

**Open Report on behalf of Richard Wills,  
Executive Director for Environment and Economy**

Report to:	<b>Executive</b>
Date:	<b>02 October 2018</b>
Subject:	<b>North Hykeham Relief Road</b>
Decision Reference:	<b>I016499</b>
Key decision?	<b>Yes</b>

**Summary:**

The North Hykeham Relief Road (NHRR) is a major infrastructure project aimed to complete the final phase of the circulatory around Greater Lincoln and North Hykeham.

This report seeks to gain approval for the length and type of carriageway, prior to the completion of the Outline Business Case. The report also seeks approval of the proposed project funding sources and associated percentages/values. The Outline Business Case is the key tool for justifying funding opportunities from governmental bodies such as the Department for Transport (DfT).

**Recommendation(s):**

It is recommended that the Executive:

- (1) Approve a dual carriageway from the A46 (Pennells' roundabout) to connect with the roundabout at the A15 (currently being constructed as part of the Lincoln Eastern Bypass) as opposed to either a single or single + future proofed carriageway as the Council's preferred carriageway option in all future development of the NHRR including the making of funding bids.
- (2) Approve seeking funding from governmental bodies such as the DfT in line with the percentages/values contained in the body of this paper.
- (3) Delegate authority for approving the final form of the Outline Business Case (at the point when the bidding opportunity is announced) and submission of the same to the County Commissioner Economy and Place.

**Alternatives Considered:**

1. There are alternative carriageway length options which are detailed in the body of this report. The reasons for rejection are also contained in the body of the report.

2.	There are alternative carriageway types (single and single+future proof) which are detailed in the body of this report. The reasons for rejection are also contained in the body of the report.
3.	Alternative funding sources and percentages/values were considered, however the NHRR Project Executive Board agreed this paper represents the best balance with regards LCC affordability, previous DfT bids and likelihood of success
4.	No further progress be made to this project

**Reasons for Recommendation:**

The full reasons are outlined in the body of this report, however to summarise. The proposed dual carriageway project delivers the greatest benefits to the public in terms of reducing traffic congestion, improving journey time, providing journey time reliability and unlocking development opportunities.

**1.1 Introduction**

The NHRR is the last major highway scheme contained within the Lincoln Integrated Transport Strategy (LITS). The NHRR is also the last element of a complete ring road around the greater Lincoln urban area comprising both Lincoln and North Hykeham. The ring road will be comprised of four sections of carriageway: the Lincoln Western Relief Road (LWRR), Lincoln Northern Relief Road (LNRR), the currently under construction Lincoln Eastern Bypass (LEB), and the NHRR.

1.2 The NHRR proposal is for an 8km bypass road providing a connection between the A46 (A46/A1434 Pennells' roundabout) to the A15 (A15 Lincoln Eastern Bypass/Sleaford Road roundabout) immediately to the south of the Greater Lincoln urban area and North Hykeham. The NHRR scheme has been an aspiration for key stakeholders in the Lincoln area for a number of years and recent changes to growth aspirations have further reinforced the need for the scheme. The scheme is identified in a number of regional and local strategies and policy plans and is a key piece of infrastructure in the wider transport strategy for the Lincoln area as well as being an important element in helping deliver planned growth in the area.

1.3 The current route of the NHRR, which is the subject of this Outline Business Case (OBC) is consistent with all strategy and policy documents dating back to and including when the preferred route was identified in December 2006. This includes the technical advice which was the basis for assessing consequential extent of blight on Station Road. The assessment of blight was based on a dual carriageway project and triggered LCC's decision to purchase those properties between 2006 and 2008. The below provides a summary of key historical strategies, policies and approvals the NHRR has been subject to:

- October 2005 First 'preferred route' consultation takes place

- April 2006                      Route 2c selected as basis for an emerging preferred route
- October 2006                 Second 'preferred route' consultation takes place
- December 2006              Route 2c endorsed as the NHRR's preferred route
- 2008 - 2010                    Purchase of properties on Station Road due to blight concerns regarding the line of the NHRR
- 2006, 2008 & 2013         Lincoln Integrated Transport Strategies adopted/updated
- April 2013                      4<sup>th</sup> Lincolnshire Local Transport Plan adopted
- April 2017                      Central Lincolnshire Local Plan Adopted
- July 2017                        Funding secured for the preparation of an Outline Business Case
- April 2018                      Creation of a new Greater Lincoln Traffic Model
- June 2018                      Project engagement carried out, including survey, drop in sessions and workshops
- End of 2018                    Proposed submission of Outline Business Case to the DfT for project funding
- 2019                                Proposed development of a new Lincoln Transport Strategy

1.4 In the summer of 2017, Lincolnshire County Council commissioned the development of an OBC for the North Hykeham Relief Road. The first step in this process was to formulate an Option Assessment Report (OAR), which provides the foundation of technical analysis upon which the OBC will be developed and the basis for decision-making on the preferred option for carriageway standard.

#### 1.5 **Options Summary**

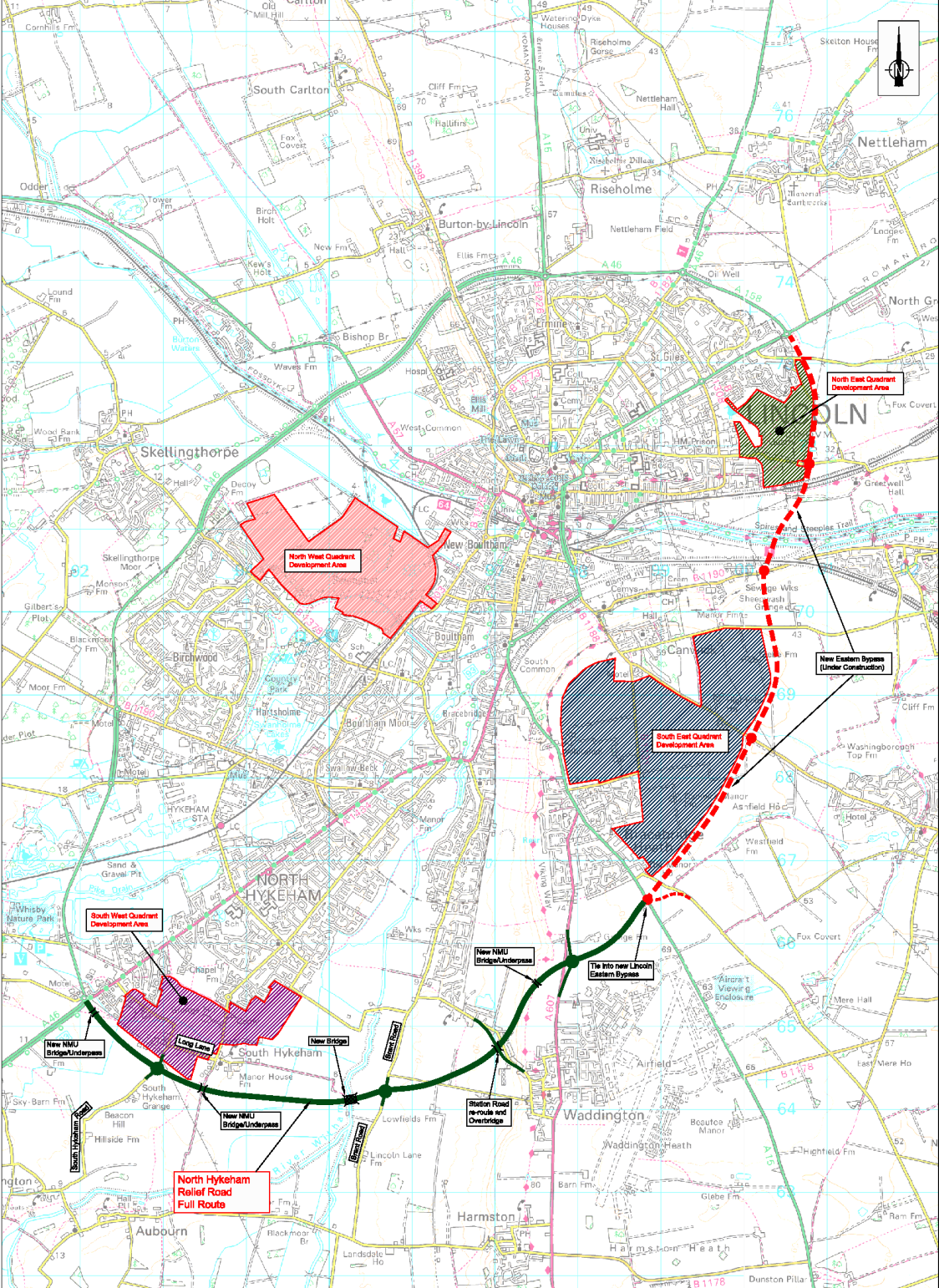
The OAR focussed on the options relating to the standard of carriageway. Three primary options have been considered, these are:

- a single carriageway
- a dual carriageway
- a single carriageway with future-proofed junctions and structures which allow for dualling of the scheme at a future date

1.6 Further options for shorter schemes have also been considered, which include:

- A46 to South Hykeham Road – single carriageway
- A46 to South Hykeham Road – dual carriageway
- A46 to Brant Road – single carriageway
- A46 to Brant Road – dual carriageway

Figure 1.0 – NHRR Location Plan



The above plan depicts the alignment of the LEB as a dashed red line, which is under construction. It also depicts the route of the NHRR in green and various coloured hatched areas which represent Sustainable Urban Extensions.

## 1.7 Option Assessment

The seven options were taken through a rigorous WebTAG compliant assessment process. (WebTAG is the DfT's Web-based Transport Analysis Guidance and toolkit which consists of software tools and guidance on transport modelling and appraisal methods that are applicable for highways and public transport interventions). The process included analysis of the current and future conditions, confirming the need for a scheme, objective setting, concept design, initial economic appraisal, stakeholder and public engagement. This work has been supported by the new Greater Lincoln Multi Modal Transport Model.

1.8 The relative benefits of the scheme options have included the following stages:

- **Initial Sift.** An initial sift of options was completed to identify any significant problems and issues which are likely to prevent an option from progressing;
- **Early Assessment & Sifting Tool.** The Early Assessment and Sifting Tool (EAST) was utilised. This was developed by the DfT as a decision support tool to develop, quickly summarise and present evidence on options in a clear manner which is consistent with the DfT's five case transport business structure;
- **Traffic Impacts.** The traffic impacts of each option were assessed on the strategic and major road network, as well as on the local roads and routes.

## 1.9 Initial Sift

The shorter options (A46 to South Hykeham Road and the A46 to Brant Road) were discounted at this stage due to:

- scoring poorly against scheme objectives;
- not being deemed deliverable on the grounds that they do not align with long-term policy aspirations of a relief road to the south of Greater Lincoln as stated within the Lincoln Integrated Transport Strategy, the Lincolnshire 4<sup>th</sup> Local Transport Plan and the Central Lincolnshire Local Plan; and
- not being deemed feasible as the options are not technically appropriate when considering future demand.

## 1.10 EAST Assessment

The EAST Assessment identified the dual carriageway as being the best performing option in relation to the objectives and overall impact. In the main this is due to the higher level of traffic relief expected to result from its implementation. However, each option is likely to deliver high value for money (in line with DfT's criteria).

## 1.11 Traffic Impacts

The following summarises the traffic impacts and issues for the three shortlisted options.

- Across all three options, the opening year traffic flows for the NHRR are consistent with those acceptable for a dual 2-lane all-purpose

carriageway as set out in guidance contained within the Design Manual for Roads and Bridges (DMRB).

- The journey times along the dual carriageway option are over a minute quicker than the single carriageway and future proofed options in the peak periods both in 2026 and 2036. The average speeds are also forecast to be significantly quicker (approximately 10mph) in the dual carriageway option.
- The traffic modelling analysis indicates that the single carriageway links, particularly at the western end of the NHRR, will be operating at full capacity by the end of the Local Plan period (2036) whilst the dual carriageway option would remain within capacity in these timescales.
- The Lincoln Eastern Bypass is being constructed as a single carriageway with future proofed junctions and features (it should be noted that the Authorities intentions had always been for a dual carriageway). There remains an aspiration to upgrade this to a dual carriageway at some point in the future. Progression of the NHRR as a standard single carriageway could be seen as being inconsistent with the overall design approach to the Eastern Bypass.
- As dependent development, the South West Quadrant has not been taken into account in the 'with NHRR' scenario. This will place further development pressures on the network.
- All three options will improve the resilience of the transport network through the expansion of the orbital network and increases in capacity. However, a dual carriageway option would further improve resilience as it would have the capacity to better deal with incidents and the impact of maintenance works.
- The dual carriageway option is forecast to provide the greatest level of traffic relief on the A46 when compared to the 'Do-Minimum' situation in both 2026 and 2036. This is more pronounced on the northern sections of the existing relief road on the sections between Skellingthorpe Road and Riseholme Road.
- All three options will provide significant traffic relief across a number of routes both within central Lincoln and in the south of the city.
- The dual carriageway option provides the greatest level of relief.

### 1.12 Costs

The initial outturn scheme cost estimates range from £100m for the single carriageway option to £148m for the dual carriageway.

	<b>Single Carriageway</b>	<b>Single Carriageway Future Proofed</b>	<b>Dual Carriageway</b>
Base Cost*	£60,620,560	£72,168,966	£91,040,330
Risk Allowance	£17,900,000	£20,324,000	£25,440,000
Inflation	£21,508,792	£25,339,031	£32,043,039
<b>Total Outturn Cost</b>	<b>£100,029,352</b>	<b>£117,831,997</b>	<b>£148,523,369</b>

*\*Does not include any sunk costs (costs that have already been incurred and cannot be recovered)*

### 1.13 Benefit to Cost Ratio (BCR)

The outcome of the indicative value for money Benefit Cost Ratio (BCR) assessment, for each of the three options is set out in the table below. The BCR presents the ratio of the forecast transport user and accident benefits to the present value of costs. The single carriageway and future proofed options are likely to produce a similar level of benefit and the dual carriageway is forecast to provide the greatest level of benefit (£321m over 60 years). However, considering the differing project costs, for the single carriageway would be expected to result in a higher BCR. It should also be noted that the BCRs for all options fall in the high value for money category (BCR between 2 and 4) as defined by DfT.

Indicative Value for Money Assessment	Options		
	Single Carriageway	Single Carriageway - Future Proofed	Dual Carriageway
Indicative BCR	3.67	3.12	2.87

### 1.14 Engagement Outcome

Stakeholder and public engagement was undertaken in June 2018. The engagement process included two stakeholder workshops and four public drop-in exhibitions. In parallel, a questionnaire was also released, of which 1,023 were completed. Some 73% of respondents strongly supported the scheme and 89% either supported or strongly supported the scheme. Only 8% of respondents opposed or strongly opposed the scheme with 2% either not knowing/having no opinion. In addition, 87% of respondents preferred the full length scheme between the A46 and the A15 with 75% of respondents preferring the dual carriageway option. Only 1% of respondents preferred any version of the A46 to South Hykeham Road option with 8% preferring the A46 to Brant Road option.

1.15 The OAR has assessed a number of options for the NHRR, including three different carriageway standards and three different lengths. Through initial sifting and the engagement process it has been deemed that the two shorter versions of the NHRR be discounted and more detailed assessment and appraisal be undertaken for the options of three different standards of the full length route. In summary:

### 1.16 Single Carriageway

- The single carriageway option will deliver the scheme objectives. It will improve the east west connectivity in the south of Lincoln, help to reduce traffic levels on local urban and rural roads, support the delivery of the Sustainable Urban Extensions and help improve the resilience of the orbital and key route network through and around Lincoln.
- It will provide significant traffic relief across a number of local routes both within central Lincoln and in the south of the city.
- The forecast flows on the single carriageway exceed the opening year flow range for a single carriageway as defined by DMRB. This identifies that a dual carriageway standard will be more economically

and operationally acceptable. Congestion Reference Flow analysis also indicates that some sections of a single carriageway scheme will be operating at full capacity by the end of the plan period in 2036.

- It will produce acceptable levels of benefits albeit these will be lower than the dual carriageway option.
- The standard single carriageway is the lowest cost option and the outturn costs are expected to be in the region of £48m lower than the dual carriageway.
- This option will produce a BCR that is within the high value for money category, as defined by DfT.
- Progressing the NHRR as a standard single carriageway could be seen as not being consistent with the overall design approach to the Eastern Bypass. This is being developed as a future proofed single carriageway and there is a clear aspiration to upgrade the route at a later date.

### **1.17 Single Carriageway + Future Proofed**

- The future proofed option is expected to have a similar level of performance to the standard single carriageway and it will deliver the scheme objectives.
- It will provide similar levels of traffic relief to the standard single carriageway across a number of local routes both within central Lincoln and in the south of the city.
- The forecast flows on the scheme are again similar to the single carriageway and exceed the opening year flow range for a single carriageway as defined by DMRB.
- It will also produce acceptable levels of benefits albeit these will be lower than the dual carriageway option.
- This is the second lowest cost option. The outturn costs for the option with future proofing are expected to be in the region of £30m lower than the dual carriageway.
- This option will produce a BCR that is within the high value for money category, as defined by DfT.
- The design standard will be consistent with the overall design approach to the Eastern Bypass. However, there are risks in adopting this approach as it requires land not immediately required for the scheme making the case for compulsorily purchasing some elements of land more difficult to justify.

### **1.18 Dual Carriageway**

- All three carriageway standard options of the full route deliver the scheme objectives. However, due to the greater capacity of the dual carriageway option, it is likely to do so more robustly.
- An analysis of opening year daily traffic flows compared to DMRB guidance for carriageway standards indicates that a dual carriageway standard is most likely to be economically and operationally acceptable.



- The recent stakeholder and public engagement exercise has shown that a very significant majority of people (75%) support the dual carriageway option for the full A46 to A15 NHRR.
- The dual carriageway option is forecast to provide the highest level of traffic relief on the A46 when compared to the Do-Minimum situation in both 2026 and 2036. This is more pronounced on the northern sections of the existing relief road. The dual carriageway option is also forecast to result in more traffic reassigning to use the Eastern Bypass with the southern section to the B1188 Lincoln Road expected to see the most significant increases.
- The dual carriageway option will provide the highest level of benefits, although not significantly higher than the other two options in proportion to the relative costs.
- The dual carriageway is more expensive than the other two options and has an outturn cost of approximately £148m.
- This option will produce a BCR that is within the high value for money category, as defined by DfT.
- If taken forward to the OBC stage, further work will need to be undertaken to demonstrate that the dual-carriageway option will provide sufficient value for money, wider economic benefits and strategic fit for the DfT to consider funding.

### 1.19 Project Funding

Project funding is the next key stage of the development of the NHRR and thus the need for the completion of the OBC for submitting to the DfT for funding. The DfT have suggested the next opportunity for submitting a funding bid will be in late 2018, possibly early 2019. Outlining the funding request to the DfT, along with all other sources of project funding is an essential element of the OBC submission.

The NHRR Executive Project Board has considered many factors when proposing the funding sources and values, which included:

- Previously percentage requests from successful bids to the DfT
- The value of previous successful bids to the DfT
- The value of the BCR for the dual carriageway scheme, which is 2.87 and categorised by the DfT as 'high'
- A review of LCC match funding expectations across all central government bodies
- An assessment of the NHRR benefits against the specific funding bid requirements

The below table depicts what the NHRR Executive Project Board decided would be the most efficient bid when balancing affordability and likelihood of success.

<b>Dual Carriageway Project</b>	
<b>Funding Source</b>	<b>Funding Value</b>
DfT requested contribution – 70%	£103,970,404
Developer funding contribution	£10,000,000 – which is a minimum
LCC funding contribution	£34,558,744
<b>Whole Scheme Estimated Cost</b>	<b>£148,529,148</b>

## 1.20 Abbreviations:

- Web Tag – DFT Web Based – Transport Analysis and Guidance and Toolkit
- EAST – Early Assessment and sifting tool
- DfT – Department for Transport
- BCR – Benefit to Cost Ratio
- OBC – Outline Business Case
- DMRB – Design Manual for Road and Bridges
- OAR – Options Assessment Report
- SUNK Cost - Funding already invested within the scheme, and not recoverable
- AADT – Annual Average Daily Traffic

## 2. Legal Issues:

### Equality Act 2010

Under section 149 of the Equality Act 2010, the Council must, in the exercise of its functions, have due regard to the need to:

- \* Eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Act
- \* Advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it
- \* Foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

The relevant protected characteristics are age; disability; gender reassignment; pregnancy and maternity; race; religion or belief; sex; and sexual orientation

Having due regard to the need to advance equality of opportunity involves having due regard, in particular, to the need to:

- \* Remove or minimise disadvantages suffered by persons who share a relevant protected characteristic that are connected to that characteristic
- \* Take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of persons who do not share it
- \* Encourage persons who share a relevant protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low

The steps involved in meeting the needs of disabled persons that are different from the needs of persons who are not disabled include, in particular, steps to take account of disabled persons' disabilities

Having due regard to the need to foster good relations between persons who share a relevant protected characteristic and persons who do not share it involves having due regard, in particular, to the need to tackle prejudice, and promote understanding

Compliance with the duties in section 149 may involve treating some persons more favourably than others

The duty cannot be delegated and must be discharged by the decision-maker. To discharge the statutory duty the decision-maker must analyse all the relevant material with the specific statutory obligations in mind. If a risk of adverse impact is identified consideration must be given to measures to avoid that impact as part of the decision making process

An impact analysis has not been undertaken in relation to the OBC as at this stage of the project these are considered to be neutral in their impact on persons with protected characteristics. Should the project attract funding then the next project phase will be sourcing planning approval which will require a significant level of impact analysis.

### Joint Strategic Needs Analysis (JSNA and the Joint Health and Wellbeing Strategy (JHWS)

The Council must have regard to the Joint Strategic Needs Assessment (JSNA) and the Joint Health & Well Being Strategy (JHWS) in coming to a decision

Consideration has been given to the JSNA and the JHWS and the NHRR scheme has significant benefits for both the health and well-being of the people of Lincoln and North Hykeham. This has been significantly scrutinised previously through the process of devising the adopting the Central Lincolnshire Local Plan.

### Crime and Disorder

Under section 17 of the Crime and Disorder Act 1998, the Council must exercise its various functions with due regard to the likely effect of the exercise of those functions on, and the need to do all that it reasonably can to prevent crime and disorder in its area (including anti-social and other behaviour adversely affecting the local environment), the misuse of drugs, alcohol and other substances in its area and re-offending in its area

The issues have been considered but there are not considered to be any direct implication for crime and disorder.

### **3. Conclusion**

The NHRR scheme has been promoted through a significant number of published strategy and policy documents, which includes the County Council's Local Transport Plan, Lincoln Integrated Transport Strategy and the adopted Central Lincolnshire Local Plan. The need for the NHRR scheme and benefits it will bring are widely recognised and that has been reflected in the chosen route, which is shown and protected in the local plan.

For the reasons set out in the report the NHRR makes a compelling case of the significant benefits this infrastructure will derive in the public interest. The report concludes that carriageway shall be of a dual carriageway standard and this shall be the basis for all further project development, including funding bids.

The summarised reasoning for a dual carriageway over a single or single + future proof are:

- The dual carriageway standard would provide the greatest level of traffic relief to the North Hykeham highway network
- There is greater vehicle capacity on the dual carriageway option which will remove the need for abortive costs in improving further in future years.
- The dual carriageway option will provide the highest level of benefits.
- The daily traffic flows compared to DMRB guidance for carriageway standards indicates a dual carriageway standard is the most economically and operationally viable option.
- The dual carriageway will unlock the South East Quadrant Sustainable Urban Extension and help improve the resilience of the whole ring road and the key routes through and around Lincoln.
- The recent stakeholder and public engagement exercise has shown that a very significant majority of people (75%) support the dual carriageway option.
- This option will produce a BCR that is within the high value for money category, as defined by DfT.
- The dual carriageway option is forecast to provide the highest level of traffic relief to the existing Western Bypass.
- The dual carriageway option is in line with the LEB strategy being a single future proofed carriageway, which will be dualled in the future.
- The dual carriageway option is consistent with the existing A46 dual carriageway between Lincoln and Newark.
- There are clear aspirations from both LCC and Highways England to upgrade the full length of the existing Western Bypass to a dual carriageway standard (where it isn't already), which further reinforces the need for the NHRR to provide consistency.

Further work is necessary to gain funding, which is the next significant milestone. The requested endorsement will allow the NHRR to be progressed and provide the County Council with the ability to react quickly to upcoming funding opportunities. The endorsement will also provide potential funding bodies with the confidence that the County Council can deliver this ambitious project.

#### **4. Legal Comments:**

Lincolnshire County Council has power to make the decisions sought by the recommendations in this Report.

The proposal is consistent with the Policy Framework and within the remit of the Executive.

## **5. Resource Comments:**

The Environment & Economy approved budget for advance scheme design includes sufficient resources to enable the development of the outline business case required to provide sufficient information to submit a funding bid to the Department for Transport at the appropriate time. The currently approved capital programme does not include any budget for the NHRR, so any bid to the DfT would need the approval of Council to include the scheme in the future capital programme.

## **6. Consultation**

### **a) Has Local Member Been Consulted?**

Yes

### **b) Has Executive Councillor Been Consulted?**

Yes

### **c) Scrutiny Comments**

The report will be considered by the Highways and Transport Scrutiny Committee at its meeting on 10 September 2018. Any comments from the Committee will be presented to the Executive.

### **d) Have Risks and Impact Analysis been carried out?**

No

### **e) Risks and Impact Analysis**

This will be completed as part of the planning application submission.

## **7. Background Papers**

No background papers within Section 100D of the Local Government Act 1972 were used in the preparation of this report.

This report was written by Mark Heaton, who can be contacted on 01522 553182 or [mark.heaton@lincolnshire.gov.uk](mailto:mark.heaton@lincolnshire.gov.uk) .