Document Reference: LCC8

Proof of Evidence
Transport Strategy

Gary Billington PhD, CEng, MICE
On behalf of Lincolnshire County Council

Public Inquiry in respect of the Lincoln Eastern Bypass and the following orders:

1. The Lincolnshire County Council (A15 Lincoln Eastern Bypass) (Classified Road) (Side Roads) Order 2014

2. The Lincolnshire County Council (A15 Lincoln Eastern Bypass) Compulsory Purchase Order 2014

3. Application In Relation To Proposed Compulsory Purchase Of Land Held By The Canal & River Trust

Department for Transport Reference: NATTRAN/EM/LAO/0084

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1 Introduction

1.1 Experience and Qualifications

1.1.1 I am Gary Billington, a Technical Director employed by Mouchel, which is Lincolnshire County Council's Technical Services Partner. I have a Bachelor of Science Degree in Architectural engineering, a Master of Science Degree in Transport Planning and Engineering and a PhD in Transport Planning, all from the University of Leeds. I am also a Chartered Engineer and a Member of The Institution of Civil Engineers.

1.1.2 I have over 35 years of experience in the field of transport planning and traffic engineering working for local authorities and consultancies and have advised private and public sector clients on the design and assessment of projects ranging from major s to local developments.

1.1.3 With regard to the Lincoln Eastern Bypass (LEB), during the period 2003 to 2005, while employed by Jacobs, which at that time was the County Council's Technical Services Partner, I directed a team of engineers and planners undertaking feasibility work on a possible scheme to bypass Lincoln to the east, including traffic surveys and modelling of the impacts of the scheme. This work ultimately formed the basis for the dual carriageway scheme for which planning permission was granted in 2010.

1.1.4 I joined Mouchel in 2005, and since 2010, I have provided advice to the County Council on all the transport planning and traffic aspects of the current single carriageway Scheme including the business case and funding bid to the Department for Transport, the transport assessment and the planning application. I have directed a team of engineers and planners working on the collection and analysis of traffic data, the building and use of a traffic model for Lincoln and the economic and operational assessment of the Scheme. Since 2010 I have supervised in excess of 130 professional staff working on the development and assessment of the Scheme.

1.1.5 While employed by Jacobs, I directed the initial development of the Lincoln Integrated Transport Strategy (LITS), of which the LEB is an integral part, and more recently, I directed the most recent review of the LITS in 2013.

1.2 Basis for my Evidence

1.2.1 My evidence is based on my work on the development of both the LITS and the LEB Scheme over many years. It also reflects consultation with a number of stakeholders whose operations will be affected by the LEB proposals.

1.2.2 I presented evidence on transport matters to the Inquiry into the orders in February 2014 and at that time my evidence included details of the traffic data analysis and modelling which had been undertaken as part of the development and assessment of the Scheme. For the current Inquiry, my evidence concentrates on the general transport planning issues which are pertinent to the Scheme, while Mr Smith will present evidence relating specifically to the traffic data analysis and modelling. This enabled the additional traffic related work to be undertaken within the inquiry timescale and will enable a clearer understanding, at a more detailed level, of a number of issues, in order to better inform this Inquiry.

1.2.3 There are no substantive differences in the information provided by me to the previous Inquiry and the information provided to this Inquiry in the evidence of either Mr Smith or myself. However, through, for example, recent consultation with stakeholders, updating of accident data and collection of additional traffic data, we are able to provide a greater level of detail, which serves to confirm the conclusions drawn in my evidence to the previous Inquiry.

1.3 Structure of my evidence

1.3.1 The remainder of my evidence is structured as follows:

- **Section 2** describes the strategic transport case for LEB
- **Section 3** sets out transport issues relevant to the approach to the choice of the Hawthorn Road junction
- **Section 4** considers the impacts of LEB on specific stakeholders
- **Section 5** gives my summary and conclusions

2 The Strategic Transport Case for LEB

2.1 Lincoln Integrated Transport Strategy (LITS)

2.1.1 LITS (Document Reference: CD18) presents a plan for long term transport investment in Lincoln and its surrounding area. LITS will deliver improved and integrated transport policies, services and infrastructure which will form a cornerstone of proposals to support economic development and seek to support the long term prosperity of Lincoln and Lincolnshire.

2.1.2 LITS (which was formerly known as the Lincoln Transport Strategy (LTS)) is the product of a partnership between Lincolnshire County Council (LCC), City of Lincoln Council (CoLC), West Lindsey District Council (WLDC) and North Kesteven District Council (NKDC). The development of LITS by this partnership is important because it ensures the cooperation of the authorities in promoting appropriate transport solutions which relate to, and facilitate, proposed land use changes as well as addressing transport issues.

2.1.3 LITS was first published in early 2006 and was envisaged as a "live" document which would be revised and reviewed periodically as circumstances demanded. It was revised in 2008 and was the subject of a progress review in 2013. The progress review (Document References: CD103 and CD104) was intended to provide a basis on which to discuss the situation with the various local authority partners interested in the progress of LITS itself. It was therefore made available in a draft form in 2013 to the partner authorities but it has not yet progressed further. In addition, the 2013 review was undertaken to inform the Final Business Case for LEB to the Department for Transport as part of the funding process for the Scheme.

2.1.4 The information contained in the 2013 progress review is a factual description of the situation as it existed in 2013. Given the intention to progress with development in Lincoln, LCC published the draft document on its website in March 2015. The information contained within this 2013 progress review document is therefore current and applicable, taking into account what has happened since.

2.1.5 Future revisions and reviews are envisaged as the situation changes and schemes, such as East West Link and Canwick Road improvements are implemented.

2.1.6 The original objectives of LITS are set out in the table below:

Table 2-1 – Original LITS Objectives

Ref:	Objectives
SO1	To assist the sustainable economic growth of Lincolnshire through infrastructure improvements to the following: • The Strategic Road Network & Non-Strategic Road Network
SO2	To remove strategic road-based freight from Lincoln and other adversely affected communities through: • Encouraging the use of alternative modes • Improving links to the Primary/Trans-European Road Network
SO3	To ensure that the transport infrastructure meets the needs of existing and proposed developments especially: • In the regeneration priorities in the Lincoln Policy Area • Including minimising congestion through the promotion of walking, cycling and public transport • Managing parking
SO4	To reduce the number and severity of road traffic accidents by reducing the potential for conflict between different modes and improving the facilities for convenient and safe alternatives.
SO5	To maximise accessibility and reduce peripherality by improving the range of travel options especially for those without access to the private car.
SO6	To increase Public Transport usage by improving: • Reliability, frequency and journey time of bus services.
SO7	To improve overall air and noise quality within the study area, especially in the Air Quality Management Area in Lincoln by the removal of unnecessary traffic by: • Removing through traffic • Reducing local journeys in Community Travel Zones • Other traffic management measures
SO8	Protect and enhance the built environment by reducing the adverse impacts from traffic, through improvements to the transport infrastructure.
SO9	Improve the attractiveness and liveability of central Lincoln for residents, workers and visitors by creating a safe, attractive and accessible environment for pedestrians.
SO10	To support the effective implementation and delivery of both the emerging Sub-Regional Strategy and the new Growth Point agenda of the Lincoln Policy Area.

2.1.7 At the time of the 2013 review, the objectives were updated to reflect changes in wider policy. In addition to some minor changes in emphasis in some existing objectives, two new objectives were added, SO11 and SO12.

Table 2-2 – Current LITS Objectives

Ref:	Objectives
SO1	To assist the sustainable economic growth of Lincolnshire through transport infrastructure improvements
SO2	To remove strategic road-based freight from Lincoln and other adversely affected communities through encouraging the use of alternative modes and improving links to the Primary Road Network
SO3	To ensure that the transport infrastructure meets the needs of existing and proposed developments especially: • In the regeneration priorities in the Lincoln Policy Area • Including minimising congestion through the promotion of walking, cycling, public transport and minor highway improvements • Parking provision and management
SO4	To reduce the number and severity of road traffic accidents by reducing the potential for conflict between different modes and improving the facilities for convenient and safe alternatives.
SO5	To maximise accessibility and reduce peripherality by improving the range of travel options especially for those without access to the private car.
SO6	To increase public transport usage by improving reliability, frequency, journey time and integration of bus and rail services.
SO7	To improve overall air and noise quality within the study area, especially in the Air Quality Management Area in Lincoln by the removal of unnecessary traffic by: • Removing through traffic • Reducing local journeys in by car • Other traffic management measures
SO8	Protect and enhance the built environment by reducing the adverse impacts from traffic, through improvements to the transport infrastructure.
SO9	Improve the attractiveness and liveability of central Lincoln for residents, workers and visitors by creating a safe, attractive and accessible environment.
SO10	To support the effective implementation and delivery of the Core Strategy and the emerging priorities of the Local Transport Body and Local Enterprise Partnership.
SO11	To reduce Lincoln's carbon emissions through planning, improving and managing transport
SO12	To reduce the overall impact of travel decisions by making best use of the range of transport interventions available including smarter choices, technology and information.

2.1.8 The objectives above, derived from the 2013 review, were presented at the 2014 Public Inquiry for LEB and remain valid.

2.1.9 The strategy identified a number of transport interventions which will facilitate the delivery of the objectives. These have remained the same through the revision and review described above and are shown in the table below:

Table 2-3 – LITS Transport Interventions

Transport Improvement – Scheme or Measure
Small -scale walking/cycling/public transport schemes
Quality Bus Corridors
Real Time Passenger Information
Public Transport Interchange
Park and Ride
Parking Strategy
Rail Service Improvements
Lincoln Eastern Bypass (Major Highway Scheme)
Traffic Management Measures
City Centre Pedestrian Improvements
East-West Link (Major Highway Scheme)
Swanpool Link
Lincoln Southern Bypass (Major Highway Scheme)
Relief Road Improvements

2.1.10 As well as promoting large scale infrastructure projects such as the LEB, the East-West Link and Lincoln Southern Bypass, inherent in LITS is a desire to contribute to promote sustainable transport and support smaller scale measures such as school travel plans which encourage sustainable travel.

2.2 Role of the LEB in LITS

2.2.1 The LEB is a fundamental part of LITS and its opening to traffic will facilitate the introduction of a series of other measures that will also help address the objectives and challenges.

2.2.2 Lincoln suffers from high levels of congestion from local, regional and strategic traffic travelling into and through the city centre. The introduction of the LEB would remove a significant proportion of the through traffic allowing the County Council to introduce further traffic management measures and infrastructure improvements that will improve the environment along the roads relieved by the new bypass, through improving accessibility and reducing community severance.

2.2.3 The removal of through traffic will provide the opportunity to reallocate road space within central Lincoln and utilise this road space for the benefit of all types of user and make Lincoln more accessible for residents, visitors and businesses.

2.2.4 LEB, and other proposals in LITS, will facilitate the introduction of improved public transport infrastructure and facilities for non-motorised users, thus increasing accessibility and options to travel, including for example by the creation of additional river and rail crossings. However, many of these measures can only be brought forward when the LEB has provided an alternative route for the significant volumes of through traffic which are currently using city centre roads and the effectiveness of other measures would be significantly limited without the LEB.

2.2.5 In summary, the LEB is a key part of LITS and is a key priority for Lincoln. The Scheme is integral to the work addressing the transport challenges facing Lincoln and is fundamental to achieving the strategic objectives of the LITS. Other transport interventions, including the city centre pedestrian improvements and traffic management measures, could not be brought forward or would not have the same impact without the implementation of the LEB. The progress review of LITS undertaken in 2013 re-stated the importance of LEB and the role it will play in facilitating wider transport improvements in Lincoln.

2.3 Transport Problems & Issues Addressed by the LEB

2.3.1 Within this section I will set out the transport problems that currently affect Lincoln and describe how the LEB is expected to address these issues.

2.3.2 Lincoln currently suffers from a number of longstanding transport related problems and issues that have a significant impact on journey reliability, journey times and network reliability throughout the city. These, in turn, have a negative impact on the wider Lincoln economy and act as a restraint to regeneration and the city's development aspirations.

2.3.3 Lincoln's city centre currently suffers from high levels of congestion from local, regional and strategic traffic movements which impacts on the quality of life for local residents, acts as a constraint to the economy and reduces the attractiveness of the city for visitors and investors.

2.3.4 The transport problems and congestion within central Lincoln are exacerbated by a lack of route choice for north-south movements and lack of alternative river and rail crossings. At present, several key strategic north-south routes converge on the city centre and with few viable alternative routes, this results

in significant levels of strategic traffic, including large numbers of long distance HGVs, being channelled through the centre of Lincoln.

2.3.5 The LEB Scheme will provide an additional crossing of the River Witham and an appropriate route for strategic traffic removing the need for much of this traffic to travel through the centre of the city. By linking a number of radial roads, the LEB also improves route choice for drivers wishing to access the city centre from the east.

2.3.6 The Scheme is also fundamental in providing the necessary infrastructure improvements that will unlock the city's development potential, as significant housing and economic development is targeted for the Lincoln area. In July 2008, Lincoln was afforded Growth Point status by the Government. The emerging Central Lincolnshire Local Plan is expected to set out targets of between 22,000 and 29,000 additional dwellings for the Lincoln area over the period 2011-2036. The North East and South East Quadrant Sustainable Urban Extension development sites, located to the east of Lincoln and to the north and south of the LEB (as shown in Appendix A) are key to the delivery of these growth aspirations. These urban extensions have the potential to accommodate a significant level of development within the Lincoln area and the LEB and LITS will be necessary to facilitate and support their delivery.

2.3.7 A number of the transport problems and challenges already facing Lincoln are expected to increase over the mid to long term. This will place further stress on the highway network and have a significant impact on the local economy and Lincoln's development aspirations.

2.3.8 Traffic levels are forecast to continue to grow within the Lincoln area, heightened by population growth, the housing and development targeted for Lincoln and increased economic activity. Much of the network, including the A15 Bunkers Hill and the A15 Broadgate, already operates above capacity during peak periods, resulting in little scope for increased demand to be accommodated on the existing network. Without major infrastructure improvements such as the LEB, the expected increases in travel demands, particularly at peak periods, will result in increased congestion on the network with longer peak periods, and increased suppression of demand. The off-peak network currently has some spare available capacity, but will become increasingly congested as traffic levels rise and the peaks spread.

2.3.9 Any deterioration of conditions in the city centre would have a detrimental impact on local businesses and the amenity of users of the public realm, so that, for example, the experience of visitors would be worsened. This would reduce the ability of Lincoln to attract investment from the business community and detract from Lincoln's attraction as a tourist destination. Any impact on this sector would have serious implications for the local and regional economy.

2.4 The LEB Objectives

2.4.1 As the LEB is identified as a key element of LITS, in order to promote a consistent approach to decision making within the Lincoln Policy Area, the Scheme objectives for the LEB remain consistent with those identified as part of LITS. The objectives for the Scheme are as follows:

- Objective 1: To support the delivery of sustainable economic growth and the Growth Point agenda within the Lincoln Policy Area (shown in Appendix B) through the provision of reliable and efficient transport infrastructure.

- Objective 2: To improve the attractiveness and liveability of central Lincoln for residents, workers and visitors by creating a safe, attractive and accessible environment through the removal of strategic through traffic (particularly HGVs)

- Objective 3: To reduce carbon emissions, improve air and noise quality within the Lincoln Policy Area, especially in the Air Quality Management Area in central Lincoln, by the removal of strategic traffic (particularly HGVs).

2.5 The LEB Business Case and Department for Transport Support

2.5.1 In 2011 Lincolnshire County Council submitted a Business Case to the Department for Transport seeking support for LEB (Document Reference: CD46). This Business Case included extensive analysis of the impacts of the Scheme including traffic analysis and environmental assessments. Letters of support for the Business Case from a wide range of local stakeholder organisations were also sent to the DfT. Supporting organisations included City of Lincoln, North Kesteven and West Lindsey District Councils, Greater

Lincolnshire Local Enterprise Partnership, business groups and major employers, the Police, ambulance and Fire and Rescue services, Lincoln University and Lincoln College, and various other stakeholders.

2.5.2 The Business Case presented an excellent case for building the Scheme including a value for money assessment which demonstrated a Benefit to Cost Ratio (BCR) of 8.453.

2.5.3 Recent work has provided greater confidence in the cost estimates for the Scheme, and this, coupled with changes in DfT guidance on economic parameters, has resulted in a revised BCR of 9.4.

2.5.4 DfT guidance, included within the Value for Money Assessment: Advice Note for Local Transport Decision Makers (DfT, December 2013) (Document Reference: CD102) and as shown in the table below, indicates that LEB will provide very high value for money.

Table 2-4 – Initial BCR Value for Money Categories

Value for Money Category	BCR Level
Poor	BCR is below 1.0
Low	BCR is between 1.0 and 1.5
Medium	BCR is between 1.5 and 2.0
High	BCR is between 2.0 and 4.0
Very High	BCR is greater than 4.0

2.5.5 The Business Case was accepted by DfT and approximately £50m of funding has been allocated by the government to the Scheme.

2.6 Acceptance of Strategic Case at 2014 Inquiry

2.6.1 With the exception of the Benefit to Cost Ratio, which has been improved due to greater confidence in the Scheme cost estimate, there have been no changes to the strategic transport planning case for LEB which was presented at the 2014 Inquiry. The Inspector at that Inquiry accepted this case and acknowledged its importance, commenting in her conclusions (Document Reference: CD1): "*The LEB is a key priority for Lincoln to relieve existing congestion, improve environmental quality in the city, reduce accidents and to enable future residential and economic growth. The essential need for the infrastructure project is identified by the development plan, LITS and the 4th Lincolnshire Local Transport Plan*".

2.6.2 The Inspector also concluded "*The economic assessment was carried out fully in accordance with the accepted methodologies and demonstrates high value for money, primarily as a result of journey time savings. There is a compelling case for the Scheme to proceed*".

3 Transport Issues relevant to the choice of the Hawthorn Road Junction

3.1 Comprehensive Spending Review and Value Engineering

3.1.1 As Mr Rowley has indicated in his evidence, in 2010 the County Council, prompted by the Comprehensive Spending Review, undertook a value engineering exercise which resulted in a single carriageway scheme design for LEB. As part of this wider review of the Scheme it was also decided to remove from the design the Hawthorn Road road bridge, providing for all vehicles over LEB, and replace it with a left-in, left-out junction with Hawthorn Road to the east and to stop up Hawthorn Road to the west. Mr Rowley has stated, *"… the decision to remove the bridge at Hawthorn Road was one of a number of decisions made to reduce the overall scheme cost whilst still achieving the overall objectives of the LEB. The assessment of the decision included a review of current and proposed traffic flows and what other routes were available for those users of Hawthorn Road who wished to travel to and from north east Lincoln."* Subsequently, a Non-Motorised User (NMU) bridge on the line of Hawthorn Road was included as part of the Scheme.

3.1.2 As indicated by Mr Rowley above, in making this decision the County Council took due account of the availability and safety of existing alternative routes for those who currently use Hawthorn Road, and also of the options available with LEB in place. In this section I describe the information and analysis relevant to this decision.

3.2 Convenience of Existing Alternative Routes

3.2.1 Hawthorn Road currently offers a local route serving movements to and from the villages of Cherry Willingham and Reepham, as well as from further afield. However, there are reasonably convenient alternative routes which serve these movements, and which will be available in the future, and the County Council has taken account of the availability of these routes in promoting the Scheme and the proposals for Hawthorn Road. In this section, I present information on the relative journey distances, times and safety of these alternatives, compared to Hawthorn Road, both in the existing situation and also in the future with LEB in place.

3.2.2 In order to provide an indicative assessment of, what in reality would be a multitude of individual trips with a variety of origins and destinations,

representative start and end points for three sample routes have been identified. Distances and journey time data between a location at the centre of the area of interest and junctions on Outer Circle Road have been surveyed. The three routes considered have one common end point at the eastern end, but different end points on Outer Circle Road. This is because Outer Circle Road provides a number of destinations in its own right but also affords access to many destinations within the city, which can be reached via a number of onward routes. The routes, which are shown on the figure below, are as follows:

- Route 1 – Junction of Hawthorn Rd / Kennel Lane to Outer Circle Road via Hawthorn Road and Carlton Boulevard

- Route 2 – Junction of Hawthorn Rd / Kennel Lane to Outer Circle Road via Kennel Lane, Wragby Road and Bunkers Hill

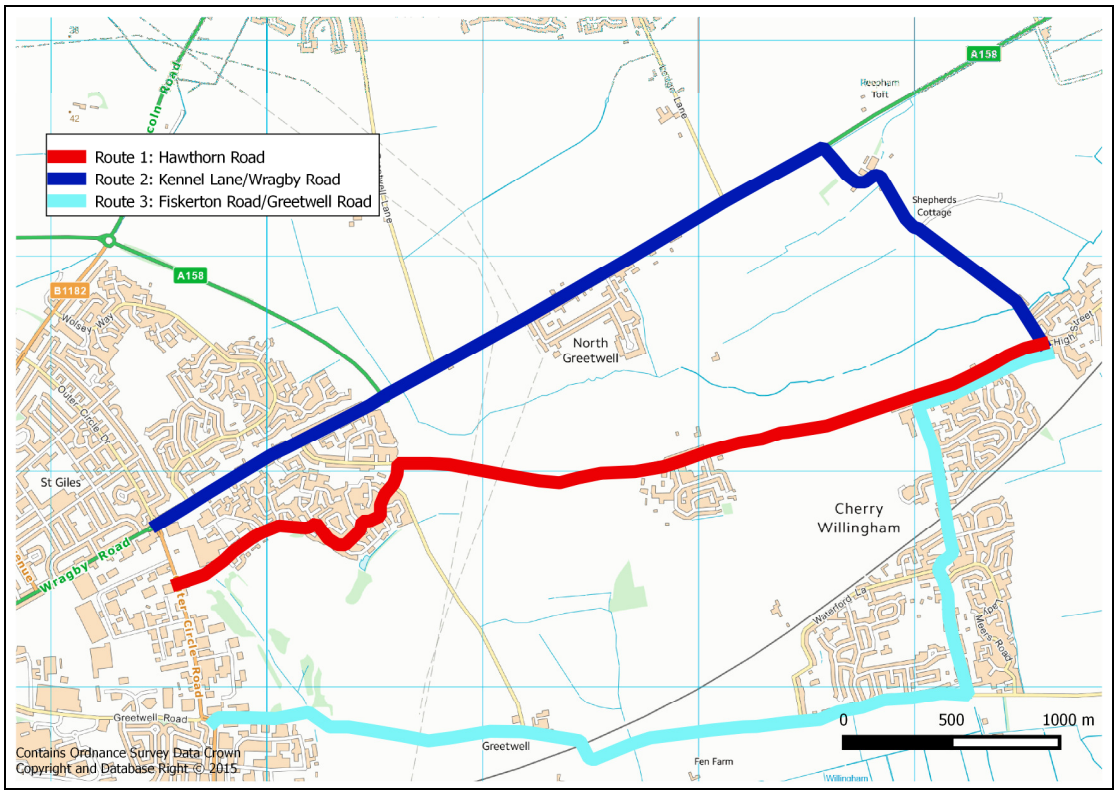
- Route 3 – Junction of Hawthorn Rd / Kennel Lane to Outer Circle Road via Hawthorn Road, Croft Lane, Church Lane, Fiskerton Road and Greetwell Road.

3.2.3 Other routes and combinations could have been assessed; for example Route 1 could continue westward on Hawthorn Road to the junction at Bunkers Hill and then be coincident with Route 2 and also sections of Outer Circle Road could have been included within all of the routes. However, it was considered that avoiding coincident sections would make the analysis clearer and that the routes chosen would be representative of local movements.

3.2.4 As indicated above, it is recognised that each individual trip on any given day will have a specific origin and destination and will follow its own specific route. It would be impossible to map all of these for every trip originating in the Cherry Willingham, Reepham and Carlton estate areas and so the routes identified should only be considered as being representative of the wider range of movements.

3.2.5 The journey time on each route was surveyed five times in each time period on typical weekdays. The resulting average times can be considered a robust representation of normal conditions.

Figure 3-1 – Routes Considered in Accident and Journey Time/Distance Analysis



3.2.6 The measured distances and surveyed journey times were as shown in the table below.

Table 3-1 – Measured Distances and Surveys Journey Times on Selected Routes

	Route 1 (Red)		Route 2 (Dark Blue)		Route 3 (Light Blue)	
Travel Times/Distance	**West Bound**	**East Bound**	**West Bound**	**East Bound**	**West Bound**	**East Bound**
	Minutes	**Minutes**	**Minutes**	**Minutes**	**Minutes**	**Minutes**
AM Peak Period	5.9	5.9	7.2	6.3	8.4	7.1
Inter Peak	5.9	5.6	6.4	5.8	7.0	6.9
PM Peak Period	6.6	5.9	6.1	6.0	6.9	6.9
Distance (kilometres)	4.5	4.5	5.0	5.0	5.6	5.6
Comparison with Route 1	**West Bound**	**East Bound**	**West Bound**	**East Bound**	**West Bound**	**East Bound**
AM Peak Period	N/A	N/A	1.3	0.4	2.5	1.2
Inter Peak	N/A	N/A	0.4	0.2	1.1	1.3
PM Peak Period	N/A	N/A	-0.5	0.0	0.4	0.9
Distance (kilometres)	N/A	N/A	0.5	0.5	1.1	1.1

3.2.7 It can be seen that compared to the Hawthorn Road route, the largest additional distance covered by using either of the alternatives would be 1.1

kilometres, incurred using the Greetwell Road option while using Kennel Lane/Wragby Road option would add only 0.5 kilometres.

3.2.8 The largest additional observed travel time (above that using Hawthorn Road) was 2.5 minutes via Greetwell Road westbound in the AM peak, while using Kennel Lane/Wragby Road, also westbound in the AM peak, would add 1.3 minutes. In most other cases differences in travel times were in the order of 1 minute or less.

3.2.9 Clearly, as indicated above, the distances and times shown above are only representative and individuals' journeys will vary considerably. However, I conclude that currently, there are reasonably convenient alternative routes which allow movements to be made between Cherry Willingham and Reepham and Outer Circle Road, and then onward to many destinations in and around Lincoln, without incurring excessive additional distances or time.

3.3 Safety of Existing Alternative Routes

3.3.1 LCC considers that all of these alternative roads are safe to use. The North Division Area Highways Manager for LCC, Alan Brown has supplied the following statement:

"*Neither Kennel Lane or Fiskerton Road/Greetwell Road are identified as being in need of realignment and are not untypical of Lincolnshire's road network. They are perfectly safe to use*".

3.3.2 These roads are currently used on a daily basis by drivers who must include some assessment of perceived risk in making their choice of route.

3.3.3 In further support of this, data on personal injury accidents (pias) resulting from road traffic collisions over recent years has been analysed. It is standard practice recommended by DfT to express accident rates as pias per million vehicle kilometres and this gives a meaningful indicator of risk by reflecting not only the nature of the road but also the level of traffic use. A further indication of the historic safety record of a road can be gathered from the numbers of accidents resulting in death or serious injury. Fortunately, pias from road traffic collisions are statistically rare events and so DfT also recommends that rates are calculated using 5 years' worth of data. It is not recommended to include data older than 5 years as road conditions, vehicle safety and driver behaviour may all have changed over that period making

earlier incidents less relevant when considering current and future risk. It is also recommended to use full years (12 months) of data in order to avoid distortion due to variations in weather conditions, traffic levels and hours of daylight. Plans showing the locations of all collisions considered for each year (2010 to 2014) are included in Appendix C.

3.3.4 It is worth noting that the accident data (for the 2010 to 2014 period) before this Inquiry is for a different period to that which was before the earlier Inquiry in 2014. Although overall the numbers of pias considered is not too different, this necessary approach has removed reference to a fatal accident in 2008 which the previous inspector would have been aware of and took into account in finding the Scheme acceptable on this basis.

3.3.5 In order to present a meaningful comparison, data for the period 2010 to 2014 has been analysed for Hawthorn Road and two alternative routes which could be used for trips to and from Reepham and Cherry Willingham. The routes considered are exactly the same as those used earlier for considering distances and journey times.

- Route 1 – Junction of Hawthorn Rd / Kennel Lane to Outer Circle Road via Hawthorn Road and Carlton Boulevard
- Route 2 – Junction of Hawthorn Rd / Kennel Lane to Outer Circle Road via Kennel Lane, Wragby Road and Bunkers Hill
- Route 3 – Junction of Hawthorn Rd / Kennel Lane to Outer Circle Road via Hawthorn Road, Croft Lane, Church Lane, Fiskerton Road and Greetwell Road.

3.3.6 The results of the analysis of these data are summarised below.

Table 3-2 – Accident Analysis Summary for Selected Routes

Accident data for 2010 to 2014 inclusive	Accident Rate (pia/million vehicle kilometres)	Number of Serious Accidents	Number of Fatal Accidents
Hawthorn Road/Carlton Boulevard	0.492	2	0
Kennel Lane/Wragby Road	0.490	4	0
Fiskerton Road/Greetwell Road	0.440	1	0

3.3.7 For the period 2010 to 2014 the analysis indicates that the overall accident rates for the Hawthorn Road/Carlton Boulevard and Kennel Lane/Wragby Road routes are virtually identical, while that for Fiskerton Road/Greetwell Road is slightly lower. However, the differences are so small that it is concluded that the three alternatives have equal levels of risk.

3.3.8 Over the five year period, groupings of accidents occurred at certain locations such as junctions and there were three accidents in the vicinity of the bends on Kennel Lane. However, none of these locations had a high enough incidence to be identified as a site of concern by Lincolnshire Road Safety Partnership.

3.3.9 There were no fatal road accidents in the period 2010 to 2014 on these routes and the numbers of serious accidents were very low, with two on Hawthorn Road, four on Kennel Lane/Wragby Road and one on Fiskerton Road/Greetwell Road. All of these serious accidents were attributed to driver error rather than to any aspect of the highway itself and details recorded by the police attending the incident are shown in Appendix D. The proportion of pias which were serious (derived by dividing the numbers of serious pias by the total) was higher on Hawthorn Road than on the other two routes, however little significance can be attributed to this as the numbers involved were so small. Therefore, in terms of accident severity, again I conclude that the three alternative routes have equivalent levels of risk.

3.3.10 In conclusion, there is nothing in the analysis of the historic data which indicates that the alternatives to Hawthorn Road are inherently less safe either in terms of the risk of being involved in an accident or in likely severity of accidents. It is not expected that any changes in traffic flow resulting from the Scheme would affect the relative safety of these local roads.

3.3.11 Lincolnshire County Council, working through the Lincolnshire Road Safety Partnership, will continue to monitor trends in safety after the construction of LEB and will seek to bring forward remedial measures to improve safety if these are shown to be necessary, as would be the case across the whole of the County's network of roads.

3.3.12 For comparison, as a newly designed and constructed road, LEB would be expected to have an accident rate of 0.138 pias per million vehicle kilometres,

which is significantly lower than that recorded for the existing local roads. Thus, any trips made using all or part of LEB, including those to or from Cherry Willingham and Reepham, will benefit from the safer driving environment provided by the new road.

3.4 Impacts of LEB and Hawthorn Road junction on journey distances and times of local vehicular trips

3.4.1 With the proposed Scheme in place, including the Hawthorn Road junction with LEB, there will be a number of safe and reasonably convenient alternative routes for all modes for travel to and from Reepham and Cherry Willingham.

3.4.2 For pedestrians and cyclists the proposed non-motorised user bridge on Hawthorn Road will provide a direct route from Cherry Willingham and Reepham to areas to the west of the line of LEB. Consequently, there will be no increase in journey distances or times for pedestrians and cyclists. Based on the analysis described in Mr Smith's evidence, pedestrians and cyclists using Hawthorn Road to access the non-motorised user bridge will benefit from lower vehicle flows on this route

3.4.3 For vehicles, depending on the origin and destination of the trip, alternative routes will include, in varying combinations, continuing to use Hawthorn Road up to the junction with LEB, LEB, Kennel Lane, Wragby Road, Croft Lane, Church Lane, Fiskerton Road and Greetwell Road

3.4.4 Journey distances will change for some travellers making local vehicular journeys in the Cherry Willingham, Reepham and Carlton estate areas. The changes will be different for each individual trip, and as indicated above, there will be a number of possible alternative routes available with the Scheme in place. However, considering the three indicative routes described earlier, the distances for the Kennel Lane/ Wragby Road and Fiskerton Road/ Greetwell Road options will be unaffected.

3.4.5 For drivers wishing to continue to use Hawthorn Road westbound, the distance from Hawthorn Road/Kennel Lane to Outer Circle Road/Carlton Boulevard via Hawthorn Road, LEB and Greetwell Road would be 6.3km, an increase of 1.8km.

3.4.6 The eastbound trip of Outer Circle Road/Carlton Boulevard to Hawthorn Road/Kennel Lane would be via Wragby Road, LEB and Hawthorn Road would be 4.9km, and would be an increase of 0.4km.

3.4.7 In order to assess the impact of the Scheme on journey times, the traffic model has been used to compare the opening year Do Minimum and Do Something travel times between representative pairs of origins and destinations which reflect the fact that while some trips will be made to local destinations, others will be made to destinations slightly further afield.

3.4.8 Journey times will also vary by time period and direction and this is addressed in the information in the table below.

Table 3-3 – Journey Times between Pairs of Trip Origins and Destinations

Origin	Destination	Change in Journey Time (Minutes) in Scheme Opening Year		
		AM Peak	Inter-peak	PM Peak
Cherry Willingham	Railway Station	-02:03	-05:53	-08:02
Cherry Willingham	Wragby Road Tesco	+02:28	+00:22	-00:27
Cherry Willingham	Carlton Estate	+05:00	+02:57	+02:44
Cherry Willingham	City Centre	-01:58	-00:31	-02:21
Cherry Willingham	Fire and Rescue Station	-03:37	-07:28	-09:30
Cherry Willingham	Lincoln County Hospital	+02:20	+00:36	+00:05
Railway Station	Cherry Willingham	-05:05	-02:14	+01:00
Wragby Road Tesco	Cherry Willingham	-00:05	-00:06	+00:18
Carlton Estate	Cherry Willingham	+01:20	+01:33	+01:30
City Centre	Cherry Willingham	-02:40	-00:23	-03:52
Fire and Rescue Station	Cherry Willingham	-06:22	-03:07	-00:51
Lincoln County Hospital	Cherry Willingham	+00:04	+00:22	-00:08
Reepham	Railway Station	-04:01	-06:30	-06:36
Reepham	Wragby Road Tesco	+00:50	+00:33	+00:03
Reepham	Carlton Estate	+01:05	+03:12	+03:12
Reepham	City Centre	-04:19	-01:50	-02:43
Reepham	Fire and Rescue Station	-05:50	-08:06	-08:04
Reepham	Lincoln County Hospital	+01:08	+00:03	-00:16
Railway Station	Reepham	-03:42	-01:33	+01:21
Wragby Road Tesco	Reepham	-00:02	-00:05	-00:16
Carlton Estate	Reepham	+01:23	+01:34	+01:30
City Centre	Reepham	-03:01	+00:04	-03:14
Fire and Rescue Station	Reepham	-05:17	-02:26	-00:34
Lincoln County Hospital	Reepham	+00:11	+00:24	-01:28

3.4.9 In this table, an increase in journey times is indicated as “+” while a decrease is indicated as “-“.

3.4.10 For some local trips it can be seen that journey times are expected to increase at certain times of the day, with the greatest increase of five minutes expected to be between Cherry Willingham and the Carlton estate in the morning peak. However, for some trips slightly further afield, for example to and from the city centre and the railway station, there will be improvements in journey times.

3.4.11 When considering these results, it is important to take account of the difference types of trip by time of day. For example, although the travel time from both Cherry Willingham and Reepham to Tesco on Wragby Road is expected to increase in the AM peak, the majority of shopping trips to supermarkets such as this are made in the inter-peak and evening peak periods when much smaller changes are expected.

3.4.12 Overall, the analysis of expected changes in journey times indicates that, of the movements considered, only one is anticipated to experience an increase of five minutes or more while 12 are anticipated to experience a decrease of five minutes or more. Overall, significantly more movements will experience a reduction in travel time than will experience an increase.

3.4.13 As indicated above, the origin-destination pairs considered are only representative of the range of individual journeys which will be affected by the Scheme and it should also be noted that the numbers making these trips will vary each day. However, overall, it can be seen that the majority of locally based movements will experience a relatively small change in travel time and travel times will improve for a number of movements to important destinations.

3.4.14 In addition, it should be noted that the numbers of trips each day to and from Cherry Willingham and Reepham, which are represented in the analysis above, equate to a very small proportion of the total number of movements across the wider Lincoln area which will benefit from reduced journey times as a result of LEB.

3.5 Recognition of availability of safe and reasonably convenient routes at 2014 Inquiry

3.5.1 In the conclusions of the report following the 2014 Inquiry (Document Reference: CD1), the Inspector noted "*I conclude that the inherent physical characteristics and the traffic conditions of Kennel Lane, Greetwell Road and the bypass would be suitable for these roads to form part of safe alternative routes to the use of Hawthorn Road. Some journeys would involve a more circuitous or less direct route and become slightly longer in terms of distance, but journey time is unlikely to be as seriously affected as suggested in the objections. The indication is that reasonably convenient alternatives would be available for people travelling by motor vehicle. In addition, there probably would be journeys that would be little affected in time or distance or see an improvement*."

3.6 Impacts on local Non-Motorised Users

3.6.1 Surveys of non-motorised users on Hawthorn Road, where it is crosses the line of the LEB, were conducted in November 2013 and again in March 2015 during school term times and the results of these are shown in the tables below.

Table 3-4 – NMU Survey Results for Hawthorn Rd – Towards Cherry Willingham

	Survey Period	AM				PM			
		07:00	08:00	09:00	Total	15:00	16:00	17:00	Total
Total Cyclists	Nov '13	9	4	0	11	2	5	7	14
	Mar '15	2	3	1	6	5	0	0	5
Total Pedestrians	Nov '13	7	7	7	21	13	13	3	29
	Mar '15	2	11	4	17	5	11	3	19

Table 3-5 – NMU Survey Results for Hawthorn Rd – Towards Bunkers Hill

	Survey Period	AM				PM			
		07:00	08:00	09:00	Total	15:00	16:00	17:00	Total
Total Cyclists	Nov '13	2	3	6	11	9	3	2	14
	Mar '15	3	2	1	6	2	2	5	9
Total Pedestrians	Nov '13	13	8	9	30	7	8	4	19
	Mar '15	0	0	1	1	1	3	2	6

3.6.2 Both 2013 and 2015 surveys showed low pedestrian and cyclist flows in all the time periods observed.

3.6.3 As set out in the Statement of Case the Council has secured planning permission for an alternative NMU bridge to that proposed at the 2014 public inquiry. The alternative NMU bridge will connect the sections of Hawthorn Road to the east and west of LEB to permit all non-motorised users (namely pedestrians, cyclists and equestrians) to cross the LEB. This will maintain the NMU linkages along Hawthorn Road. The difference between the NMU bridge proposed in the 2014 inquiry and the Scheme now proposed is that the bridge will be located on the southern side of Hawthorn Road, removing the safety concern raised at the 2014 inquiry.

3.6.4 It should also be noted that in nearly all of the forecast traffic scenarios shown in the evidence of Mr Smith, these pedestrian and cyclist trips on Hawthorn Road will benefit from lower traffic flows with the Hawthorn Road junction than with the alternative road bridge. This will particularly be the case in the inter peak periods.

3.7 Summary of Local Impacts

3.7.1 In summary, with respect to alternative routes, I conclude that with LEB in place with the Hawthorn Road junction, all movements by motorised vehicle, and by cyclists and pedestrians, can continue to be made using safe and reasonably convenient alternatives.

3.7.2 The above conclusion was supported by the Inspector at the 2014 Inquiry when she reported (Document Reference: CD1) "*On balance, I conclude that for people travelling by motor vehicle reasonably convenient routes will be available or will be provided to compensate for the proposed stopping up of Hawthorn Road*."

3.8 Comparison of Hawthorn Road junction with overbridge

3.8.1 It can be seen from the evidence above that in deciding to include the Hawthorn Road junction in preference to the overbridge, which was part of the earlier dual carriageway scheme, the County Council has taken account of the availability of alternative routes and the safety and convenience implications for local travellers.

3.8.2 The County Council has also considered how the local transport impacts of the proposed Hawthorn Road junction would compare with those of providing an overbridge, without a direct connection to LEB, as identified in the earlier

scheme and prior to the value engineering exercise in 2011. This comparison revealed a number of key differences in traffic flow on local roads as follows:

- Based on Mr Smith's evidence, with the Hawthorn Road junction, the residential area adjacent to Hawthorn Road and Carlton Boulevard lying to the west of the line of the Scheme will be relieved of intrusive through traffic. On Hawthorn Road it is expected that this relief will be in the order of 3,100 vehicles per day in both 2018 and 2033 when compared to the alternative overbridge option. For Carlton Boulevard it is expected that it will be in the region of 1,000 in 2018 and 1,500 by 2033 when compared to the overbridge option;

- The Hawthorn Road junction will also result in lower traffic flows on Hawthorn Road to the east of the LEB, particularly in the inter-peak period, and this will benefit the pedestrians and cyclists who use this road including children travelling to and from local schools. It is expected that, with the Scheme in place, these flows would be in the region of 1,000 vehicles per day lower in 2018 and 1,300 vehicles per day lower in 2033 when compared to the overbridge option;

- The Scheme with the Hawthorn Road junction would provide significant relief to the Bunkers Hill/ Hawthorn Road junction whereas the overbridge option would encourage additional traffic to use this junction which would, consequently, require improvements.

3.8.3 In addition, to the traffic benefits above, the Hawthorn Road junction offers a capital cost saving in the order of £500,000 compared to the alternative of providing an overbridge.

3.8.4 Based on the issues described above, in my opinion, the Hawthorn Road junction should be the preferred option.

3.8.5 In relation to the alterative overbridge, the Inspector at the 2014 Inquiry concluded (Document Reference: CD1) "*In summary, there would be limited improvements to vehicle journeys between the Carlton area and the east villages and the safety issue for cyclists would be resolved. Nevertheless,*

these positive factors are substantially outweighed by the negative traffic, environmental and economic effects and Alternative 1 offers no material advantage over the Scheme"

4 Impact on Specific Stakeholders

4.1 Stakeholders

4.1.1 As well as evaluating the impacts of the Scheme on general traffic, the County Council has sought to consult with specific stakeholders in order to assess the implications for them. Specifically, the education sector, emergency services and local bus operators have been consulted and in this section I report stakeholder views and summarise my conclusions on the implications for these stakeholders.

4.2 Schools Education Sector

4.2.1 Across the Lincoln area, LEB will reduce traffic levels on many roads, especially in the city centre, and thereby facilitate safer, quicker and more convenient travel to and from schools. The commitments to sustainable modes in the LITS, which LEB will allow to be brought forward, will also encourage the use of healthier options for access to schools such as walking and cycling. Mr David Robinson, the Schools Services Manager from the Children's Services Directorate of the County Council has been consulted regarding the impact of the Scheme and has provided the following observations:

"The Eastern Bypass Scheme would appear, in general, to offer opportunities for increasing sustainable transport options for families of school-age children and young learners.

The Scheme to link the main A15 south of Lincoln to the city's northern ring road is partly aimed, I understand, at allowing the considerable North-South through traffic, including much commercial traffic, to avoid having to negotiate the existing A15 through the heart of the historic centre of Lincoln using a road system which predates this traffic volume.

It is understood that the bypass will relieve pressure considerably on routes in and around Lincoln. This should make sustainable modes of transport to school and college within Lincoln (principally walking and cycling) more attractive, and it is hoped that more parents and pupils/students will opt for sustainable transport as a result, particularly for relatively short journeys in

and around the town, where there is no automatic entitlement to free school transport.

The bypass itself includes, I understand, a walking cycling path along its entire route, separated from the road lane. Access and leaving points to and from this walking/cycle lane are to be incorporated at each of the five new junctions. This would help create sustainable travel choices for people using the proposed new bypass.

The Scheme could positively contribute to parental choices in schools in the following ways:

1. *by providing a new route between centres of population and schools which are currently significantly disconnected (eg Washingborough, Heighington and Branston to the south of the River Witham and the settlements to the north of the river), and;*

2. *by reducing journey times on a large number of roads across the greater Lincoln area and thus making it easier to travel between home and a greater number of schools*

Parents have the right to express up to three preferences of school in the coordinated admissions process, ranking these preferences in order of priority. The Council coordinates with the schools and offers the highest available preference on application of the oversubscription criteria, that is, the criteria used to allocate places when there are more applications for places to a school than there are places.

The Scheme may affect the patterns of parental preference as it will make some routes to and from schools more accessible and practical in various ways. Depending on the criteria (which often come down to ranking on driving distance from addresses to a specific school), it may also change how likely parents are to gain places at some of the preferred schools.

These journeys need not be undertaken by road, but could in many cases be effected by means of walking and, particularly, by cycling. If the journeys are by road, shared car arrangements could be used effectively."

4.2.2 In relation to specific schools, there are a number of schools located in the vicinity of the LEB including Carlton Academy School and Christ's Hospital School which are located to the west of the line of LEB, Cherry Willingham Community School, Cherry Willingham Primary School and Reepham Primary School all of which are located to the east of the Scheme, and Branston Community Academy which is located to the south. The locations of these schools are shown on the plan in Appendix E.

4.2.3 Each school has identified that there are a number of significant transport related problems that affect their sites and the local communities which they serve and as part of their response to the transport problems, each school has developed a sustainable travel plan.

4.2.4 All of the school travel plans identify that volumes of traffic on the local roads surrounding the schools particularly at the start and end of the school day, parking and road safety are the key issues affecting their school. As such all are committed to promoting sustainable alternatives to travelling by car including cycling and walking as well as improving road safety.

4.2.5 The development of the LEB and the provision of the Hawthorn Road junction will facilitate these objectives by helping to provide a safer environment particularly in relation to walking and cycling by reducing traffic flows on Hawthorn Road.

4.2.6 All of the schools identified above have been consulted regarding the proposals for LEB and, in particular, the arrangements for Hawthorn Road.

4.2.7 The head teachers of the three schools to the east of LEB have expressed concerns about the accessibility of their school for children living to the west of the Scheme whose parents wish to drive their children to school. They acknowledge that alternative routes will be available, but believe that longer journey times will be a deterrent and will impact on parental choice of school. A concern has been expressed that this may, in turn, impact on individual school budgets.

4.2.8 The head teacher of Cherry Willingham Primary School is concerned that a longer route for parents bringing children from the Carlton estate will be a deterrent and believes this will impact on numbers choosing the school. She

has confirmed her concerns in an e-mail dated 9th June 2015 which is included in Appendix F.

4.2.9 The head of Cherry Willingham Community School acknowledges some benefits of the proposals for her school but maintains a number of concerns. Her views are reflected in the notes of a meeting held on 11th June 2015 also included in Appendix F, which she has agreed as an accurate record.

4.2.10 The head teacher of Reepham Primary School has expressed concerns about accessibility of his school for pupils who live in the Carlton estate area and the implications of this for school budgets. He has not provided any written confirmation of his views.

4.2.11 The deputy head of Christ's Hospital School is in favour of the overall concept of the Scheme but also expressed concerns about accessibility for pupils, although his specific issue related to pupils who live in the settlements to the east of the LEB Scheme who travel to his school. The school operates its own school buses bringing pupils to the school and some of these services will need to be re-routed and may take longer. He has confirmed his thoughts in an e-mail dated 23rd June 2015 which is also included in Appendix F.

4.2.12 In contrast, the head teacher of Carlton Academy School recognises that the Scheme will result in reductions in traffic levels near the school with consequential improved safety and accessibility and improved air quality. This school opened in 2013 and the head teacher believes that current and future provision here will reduce the need for travel by Carlton estate residents to and from Cherry Willingham and Reepham schools, particularly as siblings start to attend the same school. The head teacher has provided a letter of support for the Scheme, dated 3rd June 2015 which is included in Appendix F.

4.2.13 The head of Branston Community College, on behalf of the governing body and leadership team of the College, has written in support of the Scheme and his letter dated 22nd June 2015 is included in Appendix F.

4.2.14 The responses from all of the schools consulted were focused on the impact of the proposals on parental choice of school and hence individual schools' viability and future budgets. It is apparent that there is considerable overlap of catchment areas for these schools with a degree of competition for pupils.

4.2.15 Consequently, the responses from individual schools are influenced by the perception of how the Scheme will affect their accessibility relative to other schools, rather than in absolute terms.

4.2.16 However, these individual responses should be seen in the context of the positive view of the effect of the Scheme on parental choice and sustainable travel expressed by the School Services Manager, in particular his enthusiasm for aspects of the Scheme which would encourage walking and cycling to school.

4.2.17 In the conclusions of her report following the 2014 Inquiry (Document Reference: CD1), the Inspector noted: "*In all probability the choice of a school would take account of and balance a range of factors, not only distance and ease of journey. The concern over the impact on school rolls was based on perceived considerably longer car journeys. The technical evidence indicates local schools would not be at such a disadvantage, whilst there would be benefits over the wider school catchment area as a result of the LEB. These factors suggest that the risk of potential closure of schools would be minimal*."

4.3 Emergency Services

4.3.1 The three emergency services, Lincolnshire Fire and Rescue, East Midlands Ambulance Service and Lincolnshire Police were all consulted prior to the completion of the Business Case to DfT in 2011 and each expressed support for the Scheme. In 2015, they have all been re-consulted to confirm their views about the impact of the Scheme on the service they will be able to provide (Document Reference: CD58). All three are supportive of the case for the Scheme, as it will result in improved response times in the Lincoln area, and all three have written letters to the Council confirming their support for the proposals, as shown in Appendix G.

4.3.2 The emergency services have commented that LEB will be a good route for their vehicles as there will be space for other traffic to pull over to allow them to pass. In the specific case of the Fire and Rescue and the Ambulance services, access to all areas to the east and north from South Park will be far easier using LEB than the existing A15 on Broadgate.

4.3.3 With regard to the proposals for Hawthorn Road, the Fire and Rescue and Ambulance services have stated that these proposals will improve their

response times to Cherry Willingham and Fiskerton, when compared to the situation without the Scheme, and will have no impact on their response times to Reepham. They have stated that this will be because the junction arrangements will allow them direct access from LEB to Hawthorn Road, whereas a road bridge option would not achieve this. Furthermore, the design standard of LEB will provide a sufficiently wide carriageway to enable non-emergency vehicles to pull to the side of the road, allowing emergency vehicles to pass. The Police have stated that the Hawthorn Road proposals will have little or no effect on their response times.

4.3.4 In summary, the emergency services are supportive of the proposals, including those for Hawthorn Road, and predict that their response times will be improved or will not be adversely effected.

4.4 Bus Operators and School Buses

4.4.1 The main bus operators in Lincoln, Stagecoach, PC Coaches, and Brylaine have also been consulted about possible impacts on their services. All three operators are supportive of the proposals for the Scheme as it will reduce delays and improve reliability for bus services across the Lincoln area. They have also commented that as the LEB will provide an additional crossing of the River Witham, it will facilitate alternative routing during roadworks and emergency road closures. Appendix H shows the routes of current bus services in and around Cherry Willingham and Reepham.

4.4.2 There is currently one public service bus route, the 15/15A service operated by Stagecoach, which operates through Cherry Willingham, Reepham and Fiskerton. The routing of this service would not be affected by the Scheme as it does not utilise the section of Hawthorn Road that will be stopped up.

4.4.3 The western end of Hawthorn Road is also served by the Stagecoach 10 and PC23 services. Routing of these services would not be directly affected by the Scheme as they only use the western part of Hawthorn Road, however, they will operate in more favourable traffic conditions and hence will be more reliable.

4.4.4 Other local services run in the area but no change of routing of these will be necessary.

4.4.5 With specific regard to school services, Stagecoach operates three services through Hawthorn Road; the 548 Service between Scampton and The Priory Academy Lincoln School of Science and Technology (LSST) via Hawthorn Road and Bunkers Hill; and the 510 and 15(c) both of which run from Lincoln city centre through the northern suburbs of the city and then via Wragby Road and Hawthorn Road to schools in Cherry Willingham and Reepham. Mr Skepper of Stagecoach has stated that with the construction of LEB "*We are likely to re-route [the 548 service] to run in via Greetwell Road, on to Outer Circle Road, and then pick up the normal route. There are stops along the Bunkers Hill end of Hawthorn Road and near the Poacher but these would be within reasonable walking distance to an alternative stop on Outer Circle Drive*." Mr. Skepper has confirmed that the 510 and 15(c) will also be re-routed to enable the services to be continued.

4.4.6 Brylaine operates the G74 Lincoln to Market Rasen service to De Aston School. This daily service passes along Hawthorn Road and then passes through Cherry Willingham and Fiskerton and Reepham. Brylaine intends to continue with the service following implementation of the Scheme, re-routing as appropriate to maintain the same service to the affected communities. Malc Wheatley, Operations Director of Brylaine Travel Ltd, has stated that *"re-routing will be possible, and the benefits from the Scheme far outweigh any disbenefits from having to re-route any of our services."*

4.4.7 PC Coaches operates the B8248 school service between Wragby and Cherry Willingham Community School, which uses Hawthorn Road to travel between Westfield Drive, North Greetwell and the school. The company also operates the E84s service between Horncastle and Cherry Willingham and passes along Hawthorn Road from Reepham to Croft Lane. However, neither of these routes will be affected by the Scheme.

4.4.8 Step 1 Travel also operates a service to Cherry Willingham Community School and this passes along Hawthorn Road from Reepham to Croft Lane but again this route will not be affected by the Scheme.

4.4.9 With regard to the proposals for Hawthorn Road, none of the operators anticipates any detrimental impacts on any of their services, including school services, although some minor changes to routing will be required. Decisions on any necessary changes in service routing will be made by the operators

and it is not possible at this time to say what these changes may be. However, all of the operators have indicated that any changes will be limited and will not affect overall service levels to the relevant communities.

4.4.10 In summary, the three main bus operators are supportive of the Scheme and do not anticipate any significant detriment resulting from the Hawthorn Road proposals. All three operators have written to the Council stating their support for the Scheme and these letters are shown in Appendix I.

5 Summary and Conclusions

5.1.1 My evidence, which is based on my work on the development of both the LITS and the LEB Scheme over many years and consultation with a number of stakeholders whose operations will be effected by the LEB proposals, has demonstrated the strategic transport case for LEB and the local impact of the Scheme. The transport case is based on the contribution the LEB will make to delivering the objectives of the Lincoln Integrated Transport Strategy (LITS) as well as the direct benefits which will be derived from the Scheme itself.

5.1.2 LITS presents a plan for long term transport investment in Lincoln and its surrounding area and will deliver improved and integrated transport policies, services and infrastructure which will form a cornerstone of proposals to support economic development and support the long term prosperity of Lincoln and Lincolnshire. The LEB is a fundamental part of LITS and its opening to traffic will bring significant benefits in its own right and will also be a catalyst for the introduction of a series of other measures that will also help address its objectives and challenges.

5.1.3 Lincoln currently suffers from a number of longstanding transport related problems and issues that have a significant impact on journey reliability, journey times and network reliability throughout the city. These, in turn, have a negative impact on the wider Lincoln economy and act as a restraint to regeneration and the city's development aspirations. Traffic levels are forecast to continue to grow within the Lincoln area as a result of population growth, the housing and development targeted for Lincoln and increased economic activity. Much of the network, including key routes such as A15 Bunkers Hill and A15 Broadgate, already operates above capacity during peak periods, resulting in little scope for increased demand to be accommodated on the existing network.

5.1.4 Without major infrastructure improvements such as the LEB, the expected increases in travel demands, particularly at peak periods, will result in increased congestion on the network, longer peak periods, and increased demand for travel which cannot be undertaken due to lack of capacity. The off-peak network currently has some spare available capacity, but will become increasingly congested as traffic levels rise and the peaks spread.

5.1.5 With regard to the transport issues relevant to the choice of the Hawthorn Road junction, my evidence has shown that there are currently safe and reasonably convenient alternative routes available for movements to and from Cherry Willingham and Reepham, and that this will remain the case in the future with the Scheme in place.

5.1.6 I have identified that, with the Scheme in place, there will be several alternative routes for local traffic which are all safe and convenient, with minimum impact on local journey times and improvements in journey times to key locations in Lincoln. The accident records of alternative local roads for the period 2010 to 2014 indicate that they offer similar levels of risk both in terms of accident rates and severity. LEB will offer a significantly safer route for trips, including those to and from Cherry Willingham and Reepham.

5.1.7 When comparing the Hawthorn Road junction with an alternative of a Hawthorn Road overbridge open to all traffic, in my opinion, the Hawthorn Road junction should be the preferred option based on consideration of the superior traffic relief offered to communities, and lower capital. In addition, the overbridge would lead to the need for additional improvement works at the junction of Bunkers Hill and Hawthorn Road.

5.1.8 The Schools Services Manager from the Children's Services Directorate of the County Council has indicated support for the Scheme based on the improvements it will offer in parental choice and its contribution to encouraging sustainable travel to schools.

5.1.9 Local schools have been consulted and head teachers from schools to the east of LEB and from Christ's Hospital School have expressed concerns about impact on travel to their schools, and hence budgets. The head teacher of Carlton Academy School has identified advantages for her school and pupils and has indicated support for the Scheme, and the principal of Branston Community Academy has also expressed support for the Scheme.

5.1.10 The three emergency services (Fire and Emergency, Ambulance and Police) have all been consulted and support the Scheme proposals. Their own analysis and professional opinion indicates that their response times will in most cases be improved and as a minimum will not be adversely affected by the proposed arrangements for Hawthorn Road.

5.1.11 The three main local bus service providers have also been consulted and they also support the Scheme proposals as they will be able to deliver improved and more reliable services. They do not envisage any negative impacts on their services resulting from the proposals for Hawthorn Road, although there may be some rerouting of services.

5.1.12 In summary, my evidence has shown that, in transport planning terms, there is a compelling case in the public interest for the making and confirming the orders for the purposes of implementing the LEB.