Item No
Cabinet
19 September 2005

Norwich Northern Distributor Road

Report by the Director of Planning and Transportation

Summary
This report advises Cabinet of the further work carried out on the alternative route options for a Norwich Northern Distributor Road (NDR) and puts forward proposals for moving the scheme forward.

1. Introduction

1.1. At its meeting on 7 March 2005, Cabinet received a detailed report setting out the results of the public consultation into the route options for the Northern Distributor Road (NDR). The report recommended that it would be premature to make a decision on a preferred route in view, principally, of the strong adverse comments expressed by English Nature (EN) and Environment Agency (EA).

1.2. It is not intended to repeat the previous report here as a copy has been given to all Members who have attended the political group briefings. A copy of (Appendix 1) of the March Cabinet Report, which summarises the consultation responses is, however, attached to this report as Appendix 1, as is a copy of the plan showing the consultation routes - Appendix 2.

1.3. Cabinet resolved to defer a decision on a preferred route to allow further work to be carried out as set out below:

- Develop mitigation measures for all eastern and western route options and the latter's impacts on the Wensum Special Area of Conservation (SAC) in consultation with EN and EA.
- Assessment of the Purple and Brown routes to single carriageway standard, including limited local public consultation.
- Report back on progress in order that the Council may determine its input to the East of England Plan (EEP) Examination in Public (EIP).

1.4. The EIP begins on the 1 November having recently been deferred from 14 September and if Cabinet agrees a preferred route, that decision will be recommended to full Council on 26 September and reported to the Examination Panel accordingly.

2. Further Work Carried Out

2.1. Over the last five months a significant amount of further work has been carried out on both the detail and justification of the NDR. This is work which would normally be carried out on a preferred route after its adoption by the County Council but the legal status of the Wensum Special Area of Conservation (SAC) has meant a much greater level of detail has been gone into on all route options at this earlier stage.

2.2. The status of the Wensum SAC was known at the start of the Norwich Area Transportation Strategy (NATS) Review in 2001. The further work has identified the potential impacts of the scheme on the Wensum SAC in more detail, particularly the impacts of the construction phase. Species surveys have been carried out at the proposed crossing sites and discussions held with English Nature and the Environment Agency over the condition of the River Wensum. This work has helped to form an opinion on the likely outcome of an Appropriate Assessment, which would need to be undertaken under the 1994 Habitat Regulations, before planning consent could be granted for the scheme.

2.3. As part of the further work, three technical notes have been prepared to help the process of route selection and these have previously been circulated to Members. They are included as appendices to this report as:

Appendix 3 - Statement on Justification of Need
Appendix 4 - Statement on Environmental Impacts
Appendix 5 - Statement on Traffic Analysis

2.4. In summary, the further work has comprised the following:

- Economic Impact Assessment to assess the benefit the NDR brings to the wider economic wellbeing of Norfolk.
- Rapid Health Impact Assessment to assess the benefits that NATS brings to the health and wellbeing of the Norwich area.
- A Public Transport model being developed to assess the benefit to cost ratio of a public transport based transportation strategy without an NDR.
- Route optimisation to minimise impacts on environment and property.
- Comparative Assessment of partial NDR: Three-quarter Route; A1067 Fakenham Road to A47 Postwick
- Further Traffic Analysis and presentation of data.
- Development of mitigation strategies for all routes.
- Consideration of what can be done in the City Centre ahead of an NDR.
- Aerial photography of all routes to aid consideration of mitigation measures and design.
- Development of single carriageway options for the Purple and Brown routes.
- Public consultation with Weston Longville and local area on single carriageway options.
- Further detailed species surveys for the ecological assessment.

- Preliminary assessment of routes crossing the Wensum in terms of the 'Appropriate Assessment' test.
- Meetings and exchange of information with the Statutory Environmental Bodies to agree mitigation/compensation strategies and impacts.
- Presentations to all political groups on the issues in advance of decision by Cabinet.
- Discussions with Norwich International Airport.

3. Results of Further Work

3.1. Economic Impact Assessment

3.1.1. The Economic Impact Assessment carried out by Roger Tym and Partners (RTP) concluded that the NDR will have particularly positive effects on major developments around Norwich, including Broadland Business Park, growth of the Airport and supporting the new strategic employment site proposed in policy NSR1 of the draft East of England Plan (EEP) for airport-related commercial activities. The report also concludes there are likely to be positive effects for existing businesses located further from the NDR in areas which will have access to major markets improved by the NDR.

3.1.2. The RTP report is less optimistic in its analysis of the economic benefits the NDR will also bring, by improving access from north and northeast Norfolk to the employment areas at Longwater, Norwich Research Park and the Norfolk & Norwich Hospital. However, the RTP opinion is strongly disputed by the Head of Regeneration from North Norfolk District Council.

3.1.3. The report recognises that growth in the City Centre will be dependent on a package of measures involving skills development, public transport improvements and site development. The NDR, as part of the NATS strategy, will support these objectives.

3.1.4. The report also recognises the role the NDR has in facilitating sustainable growth in the Norwich Sub Region, particularly in the Broadland area.

3.1.5. A full commentary on the RTP report is attached as Appendix 14.

3.2. Rapid Health Impact Assessment

3.2.1. A Rapid Health Impact Assessment has been carried out by Mott MacDonald on all of the policies within NATS. The appraisal shows that the strategy when fully implemented could positively affect people's health through air quality and noise pollution improvements, as well as safety and access improvement.

3.3. Public Transport Model

3.3.1. Although previous work in developing the NATS Strategy has concluded that a transportation strategy based purely on public transport (including an option based on Light Rapid Transport) would not be economically viable, this has been an issue again raised by English Nature and Environment Agency in questioning the need for an NDR. A public transport model is being developed

which will update previous work and enable us to respond to EA and EN at the Examination in Public. It will also provide a tool to test a number of public transport enhancements as part of implementing NATS.

3.3.2. Alongside the development of a detailed model, a coarse assessment of a public transport only based strategy (i.e. without an NDR) has been carried out by Mott MacDonald The coarse assessment has been based on an indicative package of measures, and indicates that the modal shift from private vehicles to public transport is likely to be small (around 1%). Economic analysis indicates that whilst there are travel time savings to buses they would result in corresponding increased delays to other traffic.

3.3.3. The assessment indicates that reductions in bus journey times would have to be of an order of magnitude greater than those predicted by the model in order to achieve a significant (greater than 5%) modal shift across the city.

3.3.4. The coarse assessment indicates that the indicative package of public transport measures (with no NDR) would not achieve the objectives of NATS to any significant degree and would not give a positive BCR.

3.4. City Centre Proposals

3.4.1. Part of the resolution of the Norwich Highways Agency Joint Committee meeting on 3 March 2005 in supporting the NDR was to ask officers of the City and County Councils to look at what could be achieved within the City Centre, consistent with NATS and the City's Spatial Strategy, but ahead of construction of the NDR.

3.4.2. This work has been completed and reported to the Joint Committee on the 14 July. It was resolved at that meeting to make a final decision on a package of measures after the opening of Chapelfield and after a period of monitoring.

3.4.3. When implemented, these and the longer-term NATS measures will help deliver the economic benefits referred to in the RTP report mentioned in Section 3.3.

3.5. Route Optimisation

3.5.1. With the help of the aerial photographs, the various route alignments have been examined, both vertically and horizontally to reduce their impacts. Examples are the vertical alignments of the inner western routes that have been raised to take road drainage away from the floodplain, thus reducing the potential impact on the Wensum SAC and the eastern Blue route has been moved and lowered, to reduce its impact on property in Rackheath. For example, the number of properties within 200 metres of the road has been reduced from 93 to 67.

3.6. Alternatives

3.6.1. Although alternative routes had not been invited through the consultation process, further alternatives were suggested both to the east and west of Norwich, during this period of further work.

3.6.2. On the east, it was suggested that combining parts of the Blue and Yellow routes would both remove most of the impact the Blue route would have on Rackheath and overcome the adverse effects the Yellow route would have east of the Airport and on Beeston Park. The suggestion was to follow the Blue route from the A140 to North Walsham Road and then link it to the Yellow route by Salhouse Road.

3.6.3. The fundamental problem with an alternative joining these points is the increased impact on designated areas of historic parkland and ancient woodland in both Beeston Park and Rackheath Park. Whilst the Yellow and Blue routes cross farmland on both estates, they skirt the edges of actual parkland, which had effectively been considered to define the limits of investigation for route options from the earliest stages of development.

3.6.4. However, in response to this suggestion, the idea was given more detailed Stage 1 desktop investigation to see whether a route could be found that might have an acceptable level of impact on these areas. This has only confirmed the original work that had shown the sensitive status of these areas would result in any route having a much higher environmental impact rating than the consultation routes. Nevertheless, some changes in the alignment of the Blue route have been incorporated which has moved the road further away from property in Rackheath, reducing the numbers of property within 300 metres of the road. Those changes are reflected in the plan in Appendix 12.

3.6.5. Alternatives to the west were suggested in response to the Weston Longville consultation and are discussed in paragraph 4.3 below.

3.7. Comparative assessment of partial NDR

3.7.1. Options for constructing a distributor road around only part of Norwich were examined during the initial assessment of options for NATS. This work which was covered in the NATS options assessment report produced by Mott MacDonald in November 2004, found that partial options, although having significant benefits in themselves, did not provide the full range of benefits within the NATS area as well as a full NDR.

3.7.2. In view of the complexity of issues on the west, the effectiveness of a half option (A140 to A47 Postwick) and a three-quarter NDR option (A1067 to A47 Postwick) in delivering the objectives of NATS has been re-examined and a revised Options Assessment Report prepared.

3.7.3. The results of this work show that a three-quarter route is, for the most part, still effective in enabling implementation of many elements of NATS. It is only in the north western sector of the City between Drayton Road and Dereham Road, west of the outer ring road, where it would have less beneficial effect.

3.8. Further Traffic Analysis

3.8.1. Further traffic modelling has been undertaken for the two western single carriageway options. Alongside this, further analysis has been carried out to identify, in detail, what the traffic implications are for the various western routes.

3.8.2. The results of the analysis are attached as Appendix 5. The conclusions drawn are that:

- All western route options, when combined with the eastern routes, achieve the objectives of the NDR of reducing congestion, constraining traffic using unsuitable roads and making other parts of NATS easier to deliver.
- Traffic on the NDR between the A47 to the west of Norwich and A1067 reduces the further west the routes are. The lowest traffic flows occur on the single carriageway layouts for the Brown and Purple routes.
- All NDR options, including the single carriageway options give relief to these roads, to varying degrees. The modelling assumes traffic management measures in place on roads through Ringland, Taverham and Costessey. The single carriageway options would contain growth on these roads to current levels.
- The outer western routes give less benefit to some existing roads. The Inner Ring Road impact is generally confined to the sector bounded by Dereham Road and Drayton Road. All other roads gain similar benefit irrespective of which western option is chosen.
- A three-quarter route would give similar benefits/disbenefits to the single carriageway options, but with increased pressure on the existing roads through Hockering and Weston Longville.

3.9. Mitigation Strategies

3.9.1. Mitigation strategies have been developed for all the route options, which have reduced the impacts of the routes except for the Wensum Valley crossings. Examples of mitigation measures include ground reshaping to hide the road from property, planting of significant areas of new woodland, creation of new habitats for protected species and enhancements of existing environmental assets. Summaries of mitigation proposals for each route are shown in Appendix 11.

3.9.2. The principal environmental concerns identified in the Stage 2 Scheme Assessment Report (SAR) February 2005, and the Stage 2 Single Carriageway Brown and Purple SAR (July 2005), related to biodiversity and landscape. Through careful and close working with the SEB's, the draft mitigation measures show that it is possible to reduce the impact of an NDR on biodiversity and landscape, except for the new and widened river crossings.

3.9.3. These assessments take into account the results of the further ecological surveys and landscape appraisals carried out on all the routes. The assessment for the western routes (A1067 to A47) takes into account the detailed work carried out in relation to an 'Appropriate Assessment' under the 1994 Habitats Regulations. This is covered in more detail later in the report.

3.9.4. There has also been a comprehensive assessment of the how each option could be constructed, carried out by May Gurney Ltd. This assessment helped identify the probable impacts during construction over the whole of the scheme and to the Wensum Valley in particular. This work has helped to establish the minimum access requirements a contractor would need to construct the

scheme. In the process this has led to defining the optimum spans for a viaduct, to keep as far from the SAC as practical.

3.10. Discussions with Statutory Environmental Bodies

3.10.1. Over the last four months a number of meetings have been held with the SEBs, including at Director level, to discuss both the need for the NDR and its impacts on the environment.

3.10.2. Further consultation with two SEBs, English Heritage and Countryside Agency, has not changed their position. Neither objected to the principle of the scheme at the stage 2 consultation or have raised further comments after the recent consultation with additional information.

3.10.3. In response to further consultation, both the Environment Agency and English Nature have confirmed that the supplementary information provided has been useful in furthering the understanding of the environmental impacts of the proposed route options. English Nature stating in their letter of 25 August 2005 that: '*Given the number of route options (14) under consideration, the preparation of a 'stage 2.5' Assessment is a helpful approach in supporting decisions your Council may make in identifying the best environmental solutions to meet transport needs*. '

3.10.4. English Nature and the Environment Agency have considered the information supplied as part of the stage 2.5 Assessment and, in respect of biodiversity and the impact on statutory sites, English Nature have made the following comments in their letter of 25 August 2005:

'*We are in broad agreement, on the basis of current information, with the assessment of impact on biodiversity, i.e. that after the proposed mitigation there is an adverse impact on biodiversity for eastern and western routes, and that the scale of impact is likely to be:*

for the Eastern routes impact is likely to be moderate or slight (evaluation on scale is dependant on the provision of further information);

Western single Purple the impact is potentially slight adverse (evaluation on scale is dependant on the provision of further information);

*Western single Brown the impact is large adverse (based on our interpretation of TAG**);

Western routes (dual carriageway outside the river crossings) the impact is likely to be slight or moderate (dependant on detailed proposals for the effective mitigation to reduce impacts on habitats and species);

Western routes (dual carriageway with river crossings) very large adverse impact on biodiversity.'

**(TAG: Department of Transport, Transport Analysis Guidance)

The Environment Agency concur with this assessment.

3.10.5. There is the potential to develop more detailed mitigation measures to reach an agreed biodiversity impact assessment score on the Eastern routes of slight.

3.10.6. The difference in the potential biodiversity assessment scores of the single Purple and single Brown routes relates to the need for the Brown route to cross the River Tud. The Environment Agency state in their response that: '*There would be significant residual adverse impacts on biodiversity and floodplain of the River Tud even with the provision of a viaduct crossing.'*

Whilst the response from EA and EN on the River Tud is noted, there does appear to be a contradictory approach to new bridges over the River Tud. For the housing development at West Costessey, 2-3 km downstream from the Brown route, a single span bridge with embankments in the floodplain has been accepted as part of the planning consent. If the Brown route is chosen, we will continue to discuss mitigation measures with EA and EN to achieve a slight or moderate impact over the River Tud.

3.10.7. Given the agreed biodiversity impact score of very large for the dual carriageway western routes with river crossings, it would be very difficult, even with extensive mitigation measures, to reduce this impact to an acceptable level.

3.10.8. Neither EA nor EN has a core interest in landscape. This rests with the Countryside Agency, who, at the present time, reserve their comments for schemes affecting Areas of Outstanding Natural Beauty and National Parks. The EA has, however, made some advisory comments on landscape in respect of the dual carriageway western routes. In their response they agree that a new crossing of the River Wensum and associated infrastructure would have a large adverse impact on the landscape. It would be difficult, even with extensive mitigation measures, to reduce this impact to an acceptable level.

3.10.9. A further detailed note on the justification for the NDR, setting out the background and process adopted for the development and adoption of the latest NATS strategy has been submitted to both EA and EN. In the intervening period both EA and EN have lodged objections to the NDR being included in the draft East of England Plan. It is understood that should the NDR be retained as a regional priority scheme when the EEP is approved by the Secretary of State (current programme – end 2006), that EA and EN can give no assurance that they would accept that the principle of the NDR had been established. Until that point, both organisations are reserving their position. We will continue to work with both EA and EN during the forthcoming Examination in Public to try and resolve any outstanding concerns they have. A copy of a summary of the justification is attached as Appendix 3.

3.11. Public Consultation on Purple and Brown Single Carriageway Routes

3.11.1. The consultation showed a very strong feeling amongst the local communities of Weston Green, Weston Longville and Attlebridge against either of these two additional alternatives as set out in Appendix 7a of this report. The main issues are comprehensively brought together in the submission by the Too Far West Group. All Members have been sent a copy by the Action Group and a commentary of it is included in Appendix 7b.

3.12. **Discussions with Norwich International Airport (NIA)**

3.12.1. Meetings have been held with staff from NIA to clarify their position in relation to the eastern route options. NIA's future development plans will be set out in a development masterplan, which is currently under preparation. However, one element which they are considering is an extension of the main runway eastwards for up to 200 metres. The Yellow and Pink routes already impact on the landing lights for the existing runway and some form of gantry arrangements across the road would be needed to maintain the integrity of the landing light system. Any further extension of the runway would have a significant additional effect with potentially conflicting requirements between the runway extension and the vertical alignment of the NDR. The Blue route would run to the north of the landing light system and not conflict with it now or in the future.

4. Further Representations

4.1. During the period since March, a number of further representations have been received concerning the NDR. They comprise:

- A petition of 1,000 signatures from residents of Rackheath, the Plumsteads, Salhouse and other communities in support of the Pink eastern route and against the Blue eastern route. The petition was accompanied by some 800 pro forma letters, copies of which will be available in the Members' Room. The issues raised in the petition relate mainly to the impact of the Blue route on Rackheath and are highlighted in this report, particularly Appendix 8.
- Representations from Parish Councils south of the A47 expressing concerns over the potential for rat-running through minor roads between Wymondham and the A47, should the Purple or Brown western routes be chosen.

4.2. As part of the further work, a local consultation was carried out on the Purple and Brown routes as single carriageways. Over 400 residents in the Hockering/Weston Longville/Attlebridge area, together with local parish councils and local District and County Councillors, were sent information on the routes with an invitation to send in their comments. A copy of the information sent out is included as Appendix 6. A public exhibition and open public meeting were held on the 16 June. A total of 198 responses were received, including a detailed response from Weston Longville Parish Council and the 'Too Far West' Action Group. All the responses are summarised in Appendix 7a of this report, and a commentary on the Too Far West submission, which it is understood has been sent to every County Councillor, is included as Appendix 7b.

4.3. Within the responses, four further routes were suggested – one linking existing roads to the west of Weston Longville, another linking the Brown route to the Red route, and two suggesting variations at points on the Brown route. These suggestions have been looked at in as much detail as is available. The route linking the Brown and Red route, as a single carriageway, would move the road away from Weston Green but would still be within 300 metres of Weston Longville. On the limited information available at this time, the landscape impacts are not dissimilar to the Brown route and there is little overall

justification for preferring it over the two routes put out to consultation. The two variations on the Brown route would similarly still be within 300 metres of Weston Longville. A point about these three suggestions is that if the Brown route is chosen as the preferred route, there could be scope to examine minor variations outside the limit of the plan corridor to ameliorate particular adverse effects.

4.4. In responding to the local consultation, Broadland District Council resolved to strongly support the construction of a complete NDR whilst objecting to a single carriageway link between the A47 and A1067. The resolution also supported further work being undertaken in respect of improving the existing HGV route and to assess the viability of this as an alternative to the options consulted on.

5. Issues for Route Selection

5.1. Appendix 8 updates the information previously included as Appendix 3 in the March report and includes the two additional single carriageway western routes.

5.2. For the western routes, the two most critical issues relate to the impact of the routes on the Wensum SAC and SSSI and the performance of the routes in traffic terms. In order to inform the discussion on western routes, a Summary Statement on Environmental Impacts is attached as Appendix 4.

5.3. The further work has also confirmed the statements in the previous report that of the western routes, the Red, Blue, Orange and Green, are the most damaging.

5.4. For the eastern routes, the routes do not affect sites of Statutory Designation and the differences in traffic performance are less marked. The critical issues are around the impact on Rackheath, Thorpe End, the Airport and Sprowston Golf Course. A further significant issue for the eastern routes is the relationship to projected growth in housing in the north-east sector of Norwich.

6. Discussion

6.1. Planning

6.1.1. The NDR is included in the draft East of England Plan as a scheme with regional priority status. The Examination in Public on the draft Plan is scheduled to start on the 1 November and to run for several months.

6.1.2. In the draft list of matters to be debated at the EIP, the NDR does not feature as a separate topic. However, the objections of statutory and non-statutory environmental bodies will ensure the NDR is debated within the Norwich Sub-Region Topic under 'Key Infrastructure'. A statement in support of the NDR has been prepared and is attached as Appendix 3 of this report.

6.2. Economic Assessment

6.2.1. The further work undertaken since March has confirmed the strong case for the NDR in wider economic terms. Alongside this, the Benefit to Cost Ratio (BCR)

of the routes remain very good, within the range 2.7 to 4.2. The BCRs have been produced using standard methodology and recent government advice suggests this would, by itself, justify the scheme being built.

6.2.2. With robust economic justification for all options, the choice of route on economic grounds would normally be considered using an incremental analysis, a technique used frequently to assess return on road investments. This compares each option in turn, in order of cost. Starting with the lowest cost option, the next lowest is compared with it, to see if there are extra economic benefits that outweigh the additional costs incurred. If so, the additional cost is justified, and this becomes the base option for comparison of more costly ones. If not, it is rejected and comparison is made with the next option. The process is continued for each option in turn, which either succeeds as the new base option, or is rejected. When all options have been compared, the optimal option in economic terms will have emerged.

6.2.3. This process has been applied to the partial routes in the options assessment and to the options being put forward in this report, to help draw conclusions and recommendations. The results are shown in Appendix 9

6.2.4. In reviewing these results, it should be noted that reasons other than economic assessment can justify the selection of a sub-optimal option, i.e. an option which is not ranked best in economic terms*.*

6.2.5. Also, as reported previously, the recent government advice states that a good BCR can be degraded if the environmental impacts are significant. The impact of the NDR on the Wensum SAC and SSSI could be judged as such a case and is, therefore, a factor to be considered in choosing a route if government finance is to be sought. Unfortunately, there is no established formula for arriving at the resultant BCR.

6.3. **The River Wensum SAC**

6.3.1. The previous report and the Statement of Environmental Impacts at Appendix 4, highlight the importance of the process of producing an Appropriate Assessment under the 1994 Habitats Regulations. Appendix 13 is a note from the Head of Law setting out the requirements of these regulations and applying them to the alternative schemes under consideration. The following paragraphs of this section 6.3 explain the implications of the regulations for the NDR, viz:

6.3.2. It is a matter of evidence whether the scheme will have a significant effect on the SAC. The available evidence (i.e. the evidence of the County Council's external consultants, Mott MacDonalds, and the County Council's Environmental Co-ordinator) suggests strongly that a new or widened carriageway crossing will have that effect. The statutory environmental bodies have confirmed this as their opinion.

6.3.3. On this basis, it is next necessary to assess the implications of the scheme for the SAC's conservation objectives (i.e. to carry out an "appropriate assessment") and in the light of that assessment consider whether the proposal will adversely affect the integrity of the site. Although at this stage, a

full and detailed “appropriate assessment” has not been carried out on any of the route options, a significant amount of preliminary work has been carried out in consultation with the Statutory Environmental Bodies (particularly English Nature and the Environment Agency) with a view to determining the likely outcome of an appropriate assessment. As a result, all evidence to date indicates that any NDR scheme that requires a new bridge crossing or widened bridge crossing over the SAC would adversely affect the integrity of the site.

6.3.4. The next question is whether there are any mitigating measures which can overcome the adverse effect on the integrity of the site. In this respect, Cabinet asked that further work be undertaken to devise mitigation strategies for all routes in its decision of 7 March 2005. Much additional work has been done since March in consultation with the environmental bodies and consideration has been given to construction methods and possible mitigation techniques. On the basis of the work carried out and evidence available, the County Counci’s external consultants consider there are no sufficient or adequate measures which could be taken to overcome the impact on the SAC.

6.3.5. On this basis, the next question to consider is whether there are any other solutions to securing the overall objective of meeting the key objectives of NATS. In this respect, there are potentially three possibilities:-

(a) a scheme (in effect the Purple/Brown route) which utilises the existing single carriageway crossing;

(b) a partial route without the Brown or Purple route;

(c) other strategic options which avoid the need for the NDR at all.

In this respect, it is considered that (a) and (b) are suitable alternative options. However (c) has been rejected by the County Council as not meeting the key objectives of NATS.

If, following a Public Inquiry, the Secretary of State concludes that there is an alternative solution which meets the objective of the scheme then he must not grant planning permission.

6.3.6. If it were concluded that there were no alternative solutions, the next question is whether the SAC hosts a priority species. It does not.

6.3.7. In these circumstances, the next question to be considered is whether there are any imperative reasons of overriding public interest which mean that planning permission should be granted. In principle, this could cover economic and social reasons. However, Leading Counsel has advised that although there is clearly an economic and social justification for the scheme, only relatively little weight would be attached to the need to relieve congestion in the Norwich area. Further, under this part of the process it would be for the Secretary of State to balance the wider benefits of the scheme against the impact on the SAC, and in this respect he will be advised by English Nature and the Environment Agency.

6.3.8. Finally, assuming all the issues identified above can be overcome, it will be necessary to secure the carrying out of any necessary compensatory measures. In this respect, it would be difficult to provide such measures.

6.3.9. In conclusion, any decision will be very strongly influenced by the strength of the evidence as to the impact of the scheme on the SAC. In this respect, and on the basis of the environmental evidence currently available to the County Council, including English Nature's letter of 25 August 2005 (quoted at Section 3.10 of the main report), it can be said that:-

(a) it will be very difficult to justify a new/widened carriageway crossing

(b) it will be significantly easier to justify using the existing single carriageway crossing on the Brown or Purple route

(c) a partial route stopping at the A1067 would avoid any impact on the SAC.

6.3.10. Although EA and EN's opposition to the project was foreseeable, it is important to note that the work carried out so far has been necessary to enable the case to be promoted objectively for it to be progressed through each stage of scheme development.

6.4. Traffic

6.4.1. In terms of the traffic effects of the various options, it is clear the further west the route is, the less traffic the road carries, and single carriageways will carry less than dual carriageways.

6.4.2. Nevertheless, in terms of meeting the objectives of the NDR, all the options (including single carriageways) deliver benefits, as the Statement on Traffic Analysis (Appendix 5) shows. Predicted traffic flows on most roads, particularly inside the Inner Ring Road and around the northern and eastern fringes of Norwich are similar whichever option is chosen. The main difference is seen in the sector between Drayton Road and Dereham Road and the Inner Ring Road. The choice of western route between the A47 and A1067 therefore impacts locally on roads linking those two main radials. The further west the route, the more traffic will remain using other routes and existing roads across the Wensum such as Ringland Road.

6.4.3. The detailed traffic modelling indicates that the NDR acts as a distributor road, not a bypass; traffic is predicted to use it for parts of trips between radial routes, with no traffic predicted to travel along its full length, using it as a northern bypass. Each section between radial routes fulfils a role in itself, as part of the whole. A partial route, such as the half or three-quarter option, makes a contribution to removing traffic from the city centre similar to the full routes.

6.4.4. All of the options considered have assumed traffic management measures within the northern suburbs outside of the outer ring road. In addition, the three-quarter option has been modelled with traffic management measures being placed on Costessey Lane, Taverham Lane and Ringland Road. It can be seen from the traffic figures in Appendix 5 that for the three-quarter option, with traffic management measures on these roads, the flows do not increase to any large extent between 2004 and 2025. The conclusion is that a three-quarter route would at least relieve these cross-valley roads from future growth

in traffic.

6.4.5. Some concern has been expressed by parish councils to the north of Wymondham and to the south of the A47 that choosing either the Purple or Brown routes would increase the potential of rat-running as traffic would avoid the A47 and A11 in favour of existing minor roads. The delays at the existing A47/A11 junction at Thickthorn are sited in support of this concern. The situation has been modelled, recognising the significant improvements which will be carried out shortly on the Thickthorn junction and the analysis predicts only a small increase in potential 'rat-runs', of the order of forty vehicles in the peak hour.

6.5. Options on the West

6.5.1. Based on the information now available to the County Council, as summarised above, the choices available to the Council on how to proceed are narrowed down to those options where the net environmental impacts are reduced to slight or moderate adverse. Firstly, it can adopt a route which crosses the Wensum on a new bridge and run the very high risk of the scheme failing at the statutory process stage. Secondly, it can adopt one of the outer routes built as single carriageways, which avoids a new crossing of the Wensum. This would be more likely to be deliverable but would be less effective in traffic terms. Finally, it could choose to build only part of the road and avoid the Wensum Valley completely. This choice would probably mean a separate scheme (linking the A47 and A1067) would also have to be identified and built, to deal with a long standing problem in this area.

6.5.2. All the routes, including the single carriageway options give good value for money, although the inner western routes have better benefit/cost ratios. The reduction in traffic benefits of the outer routes is offset by the saving in construction cost of not having to build a viaduct across the Wensum. Building only a three-quarter route still gives a very good benefit/cost ratio and is considered to be deliverable in environmental terms.

6.5.3. Although the outer single carriageway routes provide less benefit to existing roads across the valley than the inner dual carriageway routes, they nevertheless generally contain traffic at its existing levels and would still allow stronger traffic management to be put in place on these roads. They would significantly reduce through traffic in Hockering and Weston Longville.

6.5.4. With the single carriageway routes, more major improvements would be required on the section of the Outer Ring Road (Sweetbriar Road) between Dereham Road and Drayton Road to accommodate increased traffic.

6.5.5. There has been very strong local opposition to the outer western routes, either as single or dual, and much has been said about their distance from the centre of Norwich. It is worth noting that the Brown/Purple routes are 8.5 miles from the centre of Norwich travelling along the A1067, whilst say the Red route is 6.9 miles. The distance from the City Centre simply reflects the elongated shape of the urban development along the A1067.

Approximate journey times between the A11 (south of Norwich) and the Airport during the morning peak period for the design year of the scheme of 2025 will be approximately:

- 27 minutes without the NDR in place
- 21 minutes using the Brown route
- 19 minutes using the Red route

6.5.6. In terms of the criteria set out in paragraph 6.3.1, the County Council would find it difficult to argue that there are no reasonable alternatives to a route which is likely to impact on the integrity of the Wensum SAC. The risks associated with ignoring this position and choosing a route which does impact on the SAC is that the scheme could fail at some point in the future by being rejected by the Secretary of State on the advice of Statutory Environmental Bodies. Selection of a route damaging to the Wensum could increase the estimated preparation costs of £4m significantly. Costs increase in dealing with protestors, adverse publicity, legal challenges and professional advisors advocating a case through a Public Inquiry.

6.5.7. This would be a significant financial commitment for the Council with very little likelihood of success in delivering the scheme. If a route between the A47 (west) and the A1067 is to be chosen, the recommendation would be to support one of the outer single carriageway routes linked with the Red route eastwards from the A1067. Of the two outer routes the recommendation would be for the Brown route, as it links better with the existing Southern Bypass, and does not rely on dualling of the A47, now removed from the national programme. It would also address concerns about the perception of creating rat-runs through Barnham Broom and other parishes south of the A47. However, it does have a higher impact on the wildlife and landscape as it crosses the Tud Valley.

6.5.8. The cost of the Brown single carriageway, linked with the dual carriageway Red route from the A1067 and the eastern Blue route to provide a full NDR route is estimated at £99 million (at 2002 prices), up to £30 million less than the dual carriageway options.

6.5.9. Economically, all options will produce high returns on investment, with BCRs between 2.7 and 4.2. Economic ranking of options has not been an issue for consultation, but incremental analysis, applied to the options now available to the County Council, help with the choice of a preferred option. Although a full route on one of the four original options would give the best overall return and be justified in economic terms alone, the adverse environmental effects are likely to completely negate this score. Whilst the outer western routes still have high BCRs, the major part of the benefits come from the section between the A1067 and A47 at Postwick. This can be seen from the incremental analysis in Appendix 9, which shows the three-quarter route producing the highest return, for additional expenditure over a half route.

6.5.10. However, the problem of traffic in the north western sector will remain if nothing is done between the A47 and A1067. Therefore, if a three-quarter route is chosen, then further investigations into a link particularly for heavy goods

vehicles between A47 and A1067 should be examined, building on work previously carried out.

6.6. Options on the East

6.6.1. Turning now to the eastern routes, the further work has reduced the environmental impacts to slight or moderate, making the routes more acceptable in landscape and biodiversity terms without prejudicing the value for money ranking of the schemes.

6.6.2. The tables at Appendix 8 show that the moderate adverse impacts on the Blue route relate to the proximity of the road to property at Rackheath (Edward Stracey Road) and the fact that the route runs through arable land forming part of Beeston Park. Although the factors in Appendix 8 tend towards the Yellow route in favour of the Blue route, there are other factors which need to be considered which would lead to the Blue route being the preferred route for the eastern side.

6.6.3. What is not apparent from the tables is that the Blue route, being closer to Green Lane, will give more traffic relief to properties fronting the existing road than either the Yellow or Pink routes and this will result in a net benefit to those properties in terms of noise levels and safety on the existing road. The modelling shows the potential for increased traffic flows on Green Lane with the Yellow route compared with the Blue route. A comparison of predicted traffic flows on Green Lane is shown in Table 1:

Route Option	Daily Flows on Green Lane (2025)		
	Wroxham Road to Salhouse Road	Salhouse Road to Plumstead Road	South of Plumstead Road
Pink	6200	3800	7800
Yellow	9000	8400	8500
Blue	5100	800	8500
Do Nothing	6300	9400	8700

Table 1

6.6.4. Over the last few months adjustments to the Blue route have been looked at which place more of the existing development over 300 metres from the NDR. In addition, one idea has been to place the NDR under the railway where it crosses the Plumstead Road. This could be engineered but would create a long term drainage liability for the road and require closure of the railway over significant periods of time during construction. It is estimated this would add of the order of £2 million to the cost of the NDR. Whichever route is chosen, it is suggested this option be kept under review as it would give benefit to property in Rackheath if it can be made acceptable to Network Rail.

6.6.5. The Yellow route, on the other hand, will be 170 metres at its closest point to houses in Thorpe End. It will cross the railway at a similar location on Plumstead Road as the Blue route but will then have to cross the Rackheath landfill site to the north of the Salhouse Road.

6.6.6. Discussions have been held with the Environment Agency over what can be done to construct a road over the landfill. There is concern over any proposal which might expose the existing fill and this will mean the Yellow route being raised above ground level at this point, making it more exposed to property adjacent to it and at Thorpe End. The current owner has an operator's licence but the site has been capped since the 1990's. The County Council may have to take on the liability of the whole site if the NDR were to cross it. There remains a fair degree of uncertainty over the Yellow route construction over the landfill.

6.6.7. Another factor in the consideration of a preferred eastern route is the impact on the Airport and its future expansion. On the one hand, the NDR will facilitate this expansion by providing strategic road access. On the other hand the Yellow and Pink routes have the potential to hinder the expansion plans by virtue of the fact that they run diagonally across the approach path for the main runway. For the existing situation, the landing light system will have to be accommodated across the road involving some complex and unusual gantry arrangements, recognising the potential risk of them being hit by aircraft. The relationship between the road and runway becomes even more difficult to address if the latter were to be extended by up to 200 metres as suggested by the Airport and whilst not insurmountable, resolving the issue would affect the design of the road and add to its cost. The Blue route would be wholly to the north of the main runway's zone of influence and would have no effect on existing or future requirements for the main runway.

6.6.8. In terms of the Pink route, there is conflict with proposals in the Broadland Local Plan for local road links to development in the Sprowston/Thorpe St Andrew area. The NDR by its nature could not replace these local links with accesses along them to serve planned development.

6.6.9. Perhaps the biggest issue for the eastern routes of the NDR is its function in facilitating growth in housing in the north-east sector of Norwich. The draft East of England Plan proposes an allocation of 10,500 new houses in the Norwich Policy Area of Broadland and the NDR is included in the Plan on the basis, amongst others, that it will support sustainable development of this scale.

6.6.10. The Plan suggests this housing should be seen as an expansion of the existing urban fringe. In terms of community sustainability and cohesion, it would be inconsistent to have the housing growth area 'outside' the NDR which would form a natural barrier, protected where appropriate by landscape policies.

6.6.11. To accommodate a significant part of the proposed growth in housing is estimated to require some 350 hectares of land. Included in this figure is some 80Ha for 'soft' areas such as landscaping, open space and SUDS drainage. Broadland District Council has yet to decide where the additional housing will go, but assuming it may be located in the arc between the North Walsham Road and the railway line, the available land between the existing urban fringe and the Pink route is negligible as most is already allocated; could be up to 240 Ha up to the Yellow route and 290 Ha up to the Blue route. With the Blue route, the figure excludes the historic parkland of Beeston Park and Rackheath

Park.

6.6.12. With the Pink and Yellow route there is no scope to increase the area and development to the level proposed would have to be built either side of the NDR. The NDR could therefore become a further urban ring road if the Yellow or Pink routes were chosen. To place restrictions on development close to the NDR through landscape protection policies would further limit the potential for development within the NDR.

6.6.13. The Blue route, on the other hand, has both Beeston Park and Rackheath Park, as a natural protection against development adjacent to it. These areas, within an NDR, also offer the opportunity to locate some of the 80Ha of soft areas of land needed to accompany the planned housing, which would then allow the whole of the planned housing to be accommodated within the NDR.

6.6.14. Taking this into account, of the options available, only the Blue route will allow this future housing growth to take place in a sustainable way. It was for this reason that Broadland District Council opposed the Pink route in favour of the Blue route.

6.6.15. Taking all of the factors into account, the recommendation is that the Blue eastern route be chosen as the preferred route as shown on the plan at Appendix 12.

7. Conclusions

7.1. The NDR remains a fundamental element of NATS. It is critical to the delivery implementation of other elements of the strategy, particularly removal of traffic from the City centre, relieving congestion on the ring roads and radial routes, to facilitate improvements to public transport and relieving congestion in the northern suburbs. The NDR will also facilitate a wide range of regional and local objectives.

7.2. Environmental impacts rather than economics, remain the most significant factors in choosing a preferred route.

7.3. Work undertaken since March has shown that for the western routes crossing the River Wensum SAC and SSSI, it is extremely unlikely that a significant enough mitigation can be made to reduce the impact from 'very large adverse'.

7.4. Both Environment Agency and English Nature remain opposed, in principle, to the NDR and would not find a new road crossing the Wensum as an acceptable solution. It is reasonable to assume that they would advise the Secretary of State accordingly.

7.5. Although the outer western routes are less effective in traffic terms than the inner western routes in reducing problems in the north west sector, they do offer a solution to the problem of completing the NDR between the A47 and the A1067 Fakenham Road.

7.6. Economic analysis shows that a three-quarter route will deliver most of the benefits of a Northern Distributor Road, but not all of the strategic benefits.

7.7. Work undertaken since March has identified ways in which the impacts of the various eastern routes can be reduced to acceptable levels to have the confidence to move forward with the choice of a preferred route.

7.8. Options available to the County Council are:

(i) Promote a full Northern Distributor Road with one of the western route options over the Wensum Valley. This would be the most effective in traffic terms, but would have a high risk of failure whilst absorbing considerable costs through a Public Inquiry.

(ii) Promote an eastern route between the A47 (east) and the A140 that would give the strategic access to the airport and support sustainable housing growth in the north-east of Norwich.

(iii) Promote an eastern route and western route between the A47 (east) and A1067. This would have a similar result as (ii) and would give the added benefit of relief to Taverham and Drayton.

(iv) Promote (iii) in combination with a Brown/Purple single carriageway road between the A47 (west) and A1067 to complete the NDR.

(v) Promote (iii) but with a separate scheme and possibly to a separate timescale to address the existing local problems between Hockering and Lenwade.

(vi) Abandon the scheme – this would undermine the basis of the NATS strategy and have serious implications for the Council's wider objectives.

7.9. For the reasons set out in this and the previous Cabinet Report, if any of options (i) to (v) is chosen, the recommendation is to adopt the Blue eastern route on the basis that it better serves the long term development plans for this part of Norwich. Its juxtaposition with the historic parkland becomes a positive consideration in the wider context of sustainable growth and providing a landscape buffer to the road.

7.10. Likewise, for the reasons set out in this and the previous Cabinet Report, if option (iii) is chosen the recommendation would be to adopt the Red dual carriageway route between the A1067 and A140. Also if option (iv) is chosen the recommendation would be to adopt the Brown single carriageway.

7.11. The degree to which each of these options fulfils the objectives of the NDR in NATS is summarised in Appendix 10.

8. Alternatives Considered

8.1. Alternative strategies that would not include a Northern Distributor Road were considered before the County Council adopted its present Norwich Area Transportation Strategy.

8.2. A large number of variations to the routes discussed in this report were examined through a Stage 1 Environmental Assessment and rejected as less suitable, before the public consultation.

9. Resource Implications

9.1. **Finance:** A spend profile of £4 million over the next four years has been identified for scheme preparation. However, it needs to be recognised that the figure depends very heavily on progress through the statutory processes. The figure could rise if significant challenges to the route occur. Based on experience of other contentious schemes, this could cost several million pounds more if a route across the Wensum is chosen. Currently no revenue budget provision has been made for ongoing costs, and costs to date have been met from underspends, but once a preferred route is adopted it is normal accounting practice for preparatory costs to be capitalised. The intention is to fund fees through borrowing until such time as funding streams are secured.

9.1.1. In addition to the cost of preparation, the estimated cost of works and land for the recommended options are outlined below. The construction costs use prices from October 2002, consistent with all estimates throughout the consultation. Land costs are based on assessments made by NPS in September 2004.

Eastern Blue A47 (Postwick) to A140		£63.5M
Red route from A140 to A1067		£19.1M
Brown single A1067 to A47		£16.4M
	Total	**£99.0M**

A separate scheme linking the A47 and A1067 would have to be subject to a separate study, but costs could vary widely (in the order of £2M to £15M) depending upon standards adopted - including junctions with A47 and A1067 and route alignment.

9.1.2. Once a preferred route is announced, there will be the possibility of blight notices being served on the Council. Each request will need to be considered on its merits in accordance with statutory and discretionary guidelines. Current estimates of potential blight vary depending on which route is chosen and allowance has been made in the scheme estimates. A figure of £6 million has, on average, been allowed for and claims could begin soon after a preferred route is announced. After considering available funding (capital receipts and internal funding), £1.9 million will need to be met from additional borrowing.

9.1.3. With construction cost of this order, it is unlikely that a single source of funding for the NDR will pay for the whole project and a combination of sources is likely. Various funding options have been considered and will be examined further in parallel with scheme development once a preferred route is chosen. Available options include:

- Local Transport Plan Funding
- Private Finance Initiative
- Developer Contributions
- Prudential Borrowing

- Work Place Parking Levy
- Road User Charging

9.1.4. An additional source of funding would be through the government's Transport Innovation Fund, referred to recently in the Secretary of State's speech on road pricing. It is not unreasonable to assume that future government support for a large capital scheme such as the NDR could well be linked to proposals for charging in one form or another as a means both of part funding the NDR and of reducing congestion. In our Provisional 2nd LTP, submitted to government in July, we expressed an interest in the Transport innovation Fund, stating:

We are keen to explore with Government how the Transport Innovation Fund can help fund the strategy, particularly the required revenue and capital needed for the NDR and improvements to local bus services. As a first step, we are looking for support from the TIF pump-priming fund to meet the cost of the necessary feasibility work.

9.2. **Staff:** The project is being progressed using the joint resources of the Planning and Transportation Partnership.

9.3. **Property:** It will be necessary in due course to acquire land to build the scheme, and to purchase property in advance if Blight Notices are successful.

10. Crime and Disorder Act

10.1. Once a preferred route is announced, detailed design will take account of the provisions of the Act.

Recommendation

It is recommended that Cabinet resolves:

i. To adopt the Eastern Blue route as part of the NDR between the A47 at Postwick and the A140 Cromer Road.

ii. To adopt the Red route as part of the NDR between the A140 Cromer Road and A1067 Fakenham Road.

All as shown on plan number R1C093-R1-600 at Appendix 12.

and either:

iii. To adopt the Brown route as a single carriageway as part of the NDR between A1067 Fakenham Road and A47 at Easton.

or

iv. To have no NDR link between the A47 and A1067 but to pursue a separate scheme to address the existing local problems between Hockering and Lenwade.

and

v. To authorise the Director of Planning and Transportation to develop the agreed preferred route in consultation with local communities and the District Councils and to report back on the proposed layout as the basis of a submission for planning permission.

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Background Document (s) :

1 Traffic and Economic Assessment
2 Economic Impacts of the NDR
3 NATS4 Rapid Health Impact Assessment
4 NATS Options Assessment Report
5 NDR Stage 2 Scheme Assessment Report – Supplement
6 NDR Stage 2 Environmental Assessment Report - Supplement

The Consultation Responses to a Northern Distributor Road (November 2004 Route Consultation) **APPENDIX 1**

1.1. The majority of consultation responses to a Northern Distributor Road were made using the questionnaires. Detailed comments were also received in letters, petitions and e-mails.

1.2. The consultation questionnaire had five questions relating to a Northern Distributor Road as well as inviting comments.

1.3. In total, 10092 responses were received, together with over 261 separate written responses (187 without questionnaire responses). 297 online questionnaires were received via the website. The response rate for the paper questionnaires was 7.5%.

1.4. A petition was received from the Wensum Valley Golf and Country Club. 42 signed responses were received from the "Too Far West" campaign group. 131 questionnaire responses were received on behalf of the Marriott Sprowston Manor Hotel and Country Club. 204 questionnaire responses were received from named organisations, including local councils. 75 responses were received from local councils, including 41 questionnaire responses.

1.5. 27 blank questionnaires were returned and two responses were returned ripped up. Around 470 responses stated that there should be "No NDR" (4% of responses) in answer to Questions 2 and 3.

1.6. Question 1 asked respondents to consider which issues should influence the choice of route, and to select five from a list of fourteen issues. The most frequently selected five were:

- 72% selected "Taking traffic from residential/city streets"
- 52% selected "Improving journey times"
- 48% selected "Landscape and nature conservation
- 43% selected "Improving accessibility"
- 36% selected "Noise"

1.7. Question 2a asked which western option was preferred and why. The most favoured western route was Green (22%), followed by Orange (20%), and Red (20%).

1.8. Western Green, Orange and Blue were chosen because of their "proximity to the city". Red was chosen because it was "not near housing and had the least effect on villages or communities". Purple and Brown (and their variations) were both selected because they had "less environmental damage or pollution".

1.9. Question 2b asked which western option was least preferred and why. The least favoured western route was Green (34%), followed by Purple (33%) and Brown (11%).

1.10. Western Green, Orange and Blue were not favoured because of their "proximity to property/land/business/village or town". Red was not favoured due to its "impact on the environment/nature/landscape/river valleys". Purple and Brown (and their variations) were considered to be "too far from the city".

1.11. Question 3a asked which eastern option was preferred and why. The most favoured eastern route was Blue (41%), followed by Pink (28%) and Yellow (16%).

1.12. Eastern Blue route was chosen because it had "less environmental damage or pollution" and "not near housing and had the least effect on villages or communities". Eastern Pink was chosen because of its "proximity to the city" and eastern Yellow was selected as it was "not near housing and had the least effect on villages or communities".

1.13. Question 3b asked which eastern option was least preferred and why. The least favoured eastern route was Pink (39%), followed by Blue (27%) and Yellow (17%).

1.14. Eastern Pink was not favoured as it was "too close to property/land/business/ village or town, and would cause disruption". Eastern Blue was not favoured as it was "too far from the city/too long". Eastern Yellow was not favoured due to its "impact on the environment/nature/landscape/river valleys".

1.15. The responses to Question 2 by postcode and by district are shown on the following tables overleaf.

1.16. Question 5 asked the respondent to indicate their age group. Of the individuals who responded;

- 48% were aged 36-60 years
- 35% were over 60 years
- 13% were aged 18-35 years
- 0% (21 responses) were aged under 18 years.

4% of individual responses declined to respond to this question.

1.17. For Question 7, the questionnaire asked respondents to select any of the transport modes and reasons for travel that applied from a list.

- 79% use their car for leisure purposes
- 55% walk
- 48% use their car for work
- 27% travel by bus
- 25% cycle
- 10% travel by train
- 8% use their car for a school run
- 7% use a vehicle to make deliveries
- 5% use a motorbike
- 42% use Pay & Display
- 30% use free parking
- 28% use Park & Ride

1.18. Question 8 asked if the respondent believed that one or more of the proposed routes would seriously affect their land or property. 841 (8%) respondents indicated one or more routes. The largest number, 293 (24% of these), identified the western Green route; 59 (13%) identified the eastern Pink route.

All routes were identified, broadly following a trendline based on the number of properties within 300m.

1.19. Question 9 asked if there were any other issues that the respondent thought should influence the choice of route. 1041 (10%) responses were received to this question, and the most frequently mentioned remark was that "bus lanes/public transport/Park & Ride needs improving".

1.20. 75 responses were received from local councils. The preferences for western routes were: Green (25%) and Orange (25%), Red (19%), Blue (13%), purple (4%). Brown, and the purple/Brown variations received no support.

11% of local council responses offered no response to this section.

1.21. The least preferred western routes were purple (24%), Brown (14%), Green (14%), Red (7%), Blue (5%), and Orange (4%).

20% of local councils offered no response to this section.

1.22. The preferred eastern routes were Blue (33%), Pink (24%), and Yellow (14%).

24% of local councils offered no response to this section.

1.23. The least preferred eastern routes were Pink (21%), Blue (17%), and Yellow (10%).

43% of local councils offered no response to this section.

1.24. Two Parish Councils, Terrington St. Clement and Weston Longville, wished to make it known that they do not support an NDR, and Terrington St. Clement refused to choose a route on this basis.

1.25. Horsham St. Faith and Newton St. Faith did not express a preference on either the eastern or western routes, but noted that they were happier with the adjusted route round the airport following the consultation in 2003. Edgefield supports the NDR, with the routes that "are the most economic and cost effective". Postwick with Witton did not specify any particular routes, but wished to note that they supported the eastern link to the Broadland Business Park as in the consultation in 2003.

1.26. Of the 20 directly affected parishes (those with routes crossing land within their boundaries), 8 responded with route selections; this is summarised in Table 1 (page 9).

1.27. Great Yarmouth Borough Council responded with a letter of support for the NDR, but declined to select a route.

1.28. South Norfolk District Council supports the western Orange route. They are least in favour of the western Green route. No preference was stated for the eastern routes.

They also request that the County Council minimises the number of crossings of the River Tud, the NDR's impact on the river and valley area, and the NDR's

impact on existing properties close to the route.

1.29. Broadland District Council expressed a preference for the eastern Blue route over the eastern Yellow, and formally objects to the eastern Pink route. For the western routes, Broadland preferred the Orange, but would accept the western Red. Objections were noted to the western Green, purple, Brown and Blue.

1.30. Both statutory and non-statutory environmental organisations have expressed concern about an NDR. The primary concern is that all the western options cross the Tud and Wensum valleys. There has been both reluctance and resistance from most organisations to give a view on the differing environmental effects of the consultation options, with the four following exceptions.

1.30.1. Norfolk Landscape Archaeology believes the western Red and eastern Yellow routes to have the least damaging effects on the historic environment.

1.30.2. Wensum Valley Project commented that the “least destructive” were the western purple and Brown variations. The “most destructive” was the western Green. No comments were made concerning the eastern routes.

1.30.3. Norfolk Bird Club preferred the western Green and eastern Pink routes, and least preferred the western Red and eastern Yellow route. This was based on research into the breeding grounds of several rare bird species.

1.30.4. The Countryside Agency gave a detailed report on all of the proposed options. They identified the eastern Blue and eastern Yellow routes as having the least landscape/severance impacts. Of the western options, the western purple variation was regarded to have the best outcomes for both rural communities (visual intrusion/severance) and landscape.

1.31. Most businesses and organisations stated their support for an NDR. However, Sustainable Transport for the East of England Region (STEER) and the Campaign for the Protection of Rural England (CPRE) restated their opposition to an NDR.

1.32. Norwich Airport favours the western Green route, or the western Orange and western Blue routes. They prefer the eastern Blue route, as there are concerns about the Yellow and Pink routes having an impact on any future extension of the runway.

1.33. The consultation has drawn a significant response from landowners and businesses directly affected or in close proximity to routes. Discussions about alignments have helped clarify the issues and relative merits of the options.

1.34. The detailed comments and information, both for and against options or parts of options, have added much useful data to the Stage Two Environmental Assessment, undertaken prior to the start of the consultation. For the most part, these comments were from people or organisations that would be affected by particular options.

Responses by District - **Western Route : Favourite Route**

District Name	Green	Orange	Blue	Red	Brown	Brown Variation	Purple	Purple Variation	No preference	No response	None - no NDR	Total
Breckland	21	26	9	11	4	0	11	0	2	2	4	90
Broadland	1084	854	601	1223	288	128	590	137	316	79	182	5482
Great Yarmouth	2	2	0	2	0	0	1	0	1	0	0	8
King's Lynn and West Norfolk	2	0	1	1	1	0	1	0	1	0	1	8
North Norfolk	36	17	16	15	3	0	9	0	24	1	7	128
Norwich North of River Wensum	198	129	143	113	43	19	98	24	48	9	47	871
Norwich South of River Wensum	410	243	171	211	59	37	118	45	65	12	120	1491
South Norfolk	348	630	228	352	57	33	126	33	29	3	32	1871

Responses by Norwich Postcode - **Western Route: Favourite Route**

Postcode District	Green	Orange	Blue	Red	Brown	Brown Variation	Purple	Purple Variation	No preference	No response	None - no NDR	Total
NR1 Norwich	130	68	75	69	18	7	59	9	9	25	25	494
NR2 Norwich	165	78	62	57	23	25	42	31	3	26	79	591
NR3 Milecross	115	76	78	54	23	13	50	15	5	38	33	500
NR4 Eaton	158	97	41	85	18	5	29	6	3	15	18	475
NR5 New Costessey	66	272	79	139	30	7	41	7	2	8	19	670
NR6 Sprowston	260	225	146	265	52	37	118	39	7	55	43	1247
NR7 Sprowston	234	148	184	236	74	35	171	42	29	118	38	1309
NR8 Old Costessey	160	386	95	535	117	29	176	32	2	18	29	1579

Responses by District - **Western Route: Least Favourite Route**

District Name	Green	Orange	Blue	Red	Brown	Brown Variation	Purple	Purple Variation	No preference	No response	None - no NDR	Total
Breckland	21	2	2	6	8	2	43	2	2	5	4	97
Broadland	1786	570	340	212	563	106	1605	100	84	402	180	5948
Great Yarmouth	1	0	0	0	1	0	5	0	0	1	0	8
King's Lynn and West Norfolk	2	0	0	0	1	0	2	0	0	2	1	8
North Norfolk	17	7	2	5	21	5	50	8	2	26	7	150
Norwich North of River Wensum	247	50	30	40	121	17	268	19	11	67	46	916
Norwich South of River Wensum	373	93	51	84	187	30	520	33	13	105	118	1607
South Norfolk	812	111	53	69	158	30	626	29	5	68	31	1992

Responses by Norwich Postcode - **Western Route: Least Favourite Route**

Postcode District	Green	Orange	Blue	Red	Brown	Brown Variation	Purple	Purple Variation	No preference	No response	None - no NDR	Total
NR1 Norwich	132	31	28	40	67	9	145	10	8	39	26	535
NR2 Norwich	130	34	19	41	79	13	185	12	2	39	79	633
NR3 Milecross	126	28	14	24	82	9	158	11	7	48	33	540
NR4 Eaton	112	30	16	20	57	10	226	10	5	27	15	528
NR5 New Costessey	389	27	9	8	40	11	147	13	2	19	21	686
NR6 Sprowston	483	52	28	31	113	14	380	15	13	83	40	1252
NR7 Sprowston	416	102	45	40	123	25	339	25	29	147	39	1330
NR8 Old Costessey	791	317	201	68	62	19	245	17	4	29	26	1779

Responses by District - **Eastern Route: Favourite Route**

District Name	Pink	Yellow	Blue	No preference	No response	None - no NDR	Total
Breckland	25	8	24	12	14	4	87
Broadland	730	365	1016	33	93	98	2335
Great Yarmouth	3	0	4	0	1	0	8
King's Lynn and West Norfolk	2	0	2	0	3	1	8
North Norfolk	42	21	43	5	9	8	128
Norwich North of River Wensum	323	212	726	5	57	54	1377
Norwich South of River Wensum	114	52	133	11	11	11	332
South Norfolk	751	325	850	43	101	126	2196

Responses by Norwich Postcode - **Eastern Route: Favourite Route**

Postcode District	Pink	Yellow	Blue	No preference	No response	None - no NDR	Total
NR1 Norwich	145	67	200	7	25	25	469
NR2 Norwich	169	69	188	8	32	77	543
NR3 Milecross	163	52	184	7	34	33	473
NR4 Eaton	155	75	181	16	18	19	464
NR5 New Costessey	145	127	230	22	86	27	637
NR6 Sprowston	298	194	549	22	61	46	1170
NR7 Sprowston	245	212	678	5	36	31	1207
NR8 Old Costessey	295	322	577	100	160	38	1492

Responses by District - **Eastern Route: Least Favourite Route**

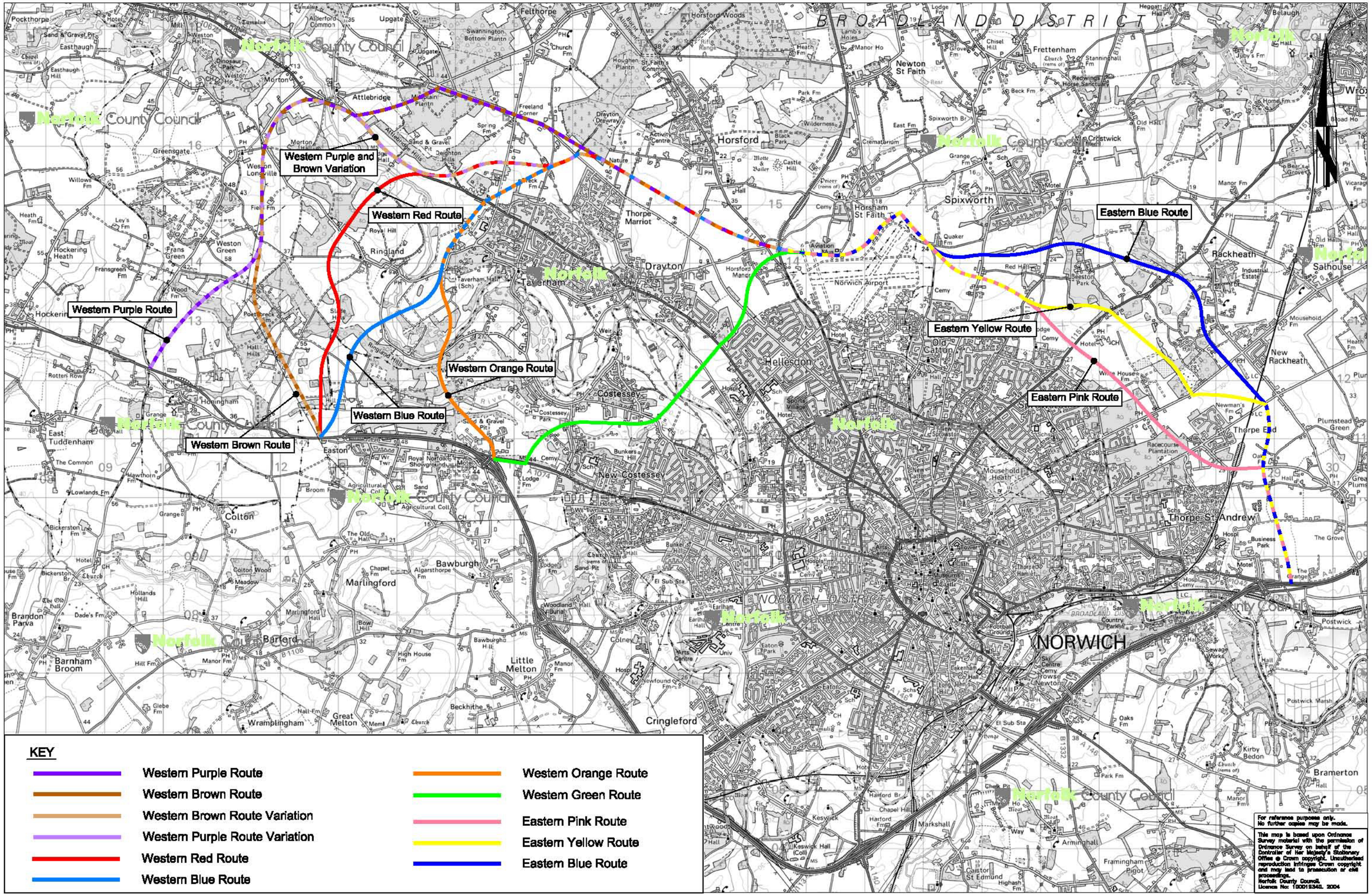
District Name	Pink	Yellow	Blue	No preference	No response	None - no NDR	Total
Breckland	22	10	20	12	19	4	87
Broadland	2273	775	1371	167	426	185	5197
Great Yarmouth	3	2	3	0	0	0	8
King's Lynn and West Norfolk	1	2	1	0	3	1	8
North Norfolk	31	42	34	1	11	7	126
Norwich North of River Wensum	290	186	212	16	75	45	824
Norwich South of River Wensum	443	276	377	41	150	119	1406
South Norfolk	636	288	514	81	234	44	1797

Responses by Norwich Postcode - **Eastern Route: Least Favourite Route**

Postcode District	Pink	Yellow	Blue	No preference	No response	None - no NDR	Total
NR1 Norwich	168	102	113	11	49	26	469
NR2 Norwich	148	113	139	11	54	79	544
NR3 Milecross	150	111	124	10	49	30	474
NR4 Eaton	152	76	154	20	43	18	463
NR5 New Costessey	239	89	142	30	109	27	636
NR6 Sprowston	533	166	300	35	106	45	1185
NR7 Sprowston	719	159	247	4	55	31	1215
NR8 Old Costessey	604	199	319	109	221	41	1493

Table 1

Parish Council	Favourite Western	Least Favourite Western	Favourite Eastern	Least Favourite Eastern
Attlebridge	-	-	-	-
Beeston	-	-	-	-
Costessey	Orange	Green		
Drayton	Orange		Pink	
Easton	Orange	Blue, Red, Brown, Purple	-	-
Felthorpe	Orange/Red	Green	-	-
Great & Little Plumstead	-	-	-	-
Hellesdon	Blue	Green	-	-
Honningham	-	-	-	-
Horsford	Green	-	-	-
Horsham St. Faith & Newton St. Faith	Supports adjusted route around airport			
Morton on the Hill	-	Purple/Brown	-	-
Postwick with Witton	Supports previous eastern link to Broadland Business Park			
Rackheath	-	-	Yellow	Blue
Ringland	Green	Red	-	-
Spixworth	No preference			
Sprowston	Supports principle of NDR			
Taverham	Red	All others	-	-
Thorpe St. Andrew	-	-	-	-
Weston Longville	Orange	Purple/Brown	-	-



KEY

- Western Purple Route
- Western Brown Route
- Western Brown Route Variation
- Western Purple Route Variation
- Western Red Route
- Western Blue Route
- Western Orange Route
- Western Green Route
- Eastern Pink Route
- Eastern Yellow Route
- Eastern Blue Route

Norfolk County Council
working with
Mott MacDonald
Mouchel Parkman

Sam Ralph C.Eng, MICE, MIHT
Director of Planning and Transportation
Norfolk County Council
County Hall
Martineau Lane
Norwich NR1 2SG

DRAWING TITLE
SCHEME ASSESSMENT REPORT
CONSULTATION ROUTE OPTIONS
LOCATION PLAN

REV.	DESCRIPTION	CHECKED	DATE

	INITIALS	DATE
SURVEYED BY	OS	2004
DESIGNED BY	NCC	2005
DRAWN BY	JGK	JAN 05
CHECKED BY	JB	02/05

DRAWING No. R1C093-R1-609
PROJECT TITLE: NORWICH NORTHERN DISTRIBUTOR ROUTE
SCALE: 1:60 000
FILE No. R1C093

ORIGINAL SIZE: A3

Norwich Northern Distributor Road
Statement on Justification of Need

1.0 Context

1.1. Norwich is a key regional city, the most significant business and financial services centre in the East of England and it is a top retail destination. It exerts a powerful economic, social and cultural influence over a wide area and with a population of around 200,000 the urban area is one of the largest in the East of England. The district of Norwich also has the highest job density of any local authority in the UK outside of London.

1.2. Investment in highway infrastructure has over the years been constrained in and around the city centre by the need to preserve the historic character of Norwich, which is a major factor in the city's success.

1.3. Traffic growth has been significant outside the city centre with over 500,000 trips per day recorded within the Norwich area. A large amount of development has and continues to take place in and around Norwich. Broadland Business Park, Longwater Employment Area, major superstores and the Norfolk and Norwich Hospital have all been developed outside the city centre. Major new housing developments are planned at Longwater and Cringleford and Norwich International Airport is well on target to double its throughput of passengers within the next 6/7 years.

1.4. These changes in land use, the increased car ownership and broader social changes have resulted in a much more dispersed pattern of trip making. These journeys are difficult for public transport to service, and the increase in traffic flows has been most marked on orbital routes. For example, on average 14,000 vehicles a day cross the River Wensum to the west of Norwich on unsuitable roads and this is expected to rise to over 18,000 vehicles a day by 2025. In the built-up area, traffic passes through residential areas creating significant problems in terms of noise, air quality, community severance and accidents. For example, in the Spixworth/Sprowston area, residential roads are predicted to carry up to 15,000 vehicles per day by 2025.

1.5. None of the forecast changes in traffic flows take account of the very significant growth planned for the Norwich area over the same period. The East of England Plan (EEP) allocates 46,000 additional houses to the Norwich sub-region for 2001-2021 - more than any other sub-region and of which 30,000 are in the Norwich Policy Area. This represents in excess of 20% increase over and above current allocations. Of these 30,000 new houses some 10,500 are expected in the Broadland District and 10,600 in the Norwich City area and although some of these houses are committed from existing local plan allocations, the Broadland District figures represent a significant increase in the north-eastern sector of the urban area. Traffic generation from 10,000 new houses could conservatively be expected to produce an additional 70,000 trips onto the network each day.

1.6. Incremental minor changes to the highway network simply cannot cope with this scale of growth.

1.7. The continued growth of Norwich is also seen as a driver for growth across much of the rest of Norfolk. Poor accessibility is likely to be a constraint on realising the

potential for growth in North and North East Norfolk. Journey times between Norwich (and locations south) and key market towns within the sub-region like Aylsham, North Walsham and Stalham are currently greatly extended by congestion to the north of the city.

2.0 Contribution to Norwich Sub Regional Policies

2.1. Consideration of an NDR as part of the Norwich Area Transportation Strategy (NATS) has been ongoing since 2001 when it was agreed to consider it as part of the roll forward of the Norfolk Structure Plan. This was, in many ways, pre-empted by the emergence of the Regional Spatial Strategy (RSS) and the Regional Transport Strategy (RTS) and in 2003 the County Council were advised by government to follow the RSS/RTS path rather than taking forward the Structure Plan separately. This has led to the NDR featuring in the draft East of England Plan as a regional transport scheme. The County Council expect to make a decision on a preferred route in September 2005.

2.2. The NDR is one of five schemes within the RTS as having regional priority status on the basis that it enables the release of development land identified for meeting the growth area housing targets. As well as meeting many of the objectives of the RTS through Policy T1, the NDR, as part of the area wide transport strategy for the Norwich area, also supports the role of Norwich as a regional interchange centre (Policy T2) and is consistent with other RTS polices such as Policy T5, T6, T7, T10, T11, T12, T13, T14 and T16.

2.3. The NDR within the Norwich Area Transportation Strategy could also facilitate consideration of road user charging in the future in line with Policy T15.

2.4. The NDR also features strongly in the Norwich Sub Regional Strategy and is seen as essential within the context of Policy NSR5 to:

- **Improve the quality of life in residential areas. It will achieve this by**:
  - reducing traffic on residential streets around the northern fringes of Norwich by up to 90% by introducing traffic management measures linked to NDR.
  - reducing noise and air pollution impacts on households within the northern suburbs.
  - reducing accidents by around 44 each year.
- **Aid rural regeneration. It will achieve this by**:
  - providing improved access from the strategic road network to North and North East Norfolk, including the market towns of Aylsham, Fakenham, North Walsham and Cromer.
  - reducing journey times across Norwich by up to 25%.
  - improving access to a large market (Norwich) for small businesses in rural areas.
  - reducing operating costs of rural businesses that operate in local or larger markets, thus improving competitiveness.
  - encouraging more businesses to locate in rural areas and market towns to the North and encouraging entrepreneurs from these areas to start up business there.

- **Enhance links to strategic employment areas. It will achieve this by**:
  - improving road access to sites such as Broadland Business Park and Longwater Employment Area.
  - opening up employment opportunities to a large proportion of Norfolk's workforce.
  - opening up new employment land at Norwich International Airport thus enabling expansion of airport related engineering and service businesses.
- **Facilitate urban expansion. It will achieve this by**:
  - providing access to planned growth in the north east of Norwich which has the potential of up to 70,000 additional trips each day onto the existing road network which is already at capacity in certain areas.
- **Improve access to Norwich International Airport. It will achieve this by**:
  - providing a good quality link to the strategic road network saving 40% on journey times by avoiding congested roads through the City Centre.
  - greatly expanding the catchment area for the Airport enabling it to grow at a faster rate, thus having a more significant impact on the local economy.

2.5. The NDR has undergone a rigorous appraisal following Department for Transport (DfT) methodology and is shown to yield significant economic benefits with Benefit to Cost Ratios in the range 2.7 to 4.2 depending on alignment. This places it in 'high value for money' category as set out in government guidance.

2.6. The County Council accepts the impact the NDR will have on the natural environment but considers it will still give good value for money overall. Set against this negative impact, the NDR provides opportunities to protect and enhance the built and historic environment of Norwich by removing through traffic and, as part of the comprehensive adopted transportation strategy, also gives opportunities to promote travel other than by the private car by enhancing public transport and other modes.

3.0 Contribution of NDR to Government Objectives for Transport

The NDR as part of NATS is also consistent with the Government's objectives for transport as outlined below:

3.1. Environment

3.1.1. The following NDR benefits are identified:

- Enhancements to city centre by removal of through traffic (some 20,000 movements per day).
- Improved air quality and noise effects along the existing congested routes within the built up area and outlying villages.
- Improvements in townscape in the northern suburbs of Norwich by removing significant amounts of traffic from it.
- Improvements in journey ambience and reduction in stress for drivers using the NDR.

- Reduced impact on existing roads within the Wensum Valley from rat-running traffic.
- The NDR also allows for additional enhancement to public transport options within the northern and central parts of the strategy area, which should also produce environmental benefits within the city centre, in relation to reduced severance, noise and air pollution.

3.1.2. The following NDR disbenefits are identified:

- NDR options involving a new crossing of the Wensum River will have adverse environmental effects on an SSSI and SAC, although some of these effects could be offset by suitable mitigation and compensation measures, such as substantial habitat creation.

3.2. Economy

3.2.1. The following NDR benefits are identified:

- An NDR could deliver significant economic benefits to consumers through congestion relief and journey time savings. In addition, it may give rise to moderate benefits in relation to driver stress.
- Although the NDR is not specifically intended to assist regeneration, parts of the NATS area are designated as regeneration areas. The City of Norwich is a 'Tier 3' Assisted Area. In addition, the North Norfolk Coast has European Structural Funds Objective 2 status. A new distributor road around the north of Norwich linking with the trunk road network would improve transport links to the North Norfolk Coast, which may ultimately assist regeneration of the Objective 2 area and assist economic development at Strategic Employment sites within the Norwich area.
- Norwich is an important tourist destination and is also a top 10 retail centre with a significant number of jobs dependent on these sectors. However, it has the most complete and extensive medieval street pattern in Europe and yet needs to cope with significant volumes of commuter, resident, tourist and cross city traffic. The NDR could enable Norwich to make a great deal more of its tourism and retail assets yet cannot do so due to its inability to cope with the existing and growing traffic volumes.
- The Norfolk Economic Growth Study recognises that Norfolk will experience a major jobs deficit. Norwich will be expected to accommodate the largest proportion of new jobs. However new developments and land allocations will be required to accommodate some of this planned growth and these will only be practical if brought forward in conjunction with an NDR.

3.2.2. There are no disbenefits to the wider economy from an NDR.

3.3. Safety

3.3.1. The following NDR benefits are identified:

- With the transfer of traffic from congested roads and existing accident cluster sites there is an estimated reduction of up to 44 accidents per year should the carriageway standard be D2AP.
- Allows traffic calming and traffic management to be carried out within residential areas creating a safer, more secure environment for residents.

3.3.2. There are no disbenefits to safety from an NDR.

3.4. Accessibility

3.4.1. The following NDR benefits are identified:

- An NDR affords substantial relief of severance in the northern suburbs of Norwich. In addition, the measures to reduce through traffic in the city centre should provide slight relief of severance.
- An NDR would provide additional transport links to any future housing growth in the north-east of the NATS area.
- An NDR would facilitate the creation of public transport links to these housing areas.
- An NDR will facilitate the expansion and better integration of the Park & Ride sites around Norwich.
- An NDR will improve accessibility to North and North East Norfolk.

3.4.2. There is some disbenefit to accessibility from an NDR for users of public footpaths but these can be mitigated through creation of new routes.

3.5. Integration

3.5.1. The following NDR benefits are identified:

- It would facilitate employment and development opportunities, and would assist in the achievement of housing growth targets for the Norwich Policy Area as well as facilitating development of the Airport. In particular it would support a major urban expansion in the north-east sector of the NATS area.

3.5.2. The following NDR disbenefits are identified:

- An NDR does not comply with land-use policies protecting the character and quality of the Wensum Valley, and the character and quality of the countryside to the north of Norwich. The NDR also raises issues in relation to biodiversity and habitat regulations.

3.6. Affordability and Financial Sustainability

3.6.1. Issues related to the NDR are:

- The present construction costs at 2002 prices of an NDR ranges from £116m to £135m.
- The NDR is likely to be funded from a number of sources including government funding.
- There is some scope for sections of the NDR to be part funded from development.
- The County Council has also expressed an interest in the Transport Innovation Fund for infrastructure projects.

3.7. Practicality and Public Acceptance

3.7.1. Issues related to the NDR are:

- Studies have identified that there a number of route options for an NDR that are practical in engineering terms.
- There is a high level of public support for an NDR, with 77.6% supporting or strongly supporting an NDR for Norwich and 13.9% opposed or strongly opposed to an NDR.
- A number of the Statutory Environmental Bodies have objected to the principle and detail of an NDR.

3.8. **Distribution and Equity**

3.8.1. Issues related to the NDR are:

- An NDR has the potential to improve conditions for people living in and around the north of Norwich, and for motorists throughout the NATS area.
- An NDR will also reduce congestion on some of the key radial routes used by bus services in the north of Norwich, assisting their efficient and reliable operation. It will therefore provide some benefits to public transport users, who are predominantly from socio-economic groups C2DE.

4.0 **Conclusion**

4.1. An NDR as part of an area wide transportation strategy, and implemented with a suite of complementary measures made possible by the freeing up of capacity on the existing road network, would help alleviate many of the problems and issues currently highlighted within the NATS area, in particular; congestion on the outer ring road; access to the airport; and accommodation of future housing requirements. It also gives rise to the most economic benefits and is the only strategy option to provide a strategic transport link to North Norfolk. However, whilst an NDR option affords the most benefits within the NATS area, it also gives rise to the most adverse environmental impacts of all options considered, some of which could not be mitigated.

4.2. Other outcomes to the aims and objectives of NATS, do not offer solutions to the full range of problems and issues. It is only the NDR option that answers the majority of these concerns. In addition, it is only the NDR option that frees up capacity on the existing road network to allow the maximum use of complementary measures to make improvements to public transport and provisions for non-motorised users.

4.3. The combination of an orbital bus route with the NDR option would ensure that the new NATS strategy is socially inclusive by improving accessibility to sites around the periphery of Norwich for both those with and without access to a car. The County Council are in the process of introducing an orbital bus route around Norwich.

Norwich Northern Distributor Road
Summary of Environmental Impacts

Summary

This note summarises the Significant Environment Impacts of the NDR and in particular looks at the legislative background to the protection of the Wensum Valley and highlights the implications for the Northern Distributor Road.

1. Introduction

1.1. In terms of the Environment the most significant issues relating to the NDR are:

- Impact on Wensum SAC (Special Area of Conservation), an internationally protected site;
- Impact on Wensum SSSI (Site of Special Scientific Interest), a nationally protected site;
- Impact on the Wensum Valley landscape, of county importance;
- Impact on historic landscapes north-east of Norwich, of county importance.

These issues are relevant both to the impact of the road when it is open and also to the impacts related to the construction of the road.

2. Impact on the Wensum SAC

2.1. The River Wensum is designated for the presence of the following species and habitat:

- Lampetra planeri : Brook Lamprey
- Cottus gobio : Bullhead
- Vertigo moulinsiana : Desmoulin's Whorl Snail
- Austropotamobius pallipes : White-clawed Crayfish
- Water course of plain to montane levels with Ranunculion fluitantis and Callitricho-Batrachion (water crowfoot) vegetation

The Desmoulin's Whorl Snail lives in the riparian vegetation and its presence may also depend on populations within the water meadows outside of the immediate river corridor. The other four species all live within the river channel.

2.2. This assemblage of species and habitat is sufficiently rare for the river channel to be protected under the Habitat Regulations. It is a site of European importance and national significance. It is the only river designated as an SAC in the East of England. Looking at it in comparative terms it has the importance of a Grade One listed building, of similar importance to Norwich cathedral.

2.3. The Norwich Northern Distributor Route (NNDR) Stage 2 Scheme Assessment Report (SAR) concludes that all the proposed western dual carriageway routes have the potential to have a major negative impact on the River Wensum SAC.

2.4. In practice it is very unlikely that Norfolk County Council will be able to demonstrate that the integrity of the SAC is not compromised by the road. Whether the project can proceed or not will therefore be governed by the findings of the appropriate assessment.

2.5. The features of the SAC could be damaged through:

- Situation (more sediment entering the river than the existing situation)
- Removal of the riparian vegetation
- Loss of channel habitat
- Chemical water pollution
- Changes to water flow
- Change in ground water levels
- Change in light levels (due to a new bridge)

2.6. This damage could occur either during the construction of the road or through its longer term operation and maintenance.

3. Impact on Wensum SSSI

3.1. The River Wensum and some surrounding land in the valley floodplain also carries the designations Site of Special Scientific Interest (SSSI). This means it is of national importance for its species and habitats.

3.2. The Countryside & Rights of Way Act 2000 imposes a duty on public bodies to take reasonable steps, consistent with the proper exercise of their functions, to further the conservation and enhancement of the features of SSSIs, for which the sites are of special interest.

3.3. Where a public body, having had regard to this duty, proposes carrying out operations likely to damage the special features on an SSSI, the Act requires that it must notify English Nature. This apples whether or not the operation is taking place on land included in an SSSI.

4. Impact on the Wensum Valley Landscape and Historic Parkland

4.1. The landscape of Norfolk river valleys and historic parkland is considered to be of local importance of its scenic and/or historic quality. It is protected from development, which would harm its appearance, character and historic integrity by policies in both the Norfolk Structure Plan and the District Local Plans.

4.2. The SAR concludes that all the proposed western dual carriageway routes have the potential to have a major negative impact on the Wensum Valley landscape. The eastern Blue route would also have a moderate negative

impact on arable land within the limits of historic parkland, which would require careful mitigation.

5. Legislation on Protection of Special Area of Conservation

5.1. Background

5.1.1. Over the past twenty years, species and habitats protection have become matters in respect of which nations have begun to agree certain obligations at international level.

5.1.2. One measure from the European Community in this respect is the 1992 Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna ("the Habitats Directive").

5.1.3. The principal aim of the Habitats Directive is to "promote the maintenance of bio-diversity by establishing across the community a network of special areas of conservation, collectively known as Natura 2000. In England, areas considered appropriate to comprise part of the Natura 2000 network are designated "Special Areas of Conservation" ("SAC's").

5.1.4. An area comprising part of the Wensum River Valley has recently been designated as an SAC under the Habitats Directive.

5.1.5. The United Kingdom is bound by the terms of the Habitats Directive and in order to implement the Directive's obligations has made the Conservation (Natural Habitats etc) Regulations 1994 (SI 1994/2716).

5.2. The Habitat Regulations

5.2.1. The Regulations afford protection to SACs as follows:-

1. The Regulations provide that before the relevant planning authority or the Secretary of State (who will normally call in for his own decision planning applications likely significantly to affect sites of international importance) grants planning permission for a project they must first establish whether the project (in this case, the road scheme):

   (a) is directly connected with or necessary to the management of the SAC for nature conservation purposes (which is unlikely in these circumstances);

   (b) is likely to have a significant effect on the SAC.

   In this respect, they are required to consult with and take account of advice from English Nature as to whether, in English Nature's opinion, the proposed development would significantly affect the ecological value for which the site was identified

2. If the relevant authority or Secretary of State (on advice from English

Nature) concludes that the road scheme is likely significantly to affect the SAC, they must then assess the road scheme's implications in view of the site's conservation objectives (i.e. the reasons for which the site was designated) so as to ascertain whether or not the scheme will adversely affect the integrity of the site. The person applying for the permission must provide such information as the Council may reasonably require. (The integrity of a site is the coherence of its ecological structure and function that enables it to sustain the habitat and/or the levels of populations of the species for which it was classified. The scope and content of an appropriate assessment will depend on the location, size and significance of the proposed project. English Nature will advise on a case-by-case basis.)

3. Having regard to English Nature's representations, if the decision-taker believes that the road scheme will adversely affect the integrity of the SAC, and this effect cannot be removed by planning conditions, or the effect of the scheme cannot be reduced to a level that does not affect the site's integrity, they must not grant planning permission except in the following circumstances:-

(i) They must firstly be satisfied that there are no alternative solutions, i.e. other suitable and available sites or different, practicable approaches which would have a lesser impact.

(ii) If there are no alternative solutions, and the site does not host a priority natural habitat type or species defined in the Habitats Directive, planning permission must not be granted unless the road scheme has to be carried out for imperative reasons of over-riding public interest, which may be of a social or economic nature. Such reasons would need to be sufficient to over-ride the ecological importance of the designation.

If the site hosts a priority habitat or species, and there are no alternative solutions, the only considerations which can justify the grant of planning permission are those which relate to human health, public safety or beneficial consequences of primary importance to the environment (or other reasons, which in the opinion of the European Commission are imperative reasons of overriding public interest).

If it is the local planning authority which is proposing to grant planning permission for the road scheme, notwithstanding this negative assessment, they must notify the Secretary of State who must firstly consent to the grant of the planning permission

4. If planning permission is then granted for a scheme which would adversely affect the integrity of an SAC, regulation 53 of the Habitat Regulations requires the Secretary of State to secure that any necessary compensatory measures are taken to ensure that the overall coherence of the network of Natura 2000 is protected. (For example, such an operation concerned the Cardiff Bay Development where habitat was lost as a result of construction of the barrage and other land near Newport was compulsorily purchased to

create a new compensatory wetland scheme.)

6. Conclusion

6.1. The legislation and policies, which protect the biodiversity and landscape of the Wensum Valley mean that a new road proposal, which includes a new dual carriageway crossing of the Wensum, would almost certainly be called in to face a public inquiry. It is very likely that English Nature and the Environment Agency (both statutory bodies) would be objectors. In addition, there would be non statutory objectors, including the Wildlife Trust and council for the Protection of Rural England (CPRE) to the scheme.

6.2. The strength of international protection for the river corridor SAC would be an important factor to be considered at an inquiry. An NNDR scheme, which included a new crossing of the River Wensum SAC, would face a high risk of failure, unless the County Council could prove beyond doubt that the scheme would have no adverse impact on the integrity of the site.

6.3. If the scheme is shown to have an adverse impact, the Secretary of State would need to first consider if:

- there are no other alternative solutions

If it is proved to be the case he/she would then need to decide whether:

- the scheme is in the overriding public interest – reflecting on economic, social and environmental concerns.

Norwich Northern Distributor Road

Statement on Traffic Analysis

Summary

The results of the traffic analysis into alternative NDR options to the west of Norwich show that:

(i) All route options achieve the objectives of the NDR of reducing congestion, constraining traffic using unsuitable roads and making other parts of NATS easier to deliver.

(ii) Traffic on the NDR between the A47 and A1067 reduces the further west you go. The lowest traffic flows occur on the single carriageway layouts for the Brown and Purple routes.

(iii) Without an NDR traffic through Hockering, Weston Longville, Ringland, Taverham and Costessey will increase significantly between now and 2025.

(iv) All NDR options, including the single carriageway options give relief to these roads, to varying degrees. The modelling assumes traffic management measures in place on roads through Ringland, Taverham and Costessey. The single carriageway options would contain growth on these roads to current levels.

(v) The outer western routes, by attracting less traffic, give less benefit to some existing roads. The impact is generally confined to the sector bounded by Dereham Road, IRR, Drayton Road. All other roads gain similar benefit irrespective of western option chosen.

1.0 Introduction

1.1. The traffic analysis carried out using the Saturn Traffic Model has been presented in the Traffic and Economic Assessment Report dated February 2005.

1.2. The appraisal shows that, generally, the closer to the built up area the road is, the more traffic will use it. For example, the Green route on the west carries more traffic than the other western routes, and the Pink route on the east carries more traffic than the other eastern routes.

1.3. The most pronounced difference in traffic flow is manifested in the western routes on the section between the A47 and the A1067. This paper sets out the reasons for the differences and the consequential impacts on the existing road network. In all cases, the analysis assumes traffic constraint in the city centre and traffic management on roads in the suburbs and across the river in conjunction with an NDR. The report does not consider the wider objectives of the scheme or its impacts.

2.0 Existing/Do Minimum Situation

2.1. There are currently significant rat-running problems between the A1067 and A47 caused by the congestion that occurs on radial roads and the ring road within the City. Existing flows and projected 'do minimum' flows are as set out in Table 1. All figures are Annual Average Daily Traffic (AADT) flows.

	2004 Existing	2025 Projected
Links through Hockering/Weston Longville	6200	9700
Links through Ringland/Costessey/Taverham	5800	9600
Links through Hellesdon	8700	8900
Outer Ring Road (Sweetbriar Road)	29400	32300

Table 1 : Do Minimum Flows

2.2. These flows indicate that without an NDR and with minimum intervention, there could be significant additional pressure on the cross valley links. The limited increase on the inner (urban) links indicate the capacity constraints that are already being reached on these roads.

3.0 Future Situation

3.1. Predicted daily flows on the various NDR western routes between the A47 and A1067 are shown in Table 2 below. All figures are in 2025.

Route	Traffic Flow
Purple	22100
Brown	21100
Red	30200
Blue	32400
Orange	34200
Green	38100
Additional Routes:	
Purple (single)	12900
Brown (single)	10400

Table 2 : NDR Flows in 2025

3.2. The traffic model assigns traffic to routes it calculates as being the cheapest between origins and destinations by giving each trip a generalised cost. In simple terms the quicker and shorter a route, the cheaper it will cost and the more likely motorists will make a decision to use it. By replicating the existing network in the traffic model each link is given this generalised cost. It should be borne in mind that the shortest route will not necessarily be the quickest or cheapest, especially when parts of the network are congested.

3.3. This reasoning, in the main, accounts for the differences in flow shown in Table 2. The two additional routes which are single carriageway alignments have different speed/flow relationships than the other routes which are dual carriageways. Speeds on these links will therefore be lower, journey times higher and idealised cost higher. Traffic, in modelling terms, will therefore choose to take a different route.

3.4. As an example, average journey times calculated from the A11 to the A140(N) via different routes is as set out below:

Route	Journey Time
1. Using Outer Ring Road	26 mins 48 secs
2. Using NDR Purple (W)	23 mins 43 secs
3. Using NDR Brown (W)	20 mins 48 secs
4. Using NDR Red (W)	18 mins 54 secs
5. Using NDR single Purple	26 mins 48 secs
6. Using NDR single Brown	27 mins 32 secs
7. Using NDR Yellow (E)	24 mins 26 secs

3.5. The question of concern is where does the traffic go and does an outer single carriageway route, for example, fail to meet the objectives of the NDR. The following sections seek to answer these questions.

4.0 Screenline Flows

4.1. In general terms, the same amount of traffic exists on the highway network irrespective of which route is chosen. In overall terms there are predicted to be over 500,000 trips each day on the network in 2025. Not all of these trips will use an NDR. Some are east/west trips and some are internal to the City Centre and Inner Ring Road.

4.2. Norwich is unique in having the river Wensum running east-west with a number of discrete points where traffic can cross. This helps to identify where traffic changes on the NDR impact on the network, by drawing a notional line east-west and looking at traffic flows crossing this 'screenline'.

4.3. For comparative purposes only, changes on the outer routes have been compared with a Red (west)/Blue (east) dual carriageway. The detailed changes in 2025 are shown on the attached Appendix 5a.

4.4. The screenline has been extended beyond the Norwich area to pick up long distance traffic that would make a decision on a route before it gets to an NDR. As an example, some traffic will decide to use the B1147 from Dereham onto the A1067 rather than the A47 and NDR.

4.5. The screenline picks up approximately 250,000 trips per day in 2025. There is a slight variation in totals which reflect in modelling terms people's reactions to increasing congestion in terms of retiming trips, changing mode or not travelling at all. Overall figures are within 2% of each other.

4.6. As part of the exercise, the option of only building a dual carriageway between the A1067 and the A47 at Postwick has also been examined and the results are also shown in Appendix 5a.

4.7. The conclusions that can be drawn from Appendix 5a are as follows:

Dual Carriageway Routes

(i) The difference in flow on the Red and Purple route, both built as dual carriageways, is 8100 vehicles per day.

(ii) The main changes on the network caused by this difference are:

- 1900 vehicles choosing to travel round to the east rather than the west of Norwich on the A47/NDR;
- 1900 vehicles choosing to travel via Sweetbriar Road/Mile Cross Road;
- 3100 vehicles choosing to use existing roads across the Wensum west of Outer Ring Road;
- 300 vehicles choosing wider alternative routes;
- minor miscellaneous changes make up the balance.

(iii) All route options give similar benefits to Hockering and Weston Longville.

(iv) Appendix 5a indicates the effects of the choice of western dual carriageway route are generally confined to the sector between the A47 Dereham Road, the Inner Ring Road and the A1067 Drayton Road.

Single Carriageway Routes

(i) The difference in flow on the Red dual and Purple single carriageway route is 17300 vehicles per day.

(ii) The main changes on the network caused by this difference are:

- 3300 vehicles choosing to travel round to the east rather than the west of Norwich on the A47/NDR;
- 3400 vehicles choosing to travel via Sweetbriar Road/Mile Cross Road;
- 5500 vehicles choosing to use existing roads across the Wensum west of the Outer Ring Road;
- 2800 vehicles choosing to use wider alternative routes;
- minor miscellaneous changes make up balance.

(iii) The benefit to Hockering/Weston Longville is the same as with dual carriageways.

(iv) As with the comparison between dual carriageway routes, the effects are generally confined to the section between the A47 Dereham Road, the Inner Ring Road, and the A1067 Drayton Road.

4.8. In each of the two above comparisons, compared to the Red route, flows on links across the Wensum Valley with either the Purple single or Purple dual increase despite traffic calming on the roads being in place.

Compared with the 'Do minimum' situation in 2025 the flows are:

	2025 Do Minimum	**2025 Red**	**2025 Purple Dual**	**2025 Purple Single**
Links through Ringland, etc	9600	900	3200	5800
Links through Hellesdon	8900	7400	8200	8000

These figures indicate that either of the Purple options still give relief to cross valley routes, but not as much as the Red route.

5.0 Other Network Effects

5.1. As well as 'screenline' effects, the overall picture of traffic movements have also been modelled. The effects have been presented in a number of Appendices which cover:

Appendix 5b – Flows on A47/NDR in 2025
Appendix 5c – Flows on Outer Ring Road in 2025
Appendix 5d – Flows on Inner Ring Road in 2025
Appendix 5e – Flows on Radial Roads outside Outer Ring Road in 2025
Appendix 5f – Flows on Radial Roads outside Inner Ring Road in 2025

5.2. These Appendices support the conclusions given in Section 4, namely:

(i) The further west the route is the more traffic will switch to the A47/NDR on the east side. This also applies to single carriageway options.

(ii) The impacts on the Outer Ring Road are substantially the same irrespective of which route is chosen, except for the sections along Sweetbriar Road and Boundary Road, which see slight increases as routes move westwards. Single carriageway options increase the impact on these parts of the Outer Ring Road.

(iii) The impacts on the Inner Ring Road are substantially the same irrespective of which route is chosen. There is a slight increase in impact on the Carrow Road/Bracondale area the further west the route goes. Changing to single carriageway on the Purple route makes little difference to flows.

(iv) The impacts on radial routes outside the Outer Ring Road are substantially the same irrespective of which route is chosen, including the single

carriageway options. The only difference of significance occurs on the Dereham Road which would see an increase of 5% between the Red route and a single carriageway Purple route.

(v) The impact on radial routes outside the Inner Ring Road are substantially the same irrespective of which route is chosen, including the single carriageway options. The only difference of significance occurs on the Dereham Road, which would see an increase of less than 4% between the Red route and a single carriageway Purple route.

6.0 Assessment of Partial Route

6.1. Alongside the full route option assessment, the impact of only constructing the NDR between the A1067 and the A47 at Postwick has also been examined.

6.2. By reference to the screenline in Appendix 5a, by not constructing the section between the A47(west) and A1067 the traffic which would have used the NDR diverts onto the other routes, such as:

- 3800 would use the A47 and NDR to the east;
- 4400 would use Sweetbriar Road/Mile Cross Road.
- 5900 would use routes across the Wensum to the West of the Outer Ring Road.
- 7500 would use existing roads through Hockering and Weston Longville.
- 3800 would use wider alternative routes.

6.3. On the wider network effects of not constructing the A47-A1067 link, the impacts are similar to those mentioned in Section 5 for the full routes, namely:

(i) Outer Ring Road effects are confined to Sweetbriar Road and Boundary Road. Some added pressure on Bracondale.

(ii) Inner Ring Road effects include additional traffic on Grapes Hill and Barn Road and the Carrow Road/Bracondale sections although these represent less than 5% of the flow expected on a full route.

(iii) On radial roads outside the Outer Ring Road, the major increase in traffic occurs on the Dereham and Drayton/Reepham Road, but again representing less than 5% of the flow expected with a full route.

(iv) On radial roads outside the Inner Ring Road the only increase of significance occurs on Dereham Road representing 5% of the flow expected with a full route.

7.0 Conclusions

7.1. This work indicates that the choice of route on the western side influences in general, the sector of the network bounded by the A47 Dereham Road, the Inner Ring Road and the A1067 Drayton Road.

7.2. The choice of western route has little impact on traffic flows on roads within and including the Inner Ring Road.

7.3. The choice of western route has little impact on existing roads to the east of the built up area.

7.4. In terms of meeting the objectives of the NDR, as set out in NATS, the following conclusions are drawn:

7.4.1. **Objective 1**: Reduce congestion on the network.

All route options have similar beneficial effects. Purple and Brown options (dual and single) have less beneficial impact on A47/Outer Ring Road/A1067 sector.

7.4.2. **Objective 2**: Constrain traffic using unsuitable roads.

All route options have similar beneficial effects. Purple & Brown options (dual and single) have less beneficial effects on existing roads across the Wensum Valley. The Purple and Brown options have more beneficial effect on existing roads through Weston Longville and Hockering.

7.4.3. **Objective 3**: Makes other parts of NATS easier to deliver

All route options give similar opportunities to, amongst others, improving public transport, developing walking and cycling to work and improving safety and accessibility. There would be a need to carry out improvements to Sweetbriar Road with the outer western routes.

7.4.4. **Objective 4**: Improve strategic access to North Norfolk & Norwich International Airport.

All route options offer similar opportunities, although the eastern approach becomes more attractive to some the further west you go.

7.4.5. **Objective 5**: Provide necessary infrastructure to deliver growth.

All route options offer similar opportunities as growth is focussed on the north-east of Norwich.

NATS Modelling of Norwich Northern Distributor Road - AADTs 2025 - Screenline -Wensum River

Site Ref.	Screenline (Wensum River)	AADTs							Changes in Flows vs Dual Red Blue			
		2004 Do Min	2025 Do Min	Dual Red/Blue	Dual 3/4 Red/Blue	Dual Purple/Blue	Single Purple+Dual 3/4 Red/Blue	Single Brown+Dual 3/4 Red/Blue	Dual 3/4 Red/Blue	Dual Purple/Blue	Single Purple+Dual 3/4 Red/Blue	Single Brown+Dual 3/4 Red/Blue
80	A47 (A140 - Postwick Eastbound)	21,200	27,600	29,700	31,600	30,600	31,300	30,800	1,900	900	1,600	1,100
81	A47 (A140 - Postwick Westbound)	20,100	30,300	32,200	34,100	33,200	33,900	34,000	1,900	1,000	1,700	1,800
82	Carrow Rd	24,700	25,300	24,400	25,000	24,600	24,800	24,900	600	200	400	500
83	Prince of Wales Rd	10,100	11,300	11,600	11,500	11,500	11,600	11,500	-100	-100	0	-100
84	Whitefriars	9,900	12,700	13,100	13,100	13,100	13,000	13,100	0	0	-100	0
85	Magdalene St/Wensum St	4,200	4,200	4,200	4,200	4,200	4,100	4,100	0	0	-100	-100
86	St Georges St	2,600	3,800	4,000	4,000	4,000	4,000	4,000	0	0	0	0
87	Duke St	5,100	6,200	5,700	5,700	5,700	5,700	5,700	0	0	0	0
88	St. Crispin Rd West of Pitt St	29,300	28,100	30,100	30,400	30,300	30,400	30,400	300	200	300	300
89	Mile Cross Rd/Heigham St	17,100	21,700	19,300	21,100	20,400	20,400	20,800	1,800	1,100	1,100	1,500
90	Sweet Briar Rd	29,400	32,300	29,000	31,300	29,600	31,000	30,400	2,300	600	2,000	1,400
91	Hellesdon Rd	8,700	8,900	7,400	8,100	8,200	8,000	7,900	700	800	600	500
92	Costessey Ln	2,900	2,800	800	2,600	2,100	2,500	2,800	1,800	1,300	1,700	2,000
93	Taverham Ln	1,600	3,800	100	3,400	1,100	3,200	3,000	3,300	1,000	3,100	2,900
94	Ringland Rd	1,300	3,000	0	100	0	100	300	100	0	100	300
95	Marl Hill Rd / Heath Rd North	6,200	9,700	700	8,200	0	0	0	7,500	-700	-700	-700
96	NDR	0	0	30,500	0	22,300	12,900	10,400	-30,500	-8,200	-17,600	-20,100
107	[2]B1147 Dereham	2,500	5,000	2,400	5,400	2,100	4,600	6,900	3,000	-300	2,200	4,500
108	[2]A1065 Swaffham - Fakenham	600	1,100	700	1,100	700	1,000	800	400	0	300	100
109	[2]A143 Gilingham - Belton	800	2,200	2,200	2,300	2,200	2,200	2,300	100	0	0	100
110	[2]A12	1,300	2,900	2,600	2,900	2,900	2,700	2,500	300	300	100	-100
	Total[1]	199,600	242,900	250,700	246,100	248,800	247,400	246,600	-4,600	-1,900	-3,300	-4,100

Notes:

[1]Small differences in total flows across the screenlines are due to local routing effects and varying volumes of induced traffic under different scenarios.

[2]Sites 107 to 110 are not total flows, but are longer distance trips interviewed in the Norwich area

APPENDIX 5a

NATS Modelling of Norwich Northern Distributor Road - AADTs 2025 - NSB A47

Site Ref.	NSB A47	AADTs							Changes in Flows vs Dual Red Blue			
		2004 Do Min	2025 Do Min	Dual Red/Blue	Dual 3/4 Red/Blue	Dual Purple/Blue	Single Purple+Dual 3/4 Red/Blue	Single Brown+Dual 3/4 Red/Blue	Dual 3/4 Red/Blue	Dual Purple/Blue	Single Purple+Dual 3/4 Red/Blue	Single Brown+Dual 3/4 Red/Blue
1	East of Postwick	40,300	51,400	53,000	52,900	53,200	52,800	52,500	-100	200	-200	-500
2&3	A146 - Postwick	41,300	57,900	61,900	65,700	63,800	65,200	64,800	3,800	1,900	3,300	2,900
4&5	A140 - A146	37,200	54,400	54,800	58,000	56,100	57,800	57,600	3,200	1,300	3,000	2,800
6&7	A11 - A140	43,100	62,800	59,000	59,400	58,700	59,500	59,100	400	-300	500	100
8&9	B1108 - A11	32,100	50,100	48,200	44,200	45,300	44,400	45,000	-4,000	-2,900	-3,800	-3,200
10&11	Longwater - B1108	36,200	50,300	51,600	43,300	45,900	44,400	44,100	-8,300	-5,700	-7,200	-7,500
12	Honingham to Easton Roundabout	33,100	41,500	37,600	37,500	42,300	39,200	38,900	-100	4,700	1,600	1,300
13	West of Honingham	27,300	35,300	37,800	34,900	39,600	35,700	31,200	-2,900	1,800	-2,100	-6,600
	Northern Distributor Road											
97	A47 - A1067			30,500	-	22,300	12,900	10,400	-	-8,200	-17,600	-20,100
98	A1067			33,200	-	25,600	16,800	15,900	-	-7,600	-16,400	-17,300
99	A1067 - Reepham Rd			27,100	13,000	21,300	15,400	14,100	-14,100	-5,800	-11,700	-13,000
100	Reepham Rd - A140			24,000	17,800	22,200	18,600	17,700	-6,200	-1,800	-5,400	-6,300
101	A140 - Buxton Rd			30,200	28,600	29,500	28,600	28,000	-1,600	-700	-1,600	-2,200
102	Buxton Rd - B1150			30,200	28,600	29,500	28,600	28,000	-1,600	-700	-1,600	-2,200
103	B1150 - A1151			34,400	35,300	34,800	35,300	34,900	900	400	900	500
104	A1151 - Salhouse Rd			36,400	37,400	37,200	37,400	37,500	1,000	800	1,000	1,100
105	Salhouse Rd - Plumstead Rd			34,100	35,400	34,800	35,300	35,300	1,300	700	1,200	1,200
106	Plumstead Rd - A47			30,000	33,400	31,600	32,800	32,800	3,400	1,600	2,800	2,800

APPENDIX 5b

NATS Modelling of Norwich Northern Distributor Road - AADTs 2025 - Outer Ring Road

Site Ref.	Outer Ring Road	AADTs							Changes in Flows vs Dual Red Blue			
		2004 Do Min	2025 Do Min	Dual Red/Blue	Dual 3/4 Red/Blue	Dual Purple/Blue	Single Purple+Dual 3/4 Red/Blue	Single Brown+Dual 3/4 Red/Blue	Dual 3/4 Red/Blue	Dual Purple/Blue	Single Purple+Dual 3/4 Red/Blue	Single Brown+Dual 3/4 Red/Blue
14	Sweet Briar Rd	29,400	32,300	29,000	31,300	29,600	31,000	30,400	2,300	600	2,000	1,400
15	Boundary Rd	27,700	32,700	28,700	30,200	29,000	30,000	29,900	1,500	300	1,300	1,200
16	Mile Cross Ln	22,100	23,300	23,200	23,000	23,200	23,000	23,000	-200	0	-200	-200
17	Chartwell Rd	30,800	30,900	30,900	30,800	30,800	30,900	30,800	-100	-100	0	-100
18	Mousehold Ln	27,600	27,400	26,600	26,300	26,400	26,500	26,400	-300	-200	-100	-200
19	Heartsease Ln	19,000	21,100	22,900	23,300	23,000	23,000	23,000	400	100	100	100
20	Harvey Ln	7,700	9,300	8,800	8,900	8,700	8,700	8,700	100	-100	-100	-100
21	Bracondale	29,500	29,800	28,600	29,600	29,000	29,300	29,500	1,000	400	700	900
22	Martineau Ln	27,400	28,900	30,100	30,000	30,000	29,900	30,100	-100	-100	-200	0
23	Barrett Rd East of Hall Rd	19,700	22,300	22,500	22,400	22,500	22,500	22,400	-100	0	0	-100
24	Barret Rd West of Hall Rd	14,500	19,500	18,600	18,300	18,500	18,500	18,400	-300	-100	-100	-200
25	Lakenham Rd	14,300	18,700	18,200	18,200	18,300	18,200	18,100	0	100	0	-100
26	Daniels Rd	22,200	25,200	25,000	25,000	25,100	25,000	25,000	0	100	0	0
27	Colman Rd	19,000	18,900	18,500	18,600	18,600	18,800	18,600	100	100	300	100
28	Guardian Rd	24,900	27,500	27,100	26,700	27,500	27,000	26,800	-400	400	-100	-300

APPENDIX 5c

NATS Modelling of Norwich Northern Distributor Road - AADTs 2025 - Inner Ring Road

Site Ref.	Inner Ring Road	AADTs							Changes in Flows vs Dual Red Blue			
		2004 Do Min	2025 Do Min	Dual Red/Blue	Dual 3/4 Red/Blue	Dual Purple/Blue	Single Purple+Dual 3/4 Red/Blue	Single Brown+Dual 3/4 Red/Blue	Dual 3/4 Red/Blue	Dual Purple/Blue	Single Purple+Dual 3/4 Red/Blue	Single Brown+Dual 3/4 Red/Blue
29	Barn Rd Northbound	13,100	13,200	12,600	13,200	12,900	12,800	13,000	600	300	200	400
30	Barn Rd Southbound	17,300	20,500	19,800	20,200	20,200	20,000	20,100	400	400	200	300
31	St. Crispin Rd West of Pitt St	24,700	22,800	24,800	24,800	24,800	24,900	24,800	0	0	100	0
32	St. Crispin Rd East of Pitt St	27,600	28,000	28,600	28,400	28,200	28,500	28,300	-200	-400	-100	-300
33	Barrack St	20,800	21,000	21,400	21,400	21,400	21,200	21,400	0	0	-200	0
34	Riverside Rd	13,400	12,900	13,200	13,300	13,500	13,300	13,400	100	300	100	200
35	Koblenz Ave	9,800	10,100	9,900	10,100	10,000	10,000	10,000	200	100	100	100
36	Carrow Rd	24,700	25,300	24,400	25,000	24,600	24,800	24,900	600	200	400	500
37	King St	25,500	24,600	24,500	25,100	24,600	24,800	25,000	600	100	300	500
38	Bracondale	16,200	18,800	17,600	18,400	18,200	18,400	18,300	800	600	800	700
39	Queens Rd	16,900	19,500	19,400	19,500	19,100	19,300	19,200	100	-300	-100	-200
40	Chapelfield Rd	30,900	33,000	32,800	33,000	32,900	32,900	32,800	200	100	100	0
41	Grapes Hill	29,500	30,500	30,000	30,800	30,400	30,400	30,300	800	400	400	300

APPENDIX 5d

NATS Modelling of Norwich Northern Distributor Road - AADTs 2025 - Radial Routes - Outside ORR

Site Ref.	Radial Routes - Outside Outer Ring Road	AADTs							Changes in Flows vs Dual Red Blue			
		2004 Do Min	2025 Do Min	Dual Red/Blue	Dual 3/4 Red/Blue	Dual Purple/Blue	Single Purple+Dual 3/4 Red/Blue	Single Brown+Dual 3/4 Red/Blue	Dual 3/4 Red/Blue	Dual Purple/Blue	Single Purple+Dual 3/4 Red/Blue	Single Brown+Dual 3/4 Red/Blue
42	Trowse Bypass	34,500	38,800	40,000	39,700	39,700	39,600	39,600	-300	-300	-400	-400
43	Long John Hill	5,100	8,500	8,600	8,500	8,500	8,500	8,400	-100	-100	-100	-200
44	Hall Rd	6,100	10,300	9,300	8,900	9,000	9,100	9,000	-400	-300	-200	-300
45	Ipswich Rd	16,800	20,700	21,000	20,800	21,100	21,000	20,800	-200	100	0	-200
46	Newmarket Rd	25,000	28,500	28,500	27,900	28,900	28,000	27,800	-600	400	-500	-700
47	Unthank Road	3,500	3,700	3,600	3,600	3,500	3,600	3,600	0	-100	0	0
48	South Park Avenue	4,300	5,800	6,000	5,900	5,800	5,900	5,900	-100	-200	-100	-100
49	North Park Avenue	800	1,800	2,000	1,900	1,900	2,000	1,900	-100	-100	0	-100
50	The Avenues	3,200	4,600	4,800	4,700	4,400	4,700	4,800	-100	-400	-100	0
51	Earlham Rd	15,200	14,500	14,000	14,500	13,900	14,400	14,500	500	-100	400	500
52	Bowthorpe Rd	7,000	8,400	8,600	8,600	8,400	8,600	8,700	0	-200	0	100
53	Dereham Rd	20,300	22,900	22,700	23,800	22,600	23,900	24,400	1,100	-100	1,200	1,700
54	A1067 Drayton High Rd	15,000	17,400	16,200	16,700	16,700	16,400	16,200	500	500	200	0
55	Reepham Rd	7,700	8,900	8,400	8,900	8,800	8,600	8,700	500	400	200	300
56	A140 Cromer Rd	17,900	18,100	17,900	17,500	17,900	18,000	18,000	-400	0	100	100
57	St Faiths Rd	11,300	13,600	10,700	10,900	10,800	10,700	10,700	200	100	0	0
58	Spixworth Rd	5,200	5,500	4,900	4,900	5,000	4,900	4,900	0	100	0	0
59	B1150 North Walsham Rd	15,200	16,000	16,500	16,600	16,700	16,300	16,400	100	200	-200	-100
60	A1151 Wroxham Rd	15,500	17,100	16,900	17,000	17,000	16,900	17,000	100	100	0	100
61	Salhouse Rd	12,200	14,400	13,900	14,400	14,200	14,000	14,200	500	300	100	300
62	Plumstead Rd	11,200	11,500	12,300	12,100	12,300	12,200	12,200	-200	0	-100	-100
63	Yarmouth Road	11,000	15,900	15,000	14,700	15,000	14,800	14,800	-300	0	-200	-200

APPENDIX 5e

NATS Modelling of Norwich Northern Distributor Road - AADTs 2025 - Radial Routes - Outside IRR

Site Ref.	Radial Routes - Outside Inner Ring Road	AADTs							Changes in Flows vs Dual Red Blue			
		2004 Do Min	2025 Do Min	Dual Red/Blue	Dual 3/4 Red/Blue	Dual Purple/Blue	Single Purple+Dual 3/4 Red/Blue	Single Brown+Dual 3/4 Red/Blue	Dual 3/4 Red/Blue	Dual Purple/Blue	Single Purple+Dual 3/4 Red/Blue	Single Brown+Dual 3/4 Red/Blue
64	Dereham Rd	14,400	16,800	16,200	17,100	16,900	16,800	16,900	900	700	600	700
65	Heigham St	4,500	6,000	5,800	5,600	5,700	5,600	5,800	-200	-100	-200	0
66	Oak St	4,300	4,800	5,500	5,600	5,600	5,500	5,600	100	100	0	100
67	Pitt St	15,300	17,700	16,500	16,200	16,400	16,500	16,200	-300	-100	0	-300
68	Magdalene St	4,600	5,200	5,000	5,100	5,100	5,100	5,000	100	100	100	0
69	Bull Close Rd	13,400	14,800	15,000	15,300	14,900	15,100	15,100	300	-100	100	100
70	Silver Rd	6,900	5,500	5,600	5,600	5,500	5,600	5,500	0	-100	0	-100
71	Kett's Hill	14,100	16,700	15,400	15,300	15,400	15,300	15,400	-100	0	-100	0
72	Thorpe Rd	4,900	7,100	7,200	7,200	7,200	7,300	7,300	0	0	100	100
73	Carrow Rd	24,700	25,300	24,400	25,000	24,600	24,800	24,900	600	200	400	500
74	City Rd	5,500	5,500	5,900	5,700	5,700	5,600	5,600	-200	-200	-300	-300
75	Hall Rd	6,500	9,300	9,400	9,200	9,200	9,200	9,300	-200	-200	-200	-100
76	Brazen Gate	7,400	9,800	9,700	9,900	9,900	9,900	9,900	200	200	200	200
77	St Stephens Rd	22,800	24,900	24,300	24,000	24,200	24,500	24,200	-300	-100	200	-100
78	Unthank Rd	12,000	12,400	13,000	12,700	12,900	12,900	12,900	-300	-100	-100	-100
79	Earlham Rd	15,500	17,900	18,400	18,200	18,400	18,200	18,500	-200	0	-200	100

APPENDIX 5f

Planning & Transportation Department
County Hall
Martineau Lane
Norwich
Norfolk NR1 2SG

Director : Sam Ralph

Tel: 01603 222143
Fax: 01603 223207
Minicom: 01603 223833
Email: norwich.transport@norfolk.gov.uk

Please ask for: A member of the help team
Contact number: 01603 223113

Your Ref:
My Ref: TE/R1C093/FD

7 June 2005

Dear Resident

Norwich Northern Distributor Route

Over the last three years the County Council has been giving consideration to a new road around the built-up area of Norwich – the Northern Distributor Route.

In November 2004, the County Council sent out leaflets to local residents showing a number of options for the route and information about each one. It also contained a questionnaire to fill in and return. I enclose a copy of the leaflet for you to refer to if you need to.

Overall, we received more than 10,000 responses, some of which expressed concerns about aspects of the routes. In March this year, the County Council decided to defer making a decision on a preferred route in order to allow more consideration to be given to these concerns.

The single biggest issue to come out of the consultation in 2004 was how best to join the A47 to the west of Norwich with the A1067 Fakenham Road while minimising the impact on the landscape and the Wensum river valley, which has protection under British and European legislation. One way of doing this would be to use the existing bridge on the A1067 at Attlebridge to cross the River Wensum, and to construct a new road around Weston Longville as a single carriageway link to the A47.

The County Council has looked at this suggestion and has drawn up two single-carriageway routes (shown on the attached plan) which follow similar lines to the Purple and Brown routes put forward in the 2004 consultation. The County Council is now inviting local people to send in their comments on these alternatives.

Continued….

To The Resident

To help you, we have also included some information about each option. In addition, there will be an exhibition at **Weston Longville Parish Hall** on **Thursday, 16 June** between 12 noon and 7 pm. Officers from the County Council will be there to answer any questions you might have.

I would stress that the County Council has not rejected any of the routes put forward in the 2004 consultation and wishes to hear the views of local communities about these two alternatives before making a decision. I therefore enclose a pre-paid envelope and ask you to let us have your comments by **Friday, 8 July**.

All being well, the County Council hopes to make a decision on a preferred route on Monday, 5 September.

Thank you for your interest.

Yours sincerely

Sam Ralph
Director of Planning and Transportation

The information in this leaflet should be read alongside the details contained in the 2004 consultation leaflet. A copy is enclosed for your use.

Both single carriageway options generally follow the alignments of the dual purple and brown routes shown previously. Between Morton and Taverham on the A1067, the single carriageway routes follow the existing road, which will remain unchanged. Information on the two single carriageway options between the A47 and A1067 is given below.

Purple Single Carriageway Route:

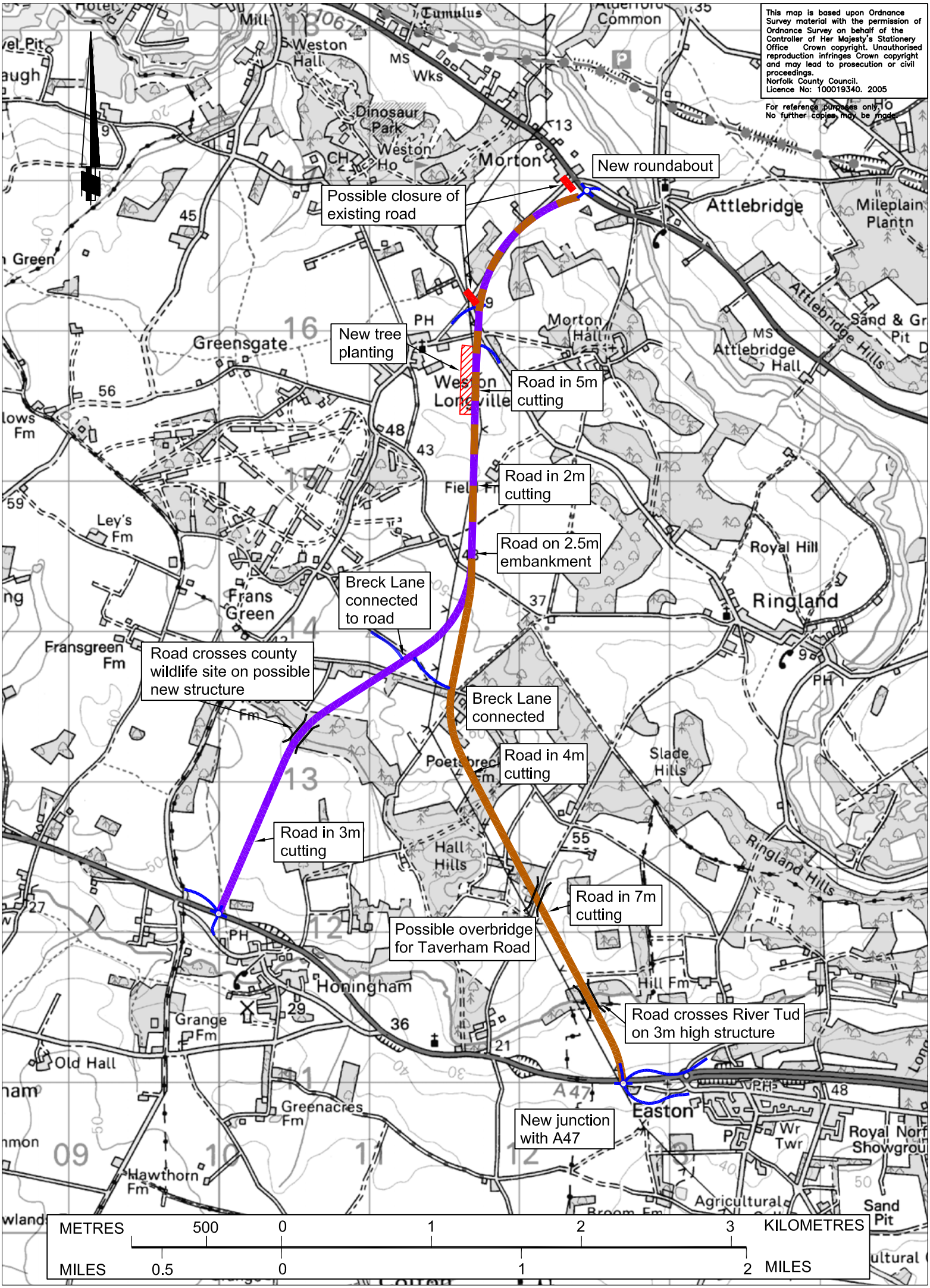
- It is approximately 5.7km long.
- It would cost approximately £19m to build, £16m less than the dual Purple route.
- There would be no houses within 100m of the road.
- The road would carry 12900 vehicles per day, in 2025.
- It is predicted that the road would remove all through traffic from existing roads through Hockering and Weston Longville.
- The road would have no direct impact on the River Tud.
- The road would cross a County Wildlife Site off Wood Lane.
- The road would be in cutting (5m below ground level) to the east of Weston Longville and Weston Green, shielding it from nearby properties.
- However, within the outer ring road, this option would have similar benefits to other dual options.

Brown Single Carriageway Route

- It is approximately 6.3km long.
- It would cost approximately £20m to build, £19m less than the dual Brown route.
- There would be no houses within 100m of the road.
- The road would carry 10400 vehicles per day, in 2025.
- It is predicted that the road would remove all through traffic from existing roads through Hockering and Weston Longville.
- The road would require a new crossing over the River Tud.
- The road would cross the River Wensum Pastures County Wildlife Site.
- The road would run close to the listed buildings of Morton Hall and Morton Lodges.
- The road would run close to the Grade I listed St Peter's Church near Easton.
- The road would be in cutting (5m below ground level) to the east of Weston Longville and Weston Green, shielding it from nearby properties.
- The road would be less effective in removing traffic from the area bounded by Dereham Road, Drayton Road and Sweetbriar Road than the dual option.
- However, within the outer ring road, this option would have similar benefits to other dual options.

If you wish to comment on these two options, please send your response in the pre-paid envelope to the Director of Planning and Transportation by Friday 8 July.

Thank you.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New roundabout
Possible closure of existing road
New tree planting
Road in 5m cutting
Road in 2m cutting
Road on 2.5m embankment
Breck Lane connected to road
Road crosses county wildlife site on possible new structure
Breck Lane connected
Road in 4m cutting
Road in 3m cutting
Road in 7m cutting
Possible overbridge for Taverham Road
Road crosses River Tud on 3m high structure
New junction with A47
Attlebridge
Morton
Greensgate
Ringland
Royal Hill
Honingham
Easton
Old Hall
Hall Hills
Slade Hills
Ringland Hills
Attlebridge Hills
METRES 500 0 1 2 3 KILOMETRES
MILES 0.5 0 1 2 MILES

Norwich Northern Distributor Road –Weston Longville Consultation

Summary of Consultation Results

In October 2004 Norfolk County Council (NCC) carried out a Public Consultation on the multiple routes being considered for the proposed Norwich Northern Distributor Route (NDR). The consultation asked respondents to consider a number of route options for the NDR and select which western option and which eastern option they would prefer to make up a full route. Due to the responses given to this consultation Norfolk County Council decided in February 2005 to defer making a Preferred Route Announcement on the NDR to allow further work to be undertaken to assist in route selection. This work included additional consultation with local groups on variations to the consultation routes.
In June 2005 residents within the Weston Longville area, and Parish Councils adjacent to it, were consulted further on the NDR variation proposals consisting of the single carriageway options on the Brown and Purple route alignments.

Table 1 below lists the number of responses received for the 2005 Weston Longville consultation.

Table 1: Number of Responses

Format	Number of responses
Comments sheet	17
Letter/Email	67
2004 NDR Questionnaire	16
Weston Longville postcard	98
Total	**198**

The majority of comments on letters and other responses were about the negative impacts of the Brown and Purple routes. Considering all responses (apart from the Weston Longville Postcards):-

- 21 responses stated the Purple route would not solve the problem or would make traffic worse,
- 17 respondents stated the Brown route would not solve the problem or would make traffic worse,
- 15 respondents stated the NDR in general would not solve the problem or would make traffic worse,
- 14 respondents stated the routes would cause environmental damage,
- 13 respondents stated the routes were too long.

In addition, four alternative alignment suggestions were received during the consultation period.

The 98 postcards received expressed opposition to the Purple and Brown single or dual carriageways for the NDR. They stated that they are too far west, will ruin the

countryside, create rat-runs, and are not wanted by constituents nor justified by NCC's evidence.

Responses received from key organisations:-
The "Too Far West" Action Group provided a detailed presentation putting forward the case against the Purple and Brown single and dual carriageway NDR routes. They have given comment on traffic, links to the A47, solving the problem, environmental impacts, community impacts, economic benefits, cultural heritage and archaeological assessments, arriving at the conclusion that the Purple and Brown routes are unviable.

Weston Longville Parish Council expressed opposition to the NDR in general, but to the Purple route in particular. They preferred the Orange route, which would contain the urban growth and link with the Southern Bypass in a logical place.

Marlingford and Colton Parish Council suggest the Blue, Red, Brown and Purple routes may increase rat-running and other impacts in parishes south of the A47. They conclude that only the Green or Orange routes would form a coherent ring road around Norwich connecting with the Southern Bypass.

Honingham Parish Council are opposed to the Purple and Brown routes, suggesting they are being driven by English Nature and Environment Agency objections to a new bridge over the Wensum. The Parish Council prefers the Orange or Green routes.

Easton Parish Council feels that the Purple and Brown routes are too far out and will not meet the need for a NDR, and that a single carriageway will require dualling in the future. They are concerned about access to Easton from the Brown route, and overall expressed a preference for the Orange route.

Hockering Parish Council believes the Purple and Brown routes will not fulfil the objectives of the NDR, are too far west, and will encourage greenfield development. They support the route closest to the city, and would prefer Wood Lane to be a designated lane for two-way HGV traffic as opposed to Hockering's Heath Road.

A letter was submitted by M Dewsbury (Councillor for Easton Ward) on behalf of Parish Councillors from Barford and Wramplingham, Barnham Broom, Great Melton, Carleton Forehoe and Kimberley, and Marlingford and Colton. The letter stated that the Parish Councils listed, and South Norfolk District Council, were concerned over the "inevitable" increase in rat-running that would occur if the Purple or Brown single routes were constructed. The letter also stated that the councils listed supported the need for an NDR, but felt that the Orange Route was the more obvious choice.

Commentary on "Too Far West – The Case against the Purple and Brown Single and Dual Carriageway NDR Routes"

Replies to points made:

3.1 Impact on Traffic Congestion in 2025 of the Purple and Brown routes

Cost of scheme	There are many schemes across the country, which are well in excess of the cost of the NDR. There are many schemes within the government's own targeted programme which have costs in excess of the NDR and benefit/cost ratios less than the NDR. The NDR gives good Value For Money.
Route length	From end to end, the Purple route measures 14.65km, the Red route measures 12.05km, and the Green route measures 6.82km.
Value For Money	All route options give good value for money. The inner routes give better benefit/cost ratios.
Objectives	All route options achieve the objective of removing traffic from the city centre and existing rat-runs , and gives access to north Norwich and north Norfolk. The economic assessment gives a value of benefits of the NDR of up to £600 million over a 60 year period – this is a measure of the time saved by traffic on the network.
Traffic effects	Refer to 'Statement of Traffic Analysis' for full picture on traffic effects. Figures don't take account of 19,000 trips a day taken out of the City Centre – they have to go somewhere. Without the 'safety valve' of the NDR, more traffic would use unsuitable roads. Potential for creating rat-runs via Berry's Lane has been modelled. Very small potential, and dependant on which route is taken.

3.2 Journey times

These reflect in the economic case for the NDR which with BCR's in the range from 2.7 to 4.2 give very good value for money.

3.3 Single carriageway versus dual carriageway

Statement quoted refers to NDR as a whole. Traffic predictions for Purple/Brown as single carriageway indicate flows well within capacity of single carriageway.

Junction arrangements would be subject to local discussions and designed to avoid creating new rat-runs.

Purple/Brown single would contain flows on cross-valley roads to existing flows, and would absorb future growth.

3.4 Links to A47

The 21,000 figure quoted is a 2025 figure assuming the A47 is dualled by this time. Dualling or not dualling the A47 makes little difference to the Value For Money case for the NDR.

3.5 Solve the right problem

All Western routes give similar benefits to the City Centre. All options have been modelled with traffic restraint in the City Centre, on residential roads around Norwich and on existing cross-valley roads.

Traffic from north Norfolk to the south will have the choice of either going east or west from the A140 Aylsham Road. Their decision will depend on where their destination is.

4 Ecology and Nature Conservation

This information in this section forms part of the County Council's assessment. The information on water quality, invertebrates and crustaceans relates to the River Wensum and is particularly relevant to the impact on the SAC.

5 Community effects

5.1 Noise pollution

The figure of 21,000 refers to dual carriageway layout. A single carriageway layout would carry between 10,000 - 12,000 vehicles per day. The existing A1067 carries approximately 15,000 vehicles a day on Drayton High Road in 2004, and this would rise to 16,400 vehicles a day on Drayton High Road in 2025 if a single carriageway NDR were built.

The road will be in an 5 metre cutting where it passes closest to Weston Longville, and this will

		have a significant effect in reducing noise levels.
5.2	Landscape and visual intrusion	These impacts are taken into account in the County Council's assessment.
5.3	Severance and loss of access	Where existing rights of way are severed we attempt to maintain links, and can CPO land to create new links.
5.4	Rural/urban balance	Unclear which small towns and villages they mean. Towns in north Norfolk and Broadland will benefit by encouraging businesses to locate there with better links to the rest of the County and Country. By removing rat-running traffic from communities they will become safer and more attractive for residents. Linked to Park & Ride, the NDR will give greater flexibility for people wanting to access Norwich.
5.5	More roads more traffic	None of the routes will create a new urban boundary, just as the Southern Bypass hasn't. The housing growth pressures in the north east of Norwich could reach the NDR depending on which route is chosen.
5.6	Planning & Development Consequences	This is not correct. The government, through the East of England Plan, is proposing 30,000 new houses within the Norwich Policy Area between 2001 and 2021. 10,000 of these are earmarked for Broadland in the north-east sector of Norwich. These will mainly have to be on greenfield sites. The NDR will allow this to happen in a sustainable way as an extension of the urban fringe. The NDR is likely to be funded from a number of sources with government funding the main contributor. The government's own advice on Value For Money makes the NDR a good candidate for government support.
6	**Economic benefit**	
		Using government advice on traffic growth, traffic in the Norwich area is expected to grow by 50% up to 2025.
7	**Cultural and historic heritage**	
		Morton Lodge would only need to be demolished if the dual carriageway option is chosen.
8	**Archaeological assessment**	
		The possibility of archaeological finds exists on all routes. There are no registered sites affected by the Purple or Brown routes.

Factors in Route Selection — APPENDIX 8
Western Routes

Issue	Green	Orange	Blue
Noise and Air Pollution	536 properties within 300m of the route; 235 within 200m; 1 within 50m	180 properties within 300m of the route; 50 within 200m; 6 within 50m	156 properties within 300m of the route; 36 within 200m; 3 within 50m
Landscape	Substantial impact on attractive river valley landscape. Substantial visual intrusion particularly on Costessey.	Substantial impact on very attractive river valley landscape. Substantial visual impact on the edge of Taverham.	Substantial impact on very attractive river valley landscape. Substantial visual impact on the edge of Taverham.
Biodiversity	Substantial impact on SAC & SSSI features. Significant impact on local biodiversity habitats and species.	Substantial impact on SAC & SSSI features. Significant impact on local biodiversity habitats and species. Substantial impact on Ringland Hills and wet fen/woodland in Wensum valley.	Substantial impact on SAC & SSSI features. Significant impact on local biodiversity habitats and species. Substantial impact on Ringland Hills and wet fen/woodland in Wensum valley.
Water Quality	Substantial impact on Tud valley, increased flood risk and change in river regime. With viaduct across whole of floodplain minimal impacts on river Wensum system.	Moderate impact on river Tud (depending on mitigation measures). With viaduct across whole of floodplain minimal impacts on river Wensum system.	Moderate impact on river Tud (depending on mitigation measures). With viaduct across whole of floodplain minimal impacts on river Wensum system.
Community and Other Severance	Separates Old Costessey from New Costessey, and Drayton from Hellesdon. Severs 1 bridleway and bridges 1 cycleway. Severs 3 minor roads and intersects 4 at roundabouts.	No communities are severed. Severs 1 RUPP, meets 1 RUPP at a roundabout and bridges 1 cycleway. Severs 4 minor roads, intersects 4 at roundabouts and is bridged by 2 others.	No communities are severed. Severs 1 RUPP meets 1 RUPP at a roundabout and bridges 1 cycleway. Severs 5 minor roads, intersects 3 at roundabouts and is bridged by 2 others.
Cultural Heritage	Impact on cropmark; impact not fully known as associated finds are buried.	Unknown impact on buried archaeological finds. Substantial impact on setting and character of grade II listed building.	Unknown impact on buried archaeological finds.
Cost of works and land *	£47.1M	£66.7M	£59.0M
Cost Benefit Analysis (based on whole route)	BCR = 4.2	BCR = 3.5	BCR = 3.7
Traffic Relief	Would attract 29,000-38,000 vehicles per day from existing roads	Would attract 28,000-34,000 vehicles per day from existing roads	Would attract 28,000-35,000 vehicles per day from existing roads
Buildability/ Deliverability	Construction of Wensum viaduct with minimal disruption to floodplain	Difficult to access area between Tud & Wensum. Constraints through Longwater Business Park & junction. Construction of Wensum viaduct with minimal disruption to floodplain	Difficult to access area between Tud & Wensum. Construction of Wensum viaduct with minimal disruption to floodplain
Disruption during Construction	Construction of junction with A47 and along A1074 will result in traffic delays. Access for construction would be through built-up areas	Construction of junction with A47 will result in traffic delays. Access for construction would be across environmentally sensitive areas.	Construction of junction with A47 will result in traffic delays. Access for construction would be across environmentally sensitive areas.

* Works costs at October 2002 prices Land at September 2004 prices

Issue	Red	Brown Dual (using Reepham Road)	Brown Dual (using A1067)
Noise and Air Pollution	52 properties within 300m of the route; 9 within 200m; 0 within 50m	93 properties within 300m of the route; 49 within 200m; 6 within 50m	97 properties within 300m of the route; 42 within 200m; 9 within 50m
Landscape	Substantial impact very attractive woodland and river valley landscape. Substantial visual intrusion on the edge of Ringland.	Largely open farmland, moderate impact reducing to slight in design year. Moderate visual intrusion on Morton, Attlebridge and Western Longville. Severe impact on Marriott's Way	Largely open farmland, moderate impact reducing to slight in design year. Moderate visual intrusion on Morton, Attlebridge and Western Longville.
Biodiversity	Substantial impact on SAC & SSSI features. Significant impact on local biodiversity habitats and species,. Substantial impact on Ringland Hills.	Substantial impact on SAC & SSSI features. Significant impact on local biodiversity habitats and species.	Substantial impact on SAC & SSSI features. Significant impact on local biodiversity habitats and species.
Water Quality	Moderate impact on river Tud (depending on mitigation measures). With viaduct across whole of floodplain minimal impacts on river Wensum system.	Moderate impact on river Tud (depending on mitigation measures). Existing crossing over the Wensum but on viaduct across whole of floodplain minimal impacts on river Wensum system.	Moderate impact on river Tud (depending on mitigation measures). Existing crossing over the Wensum, but on viaduct across whole of floodplain minimal impacts on river Wensum system.
Community and Other Severance	No communities are severed. Severs 2 RUPPs, meets 1 RUPP at a roundabout and bridges 1 footpath and 1 cycle-way. Severs 8 minor roads, intersects 3 at roundabouts and is bridged by 1 other.	No communities are severed. Severs 3 RUPPs and intersects 1 cycleway at a roundabout. Severs 8 minor roads, intersects 5 at roundabouts and is bridged by 2 others.	No communities are severed. Severs 3 RUPPs, meets 1 RUPP at a roundabout and bridges 1 cycleway. Severs 8 minor roads, intersects 5 at roundabouts and is bridged by 1 other.
Cultural Heritage	Unknown impact on buried archaeological finds.	Demolition of grade II listed building. Unknown impact on buried archaeological finds.	Demolition of grade II listed building. Unknown impact on buried archaeological finds.
Cost of works and land *	£67.4M	£70.1M	£67.9M
Cost Benefit Analysis (based on whole route)	BCR = 3.3	BCR = 2.9	BCR = 3.0
Traffic Relief	Would attract 24,000-31,000 vehicles per day from existing roads	Would attract 21,000-22,000 vehicles per day from existing roads	Would attract 21,000-22,000 vehicles per day from existing roads
Buildability/ Deliverability	Construction of Wensum viaduct with minimal disruption to floodplain	Construction of Wensum viaduct with minimal disruption to floodplain	Construction of Wensum viaduct with minimal disruption to floodplain
Disruption during Construction	Construction of junction with A47 will result in traffic delays. Access for construction might impact on environmentally sensitive areas	Construction of junction with A47 will result in traffic delays. May need to consider access routes other than through settlements such as Weston Longville	Construction of junction with A47 will result in traffic delays. May need to consider access routes other than through settlements such as Weston Longville

* Works costs at October 2002 prices Land at September 2004 prices

Issue	Purple Dual (using Reepham Road)	Purple Dual (using A1067)
Noise and Air Pollution	91 properties within 300m of the route; 48 within 200m; 6 within 50m	95 properties within 300m of the route; 41 within 200m; 9 within 50m
Landscape	Largely open farmland, moderate impact reducing to slight in design year. Moderate visual intrusion on Morton, Attlebridge and Western Longville. Moderate impact on Berry Hall.	Largely open farmland, moderate impact reducing to slight in design year. Moderate visual intrusion on Morton, Attlebridge and Western Longville. Moderate impact on Berry Hall.
Biodiversity	Substantial impact on SAC & SSSI features. Significant impact on local biodiversity habitats and species.	Substantial impact on SAC & SSSI features. Significant impact on local biodiversity habitats and species.
Water Quality	No river Tud crossing. Existing crossing over the Wensum but on viaduct across whole of floodplain minimal impacts on river Wensum system.	No river Tud crossing. Existing crossing over the Wensum but on viaduct across whole of floodplain minimal impacts on river Wensum system.
Community and Other Severance	No communities are severed. Severs 4 RUPPs and intersects 1 cycleway at a roundabout. Severs 8 minor roads, intersects 6 at roundabouts and is bridged by 2 others.	No communities are severed. Severs 4 RUPPs, meets 1 RUPP at a roundabout and bridges 1 cycleway. Severs 8 minor roads, intersects 6 at roundabouts is bridged by 1 other.
Cultural Heritage	Demolition of grade II listed building. Unknown impact on buried archaeological finds.	Demolition of grade II listed building. Unknown impact on buried archaeological finds.
Cost of works and land *	£65.6M	£63.4M
Cost Benefit Analysis (based on whole route)	BCR = 2.9	BCR = 2.9
Traffic Relief	Would attract 21,000-23,000 vehicles per day from existing roads	Would attract 21,000-23,000 vehicles per day from existing roads
Buildability/ Deliverability	Reliant on HA dualling A47(T). Construction of Wensum viaduct with minimal disruption to floodplain	Reliant on HA dualling A47(T). Construction of Wensum viaduct with minimal disruption to floodplain
Disruption during Construction	Construction of junction with A47 will result in traffic delays. May need to consider access routes other than through settlements such as Weston Longville.	Construction of junction with A47 will result in traffic delays. May need to consider access routes other than through settlements such as Weston Longville.

* Works costs at October 2002 prices Land at September 2004 prices

Issue	Brown Single with Dual A1067 to A140	Purple Single with Dual A1067 to A140	Three Quarter (A1067-A140 section only)
Noise and Air Pollution	104 properties within 300m of the route; 46 within 200m; 10 within 50m	102 properties within 300m of the route; 45 within 200m; 10 within 50m	46 properties within 300m of the route; 7 within 200m; 0 within 50m
Landscape	Largely open farmland, moderate impact reducing to slight in design year. Slight visual intrusion on Morton, Attlebridge and Western Longville.	Largely open farmland, moderate impact reducing to slight in design year. Slight visual intrusion on Morton, Attlebridge and Western Longville. Moderate impact on Berry Hall.	Largely open farmland.
Biodiversity	Negligible impact on SAC & SSSI features. Significant impact on local biodiversity habitats and species.	Negligible impact on SAC & SSSI features. Significant impact on local biodiversity habitats and species.	Slight impact on local biodiversity.
Water Quality	Moderate impact on river Tud (depending on mitigation measures). Existing crossing over the Wensum.	No river Tud crossing. Existing crossing over the Wensum.	Insignificant impacts on groundwater.
Community and Other Severance	No communities are severed. Severs 2 RUPPs, meets 1 RUPP at a roundabout and bridges 1 cycleway. Severs 7 minor roads, intersects 4 at roundabouts and 2 minor roads at major/minor junctions.	No communities are severed. Severs 3 RUPPs, meets 1 RUPP at a roundabout and bridges 1 cycleway. Severs 6 minor roads, intersects 6 at roundabouts and 2 minor roads at major/minor junctions.	No communities are severed. Severs 2 RUPPs, meets 1 RUPP at a roundabout and bridges 1 cycleway. Severs 4 minor roads and intersects 3 at roundabouts.
Cultural Heritage	Unknown impact on buried archaeological finds.	Unknown impact on buried archaeological finds.	Unknown impact on buried archaeological finds.
Cost of works and land *	£35.5M	£33.2M	£19.1M
Cost Benefit Analysis (based on whole route)	BCR = 2.7	BCR = 3.1	BCR = 3.3
Traffic Relief	Would attract 10,000-18,000 vehicles per day from existing roads	Would attract 13,000-19,000 vehicles per day from existing roads	Would attract 13,000-18,000 vehicles per day from existing roads
Buildability/ Deliverability	No major issues.	No major issues.	No major issues.
Disruption during Construction	Construction of junction with A47 will result in traffic delays. May need to consider access routes other than through settlements such as Weston Longville	Construction of junction with A47 will result in traffic delays. May need to consider access routes other than through settlements such as Weston Longville.	Slight

* Works costs at October 2002 prices Land at September 2004 prices

Issue	Pink	Yellow Over (Under) railway at Rackheath	Blue Over (Under) railway at Rackheath
Noise and Air Pollution	185 properties within 300m of the route; 57 within 200m; 1 within 50m	97 (109)properties within 300m of the route; 39 (37) within 200m; 1 (1) within 50m	141 (147) properties within 300m of the route; 67 (65) within 200m; 3 (3) within 50m
Landscape	Slight impact on largely open farmland. Slight visual intrusion on properties on Norwich fringe however substantial near Thorpe St Andrew.	Slight impact on largely open farmland but moderate impact on parkland at Beeston Park passing in front of Hall. Moderate (slight) visual intrusion on properties at Thorpe End and Rackheath.	Moderate impact on largely open farmland. Impact on Beeston Park but passing over agricultural land to rear of Hall. Moderate (slight) visual intrusion on properties at Rackheath.
Biodiversity	Loss of woodland and mature trees. Severs Racecourse Plantation CWS. Moderate impact on local biodiversity species including great crested newts.	Loss of woodland and mature trees. Moderate impact on local biodiversity species including great crested newts, badgers and hobbies.	Loss of woodland and mature trees. Adjacent to the Springs CWS. Moderate impact on local biodiversity species including great crested newts.
Water Quality	Insignificant impacts on groundwater.	Insignificant impacts on groundwater but special consideration needed at Rackheath landfill site.	Minor long term effects on groundwater and rivers fed by groundwater. Slight impact on Spring if adequately mitigated.
Community and Other Severance	Separates Thorpe End from Norwich. Severs 1 footpath and is bridged by 1 cycleway. Severs 6 minor roads, intersects 5 at roundabouts and is bridged by 1 other.	No communities are severed. Severs 1 footpath and is bridged by 1 cycleway. Severs 6 minor roads, intersects 4 at roundabouts and is bridged by 1 other.	No communities are severed. Severs 1 footpath and is bridged by 1 cycleway. Severs 5 minor roads, intersects 4 at roundabouts and is bridged by 1 other.
Cultural Heritage	Slight impact on Sprowston historic parkland. Unknown impact on buried archaeological finds.	Slight impact on Beeston and Rackheath historic parklands. Unknown impact on buried archaeological finds.	Moderate impact on Beeston and Rackheath historic parklands. Unknown impact on buried archaeological finds.
Cost of works and land *	£63.4M	£64.7M (£65.9M)	£63.5M (£65.8M)
Cost Benefit Analysis (based on whole route)	BCR = 3.9	BCR = 3.3 (3.3)	BCR = 3.2 (3.2)
Traffic Relief	Would attract 32,000-39,000 vehicles per day from existing roads	Would attract 32,000-35,000 vehicles per day from existing roads	Would attract 30,000-36,000 vehicles per day from existing roads
Buildability/ Deliverability	No major issues	No major issues. (Issues associated with building under the railway line)	No major issues. (Issues associated with building under the railway line)
Disruption during Construction	Possible impact on operation of Airport during construction. Construction of junction with A47 will result in traffic delays	Possible impact on operation of Airport during construction. Construction of junction with A47 will result in traffic delays. (Possible impact on Bittern Line)	Construction of junction with A47 will result in traffic delays. (Possible impact on Bittern Line)

* Works costs at October 2002 prices Land at September 2004 prices

Incremental Economic Analysis

A standard technique used by the Department for Transport for comparing complementary transport projects in economic terms is incremental analysis. Options are ranked in order of increasing cost. The increase in cost from one option to the next is then compared with the resulting increase in benefits: change in benefit is divided by change in cost to give an incremental Benefit Cost Ratio (BCR). If the incremental BCR is 1 or greater, then the benefits of the next option equal or outweigh the additional cost.

The technique does not include consideration of any aspects other than economics, and so environmental or other reasons may justify foregoing some economic benefit.

The relevant information for the Eastern Blue Route (half route, from A140 to the A47 at Postwick) and the three-quarter Red / Blue route (from A1067 to A47 at Postwick) is given below.

The Present Value of Cost (PVC) is based on the construction and land costs quoted for each route, but in addition includes allowances for future maintenance, operating costs, and also an allowance for optimism bias, required by central government to be included economic assessments. The Present Value of Benefits (PVB) includes savings in journey times, fuel and other operating costs.

Option	PVC	PVB	BCR	Incremental BCR
Dual half route (Blue)	85.2	269.3	3.2	-
Dual three-quarter route (Red / Blue)	111.4	362.6	3.3	3.6

The half route has a BCR of 3.2 representing good economic performance. The additional investment for the three-quarter route produces an incremental BCR of 3.6, again representing good economic performance of the additional cost.

The incremental assessment can then be taken forward using the three-quarter route as the base. The relevant information for the single carriageway options for the western single purple route and the single brown route is given below.

Option	PVC	PVB	BCR	Incremental BCR
Dual three-quarter route (Red / Blue)	111.4	362.6	3.3	-
Single purple route + dual three-quarter	130.0	399.8	3.1	2.0
Single brown route + dual three-quarter	135.3	368.0	2.7	0.2

The three-quarter route has a BCR of 3.3 representing good economic performance. The additional investment for the purple route produces an incremental BCR of 2.0, showing that the additional benefit is twice the additional cost. For the brown route, the incremental BCR of 0.2 shows that the additional benefit is smaller than the additional cost.

A47 dualling

The above assessment includes the assumption that the section of the A47 trunk road west of Norwich will be improved to dual carriageway as part of the Highways Agency's programme. If that were not to be the case, it would be appropriate to dual the A47 between the Easton junction and the new NDR junction as part of the NDR scheme. The length to be dualled is significant for the purple route, and the costs of dualling would reduce its BCR to approximately 2.5. However, there would be less additional cost for the brown route, and so that would rank higher in economic terms.

Option		NDR Objective in East of England Plan					
		Improve the quality of life in residential areas	Aid rural regeneration	Enhance links to strategic employment areas	Facilitate urban expansion	Improve access to Norwich International Airport	*Reduce congestion on strategic routes
(i)	Full route Inner Western and Eastern	Met	Met	Met	Met	Met	Met
(ii)	Promote Eastern route only	Partially met: with complementary measures will reduce traffic from residential areas around north east Norwich side, constrains traffic on cross valley routes at existing levels	Partially met: will provide access from A11 to North Norfolk via Eastern route	Partially met: will provide access from main trunk road network, but results in longer route from the west (eg Midlands and North)	Met	Partially met: will provide access from main trunk road network, but results in longer route from the west (eg Midlands and North)	Met
(iii)	Promote Eastern route and Western route to A1067 (three-quarter option)	Partially met (as above): adds link between A140 and A1067	Partially met (as above)	Partially met (as above)	Met	Partially met (as above): provides link from north west of country	Met
(iv)	Promote (iii) with single Brown/Purple route	Partially met: with complementary measures will reduce traffic from residential areas in and around the north of Norwich	Largely met: provides road link access to trunk road network from North Norfolk	Met	Met	Met	Met

* Objective in 2nd Norfolk Local Transport Plan

Option	NDR Objective in East of England Plan					
	Improve the quality of life in residential areas	Aid rural regeneration	Enhance links to strategic employment areas	Facilitate urban expansion	Improve access to Norwich International Airport	*Reduce congestion on strategic routes
(v) Promote (iii) with separate scheme linking the A1067 and A47	Met	Partially met: traffic from west could be routed via new link to Airport etc.	Met	Met	Met	Met
(vi) Abandon scheme	Not met	Not met	Not met	Not met	Not met	Not met

* Objective in 2nd Norfolk Local Transport Plan

Option	New Approach To Appraisal NATA Objective			
	(environment, safety, economy, accessibility, integration)	Practicality and public acceptability	Distribution and equity	Impact on problems and issues
(i) Full route Inner Western and Eastern	□ Large adverse effects on environment caused by a new road scheme on west side of Norwich □ Beneficial on safety, economy , accessibility and integration	□ New road across Wensum unlikely to be achieveable due to impacts on environment □ Consultation showed strong public support for new road (78% in favour)	Provides relief to communities in and around the north of Norwich	Would resolve problems of congestion and traffic on inappropriate routes
(ii) Promote Eastern route only	□ Adverse effects on environment caused by a new road scheme □ Beneficial on safety, economy , accessibility and integration	Not tested, but may not be fully supported	Relieves communities on eastern side only	Does not, by itself, resolve issues of traffic on inappropriate routes to west of Norwich
(iii) Promote Eastern route and Western route to A1067 (three-quarter option)	As (ii) above	As (ii) above	As (ii) above	As (ii) above, but provides a new road link between A140 and A1067
(iv) Promote (iii) with single Brown/Purple route	As (ii) above	Routes unpopular in full consultation. No support in local consultation on single carriageway route options	Largely as (ii) above, but does provide some relief to communities on western side	Should resolve some of the problems of congestion and traffic on inappropriate routes

Option	New Approach To Appraisal NATA Objective			
	(environment, safety, economy, accessibility, integration)	Practicality and public acceptability	Distribution and equity	Impact on problems and issues
(v) Promote (iii) with separate scheme linking the A1067 and A47	As (ii) above	As (ii) above, although previously there has been support for a separate scheme linking the A1067 and A47	As (ii) above	As (ii) above
(vi) Abandon scheme	□ No adverse effects on environment caused by a new road scheme □ More adverse on safety, economy , accessibility and integration	Can be achieved, but public acceptability not tested, although not likely to be supported - 78% in consultations supported a full NDR	As existing situation	Does not solve all problems and issues, eg □ Congestion □ Traffic on inappropriate routes

Mitigation

Cabinet required (5 March 2005) that mitigation measures should be devised for each route option. Using the Stage 2, and additional survey information gathered since March, the following issues were considered for each route option;

- Impact on biodiversity
- Impact on landscape
- Impact on amenity of local residents
- Impact on the water environment

and draft mitigation measures were prepared. These measures fall broadly into five main areas:

1. Examining, in more detail, the line and level of the road
2. Preparing indicative plans showing new roadside landscape proposals
3. Preparing generic measures for safeguarding biodiversity and protected species
4. Preparing indicative drainage measures
5. Looking at measures to limit construction impacts

1 The line and level of the road within each route corridor has been examined to see what adjustments could be possible to reduce impacts both on local residents and the wider landscape. This has been done within the constraints of national standards for road construction and the need, where possible, to balance the quantities of excavated and imported material required to build a road. Thus reducing the need for earth moving and the transport of heavy vehicles on the public roads.

2 New roadside landscape would comprise a mix of hedgerows, small woods, tree belts, individual and small groups of trees and grassland. This has been designed to fit in, where possible with the existing pattern of the landscape, provide additional screening in sensitive areas and replace lost habitat. Native trees and shrubs would be planted. Overall the quantity of new planting would be greater than the mature landscape lost to road construction.

3 Generic measures include creating new habitat e.g. newt ponds, grassland areas for reptiles and retaining dead wood for invertebrates. Measures would also be provided to aid the movement of species under the road, for example wildlife tunnels.

4 Indicative plans have been prepared for a sustainable drainage system (SUDs), including the location of drainage lagoons and infiltration areas.

5 Discussions have taken place within the Planning and Transportation partnership with May Gurney and Mott MacDonald to look at means to limit the short-term impacts, which would be caused during the construction of the road.

A summary of the measures considered for each route follows.

Western Green Route

Line and Level

The line of the road has been amended between Dereham Road and Longwater lane to avoid the Costessey landfill site.

The level of the road has been re-examined and amended as follows:

- Lowered north of Hellesdon either side of Reepham Road
- NDR lowered on approach to A140 Cromer Road (to pass under)

Landscape

The most significant proposals comprise a wide belt of woodland planting between the Reepham Road and Fakenham Road to help screen housing on the edge of Drayton and a large area of new wet woodland at Costessey.

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 1.9 km (ratio loss to gain 1:2.1)
- Woodland 11.6 ha (ratio loss to gain 1:2)
- Grassland 0 ha

Biodiversity and Protected species

Ecological surveys indicate the following protected species are present; bats, badgers and otters. Standard mitigation measures for these species would be implemented where they are considered feasible.

A viaduct over the River Wensum may act to reduce impacts on the features of the SAC, provide good corridors of movement for wildlife such as otters, limit the need to provide replacement grazing marsh habitat and reduce habitat fragmentation. Similar benefits could also be attributed to a multi-span bridge over the River Tud.

Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 1.8 hectares (ha) of drainage lagoons distributed along the route. Pollution containment measures would also be put into place.

Construction

Main additional measures required would be to prevent sediment entering the River Wensum and Tud during construction. Difficult to safeguard amenity of some Costessey residents from construction impacts.

Western Orange Route

Line and Level

No changes to the line of the road.

The level of the road has been re-examined and amended as follows:

- Level raised over Tud valley (EA have indicated requirement for a viaduct)
- Level raised through Lords Hills reducing depth of cutting
- Height of Wensum viaduct raised to reduce risk of sterile areas and to take road drainage away from floodplain
- NDR lowered on approach to A140 Cromer Road (to pass under)

Landscape

The most significant landscape areas comprise new planting belts to help screen the edge of Thorpe Marriot and Taverham and a new block of replacement woodland planting at Ringland Hills north of the Tud

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 3.2 km (ratio loss to gain 1:2.3)
- Woodland 13.7 ha (ratio loss to gain 1:5.5)
- Grassland 0 ha

Biodiversity and Protected Species

Ecological surveys indicate the following protected species are present; bats, badgers, great crested newts, reptiles and otters. Standard mitigation measures for these species would be implemented where they are considered feasible.

A viaduct over the River Wensum may act to reduce impacts on the features of the SAC, provide good corridors of movement for wildlife such as otters, limit the need to provide replacement grazing marsh habitat and reduce habitat fragmentation. Similar benefits could also be attributed to a multi-span bridge over the River Tud.

Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 2.7 hectares of drainage lagoons distributed along the route.

Construction

Main additional measures required would be to prevent sediment entering the River Wensum and Tud during construction and to overcome the difficulty of providing an access to construct the new Wensum bridge. Pollution containment measures would also be put into place.

Western Blue Route

Line and Level

No changes to the line of the road.

The level of the road has been re-examined and amended in following ways in the design used for assessment:

- Level raised over Tud valley to take road drainage away from floodplain (EA have indicated requirement for a viaduct)
- Height of viaduct raised to reduce risk of sterile areas and to take road drainage away from floodplain
- NDR lowered on approach to A140 Cromer Road (to pass under)

Landscape

The most significant landscape areas comprise new planting belts to help screen the edge of Thorpe Marriot and Taverham

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 3.7km (ratio loss to gain 1:1.18)
- Woodland 11.4 ha (ratio loss to gain 1:2.7)
- Grassland 0 4ha

Biodiversity and Protected Species

Ecological surveys indicate the following protected species are present; bats, badgers, great crested newts, reptiles and otters. Standard mitigation measures for these species would be implemented where they are considered feasible.

A viaduct over the River Wensum may act to reduce impacts on the features of the SAC, provide good corridors of movement for wildlife such as otters, limit the need to provide replacement grazing marsh habitat and reduce habitat fragmentation. Similar benefits could also be attributed to a multi-span bridge over the River Tud.

Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 3.0 hectares of drainage lagoons distributed in along the route. Pollution containment measures would also be put into place.

Construction Issues

Main additional measures required would be to prevent sediment entering the River Wensum and Tud during construction and to overcome the difficulty of providing an access to construct the new Wensum bridge.

Western Red Route

Line and Level

No changes to the line of the road.

The level of the road has been re-examined and amended as follows:

- Level raised over Tud valley to take road drainage away from floodplain (EA have indicated requirement for a viaduct)
- Height of viaduct raised to reduce risk of sterile areas and to take road drainage away from floodplain

NDR lowered on approach to A140 Cromer Road (to pass under)

Landscape

The most significant landscape areas comprise new planting belts to help screen the edge of Thorpe Marriot and Taverham and extensive areas of new woodland planting north of the river Tud.

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 4.6 km (ratio loss to gain 1.1.6)
- Woodland 12.7 ha (ratio loss to gain 1:2.1)
- Grassland 0 ha

Biodiversity and Protected Species

Ecological surveys indicate the following protected species are present; bats, badgers, great crested newts, reptiles, otters and schedule 1 birds. Standard mitigation measures for these species would be implemented where they are considered feasible.

A viaduct over the River Wensum may act to reduce impacts on the features of the SAC, provide good corridors of movement for wildlife such as otters, limit the need to provide replacement grazing marsh habitat and reduce habitat fragmentation. Similar benefits could also be attributed to a multi-span bridge over the River Tud.

Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 2.7 hectares of drainage lagoons distributed along the route. Pollution containment measures would also be put into place.

Construction

Main additional measures required would be to prevent sediment entering the River Wensum and Tud during construction.

Western Brown Route

Line and Level

No changes to the line of the road.

The level of the road has been re-examined and amended as follows:

Level raised over Tud valley to take road drainage away from floodplain (EA have indicated requirement for a viaduct)

Landscape

The most significant landscape areas comprise new planting belts to help screen the edge of Thorpe Marriot and new woodland planting south of Hall Hills near Honningham.

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 8.2 km (ratio loss to gain 1:3.1)
- Woodland 14.3 ha (ratio loss to gain 1:1.1)
- Grassland 0 ha

Biodiversity and protected species

Ecological surveys indicate the following protected species are present; bats, badgers, great crested newts and reptiles. Standard mitigation measures for these species would be implemented where they are considered feasible.

A multi-span bridge over the River Tud would provide good corridors of movement for wildlife such as badgers, limit the need to provide replacement grazing marsh habitat and reduce habitat fragmentation.

A viaduct over the river Wensum at Attlebridge is not proposed in this location, instead wildlife ledges and species exclusion and translocation as well as habitat replacement are all proposed.

Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 2.9 hectares of drainage lagoons distributed along the route. Pollution containment measures would also be put into place.

Construction

Main additional measures required would be to prevent sediment entering the River Wensum and Tud during construction. Difficult to safeguard Attlebridge/Morton from construction impacts.

Western Brown Variation Route

Line and Level

No changes to the line of the road.

The level of the road has been re-examined and amended as follows:

Level raised over Tud valley to take road drainage away from floodplain (EA have indicated requirement for a viaduct)

Landscape

The most significant landscape areas comprise new planting belts to help screen the edge of Thorpe Marriot and new hedgerow planting along the A1067.

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 11.2 km (ratio loss to gain 1:2.7)
- Woodland 11.7 ha (ratio loss to gain 1:1.8)
- Grassland 0 ha

Biodiversity and protected species

Ecological surveys indicate the following protected species are present; bats, badgers, great crested newts and reptiles. Standard mitigation measures for these species would be implemented where they are considered feasible.

A multi-span bridge over the River Tud would provide good corridors of movement for wildlife such as badgers, limit the need to provide replacement grazing marsh habitat and reduce habitat fragmentation.

A viaduct over the river Wensum at Attlebridge is not proposed in this location, instead wildlife ledges and species exclusion and translocation as well as habitat replacement are all proposed.

Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 2.6 hectares of drainage lagoons distributed along the route. Pollution containment measures would also be put into place.

Construction

Main additional measures required would be to prevent sediment entering the River Wensum and Tud during construction. Difficult to safeguard Attlebridge/Morton from construction impacts.

Western Purple Route

Line and Level

No changes to the line of the road.

No changes to the level of the road.

Landscape

The most significant landscape areas comprise new planting belts to help screen the edge of Thorpe Marriot and new woodland planting either side of the River Tud.

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 7.0 km (ratio loss to gain 1:1.4)
- Woodland 14.8 ha (ratio loss to gain 1:1.4)
- Grassland 0 ha

Biodiversity and Protected Species

Ecological surveys indicate the following protected species are present; bats, badgers, great crested newts, reptiles and schedule 1 birds. Standard mitigation measures for these species would be implemented where they are considered feasible.

A viaduct over the river Wensum at Attlebridge is not proposed in this location, instead wildlife ledges and species exclusion and translocation, as well as habitat replacement are all proposed.

Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 2.9 hectares of drainage lagoons distributed along the route. Pollution containment measures would also be put into place.

Construction

Main additional measures required would be to prevent sediment entering the River Wensum during construction. Difficult to safeguard Attlebridge/Morton from construction impacts.

Western Purple Variation Route

Line and Level

No changes to the line of the road.

No changes to the level of the road.

Landscape

The most significant landscape areas comprise new planting belts to help screen the edge of Thorpe Marriot, new hedge planting along the A1067 Fakenham Road.

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 15.0 km (ratio loss to gain 1:3.4)
- Woodland 14.4 ha (ratio loss to gain 1:3.7)
- Grassland 0 ha

Biodiversity and Protected Species

Ecological surveys indicate the following protected species are present; bats, badgers, great crested newts, reptiles and schedule 1 birds. Standard mitigation measures for these species would be implemented where they are considered feasible.

A viaduct over the river Wensum at Attlebridge is not proposed in this location, instead wildlife ledges and species exclusion and translocation, as well as habitat replacement are all proposed.

Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 2.4 hectares of drainage lagoons distributed along the route. Pollution containment measures would also be put into place.

Construction

Main additional measures required would be to prevent sediment entering the River Wensum during construction. Difficult to safeguard Attlebridge/Morton from construction impacts.

Western Brown Single Route

Line and Level

Minor adjustments to the line of the road (compared to dual option) in the area of Weston Longville to move road slightly to east of village. Line to use Marl Hill Road rather than running parallel.

Minor adjustments to level (compared to dual option)

Landscape

The most significant landscape areas comprise new planting belts to help screen the edge of Thorpe Marriot and Weston Longville and new hedgerow planting along the A1067 Fakenham Road

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 13.0 km (ratio loss to gain 1:7.2)
- Woodland 9.1 ha (ratio loss to gain 1:2.2)
- Grassland 0 ha

Biodiversity and Protected Species

Ecological surveys indicate the following protected species are present; bats, badgers, great crested newts and reptiles. Standard mitigation measures for these species would be implemented where they are considered feasible.

A multi-span bridge over the River Tud would provide good corridors of movement for wildlife such as badgers, limit the need to provide replacement grazing marsh habitat and reduce habitat fragmentation.

The existing bridge crossing over the river Wensum will be utilised without any substantial improvement or alteration, the need for mitigation measures are therefore eliminated as an adverse impact is unlikely to arise.

Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 2.5 hectares of drainage lagoons distributed along the route. Pollution containment measures would also be put into place.

Construction

No special measures required over and above those required on a standard road construction scheme

Western Purple Single Route

Line and Level

Junction with A47 moved east of existing Wood Lane junction.

Minor adjustments to the line of the road (compared to dual option) in the area of Weston Longville to move road slightly to east of village. Line to use Marl Hill Road rather than running parallel.

Minor adjustments to level (compared to dual option)

Landscape

The most significant landscape areas comprise new planting belts to help screen the edge of Thorpe Marriot and Weston Longville and new hedgerow planting along the A1067 Fakenham Road

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 7.0 km (ratio loss to gain 1:3.3)
- Woodland 8.6 ha (ratio loss to gain 1:3.9)
- Grassland 0 ha

Biodiversity and Protected Species

Ecological surveys indicate the following protected species are present; bats, badgers, great crested newts, reptiles and schedule 1 birds. Standard mitigation measures for these species would be implemented where they are considered feasible.

The existing bridge crossing over the river Wensum will be utilised without any substantial improvement or alteration, the need for mitigation measures are therefore eliminated as an adverse impact is unlikely to arise.

Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 2.0 hectares of drainage lagoons distributed along the route. Pollution containment measures would also be put into place.

Construction

No special measures required over and above those required on a standard road construction scheme

Eastern Pink Route

Line and Level

No changes to the line of the road.

The level of the road has been re-examined and amended as follows:

- NDR under A140 Cromer Road instead of over
- Deeper cutting around north east corner of airport
- NDR under Buxton Road instead of over (Buxton Road taken over NDR on new line to east)
- NDR lowered under Smee Lane

Landscape

The most significant landscape areas comprise extensive new hedgerow planting along the route and woodland belts to help screen the edges of Thorpe St Andrew and Sprowston.

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 12.2 km (ratio loss to gain 1:7.6)
- Woodland 12.6 ha (ratio loss to gain 1:9.7)
- Grassland 2.7ha

Biodiversity and Protected Species

Ecological surveys indicate the following protected species are present; bats, great crested newts and reptiles. Standard mitigation measures for these species would be implemented where they are considered feasible.

Substantial woodland planting to mitigate loss of Racecourse plantation CWS.

Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 3.3 hectares of drainage lagoons distributed along the route. Pollution containment measures would also be put into place.

Construction

No special measures required over and above those required on a standard road construction scheme

Eastern Yellow Route

Line and Level

Adjustments to the line of the road in the area of level crossing at Plumstead Road, (option over railway only) have been examined and included in the design used for assessment. The line has been moved to the west taking it further away from Green Lane East.

The level of the road has been re-examined and amended as follows:

- NDR under A140 Cromer Road instead of over
- Deeper cutting around north east corner of airport
- NDR under Buxton Road instead of over (Buxton Road taken over NDR on new line to east)
- Options both under and over the railway near Plumstead Road being examined.
- Gradient increased for option over railway to reduce length of embankment east of Thorpe End
- NDR lowered under Smee Lane

Landscape

The most significant landscape areas comprise extensive new hedgerow planting along the route.

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 9.0 km (ratio loss to gain 1:5)
- Woodland 12.3 ha (ratio loss to gain 1:5.3)
- Grassland 2.7ha

Biodiversity and Protected Species

Ecological surveys indicate the following protected species are present; bats, great crested newts and reptiles. Standard mitigation measures for these species would be implemented where they are considered feasible.

Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 3.0 or 3.1 hectares (for options under or over railway respectively) of drainage lagoons distributed along the route. Pollution containment measures would also be put into place.

Construction

Most significant issue is to obtain the consent and devise a method of working to minimise disruption whilst crossing over or under the railway, otherwise no special measures required over and above those required on a standard road construction scheme.

Eastern Blue Route

Line and Level

Adjustments to the line of the road in the area between A1151 Wroxham Road and a point south of Plumstead Road, have been made by moving the line to the west taking it further away from Green Lane East and Sir Edward Stracey Road. The line has been moved slightly to the north of Beeston Hall.

The level of the road has been re-examined and amended as follows:

- NDR under A140 Cromer Road instead of over
- Deeper cutting around north east corner of airport
- NDR at ground level at Buxton Road instead of over (Buxton Road taken over NDR on new line to east)
- Lowered north and east of Beeston Hall
- Options both under and over the railway near Plumstead Road being examined.
- Gradient increased for option over railway to reduce length of embankment west of Green Lane East
- NDR lowered under Smee Lane

Landscape

The most significant landscape areas comprise new hedgerow planting along the route and significant new woodland areas to the south of Spixworth and west of Rackheath to provide additional screening to residential

The figures below give the total length/area of new roadside landscape. The figures in brackets giving the ratio of mature habitat lost to new habitat gain.

- Hedgerow 7.0 km (ratio loss to gain 1:3.5)
- Woodland 20,3 ha (ratio loss to gain 1:8.1)
- Grassland 1.1 ha

Biodiversity and Protected Species

Ecological surveys indicate the following protected species are present; bats, great crested newts and reptiles. Standard mitigation measures for these species would be implemented where they are considered feasible.

Pollution prevention measures to ensure the water quality and general regime of the Springs CWS remains unchanged.

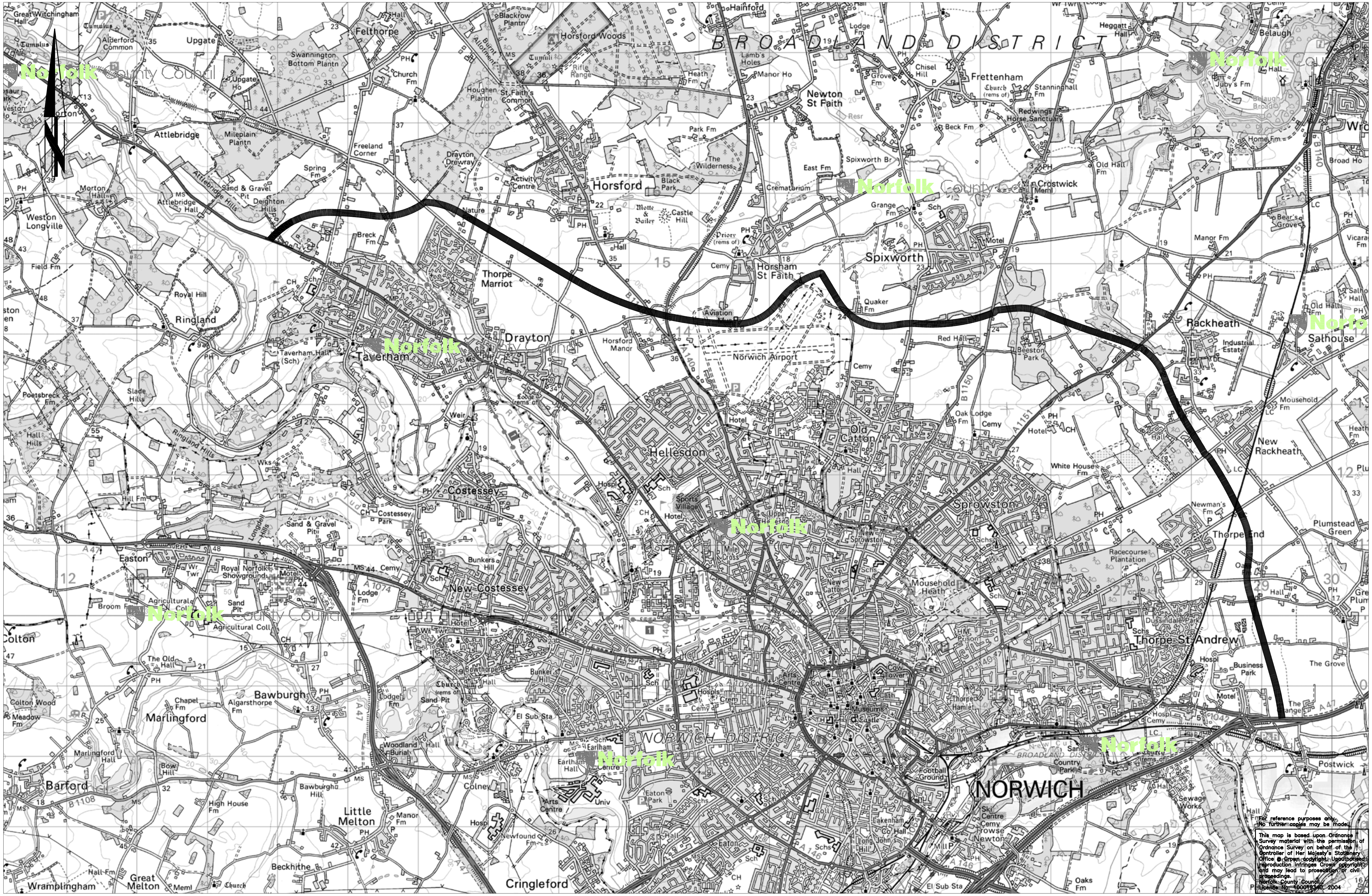
Water Environment

The route would be drained using swales (wide shallow infiltration ditches) with a total of approximately 3.3 or 3.4 hectares (for options under or over railway respectively) of drainage lagoons distributed along the route. Pollution containment measures would also be put into place.

Construction

Need to obtain the consent and devise a method of working to minimise disruption whilst crossing over or under the railway, otherwise no special measures required over and above those required on a standard road construction scheme.

APPENDIX 12



Norfolk County Council
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DRAWING TITLE
NORTHERN DISTRIBUTOR ROUTE -
PREFERRED ROUTE

REV.	DESCRIPTION	CHECKED	DATE

	INITIALS	DATE
SURVEYED BY	OS	
DESIGNED BY	JB	8/05
DRAWN BY	JB	8/05
CHECKED BY	DP	8/05

DRAWING No. R1C093-R1-600

PROJECT TITLE NORWICH NORTHERN DISTRIBUTOR ROUTE

SCALE 1:50,000

FILE No. R1C093

ORIGINAL SIZE: A3

NORTHERN DISTRIBUTOR ROUTE – IMPACT OF THE HABITATS REGULATIONS

Note by Head of Law

1. The Conservation (Natural Habitats etc) Regulations 1994

These Regulations afford protection to areas designated as Special Areas of Conservation ("SAC") and other similarly designated areas. They provide as follows:-

(a) The Regulations provide that before the relevant planning authority or the Secretary of State (who will normally call in for his own decision planning applications likely significantly to affect sites of international importance) grants planning permission for a project they must first establish whether the project (in this case, the road scheme):-

(a) is directly connected with or necessary to the management of the SAC for nature conservation purposes

(b) is likely to have a significant effect on the SAC.

In this respect, they are required to consult with and take account of advice from English Nature as to whether, in English Nature's opinion, the proposed development would significantly affect the ecological value for which the site was identified.

(b) If the relevant authority or Secretary of State (on advice from English Nature) concludes that the road scheme is likely significantly to affect the SAC, they must then assess the road scheme's implications in view of the site's conservation objectives (i.e. the reasons for which the site was designated) so as to ascertain whether or not the scheme will adversely affect the integrity of the site. The person applying for the permission must provide such information as the Council may reasonably require. (The integrity of a site is the coherence of its ecological structure and function that enables it to sustain the habitat and/or the levels of populations of the species for which it was classified. The scope and content of an appropriate assessment will depend on the location, size and significance of the proposed project. English Nature will advise on a case-by-case basis.)

(c) Having regard to English Nature's representations, if the decision-taker believes that the road scheme will adversely affect the integrity of the SAC, and this effect cannot be removed by planning conditions (i.e. mitigating measures), or the effect of the scheme cannot be reduced to a level that does not affect the site's integrity, they must not grant planning permission except in the following circumstances:-

(i) They must firstly be satisfied that there are no alternative solutions, i.e. other suitable and available sites or different, practicable approaches which would have a lesser impact.

(ii) If there are no alternative solutions, and the site does not host a priority natural habitat type or species defined in the Habitats Directive, planning permission must not be granted unless the road scheme has to be carried out for imperative reasons of over-riding public interest, which may be of a social or economic nature. Such reasons would need to be sufficient to over-ride the ecological importance of the designation.

If the site hosts a priority habitat or species, and there are no alternative solutions, the only considerations which can justify the grant of planning permission are those which relate to human health, public safety or beneficial consequences of primary importance to the environment (or other reasons, which in the opinion of the European Commission are imperative reasons of overriding public interest).

(d) The European Court of Justice have ruled that a plan or project may not be authorised under paragraph (c) unless the promoting authority has made certain that the plan or project will not adversely affect the integrity of the site i.e. that "no reasonable scientific doubt remains as to the absence of such effects", except in the closely defined circumstances that the European Directive and now the UK Regulations prescribe. Where doubt remains on this point the plan or project must not be authorised, unless there are no alternative solutions and there are imperative reasons of overriding public interest for proceeding.

(e) If it is the local planning authority which is proposing to grant planning permission for the road scheme, notwithstanding this negative assessment, they must notify the Secretary of State and may not grant permission unless the Secretary of State notifies them that they may do so. The Secretary of State may give directions prohibiting the Authority from granting permission either indefinitely or for a given period. It will be usual for the application to be "called-in" and considered at a Public Inquiry.

(f) If planning permission is then granted for a scheme which would adversely affect the integrity of an SAC, the Habitats Regulations then require the Secretary of State to secure that any necessary compensatory measures are taken to ensure that the overall coherence of the network of Natura 2000 is protected.

2. Implications of the Regulations for the NDR

2.1 The scheme is not directly connected to or necessary for the management of the site for nature conservation.

2.2 It is a matter of evidence whether the scheme will have a significant effect on the SAC. The available evidence (i.e. the evidence of the County Council's external consultants, Mott MacDonalds, and the County Council's Environmental Co-ordinator) suggests strongly that a new or widened carriageway crossing will have that effect. The statutory environmental bodies have confirmed this as their opinion.

2.3 On this basis, it is next necessary to assess the implications of the scheme for the SAC's conservation objectives (i.e. to carry out an "appropriate assessment") and in the light of that assessment consider whether the proposal will adversely affect

the integrity of the site. As the Director of Planning and Transportation's report indicates a full and detailed assessment to the level required for this purpose has not been carried out on any of the route options. However, a significant amount of preliminary work has been carried out in consultation with the statutory environmental bodies with a view to determining the likely outcome of an appropriate assessment. As a result, the evidence currently available to the County Council (see paragraph 2.2) suggests that a new or widened carriageway crossing would adversely affect the integrity of the SAC.

2.4 The next question is whether there are any mitigating measures which can overcome the adverse effect on the integrity of the site. In this respect, the Director of Planning and Transportation considers that on the basis of the work carried out and evidence available there are no sufficient or adequate measures which could be taken to reduce sufficiently the impact on the SAC.

2.5 On this basis, the next question to consider is whether there are any other solutions to securing the overall objective of meeting the key objectives of NATS. In this respect, there are potentially three possibilities:-

(a) a scheme (in effect the purple/brown route) which utilises the existing single carriageway crossing;

(b) a partial route without the brown or purple route;

(c) other strategic options which avoid the need for the NDR at all.

In this respect, the Director of Planning and Transportation is of the view that (a) and (b) are suitable alternative options. However (c) has been rejected by the County Council on advice from the Director of Planning and Transportation as not meeting the key objective of NATS.

If, following a Public Inquiry, the Secretary of State concludes that there is an alternative solution which meets the objective of the scheme then he must not grant planning permission.

2.6 If it were concluded that there were no alternative solutions, the next question is whether the SAC hosts a priority species. It does not.

2.7 In these circumstances, the next question to be considered is whether there are any imperative reasons of overriding public interest which mean that planning permission should be granted. In principle, this could cover economic and social reasons. However, Leading Counsel has advised that although there is clearly an economic and social justification for the scheme, only relatively little weight would be attached to the need to relieve congestion in the Norwich area. Further, under this part of the process it would be for the Secretary of State to balance the wider benefits of the scheme against the impact on the SAC, and in this respect he will be advised by English Nature and the Environment Agency.

2.8 Finally, assuming all the issues identified above can be overcome, it will be necessary to secure the carrying out of any necessary compensatory measures. In this respect, it is understood that it would be difficult to provide such measures.

2.9 In conclusion, any decision will be very strongly influenced by the strength of the evidence as to the impact of the scheme on the SAC. In this respect, and on the basis of the environmental evidence currently available to the County Council, including English Nature's letter of 25 August 2005 (quoted at Section 3.10 of the main report), it can be said that:-

(a) it will be difficult to justify a new/widened carriageway crossing

(b) it will be significantly easier to justify using the existing single carriageway crossing on the brown or purple route

(c) a partial route stopping at the A1067 would avoid any impact on the SAC.

Keir Hounsome
Head of Law & Monitoring Officer
August 2005

KRH/FMB-NDR-Impact of Habitat Regulations (P&T/17537)

APPENDIX 14

ASSESSMENT OF THE ECONOMIC IMPACT OF DEVELOPING THE NORTHERN DISTRIBUTOR ROUTE

Report by the Head of Economic Development

- This report deals with the outcomes of an assessment of the economic impacts of the Norwich Northern Distributor Route by Roger Tym and Partners.

1 BACKGROUND

1.1 Proposals for a Northern Distributor Route (NDR) form an important element of the draft revised Norwich Area Transportation Strategy. Compared to a scenario with no NDR, it will significantly reduce congestion and traffic flow on existing parts of the road network including the ring road, outer urban areas and city centre in Norwich. It will enable delivery of improvements to public transport including within the city centre by reducing through traffic and improve access to/from north Norfolk including Norwich Airport, to the strategic road network linking Norfolk with the rest of the UK and beyond. The NDR will also enhance connections for large swathes of north and north–east Norfolk to the A11 and A47.

1.2 The draft Regional Spatial Strategy, if adopted, will require that around 30,000 new houses will be needed in the Norwich policy area between 2001 and 2021. Development is likely to include a significant urban extension in the north-east sector. The Norwich area will also have to play a significant part in delivering the strategy's additional job growth targets. The NDR will support this anticipated growth by providing strategic access to new developments as well as enabling Norwich to continue to function as a sustainable urban community by taking much of the growth traffic off existing roads.

1.3 The Norwich sub-region contains areas of significant deprivation, particularly within the city. At the same time Norwich has a number of strengths in high value added sectors (such as bio-technology, financial service and media industries) and its role as a regional centre for retailing, tourism and leisure means that it has the potential to be a key driver for the regional economy.

2. AIMS OF STUDY

2.1 The purpose of the study was to provide an evidence based assessment of the economic impacts of the NDR on Norfolk's economy in terms of:-

- Potential impact on existing and planned employment
- Potential impact on existing and potential new employment patterns.
- Possible impact on commuting patterns into Norwich City Centre.
- Performance of existing businesses.
- Potential to attract new inward investment.
- Potential impact on new business start-up rates – particularly in areas previously considered remote.

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- Potential effect on maximising Norfolk's tourism potential through increased investment and visitor numbers.
- Potential impact on Norwich Airport.

2.2 This study was not in itself intended to be a formal Economic Impact Report to DFT methodology but will provide a useful input into a full Economic Impact Report if this is required at a later date.

2.3 Norfolk County Council commissioned the study on behalf of a broader partnership. Roger Tym and Partners (RTP) were chosen to carry out the work on the basis of the cost savings accrued from their associated contract on the Norfolk Employment Growth Study. A project group was formed to guide the consultant's work, comprising representatives from:-

- Norfolk County Council (Economic Development and Planning and Transportation)
- East of England Development Agency
- Broadland District Council
- South Norfolk Council
- Norwich City Council
- North Norfolk District Council

2.4 It should be borne in mind that within the limited remit of the study it was not possible to investigate all aspects of the potential impacts in detail. As such, some of the findings were inconclusive and others were contested by the project group. As a result, further study may be needed to establish a definitive position on some aspects, perhaps as part of a full Economic Impact Report, should this be required.

3. KEY FINDINGS

3.1 In summary, the consultants concluded that the NDR is likely to have particularly positive effects on:-

(i) the development of Norwich Airport, where it releases the planning restrictions imposed due to poor surface access – RTP estimate this to generate 350 jobs by 2015, on the assumption that expected growth in passenger numbers materialises. The opening up of more air routes will bring further benefits for Norfolk companies as access to customers and suppliers is improved. Also, increases in the number of domestic and overseas tourists to the county through the enhanced marketing of Norwich as a key visitor destination (Visit Norwich Ltd and Norfolk Tourism) will bring additional economic benefits.

(ii) the new employment area at Norwich Airport, proposed in Policy NSR1 of the draft Regional Spatial Strategy, which highlights the strategic significance of a site to accommodate commercial uses benefiting from an airport-related location.

(iii) the development of employment sites near the route of the NDR (eg Broadland Business Park) where a wider labour catchment would prove particularly valuable to new businesses – RTP estimates 1,300 jobs may be accommodated by site development stimulated by the full route.

(iv) existing businesses located further from the NDR in areas which will have access to major markets improved by the NDR (eg located to the north and north east of Norwich). In this respect, the report particularly highlights the benefits to locations such as Spixworth, Rackheath and Wroxham for office, industrial and warehousing employment.

3.2 As mentioned in 2.4 above, there were some areas where RTP was unable to conclude that the NDR would have a clear positive effect. These included:

(i) the retail trade and office employment in central Norwich. Although access improvements to the city centre are predicted to be small (in terms of time savings) and uncertainty over whether the road would encourage out of town development, partner organisations have stressed that the removal of through traffic from the city centre will create a more pleasant environment for shoppers, businesses and employees.

(ii) the volume and value of additional visitors to Norfolk – notwithstanding the role of the airport. The report concludes that without further study, it is impossible to say how transport improvements affect tourism patterns. However, comparable tourism hotspots in the UK all benefit from motorway or dualled roads and partner organisations feel strongly that having to contend with non-dualled roads and then having to cross or circumvent Norwich to reach their destinations can act as a considerable disincentive – particularly for day visitors.

(iii) the alleviation of labour market constraints to company growth, which is clearly highlighted as an issue in the business surveys undertaken as part of the study. RTP concluded that current levels of transport access do not create a barrier to those seeking to access jobs. However, partner organisations feel that the NDR will make some employment areas more accessible and RTP do acknowledge that the NDR is likely to assist in the growth of some companies through a widening of the labour market pool from which companies located outside of the city centre can recruit. The impact of this effect relies on the extent to which company growth is already being constrained by labour shortages.

(iv) economic activity rates and unemployment levels in Norwich and North Norfolk, despite the fact that the NDR would improve access for residents north of the city to a number of strategic employment areas (such as, Longwater, the University, Norfolk and Norwich Hospital and the Norwich Research Park). This aspect of the report has been robustly challenged by some partner organisations, particularly the Head of Regeneration at North Norfolk District Council. He stresses that residents of north-east Norfolk have experienced a significant diminution of job opportunities in recent years and he is very clear that improved road access will make this part of Norfolk more attractive to investment as well as expanding the choice of employment in and around the city. North Norfolk District Council has supported the case for the NDR in the strong belief that it will significantly benefit an area faced with serious disadvantage in terms of access to the strategic road network.

(v) levels of deprivation, which are more likely to result from a series of complex social reasons, rather than poor physical accessibility to employment opportunities or to deficient demands for labour.

(vi) attracting inward investment. RTP commented that the perceptions of peripherality might be reduced by the NDR, although research has indicated that the effect of infrastructure investment on existing businesses in areas considered peripheral might be low. However, the Infrastructure Benchmarking Study, undertaken for the East of England Development Agency (EEDA) by Steer Davies Gleave in 2000, concluded, inter alia, that infrastructure investment:-

- May be a necessary condition for improved economic performance, as it will play a role in enhancing or sustaining economic development where there are already conditions of economic buoyancy.

- Can play a catalytic role alongside other forms of public and private investment and can enhance the returns to such investment.

- May positively affect perceptual maps of places, especially those which are remote from major centres of activity.

(vii) the mechanism by which the NDR is likely to affect new business start-ups in peripheral areas, which is the same as that on existing businesses, ie through the improved linkages between businesses and their customers, suppliers and labour. However, partner organisations believe that many of the conditions that are required to ensure the creation of new businesses are similar to those required by inward investors. In this respect, the conclusions made in (vi) above could be equally applied.

3.3 RTP undertook a survey of businesses which showed mixed views about the NDR. However, as the sample was drawn from across the whole of the county it is reasonable to accept that the impact will be minimal for the average business in, say, Kings Lynn. Where further interviews were undertaken of businesses in and around Norwich only, the positive impact was perceived to be much higher. Business representative organisations gave their full support to the NDR, with all those interviewed suggesting that company profitability was being affected by accessibility issues.

3.4 Clearly, there are also positive transport benefits generated by the NDR, which area captured in the cost/benefit analysis carried out separately, which show 'value of time' savings in favour of the road.

3.5 A copy of RTP's final report is available for inspection in the Members' Room.

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