2015

Leicester North West Major Transport Scheme

LLTB/SEP Business Case

Edwards & Edwards Consultancy Ltd

HIGHWAYS PLANNING AND DESIGN

EAE Consultancy
March 2015

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For Client: Leicester City Council and Leicestershire County Council

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1 Summary

1.1.1 To support the LLEP's Strategic Economic Plan and the LTP3 objectives of the City and County Council's, the Leicester and Leicestershire Transport Board (LLTB) have prioritised the funding of two transport projects for the 2015 to 2019 Spending Review Period. Considering the nature and location of the projects the promoters have agreed to develop the projects as if it is one scheme. These have been brought together into the Leicester North West Major Transport Project (LNWMTP). This scheme will support the Leicester Launchpad and will aid connectivity to the West Loughborough and Roxhill development project sites. The scheme area consists of a wedge broadly around the transport corridors of the A50 Groby Road and the A6 Loughborough Road.

1.1.2 There will be a phased approach to delivering the construction elements of the scheme mainly due to the need to minimise disruption to road users. To help realise the benefits of the highway infrastructure improvements, the scheme will also include marketing and promotional activities.

1.1.3 The scheme will support the ambitions of the LLEP's Strategic Economic Plan (SEP) and in particular the Leicester Growth Area (GA1) which is defined within the plan. The Growth Area aims to support the delivery of the Leicester Launchpad.

1.1.4 The GA1 objective is to:

- release 20ha of land for development
- provide 111,500 sqm of workspace
- support 120 businesses
- provide 600 training places
- facilitate the creation of 7,700 new jobs
- provide 11km of cycleway
- provide 11km of highway improvements
- facilitate the creation of 26 new apprenticeships

1.1.5 The creation of 7,700 new jobs to the Leicester Growth area is worth £285M per year in GVA[1]

1.1.6 **This business case supports the delivery of the 2015/16 scheme** which will deliver:

- Improvements to the A50 County Hall Roundabout to increase the vehicle capacity as well as improve facilities for walker and cyclist wishing to cross the junctions
- Improvement to A50/New Parks Way Roundabout to increase the vehicle capacity as well as improve facilities for walker and cyclist wishing to cross the junctions
- Improvements to A563/Dillon Road junction

[1] In 2011 the GVA per employee in East Midlands was £37,097. [2] http://consultations.leicester.gov.uk/city-development-and-neighbourhoods/nwleicester_traffic/supporting_documents/Consultation%20Letter%20Occupier%20%20public.pdf

- Improvements to the A563/Aikman Avenue junction
- Cycle path between Blackbird Road and A50/New Parks Way Roundabout
- Cycle path between New Parks Way Roundabout and County Hall Roundabout
- Outbound bus lane between New Park Way Roundabout and County Hall Roundabout
- A Smarter Choices and Travel Planning initiative to complement the infrastructure improvements that are aimed at supporting walkers and cyclists.

1.1.7 The promotors have agreed to implement a Quality Audit process for this scheme. This process will broadly follow the advice as set of in the Traffic Advisory Leaflet 5/11 (November 2011) published by the Department of Transport (DfT). It will provide a systematic review of the scheme using a series of discrete but linked evaluations to ensure that the broad objectives of safety, accessibility, equality etc. are achieved.

1.1.8 **The scheme is expected to produce a Benefit Cost Ratio (BCR) of 3.8. This is classified by the DfT as High Value for Money (VfM).** This means that for every £1 of public money that is invested there is a return of £3.80. This is based upon:

- 60 year appraisal of the highways benefits of the roundabout improvements
- 30 year appraisal of the highway benefits attributed to the drivers who switch to walking and cycling
- 10 year appraisal of the health benefits of increased walking and cycling

1.1.9 Sensitivity analysis is included within section 4 which shows a minimum BCR of 2.88 and a maximum BCR of 6.74 which demonstrates a high to very high VfM outcome.

1.1.10 Modelling has demonstrated that the combination of the infrastructure works and the smarter choices programme is forecast to deliver:

- Improved flow and operation of both roundabouts with, for instance, average transit times forecast to reduce from 62 seconds to 27 seconds in the morning peak at the County Hall roundabout
- Improved flow and operation of both the A50 (radial) and A563 (orbital) roads.
- 2% to 3% increase in average speed in the A50 wedge area in the morning peak
- 1164 new walkers and 733 new cyclists each day

1.1.11 For the 2015/16 schemes the SLGF contribution of £3.5M is to be matched by £4.185M of Local Authority funding. The funding profile from the SLGF does not match the spend profile for the project, therefore to ensure early delivery of the scheme the local authorities have brought forward around £1M of funding which will be reclaimed in 2016/17 or 2017/18 in order that the total local contribution is 15%. In addition to the capital funds there is a £326K of revenue funding in 2016/17 together with £63K of private sector contributions in support of the smarter choices activities.

1.1.12 The funding for the future years is set out in the Financial case.

1.1.13 Work will commence in July 2015 with a phased programme that is dependent of the levels of funding received through the SLGF process

1.1.14 The programme will include stakeholder engagement and consultation. This will include direct engagement/consultation[2], Press Releases, Website[3] and Stakeholder workshops.

1.1.15 The scheme will not involve the use of statutory powers.

1.1.16 Delivery has been an important consideration during the development of the package. The potential resource requirements and procurement routes have been assessed and the promoters will use a combination of their own direct labour capabilities (City Highways and Leicestershire DLO) and the existing Midlands Highway Alliance partnership arrangement (which the County Council led the creation of) to procure the scheme and support preliminaries where appropriate.

1.1.17 A project board will oversee the delivery of the scheme.

1.1.18 This scheme fits within a wider set of measures to deliver economic growth to Leicester. The success of the transport aspects of the scheme will be measured by before and after monitoring of the transport movements within the area.

1.1.19 Details of the LLEP/LLTB approval process are contained within Appendix A

[2] http://consultations.leicester.gov.uk/city-development-and-neighbourhoods/nwleicester_traffic/supporting_documents/Consultation%20Letter%20Occupier%20%20public.pdf

[3] http://consultations.leicester.gov.uk/city-development-and%20neighbourhoods/nwleicester_traffic/

2 Contents

3 Strategic Business Case:

What is the problem the scheme means to address, what options have been considered, and why does this solution meet the requirements?

3.1.1 To support the SEP objectives and the LTP3 objectives of Leicester City Council and Leicestershire County Council the Leicester and Leicestershire Transport Board (LLTB) have prioritised the funding of two transport projects for the 2015 to 2019 Spending Review Period. Considering the nature and location of the projects, the promoters have agreed to develop the projects as if it is one scheme. These have been brought together into the Leicester North West Major Transport Project. This scheme will support the Leicester Launchpad and will aid connectivity to the West Loughborough and Roxhill development project sites. The scheme area consists of a wedge broadly around the transport corridors of the A50 Groby Road and the A6 Loughborough Road.

3.1.2 The two Councils are working in partnership to develop and deliver the scheme. The process and procedures for the management of the project are contained within the Project Initiation Document[4] (PID). The document also details the workplans of the individual workpackages defined within the project.

Table 1: Sources of scheme objectives

LLTB	http://www.leicester.gov.uk/your-council-services/transport-traffic/transportpolicy/leicester-and-leicestershire-transport-board/
Strategic Economic Plan	http://www.llep.org.uk/SEP
LTP3 Leicestershire County Council	http://www.leics.gov.uk/ltp3v1-4.pdf
LTP3 Leicester City Council	http://www.leicester.gov.uk/your-council-services/transport-traffic/transportpolicy/transport-plan/

3.2 LLEP/SEP OBJECTIVES

3.2.1 The LNWMTP scheme primarily supports the Leicester Growth Area (GA1) defined within the LLEP's Strategic Economic Plan[5] (SEP) to support the delivery of the Leicester Launchpad.

3.2.2 The GA1 objective is to:

- release 20ha of land for development
- provide 111,500 sqm of workspace

[4] Appendix E

[5] http://www.llep.org.uk/SEP

- support 120 businesses
- provide 600 training places
- facilitate the creation of 7,700 new jobs
- provide 11km of cycleway
- provide 11km of highway improvements
- facilitate the creation of 26 new apprenticeships

3.2.3 The creation of 7,700 new jobs to the Leicester Growth area is worth £285M per year in GVA[6]

3.3 THE LTP3 GOALS AND OBJECTIVES OF LEICESTER CITY COUNCIL

3.3.1 The Goals and Objectives are shown in Table 2

Table 2: From LTP3 chapter 3, section 4.1

Goal	Objective
Economic Growth Supported: Leicester is more prosperous	To reduce congestion and improve journey times
Carbon Emissions Reduced:	To reduce Carbon Emissions
Equality of Opportunity promoted	To improve connectivity and access
Better Safety, Security and Health	To improve Safety, Security and Health To improve Air Quality and Reduce Noise
Quality of life and healthy natural environment are improved	To improve quality of life To Better maintain transport assets
Population Growth is supported	To reduce congestion and improve journey times

3.4 THE LTP3 GOALS OF LEICESTERSHIRE COUNTY COUNCIL

3.4.1 The goals and objectives are shown in Table 3

Table 3: From LTP3 Chapter 4 (page 47)

Strategic Goals	Strategic transport outcomes
A transport system that supports a prosperous economy and provides successfully for population growth	Our transport system provides more consistent, predictable and reliable journey times for the movement of people and goods All residents have efficient, easy and affordable access to key services (such as employment, education, health care and food shopping), particularly by public transport, bike and on foot
An efficient, resilient, and sustainable transport system that is well maintained	Our transport system and its assets are effectively managed and well maintained Our transport system is resilient to the impacts of climate change
A transport system that helps to reduce the carbon	The negative impact of our transport system on the environment and individuals is reduced

[6] In 2011 the GVA per employee in East Midlands was £37,097.

footprint of Leicestershire	More people walk, cycle and use public transport as part of their daily journeys
An accessible and integrated transport system that helps to promote equality and opportunity for our residents	All residents have efficient, easy and affordable access to key services (such as employment, education, health care and food shopping), particularly by public transport, bike and on foot
A transport system that improves the safety, health and security of our residents	The number of road casualties is reduced More people walk, cycle and use public transport as part of their daily journeys
A transport system that helps to improve the quality of life for our residents and makes Leicestershire a more attractive place to live, work and visit	The negative impact of our transport system on the environment and individuals is reduced There is improved satisfaction with the transport system amongst both users and residents The natural environment can be accessed easily and efficiently, particularly by bike or on foot

3.4.2 In addition to the economic and transport goals an Equality Impact Assessment has been undertaken to assess the impacts on different sections of society and to ensure that the needs of all community groups are addressed and no group is discriminated against. See section 6.5

3.5 DETAILS OF GEOGRAPHIC AREA

3.5.1 Figure 1 shows the boundary of the combined A50 and A6 wedges[7] in which schemes to be delivered between 2015 and 2019 are located.

[7] In the remainder of the report the combined wedge will be referred to as 'the wedge'

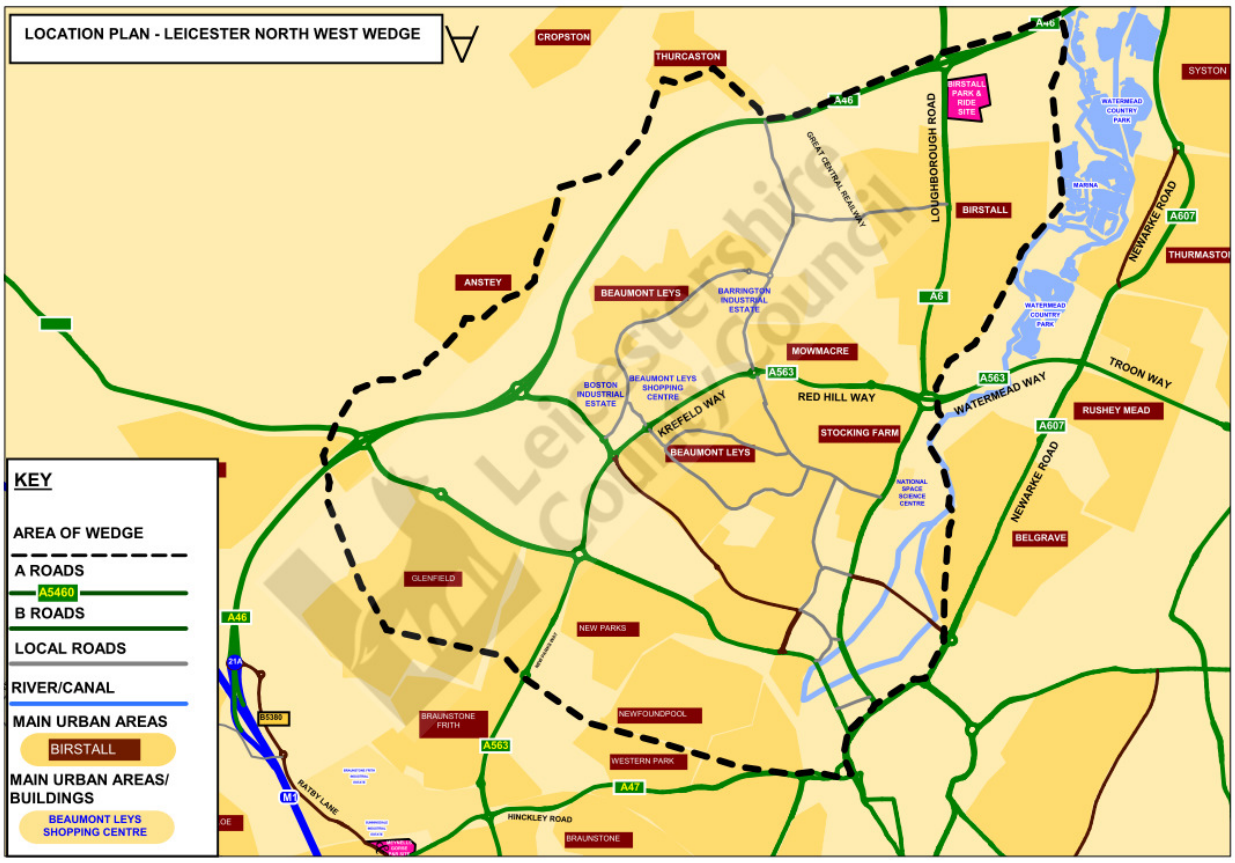


Figure 1: Combined A50 and A6 Wedge

3.6 PROBLEMS AND OPPORTUNITIES IDENTIFIED

3.6.1 The wedge was identified as a strategically important area by the LLTB[8]. As well as containing important origins and destinations for trips from Glenfield Hospital, the Beaumont Leys retail and commercial centre and County Hall (i.e. Leicestershire County Council offices) the area also has plans for major residential and commercial regeneration at Waterside, Abbey Meadows and Ashton Green. In addition, the wedge links the City with the North and North West of Leicestershire and plays an important role in facilitating orbital movements between the North East and North West of the City.

3.6.2 The schemes presented in this business case form the first part of a series of measures to provide new infrastructure to support economic growth, improve accessibility and support the health benefits of walking and cycling. These schemes will be delivered in 2015/16

3.6.3 Various studies have been undertaken to inform the strategic priorities for investment for the 2015/16 schemes. Schemes proposed in the PID for future years will be reviewed and additional schemes added in the light of emerging evidence and policy direction.

[8] http://www.leicester.gov.uk/your-council-services/transport-traffic/transportpolicy/leicester-and-leicestershire-transport-board/

LNWMTP: SEP Business Case (March 2014). (see Appendix F)

3.6.4 The original SEP 'business case' from March 2014 set out the initial plans regarding the development of the complete LLTB programme including the possible schemes and planned delivery dates. This proposed that the County Hall Roundabout and New Parks Way Roundabout should be delivered first. These schemes directly support growth within the wedge including at Waterside and Abbey Meadows. In addition, the schemes support the desire for increased orbital movements as well as improving facilities for walkers and cyclists.

A50 Desktop Study (2013). (see Appendix G)

3.6.5 This study was produced by the Infrastructure Planning Team (Transport Policy & Strategy Group). The main thrust of the feasibility work outlined in the package is to:-

- review proposals to reduce the congestion and delays at the A46/A50 Roundabout, using existing traffic flows (2009);
- assess various improvement options for the A50/Gynsill Lane Roundabout using existing flows (2012);
- assess the peak period traffic interaction between the proposed improved A46/A50 Roundabout and the existing A50/Gynsill Lane Roundabout;
- review the 2009 proposals for inbound and outbound bus lanes along the A50 corridor between the A46/A50 Roundabout to the A50 Groby Road/Glenfrith Way Roundabout .

3.6.6 The report is based on establishing the peak period traffic conditions along the various sections of this corridor, analysing the accident cluster sites and identifying the most appropriate feasible solution or highlighting various possible options outlining the pros and cons of each one.

3.6.7 The report recommended that:

- The A46/A50 Roundabout would benefit from signal control and would provide the optimum solution at this locality. This would result in an improvement in the peak period capacities with reduced queues and delays that would also benefit the local buses travelling along the A50 through this junction. It is expected that some accident types would reduce with these proposals, but no formal analysis of the accident benefits has been carried out.
- The A50/Gynsill Lane Roundabout would also benefit from signal control. There will be an improvement in the peak period capacities with reduced queues and delays that would also benefit the local buses travelling along the A50 through this junction. It is expected that some accidents types would reduce with these proposals, but no formal analysis of the accident benefits has been carried out.
- If no improvements are carried out at the A50/Gynsill Lane Roundabout at the same time or shortly after the A46/A50 Roundabout signalisation, it is highly likely that the A50 inbound traffic in the AM peak period will queue back and block traffic trying to exit the A46/A50. This will result in the loss of any capacity benefits gained by the installation of the traffic signals at the A46/A50 Roundabout. .

LNWMTP: Work Package 1: Forecasting future performance of the A50 and A6 wedge (see Appendix H)

3.6.8 Key findings of the Wedge Summary report (Appendix H**)** were:

- The A50 and A6 wedges will accommodate a significant amount of the housing and commercial floorspace growth allocated within the city,
- Over the next 10 years LLITM forecasts little change in the net number of jobs within the wedge. Employment within the remainder of the city is forecast to fall.
- Car ownership for households within the wedge is forecast to increase by over 30% over the next 10 years
- Average morning peak traffic speeds in the wedge are forecast to fall by 11% compared to a HMA average of 5% between 2016 and 2026
- In the morning 3 hour peak around 26% of trips associated with the wedge are entirely within the wedge, 45% are orbital and 19% radial. Only around 3% travel radially right-through the wedge.
- The model forecasts a faster rise in outbound traffic compared to inbound traffic as workers living within the City increasingly look outside to find employment
- The A50 wedge is a net attractor of trips in the AM peak period (3hour) whilst he A6 wedge is a net producer of trips. Between 2016 and 2026 the model forecasts that the number of households will increase faster than the number of jobs. This will result in the ratio of the number of trips attracted to the area compared to the number of trips produced falling. There is therefore a net increase in the proportion of trips flowing out of the wedge.
- Public Transport (PT) demand and mode share will continue to struggle. Rises in bus fares and reductions in car operating costs will continue to make PT unattractive.
- The PUA assessment for 2031 highlighted congestion on:
    - A563 between Aikman Aveneue and Anstey Lane.
    - A50 east of Blackbird Road
    - A6 at various major junctions
    - It also shows that the inner ring road is severely congested at virtually every junction at or near capacity.

LNWMTP: Work Package 2: Investigation of current performance, opportunities and constraints of the transport network within and surrounding the wedge (See Appendix I)

3.6.9 The purpose of the study was to undertake a comprehensive assessment of all aspects of the current transport related performance, opportunities and constraints of the transport network within the geographical scope of the project. It included appraising, and if necessary updating, existing studies that examined transport infrastructure within the A50/A6 wedge area.

3.6.10 Investigation of the current transportation issues support the identification of the wedge for investment with the three radial routes already serving a higher proportion of traffic than the other seven radials to the city. The anticipated future development proposals will further concentrate demand on the wedge highway network.

3.6.11 The report concluded that based upon evidence relating to existing state of the network

- The evidence largely correlates with the work packages identified within the PID. The work package objectives focus on facilitating travel by sustainable modes and accommodating 2026 predicted traffic levels.
- Evidence identified additional schemes for potential delivery pre and post 2019 that would support the LLEP/SEP strategic objectives subject to funds being made available. These focus on accommodating the the orbital movements and the A5630 section of the Anstey Lane.
- With the development of the active travel and public transport network there is sufficient evidence from work place travel plans and current distances travelled by mode that the Smarter Choice Measures referred to in the PID can significantly influence modal choice within the wedge.

3.7 SCHEME DESIGN

3.7.1 Design options for the roundabouts were undertaken and a briefing note and appraisal summary table produced to compare the merits of design options in order to allow County Council Members and the City Mayor to agree optimum design solutions.

3.7.2 Design options for the cycle route were undertaken and outline options produced in order to allow County Council Members and the City Mayor to agree optimum design solutions. The design objective is to provide a route serving the National Cycle Network (NCN 6) alongside the A50.

3.7.3 Details of the design options and the option appraisal are contained in Appendix J

3.7.4 Details of the proposed scheme components can be found at the following link http://www.leics.gov.uk/index/highways/road_pathway_maintenance/road_schemes/major_transport_projects/nwleicester-overview.htm

3.7.5 A Smarter Choices programme is proposed to encourage non-driving modes and to complement the cycle lanes and improved crossing provision at the CH and NPW roundabouts. The programme is proposed to run in the year after the completion of the scheme in order to ensure the measures are in place before commencing with the activities aimed at changing travel behaviour.

3.8 SCHEME IMPACTS AND BENEFITS

3.8.1 The scheme has been assessed in two ways. Firstly using the LLITM transport model to assess the highway impacts and secondly a separate exercise to assess the impacts on walkers and cyclists of the proposed improvements together with the Smarter Choices measures.

3.8.2 The LLITM assessment[9] compares the core scenario (where there are no improvements to the roundabouts) with a 'With Intervention' (WI) scenario. Differences are assessed for 2016 and 2026.

3.8.3 The model mainly forecasts changes in routes used by car travellers, with little change between the core scenario and the 'With Intervention' (WI) scenario in mode share or origins and destinations of trips. This is consistent with the type and scale of intervention proposed and assessed.

3.8.4 This reinforces the decision to separate the assessment into the two parts, and suggests that the approach will not result in the double counting of benefits.

3.8.5 Compared to making no changes, the improvements are forecast to result in increased levels of traffic through the roundabouts, but reduced average delays per vehicle

Improvements at the County Hall and New Parks Way Roundabouts

3.8.6 The CH Roundabout predominantly has traffic travelling radially (in/out) on the A50 with the design improving these movements considerably whilst accommodating the cross movements from Gynsill Lane and Station Road.

3.8.7 The New Parks Way roundabout has a greater level of conflicting orbital and radial movements to accommodate as orbital movements are at a similar level to the radial movements.

3.8.8 Comparing the '2026 with the improvements' to the '2016 core' the following highlights are obtained from the model:

County Hall Roundabout

- Volumes increase between 14% (AM Peak) and 17% (PM Peak)
- Delay per vehicle reduce between 24% (AM Peak) and 3% (PM Peak)

New Parks Way Roundabout

- Volumes increase 10% in both the AM and PM Peaks
- Delays per vehicle increase by 7% in the AM Peak and 11% in the PM Peak

Total Distance travelled

3.8.9 The model forecasts that the improvements to the roundabouts could increase the traffic levels by a small amount (<1%) as traffic re-routes to make use of the improved infrastructure.

[9] WP1 Technical Note 20: LLITM Impact Assessment of improvement to CH and NPW roundabouts Appendix H4

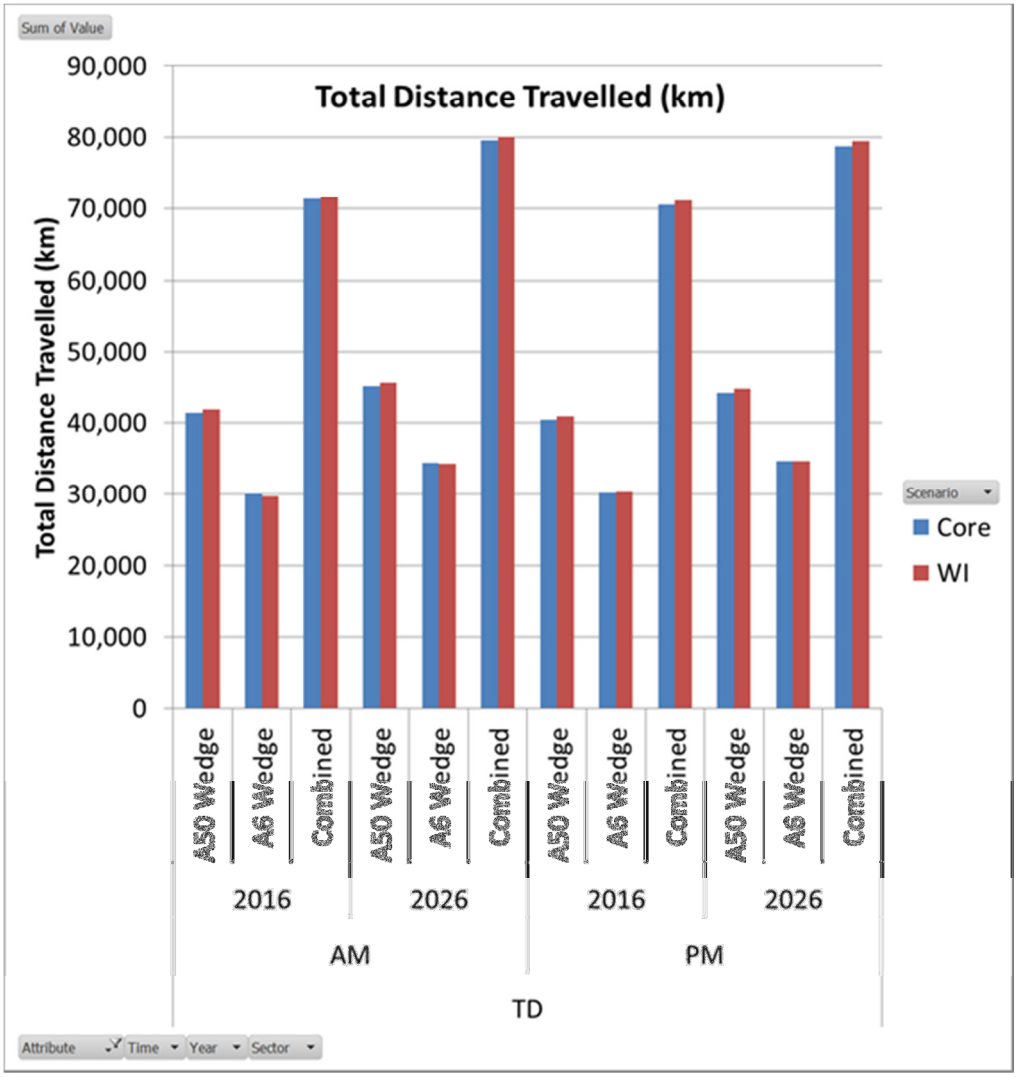


Figure 2: Total distance travelled within the defined areas (vehicle-km)

Average Speeds

3.8.10 Within the Wedge the Average speeds on key routes are generally improved in the With Intervention (WI) Scenario compared to the core in which no change is made. This is shown in Figure 3

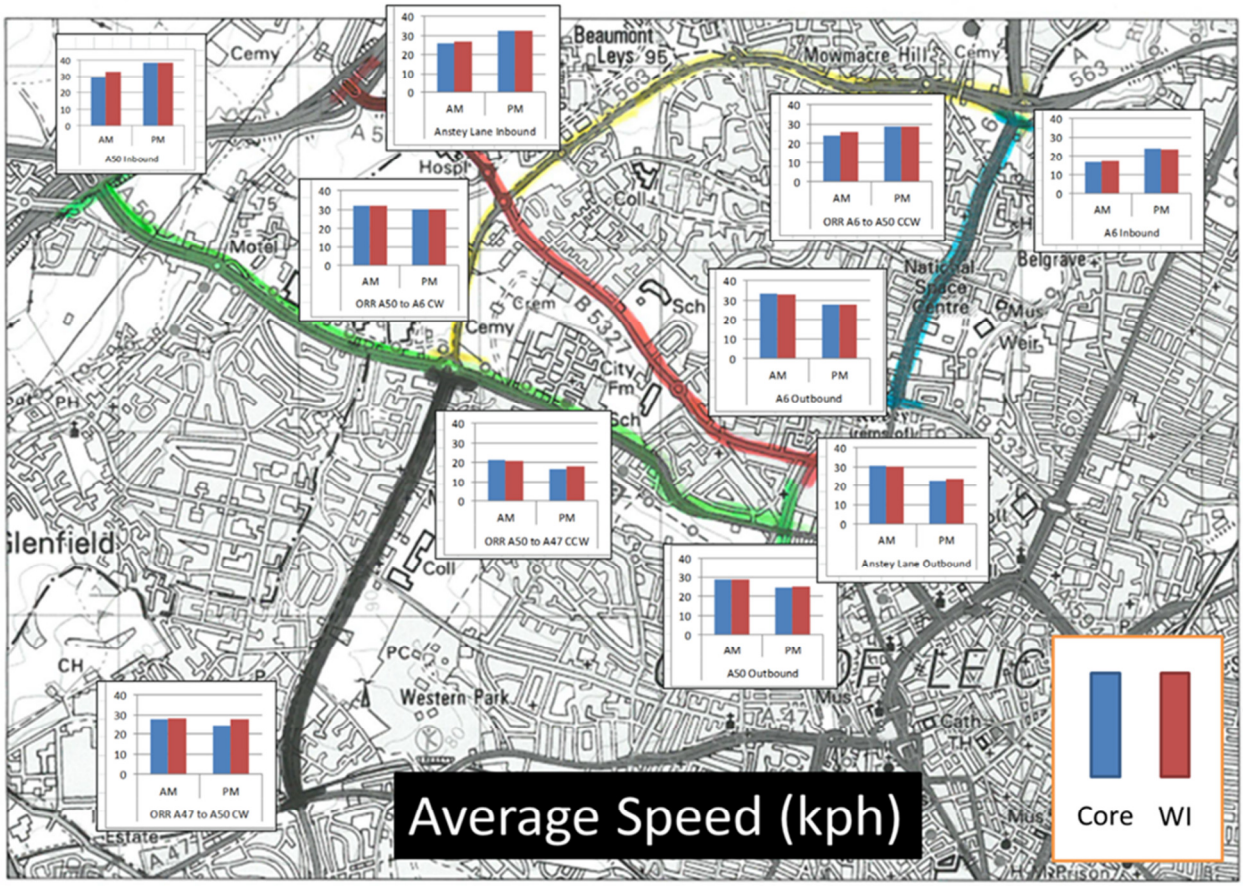
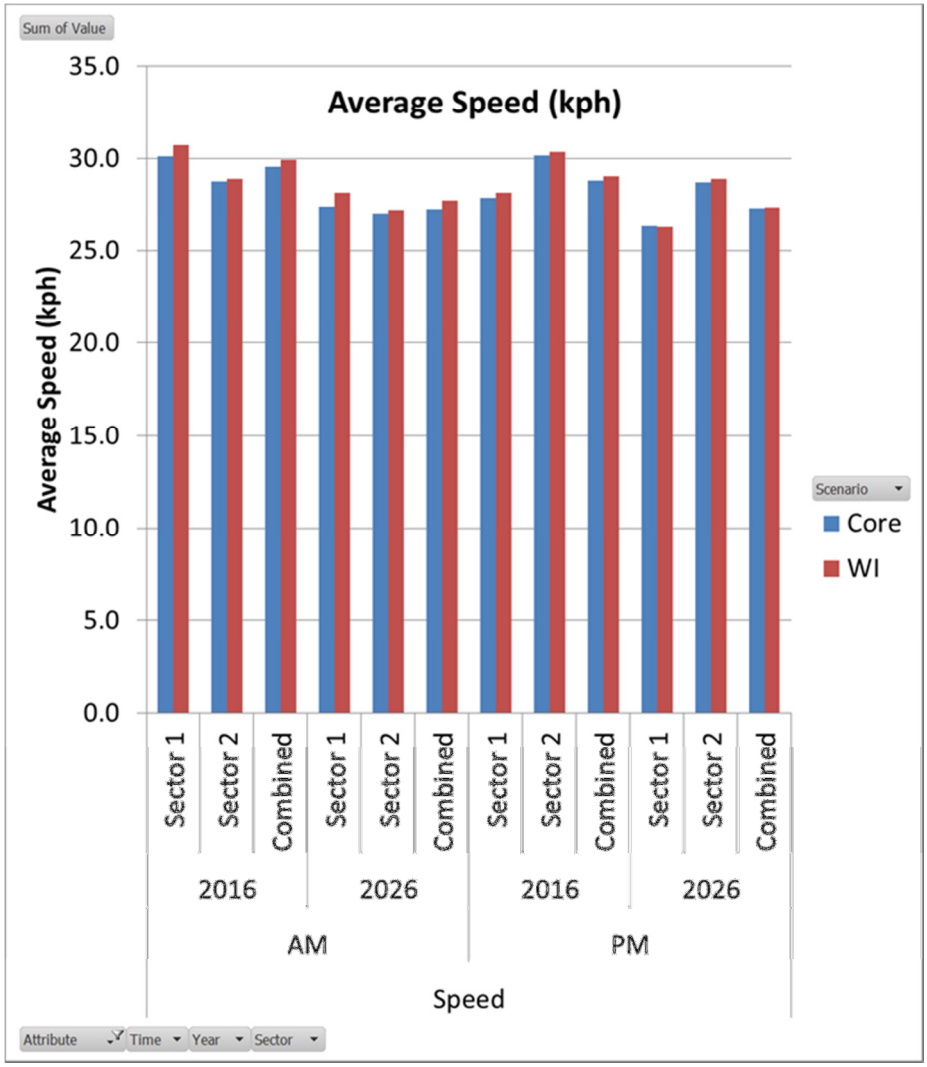


Figure 3: Average speeds (kph) on key strategic routes within the wedge. Routes marked on map

3.8.11 Figure 4 shows that this improvement in average speed is reflected across the A50 and A6 wedges.



3.8.12 **Figure 4: Average speed for all traffic with Sector 1 (A50 Wedge) and Sector 2 (A6 Wedge)**

Difference in flow volumes

3.8.13 The differences in the flow volumes of the 2016 With Intervention scenario compared to the Core scenario for the three time periods are presented below in Figure 5, Figure 6 and Figure 7

3.8.14 **Green** shows an increase in traffic levels in the WI scenario, whilst **blue** shows a decrease. The width of the line indicates the magnitude of the change.

3.8.15 As would be expected there is very little change during the relatively uncongested inter-peak period. However, both the AM and PM periods show some quite complicated changes to routing patterns.

3.8.16 The Following text refers to the 2016 modelled results. The 2026 results are similar.

AM PEAK HOUR

- **Orbital:** The model shows a considerable increase in Anticlockwise orbital movements on both the A563 and on Station Road/Gynsill Lane.
    - The A563 shows increased traffic levels between the A6 around to M1/J21, with the improvements at NPW roundabout improving the use of the A563 as an orbital distributer before travellers use a radial route into the City. Traffic is reduced inbound on the A6, Loughborough Road, Halifax Drive, Beaumont Leys Lane, Strasboug Drive/Heacham Avenue and Anstey Lane whilst increasing inbound on the A50, Aikman Avenue and the A47
    - Reduced delays and increased accessibility across the County Hall Roundabout between Gynsill Lane and Station Road provide a convenient short-cut between the A46/Anstey Lane junction and Glenfield. Traffic Calming, or alterations to the traffic signal timings may be required to reduce this potentially undesirable traffic flow
- **A50 Inbound**: Increased traffic on the A50 inbound with traffic increasing through Blackbird Road (rather than through Waterside) to meet with the A6 near to the B&Q junction (and also increasing along Abbey Park Road). This supports the previous ideas of prioritising movements in this direction
- **A50 Outbound**: This decreases in volume with traffic redistributing to Anstey Lane and Heacham Avenue

INTER PEAK

- **Very little change**

PM PEAK HOUR

- **Glenfield**: The changes shown in Glenfield are modelling artefacts relating to how the highway network is coded in this area. Both Station Road and the A50 outbound are modelled with large increases in capacity; therefore it is unlikely that this will cause an increase of traffic in Faire Road as shown. Should large increases of traffic in Faire Road occur then measures to reduce traffic using this route may be necessary
- **Orbital:** The improvements at the New Park Ways roundabout to increase capacity for orbital movements has greatly increased the A563 as an orbital collector of traffic which collects it onto the A50 and leads it outbound to the A46 E and W and also the A50 Northbound towards Markfield and the M1.
- **A50 inbound:** Traffic levels increase. Again it appears that the A563 is acting as an improved collector/distributer allowing traffic to be taken from parallel roads such as Glenfield Road
- **A50 outbound:** Traffic on the A50 outbound from the city centre from the Blackbird Road junction does not increase. However, between New Parks Way roundabout and the County Hall Roundabout there is a large increase in traffic volume due to the improved operation of the A563 orbital collector/distributer road.

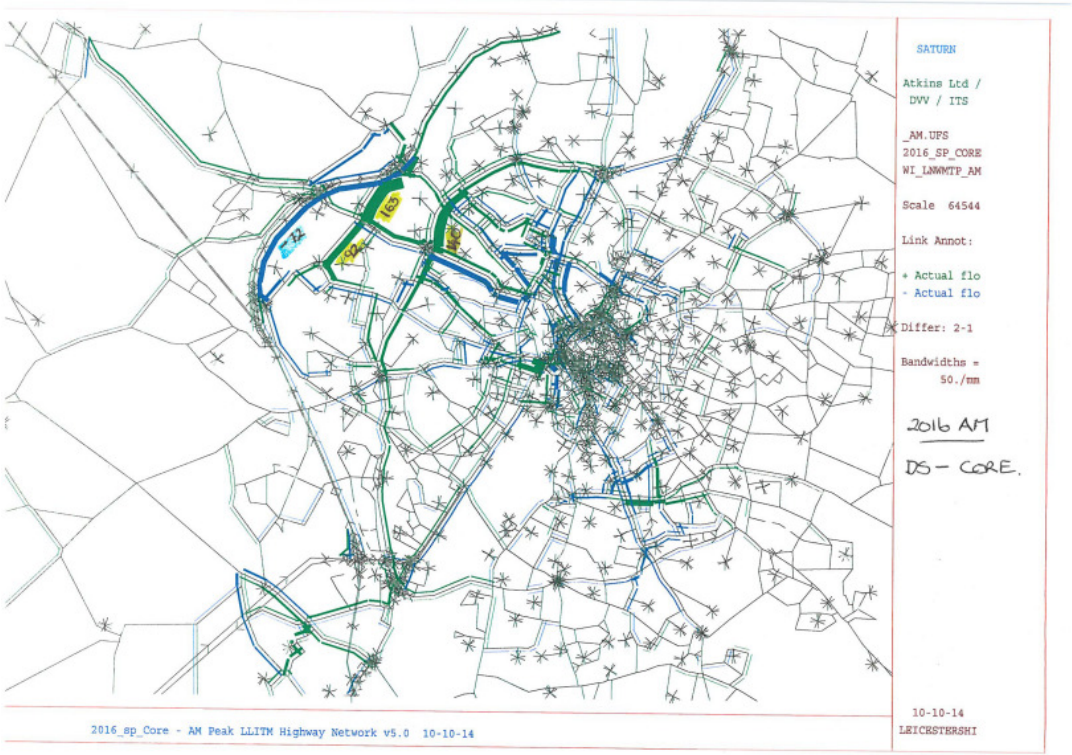


Figure 5 2016 AM Peak. Flow Volume Differences. Green traffic increase, blue traffic decrease

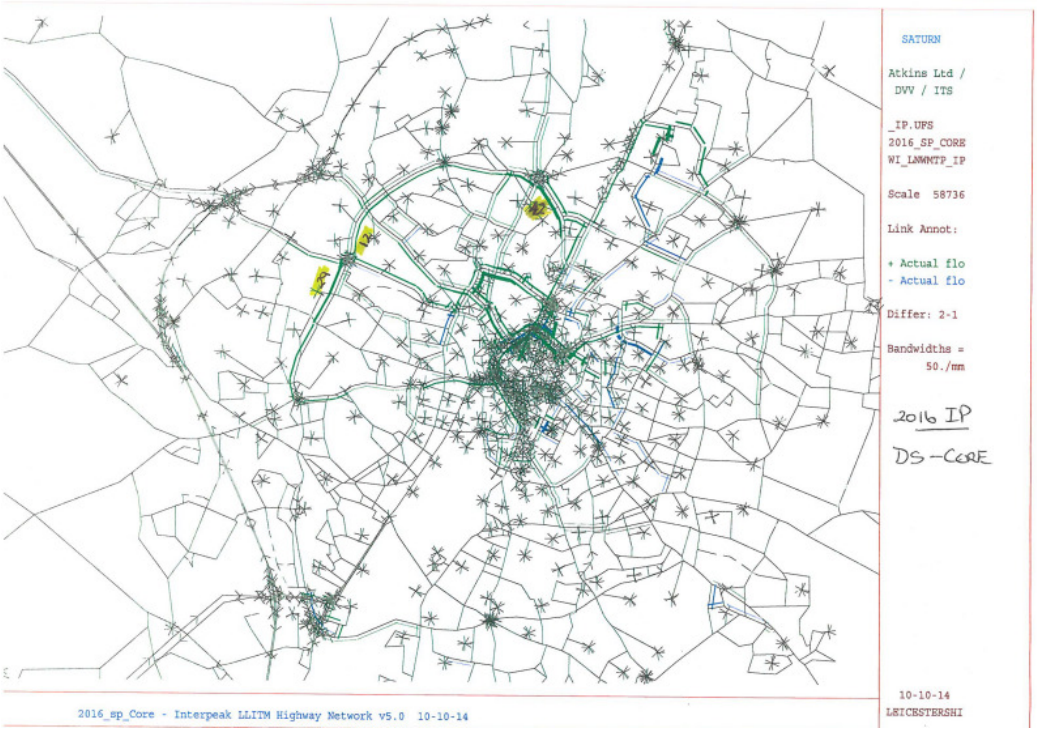


Figure 6 2016 IP. Flow Volume Differences. Green traffic increase, blue traffic decrease

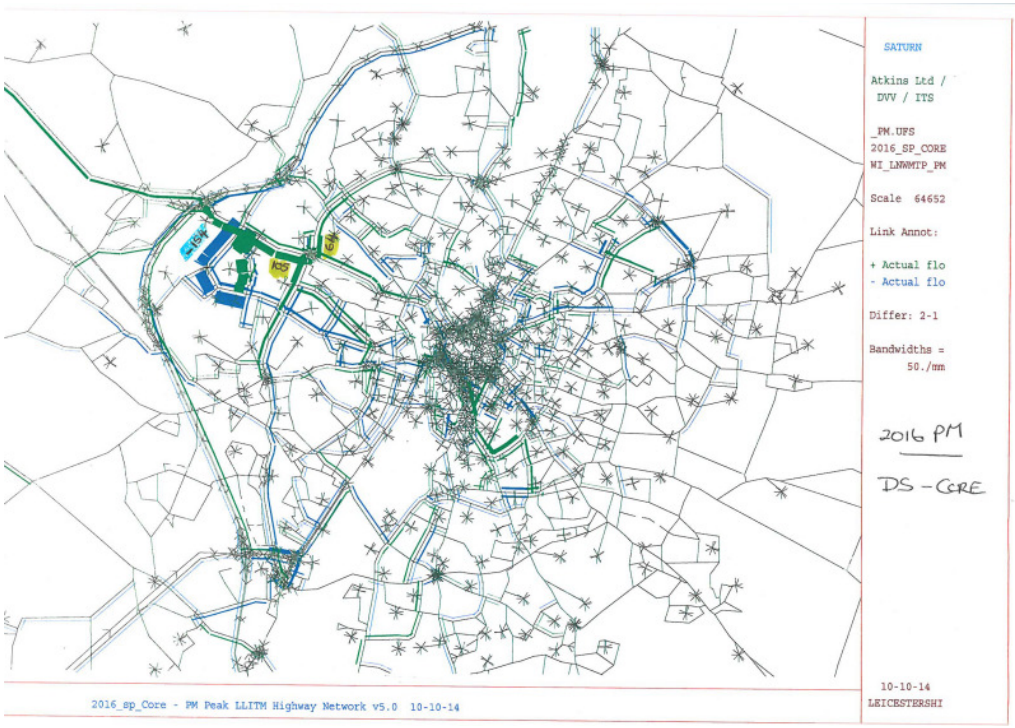


Figure 7 2016 PM Peak. Flow Volume Differences. Green traffic increase, blue traffic decrease

NOx Emissions

3.8.17 Overall there is a negligible change between the core and WI scenarios in the level of forecast NOx emissions within the combined wedge for 2026.

3.8.18 In 2026 LLITM forecasts a daily total of 742kg of NOx emissions within the wedge in the core scenario, and 743kg in WI scenario representing a difference of <0.1%.

3.8.19 Figure 8 shows how the changes in travel patterns impact the distribution of the emissions estimated over a 24 hour period. A primary purpose of the scheme is to improve the conditions of the A50 and A563 within the wedge area. The improvements, whilst easing existing traffic conditions, also acts to attract new travellers, and this is reflected in the levels of emissions rising in the vicinity of the A563 and A50, but generally falling elsewhere within the wedge

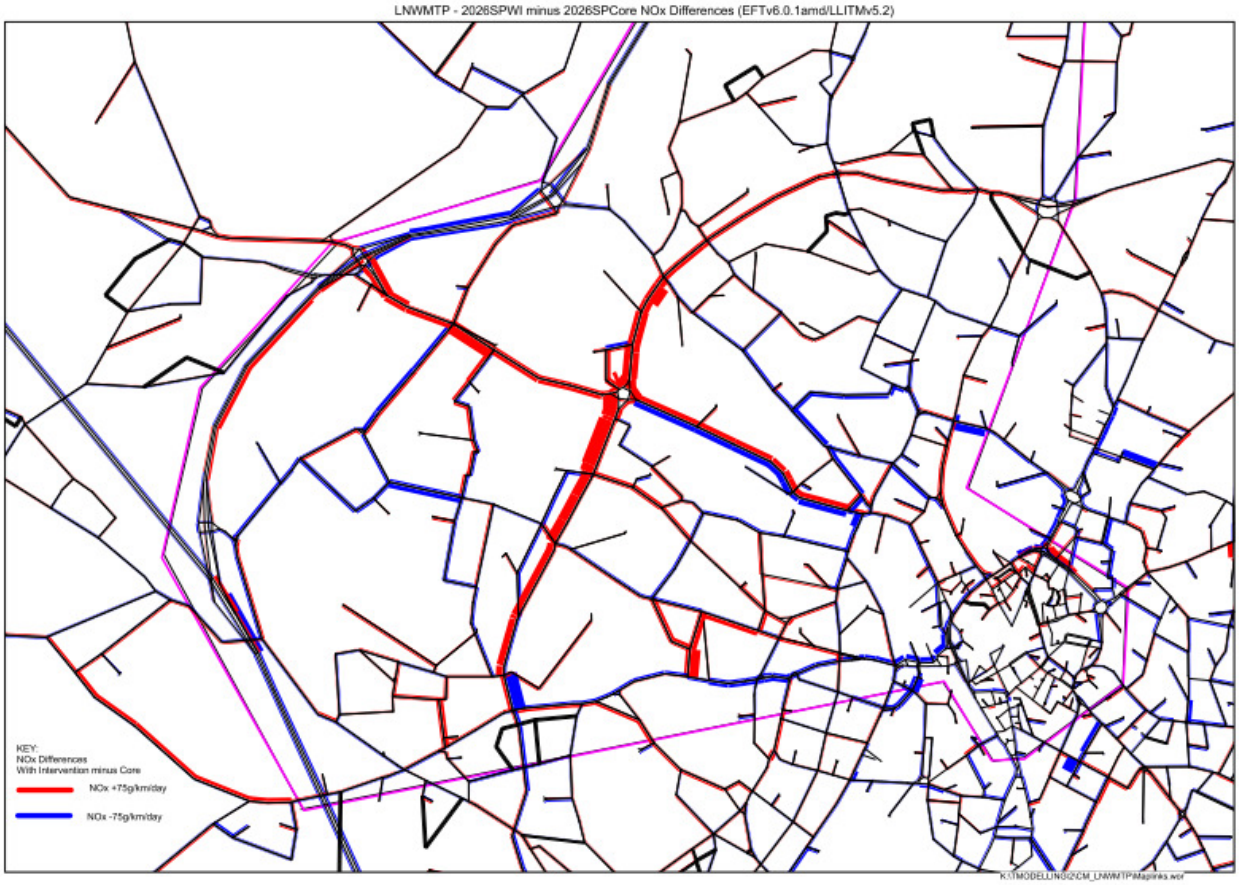


Figure 8: NOx emissions (2026, 24 hours)

Walking and Cycling

3.8.20 It is estimated[10] that the infrastructure improvements, together with the smarter choices measures, could lead to an additional 1,164 new walkers and 733 new cyclists each day. This increase should be seen in the context of around 22,000 walking and cycling trips originating from the wedge each day, and corresponds to a 33%[11] increase in cycling and a 5%[12] increase in the combined level of walking and cycling. The increase in walking and cycling is estimated to reduce the number of car trips by between 250 and 280 vehicles in

[10] WP1 Technical Note 22: The Economic Benefits of Walking and Cycling including the impact of Smarter Choices Initiatives (See Appendix K)

[11] This corresponds to the lower bound of expected increase in expected cycle trips as reported in the Leicester City Cycle Ambition Economic Appraisal Report produced by SUSTRANS and contained with appendix H of the Connecting Leicester city cycle ambition bid.
http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCMQFjAA&url=http%3A%2F%2Fwww.leicester.gov.uk%2FEasysiteWeb%2Fgetresource.axd%3FAssetID%3D128091%26type%3Dfull%26servicetype%3DAttachment&ei=F9bcVL2qNqXR7QaQsIGgAw&usg=AFQjCNGE1BJ-PxohzR5R2X5_yrZZcUe7Fg&bvm=bv.85761416,d.ZGU&cad=rja

[12] This is the weighted average of 7.5% increase in trip production and a 2% increase in trip attraction

each of the morning and evening peak hours. This is made up of a 2% reduction in car arrivals and a 1% reduction in car departures from the wedge.

4 Economic Business Case:

Does the scheme represent value of money?

4.1 OVERVIEW

4.1.1 The scheme has been assessed as having a Benefit Cost Ratio (BCR) of 3.8. This is classified by the DfT as 'High Value for Money'.

4.1.2 The methodology follows the standard approach whereby all costs and benefits are assessed at 2010 market prices with prices deflated and discounted to a 2010 base.

4.1.3 The scheme has been modelled using the LLITM Landuse and Transport model to appraise the highways benefits of the improved roundabouts with the appraisal calculated using TUBA. The benefits of the improved walking and cycling infrastructure have been separately assessed using WebTAG guidance contained within WebTAG A5.4.2 and WebTAG A5.4.

4.2 MODELLING APPROACH

4.2.1 A dual-track approach has been adopted whereby the highway benefits of the roundabout improvements have been modelled in LLITM whilst the walking and cycling benefits have been assessed independently.

4.2.2 The LLITM model has been run for three time periods in the future years 2016 and 2026 assuming the scheme has been completed, and compared against a scenario in which no improvements are made. A standard 60 year highways appraisal using TUBA has been undertaken. A technical note[13] has been produced setting out the procedures, assumptions and checking undertaken as part of the TUBA running process

4.2.3 It is estimated[14] that the infrastructure improvements, together with the smarter choices measures, could lead to an additional 1,164 new walkers and 733 new cyclists each day. This increase should be seen in the context of around 22,000 walking and cycling trips originating from the wedge each day, and corresponds to a 33%[15] increase in cycling and a

[13] LNWMTP: Highway Economic Assessment Report. Appendix L

[14] WP1 Technical Note 22: The Economic Benefits of Walking and Cycling including the impact of Smarter Choices Initiatives (Appendix K)

[15] This corresponds to the lower bound of expected increase in expected cycle trips as reported in the Leicester City Cycle Ambition Economic Appraisal Report produced by SUSTRANS and contained with appendix H of the Connecting Leicester city cycle ambition bid.
http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCMQFjAA&url=http%3A%2F%2Fwww.leicester.gov.uk%2FEasysiteWeb%2Fgetresource.axd%3FAssetID%3D128091%26type%3Dfull%26servicetype%3DAttachment&ei=F9bcVL2qNqXR7QaQsIGgAw&usg=AFQjCNGE1BJ-PxohzR5R2X5_yrZZcUe7Fg&bvm=bv.85761416,d.ZGU&cad=rja

5%[16] increase in the combined level of walking and cycling. The increase in walking and cycling is estimated to reduce the number of car trips by between 250 and 280 vehicles in each of the morning and evening peak hours. This is made up of a 2% reduction in car arrivals and a 1% reduction in car departures from the wedge.

4.2.4 It assumes that for every person that no longer makes a trip by car then they will make an identical trip by walking or cycling. The average trip length is either 5.3km for cycling, or 1.3km for walking.

4.2.5 The Reduction in trips and the economic benefits are estimated using evidence from:

- Connecting Leicester, Cycle City Ambition, Economic Appraisal Report. Sustrans
- LLITM TN119. Modelling of Smarter Choices within LLITM
- WebTAG table A5.4.2
- WebTAG A5.4
- World Health Organisation's, Health Economic Appraisal Tool (HEAT)[17]

4.2.6 The results are in-line with recent DfT research on the benefits of increased levels of walking and cycling, i.e.

- Value for Money Assessment for Cycling Grants[18] , Aug 2014, DfT
- Claiming the Health Dividend: A summary and discussion of value for money estimates from studies of investment in walking and cycling[19] , November 2014, DfT

4.2.7 **The health (Physical Fitness) and absenteeism benefits** are accumulated over a 10 year period with trips estimated for the whole day. In the absence of further smarter choices initiatives evidence shows that the use of non-car modes declines with time. The 2009 Leicester and Leicestershire Households survey showed that the median tenure in the area was 15 years. Therefore, in order to ensure new households are made aware of the benefits it is necessary to undertake further travel planning and other softer measures every 10-15 years. Should the softer measures (travel planning etc.) be repeated at 10 year intervals then the physical fitness benefits could increase from £15.0M over a 10 year period to £44.0M over a 30 year period.

4.2.8 **The highways de-congestion benefits** are accrued over 30 years for congestion occurring only in the morning and evening peak hours. In the peak hours the increased highways congestion that is forecast is likely to reinforce the benefits of walking and cycling. Therefore benefits are likely to continue to accrue over a longer period than the monetised health benefits that are calculated for travel throughout the day. Whilst WebTAG

[16] This is the weighted average of 7.5% increase in trip production and a 2% increase in trip attraction

[17] http://heatwalkingcycling.org/

[18] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/348943/vfm-assessment-of-cycling-grants.pdf

[19] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/371096/claiming_the_health_dividend.pdf

recommends appraisal over a 60 year period, a shorter, more robust, 30 year period has been adopted in this appraisal.

4.2.9 A technical report[20] summarising the benefits of the walking/cycling improvements has been produced with the results summarised in this business case.

4.3 LLITM MODEL VALIDATION

4.3.1 The Leicester and Leicestershire Integrated Transport Model (LLITM) is comprised of five main components:

- Land-use model, built in bespoke DELTA software;
- Variable demand model, built in EMME;
- Highway supply model developed in SATURN;
- Public transport supply model, developed in EMME;
- Environmental module, built in bespoke EASE software

4.3.2 The model has been built in accordance with the Department of Transport's modelling and appraisal guidance (WebTAG) and has been approved for a range of transport schemes and as a tool to secure wider-ranging infrastructure.

4.3.3 The model has been checked within the area of the A50 and A6 wedges and the results reported in a LLITM model Validation Report in Appendix M

4.4 STANDARD WEBTAG TABLES

4.4.1 The Standard Public Accounts (PA), Analysis of Monetised Costs and Benefits (AMCB), Transport Economic Efficiency (TEE) and Appraisal Summary Table (AST) are contained within Appendix C

4.5 COMBINED BENEFITS

4.5.1 Table 4 shows the monetised benefits of the complete scheme:

[20] The Economic Benefits of Walking and Cycling including the impact of Smarter Choices Initiatives Work Package 1 Technical Note 22. (see Appendix K)

Table 4: Benefits. 2010 prices, discounted to 2010, market prices

Category	Type	Benefit (£m)	Included in AMCB	Including all benefits
Economy	business user time	5.44	5.44	5.44
Economy	Agglomeration	Not monetised		
Economy	Impact of imperfect competition	Not monetised		
Environment	Air Quality	0.00	0.00	0.00
Environment	Noise	0.01	0.01	0.01
Environment	Greenhouse Gases	-0.15	-0.15	-0.15
Environment	Landscape/Townscape	Neutral	Neutral	Neutral
Environment	Water Environment	Neutral	Neutral	Neutral
Environment	Biodiversity	Neutral	Neutral	Neutral
Social	Highway non-business user time	10.1	10.1	10.1
Social	Highway user reliability	Not monetised		
Social	Absenteeism	0.87		0.87
Social	Accidents	0.20	0.20	0.20
Social	Physical Fitness	15.0	15.0	15.0
Social	Option Values	Neutral	Neutral	Neutral
Social	Affordability	Neutral	Neutral	Neutral
Social	Severance	Neutral	Neutral	Neutral
Public Accounts	Indirect Tax	0.43	0.43	0.43
Private Sector	Private Sector Contributions	0.06	0.06	0.06
Total Benefits	PVB		31.03	31.90

4.5.2 The nature and location of the scheme would lead to an expectation that the Wider Impacts benefits of agglomeration would be significant. On a scheme of this type an additional 30% increase in benefits would not be uncommon. However, these benefits have not been included in the scheme appraisal.

4.5.3 The small detriment in Greenhouse gases represents a very small change (4,213 tonnes over 60 years- 70 tonnes per year, see Table 20), and is consistent with the overall levels of traffic rising very slightly (paragraph 3.8.9) as drivers adjust their routes to make use of the improved infrastructure

4.5.4 Whilst WebTAG recommends that potential adverse effects that could occur during the construction phase of the programme are monetised. This has not been included in this proportionate business case. However a sensitivity test was undertaken to estimate in the BCR should the benefits be reduced by 10%. This is equivalent to the adverse impacts during the year of construction being equivalent to one tenth of the total benefits estimated over 60 years.

4.6 COSTS

4.6.1 The Present Value Cost (PVC) is estimated as £8.07M in 2010 market prices. This is the public sector contribution to the costs for both the Capital and Revenue funding stream.

4.6.2 Private sector contributions of £63,000 support the delivery of the smarter choices schemes

4.6.3 Costs for the programme preparation and scheme development have not been included in the costs and neither have additional maintenance costs been assessed. However, an appraisal using a 33% increase in costs has been undertaken in order to test the sensitivity of the BCR to a higher cost basis.

4.7 BENEFIT ANALYSIS AND SENSITIVITY TESTS

4.7.1 Both the Benefit Cost Ratio (BCR) and Net Present Value (NPV) have been calculated for

- Standard appraisal parameters
- Enhance benefits (including absenteeism)
- Costs increased by 33% (pessimistic view of uncertainty, future maintenance liabilities and project development costs)
- Benefits reduced by 10% to account for delays/congestions during the delivery phase

Table 5: Monetised costs and benefits (£M)

	PVC	PVB	NPV	BCR	VfM category
AMCB standard benefits	8.07	31.03	22.96	3.84	High
Enhanced benefits	8.07	31.90	23.83	3.95	High
Costs increased by 33%	10.76	31.03	20.27	2.88	High
Benefits reduced by 10%	8.07	27.93	19.86	3.46	High

4.7.2 The scheme ranges from a BCR of 3.84 to 3.95 for the standard appraisal and the appraisal with enhanced benefits. However the full economic benefits of Wider Impacts and Regeneration have not been included

4.7.3 The scheme ranges from a BCR of 2.88 to 3.95 over the range of sensitivity tests. This is classified as High Value for Money by the DfT

4.7.4 In addition, a range of tests have been undertaken regarding the assumptions made for the walking and cycling improvements:

- It is assumed 50% fewer motorists are attracted to switch to using a bicycle
- It is assumed that only pedestrians within 1km of the two roundabouts benefit
- It is assumed that there is a 50% reduction in car-vehicle-km saved

Table 6: Sensitivity Analysis of the benefits (PVB) £M

	50% fewer cyclists	Only walkers within 1km of roundabouts benefit	50% reduction in veh-km saved	Central estimate
Physical Fitness (Walking)	£9.61	£5.63	£9.61	£9.61
Physical Fitness (Cycling)	£2.69	£5.37	£5.37	£5.37
Highway Impacts	£1.39	£1.39	£0.69	£1.39
Absenteeism	£0.87	£0.87	£0.87	£0.87
Highway TUBA	£14.65	£14.65	£14.65	£14.65
Total	**£29.19**	**£27.91**	**£31.19**	**£31.89**
PVC	**£8.07**	**£8.07**	**£8.07**	**£8.07**
BCR	**3.62**	**3.46**	**3.89**	**3.95**

4.7.5 Should the softer measures (travel planning etc) be repeated at 10 year intervals (i.e. in 2026 and 2036) in order to reinforce and lock-in the benefits of the increased level of walking and cycling throughout the day, the physical fitness and absenteeism benefits could increase to around £42.7M (**Note:** that this does incur additional costs of £326k in 2026 and 2036)

Table 7: Sensitivity Analysis with Smarter Choices interventions repeated at 10 year intervals

	PVC	PVB	NPV	BCR	VfM category
Repeating Smarter Choices every 10 years	8.72	58.74	50.02	6.74	Very High

5 Financial Case:

What does it cost, and who is paying, also the risk to different parts of the contributions not being provided?

5.1 FUNDING PROFILE

5.1.1 In December 2014 a letter[21] was sent by the LLEP setting out the expected funding profile from the LLEP, together with the expected local contribution.

5.1.2 This confirmed that the Local Growth Fund has a confirmed £3.5M contribution for 2015/16 and an indicative allocation of £12.7M for 2016/17 and 2017/18. Match funding of £1M in 2015/16 and £1.9M for the remaining years is required.

5.1.3 In order to deliver the benefits of the scheme as soon as possible Leicester City Council and Leicester County Council each plan to contribute £2,092,500 to the 2015/16 scheme. A proportion of this, £1,381,600 would be recovered in 2016/17 in order that over the total growth deal period the local contribution amounts to £1,400,000 from each authority, accounting for 15.2% of the total costs.

5.1.4 Table 8 shows and indicative funding profile over the full period. The yellow shows the committed funding. Revenue funding supports the Smarter Choices measures that have been included in the assessment of the scheme, but are not included within the SLGF allocation. Leicester County Council expect to add to the revenue contribution in 2016/17, however the assessment has been undertaken without this commitment.

Table 8: Funding Profile (£K). (Yellow cells show the scheme costs included within this business case)

	£K	2015/16	2016/17	2017/18	2018/19	TOTAL	Proportion
LLTB Capital funding	LLTB	**£ 3,500.0**	£ 7,414.0	£ 5,286.0		£ 16,200.0	84.8%
	Leics County	**£ 2,092.5**	-£ 1,331.6	£ 450.2	£ 239.0	£ 1,450.0	7.6%
	Leics City	**£ 2,092.5**	-£ 1,331.6	£ 450.2	£ 239.0	£ 1,450.0	7.6%
	Total	**£ 7,685.0**	£ 4,750.8	£ 6,186.3	£ 477.9	£ 19,100.0	
Revenue funding	Leics County					£ -	
	Leics City		**£ 326.0**			£ 326.0	
	Private		**£ 63.0**			£ 63.0	
	Total		**£ 389.0**			£ 389.0	

The forecast spend profile for Work Packages 5 (County Hall Roundabout) and 7 (New Parks Way Roundabout) is shown in Table 9. The Work package 6 programme for the cycle paths is under development

[21] Dated 3rd December 2014 (see Appendix N)

Table 9: Spending Profile

Cost Heading	Cost (£000's)	Estimated Date
Site Investigation - GPRS & coring	55.00	Feb 2015
WP5 Construction Costs	1,999.50	July 2015
WP5 SU Costs	150.00	April 2015
WP7 Construction Costs:		
New Parks Way Roundabout	2,115.50	July 2015
Aikman Avenue Junction	1,197.10	July 2015
WP7 SU Costs	500.00	April 2015
Fees for WP5 & WP7:		
Design & Supervision (15%)	744.30	?
Project Management (1%)	49.60	?

5.2 DRAW DOWN REQUIREMENTS

5.2.1 The programme requires funding to be confirmed and in place for start of April in order to place the Task Order with the Contractor, so that the works can start on site at beginning of July.

5.2.1 In addition, funds will be required from this date to allow advance orders to be placed with the statutory undertakers for diversion works and with contractors for site clearance required as part of the scheme. Delay in placing these orders will cause a delay to the overall scheme, potentially by some twelve months to summer 2016/17, at very least delay start until Jan 2016.

5.3 LOCAL CONTRIBUTION

5.3.1 The total scheme capital costs are £7.685 million. This excludes historic land costs, off-site mitigation costs, Part 1 Claims under the Land and Compensation Act 1973.

5.3.2 Leicestershire County Council and Leicester City Council will each contribute £2.0925M in 2015/16 in order to make up the required cost with the £3.5M SLGF contribution for 2015/16. However part of this contribution will be reclaimed in 2016/17 in order that the total contribution by each of the two authorities is £1.45M over the total period

5.3.3 The local contribution will be drawn from a combination of Leicestershire County Council Capital funds and Leicester City Council capital funds and Integrated Transport capital funds. These funds are committed by the current administration.

5.3.4 Over the total period this represents a local contribution of 15.2% from Leicestershire County Council/Leicester City Council.

5.4 AFFORDABILITY AND FINANCIAL RISK

5.4.1 The scheme is delivered within areas that are responsible of both the County Council and City Council. Joint working between the authorities based upon the functional requirements rather than geographical location has been applied throughout the project to ensure efficiency savings and avoiding duplications of work and procedures.

5.4.2 Whilst the SLGF monies have been committed to the LEPs through the Growth Deals on the 7th July, there is a degree of uncertainty around this funding, especially for 2016/17 and 2017/18. As a result there may be some risks around issuing orders for work on these schemes to ensure the timescales for delivery are met. However, a letter sent to LEP chairs by Sir Bob Kerslake, the Permanent Secretary of the DCLG, suggests that these risks are small and encourages LEPs to proceed with delivery of their schemes. Furthermore, if funding for schemes in future years is subsequently withdrawn, this would also free up the County Council's matched funding element against these schemes which could instead be used to fund any committed expenditure against schemes already progressing for which funding will no longer be forthcoming

5.4.3 Financial risk is a major factor to be considered during the management of any project or programme. The aim is to manage the exposure to risk by taking actions to keep it to an acceptable level in a cost-effective way.

5.4.4 PRINCE2 methodology has been adopted for managing risk ensuring that all risks are captured and processed in a consistent manner. There is a high level risk register included in the PID and each scheme requiring a business case will have its own detailed risk register. Figure 9 shows the risk matrix that has been agreed and enables project risks to be subjectively scored based on their impact and likelihood. When the assessment of risk falls into the red zone, the risk needs to be managed by mitigation.

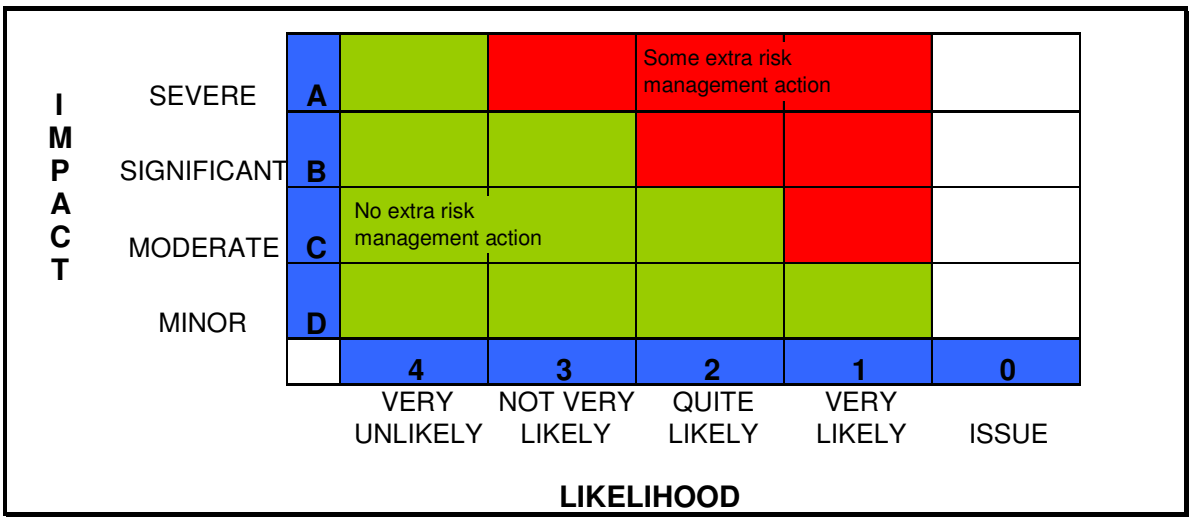


Figure 9: Risk Matrix

Main risks to project delivery timescales and impact will this have on the costs

5.4.5 From a construction point of view, the two main risks are statutory undertakers & availability of funds. SU apparatus that requires diversion or protection often causes delays to a project, which in turn has an impact on costs. At present we are planning a start date on site of beginning of July, however, this is dependent on placing an order with the Contractor at start of June. This can only happen if the necessary funding is in place, confirmation of funding could delay the start of the works & therefore impact on timescales & possibly costs.

5.4.6 Another risk is the restrictions that may be imposed on the Contractor as to when he is able to carry out works on the network, i.e. restricted working hours will increase the duration of the scheme & subsequently the costs will increase (additional prelims, etc.).

Dealing with Cost Over-runs

5.4.7 Any cost over-runs would be reported to the Project Board at monthly meetings, plus any advance warning of such costs would be reported at monthly site progress meetings.

6 Management Case:

This demonstrates that the programme is deliverable.

6.1 DELIVERY

6.1.1 Leicestershire County Council and Leicester City Council both have an excellent track record on delivery of large and major transport schemes. In the last 5 years, the following projects have been successfully delivered:

- **Loughborough Town Centre Scheme** - £19.0m DfT funded scheme of 18 months duration. The scheme was delivered on time & to budget. The scheme was let through the Midlands Highway Alliance (MHA) Medium Schemes Framework 1 contract (NEC3 Option C). All contract management (e.g. issuing of drawings, programmes, compensation events, submission of valuations, etc.) was conducted through an electronic system called 'Conject'. This aided financial monitoring & provided a system whereby all members of the project team could view important documents/info.The contract was completed on time, as per the originally accepted Clause 31 programme, and within budget (resulting in a gain percentage).
- **A426 Aylestone Road – Better Bus Area Fund (BBAF**) - £5m scheme funded by the DfT in partnership with Leicester City Council.
- **A47 Earl Shilton Bypass** - £14.0m DfT funded scheme, successfully steered through a difficult statutory period and RFA process, completed in March 2009;
- **Leicester Park and Ride, Enderby** - £8m scheme funded in partnership with Leicester City Council, completed within budget and programme in November 2009 and
- **Leicester Park and Ride, Birstall** - £5m scheme funded by government grant in partnership with Leicester City Council, completed within budget and programme in June 2011.

6.1.2 Land Acquisition

6.1.3 All land requirements & potential land compensation claims were considered at preliminary design stage. As a result the scheme has been was designed with this in mind & no land acquisition is required for the scheme

6.1.4 Allotments

6.1.5 As part of our design process we undertook a design review to ensure that we minimised the effect on the allotments while maintaining the design aspirations and overall benefits of the scheme. As a result of this review we were able to realign the proposed new highway (cycleway/footway) boundary such that no allotment plots or plot holders were affected. The land required for the proposed scheme is only a strip of average width of 0.5m from the

allotments boundary. The new boundary will be secured by the rebuilding of the fence which will make the site more secure. The proposed scheme does not fall under the Allotment Act 1950.

6.1.6 Construction Milestones

6.1.7 Construction Milestones are shown in Table 10

Table 10: Construction Milestones

Milestones	Dates
Design Approval	March 2015
ECI Phase	Feb – June 2015
Place Task Order with Contractor	June 2015
Construction Works Start	July 2015
Opening Date	June 2016

6.1.8 Project Programme

6.1.9 The planned programme for the substantive parts of the works on WP5 (County Hall Roundabout) and 7 (New Parks Way Roundabout) is shown in the Gantt chart in Figure 10. The programme for the cycle paths (WP6) is in development.

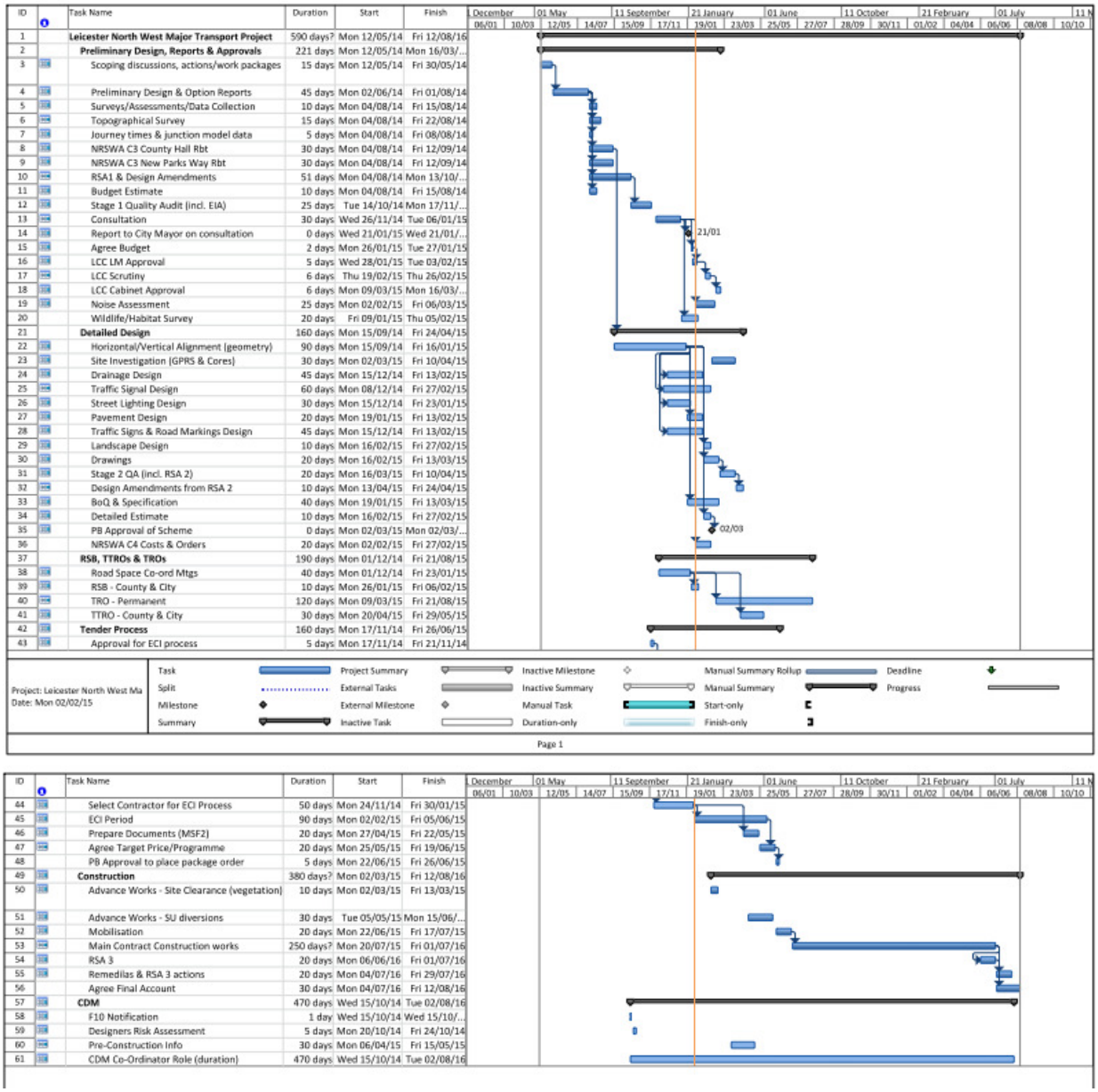


Figure 10: Project Gantt Chart (January 2015)

6.2 STATUTORY POWERS AND CONSENTS

6.2.1 The scheme will not involve the use of statutory powers.

6.3 GOVERNANCE

6.3.1 Roles & Responsibilities

6.3.2 See Appendix D for a Project Governance and Organisation Chart

6.3.3 Promoter Group

6.3.4 The Promoters Group's role will be to:

- Agree a Memorandum of Understanding dealing with the funding of the project, procurement decisions including associated contractual conditions and obligations;
- monitor overall progress;
- promote co-operation between partners and stakeholders;
- assist the Project Board in resolving impediments affecting progress;
- agree to any necessitated changes in direction as proposed by the Project Board.

The Promoters Group will meet every quarter and include the following representatives:

1. Sir Peter Salisbury City (Mayor);
2. Peter Osbourne (County Transport Lead);
3. Andrew L Smith (Director City Council);
4. Peter Price (County Director)
5. Mark Wills (Group Manager Transport Strategy City);
6.
7. Steve Clarke Project Manager

6.3.5 Project Board

6.3.6 Responsible for the delivery of the project together with setting the objectives and strategic direction. The Project Board will be responsible for making key decisions in accordance with the 'Approval Protocol' in Appendix D of the PID agreed between Leicestershire County Council and Leicester City Council.

6.3.7 Project Manager

6.3.8 Responsible for delivering the objectives of the project as defined by the board including taking matters for Project Board approval in accordance with the 'Approval Protocol' in Appendix D of the PID.

6.3.9 Work Package Leads (WPL's)

6.3.10 Work Package Leads are responsible for the delivery of the package assigned to them in the PID. They act as the lead manager for their Work Package and are responsible for providing advice to the Project Manager and other Work Package Leads. They will also work as part of the overall project team, to ensure issues are resolved within the project and interfaces and dependencies between work packages are effectively communicated and managed.

6.3.11 Their responsibilities also include:

- Contribution to the PID, reports and planning;

- Contribution to project communication and stakeholder engagement with all areas of the PID;
- Liaison with business as appropriate and in conjunction with other Work Project Leads;
- Reporting to the Project Manager in accordance with Appendix D of the PID;
- Manage the assigned Work Package which will include:
    - Producing a critical path of tasks to ensure delivery of the work package in the designated timescale). Each WP Lead to produce an Excel Spreadsheet and provide Project Manager with an update on progress every month;
    - Ensuring timescales are met;
    - Ensuring quality of outputs;
    - Ensuring outputs meet PID objectives;
    - Employing the methodology for undertaking an appraisal of work packages as set out in Appendix F of the PID;
    - Liaising with staff within the assigned Work Package to ensure consistency of approach etc., across Work Packages and in accordance with Appendix F of the PID;
    - Identification of risks and how they will be managed in accordance with Prince 2 methodology. Each WP Lead to produce an Excel Spreadsheet similar to the example shown in Appendix G of the PID and provide Project Manager with an update every month on progress;
    - Effective management of resources within the assigned Work Package, including staff, budget, equipment as appropriate;
    - Supporting and advising staff who are assigned to their Work Package team, providing clear guidance on their role, the objectives and outputs expected, and addressing any development needs in line with their role on the Work Package;
    - Following relevant guidance and standards as relevant to the project;
    - Producing Construction tender package;
    - Procuring the contractor;
    - Project manage the construction phase.

6.4 RISK MANAGEMENT

6.4.1 Project risks will be kept under review throughout the life of the project by the Work Package Lead and updates will be provided to the Project Manager. The Project Manager maintains a Project Risk Register.

6.4.2 In addition, a risk register will also be prepared for the construction works (WP5- County Hall Roundabout & WP7 the New Parks Way Roundabout) with the Contractor under Early Contractor Involvement (ECI) phase.

6.4.3 The Project Manager maintains and an overall Project Risk Register throughout the project. The Project Manager reports any problems/difficulties to the Project Board at their regular meetings or can call a special meeting of the Project Board if considered appropriate.

6.4.4 Any cost over-runs would be reported to the Project Board at monthly meetings, plus any advance warning of such costs would be reported at monthly site progress meetings.

6.5 QUALITY AUDIT (QA)

6.5.1 The promotors have agreed to implement a Quality Audit process for this scheme. This process will broadly follow the advice as set of in the Traffic Advisory Leaflet 5/11 (November 2011) published by the Department of Transport (DfT). It will provide a systematic review of the scheme using a series of discrete but linked evaluations to ensure that the broad objectives of safety, accessibility, equality etc. are achieved.

6.5.2 The QA provides a framework for evaluations that:

- ensures that an independent audit of the design is undertaken at two stages;
- ensures that the design considers the needs of all community groups that would have a stake in the design;
- leads to a balanced design.

6.5.3 A QA coordinator has been appointed by both Leicester City Council and Leicestershire County Council. Their role is to agree with the Work Package Lead the discreet studies that need to be undertaken and by which officers. They will also agree a time frame for the completion of the various audit reports which shall be brought together in an overarching report produced by the QA Co-ordinator which identifies conflicts that may arise between the audits with a view to providing a written balanced response to the Work Package Lead.

6.5.4 The identified audits already commissioned as part of this process include:

- Road Safety Audit (RSA)
- Cycle Audit/Review
- Equality impact assessment

6.5.5 Additional audits, such as those listed below, will be commissioned by the Work Package leads and the QA co-ordinator if considered appropriate for the context.

- Street character review
- Maintenance Regime audit
- Public transport Audit
- Technical Standard Audit

6.6 STAKEHOLDER MANGEMENT

6.6.1 The promotors of this major transport scheme are committed to constructive engagement with all stakeholders as an important aspect of a successful scheme delivery. The Project Initiation Document (PID) has identified a wide range of stakeholders. The PID also outlines engagement opportunities and routes of communication.

6.6.2 The following groups of stakeholders have been identified as important consultees during the course of the project. Many authorities/bodies are directly involved in the project whilst others need to be able to convey their representations through consultation. Table 11identifies the key stakeholders and how it is proposed to engage with them.

Table 11: Stakeholders

Authority/Body	To be Represented by
LLEP	LLTB/Promoters Group
City Mayor and senior Council team	Sir Peter Soulsby
County Councillor lead	Peter Osborne CC
County Council	LLTB/Promoters Group/PID Project Board
City Council	LLTB/Promoters Group/PID Project Board
Leicester and Leicestershire Transport Advisors Group	Quarterly at the meetings. Group includes representatives from the planning authorities (strategic planning), freight transport, LLEP etc.
Charnwood Borough Council	Stakeholder Consultation
North West Leicestershire District Council	Steve Bambrick
Blaby District Council	Stakeholder Consultation
Leicester Access Forum Leicestershire Access Forum	Quarterly at the Access Forum meetings.
Bus operating companies	Monthly at the 'Improving Bus Services' (formally the Quality Bus Partnership Management) meetings'. Also by meeting operators on an individual basis as and when required or requested.
Bus users	Quarterly at the Bus User Panel meetings.
Leicester Local Taxi Forum	Quarterly at the Taxi Forum meetings.
Parish Council	Stakeholder Consultation
Business	Local Business Forum and at critical stages of the project through public consultations, press releases, advertisements and meetings as appropriate.
General Public	At critical stages of the project through public consultations, press releases, advertisements and meetings as appropriate.

6.6.3 There are a number of stakeholders, however, who are not directly involved in the project and these stakeholders will need to be engaged by a number of different methods.

6.6.4 These communication methods are shown in Table 12.

Table 12: Communication methods

Method	Responsibility
Press Releases (to community media as well as mainstream media).	Project Manager to draft press release in consultation with the County/City media officers and send to County/District Group Managers for comments/approval
Website	County and City Council are responsible for their website.
Stakeholder workshops	Project Manager to organise workshops at appropriate venues in accordance with the PID Programme

6.6.5 A Communications Plan has been developed (See Appendix H of the PID in Appendix E) to ensure all those with a stake in the work package proposals are engaged so that their views and concerns can be taken into account. This is in the interests of transparency, increasing awareness, encouraging buy-in and seeking the wider views of affected community groups

6.7 MONITORING AND EVALUATION

6.7.1 Evaluation has been identified as an essential part of the scheme and future year scheme development. Monitoring will be undertaken to assess the success of the measures and evaluate the outcomes of the scheme. A separate work package has specifically been identified in the PID to develop a methodology for post scheme monitoring.

6.7.2 In order to monitor the overall benefit of the bid package the key indicators will be used in conjunction with planned LTP3 and LSTF monitoring. This will comprise of:

6.7.3 Highway network statistics

- Total vehicle kilometres
- Average vehicle speed

6.7.4 Public Transport statistics

- Average queue time per mile (mins) for buses
- Bus patronage

6.7.5 Changing travel behaviour on the journey to work

- Number of commuting trips and modal share: - Highway / PT / Active

6.7.6 Changing travel behaviour generally

- Total number of trips, trip length and modal share: - Highway / PT / Active

6.7.7 Accessibility

- Working age people with access to employment by public transport and other specified modes

6.7.8 Perception-based indicators

- Satisfaction with local bus services

6.7.9 Environment

- Carbon emissions from road transport

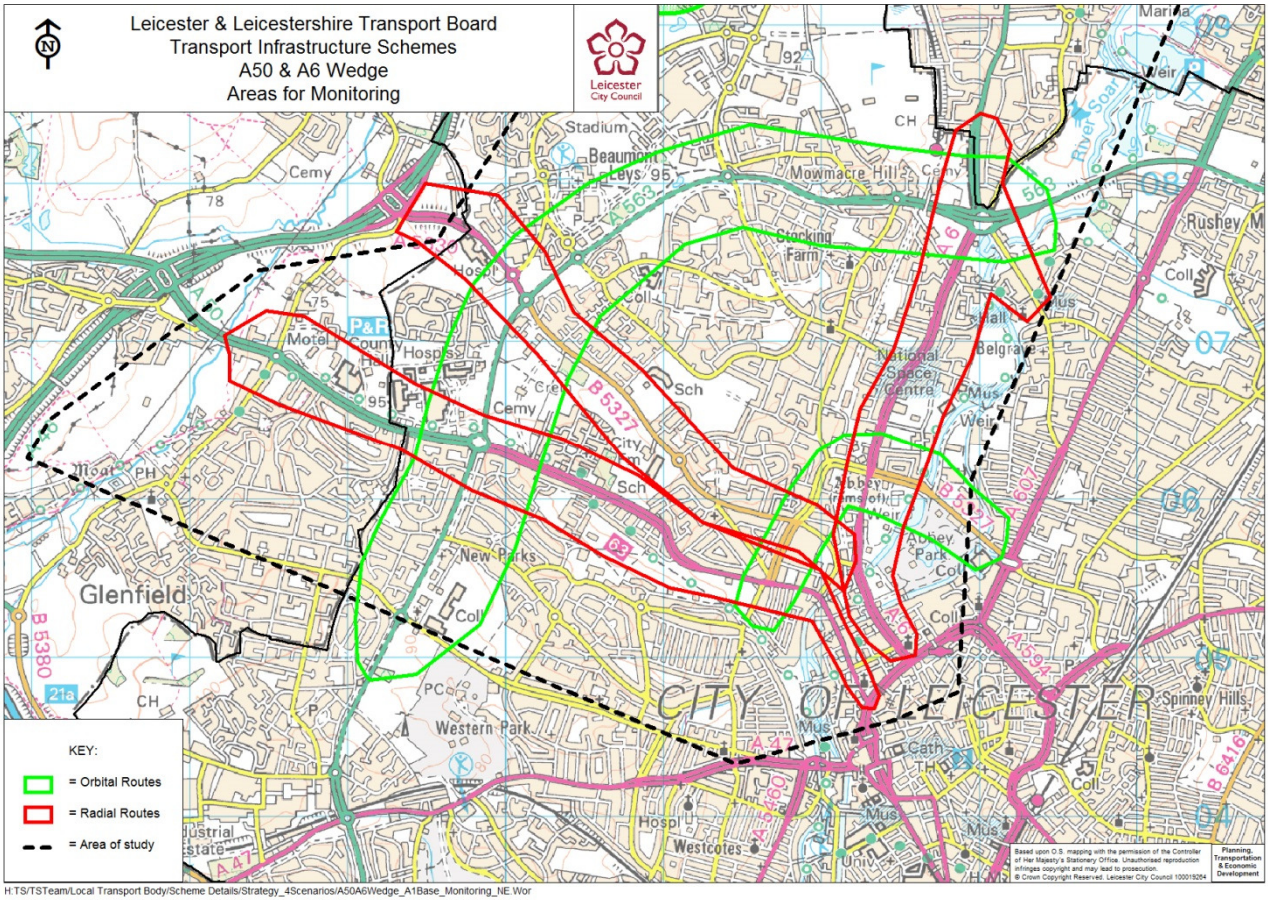


Figure 11: Orbital and Radial routes to be monitored

6.7.10 **Cars and other vehicles** will be monitored with permanent automatic counters on the main radials and orbitals, which we may supplement with additional counters on the A563, A50 & A6. Manual classified counts will also be available on all the radials just inside the Outer Ring Road and across the Central Transport Zone cordon.

6.7.11 **Buses** will be monitored by the same manual classified counts, with bus punctuality surveys and additional bus occupancy counts at the same locations. New bus timetable/network is used in Accession and is evaluated at least once a year, typically for the month of October. Quarterly bus patronage data from the bus companies' electronic ticket machines.

6.7.12 **Cycles & walkers** will be monitored by the same manual classified counts, with some additional permanent radar counters. These could be strengthened with 2 week tube monitoring (tubes can count cycles; radar units can count pedestrians and cycles)-

6.7.13 **Travel Choice** will be monitored with feedback from Personalised Travel Planning

6.7.14 Journey time and reliability / Delay and queue lengths

6.7.15 There are various options for this to be monitored:

- Traffic Master (Dft data) – 6 months lag in data being evaluated; bias towards vans/goods vehicles with greater proportion of GPS loggers
- TomTom – can buy data, say for a neutral month and is available historically [need to know what is the sample rate and if there is any bias with devices in any type of vehicle]
- Blue Tooth devises – permanent/temporary equipment can be installed to collect data, thought to be in the order of 30% of traffic.
- Floating Cars – we have 85 GPS trackers that can be used in survey vehicles [may be staff intensive and sample rate may be less than other sources and subject to variations on the day]

6.7.16 Change in congestion and traffic levels

6.7.17 City Centre & Central Transport Zone annual cordons (classified 12 hour counts) and ATC automatic counts

6.7.18 **Air Quality:** there are large monitoring stations which provide definitive levels of gases and particulates but are very expensive. Smaller mobile units may be available which could be used to identify changes in levels. Possible options are shown in Table 13.

Table 13: Air Quality measurement technologies

Technology	Features
Portable Detectors	CO2 and NOx only. Less sensitive but will give readings by the minute. 3 year lifespan. U.S. product. Meets Defra spec
Motes/Pods	Developed by Leicester University. Like Portable detectors, can be fixed to lampposts. Give hourly measurements. NOx & CO2.
Diffusion tubes	NO2. 50% accuracy. Gives the amount over a week or a month.

6.8 PROJECT HANDOVER AND CLOSEDOWN

6.8.1 On completion the construction contractor will provide

- Health and Safety File
- Original and as-built information and drawings for anything 'Contractor Designed'
- List of suppliers and materials
- Product data sheets and/or technical specs for all materials used
- As-built information for any stats discovered or moved during the works
- CCTV footage of drainage

- Methods Statements for works carried out
- Road lighting, signs and traffic signals
- Operation and Maintenance (O&M) manuals
- As built drawings in AutoCAD
- Test results and records

6.8.2 A substantial completion certificate will be issued which will trigger the start of the 12 month defects period

7 Commercial Case:

This demonstrates the commercial viability of the programme and the procurement strategy

7.1 PROCUREMENT STRATEGY

7.1.1 Implementation has been an important consideration during the development of the bid package. The potential resource requirements and procurement routes have been assessed and the promoters will use a combination of their own direct labour capabilities (City Highways and Leicestershire DLO) and the existing Midlands Highway Alliance partnership arrangement (which the County Council led the creation of) to procure the scheme and support preliminaries where appropriate.

7.1.2 The scheme delivery is secured though a clearly identified and established procurement route.

7.1.3 The scheme has undergone a thorough risk assessment and has a high level and a risk register associated with each work package. This is considered proportionate to the nature and complexity of the scheme. A Risk Management Strategy has also been developed that outlines how risks will be managed.

7.1.4 The greatest risk, in financial terms, to the scheme relates to the delay in the grant of consent from the Leicester & Leicestershire Transport Board (LLTB). Whilst this cost would be significant, the risk potential is considered to be very low. It is anticipated that a decision from the LLTB will be forthcoming following their next scheduled meeting in January 2015.

7.1.5 The joint promoters (Leicester City Council and Leicestershire County Council) do not consider the need for a cost appraisal in the conventional approach to a Quantified Risk Assessment (QRA). It is the promoters' view that the risk is time related only and the effect of this for the Strategic Economic Plan funding is the potential to not spend the monies within the prescribed period of time. On this basis, the risk that the LLTB contribution will not be spent is considered to be minimal and it is more a question of delay to the delivery.

Appendix A. LEP Approval Process

There are two approval processes in place depending on the source of the SLGF funding. The schemes developed for the LLTB should be approved through a staged process that mirrors the DfT WebTAG process which is described in the Assurance Framework whilst SEP schemes follow a gateway process that is set-out in the SEP.

The LNWMTP is to be approved through the LLTB Assurance Framework process.

A.1 LLTB (ASSURANCE FRAMEWORK) PROCESS

The Assurance Framework[22] (AF) set out the process by which schemes were proposed, sifted, prioritised and eventually put forward for consideration for funding by the DfT

Part 1 and 2 of the AF relating to the governance, sifting, prioritisation and selection of schemes for approval by the LLTB board was approved and 'signed-off' by the DfT.

Part 3 relating to 'Programme Management and Investment Decisions' was not fully signed-off.

A letter was received by the LLTB on the 23 December 2013 from DfT (Head of Local Transport Funding, Growth and Delivery Division). An extract from the letter is provided as Figure 12 in which the DfT state that Part 3 of the AF is redundant apart from the Value for Money segment. Table 14 shows the 'attached sheet' within the letter showing the status of the approval process.

¶
LTBs can consider individual business cases for any of the schemes that already feature in their published lists, firmly committing some of the post-2015 LEP funding to them, provided that:-¶
¶
(a)→The LTB does so within the terms of their assurance framework that has been signed off by DfT. We have already signed off Parts 1 and 2 of most assurance frameworks and are signing off only those elements of Part 3 that relate to value for money in scheme assessments. The remaining elements of Part 3 are now redundant in that they relate to the ongoing operation of the LTB in matters that will now be the responsibility by the LEP. **The attached sheet indicates the status of your LTBs assurance framework and whether any further steps need to be taken before it is fully signed off.**¶
¶

Figure 12: Extract from the DfT Letter

Table 14: Table from the DfT showing the status of the AF approval

Part 1	Signed-off
Pert 2	Signed-off
Part 3 (Value for Money)	Signed-off

The Value for Money section of the AF consists of paragraphs 58 to 79 of the September version of the AF. This section primarily relates to items that would traditionally form part of the Economic Case together with evidence of a robust monitoring and evaluation plan which would appear in the Management Case.

[22] http://www.leicester.gov.uk/EasysiteWeb/getresource.axd?AssetID=123717&type=full&servicetype=Attachment

As specified in paragraph 61 of the AF an appraisal specification report[23] was submitted to the LLEP on the 25 September 2014, and a meeting held with the LLEP on 5 November 2014. An email from Andy Rose was received (see Figure 13) on 6th November 2014 confirming that the methodology for appraising the scheme met the LLEPs requirements

The LLEP has not contributed to the process of developing the business case. However the steps below show the key milestones related to the scheme development.

Date	Action
Jan –July 2013	• LLTB sift, prioritise and select schemes to be put forward for funding as part of the LLTB funded schemes
Jul 2013	• LLTB Board Meeting (ref LLTB Website) o July Version of AF submitted to Project Board (LLTB) o Board adopt part 1 and 2 of the AF o **Board adopted the A50 and A6 corridor schemes as required by DfT** o Board noted Part 3 would be considered for adoption at future meeting
20 Mar 2014	• SEP (LEP Proforma) business case submitted by promoters of the joint A50 and A6 scheme to LEP
May 2014	• Meeting between DfT/DCLG/BIS and Leicestershire County Council, Leicester City Council and the LLEP regarding the schemes for the SLGF which included LNWMTP
Aug 2014	• Amion Consulting appointed by LLEP to review the business cases • LNW project team met with representatives of Amion to discuss the business case.
Aug 2014	• Meeting between DfT/DCLG/BIS and Leicestershire County Council, Leicester City Council and the LLEP regarding the schemes for the SLGF which included LNWMTP
22 Sep 2014	• Wedge Transport Strategy Workshop. Transport professionals from city council, county council and LLEP see Appendix H
25 Sep 2014	• Submission of Appraisal Specification Report to see Appendix O
6 Nov 2014	• Reply from LLEP confirming the methodology met the LLEP's requirements (email from Andy Rose dated 6 Nov 2014, see Figure 13)
3 Dec 2014	• Letter from LLEP to Mark Wills confirming the 2015/16 SLGF allocation
6 Feb 2015	• Letter from DCLG to LLEP confirming LGF capital payment will be made to the LLEP on 1 April 2015

[23] WP1 Technical Note 16: Appraisal Specification Report. Appendix O

Duncan Forbes

From: Andy Rose <andy.rose@llep.org.uk>
Sent: 06 November 2014 13:26
To: 'Duncan Forbes'; neal.edwards@EAEconsultancy.co.uk
Subject: RE: LNWMTP: Business Case

Duncan / Neal,

Further to our catch up yesterday; I would like to confirm that the proposed methodology meets the LLEP's requirements.

Regards

Andy Rose
Economic Strategy Manager (Place)
Leicester & Leicestershire Enterprise Partnership
City Hall
115 Charles Street
Leicester LE1 1FZ

Mobile: 0783 707 2234
Telephone: 0116 454 2912
www.llep.org.uk

llep
Leicester & Leicestershire Enterprise Partnership
Creating prosperity for all

From: Duncan Forbes [mailto:Duncan.Forbes@EAEconsultancy.co.uk]
Sent: 25 September 2014 20:38
To: Andy Rose; Mark Wills; John Dowson; Paul Sheard; bernard.evans@leics.gov.uk; Andy.Yeomanson@leics.gov.uk; clarkestev@aol.com; neal.edwards@EAEconsultancy.co.uk
Subject: LNWMTP: Business Case

Hi Andy.

Please find attached a note that sets out our proposed 'high-level' methodology for undertaking the proportionate economic assessment of the 2015/16 LLTB schemes which will be submitted to yourselves in the LLEP as part of the business case for these schemes.

Would you please confirm that this approach meets your requirements.

In parallel we are putting together a template for the business case which we will submit to you in due course. We would be happy to meet with you to discuss the development of the business case and the contents of these documents.

As we progress with the development of the business case we will continue to provide you with updates

Please note that whilst we, as scheme promoters, can set out what we consider to be proportionate. WebTAG only provides guidance on what **could** be included in a business case, but it is up to the scheme funders to agree with the scheme promoter what **is** required, and what is considered proportionate.

If you have any questions then please get in contact with me or Neal.

Regards

Duncan

Duncan Forbes
07891 137778
Duncan.Forbes@EAEconsultancy.co.uk

Figure 13: Confirmation Received from LLEP on acceptance of the methodology

Appendix B. Definitions and Abbreviations

Table 15: Acronyms

AMCB	Analysis of Monetised Costs and Benefits (standard DfT form of presenting costs and benefits)
EIA	Equality Impact Assessment
LGF	Local Growth Fund (See SLGF)
LLEP	Leicester and Leicestershire Enterprise Partnership
LLITM	Leicester and Leicestershire Integrated Transport Model
LNWMTP	Leicester North West Major Transport Project (see also LNWMTS)
LNWMTS	Leicester North West Major Transport Scheme (see all LNWMTP)
PA Table	Public Accounts table (standard DfT form of presenting
PID	Project Initiation Document
PT	Public Transport
SEP	Strategic Economic Plan
SLGF	Single Local Growth Fund
LTP3	3rd version of the Local Transport Plan
WebTAG	Guidance from the DfT on business case development, scheme appraisal and transport modelling

Table 16: Transport Modelling Terms

AM Peak	Peak hour is 0700 to 0800, A peak period is 0700 to 1000
Core Scenario	Scenario without improvements to County Hall and New Parks Way roundabouts
DS scenario	Do Something (modelling term to describe WI scenario)
IP	Inter Peak hour is average between 1000 and 1600
PM Peak	Peak hour is 1700 to 1800, A peak period is 1700 to 1900
WI scenario	With Interventions scenario
Forecast Year	Typically 2016 and 2026. It is the year in which the model provides outcomes

Appendix C. Standard Appraisal Tables

Table 17: PA Table

Public Accounts (PA) Table

	ALL MODES		ROAD	BUS and COACH	RAIL	OTHER
Local Government Funding	**TOTAL**		**INFRASTRUCTURE**			
Revenue	393,000					393000
Operating Costs						
Investment Costs	714,000					714000
Developer and Other Contributions	-64,000					-64000
Grant/Subsidy Payments						
NET IMPACT	1,043,000	*(7)*				
Central Government Funding: Transport						
Revenue						
Operating costs						
Investment Costs	6,995,000		6995000			
Developer and Other Contributions						
Grant/Subsidy Payments						
NET IMPACT	6,995,000	*(8)*				
Central Government Funding: Non-Transport						
Indirect Tax Revenues	-434,896	*(9)*				
TOTALS						
Broad Transport Budget	8,038,000	*(10) = (7) + (8)*				
Wider Public Finances	-434,896	*(11) = (9)*				

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values in 2010 prices and values.

Table 18: TEE Table

Economic Efficiency of the Transport System (TEE)

Non-business: Commuting	**ALL MODES**		**ROAD**		**BUS and COACH**	**RAIL**		**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**		**Passengers**	**Passengers**		
Travel time	3,514,489		3,514,489					
Vehicle operating costs	-8,000		-8,000					
User charges								
During Construction & Maintenance								
NET NON-BUSINESS BENEFITS: COMMUTING	3,506,489	*(1a)*	3,098,000					

Non-business: Other	**ALL MODES**		**ROAD**		**BUS and COACH**	**RAIL**		**OTHER**
User benefits	**TOTAL**		**Private Cars and LGVs**		**Passengers**	**Passengers**		
Travel time	7,095,795		7,095,795					
Vehicle operating costs	-508,000		-508,000					
User charges								
During Construction & Maintenance								
NET NON-BUSINESS BENEFITS: OTHER	6,587,795	*(1b)*	5,896,000					

Business								
User benefits			**Goods Vehicles**	**Business Cars & LGVs**	**Passengers**	**Freight**	**Passengers**	
Travel time	4,927,104		2,560,000	2,367,104				
Vehicle operating costs	510,000		419,000	91,000				
User charges								
During Construction & Maintenance								
Subtotal	5,437,104	*(2)*	2,979,000	2,242,000				
Private sector provider impacts						**Freight**	**Passengers**	
Revenue								
Operating costs								
Investment costs								
Grant/subsidy								
Subtotal		*(3)*						
Other business impacts								
Developer contributions		*(4)*						
NET BUSINESS IMPACT	5,437,104	*(5) = (2) + (3) + (4)*						

TOTAL		
Present Value of Transport Economic Efficiency Benefits (TEE)	15,531,388	*(6) = (1a) + (1b) + (5)*

Notes: Benefits appear as positive numbers, w hile costs appear as negative numbers.
All entries are discounted present values, in 2010 prices and values

Table 19: AMCB Table

Analysis of Monetised Costs and Benefits

Noise	13,830	*(12)*
Local Air Quality	526	*(13)*
Greenhouse Gases	-157,956	*(14)*
Journey Quality		*(15)*
Physical Activity	14,985,086	*(16)*
Accidents	206,537	*(17)*
Economic Efficiency: Consumer Users (Commuting)	3,506,489	*(1a)*
Economic Efficiency: Consumer Users (Other)	6,587,795	*(1b)*
Economic Efficiency: Business Users and Providers	5,437,104	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	434,896	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	31,014,307	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	8,038,000	*(10)*
Present Value of Costs (see notes) (PVC)	8,038,000	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	22,976,307	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	3.86	BCR=PVB/PVC

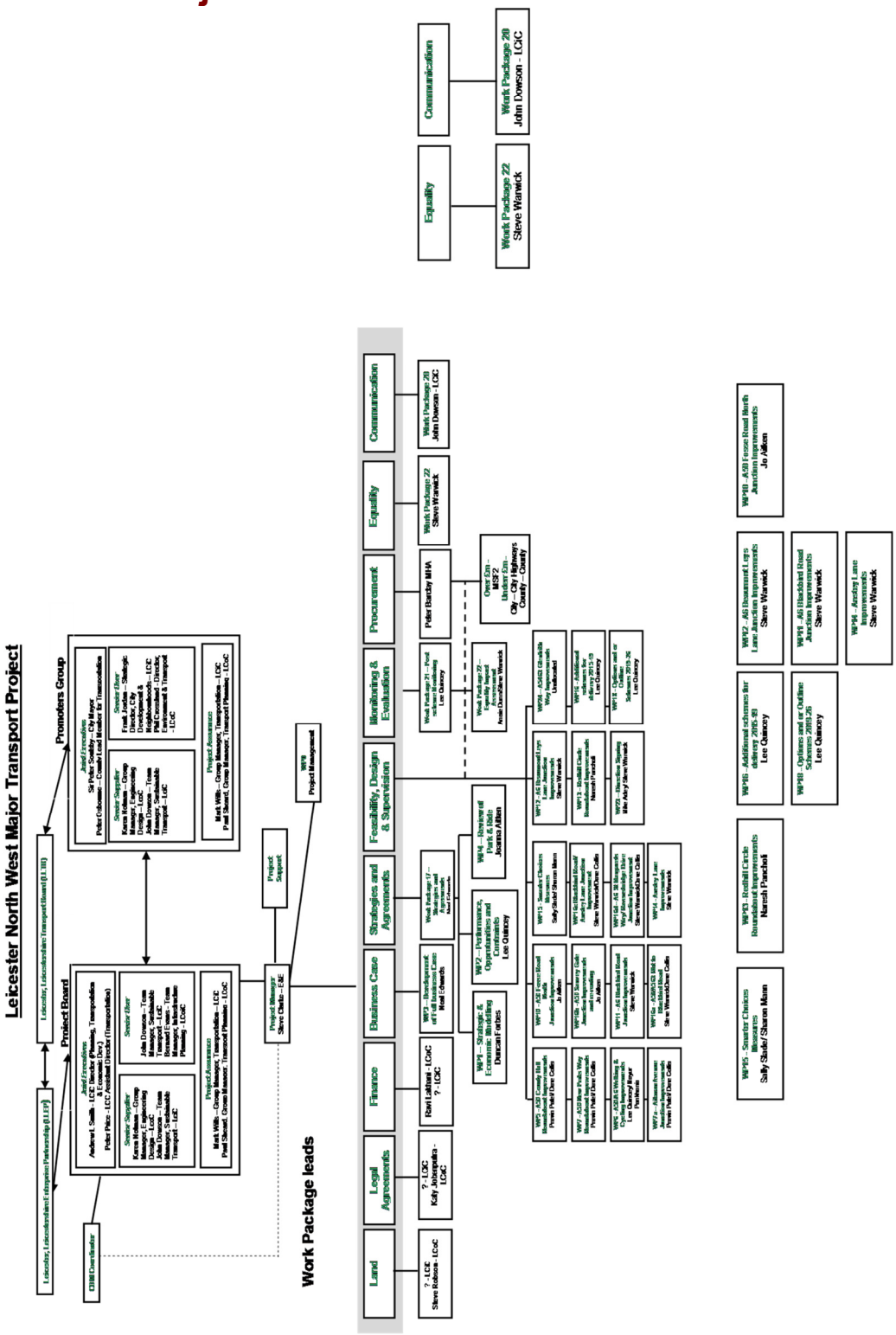
Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where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

Table 20 Appraisal Summary Table

Appraisal Summary Table			Date produced:	Dec-14		Contact:	
Name of scheme:		Leicester North West Major Transport Project				Name	Duncan Forbes
Description of scheme:		Improvements to				Organisation	EAE Consultancy
						Role	Promoter

Impacts		Summary of key impacts	Assessment				
			Quantitative			Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp
Economy	Business users & transport providers	Reduced congestion due to improvments at roundabouts and reduced car use due to increased w alking and leads to reduction in journey times	Value of journey time changes(£)			large benficial	5,437,104	
			Net journey time changes (£)					
			0 to 2min	2 to 5min	> 5min			
			n/a	n/a	n/a			
	Reliability impact on Business users	Reduced congestion due to improvments at roundabouts and reduced car use due to increased w alking and leads to reduced congestion and increased journey reliability	Details of the benefit has not been assessed			beneficial		
	Regeneration	Transport infrastrucutre to support the LLEPs Strategic Economic Plan and the Leicester Grow th Area (GA1) know n as the Leicester Launchpad	The scheme supports the LLEPs objective of creating 7,700 jobs w ithin the Launchpad. This w ould lead to an increase of £285M per year in GVA			large benficial		
	Wider Impacts	Benefits are likely to arise largely as a result of agglomoration	The benefits have not been assessed. How ever the benefits are likely to be substantial as the scheme improves connectivity and accessibility w ithin a key industrial and commercial part of the city of Leicester			large benficial		
Environmental	Noise	Noise has not been identified as an issue and has not been specifically appraised	The monetary benefits of the reduction in car levels do to the shift to w alking and cycling produce a neutral impact			neutral	13,830	
	Air Quality	The increased veh-km that results from reducing congestion results in a small increase in fuel consumption and therefore emissions	The impact of the highw ay improvments have not been included in the assessment, the scheme			neutral	526	
	Greenhouse gases	Improvements to the roundabouts leads to an increase in traffic volume w ithin the w edge. Although average journey time decreases this does result in an increased of 4,213 tonnes of CO2 over 60 years. How ever the cycling/w alking measures have a small impact in reducing the increase in CO2 emissions	change in non-traded Carbon over 60yrs (CO2e)	+4,213 tonnes		slight adverse	-157,956	
			change in traded Carbon over 60yrs (CO2e)					
	Landscape	not assessed						
	Tow nscape	not assessed						
	Historic Environment	not assessed						
	Biodiversity	not assessed						
	Water Environment	not assessed						
Social	Commuting and Other users	Reduced congestion due to improvments at roundabouts and reduced car use due to increased w alking and leads to reduction in journey times	Value of journey time changes(£)			large benficial	10,094,284	
			Net journey time changes (£)					
			0 to 2min	2 to 5min	> 5min			
			n/a	n/a	n/a			
	Reliability impact on Commuting and Other users	Reduced congestion due to improvments at roundabouts and reduced car use due to	Details of the benefit has not been assessed			beneficial		
	Physical activity	Increased levels of w alking and cycling result in reduced mortality.	This has been assessed by the WHO HEAT tool. A detailed assessment of the benefits w as undertaken			large benficial	14,985,086	
	Journey quality	not assessed						
	Accidents		Monetised benefits calculated for impact of modal shift from car to w al/cycle. Additional benefits that have not been monetised include direct benefits at the 2 roundabouts from improved design for drivers and w alkers and cyclists			slight benefit	206,537	
	Security	not assessed						
	Access to services	improvemets to w alking and cycling accessibility	inmproved crossing provision at the CH and NPW roundabout improve pedestrian access across the A50 and A563 to the hospital			beneficial	-	
	Affordability						-	
	Severance	improvemets to w alking and cycling accessibility	inmproved crossing provision at the CH and NPW roundabout improve pedestrian access across the A50 and A563 to the hospital			beneficial	-	
	Option and non-use values							
Public Accounts	Cost to Broad Transport Budget						8,104,000	
	Indirect Tax Revenues		The increase in w alking and cycling reduces tax revenues how ever the improvements to the roundabout leads to additional veh-km w hich increase fuel consumption and tax revenue				434,896	

Appendix D. Project Governance Structure



Appendix E. Project Initiation Document (PID)

Note that this document is kept under review and is updated in accordance with the governance arrangements of the project board

Appendix F. SEP Business Case (March 2014)

Appendix G. A50 Desktop study (2013)

Appendix H. Work Package 1 Report and Technical Notes

Report:
Appendix H1: A50/A6 Wedge Forecasting: Summary Findings

Supporting Technical Notes:
Appendix H2: TN18 Leicester North West Transport Strategy Workshop

Appendix H3: TN08 LLITM distribution of trips

Appendix H4: TN20 LLITM Impact Assessment of improvement to CH and NPW roundabouts .

Appendix H5: Review of Impact on Gynsill Lane as consequence of A50/County Hall Junction Improvements

Appendix I. Work Package 2 Report

Work Package 2: Investigation of current performance, opportunities and constraints of the transport network within and surrounding the wedge

Appendix J. County Hall Roundabout Design Options

Table 21: County Hall Roundabout

J1	A50 Groby Road/Gynsill Lane Rounabout (County Hall Roundabout) Appraisal Report (July 2014, Pravin Patel)	
J2	Members briefing: roundabout	
J3	Members briefing: roundabout additional points	
J4	Members briefing- Station Road signalisation	

Table 22: New Parks Way Roundabout

J5	Appraisal Table	
J6	Members briefing	

Appendix K. The Economic Benefits of Walking and Cycling including the impact of Smarter Choices Initiatives

Appendix L. LNWMTP: Highway Economic Assessment Report

Appendix M. LNWMTP –LLITM Validation Report

Appendix N. LLEP Funding Letter

Appendix O. Appraisal Specification Report