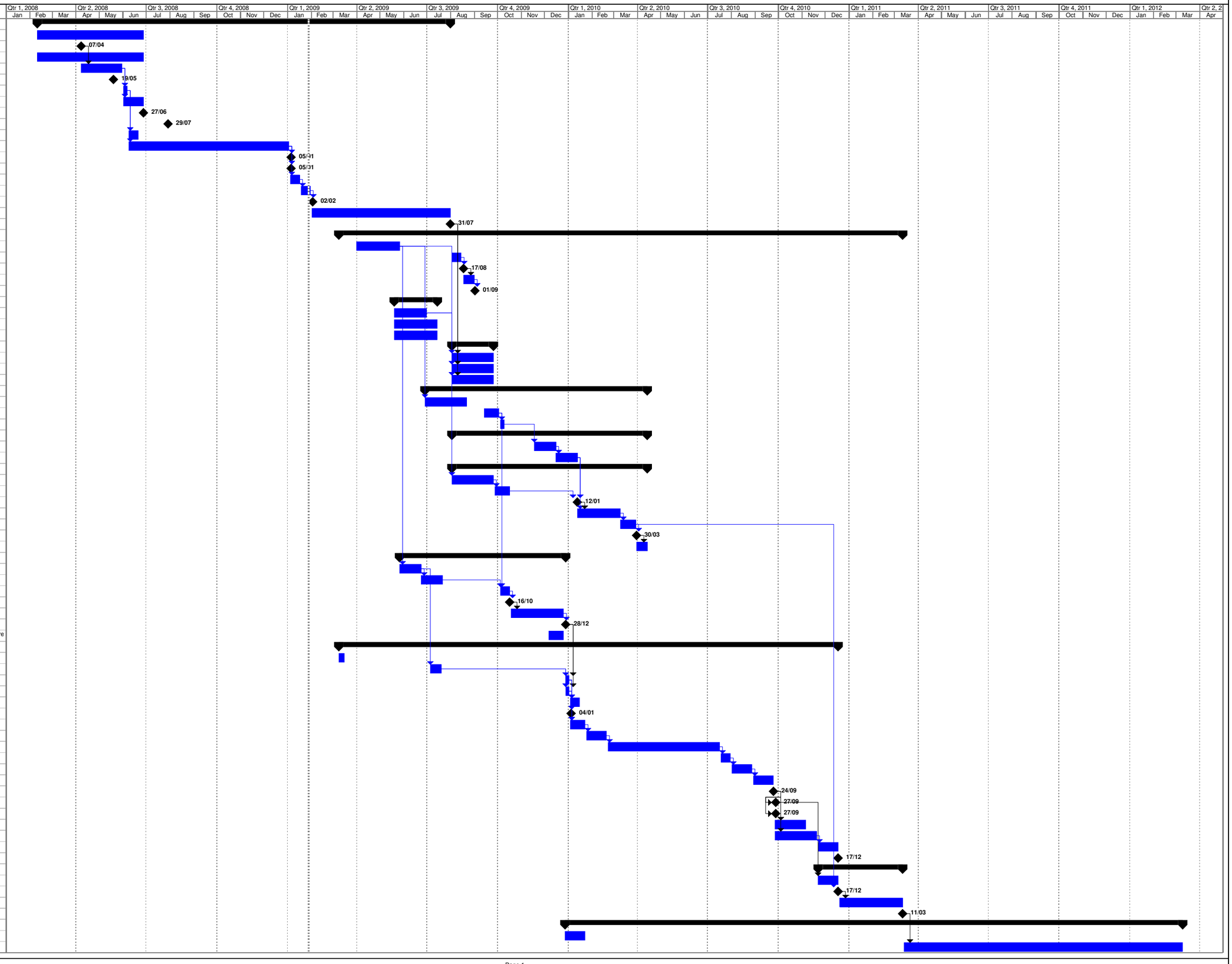
5.19 Key Milestones and dates include:

- Programme Entry status granted by DfT - end July 2009;
- Planning Application submitted – mid October 2009
- CPO/SRO advertised –early January 2010
- Public Inquiry completed – end July 2010

- Confirmation of CPO/SRO – mid December 2010;
- Planning consent granted- end Dec 2009;
- Complete detailed design – early October 2009;
- Submit application for Full Approval - mid December 2010;
- Full Approval granted by DfT – mid March 2011;
- Appoint contractor – end March 2010;
- Start on Site – Mid March 2011;
- Complete works – early March 2012.

Figure 5-2

ID	Task Name
1	**Programme Entry**
2	Scheme Cost Review
3	Agreement from DfT on Modelling
4	Negotiations with Network Rail
5	Base Year Model Update
6	Risk Workshop
7	Variable Demand Modelling
8	Economic Appraisal
9	Submission to RTB (if required)
10	RTB
11	Environmental Appraisal
12	MSBC Bid Document Preparation
13	Draft MSBC
14	Inform DfT of Submission of MSBC
15	Review of Draft MSBC by NELC
16	Finalising MSBC
17	Submit MSBC to DfT
18	DfT Review MSBC
19	Decision on Programme Entry
20	**Full Approval**
21	Commission Implementation Team/Consultants
22	Update to Project management information
23	Submission to DfT
24	DfT to Review
25	Meeting with DfT
26	**Surveys**
27	Topographical Survey
28	Geotechnical Surveys
29	Flood Risk Assessment
30	**Detail Design**
31	Prepare Design Drawings
32	Prepare BoQ
33	Prepare Specification
34	**Environmental Statement**
35	Update Environmental Statement
36	Modify Design to incorporate mitigation measures
37	Update works cost estimate
38	**Contract Documentation**
39	Prepare draft contract documentation
40	Finalise contract documentation
41	**Contract tendering processes**
42	Prepare and submit OJ notice
43	Prepare list of tenderers
44	Issue tenders
45	tender period
46	tender review period
47	Award Contract
48	Cooling off period
49	**Planning Process**
50	Prepare Draft Documentation
51	Preplanning Discussion
52	Finalise Documentation
53	Submit Application
54	Consultation Period
55	Determination
56	Modify design and costs to incorporate determination re
57	**Orders Process**
58	Cabinet Report / Decision
59	Make CPO
60	Finalise CPO
61	Statement of Reasons
62	Advertise CPO
63	Serve Notices
64	Objection Period
65	Ministerial Decision
66	Await Public Inquiry
67	Negotiation with Objectors/Public Inquiry
68	Inspector's Statement/Report to Minister
69	Ministerial Decision Statement
70	Secretary of State Notice of Confirmation
71	Publication of decision
72	Serve general vesting declaration notice
73	Challenge in High Court
74	GVD notice period
75	Execute GVD
76	GVD effective/complete acquisition
77	**Submission to DfT**
78	Prepare Bid Documents
79	Submission to Dft
80	Review by DfT
81	Full Approval
82	**Works Processes**
83	Mitigation for Voles and nesting birds
84	Carry out works



Project Control

5.20 Any decisions that are made on the project will be made in a timely manner by those with the appropriate authority based on accurate and up-to-date information. This has been achieved by setting up project controls to ensure adequate communication, control and monitoring are in place.

5.21 So that all parties with an interest in the project can be kept informed, the **Communications Plan** has been drawn up setting out the frequency and means of communication (**Annex P**).

5.22 To keep track of all project information, it is vital that project files are set up which include an **Issues Log** and **Lesson Learned Log**. A copy of the issues log is included at Annex

Issues Log

5.23 Contains all project issues and their status and is one of the primary project controls. What ever its type, every issue has been allocated a unique reference and logged as a Project Issue. A copy of the issues log is included at **Annex Q**.

Lessons Learned Log

5.24 A record of events that have had an effect on the running of the project, and can be used to compile a **Lesson Learned Report** at the end of the project, which will be useful to improve future projects.

Risk Management

5.25 A risk workshop was held in May 2008 in order to identify all of the risks associated with the scheme, including project and construction risk, and to derive a quantified contingency. This was facilitated by JMP and was attended by the following officers from NELC's Project Team:

- Simon Moss – Principal Transport Officer;
- Dick Crump – Transport Strategy Manager;
- John Drinkall – Head of Design Team;
- Damien Jaines-White – Valuation & Estates Manager;
- Chris Holliday – Spatial Futures & Intelligence Manager;
- Malcolm Towle – Insurance and Risk Manager;
- Luke Allwood – Environment Group;
- Dave Poucher – Principal Traffic Engineer.

5.26 The risk workshop considered the following types of risk:

- Project;
- Environmental;
- Cost;
- Programme;
- Commercial;
- Safety.

5.27 A risk may impact on more than one risk type, for example a risk which may impact on programme will also impact on cost.

5.28 NELC have a risk procedure which identifies the risks to the Council associated with different stages of project delivery. This categorises risk into the following key stages:

- Obtain Funding;
- Land Assembly;
- Obtain Planning Permission;
- Legal Orders;
- Implement Proposals.

5.29 Each of the risks identified at the risk workshop were assigned to one of these key stages.

5.30 The NELC Risk Management System has a 10 point scoring system for the likelihood of a risk occurring and impact if it were to occur. These are shown in **Table 5-2**.

Table 5-2 Risk Scores

Value	Likelihood			Impact				
	Scale	Typical Range (%)		Scale	Time (mths)		Cost (£)	
1	Almost certain not to occur	0%	10%	Negligible	0	0.25	0	£10k
2	Remote chance	10%	20%	Minimal	0.25	0.5	£10k	£50k
3	Unlikely	20%	30%	Some	0.5	0.75	£50k	£100k
4	Not very likely	30%	40%	Minor	0.75	1	£100k	£250k
5	Even chance	40%	50%	Limited	1	2	£250k	£500k
6	Fairly likely	50%	60%	Significant	2	3	£500k	£1m
7	Significant	60%	70%	Substantial	3	4	£1m	£2m
8	High likelihood	70%	80%	High	4	8	£2m	£4m
9	Almost certain	80%	90%	Critical	8	12	£4m	£8m
10	Inevitable	90%	100%	Catastrophic		>12		<£8m

5.31 The likelihood and impact scores are then multiplied together to identify the most significant risks. The NELC risk management system requires that the identification of raw risk (the risk if no control measures were in place), the residual risk (the current risk taking into account existing control measures) and target risk (the aspired risk level that would be achieved with additional control measures). For risks associated with cost, it is the residual risk scores that are used to inform the Quantified Risk Allowance, see **section 7.3.** The most significant residual risks are shown in **Table 5-3.** A copy of the full Project Risk Register is included at **Annex Q.**

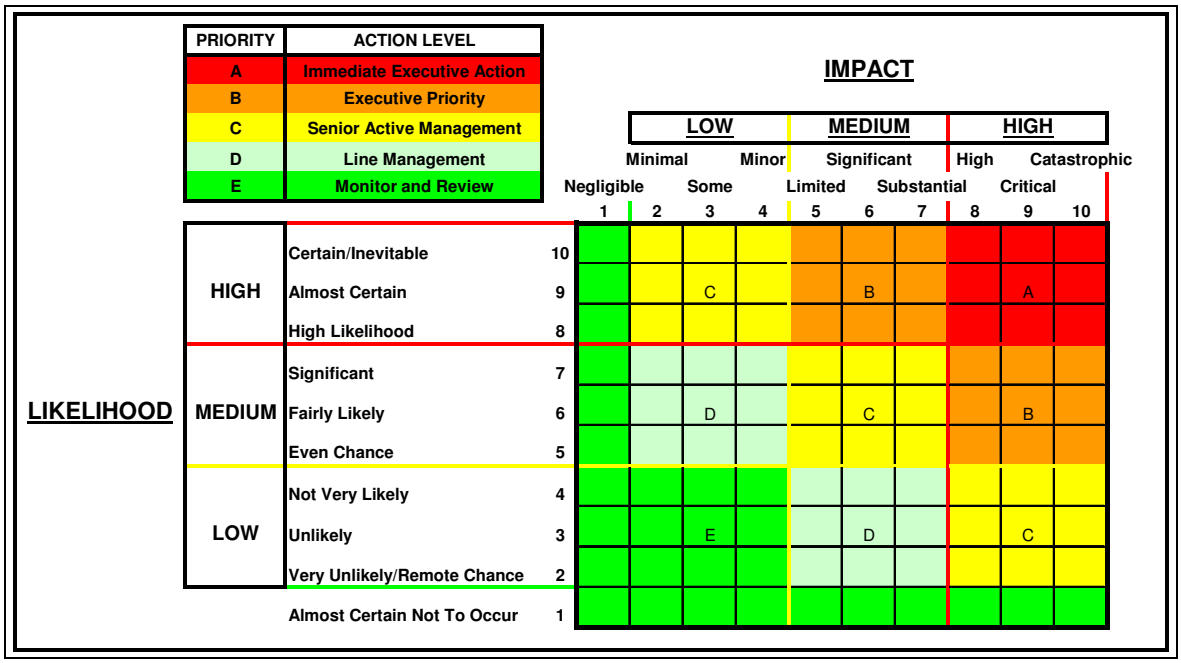
Table 5-3 Risk Log of Significant Residual Risks

Risk ID	Risk Description	Risk Type	Likelihood	Impact	Risk Exposure	Identified Further Actions
7	Excessive inflation	Cost	8	6	48	Risk tolerated (included in the QRA contingency)
14	Land acquisition (requires CPO)	Programme	4	10	40	Early engagement with landowners
32	"Towards Top Performance"	Programme	4	8	32	Further engagement with TTP project (to include an effective procurement solution)
16	Other objections	Programme	3	10	30	Further public consultation
	Negative Impact on other junctions	Safety	4	7	28	Safety audit processes

Escalation of Risks

5.32 The NELC system categorises risks using the framework as shown in **Figure 5-3**. The escalation of risks and required action by the Council is determined by this framework.

Figure 5-3 NELC Risk Matrix



5.33 The Project Board will have overall responsibility for the risks identified in the Risk Register and also unexpected risks encountered as the project progresses. As the risk register is developed it will outline the sector which is responsible for the risks highlighted and the Project Board will apportion responsibility to the relevant body to manage.

5.34 The register will be constantly updated and maintained during the design and construction process and the maintenance period so that unforeseen risks can be identified, assessed and managed or dealt with promptly in order to avoid prolonged delays and financial implications.

Stakeholder Management

5.35 All local authorities have a statutory duty to consult on specific areas of service delivery. North East Lincolnshire Council is committed to extending its consultation far beyond any statutory requirements with interested parties.

5.36 North East Lincolnshire Council's Consultation Strategy is intended to **INVOLVE** stakeholders in:

- Identifying issues which affect their lives or interests
- Voicing their needs and concerns
- Identifying solutions to problems
- Setting and monitoring targets for the continuing improvement of Council services.

5.37 The Consultation Strategy will **EMPOWER** all stakeholders to gain a voice within the decision-making processes and to play a key role in the strategic planning of services and in the monitoring of service delivery.

5.38 Furthermore, the Consultation Strategy will **FORMALISE** the consultation process so that all involved understand the competing priorities and constraints under which the Council services are delivered. Implementation of the consultation strategy will ensure that:

- The Council is open and responsive to the views of all stakeholders;
- Local communities are involved in identifying local needs;
- There is increased public participation in the decision-making process;
- The concept of involved and responsible citizenship is enhanced throughout the Borough;
- Residents are made aware that the Council actively seeks and values their input;
- Business and community partnerships can flourish

5.39 The main effect on key stakeholders is summarised in **Table 5-4**, with an indication at what stage further communication and consultation will be needed following the Council's Consultation Strategy.

Table 5-4 Consultation framework for key stakeholders

Stakeholder	Main Effect	Communication Approach
Associated British Ports Local industry and commerce	Benefits Port of Immingham, which is the largest port in the UK in terms of tonnage handled, Improved access from the A18 to the south.	Consultees at Planning, Orders and construction stages
DfT	Is the major financial contributor for the scheme of up to 90%	Programme Entry Conditional/Full Approval Major Scheme Unified Progress Report and Funding Claim Form Technical, financial and administrative advice Processing Legal Orders
English Heritage	Option 2 has no adverse affect upon designated historic assets in the area	Consultee at Planning, Orders and construction stages.
Environment Agency	Option 2 has the greatest effect on drainage and wildlife compared to other options Flood Risk Affects Stallingborough North Beck which is classified as a main river. Biodiversity Protection of water voles. Pollution Prevention Pollution traps should be installed in the surface water system with closure valves.	Consultee at Planning, Design, Orders and construction stages Approval of Flood Risk Assessment and Land Drainage Consent Provisions of Wildlife & Countryside Act 1981(Schedule 5) and Water Vole Guidance for Planners and Developers... Approval required from Environment Agency and Land Drainage Board
GoYH	The Government Office at Leeds is the main conduit between the Regional Transport Board and Central Government	Programme Entry Conditional Approval Full Approval Major Scheme Unified Progress Report and Funding Claim Form Technical, financial and administrative advice Processing Legal Orders
Highway Agency	Connects with the A180 Stallingborough Interchange	Consultee at Planning, Design, Orders and construction stages

Table 5-4ctd Consultation framework for key stakeholders

Stakeholder	Main Effect	Communication Approach
HMRI	Would have preferred road bridge to replace level crossing but expects measures to be taken if queuing encroaches over level crossing	Consultee at Planning, Design, Orders and construction stages
Local Schools	Reduces dock bound traffic using Pelham Road, Immingham. Improved safety for pedestrians in Immingham and Stallingborough	Consultee at Planning, Orders and construction stages
Natural England	Ecological effect within 2 km of the scheme	Consultee at Planning, Design, Orders and construction stages Collation of ecological information within 2 km of the scheme. Provisions of Wildlife & Countryside Act 1981(Schedule 5) and Water Vole Guidance for Planners and Developers...
NELC	Highway Authority for the A18-A180 Link Road with a 10% financial stake	Cabinet Reports Planning Approval
Network Rail	Within 200m of the Little London level crossing along the Sheffield-Grimsby Railway line. No increased risk to operation of level crossing	Consultee at Planning, Design, Orders and construction stages
Parish Councils and Town Councils	Affects areas within Healing and Immingham	Consultee at Planning, Orders and construction stages.
Regional Transport Board	RTB Major Transport Scheme Regional Submission, A18 – A180 Link included in regional transport funding allocation. The scheme supports key Regional Transport Strategy objectives of improving links to Humber Ports.	Progress on Major Schemes Reports.

5.40 The A18 – A180 Link Road Project Communications Plan is set out in more detail in **Annex P**.

Evaluation

5.41 The core evaluation objectives are:

- Improved access from rural Lincolnshire to the docks and other industrial areas in Immingham and vice versa;
- Improved journey times for commercial traffic;
- The removal of heavy goods vehicles from Pelham Road in Immingham.
- The removal of through traffic (cars and Light Goods Vehicles [LGV]) from the village of Stallingborough.

5.42 The indicators which will be measured include:

- Traffic flows by vehicle type on Pelham Road and Station Road, Stallingborough;
- Journey times from B1210 to Immingham Docks eastern and western gates.

5.43 Before and after surveys will be undertaken which include journey time surveys along key routes and classified traffic counts on Pelham Road, Immingham and Station Road, Stallingborough and the new A18-A180 Link road.

6 The Commercial Case

Introduction

6.1 The procurement process, unless managed carefully, can significantly reduce the success and development of the initial stages of implementation, resulting in unacceptable delay and disruption to the overall timescale of the project. The Council is committed to the principles of 'Achieving Excellence in Construction' and as such, has considered the commercial aspects of the proposals in detail.

Project Procurement

6.2 The Council's approach to procurement is in keeping with the Community Strategy and its Corporate Plan, both customer focused and driven by improving value for money. The Corporate Procurement Strategy, which is included as **Annex R**, sets out the framework by which the Council will ensure that procurement across the Council delivers excellent value for money.

6.3 Much of the direction, guidance, policies and recent thinking in respect of local authority procurement have been driven by and informed by best practice in procurement influenced by the government's efficiency review 'Releasing Resources for the Frontline' 2004 undertaken by Sir Peter Gershon (also referred to as the 'Gershon Review'). Where new infrastructure is being considered, Sir John Egan's government report Rethinking Construction / Constructing Excellence is particularly important.

1. The Councils Contract Procedure Rules (CPR) are integral to the Corporate Procurement Strategy for any purchase or procurement exercise by the Council and are intended to:
2. **To support the delivery** of the Council's Corporate Procurement Strategy;
3. To **provide a legal framework** for the Council's procurement activities;
4. To **provide an auditable framework** for the Council's procurement activities when used in conjunction with the Manual of Guidance for Procurement Procedures;
5. To help the Council **obtain value for money** so that in turn it may provide value for money services to the public;
6. To **comply with the law** governing spending of public money; and
7. To **protect staff and members** of the Council from undue criticism or allegation of wrong doing.

Towards Top Performance

6.4 To deliver top performing services for the community it serves, the Council has established a Towards Top Performance (TTP) programme which will eventually determine how the Council provides transport services and infrastructure with the help of a partnering organisation. An Official Journal of the European Union (OJEU) notice has been developed to explore possible options with the market for the long term service delivery solutions. After the 1st stage pre-qualification evaluation, when 5 bidders were chosen, this has now been taken to the next stage which will result in a partner being in place by early 2009 who will be able to undertake the design, construction and maintenance of highways, which will have particular relevance to procuring the A18-A180 Link road.

Risk Transfer

6.5 Project risks should only be transferred to the private sector if, and to the extent that, the private sector is capable of managing such risk. Transfer of responsibility increases the scope for innovation by the private sector. The private sector is thought to be better able to manage certain risks. The transfer of risk associated with this scheme will be a matter for negotiation once the Council's partner, (see section 6.4), has been identified.

6.6 For Design and Build contracts specifically it is important to ensure that the output specification is clear and avoids weaknesses or ambiguities. This will avoid reductions in the final quality of the product. In addition, changes to requirements after the contract award stage can prove expensive and should be avoided wherever possible.

6.7 A Risk Register for the scheme has been developed, setting out in detail the risks relevant to the project, the likelihood of those risks occurring and an estimate of the financial impact of occurrence.

7 The Financial Case

Base Cost

Construction Cost

7.1 Consultants Opus produced the original cost estimates in 2007 for submission to the Regional Transport Board[2]. On the basis of these estimates, the Regional Transport Board approved £7.065million in outturn costs.

7.2 More recently, consultants JMP have independently reviewed the scheme costs which included a check of quantities. The rates were checked against rates given in SPON's 2008[3]. JMP identified some changes to quantities and rates, as well as some additional items, which is reported in the JMP report A18-A180 Link Road: Review of Scheme Costs[4], which is included as **Annex S.**

Quantified Risk Allowance

7.3 As discussed in Section 5, a risk workshop was held in May 2008 in order to identify all of the risks associated with the scheme and to derive a quantified contingency. The most significant cost risks identified are related to inflation, either due to excessive inflation of key materials, or through annual inflation costs due to various possible delays. The most significant risks of delay are related to the programming of Network Rail's level crossing upgrade and the possibility of a lengthy CPO process. The risks were run through the @RISK software which derived a most likely cost risk of £2.02m which represents a 55% uplift to the construction costs.

Total Scheme Cost

7.4 A summary of the scheme costs is provided in **Table 7.1**. A detailed breakdown of the construction costs including quantities and rates are provided within Appendix B of the report contained in **Annex S.**

[2] Major Transport Scheme: Regional Submission, A18-A180 Link, OPUS, May 2007
[3] SPON's Civil Engineering and Highway Works Price Book, 2008
[4] A18-A180 Link Road: Review of Scheme Costs, JMP, June 2008

Table 7-1 Scheme Costs

Description	Total £
100: Preliminaries	837,000
200: Site Clearance	42,850
300: Fencing	36,310
400: Road Restraint Systems (Vehicle and Pedestrian)	28,800
500: Drainage and Service Ducts	148,550
600: Earthworks	1,706,925
700: Pavements	572,916
1100:Kerbs, Footways & Paved Areas	34,375
1200: Traffic Signs and Road Markings Permanent Traffic Signs	30,015
1300: Road Lighting Columns and Brackets	13,200
1400: Electrical Work for Road Lighting and Traffic Signs	14,900
3000: Landscape and Ecology	10,000
Other Costs	222,500
Construction Cost Sub Total	**3,697,711**
Land Purchase	60,500
Detail Surveys & Preliminary Design	73,954
Planning & Orders Process	110,931
Detailed Design	166,397
Tendering	21,964
Site Supervision	110,931
Quantified Risk Allowance	2,020,000
Scheme Cost Total	**6,232,388**

Out-turn Cost and Funding Package

Tender Price Inflation

7.5 Driven by a boom in construction in recent years, construction inflation is significantly higher than retail inflation: current forecasts by Cyril Sweett[5] range between 4.5% and 6.5% per annum over the period to 2011, with tender price inflation for Yorkshire and Humberside forecast at around 5%, as shown in **Table 7.2**.

[5] Tender Price Forecast (Q1 2008), Cyril Sweett, February 2008

Table 7-2 Forecast Increases in Tender Prices

Tender price forecasts	2007	2008	2009	2010	2011
East Anglia	5.5	5.25	5.0	5.0	5.0
East Midlands	4.5	4.5	4.0	4.0	4.0
West Midlands	4.5	4.5	4.0	4.0	4.0
North	5.0	5.0	5.0	4.5	4.5
Yorks & Humber	5.0	5.0	5.0	4.5	4.5
N West	5.0	4.75	4.5	4.25	4.25
N Ireland	5.0	4.0	5.0	5.25	5.5
Scotland	4.5	4.25	4.0	4.0	4.5
Greater London	6.5	6.25	5.75	5.5	5.5
South East (ex London)	5.5	5.25	5.0	5.0	5.0
South West	5.5	5.5	4.5	4.5	4.5
Wales	4.5	4.5	4.0	4.0	4.0
UK Average	**5.25**	**5.0**	**4.75**	**4.5**	**4.5**
Republic of Ireland	3.0	-10.0	-2.0	5.0	5.0

Source: Tender Price Forecast (Q1 2008), Cyril Sweett, February 2008

7.6 Davis Langdon's assessment[6] is that over the period 2007-2012, workload within the construction sector associated with the Olympics will add a further 1-2% to current inflation trends, equating to an average inflation rate of 6% per annum from 2008 onwards which is slightly higher than the Cyril Sweett forecast. An inflation rate of 6% per annum has therefore been used to produce the outturn costs presented in **Table 7-3**.

7.7 Savills land value research[7] showed that average farmland values have increased by 15% in 2006 across Great Britain, recording a total growth of 50% since the beginning of 2004, 37.5% over the last year. However, over the last 10 years agricultural land has gone up by 58%[8] which equates to 4.7% per annum. The high inflation rate seen over recent years is very unlikely to be sustained, therefore an inflationary rate of 10% has been applied to the land costs.

Table 7-3 Out-turn Cost

Project Element	Timing	Cost 2007 Prices £	Outturn Cost £
Land Purchase	2009-10	76,830	92,964
Detail Surveys and Preliminary Design	2009-10	74,074	83,230
Planning Orders and processes	2009-10	159,925	179,692
	2010-11	119,384	142,188
Detail Design	2009-10	188,440	211,731
Tendering process	2009-10	21,994	24,712
Works process (including site supervision)	2010-11	1,099,267	1,309,245
	2011-12	4,522,399	5,709,425
Total		**6,262,312**	**7,753,185**

[6] Market Forecast. Davis Langdon, Building, 2006, Issue 18
[7] Agricultural Land Market Survey No. 26, Savills, Spring 2007.
[8] http://agriculturalland.com/

7.8 Therefore, the total outturn cost of the scheme following Programme Entry is £7.75million. Guidance[9] states that the DfT will fund no more than 50% of the preparatory costs between Programme Entry and Full Approval. The amount requested from the DfT for each financial year is presented in **Table 7-4.**

Table 7-4 Funding Package

	Prep Costs between Programme Entry and Full Approval	Costs after Full Approval		Total £
		2010-11 £	2011-12 £	
Total Scheme Cost	**733,838**	**1,310,584**	**5,708,857**	**7,753,279**
Local Contribution	366,919	0	480,409	775,328
DfT Funding Bid	**366,919**	**1,310,584**	**5,228,448**	**6,977,951**

7.9 A copy of the Section 151 letter which confirms NELC which confirms that the 10% contribution and funding profile has been approved is included as **Annex T**.

[9] Guidance for Local Authorities seeking Government funding for major transport schemes: Main document, DfT , 2007