A52 CLIFTON BRIDGE TO BINGHAM
MULTI-MODAL STUDY

FINAL REPORT – ANNEX H

RECOMMENDATIONS FOR RIVER CROSSING

MARCH 2004

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Contents

1. Introduction

1.1 This paper has been prepared to present the Consultants' recommendations regarding the river crossing option to be included within the preferred strategy for the A52 MMS.

1.2 Three alternative river crossing options have been examined:

- Maintenance of the existing river crossing provision – the 'no change' option;
- Provision of a new 2-lane single carriageway bridge between the Gamston junction on the A52 and the Colwick racecourse roundabout on the A612 – The Gamston bridge; and
- Provision of a new 2-lane single carriageway bridge between the A52 near Radcliffe and the A612 Colwick Loop road. This would follow a line immediately to the west of the existing railway crossing formed by the Grantham line and the former Cotgrave mineral line – The Radcliffe bridge.

1.3 In each of the options for a new bridge, enhanced bus priority measures would be provided on Trent Bridge and its approaches to capture the traffic relief offered by these options. Thus it is intended that there should be no overall increase in river crossing capacity for general road traffic.

1.4 Chapter 2 of this paper discusses the need for, and benefits arising from, the provision of a new crossing, set within the context of the objectives for the A52 MMS strategy. No conclusion is drawn regarding the provision of a new crossing at this stage, as this would require comparison of the alternative new bridges.

1.5 Chapter 3 compares the function and impacts of the alternative new crossing options (Gamston and Radcliffe) and recommends a preferred new crossing option to be taken forward for comparison against the 'no change' option.

1.6 Chapter 4 examines the benefits and impacts relating to the provision of the preferred crossing option, compared with the 'no change' option.

1.7 Finally chapter 5 summarises the recommendations made by Atkins regarding the preferred river crossing option.

2. Need for, and Benefits of, a New River Crossing

THE NEED FOR AN ADDITIONAL TRENT CROSSING

2.1 The need for an additional crossing of the River Trent to the east of Nottingham arises from the lack of direct links between the north-east sector of Nottingham and areas south of the river. Traffic wishing to make this movement is likely to use one of three routes:

- The A612 to the west, crossing the river near the City centre using Lady Bay or Trent bridges;
- Arno Vale road to the north, providing access the ring road at Daybrook: or
- The A612 to the north-east, crossing the river by the A6097 Gunthorpe bridge to access the A46.

2.2 In addition some traffic is likely use a variety of routes through the urban area to access either the ring road or the City centre bridges.

2.3 With any of these routes, traffic is likely to incur significant additional journey time compared with a direct routing, either due to the additional length of the route or the need to use congested roads in and around the City centre.

2.4 A number of tests have been carried out of two alternative new river crossing options, the Gamston Bridge and the Radcliffe Bridge. For both new bridge options the results of the tests show significant levels of usage of the new crossing and large time savings for users of the new crossing. Traffic reductions result on the routes described above, particularly on the City centre bridges and their approaches. These tests have demonstrated the need for a new bridge, with average travel time savings for users greater than those provided by the A52 improvements.

THE BENEFITS OF AN ADDITIONAL TRENT CROSSING

2.5 The tests of the alternative new bridge options have shown that the principal functions of a new crossing of the River Trent to the east of Nottingham are:

- Improved access to areas north of the river and east of the City – Colwick, Netherfield, Carlton, Gedling;
- Removal of unnecessary traffic from the existing river crossings (primarily Trent Bridge and Lady Bay Bridge) and the associated road network (particularly in the City centre) thus facilitating the provision of enhanced bus priority measures; and
- Reduced travel distances and times for users of the new crossing and reduced travel times for users of relieved routes.

2.6 The relevance of a new crossing to the core objectives established for the A52 MMS is detailed below:

Core Objective	Effects of New Crossing
Support the economic and social vitality of the study area and surrounding region.	Improved access to/from NE Nottingham. Removal of unnecessary traffic from the City centre bridges and road network leading to reduced congestion on and around existing crossings benefiting non-users and road based PT.
Provide enhanced opportunity for all segments of the community to access employment, health, education, social and recreation facilities.	Improved access to/from NE Nottingham. Improved PT operation due to removal of unnecessary traffic from existing crossings. Provision of a new corridor of movement for non-motorised users.
Enable economic regeneration and development in a manner that maximises achievement of sustainability objectives.	Enhanced direct access to land use developments in Gedling District.
Enhance the quality of life in communities in the study area through minimisation of transport impacts.	Reduced severance impacts of transport upon communities around existing crossings. Introduces new line of severance (Gamston principally). Reduced noise impacts upon communities around existing crossings. Introduces new source of noise elsewhere in valley. Improved road safety especially for vulnerable road users by reducing traffic flows in community areas around existing crossings. Improved air quality in communities around existing bridges but reduces air quality in vicinity of new crossing .

Protect the natural, historic and built environment of the study area.	New crossings would affect the natural, historic and built environment to varying degrees. Gamston bridge would affect the landscape of the urban fringe, sites of local nature conservation importance and a site of archaeological importance. Radcliffe bridge would have localised impacts on landscape and ecology and is close to a listed structure.

2.7 Thus it can be seen that the provision of a new river crossing is likely to deliver benefits under all the core objective areas except that relating to environment.

2.8 A more detailed comparison of the alternative new crossing options is presented in Chapter 3 of this paper.

2.9 The performance of the preferred new river crossing option is examined in more detail in Chapter 4 of this paper.

2.10 A final recommendation regarding the provision or otherwise of a new crossing is considered in Chapter 5.

3. Comparison of Gamston and Radcliffe Bridges

3.1 In this chapter the function and performance of the two new river crossing options is compared. This is undertaken using a combination of comparison between the two new bridge options and comparison against the 'no change' option. The traffic function performed by each bridge is examined first. This is followed by a comparison of the transport effects of each of the new bridge options. Finally each bridge is examined against the 5 Government criteria for transport; accessibility, environment, economy, safety and integration.

TRAFFIC FUNCTION

3.2 The traffic carried by each of the bridges is shown diagrammatically in figures 3.1 to 3.4. Figures 3.1 and 3.2 show an area-wide view of the traffic patterns for each of the two new bridge options. Figures 3.3 and 3.4 show the same information but are focused on the City centre area.

3.3 Comparison of figure 3.1 against 3.2, and 3.3 against 3.4, shows a marked difference in the origins and destinations of the traffic using the two bridge options. The majority of traffic using the Gamston Bridge is travelling to/from areas around, and immediately to the north of, the City centre. In contrast, the majority of traffic using the Radcliffe bridge is travelling to/from areas in the north-eastern sector of the urban area.

3.4 Thus in traffic function terms the Gamston bridge is (to a large extent) providing a bypass for the existing City centre bridges for traffic travelling between areas in (and immediately north of) the City centre and areas to the south of the River Trent and east of Nottingham.

3.5 The principal function performed by the Radcliffe bridge is to provide a new means of access between the areas in the north eastern sector of the urban area (Colwick, Netherfield, Carlton and Gedling) and areas to the south of the River Trent. This improves accessibility to areas with currently poor levels of access to/from the south and supports movements for which public transport can not provide a realistic alternative.

3.6 In terms of pure traffic function, the Radcliffe Bridge is preferred to that at Gamston. This is due to Radcliffe bridge showing greater usage by traffic travelling to/from the areas north-east of the City whereas Gamston bridge shows greater usage by traffic travelling to/from the City centre area.

TRANSPORT EFFECTS – LINK FLOW CHANGES

3.7 Figures 3.5 to 3.7 show the link flow changes between each of the three bridge options ('No change', Gamston and Radcliffe) and the reference case for the morning peak hour period as forecast for 2016. Thus figure 3.5 indicates the impacts of the preferred strategy measures (in particular the improvements to the A52) with no change in River crossing provision. Comparison of figures 3.6 and 3.7 against figure 3.5 show the effects of the provision of the Gamston and Radcliffe bridges respectively.

3.8 Changes in traffic flow are shown in bandwidth form, with increases shown in red and reductions in green. It should be noted that these figures only show flow changes for selected links where direct comparison is possible. Thus where network changes have taken place no change may be shown. This applies to a number of sections of the A52, including between Ling's Bar and Clifton Bridge and adjacent to the Gamston roundabout. It should also be noted the dualling of the A52 between Radcliffe and Saxondale (A46) is not shown, although the relief that this would give to the existing section of the A52 is shown in green.

3.9 Comparison of figures 3.6 and 3.5 shows the effects of the provision of the Gamston bridge. This can be seen to provide significant relief to the existing City centre bridges (Trent Bridge and Lady Bay Bridge) and the road network around these bridges, particularly in West Bridgford. This relief would facilitate the introduction of enhanced bus priority measures. There are increases in traffic flow in the immediate vicinity of the new bridge on the A52 to the south-east and A612 to the north-west.

3.10 Comparison of figures 3.7 and 3.5 shows the effects of the provision of the Radcliffe bridge. This also provides relief to the existing City centre bridges, but in this case the degree of relief is lower, particularly in the southbound direction. The Radcliffe bridge provides significantly reduced traffic flow on the Gunthorpe bridge and the A612 through Burton Joyce. Traffic increases occur on the road network accessing the bridge to the north of the River Trent.

TRANSPORT EFFECTS – TRAVEL TIMES

3.11 Figures 3.8 to 3.10 show the travel time changes for selected journeys representing the key axes of cross-river movement for each of the 'No change', Gamston bridge and Radcliffe bridge options. Thus the travel time changes shown in figure 3.8 ('no change') are those arising principally from the improvements proposed for the A52.

3.12 Comparison of figures 3.9 and 3.8 shows the additional travel time savings provided by the Gamston bridge. This shows that for many of the movements identified, the new bridge offers significantly reduced travel times. Comparison of figures 3.10 and 3.8 shows the travel time changes provided by the Radcliffe bridge and this again shows significantly reduced travel times for a number of movements.

3.13 Comparison of figures 3.9 and 3.10 shows the differences between the travel time savings provided by the two new bridge options. It can be seen that the Radcliffe bridge provides generally higher levels of travel time savings.

3.14 Figure 3.11 shows the average travel time savings for users of the new bridges compared with the travel times required for the same journeys in the reference case. This shows that the Radcliffe bridge provides a higher level of average travel time saving than the Gamston bridge. The Gamston bridge carries more traffic than Radcliffe bridge with the results that the vehicle hours savings provided by the bridges are:

- Gamston Bridge – 2054 veh-hrs/day
- Radcliffe Bridge – 2522 veh/hrs/day

TRANSPORT EFFECTS – STRESS ON RIVER CROSSINGS

3.15 Figure 3.12 shows the link stress occurring on each of the river crossings in the AM peak hour for the base year (2002), the reference case in 2016 and each of the three bridge options in 2016. Link stress is defined as the ratio of flow to capacity. This shows that the existing river crossings at Clifton, Trent and Lady Bay bridges are stressed (85% of capacity or above) in the base year and the reference case. The A52 improvements included in the 'no change' case result in slight relief to the City centre bridges (Trent and Lady Bay). Both the new bridge options result in significant reductions in stress on the City centre bridges, with the greater relief provided by Gamston Bridge, although that bridge will itself be approaching 85% of capacity on 2016.

TRANSPORT EFFECTS – CITY CENTRE TRAFFIC

3.16 Figure 3.13 shows the total volume of traffic entering and leaving the City centre (including through traffic) in the morning peak period in 2016 for the reference case and each of the bridge options. This shows that the improvements to the A52 in the 'no change' case reduce City centre traffic by around 2% (two-way) compared with the reference case. There is no significant further change in City centre traffic as a result of the provision of the Gamston bridge. The provision of the Radcliffe bridge results in a further small reduction in City centre traffic, with a reduction of around 3% two-way compared with the reference case.

TRANSPORT EFFECTS – CONCLUSIONS

3.17 The Gamston bridge provides greater relief to the existing City centre bridges. The Radcliffe bridge provides greater travel time savings and provides a small reduction in City centre traffic. On balance there is little difference between the two bridges in terms of transport effects.

GOVERNMENT CRITERIA - ACCESSIBILITY

3.18 As detailed above, both bridges offer significant savings in travel time for users of the new bridge. Both bridges also offer significant savings for users on relieved routes. The average time saving for users of the Gamston bridge is around 4 minutes and for users of the Radcliffe bridge is in excess of 5.5 minutes. The Radcliffe bridge provides a higher level of overall vehicle hours savings. Whilst this benefit is included within the overall description of accessibility, it should be noted that these savings are measured within the economy section of the AST.

3.19 As noted earlier, the Gamston bridge tends to act as an access for car traffic to the City centre whilst the Radcliffe bridge provides a new access for the north eastern sector of the City centre.

3.20 With regard to the other aspects of the accessibility criteria (access to transport systems, option values and severance), there is considered to be little difference between the two new bridge options.

3.21 Thus on balance the Radcliffe bridge is preferred as it provides a higher level of overall journey time savings for users and improves access to more peripheral areas of the urban area that currently have poor access.

GOVERNMENT CRITERIA - ENVIRONMENT

3.22 The environmental impacts of the bridges are detailed in the table below:

Environmental factor	Gamston	Radcliffe
Noise	--	-
Local air quality	--	-
Landscape	--	-
Townscape	-	**Neutral**
Biodiversity	--	-
Cultural heritage	---	--
Water	---	--
Personal fitness	+	+
Journey ambience	+	+
Land use	-	-
Integration	--	-

3.23 The key for the above is as follows:

- **+** beneficial
- **-** slight adverse
- **--** moderate adverse
- **---** large adverse

3.24 Thus it can be seen that the Gamston bridge has moderate adverse environmental impacts for most headings.

3.25 The Radcliffe bridge has slight environmental impacts for most headings. In the majority of cases the Radcliffe bridge performs better than the Gamston bridge and all cases the Radcliffe bridge performs at least as well as the Gamston bridge.

3.26 Thus the Radcliffe bridge is preferred in environmental terms.

GOVERNMENT CRITERIA - ECONOMY

3.27 Both bridges perform well economically, due to the large travel time savings offered by the bridges.

3.28 Gamston provides lower average time savings than the Radcliffe bridge but carries more traffic and has a lower capital cost.

3.29 Radcliffe provides higher time savings but carries less traffic and has a higher capital cost.

3.30 The Radcliffe bridge provides significantly enhanced accessibility to the (currently relatively isolated) north eastern sector of the urban area.

3.31 The Gamston bridge provides a higher benefit to cost ratio than the Radcliffe bridge, although both bridges perform well in terms of value for money. The Radcliffe bridge would provide a higher level of 'wider economic benefits' due to the improved access to the north eastern area.

3.32 On balance there is little difference between the bridges in economic terms.

GOVERNMENT CRITERIA - SAFETY

3.33 There is little or no difference in the safety performance of the bridge options.

GOVERNMENT CRITERIA - INTEGRATION

3.34 Neither bridge has any major impact upon transport integration, although either bridge would provide a new corridor for non-motorised users.

3.35 Both bridges would conflict with Green Belt and environmental policies in adopted Local Plans to varying degrees.

3.36 As discussed under traffic function, the Gamston bridge tends to carry more traffic to the City centre and the Radcliffe bridge more traffic to the north eastern area of the City. On balance the Radcliffe bridge is considered to better integrate with transport policy for the area.

3.37 In terms of transport integration and integration with non-transport policies there is little difference between the bridges. In terms of integration with transport policy the Radcliffe bridge is preferred.

ACCEPTABILITY

3.38 The results of the public consultation show that levels of support for improved river crossing facilities are similar to the support for PT improvements or A52 improvements. In each case a large minority supports the proposed improvements. The degree of support varies geographically. In general, areas that would benefit from a particular improvement show a higher degree of support and areas that may incur negative impacts show a lower level of support.

3.39 For consultees in favour of 'making it easier to cross the river', the majority favour provision of a new crossing over improvements to existing crossings.

3.40 For those in favour of a new crossing, there is no significant difference between the support for Gamston or Radcliffe bridge.

3.41 Thus in terms of public acceptability there is no significant difference between the two new bridge options.

CONCLUSIONS

3.42 The traffic function provided by the Radcliffe bridge better serves the objectives for the A52 MMS strategy, as it removes unnecessary traffic from the City centre bridges and provides enhanced access to the areas to the north east of the City.

3.43 The Gamston bridge provides greater relief to the existing City centre bridges. The Radcliffe bridge provides greater travel time savings and provides a small reduction in City centre traffic. On balance there is little difference between the two bridges in terms of transport effects.

3.44 The Radcliffe bridge improves access to the north eastern area of the City and provides the higher overall level of travel time savings. Thus the Radcliffe bridge is preferred in terms of accessibility.

3.45 The Gamston bridge has greater environmental impacts than the Radcliffe bridge.

3.46 On most aspects of integration there is little to choose between the bridges, but the Radcliffe bridge is preferred in terms of integration with transport policy.

3.47 There is little to choose between the bridges in terms of economy, safety or acceptability.

3.48 Thus whilst both bridges deliver significant levels of benefits, on balance the Radcliffe bridge performs better overall than the Gamston bridge against the AST headings and study objectives. If a new bridge is to be pursued, it is recommended that this should be at Radcliffe.

4. The Benefits of the Preferred New River Crossing

4.1 This chapter provides comparison between the preferred Radcliffe bridge option and the 'no bridge' option. A brief summary is given regarding the transport effects of the Radcliffe bridge, these have been examined in more detail in chapter 3. This is followed by an assessment of the effects of the provision of the Radcliffe bridge against the core objectives for the study, as detailed in chapter 2. The new bridge option is then examined against the 5 Government criteria for transport. Finally conclusions are drawn regarding the benefits of the provision of a new bridge.

SUMMARY OF TRANSPORT EFFECTS

4.2 The traffic effects of the Radcliffe bridge are illustrated by comparison of figures 3.5 and 3.7. Figure 3.5 compares traffic flows for the 'no change' option against the reference case and figure 3.7 shows the Radcliffe bridge option against the reference case. Thus the differences between figures 3.5 and 3.7 show the effects of the addition of the Radcliffe bridge.

4.3 The origins and destinations of the traffic using the Radcliffe bridge are discussed in chapter 3. The Radcliffe bridge removes unnecessary traffic from the City centre bridges by providing a direct route between the north eastern sector of the urban area and areas to the south of the River. The consequential traffic relief effects are discussed below.

4.4 The provision of the Radcliffe bridge brings significant relief to the City centre bridges (Trent Bridge and Lady Bay) and associated road network as shown in figure 3.7. There are significant traffic reductions through West Bridgford, together with Gunthorpe bridge and the A612 through Burton Joyce.

4.5 The Radcliffe bridge results in traffic increases on the A612 to the west of the bridge and the road network accessing the bridge to/from the north (including the proposed new roads in Gedling district). To the south of the bridge there is a small increase in traffic through Cotgrave. These increases occur as a result of traffic travelling between the north east sector of the urban area and areas south of the River Trent re-routing to use the new bridge. This results in relief on a number of routes including the A612 to the east, the ring road to the west, and a number of routes through the City centre.

4.6 The Radcliffe bridge adds to the benefits achieved through the A52 improvements alone. The provision of a direct route between the north eastern sector of the urban area and areas to the south is shown to remove significant volumes of unnecessary traffic from the City centre bridges.

CORE OBJECTIVES – ECONOMIC AND SOCIAL VITALITY

4.7 The Radcliffe bridge supports this core objective through two principal functions:

- The new bridge provides significantly improved access to the areas north of the River and east of the City, as demonstrated by the time savings detailed in Chapter 3. This includes important industrial and employment areas, particularly in the vicinity of Colwick, together with retail and social facilities; and
- The new bridge significantly reduces traffic flows and stress on the existing river crossings in the City (Trent and Lady Bay bridges) as shown in figure 3.12. There is also significant relief to the associated road network particularly in West Bridgford and on the City centre roads north of the bridges. This traffic relief will improve access to the central areas of the City including that by road based public transport movements, for which Trent Bridge is the main artery to/from the south. The new Radcliffe bridge itself will not be stressed in the peak period in 2016.

CORE OBJECTIVES – ACCESS FOR THE COMMUNITY

4.8 This objective relates to the need for all segments of the community to be able to access the facilities and services necessary to enjoy a high quality of life. This objective is supported by the two functions of the bridge noted above. In addition the new bridge will provide a new axis of movement for non-motorised users through provision of a direct link between the Radcliffe area south of the river and the Colwick area to the north.

CORE OBJECTIVES - ECONOMIC REGENERATION AND DEVELOPMENT

4.9 This objective relates to the desire to enable continued economic growth but in a manner that maximises the achievement of sustainability objectives. The Radcliffe bridge assists with this through the provision of direct access to existing and planned land use developments, with consequent significant reductions in travel times and distances. In addition, the relief of traffic on the City centre bridges will enable more effective provision of road based public transport measures for access to the City.

CORE OBJECTIVES - QUALITY OF LIFE IN COMMUNITIES

4.10 The Radcliffe bridge will contribute to this objective by providing a net reduction in traffic flows in community areas. The main areas to benefit will include West Bridgford, areas close to the existing river crossings in the City, and Burton Joyce. There will be some small increases in traffic in areas close to the northern end of the bridge, most notably on the A612 near Colwick. Elsewhere increases would be catered for by new roads proposed in the Gedling area. Reduced traffic flows will benefit communities in a number of ways including:

- Reduced severance – due to reduced flows;
- Reduced noise – due to reduced flows and reduced congestion;
- Increase safety through reduction of vehicle/non motorised user conflicts; and
- Improved air quality – due to reduced total flow and improved travel conditions.

CORE OBJECTIVES - PROTECT THE NATURAL, HISTORIC AND BUILT ENVIRONMENT

4.11 The construction of a new river crossing will inevitably have negative effects upon the physical environment. However, in the case of the Radcliffe bridge these are substantially reduced through adoption of an alignment that uses the existing line of severance and physical impact created by the railway crossing. It should be noted that the environmental impacts of the Radcliffe bridge are likely to be substantially less than those arising from the proposed Radcliffe bypass.

GOVERNMENT OBJECTIVES - ACCESSIBILITY

4.12 The provision of the Radcliffe bridge provides large travel time savings for users of the bridge as shown in figure 3.11. Non-users on relieved routes will also benefit. The average travel time saving for users is around 5.5 minutes, with savings of up to 15 minutes for some journeys. The principal location benefiting from improved access is the Gedling district area.

4.13 The provision of the bridge will also provide a new corridor of movement for non-motorised users.

GOVERNMENT OBJECTIVES - ENVIRONMENT

4.14 As discussed earlier in this report, any new bridge crossing would introduce additional impacts on the natural and built environment and on other environmental resources, by virtue of the additional land take and construction required. The provision of a bridge would bring traffic relief to other parts of the network and would thus result in a net reduction in the impacts of vehicle movements on local communities.

GOVERNMENT OBJECTIVES - ECONOMY

4.15 As discussed in chapter 3, the Radcliffe bridge performs well economically, due to the large travel time savings provided by the bridge. The benefit to cost ratio is of a similar order to that for the A52 package of improvements.

GOVERNMENT OBJECTIVES - SAFETY

4.16 The Radcliffe bridge will provide accident savings due to reduced vehicle mileage, especially in community areas. The addition of the bridge increases the reduction in accidents by around 20% compared with the reduction provided by the A52 improvements alone.

GOVERNMENT OBJECTIVES - INTEGRATION

4.17 The provision of the Radcliffe bridge will:

- Remove unnecessary traffic from the City centre bridges;
- Provide improved access to the north eastern area of the City and Gedling District;

- Provide a new corridor of movement for non-motorised users offering greatly reduced journey length;
- Conflict with some planning and environmental policies aimed at protecting the environment of the valley floor.

ACCEPTABILITY

4.18 As discussed in chapter 3, the results of the public consultation show that levels of support for improved river crossing facilities are similar to the support for PT improvements or A52 improvements.

4.19 For consultees in favour of 'making it easier to cross the river', the majority favour provision of a new crossing over improvements to existing crossings.

CONCLUSIONS

4.20 The Radcliffe bridge provides a similar level of achievement of benefits to those achieved by the A52 improvements. The Radcliffe bridge produces a low level of negative impacts, with environmental impacts being generally slight.

4.21 The Radcliffe bridge provides significant time savings for users of the new Bridge. The average time saving is over 5.5 minutes. In comparison, the proposed A52 improvements result in typical time savings of 3 to 4 minutes for A52 users (depending on the journey being made).

4.22 The Radcliffe bridge removes unnecessary traffic from the City centre bridges, providing significant levels of traffic relief on the bridges and the associated road network. With the A52 improvements alone there is little relief to the City centre bridges.

4.23 The Radcliffe bridge delivers significant benefits to the areas north of the river and east of the City, ensuring that the strategy benefits are distributed across the study area.

4.24 The Radcliffe bridge provides a similar level of economic performance to A52 improvements.

4.25 The Radcliffe ridge will deliver safety improvements.

4.26 The level of public acceptability for a new river crossing is similar to that for improvements to the A52.

5. Recommendations

5.1 This working paper has compared three alternative river crossing options:

- Maintenance of the existing river crossing provision – the 'no change' option;
- Provision of a new 2lane single carriageway bridge between the Gamston junction on the A52 and the Colwick racecourse roundabout on the A612 – The Gamston bridge; and
- Provision of a new 2lane single carriageway bridge between the A52 near Radcliffe and the A612 Colwick Loop road. This would follow a line immediately to the west of the existing railway crossing formed by the Grantham line and the former Cotgrave mineral line.

5.2 Whilst both bridges provide significant benefits, on balance the proposed new bridge at Radcliffe is preferred to that at Gamston as:

- The Radcliffe bridge provides better accessibility to the north eastern area of Nottingham;
- The Radcliffe bridge removes unnecessary traffic from the City centre bridges; and
- The Radcliffe bridge has lower environmental impact than the Gamston bridge.

5.3 It is recommended that a new bridge at Radcliffe be included in strategy as the new bridge:

- Performs well against the strategy objectives;
- Performs well economically;
- Removes unnecessary traffic from the City centre bridges and associated road network;
- Ensures that significant benefits are achieved for areas north of the River; and
- Builds upon the benefits provided by the proposed A52 improvements, and provides a similar level of benefits to the A52 improvements.