



Department of the Environment, Transport and the Regions

**MULTI-MODAL STUDY  
A453 NOTTINGHAM TO M1 JUNCTION 24**

**WORKING PAPER No 27**

**AN ASSESSMENT OF CLIFTON BYPASS SCHEMES AND THE  
STRATEGIC ROUTE A50- A46**

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## **1. THE BACKGROUND TO THE WORKING PAPER**

### **1.1 The range of bypasses**

A number of different schemes for a bypass of the A453 at Clifton have been suggested during this Study. Altogether they effectively form the full range of feasible possibilities that can be identified covering the Study area, from M1 junction 24 or 24a, connecting to the A52 at Queens Drive at the western extreme, to points further east on the A52, or routes even more easterly, connecting with the A46 Leicester – Newark – Lincoln Trunk Road. The range is shown on figure 1. They naturally fall into corridors at this level of investigation.

### **1.2 Previous schemes and the need for review**

Eastern and western routes previously featured as objectors alternatives at the Public Inquiry into the Highways Agency's (HA's) proposed On-line scheme in 1996. They were referred to as the Green Route and Yellow Route respectively, although there were some variations of these given other colours. The Public Inquiry process demanded that routes be examined in considerable detail.

For this Study these earlier schemes must be reviewed:

- with the most up to date information, in the context of an integrated transport policy,
- as part of a more open examination of the possibilities appropriate for the wider ranging remit of the Multi Modal Study approach.
- at a more strategic and less detailed level, sufficient to enable recommendations to be made

### **1.3 On line schemes**

The dual carriageway On-line scheme (known as the Red Route) was recommended for approval by the Inspector following the 1996 Inquiry. It is a requirement of this Study that other schemes and Options are compared with it. The comparison is an important part of the current exercise, and is dealt with elsewhere in this Report. The scheme is currently 'on hold' within the Highways Agency's road programme.

## **2.THE SIFTING APPROACH**

As any of these bypasses are major interventions in terms of their impact on transport as well as many aspects of the environment they would all ideally be fully modelled and tested on the Transport Model. There are however many other demands for such testing in a multi modal context. GOMMMS appraisal need be undertaken only as far as necessary to inform decisions and choices.

This Paper looks conclusions that can logically be drawn for the range of bypasses with the information available and makes a critical appraisal, eliminating the weaker contenders to identify a shortlist to carry forward for further appraisal. This approach is compatible with GOMMMS procedures.

### **3. SCHEMES**

#### **3.1 Design Standards**

Dual 2 lane all-purpose roads are taken as the basic standard in each case, but single carriageway variations are also considered.

#### **3.2 Bypass Corridors**

The Bypass schemes fall into distinct groups by corridor:

- Western routes, from south of Barton Lane, along the Trent valley, including a crossing of the river, to the A453/A52 junction at Queens Drive, (similar to the Public Inquiry Green Route).
- Inner eastern routes (similar to the Public Inquiry Yellow route) from south of Barton Lane south of Clifton, between Clifton and Ruddington, to the A52 Nottingham Ring Road west of or at the junction with A60.
- Middle eastern routes (similar to the public inquiry Blue route) from south of Barton Lane, south of Clifton and Ruddington, to the A52 at the A606 junction.
- Outer eastern routes from the A50 at junction 24a of the M1 on the line of the A453 to south of Barton Lane, south of Clifton and Ruddington, north or south of Tollerton, to the A52 at or east of Gamston.
- A strategic new west-east route from the A50 at junction 24a of the M1 in a broad corridor between A453 and south of Gotham, Ruddington and Bunny, and to the A46 between Owthorpe and A606 at Widmerpool.

The range forms a family of possible bypass schemes as shown on diagram 1, with some common characteristics, that can be considered in a structured way.

#### **3.3 Traffic effects**

3.3.1 The primary traffic issues are:

- The amount of relief for the existing A453 provided by a bypass
- The amount of traffic that would benefit from using a bypass

A key issue is the contribution towards an integrated strategy and reduction in dependence on the car.

Secondary but important traffic issues are:

- The traffic impacts on the adjacent road network
- The impact on other modes of transport in the area.

3.3.2 In broad terms the further south and east the corridors are, the less they will relieve the A453, and the more they will attract longer distance strategic movements. The inner eastern and the A50-A46 corridors have been tested by the Transport Model. The intermediate ones can be

expected to have correspondingly intermediate traffic characteristics. Each corridor is considered further in the following sections of this Paper.

- 3.3.3 It can be concluded that by adding to the national road network, major new highways would all have a similar basic effect of favouring transport by road over the other modes. The inner corridors would in particular encourage local commuting by car, and conversely tend to discourage public commuter transport. This is reflected in the transport model, which shows public transport use falling to around half the current level in a ten year period.

The scale of the bypasses and their position in the regional and national highway network is such that the numbers of heavy goods vehicles on all routes would be broadly in proportion to the overall traffic. In other words no one route could be regarded particularly as a heavy goods route or a commuter route.

### **3.4 Western corridor traffic**

- 3.4.1 The western corridor provides a shorter route than the existing A453 for a large part of Greater Nottingham, the City centre, Lenton Industrial area, and Beeston. It also provides substantial extra capacity to cross the River Trent and would reduce traffic on Clifton Bridge.
- 3.4.2 It would be attractive for the central Nottingham and Beeston through traffic if a junction with enough capacity could be accommodated at Queens Drive (see also the following section on environmental assessment). It would be less attractive for West Bridgford and points east and north of Nottingham, being 1km longer than existing. The existing A453 through Clifton could be restricted to encourage more transfer for these trips, but they would then wish to re-cross the river at Clifton Bridge.
- 3.4.3 Western routes would provide a high degree of relief through Clifton and would have to be built to dual carriageway standard.
- 3.4.4 The A52 Nottingham Ring Road and adjoining road network is already highly loaded, with saturation flows on all the major roads (Wilford Lane, A453, A6005 to Beeston, A52 Nottingham-Derby in peak hours. As there is very little scope for expanding these roads and it is in any case not part of the Local Transport Policy to do so, congestion would occur around the junction of the bypass in the Queens Drive area leading traffic possibly to divert to other routes.
- 3.4.5 A junction between a bypass and the part of Lenton Industrial area south west of the Ring Road would siphon off some of the traffic and reduce the traffic loading on the Ring road itself and Queens Drive junction. The form and exact location of such a connection would require in-depth study. Either a traffic signal controlled ground level junction or a roundabout with traffic signals incorporating Thane Road would be the most likely to be suitable, and should provide (with Urban Traffic Control) the flexibility and control needed in the urban conditions. The capacity of the junction to accommodate remaining movements would need to be investigated.

### **3.5 Inner Eastern corridor traffic**

- 3.5.1 These routes are at least 2Km longer for Beeston and a large part of Nottingham (about 70% of demand), but correspondingly 2km shorter for the outer part of West Bridgford and points east and north of Nottingham (about 30% of demand). The corridor is therefore slightly less effective at relieving the existing A453 in Clifton, but there would still be a high degree of transfer from the existing road through Clifton not least because the new routes would permit faster speeds without urban junctions and crossings.
- 3.5.2 No intermediate junctions are envisaged. Any local roads connected would be at risk of extra through traffic.
- 3.5.3 Adding A453 traffic to the A52 Ring Road between Queens Drive and the bypass would cause severe overloading. This section of A52 is dual 2 lane, and currently is at capacity during the peak hours. There is continuous housing adjoining both sides at Silverdale and Wilford. Additional lanes would not be a practical acceptable proposition. A junction restricting movements to bypass south to A52 east and vice versa would avoid this problem., but would be much less effective in attracting traffic off the existing road.
- 3.5.4 Without the A453 – A52 north and A52 north – A453 movements at the A52 junction the traffic for Beeston, the west side of Nottingham, and most for the City centre, would remain on the existing A453 through Clifton. Some City centre traffic could divert via the A60 and Trent bridge. This is a single 2 lane with a fully built-up and largely domestic frontage. It is very limited in capacity around the ASDA supermarket.
- 3.5.5 The Ring road east of the bypass is also at or near capacity. Although the dual 2 lanes between A60 and A606 could accommodate some growth, the junctions currently experience regular peak hour delays of up to 10 minutes. Schemes for increasing their capacity are in the trunk road programme and are assumed in this Study as constructed in advance of any A453 bypass.
- 3.5.6 At the A60 a grade separated layout taking the A52 through in cutting below a roundabout and slip roads appears feasible, although it has not been investigated as part of the Study. However, a grade separated junction for a bypass could not be accommodated in such a short distance with full rural design standards. An urban standard design with merged slip roads would be required, but a technically acceptable solution should be possible.
- 3.5.7 A single level layout at A60 could take the form of a traffic signal controlled junction or signal controlled roundabout, and would provide limited extra capacity. In a highway expansion strategy a further scheme with more capacity would be required within the Study period.
- 3.5.8 Similar capacity and scheme considerations apply to the A606 junction, but without the problem of a bypass junction close by. East of the A606, the Ring road becomes a single 2-lane road for just over 2km although with enough width of highway land for eventual widening. The second carriageway would need to be added during the Study period.

- 3.5.9 The A52 junction at the northern end of the A606-A52 section of the Ring road is currently severely congested in the a.m. peak hours particularly with commuter traffic approaching Nottingham from the east, although much of this is due to City bound congestion on the Nottingham side. An A453 bypass would require extra capacity, with a traffic signal controlled layout including separated approach lanes for City bound and Ring road traffic.
- 3.5.10 As part of an Option that also includes demand management schemes a single carriageway inner eastern bypass would be capable of carrying all the attracted traffic. The main differences from a dual carriageway version are in other impacts and how it might be packaged in a transport Option. These differences are dealt with later in this Paper.

### **3.6 Middle eastern corridor traffic**

- 3.6.1 This is a fairly narrow band of possible routes sharing some of the traffic characteristics of the inner corridor. The minimum route would be between Barton Lane, around the south of Clifton like the inner routes, closely round the south of Ruddington, joining the A52 Ring road with an all-movements junction at the A606 junction. It would be 8 km longer than the existing A453 for Beeston, Nottingham west and centre, and 1 km shorter for the eastern fringe of Nottingham and more distant points east and north. At the southern end it involves a pronounced deviation in direction, adding to the route length and journey time.
- 3.6.2 A more direct alternative would start further south, between Barton in Fabis and Thrumpton north junction, to avoid having to loop around the south of Clifton. The length of bypass construction would be 0.6m more, but it would save a further 3.8 km in journey distance for through movements.
- 3.6.3. The corridor would attract a very similar pattern of traffic to the version of the inner routes with restricted movements at the Ring road junction, and would have the same implications of schemes on the eastern section of the Ring road. Any disadvantages on the Ring Road sections on either side of the A60 (Nottingham Knight) junction would be eliminated.

### **3.7 Outer eastern corridor traffic**

- 3.7.1 This corridor is significantly different from the others in that it covers a wider geographical area, and joins the A52 to the east of Nottingham.
- 3.7.2 Routes joining the A52 east of Gamston immediately lose any attraction for Nottingham traffic, as the inconvenience of the extended distance travelled on the bypass is added to by having to use the A52 east of the City in the opposite direction i.e. doubling back. These routes would principally serve the longer distance west-east journeys on the A453 at Clifton. They would also remove the same journeys from the Ring road between Clifton Bridge and Gamston as would the inner and middle corridors, as well as bypassing a section of the A52 radial route east of Nottingham.
- 3.7.4 In the traffic context, the junction with the A52 could be located at a number of points. East of the proposed Gamston Park & Ride site would be one, assuming the project is implemented, or east of any alternative more distant A52 Park and Ride sites. A single level junction would most likely be appropriate. Scheme length and cost become rapidly longer as the joining point with A52 is located further eastwards (see table 1).

- 3.7.5 The pattern of traffic demand shown in the Travel Survey Report indicates that a single carriageway sufficient.
- 3.7.5 If intermediate junctions were included they would most likely be at the A60 and A606. However, this would modify the role and purpose of the bypass by adding a local distribution function, development pressures, and consequent growth of local traffic.
- 3.7.6 A new road connecting with the A52 east of Nottingham with the A453, or in the largest of the possible schemes, with the A50 at M1 junction 24a, would encourage the growth in the volume of strategic traffic, with implications for the rest of the A52 eastwards to the A1 at Grantham. Most of this is single carriageway and operates within its capacity, but the section west of the A46 at Saxondale is frequently congested, with peak hour delays. Schemes would be needed to increase the capacity.

### **3.8 A50-A46 corridor traffic**

- 3.8.1 For traffic the significant difference of this corridor is its comparatively remoteness from the A453, Clifton, and Nottingham, and its direct connection with the A46 Trunk road near the A606 at Widmerpool. Effectively, no Nottingham traffic would use it, and its purpose would be for longer distance west-east through journeys, some of which presently use the A453. The traffic relief on the A453 would be between 25% removed at Thrumpton, and 18% removed south of Farnborough Road Clifton. This is insufficient relief for the A453. Other less expensive and intrusive routes fare better. Its merits as a strategic route are beyond the main concern of this Study, but looking at its location in the National network of major highways, there is not a clear indication that longer distance traffic would divert onto the route unless it were linked east or south-eastwards to join the A1.
- 3.8.2 With its emphasis on strategic transport, intermediate junctions with minor roads would be avoided. A junction with the A46 would be either at or close to the A606 at Widmerpool. There need not be a separate junction with A606. Intermediate junctions would be a 2 level interchange with A453 west of Ratcliffe on Soar, and possibly a single level junction with the A60 south of Bunny.

On a new route of nearly 20km. however, there could be pressure for more connections or even spur roads in the future for development.

- 3.8.3 The choice of design standard between a single or dual 2 lane all-purpose road is not entirely clear. To cater for the flows transferring from A453 a single carriageway would be adequate, but if implemented in combination with a link to the A1, the addition of long distance journeys attracted from beyond the catchment of the Study Survey could suggest a dual carriageway.

## **4 OTHER EFFECTS**

### **4.1 General**

The assessment of effects for the Study is carried out in accordance with the Guidance on methodology for Multi Modal Studies. Although there will be variations in impact across the range of sub objectives, in looking at a common group of major highway schemes the main attention other than for traffic (and the associated economic issues) has to be on their environmental impact.

Furthermore, as there are many shared characteristics in the area of south Nottinghamshire countryside covered by the corridors, the environmental considerations can be considered in a simplified way. Issues of biodiversity, heritage, water environment, severance, are present and important, but not dominant given the broad-brush nature of the corridor assessment. The main differences amongst the possible bypasses are in visual and noise impacts, together with the effects on communities and land use planning.

### **4.2 Western corridor environmental effects**

- 4.2.1 The environmental impact of western routes were examined in some detail during the preparation of the HA's scheme for the A453 at Clifton in 1994/5. The area of the Trent valley concerned has remained unchanged apart from further development of the weir at Beeston Rylands, which has involved construction of some low but visible concrete structures with steel fencing. It is therefore reasonable to make use of the previous information.
- 4.2.2 The wide swathe of the valley clearly has a very substantial environmental value in many respects. The site was visited by the Landscape Advisory Committee, the body of learned independent advisors who used to be engaged by the Department of Transport for major road schemes. They concluded that the valley was of a sufficiently large scale to accommodate a new road, but there were a number of significant or severe individual features. The perspective of the Committee was different from this Study in their task was to look at alternative routes for a dual carriageway road proposal.
- 4.2.3 Particular problem areas were and still are the visual impact below Brandshill Wood north of Barton in Fabis, the loss of tranquillity from Barton to the north end of Clifton, and having to cross the valley from one side to the other. The previous routes generated strong opposition from residents in Beeston Rylands, and were recommended for rejection by the Inspector for the Public Inquiry into A453 proposals in Clifton in 1996.
- 4.2.4 Most of the valley is a floodplain needed to protect the balance of flood flows in the Nottinghamshire section of the River Trent. Concern about flood risk has increased since 1996. A working flood model would be required to properly evaluate the scheme. However, it is clear that its crossing from one side of the valley to the other would have to be wholly on a viaduct in order to reduce the obstruction to flood waters, whilst the consequences of flooding in that area would be extremely serious.

- 4.2.5 Variations on the route have been tried. There is slightly more scope for a shorter route if it is accepted that the south end of the bypass joins the existing A453 at a roundabout. This would enable a sharp change of direction, allowing the route to fit better into the small dip in topography near Burrows farm with a maximum depth of cutting of 2-3m. This is a quiet secluded side valley and the local impact would be severe.
- 4.2.6 The layout of the junction with the Ring Road cannot be derived without a detailed traffic analysis and design exercise. It is currently a 3 level complex in which the A52 flies through over a part signal controlled roundabout and slip roads, with a one lane one way high level flyover for traffic from the east including from Clifton, to the A453 Queens Drive to the City centre. One layout would be to replace this movement with a single 2-lane high level flyover between the bypass and Queens Drive. This would be a more intrusive development, but the existing local environment is not particularly restricted or sensitive.

### **4.3 Inner eastern routes environmental effects**

- 4.3.1 The two routes in this corridor in principle follow the lines of the Yellow Route and the Modified Yellow Route from the 1996 Public Inquiry. The two Yellow Routes differ only in the vicinity of Green Lane between Clifton and Ruddington. At that point a highway could bridge over the lane on the narrow area of low-lying ground immediately east of Fairham Brook, but its elevation on 6m of embankment would worsen and widen the impact.
- 4.3.2 The alternative is to cross at a depth of 6m below ground level under the lane further east at Brook Hill, which could contain and reduce the impact to a large degree. It would however involve demolition of two, possibly four large houses, and impact on the adjacent ones.
- 4.3.3 The Fairham Brook valley separates Clifton from Ruddington with undeveloped Green Belt land a quarter of a mile wide at its narrowest point. On the Clifton side there are nature reserve, a school and a college each with playing fields. All would lie within 100m of the Fairham Brook route, or 300-400m of the Brook Hill route. Further north the routes would be located east of the Willwell SSSI and along the western side of Ruddington Golf Course. The bypass would end at a grade separated junction with the A52 Ring Road passing under a ground level roundabout. The Ring Road and junction would be aligned to the south of the existing road, encroaching on the golf course.
- 4.3.4 A further possible variation arises at the northern end of the corridor, combining the bypass and the A60 Nottingham Knight junction with the A52 Ring road. A grade separated layout with a larger roundabout would be needed to accommodate the extra bypass leg. The two houses on the south west side of the junction would have to be demolished, and the Golf course would be bisected.
- 4.3.5 A dual carriageway would have significantly greater impact than a single carriageway Bypass, such that if a choice had to be made between them in a recommended Option package, the difference could well be an important factor. The smaller scale and less rigid alignment of a single carriageway road would allow scope for fitting it in the landscape especially in the section from Clifton Pastures in the south to Wilford Road in the north. It would also allow space for mitigation by additional earth-mounding and tree planting.

### **4.4 Middle eastern corridor environmental effects**

- 4.4.1 This also is a narrow route corridor except at its southern end.
- 4.4.2 There are no large built-up areas in close proximity, but there are particular visual impacts. A bypass could diverge from the existing A453 at Thrumpton or further north at Barton Lane but these two lines would converge east of Gotham Hill. The former route would curve around the bottom of the steep slopes of Gotham Hill, then across Barton and Ruddington Moors, and around the southern edge of Rushcliffe Country Park. The whole of this area has a very open aspect with long views. The Country Park is a former MOD site redeveloped during the last two decades into a leisure park with a small quality business park at its eastern end. There is very little scope for mitigation on this western portion of the corridor. The road would be close to ground level.
- 4.4.3 At the A60 a ground level roundabout would be appropriate. East of the A60 the ground remains open arable countryside, rising by about 8m before falling gently towards the A52 at its junction with the A606. Although a new road would be prominent in the largely tree-less landscape it would be partly in shallow cutting, and views are naturally curtailed by the landform.
- 4.4.4 A new road in this corridor would be significant for land use planning in Rushcliffe. It would be likely to eventually form a new southern boundary for the Nottingham conurbation because of the size of the green area enclosed and its relationship to the transport infrastructure. Almost the whole of the corridor is in the Nottingham Green Belt.

#### **4.5 Outer eastern corridor environmental effects**

- 4.5.1 As the middle and outer corridors are the same from the southern end to east of the A60 the same considerations apply as in 4.4.2. and parts of 4.4.3 and 4.4.4.
- 4.5.2 East of the A60 the outer corridor could either lie north or south of Tollerton. North of the village a route would pass through the relatively narrow open gap of land between the A52 Ring road and the western and northern edges of the housing, crossing the line of the unused end portion of the rail test track, running roughly parallel to the Ring road to join the A52 east of Gamston. South of Tollerton a route would run along a shallow valley, then east of the privately owned Nottingham Airport to the A52 west of Radcliffe on Trent.
- 4.5.3 Neither of these sub corridors has much merit overall, so the environmental effects are not considered in detail. The routes are excessively long, with consequent increase in environmental impact and cost, do not provide sufficient relief for the A453, accentuate problems on the A52, and are not capable of integration.

#### **4.6 A50 – A46 corridor environmental effects**

- 4.6.1 The scheme suggested is an all-purpose road on a new route between the A50 Stoke on Trent – Derby road at its junction with the M1, and the A46 Leicester – Newark Trunk Road north of Widmerpool. It could be a single or dual carriageway. For the purpose of this assessment a dual carriageway is assumed, with junctions at the A453 crossing west of the power Station (grade separated) and roundabouts at the A60 and A46. Other road crossings would be bridged without connection.
- 4.6.2 The purpose of the scheme, from the perspective of the A453 Study, must be to

- a) contribute to solutions to the transport problems of the A453 corridor
- b) meet national and local transport objectives

4.6.3 For maximum relief of the A453 the route should tend to follow the same south west-north-easterly direction without stretching too far north before joining the A46.

4.6.4 Possible routes are constrained by the A50 junction in the west, the undulations of the Wolds east of the River Soar, and the need to avoid the villages of Ratcliffe on Soar, Gotham, Ruddington, Bradmore, Bunny, Plumtree, Keyworth, and Stanton on the Wolds. The route must also take a fairly direct line to the A46 to make use of the proposed Widmerpool to Newark dualling scheme.

4.6.5 The route for assessment is in the southern of 2 possible sub-corridors having a common section between the M1 motorway and the Power Station at Ratcliffe:

- The northern corridor passes north of Gotham and between Bradmore and Ruddington, between Plumtree and Keyworth, and through the southern part of Cotgrave Forest.
- The southern corridor passes south or north of Ratcliffe, then south of Gotham, Bunny and Stanton, joining the A46 some 1.5km north of the A606 at Widmerpool.

As the descriptions indicate, except at the western end the routes pass through a rural area with a characteristic Nottinghamshire pattern of discrete villages, set in an agricultural Wolds landscape with tree covered scarp slopes. About half of the lengths in each case are in the Nottingham Green Belt.

4.6.6 Most of the Wolds area affected is classified by Nottinghamshire Council's Landscape Study as mature landscape.

4.6.7 The southern corridor affects more of this landscape and in the initial assessment the impact has been rated as very adverse. Although there are impacts throughout the route the severely affected areas are:

- at Ratcliffe on Soar where the village could be contained within a triangle of the A453, the new route both on embankment, and the Midland Mainline railway if engineering difficulties preclude a variation combining the new route with the A453 across the valley at the Power Station
- around the headland of Gotham Wood, where there would be cutting of 8m and embankment of 6m.
- Leake Road Gotham, where the route would cross Leake Road through a line of houses requiring demolition of one or two
- Through the undulating Wolds hills from south of Bunny to Stanton on the Wolds
- From east of Ratcliffe to the A46, a rural landscape with a high degree of tranquillity.

4.6.8 The northern corridor has comparable landscape impacts but more severe effects on the villages. It passes across the very open landscape of Gotham, Ruddington, and Bradmore moors, then close to Bradmore, Keyworth, Plumtree, and Normanton on the Wolds, and routes would be somewhat longer and would cost more than the southern corridor.

4.6.9 The Appraisal sub-objectives identified with significant impacts are:

- Noise (on a qualitative assessment of the effect in a tranquil area), Landscape as briefly covered above, bio-diversity, water environment (degradation of amenity at R.Soar, pollution, discharge, and disturbance in the local land drainage).
- Physical fitness (encouragement of more dispersed living and car dependence).
- Land use - the creation of a major severance and development line. Both corridors would be likely to create development pressures on the nearby villages because of the proximity in travel terms to major centres e.g. the 3 cities and East Midlands Airport.

#### **4.7 Comments on Economics, Safety, Accessibility, and Integration**

4.7.1 At an estimated cost of £70-80m the scheme could have a moderate to good Net Present Value if enough traffic were assigned to use it. The assignment is a strategic issue that cannot be fully evaluated within the limits of this Study as it would depend on other future major transport schemes.

For the A453 it would not provide enough relief of congestion arising from the bulk of Greater Nottingham trips and from unrestricted growth in local traffic.

4.7.2 The 29% of traffic identified in this Study wishing to travel between A453 near the M1 J24 and east of Nottingham covers wide sectors of origins and destinations east and west of the study. There will be some elasticity in traffic flows arising from the choice of using A46 or M1 and J21a, so that the proposed A46 dualling between Widmerpool and Newark would attract some of this movement. It is likely to be attractive for more northerly long distance trips via A50 wishing to avoid Greater Nottingham. Local dog-leg movements are limited by the lack of radial route connections apart from A60.

4.7.3 On safety, accessibility, and integration the scheme rating is not positive. Although it would be designed to modern safety standards it would not significantly reduce overall traffic in the A453 corridor and therefore not itself contribute to safety. It would clearly not assist integration or accessibility to transport, and would increase overall road travel.

**Table 1. Comparative Summary of A453 bypass schemes  
(not including on-line highway schemes)**

| Corridor                 | Length of Bypass Km | Journey times *                       |                     | Relief of A453** | Environmental impact –salient items                                                                                                  |
|--------------------------|---------------------|---------------------------------------|---------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|                          |                     | Mins. Shorter- or longer+ City centre | East of A52 Gamston |                  |                                                                                                                                      |
| Inner western<br>£45m    | 6                   | -0.25                                 | +0.1                | 45%              | 4km of noise and visual intrusion rural Trent valley. Moderate noise impact on houses at Beeston Rylands. Flood risk.                |
| Inner eastern<br>£35m    | 6                   | +1.8                                  | -0.2                | 45%              | Moderate, locally severe noise impact between Clifton & Ruddington. Visual intrusion and loss of green belt land and nature reserves |
| Middle eastern<br>£40m   | 9.5                 | +7.5                                  | -1.4                |                  | Visual exposure and severance in open countryside. Highly significant impact on land use planning                                    |
| Outer eastern<br>£70-80m | 20                  | Not realistic                         | -2.3                |                  | Lengthy corridor in open countryside at odds with existing structure and land use planning                                           |
| A50-A46<br>£70-80m       | 20                  | Not realistic                         | +0.5                | 18%              | Completely new corridor in quiet rural Wolds countryside                                                                             |

\* at average 40mph for each route. (times compared with an on-line route) for a journey between M1 Junction 24 and the destinations shown

\*\* % traffic removed in AM Peak hour Nottingham bound in Clifton (between Crusader and Farnborough Rd junctions)

## 5 Conclusions

- The outer eastern corridor would provide insufficient relief for the A453, and has a high cost and environmental impact.
- The A50 – A46 corridor has similar disadvantages as the outer eastern corridor.
- The middle eastern corridor would provide limited relief for the A453, adding some 4 miles to trips to and from Nottingham City centre. It has greater significance as a potential influence land use planning at a Regional and local scale.
- The inner eastern and western routes are broadly comparable in their traffic effects and are capable of a major contribution to relief on the A453 in an Option package. Current transport policy and the multi modal context has changed the traffic forecasts and adjusted appraisals since they were last officially considered.
- Routes in the western corridor were rejected at a Public Inquiry in 1996. Concerns about flooding have increased. Construction would be more costly and intrusive as a consequence.

- Inner eastern routes affect green belt and nature reserves. They were also rejected at the Public Inquiry in 1996. They would be relatively simple to construct. The changes in circumstances since 1996, particularly the possibility of a single carriageway scheme, are sufficient to warrant a review of Inner eastern routes along with on line schemes.