
The Norfolk County Council (Norwich Northern Distributor Road (A1067 to A47(T))) Order

Applicant's comment on Written Representations by Norwich and Norfolk Transport Action Group

Planning Act 2008

Infrastructure Planning

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Introduction

This document provides the Applicant's responses in respect of substantial issues raised by Norwich and Norfolk Transport Action Group (NNTAG) in their Written Representation to the Examining Authority dated June 2014. The points in the NNTAG conclusions have been responded to in the order they were raised, whilst other issues raised in the main text are also addressed under these headings. In addition a detailed response to the points raised in Professor Goodwin's report is appended. Each issue, or in some cases a summary of it, is shown in italics.

Applicant's comment on Written Representations

1.1. *The NDR would make traffic, network performance and conditions for economic growth worse in 2032 than those currently experienced. It would be a 'temporary and costly answer'.*

Examination of NDR and Need: the NDR fails to meet its objectives. 'It seems likely that lower growth would put substantial pressure on the BCR and the higher growth would cause substantial deterioration in network performance; either needing careful consideration of the viability of the scheme'.

The NDR and the Norwich Inner Ring Road (3) share much in common.

Applicant's comment

1.1.1. In assessing the performance of a scheme like the NDR, two forecasts are required, called the without-scheme forecast (also called the Do Minimum scenario) and with-scheme forecast (also called the Do Something scenario), as detailed in TAG Unit M1 - Principles of Modelling and Forecasting (the relevant extract from section 2.2 is included in the Appendices to the response to Professor Goodwin's paper). The appraisal of the NDR has followed the Department for Transport WebTAG guidance and has examined the scheme performance for the 2017 opening year and the 2032 design year. Over time there will be changes in land use, demographical changes and other network improvements. Hence it is appropriate to compare the future performance of the road network with the Scheme included against the future performance without the Scheme. Whilst there is always some uncertainty over forecast growth in traffic, in this case there is a plan for development and land use (Joint Core Strategy) that has already been examined and approved and therefore the conditions in the future when the NDR may be implemented will be different to those occurring today.

- 1.1.2. The assessment of a scheme on the basis of future network performance without the scheme compared with future performance with the scheme has been applied for many years in transport assessments and is implicit in the WebTAG approach to appraisal. Where the scheme produces reductions in journey times and congestion on this basis then it is correct to describe this as an improvement.
- 1.1.3. Notwithstanding this it is also the case that aspects of performance are better in the future with the NDR than in the 2012 base year so it is wrong to characterise the change in performance as universally a deterioration compared with existing and that the Scheme would be a temporary and costly answer.
- 1.1.4. The NDR Traffic Forecasting Report (TFR), Document Ref No 5.6, contains details of the network performance with and without the NDR. The network performance is analysed in section 7 of the report and examines traffic impacts, traffic queues, effect on people, city centre through traffic, highway journey times and journey times on public transport routes. In all cases data is presented for the base year 2012 as well as for forecast years with and without NDR. Impacts described in the TFR include the following:
 - 1.1.5. Figure 7.1 shows the traffic flows on inappropriate routes which are reduced substantially with NDR in forecast years to levels on four of the five roads that are lower than 2012 levels, even for 2032 forecast levels.
 - 1.1.6. City centre through traffic inside the Inner Ring Road is substantially reduced in the forecast years with the Scheme to levels much lower than those in 2012 (section 7.4 of the TFR)
 - 1.1.7. Through traffic crossing the Outer Ring Road cordon reduces with the Scheme to levels below 2012 (section 7.4 of the TFR)

- 1.1.8. Journey times between the strategic routes and development locations would reduce substantially with NDR compared to the Do Minimum scenario, but in many cases the journey times are reduced to times well below the 2012 existing travel times (see Table 7.6 of the TFR).
- 1.1.9. The section on Examination and Need draws largely on the work carried out by Professor Goodwin which is addressed in detail in the appended response. Professor Goodwin requested information in his report which NNTAG states has not been made available. It should be noted that those requests were first made in his paper and the information requested is provided in this response. It should not be inferred from the NNTAG document that NCC have refused or are unwilling to provide the information.
- 1.1.10. The conclusion drawn by NNTAG that Scheme fails to meet its objectives is not accepted. The Scheme will produce an improvement to network travel given the planned future JCS development and as explained in the preceding paragraphs a number of network conditions will improve compared with existing conditions.
- 1.1.11. With regard to the sensitivity tests for low and high growth these are provided in the report Summary Results of Sensitivity Tests (Document Ref. 5.11). For low growth the economic appraisal (section 6.3) shows that the Scheme would produce a benefit cost ratio (BCR) that represents high value for money with accident benefits included, and very high value for money with wider economic and reliability benefits included. With high growth then the network performance benefits of the Scheme will generally be greater compared with those forecast without the Scheme. Whilst Professor Goodwin might argue that the comparison should be with the base year, as explained earlier in this response it is appropriate to compare on the same forecast basis.

- 1.1.12. On the grounds that the evidence undermines Professor Goodwin's conclusion on sensitivity testing it is not accepted that the viability of the scheme is challenged on this basis.
- 1.1.13. The IRR3 was the proposal to complete the Norwich Inner Ring Road (phase three). It was considered at a public inquiry, with the report being published in April 1994. The then Secretary of State for Transport decided to accept the Inspectors decision to reject both the proposal put forward by NCC to complete the Inner Ring Road and the alternative put forward by Norwich City Council to complete the Outer Ring Road. Following this decision, the NATS (version 2) was reviewed.
- 1.1.14. In 2002 NATS was reviewed again, consulted in 2003 and formally adopted in 2004 (version 4). It included the provision of a bus based Park and Ride, to alleviate traffic in the city centre, and included the NDR. The Park and Ride sites have since been delivered and have been operating for a number of years. Whilst this has realised benefits in terms of traffic within the city centre, traffic problems still remain, as set out in the need case for the NDR in the Environmental Statement (Document Ref 6.1) and the Traffic Forecasting Report (Document Ref 5.6) set out above.
- 1.1.15. The suggestion that there are similarities between the NDR and the proposals for the Norwich Inner Ring Road, dating back to the late 1980's and early 1990's, are not accepted. The IRR3 had an impact on major redevelopment sites in the central city urban area and was opposed by Norwich City Council, amongst others. The NDR is a non-urban solution serving planned growth locations, which has the support of the City Council, Broadland District Council, South Norfolk Council and the Broads Authority. As explained in paragraphs 2.11.2 to 2.11.9 of Volume 1 of the Environmental Statement (Document Ref 6.1) the NDR scheme is identified as infrastructure which is fundamental to the achievement of the strategy in the JCS.

1.2. *With higher levels of motorised traffic with the scheme, traffic-related impacts on the environment and communities (air pollution, carbon, noise, severance, disturbance, safety etc) would all be worse. High costs would be imposed on the environment and communities for a negative return. The damage would be even greater if the NDR is taken across the River Wensum valley.*

Applicant's comment

- 1.2.1. The Environmental Statement (ES) for the NDR presents the individual topic assessments undertaken for the Environmental Impact Assessment (EIA) (Document Ref 6.1) this includes. All the effects both adverse and beneficial are presented. This was undertaken using methodologies detailed in DMRB Volume 11 Section 2 – HA 205/08. The individual chapters of the ES explain the methodologies used in the assessment of each topic. This includes assessments on air quality, cultural heritage, landscape, nature conservation, geology and soils, noise, the effects on all travellers, community and private assets, road drainage and water, and cumulative effects. The ES also presents the mitigation that will be put in place to eliminate or reduce any adverse effects.
- 1.2.2. A carbon assessment was undertaken as part of the EIA and is reported in the ES Vol 1 Chapter 5 (Document Ref 6.1). The Norwich Area Transport Strategy of which the NDR is a part aims to provide high-quality alternatives to the car including public transport, cycling and walking and to reduce carbon emissions and the impact of transport on the environment and our communities. However, the plan also allows that for many people the car will remain essential, particularly for those who live in more rural areas and that through-traffic to and from the north of Norwich adds to congestion in and around the city.
- 1.2.3. It should be noted that Natural England are a Statutory Consultee for the following:

- plans or projects that are subject to the requirements of the Conservation of Habitats and Species Regulations 2010 (as amended) (the “Habitats Regulations”) which are likely to have a significant effect on European protected sites – that is, sites designated as Special Areas of Conservation (“SACs”) and Special Protection Areas (“SPAs”) for the purposes of the EU Habitats and Birds Directives;
- proposals likely to damage any of the flora, fauna or geological or physiographical features for which a Site of Special Scientific Interest (“SSSI”) has been notified pursuant to the Wildlife and Countryside Act 1981 (the “1981 Act”); and
- all applications for consent for Nationally Significant Infrastructure Projects which are likely to affect land in England.

1.2.4. Therefore they are a statutory consultee as regards the NDR with respect to where the NDR applies to the above.

1.2.5. The NDR does not include any proposal to cross the Wensum Valley SAC and nor is any such crossing required in order for the NDR to achieve its identified objectives.

1.3. *The NDR is heavily framed in terms of supporting NATS to help deliver development and growth but there is no justification for the NDR on this basis.*

Economic: concern about more growth based on a report by Roger Tym and Partners and that towns with fragile economies would be undermined.

Applicant's comment

- 1.3.1. The amount of development and the general locations of development for the Greater Norwich area are detailed in the adopted Joint Core Strategy (JCS), the key adopted element of the development plan for Norwich and its surrounding area. This has been found to be sound following independent examinations of that strategy; most recently in 2013. As explained in paragraphs 2.11.2 to 2.11.9 of Volume 1 of the Environmental Statement (Document Ref 6.1) the NDR scheme is identified as infrastructure which is fundamental to the achievement of the strategy in the JCS.
- 1.3.2. The economic development impact of NDR is set out in Land Use and Economic Development Report (Document Ref. 10.3.) The economic impact assessment of the proposed NDR is provided within the context of the JCS stated growth targets which are in place to guide the future of the Greater Norwich economy. The NDR is a key strategic piece of infrastructure and will play a key role in supporting the delivery of growth in housing and jobs over the next two decades.
- 1.3.3. The purpose of the report is to provide an explanation of the relationship between the proposed NDR and sites earmarked for development and to assess the economic development impact of the NDR in terms of jobs and dwellings. These are assessed on a site-by-site basis with respect to the influence of the NDR on bringing development forward. The report also presents wider evidence of the relationship between road schemes and economic development.

- 1.3.4. NNTAG refer in their Paragraph 36 to: “a study commissioned by NCC, “The Economic Impact of the NDR” (Roger Tym and Partners, 2005)” and note that:

“Overall, the study presented a mixed picture on whether a NDR would deliver employment growth. It concluded that:

A NDR would have only limited effects on:

- retail sector or office employment in Norwich city centre*
- labour market ...”*

- 1.3.5. As a source for present day analysis, the Tym report suffers from being almost a decade old: aside from the passage of time, that decade saw a recession unprecedented in modern times. Furthermore the report’s various demographic and economic forecasts have been superseded by more recent forecasts, notably those that supported the development of the JCS. The report could take no account of the proposals in the JCS or the more recent development of the City Deal and the New Anglia Strategic Economic Plan. It also predates the establishment of the off shore wind industry and the Enterprise Zone at Great Yarmouth and Lowestoft. Section 9 of the report is concerned directly with labour market effects. It concludes that the effect of the NDR on the labour market might be quite small, but one basis for this conclusion is the report’s repeated reference to the ‘tightness’ of labour markets – something that changed abruptly with the recession.

- 1.3.6. It is, however, Section 11 (rather than Section 9) of the report that is most relevant to an assessment of the labour market effects of the NDR. Section 11 includes a site by site analysis of employment locations that might benefit, to a greater or lesser degree, from construction of the NDR according to each of the three route options then under consideration. It says:

“11.28 There is capacity for between 8,400 and 7,200 additional jobs in sites identified as having a high impact, depending on route option chosen. This does not necessarily mean that there will be a gain of this number of jobs to the economy, nor that some of this would not have occurred in any event without the NDR proposals. Empirical evidence from previous studies is not specific as to impacts, in any event circumstances will vary.

11.29 In the absence of detailed surveys we cannot undertake accurate assessments of deadweight (what would have happened anyway). We can only make an estimate based on our findings. We have followed the SACTRA committee in looking at the effects of local supply, demand and viability factors. If we assume that the contribution of the NDR in bringing these developments forward represents approximately 15% of the jobs on the highly influenced sites then the full option could be responsible for stimulating around 1,300 jobs, the $\frac{3}{4}$ option could be responsible for stimulating 1,100 jobs, and the $\frac{1}{2}$ option could be responsible for stimulating 1,100 jobs.”

- 1.3.7. This is the approach adopted in the Land Use and Economic Development Report (Document Ref 10.3). Table 5.3 of that report identifies 11,281 jobs capable of being accommodated on sites directly affected by the NDR, a figure greater than the 8,400/7,200 ‘high impact’ jobs identified in the Tym report reflecting changes and refinements since 2005 of site development proposals and in judgments about where ‘high’, or direct, impact might be expected (the Tym report identified the potential of the NDR to affect over 32,000 jobs to some degree).

- 1.3.8. Table 5.3 suggests that 4,358 of the 11,281 jobs will be additional, an average ratio of 39%. This is higher than the 15% appearing in the extract from the Tym report above, but the Tym report states that 15% is an assumption based in part on *'looking at the effects of local supply...'*. The Tym report could not, of course, have taken into account the subsequent analysis in the JCS, which identified a limited number of sites capable of accommodating the large expansion of employment envisaged in the JCS, and a correspondingly worse local supply position than seems to have been envisaged in the Tym report: it is this consideration, and the site by site analysis in the Land Use and Economic Development Report (Document Ref. 10.3), that led to a greater additionality ratio than assumed in the Tym report.
- 1.3.9. NNTAG claim that the Tym report was 'quietly shelved'. This is not true, it was reported to NCC Cabinet in 2005 as one of the supporting documents that led to the decision on the Preferred Route. However, as explained, that work has been superseded by the recent work that has been provided with the DCO submission.
- 1.3.10. Access to the Greater Norwich area and to North Norfolk from the trunk road network would be improved with NDR as demonstrated by the journey time changes reported in the Traffic Forecasting Report (Document Ref. 5.6) in section 7.5. This effect is considered qualitatively in the Land Use and Economic Development Report (Document Ref. 10.3) in Table 5.2 which, amongst other impacts, explains the beneficial effect for Norfolk tourism and in paragraph 2.5.1 explains that the NDR would improve connections for workers in the Greater Norwich area, North Norfolk and Great Yarmouth.

1.4. *Delivery of development and growth are not dependent on the NDR. Many of the sites with planning permission lie along the axis of the inner link roads away from the NDR. The two main airport development sites can be accessed from the A140.*

Traffic, Transport Planning and Land Use Planning: the report 'Trunk Roads and the Generation of Traffic' (SACTRA, 1994) looked at the NDR and concluded that the level of induced traffic would be very significant if sites along NDR were to be developed to 100% of their assumed potential.

Applicant's comment

- 1.4.1. While some development can take place without the NDR, much of the development planned in the JCS is linked to the delivery of the NDR. Sites currently benefiting from planning permission represent a limited part of planned housing delivery. Moreover, a discussion on the ability to release sites in advance of the NDR should not lose sight of the need to deliver sustainable communities as set out in the JCS including public transport infrastructure and successful business locations.
- 1.4.2. The extension to Broadland Business Park required by the JCS is being delivered largely through the outline planning permission for the Broadland Gate part of the Postwick Hub development. Implementation of the permission is not dependent on the NDR or the link road.
- 1.4.3. There are three significant sites with planning permission or agreement to permit on the axis of the emerging inner link road: moving in an anti-clockwise direction from Postwick these are Brook Farm Laurel Farm, White House Farm (with Home Farm) and Old Catton North Sprowston.
- 1.4.4. Brook Farm Laurel Farm has outline permission and will provide around 600 dwellings and 15ha of employment development associated with Broadland Business Park. It is conditioned to the improvements at Postwick but can come forward ahead of the NDR.

- 1.4.5. White House Farm is a commitment for over 1230 dwellings from the previous Local Plan, predating the JCS, and does not count as part of the 10,000 dwellings in the Growth Triangle. It has planning permission and construction has recently begun. The final phases of an adjacent Local Plan allocation at Home Farm have outline permission for 169 dwellings of which 23 will be considered part of the JCS provision.
- 1.4.6. The development at Old Catton North Sprowston benefits from a decision to permit subject to agreement of the S106. It includes over 3,500 dwellings but a condition will limit the development to 895 dwellings prior to the NDR.
- 1.4.7. Consequently, when fully permitted, the developments at Brook Farm Laurel Farm and Old Catton North Sprowston will deliver approximately 1500 dwellings of the 10,000 in the Growth Triangle.
- 1.4.8. When taken together with a number of other sites and locations the emerging AAP for the Growth Triangle identifies that 3,268 dwellings of the 10,000 can come forward in advance of the NDR (see the response to 1.5 below)
- 1.4.9. In relation to the A140 employment sites referred to, the Aeropark proposal (40ha) has planning permission (part full part outline). Although implementation of the planning permission is not dependent on it, the NDR will improve access to the development. The permission allows the site to be accessed from the existing A140 roundabout via a long access road running parallel with the route of the NDR. However, the site is located adjacent to the “Airport Roundabout” of the NDR and the applicant intends that this will become the main access point with the direct link to the A140 becoming an emergency only access.

- 1.4.10. The Broadland Site Allocations DPD proposed submission version allocates 35ha for a Business Park north of the NDR adjacent to the A140 (slightly larger than the 30ha required by the JCS). The draft policy requirement is for access to be from the A140/NDR junction and delivery of the site to be co-ordinated with the delivery of the NDR.
- 1.4.11. The remaining employment site, not associated with the A140, is the 25ha within the Rackheath part of the Growth Triangle. This is not included in the AAP as development that can come forward in advance of the NDR.
- 1.4.12. Regarding access to the development sites by developer link roads without NDR, an alternative has been assessed that relies on the developer link roads, but with an extension to connect with the Airport. This is reported as Alternative 5 in the report Traffic and Economic Appraisal of NDR Alternatives (Document Ref. 5.12) in section 8. It was concluded that: Alternative 5 singularly fails to reduce traffic on inappropriate routes and relieve the existing network..... the developer link roads would not operate satisfactorily and they would cause particularly severe difficulties in implementing the proposed shared use high street-type design envisaged in the development proposals..... the delays would also mean that the Alternative would fail to meet the improved transport connectivity objective for the Scheme.... the economic appraisal results highlight that the performance of Alternative 5 is especially poor and does not offer good value for money. This shows that it is not sufficient to rely on the implementation of developer link roads to support the planned development for Norwich.
- 1.4.13. The SACTRA report examined NDR as a case study which was different to the DCO Scheme in terms of the extent of the NDR and also on the extent and the distribution of developments. The DCO Scheme forecasts are based on the JCS that was reviewed and approved at examination in 2013 and has been formally adopted by the Greater Norwich Development Partnership (GNDP) authorities.

- 1.4.14. Section 3.3 of the Traffic Forecasting Report (Document Ref 5.6) contains information on demand modelling undertaken for the Scheme. It sets out the demand responses that have been included in this process. The process was applied to both the without and with Scheme networks and thus accounts for traffic 'induced' as a consequence of the improved travel conditions with the Scheme. Section 6 of the report contains further details and summarises the results of the process comparing Do Minimum and Do Something trip numbers. It is evident that the NDR does not induce a large increase in trips.
- 1.4.15. In addition a dependent development sensitivity test scenario was also examined (see Sections 3.5 and 8 of Document Ref 5.11 for more details). This test includes spatially allocated development that is considered could only proceed with the Postwick Hub Scheme but absent the NDR. Section 8.1 of Document Ref 5.11 also contains detailed traffic flow information with and without NDR under the dependent development scenario. This shows that overall the dependent development sensitivity test produces similar forecast traffic flows on the NDR and thus similar Scheme impacts.

1.5. *The 2010 JCS Panel Report proposed further consideration of housing capacity through an Area Action Plan for the Growth Triangle in the event of the NDR not going ahead and this has been carried forward into the Amended JCS (Policy 22 para 7.17). There is no reason why the design of the inner links could not be coordinated as a wide single carriageway orbital road for carrying more traffic. Also, a Plan B sustainable transport package would encompass more than the inner road link.*

Applicant's comment

- 1.5.1. On 10th July 2014 Broadland District Council agreed that the submission draft Growth Triangle Area Action Plan (AAP) will be published for comment on its soundness (under Regulation 19) over the period from 4 August to 19 September 2014.
- 1.5.2. Paragraph 9.19 of the draft AAP acknowledges that ahead of the commencement of the NDR it is necessary to plan for the eventuality, however unlikely, of non-delivery or significant delay to its construction. The JCS provides an estimate of the quantum of development that can come forward in advance of the NDR. Further assessment work has since been undertaken which establishes that an increased level of development can be accommodated ahead of the NDR. Paragraph 9.22 identifies that at least 450 additional homes can be accommodated in the vicinity of Postwick Junction beyond the levels identified in the JCS. Additionally Beyond Green Developments have demonstrated to the satisfaction of the Highway Authority that a first tranche of 895 homes can be accommodated in North Sprowston and Old Catton ahead of the NDR.

- 1.5.3. The AAP covers an area that will deliver in excess of 11,420 dwellings. This includes a commitment for 1,420 un-built dwellings, the majority at White House Farm and Home Farm, that predate the JCS 2008 base plus the 10,000 additional dwellings required by the JCS. Paragraph 9.23 states that based upon current evidence, 4,687 homes from this total can be accommodated ahead of the NDR of which 3,268 are part of the JCS requirement. Therefore the AAP considers that 6,730 dwellings are reliant on the NDR. The locations, and their dwelling capacity, that can be delivered ahead of the NDR are identified on page 76 of the AAP.
- 1.5.4. With regard to the status of the link roads:
- The development at Brook Farm Laurel Farm includes the section of link road between Broadland Business Park and Plumstead Road. It has outline planning permission with all matters reserved. The permission ties the detailed scheme for the link road to a specific drawing of the scheme in principle.
 - There are no relevant planning permissions or applications between Plumstead Road and Salhouse Road.
 - The White House Farm development, where construction has commenced includes the section of link road between Salhouse Road and Wroxham Road.
 - The Old Catton North Sprowston proposal benefits from a resolution to permit with discussions continuing on the S106 agreement. The development can only be carried out in accordance with a number of plans and documents. A link road in the form of a “high street” will connect Wroxham Road with North Walsham Road, Buxton Road and St Faiths Road.

- 1.5.5. The Plan B specified by NNTAG does not fit with the link roads as proposed for the Beyond Green and Brook Farm / Laurel Farm developments so it is not an option that NCC considers could be delivered.
- 1.5.6. The NNTAG Plan B also suggested greater demand management control of traffic growth. The response in section 4 of the detailed response to Professor Goodwin's paper explains the travel plan reduction of 11% assumed and its consistency with the reduction accepted by NCC development control for the Beyond Green Development. It is therefore considered that a much higher reduction is unrealistic. However the desirability of travel planning as part of a sustainable transport plan is agreed. The NATS plan provides this framework and elements of that strategy have been included in the modelling where there are plans likely to proceed. The city centre measures are an example but it is considered that the full extent of these measures could only be implemented with the relief to through city traffic produced by the NDR.

1.5.7. However as a proxy for a substantial demand reduction with Plan B and the proposed modified developer link roads the Alternative 5 has been tested with low traffic growth (see Document Ref 5.12 for more information on Alternative 5). This also includes city centre measures with the Alternative. The table below shows the economic appraisal results.

Analysis of Monetised Costs and Benefits – A proxy for Plan B

Item	Accidents included (£000)	
	DCO	A proxy for Plan B
Accidents (not assessed by TUBA)*	41,219	-9,178
Greenhouse Gases**	-22,756	-17,281
Economic Efficiency: Consumer Users (Commuting)	51,164	-35,165
Economic Efficiency: Consumer Users (Other)	380,623	-11,185
Economic Efficiency: Business Users and Providers	267,797	-330,827
Wider Public Finances (Indirect Taxation Revenues)	55,270	41,330
Present Value of Benefits (PVB)	773,317	-362,306
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Broad Transport Budget Present Value of Costs (PVC)	185,542	29,052
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OVERALL IMPACTS		
Net Present Value (NPV)	587,775	-391,358
Benefit to Cost Ratio (BCR)	4.168	-12.471

Notes: All monetary values are expressed in 2010 prices discounted to 2010

**We do not expect Plan B proxy accident benefits to be very different to Alternative 5 hence Alternative 5 value is used for Plan B proxy scenario.

**Greenhouse gas impacts were calculated using TUBA1.9.2 since there was a bug in TUBA 1.9.1

Summary of Economic Appraisal including Wider Benefits – A proxy for Plan B

Item	Scenario also including WEBs and JTR (£000)	
	DCO	A proxy for Plan B
Present Value of Benefits (PVB)	989,063	-697,205
Present Value of Costs (PVC)	185,542	29,052
Net Present Value (NPV)	803,521	-726,257
Benefit to Cost Ratio (BCR)	5.331	-23.999

Notes: All monetary values are in £000's and expressed in 2010 prices discounted to 2010

- 1.5.8. The results show that the Present Value of Benefits (PVB) of Plan B proxy is estimated to be £-362m (inclusive of accident benefits). A significant factor in this are the private sector costs of -£44m for the developer link roads which TUBA allocates as negative benefits rather than costs to public accounts as they are private sector funded. The Plan B proxy also produces transport efficiency economic disbenefits as any benefits of the extended link roads are outweighed by the reduced performance due to overcapacity and due to the effects of introducing city centre traffic management measures without significant traffic relief being provided by the Alternative. Set against these PVB results is the £29m Present Value of Costs (PVC) to public accounts. The Benefit Cost Ratio (BCR) of the scheme is -12.47 including accidents and does not represent good value for money.
- 1.5.9. The BCR of Plan B proxy deteriorates even further to -24.00 once journey time reliability benefits (£-30m) and wider economic benefits (£-305m) are included in the appraisal. These additional dis-benefits amount to £-335m (2010 prices discounted to 2010). The inclusion of these dis-benefits result in a further deterioration of the BCR although it should be noted that the BCR is not a meaningful term when the benefits are negative.
- 1.5.10. The economic appraisal results highlight that the performance of Plan B proxy is especially poor and does not offer good value for money. It should be noted however that the appraisal has not attempted to assess any development benefits that may arise with the link roads.

1.6. *The case for treating the NDR as 'nationally significant' was on the basis the scheme would connect the Airport to A47-TEN-T and Great Yarmouth Enterprise Zone. Traffic growth along the A47 east of Norwich with the NDR suggests outward commuting from the coastal area to Norwich, which could have a negative economic impact on Great Yarmouth. An Appropriate Assessment of the environmental impact on nationally and internationally important habitats along the A47 Acle Straight has not been carried out.*

Applicant's comment

- 1.6.1. The amount of development and the general location of development for the Greater Norwich area are detailed in the adopted Joint Core Strategy (JCS), the key adopted element of the development plan for Norwich and its surrounding area. This has been found to be sound following independent examinations of that strategy; most recently in 2013. As explained in paragraphs 2.11.2 to 2.11.9 of Volume 1 of the Environmental Statement (Document Ref 6.1) the NDR scheme is identified as infrastructure which is fundamental to the achievement of the strategy in the JCS.
- 1.6.2. Paragraphs 7.1.3 of the Traffic Forecasting Report, (Document Ref 5.6) Vol 1 describes the forecast changes in traffic on the A47 to the east of Norwich with the Scheme. It explains that the increases are due to traffic reassignments from routes to the north and south of the A47 (particularly the A146 and A149). A further check has been carried out to address this point using the model to identify the change in the trips in 2032 AM peak to / from Great Yarmouth due to the NDR. This showed identical numbers of trips. It is concluded therefore from the modelling that the NDR does not result in a significant change that could have a negative economic impact on Great Yarmouth.

- 1.6.3. The assessment of the scheme has been carried out for the whole model area including the stretch of the A47. It would be wrong to only consider the economic assessment for one particular part of the network.
- 1.6.4. The Damgate Marshes Site of Special Scientific Interest (SSSI) adjacent to the Acle Straight is an area of traditionally managed grazing marsh lying on fen peats and alluvial gravels. The practice of summer grazing of cattle and hay production are the important features of this site. The nature conservation importance is concentrated around the hydrology of the area, and principally in the aquatic flora and invertebrate populations of the nutrient poor waters of the dykes that cross the area. Increases in traffic numbers along this already busy stretch of road are unlikely to impact on hydrology and therefore the qualifying features of the SSSI or the integrity of the site as a whole.
- 1.6.5. The Scope of the Habitats Regulations Assessment was agreed with Natural England and only a consideration of potential impacts on the Wensum SAC was required.

1.7. *There is no traffic and economic case for extending the NDR west of the A140. Its main purpose appears to be signposting of the NDR across the Wensum valley at a future date.*

Applicant's comment

- 1.7.1. There are notable transport benefits in delivering the NDR scheme to the A1067.
- 1.7.2. The report on Traffic and Economic Appraisal of NDR Alternatives (TEAA) (Document Ref 5.12) includes the results of appraisal of Alternative 2, which comprises a dual carriageway between the A140 and the A47(E) at Postwick – i.e. the Scheme but without the section between the A140 and the A1067. The results, including effects on traffic flows, junctions, safety, and economics, are presented in Section 6 Environmental Statement Chapter 3 (Document Ref 6.2).
- 1.7.3. Alternative 2 would not provide any relief to roads and communities to the west of the A140, and in some cases there would be increases (section 6.1).
- 1.7.4. Table 6.6 in section 6.4 shows that the PVB for Alternative 2 of some £550m are significantly less than that for the DCO Scheme, of some £989m. Alternative 2 has a lower cost than the DCO Scheme, and the resulting BCR is 4.114 compared to 5.331 for the DCO Scheme. This indicates that, in economic terms, the additional cost of the section between the A140 and the A1067 is forecast to be outweighed by the benefits it produces.

1.8. *If the EA is minded to recommend approval of the NDR between A47 Postwick and A140, we recommend that the Panel rejects the NDR extension to the west of A140 on grounds that it brings little benefit and would spell disaster for the future of the River Wensum SAC and its valley and also for future land use planning for Norwich. We would like the EA to recommend that Norfolk County Council should set about developing a Plan B Sustainable Transport Alternative, although that, hopefully would be the inevitable outcome if the NDR is not approved.*

Applicant's comment

- 1.8.1. See the response to 1.2 and 1.7 regarding the benefits of the western section of NDR.
- 1.8.2. Regarding the suggestion that the proposed Scheme would act to the detriment of the River Wensum SAC if allowed to be built from the A140 to the A1067, Norfolk County Council and Mott MacDonald have produced a Habitats Regulations Assessment (HRA) as required by The Conservation of Habitats and Species Regulations 2010 (referred to as The Habitats Regs) to ensure that no adverse effects on the Wensum would occur. The HRA was submitted to the Planning Inspectorate as part of the overall application.
- 1.8.3. Since this time an Addendum has been produced (which is currently with Natural England for final review), which details further work carried out to address the remaining concerns of Natural England and the Environment Agency. This has concentrated on measures and initiatives to ensure that no sediment from verge erosion, potentially caused by an increase in traffic on the wider highway network, would enter the Wensum.

- 1.8.4. Subject to final sign-off by Natural England and the Environment Agency, the HRA Addendum aims to demonstrate that the design of the proposed Scheme, and proposed measures/processes on the wider highway network, would be such that no detrimental impacts would occur on the Wensum SAC, and that the Conservation Status of the Qualifying Features would remain unaffected.
- 1.8.5. Sustainable transport measures and the implementation of 'Plan B' are covered in section 1.5. The NATS implementation plan provides the framework for a sustainable transport plan, but with NDR fulfilling a vital part of this. Without NDR it is considered that other parts of the plan would not be deliverable and the evidence shows (refer to section 1.5) that a plan relying on developer link roads would fail to meet the Scheme objectives and that the suggested modified wide single carriageway inner distribution road would fail to meet other objectives and is not considered to be deliverable.