

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

Report to:	<b>Highways and Transport Scrutiny Committee</b>
Date:	<b>18 September 2017</b>
Subject:	<b>A17 Highway Improvement Project at Gedney and Highway and Transportation use of the National Productivity Investment Fund</b>

**Summary:**

This report summarises the assessment process undergone for generating the highway improvement project at Gedney and then identifies the details and benefits. The report also identifies how the National Productivity Investment Fund is being allocated across the County for Highway and Transportation Projects to maintain existing infrastructure and drive improvements.

**Actions Required:**

The Committee is invited to consider how the current tranche of National Productivity Investment Fund is being utilised across the County and how the future tranche will be allocated following the bidding phase. The committee is also invited to comment on the proposed carriageway improvement scheme on the A17 at Gedney.

## **1. Background**

### **1.1 A15/A16/A17 Routes Action Plan**

In 2014, Lincolnshire County Council (LCC) commissioned Mouchel to deliver a Routes Action Plan (RAP) for the A15, A16 and A17. The overall aim of the study was to identify potential options for improvements schemes on these routes to be taken forward for any future funding bids, and to provide the robust evidence base necessary to enable bids to be submitted when the opportunities arise.

### **1.2 The RAP investigated:**

- The A15 between the A46 at the northern edge of Lincoln and the North Lincolnshire boundary, and between the southern edge of Lincoln and the A17 at Sleaford
- The A16 between the county boundaries with Peterborough and North East Lincolnshire (excluding the town of Boston)
- The A17 between the Nottinghamshire and Norfolk county boundaries

1.3 *The Need for Intervention*

The current conditions of the networks were assessed in detail to understand the need for intervention. This assessment included both qualitative elements (such as discussions with stakeholders and review of key policy documents) and quantitative elements (such as analysis of accident data, traffic flows, journey times and traffic speeds, network stress, origins and destination data, public transport provision and asset condition).

The assessments of current conditions showed challenges in a range of areas, although the majority of the challenges identified were connected with safety and network capacity.

1.4 *Option Generation*

Based on the challenges identified, an initial longlist of potential options (over 100 schemes) for interventions were drawn up, with at least one option to address each capacity or safety challenge identified (capacity and safety together accounting for the most significant issues on the network).

1.5 *Sifting and Assessment*

Following the identification of challenges, the longlist was sifted to identify the most favourable options. The sifting approach involved assessing how well each potential option would address the strategic objectives and specific outcomes identified for the network.

The sifting exercise also took into account which sections of the network faced the greatest overall challenges and were therefore in most need of interventions.

1.6 This sifting exercise highlighted the schemes which would deliver the greatest benefits. However, the schemes which performed best tended to be the largest and most expensive schemes (typically off-line schemes and dualling schemes) which may not necessarily reflect the funding which becomes available. Consequently, the ten highest scoring in each of the following five specific categories was identified:

- Off-line schemes
- Widening schemes
- Junction improvements
- 'Least constrained' schemes (that is, those which were deemed both 'feasible' and deliverable' without challenges)
- Safety schemes

1.7 Based upon this sifting exercise, a selection of schemes which could potentially deliver significant benefits were identified reflecting a range of different possible budgets.

1.8 Five schemes which addressed capacity issues were identified for further development. It's important to note that the assessment process behind the five schemes was generated from the 'least constrained' category as this was the primary aim of the RAP. A decision support tool provided by the Department for Transport (DfT) which is designed to summarise and present evidence on options was used. The approach adopted for the assessment of the schemes identified ranking the score, from highest to lowest, for each scheme in terms of the following categories:

- Scale of Impact
- Practical Feasibility

- Affordability
- Public Acceptability

1.9 Schemes that ranked highest across these four categories were deemed to be the most successful and therefore topped the rankings. The scheme which ranked the highest against the identified measures was the roundabout improvements at Sutterton Roundabout, while the widening of the A17 at Gedney to provide an additional lane for overtaking opportunities ranked second.

1.10 *Economic Analysis*

An economic assessment of each of the five schemes was completed using COBA11 software. All schemes were able to demonstrate a benefit to cost ratio (BCR) of greater than 1. The proposed improvements at Sutterton Roundabout clearly generated the most significant BCR, with a value of over 100 and therefore this scheme was developed and constructed in early 2017.

1.11 Below is summary table of the five schemes identified with the associated BCR.

Road Network	Project	Brief Description	BCR
A16	Carriageway widening at Kirton	Carriageway widening to provide an additional lane for overtaking opportunities	1.37
A17	Carriageway widening at Gedney	Carriageway widening to provide an additional lane for overtaking opportunities	4.02
A17	Carriageway widening at Long Sutton	Carriageway widening to provide an additional lane for overtaking opportunities	1.85
A17	Heckington Bypass	Upgrade the existing wide singles carriageway to a full dual carriageway road	2.66
A16	Sutterton Roundabout	Widening of entry and exit lanes to the roundabout	140.92

Table 1 – Summary of five schemes with identifies BCR

Economic analysis and therefore the BCR for the other schemes in the RAP were not developed at this stage. It is understood that there are likely to be numerous projects which will identify a higher BCR than those five schemes above, however these are not deliverable within constrained time periods. This should not deviate focus away from appreciating that the five schemes above generate significant benefits to the highway network and do not present abortive costs for future identified schemes within the RAP.

1.12 **A17 Carriageway Widening at Gedney Design**

The proposed highway improvement scheme at Gedney comprises widening both sides of the existing carriageway to allow for the establishment of a third lane used for overtaking opportunities in the eastbound direction towards Norfolk.

1.13 The full extent of the eastbound overtaking opportunity will be approximately 1.2km in length commencing a merge operation back to one lane 325m in advance of Lutton Garnsgate junction and completing the merge 150m in advance. It should be noted that the proposed scheme exceeds the minimum requirements of the national design standards with regards proximity of the merge to the Lutton Garnsgate junction.

1.14 Lane designation is a crucial design factor in implementing a safe provision for both vehicles in the two lane overtaking direction and the single lane direction. It must be stressed that the overtaking (middle) lane will be clearly delineated for eastbound traffic by the use of two solid white lines 1.2m apart with hatching and red surfacing between the lines. This provision again exceeds the minimum requirements of the national design standards with regards providing safe delineated lanes. Pictures 1 and 2 below are from an example project constructed in Scotland on the A876 in 2009; the Gedney improvement project will adopt the same standards and mirror this form.



*Picture 1 – Example project on the A876 to demonstrate what it will be like to travel in an eastbound direction on the A17 Gedney scheme once complete*



*Picture 2 - Example project on the A876 to demonstrate what it will be like to travel in a westbound direction on the A17 Gedney scheme once complete*

- 1.15 Another example of providing an overtaking lane in one direction in England is the A5 at Towcester, Northamptonshire. The lane separation in this example is a simple double white line which the Gedney scheme will exceed in terms of safe lane delineation. In addition, a junction has been sited within the scheme which the Gedney scheme will not have. Please see picture 3 below to demonstrate this.



*Picture 3 - Example project on the A5 to demonstrate what is allowable, however the Gedney scheme will exceed these provisions to ensure a safe scheme is constructed*

- 1.16 Picture 4 below is an example of an overtaking lane on the A303 north of Ilminster. It should be noted that Highways England has quoted this scheme as being one of the safest sections on the A303. The Gedney scheme will exceed this in the context of safe lane delineation.



*Picture 4 - Example project on the A303 to demonstrate what is allowable, however the Gedney scheme will exceed these provisions to ensure a safe scheme is constructed*

- 1.17 This form of highway improvement is identified for promoting journey time reliability on long distance single carriageway roads and is identified as being a more effective solution than many other single carriageway road options.



- 1.18 The Department for Transport recommend that this form of highway should be adopted where existing single carriageway and wide single carriageway roads have problems with vehicle platooning and a lack of overtaking opportunities. Both these issues are present on this section of the A17. Below are extracts from the general arrangement design drawings to indicate the planned orientation.

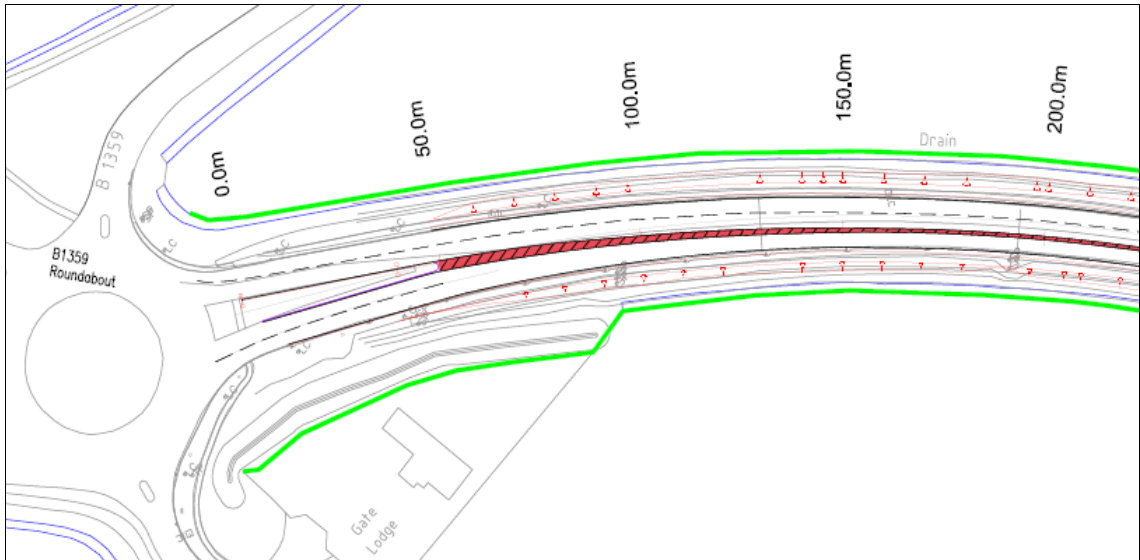


Figure 1 - Commencement of carriageway widening at A17/Station Road roundabout

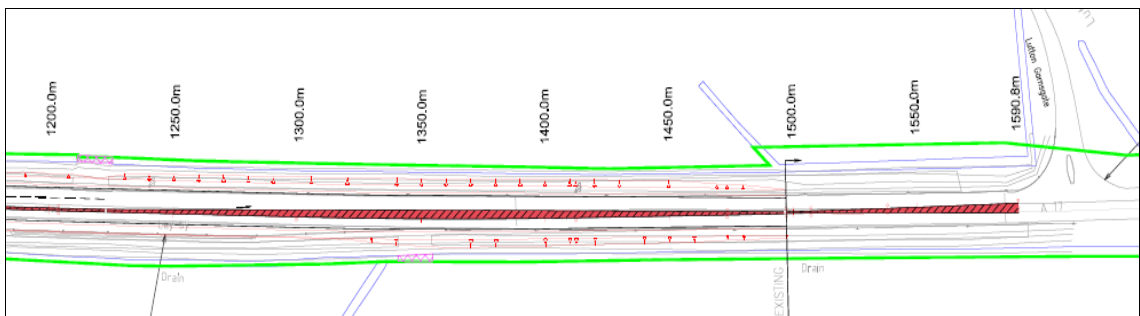


Figure 2 - End of overtaking opportunity in advance of Lutton Garnsgate Junction

- 1.19 Pictures 5 and 6 below are examples of crawler lanes in Lincolnshire, with picture 5 being on the A16 Louth bypass and picture 6 being on the A17 at Leadenham. Crawler lanes are not directly comparable with providing dedicated overtaking lanes on schemes such as Gedney, however they do demonstrate how overtaking capacity can operate safely on the network



Picture 5 - Example crawler lane project on the A16 Louth Bypass



Picture 6 - Example crawler lane project on the A17 at Leadenham

#### 1.20 *Local Transport Plan*

The need for an efficient road network is identified as a significant factor in assisting economic growth. In 2012, consultation was undertaken in the development of Local Transport Plan 4 (LTP4), this consultation identified that support of the local economy should be the most important aim of LTP4 and that investment in major roads and the existing highway network was viewed as the highest priority.

#### 1.21 *Transport Strategy*

Further to the outcomes of the RAP, it is expected that the scheme will contribute towards improved connectivity addressing issues identified within:

- The South Holland Local Plan

- The emerging South East Lincolnshire Local Plan
  - The Greater Lincolnshire Agri-food Sector Plan
  - The Greater Lincolnshire LEP Strategic Economic Plan
- 1.22 Significant growth is planned within Lincolnshire including agri-food business sector growth, significant increases in housing, port expansion at Sutton Bridge and the construction of a new rail-freight terminal south of Spalding; all of which will generate increased traffic (including significant increase in HGV's) on the strategic network within Lincolnshire. The need for an efficient road network is identified as a significant factor within the above documents in terms of delivering this planned growth.
- 1.23 *Identified Issues*  
 This section of the A17 has recorded average speeds of less than 70% of the speed limit in an eastbound direction in the AM Peak, which is one of the poorest performing networks in the context of the A15, A16 and A17. There are high numbers of HGVs, and variations in peak period journey times between months are as much as 12%-15% indicating journey time unreliability. The route is perceived as having slow journey times due to the lack of overtaking opportunities. This Section of the A17 has a two-way traffic flow of 19,600 vehicles per day, which is the highest figure in the context of the A15, A16 and A17. Much of this Section of the A17 has only a residual carriageway life of less than 7 years and therefore will require significant maintenance in the short term to maintain the network.
- 1.24 *Public Concerns*  
 Concerns have been raised from local Councillors, Parishes and members of the public regarding the form of the scheme, primarily focused on providing a safe network. The concerns appear to be based on the perception that the overtaking lane will be used by vehicles in both directions at the same time, thus causing collisions. There have also been safety fears regarding the proximity of the overtaking lane to Luton Garnsgate junction. These concerns have been explicitly addressed in items 1.13 and 1.14 of this report and the project will also be subjected to an independent safety audit which will review the project from a user safety perspective.
- 1.25 *Project Benefits*  
 The scheme will provide safe and guaranteed overtaking opportunities for vehicles travelling in an eastbound direction. This provision helps improve journey times, journey time reliability and will represent an improvement in terms of safety by negating risky overtaking manoeuvres on this section of the A17. There are no other short to medium term highway improvement initiatives, outside of providing an additional lane, identified on the A17 in this area. When balancing the need to address the future expected increase in traffic on the network it's imperative that improvements are implemented in advance.
- 1.26 The long term (due to very high scheme value) aspiration is to widen the A17 to allow a dual carriageway to be constructed. The dual carriageway aspiration on the A17 spans from the B1168 Boston Road Roundabout at Holbeach to the roundabout with the A1101 at Long Sutton. The assessment of the 6.34mile length of dualling was separated into the three different sections within the RAP, all of which were ranked in the top ten aspirational carriageway widening projects along the A15, A16 and A17. Figure 3 below identifies the three sections. It should be noted that the proposed scheme at Gedney does not present abortive costs as the road extent would be incorporated within the future dual carriageway width.



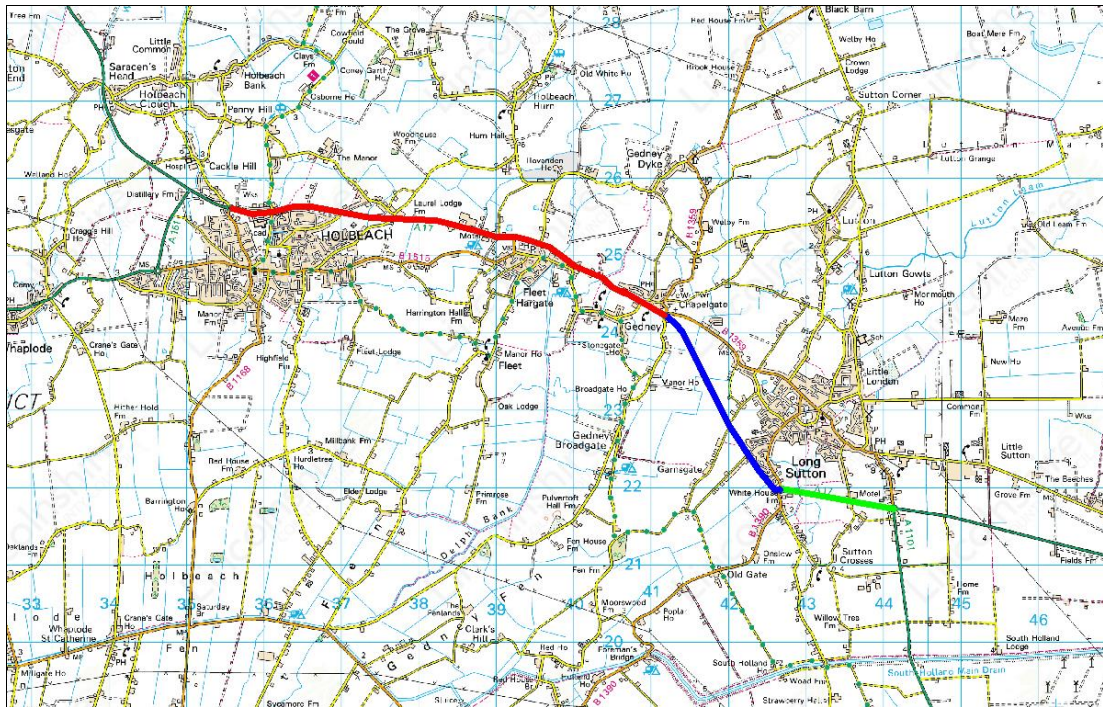


Figure 3 – Map identifying the three sections of the A17 which were highlighted for widening to dual carriageway in the future

LCC is currently working with the Midlands Engine to establish a number of key strategic highway routes to be identified as Major Road Networks (MRN), this will include the A17. Once the A17 is on the MRN it allows LCC to bid for further funding, for example through the upcoming "DfT Bypass Fund". This source of funding (if secured) will commence the process of widening the A17 to a dual carriageway. Note item 1.30 of this report which details the evident risk of securing funding should the Gedney improvement scheme not be constructed.

- 1.27 Resilience of the A17 will be improved and overall network reliability which contributes towards a more efficient strategic network within Lincolnshire facilitating economic growth; or more accurately not hindering it.
- 1.28 The project has sound objectively developed benefits as outlined in the RAP. Careful future consideration would need to be applied to the RAP (and all further schemes identified within it), including the adopted national assessment process if the scheme was not perceived as providing a positive impact on the network. This would also impact on other similar existing and planned assessment processes in the County.
- 1.29 Although this project promotes significant benefits, with regards the traffic flow, it does so only in an eastbound direction. A further similar carriageway widening scheme originating from the RAP assessment process at Long Sutton is being developed where the overtaking opportunities will be in the westbound direction. The Long Sutton and Gedney improvement schemes complement each other.
- 1.30 Outlined later in this paper is the allocated DfT funding for both improvement schemes at Gedney and Long Sutton (See items 1.31 to 1.48 of this report). The Gedney scheme will be solely financed via a centrally provided fund and therefore LCC does not need to allocate any internal funding. By constructing this scheme it generates further benefits by providing confidence to the DfT that LCC is a safe

authority to invest further funding allocations. Inversely, by not spending the allocated funding in the manner it was identified to the DfT it diminishes the confidence which the DfT have in investing in Lincolnshire further.

It's important to stress that the DfT have been clear to LCC officers that the allocated funding can only be spent on the schemes which were originally identified to them, as per items 1.37 and 1.38 of this report. There is limited flexibility to change the detail of the scheme within the scheme boundaries; however the allocated funds cannot be transferred to alternative schemes. If the Gedney scheme does not proceed then the funding will simply be returned to the DfT. Without the Gedney project the proposed Long Sutton scheme is not deliverable due to its connection, thus this bid would also be rescinded. The result is that LCC will have relinquished the use of allocated funding to a value of approximately £4.5m. This could prompt the DfT to question whether LCC was a credible Authority to invest further funding. We would wish to argue that we are acknowledging that there are local reasons why a scheme that is technically feasible should not go ahead for other reasons. However, it may mean that other areas could be ahead of us if the deliverability record is part of any assessment.

This scenario has recently been tested with the DfT in another Authority where they were likely to receive a significant sum of funding for a specific project. By the changing the parameters of the project It's clear this has impacted the DfT's confidence in the Authority. The result is that the DfT has delayed their bid announcement (with an expected result of it being rejected).

If the DfT lose confidence in LCC then this may affect the Band 3 status which it holds, being the highest banding, thus receiving the largest proportion of funding. This clearly affects future bidding opportunities regardless of the merits the bids will present. It should be noted that LCC are actively collating bid submissions against all these funding opportunities.

- National Productivity Investment Fund
- Challenge Fund Bid
- "The Bypass Fund"
- Safer Roads Fund
- Cycling and Walking Investment Strategy
- Integrated Transport
- Highway Maintenance needs element
- Highway Maintenance incentive element
- Pothole Action Fund

**1.31 Allocated use of Tranche 1 NPIF**

As part of the Autumn Statement 2016 Central Government announced the creation of a National Productivity Investment Fund (NPIF) worth £23bn. NPIF is for investment in areas that are key to boosting productivity. The Secretary of State for Transport gave further details in Written Statements to Parliament indicating that of the total, £1.1bn will be for local roads.

1.32 LCC were allocated £5.366m from the NPIF to fund both improvement and maintenance schemes in the 2017/18 financial year.

1.33 The DfT issued guidance on the use of the NPIF which identified the key constraints as per below.

- 1.34 *"Funding from the National Productivity Investment Fund will be spent on improving local road networks, such as highways and public transport networks. Without this confirmation you will not receive the funding. A condition of the subsequent grant allocation will be that you include on your website information showing how you intend to use the funding;*

*To promote greater transparency, please also confirm by the end of March 2017 how you plan to spend the funding allocated to your authority. This spending should be additional to your planned maintenance service or other programmes. We will require this to be provided before we confirm the funding allocation."*

- 1.35 In January 2017 a number of deliverable schemes were presented to Cllr Richard Davies at Capital Programme Steering Group where the group agreed on the projects which would be funded (or part funded) based on their identified merits and the deliverability to mirror the DfT funding requirements as there is no facility for funding to slip beyond the end of March 2018.

- 1.36 The following agreed schemes were advertised on the LCC website, sent to the DfT and publicised in the local media at the end of March 2017.

- 1.37 The identified improvement schemes are:

- A17 Sleaford Embankment Slippages – Works to stabilise the embankments on the A17 at Sleaford.
- A17 2+1 Gedney carriageway widening – Construction of an additional lane to provide overtaking opportunities which was identified in the RAP.
- Wolsey Way/Wragby Road junction improvement – Provides additional lanes to relieve congestion and replaces traffic signal equipment which has reached the end of its serviceable life.
- Transport Infrastructure projects - Includes replacement bus shelters and real time junction priority measures.

- 1.38 The identified maintenance schemes are:

- Louth Bypass – A mixture of reconstructing the existing carriageway and resurfacing areas where only the top surface has failed.
- Thin surfacing package – Allocated to maintenance scheme where the top surface of the carriageway has or is starting the fail.
- Retread Carriageway Schemes – Reconstruction of failing carriageways through the use of recycled road materials.

- 1.39 Following the publication of the schemes the DfT confirmed the allocation of the full £5.366m for use in the 2017/18 financial year.

- 1.40 **Allocated use of Tranche 2 NPIF**

On the 6<sup>th</sup> April 2017 the DfT announced the launch of tranche 2 NPIF bidding opportunities for use in the financial years of 2018/19 and 2019/20.

- 1.41 Unlike the first tranche of funding this time it is being assessed and awarded on the basis of a competitive bid format with the DfT setting a cap of two bids from any individual local highway authority. The purpose of the cap is to focus the efforts on the quality of bids submitted. In addition the funding is for capital expenditure only and has been split between two different project areas:

- Small projects (funding for £2m to £5m)
- Larger projects (funding for £5m to £10m)

- 1.42 Funding will be allocated to successful bidders over two financial years - 2018/19, 2019/20. There will be no facility for funding to slip beyond the end of March 2020. Any additional costs over the agreed maximum contribution will be the responsibility of LCC to fund.
- 1.43 The principle assessment criteria will be:
- to ease congestion and improve the efficiency of important national, regional or local routes
  - to unlock economic and job creation opportunities; and/or
  - to enable the delivery of new housing developments
- 1.44 The Dft strongly suggested '*A local contribution in the order of 30% of costs would be very welcome in the bid. This can be made up of both local authority and other third party funding. Evidence of funding and support from the private sector would further strengthen the case that the project has a demonstrable link to productivity, growth, jobs and housing. Local contributions could include the provision of land in-kind (although this will need to be supported by a letter from an independent valuer to verify the market value of the land).*'
- 1.45 The guidance document goes on to outline the following '*Deliverability is of paramount importance and bids must demonstrate, with supporting evidence that the project will be delivered expeditiously and certainly with works on-site commencing during 2018/19 demonstrating an immediate impact once implemented.*
- Statutory powers, if required, should either be in place, or be sufficiently advanced to allow delivery within the funding timeframe.*
- The deadline for submitting bids is 5pm on 30 June 2017. Decisions on successful bids will be made as soon as possible, with a target of Autumn 2017 to allow work to start in spring 2018.'*
- 1.46 Based on the above criteria, LCC presented two projects which conform within the 'smaller projects' bid criteria to Cllr Richard Davies at Capital Programme Steering Group on the 25<sup>th</sup> April 2017. The two projects which were presented were:
- A17 2+1 Long Sutton carriageway widening – Construction of an additional lane to provide overtaking opportunities which was identified in the RAP. This scheme presents a good BCR and compliments the carriageway improvements at Gedney as per the first tranche of the NPIF allocation.
  - Welton Roundabout – The scheme design was well advanced and the scheme planning application is due to be submitted in Autumn 2017. The scheme will provide improved linkage for economic growth through unlocking residential development; it also improves safety at this junction.
- 1.47 Cllr Richard Davies agreed that these projects deliver significant benefits to the County. They also adhere to most, if not all the essential assessment criteria, including elements of the desirable assessment criteria.
- 1.48 Bids were submitted at the end of June 2017 and the authority is now awaiting a decision on the submitted bids.



## 2. Conclusion

That the Committee note how the current tranche of the NPIF has been allocated and if successful how the next tranche of the NPIF will be used. The Committee note how the highway improvement project on the A17 at Gedney has been generated and also the method in which the scheme proposal addresses the traffic flow problems while maintaining a safe environment for users.

## 3. Consultation

### a) Have Risks and Impact Analysis been carried out?

N/A

### b) Risks and Impact Analysis

A Risk and Impact analysis has not been completed in relation to this paper, however each individual scheme will undergo a specific Risk and Impact analysis as it progresses in line with LCC's policy.

## 4. Appendices

These are listed below and attached at the back of the report	
Appendix A	A17 Gedney WS2+1 Scheme General Arrangement Drawing - Drawing Number: 70031115/WSP/DWG/A17/LC/0100/001 rev 0.3

## 5. Background Papers

Document title	Where the document can be viewed
A15/A16/A17 Routes Action Plan	<a href="https://www.lincolnshire.gov.uk/transport-and-roads/strategy-and-policy/a15/a16/a17-routes-action-plan/131581.article">https://www.lincolnshire.gov.uk/transport-and-roads/strategy-and-policy/a15/a16/a17-routes-action-plan/131581.article</a>

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