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

Applicant's comment on Written Representations by CTC The National Cycling Charity

Planning Act 2008

Infrastructure Planning

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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Introduction

This document provides the Applicant's responses in respect of selected issues raised by The National Cycling Charity in their Written Representation to the Examining Authority dated 25 June 2014. The Written Representation covers many issues. Some of these have been addressed elsewhere (including the Applicant's comments on Relevant Representations, and the Applicant's comments on other Written Representations). Therefore a limited selection of issues raised have been extracted and comments provided.

The points have been responded to where possible in the order they were raised. Each issue, or in some cases a summary of it, is shown in italics.

Applicant's comment on Written Representations

Representation

1.1. *What qualifications or training have the designers of the NNDR had in provision for non-motorised users?*

Applicant's comment

1.1.1. The development of Non-Motorised User (NMU) provision for the NDR has been on-going since preferred route announcement in 2005. Over the years designers have included Chartered Engineers, Incorporated Engineers and Engineering Technicians being Members of the Institution of Civil Engineers and the Chartered Institution of Highways and Transportation as well as other professional institutions. All designers are familiar with the Design Manual for Roads and Bridges. The design work has primarily been carried out by NCC internal design teams supported by Mott MacDonald a significant and International design consultant, with significant and wide ranging experience gained delivering all types of highway improvement schemes across the County of Norfolk. Types of schemes would typically include footway and cycle schemes, traffic calming schemes, rural and urban junction improvements, urban traffic management schemes as well as village bypass schemes. Most including some form of NMU provision. A considerable number of the current design team are cyclists of which some are members of local cycling groups and British Cycling.

Representation

1.2. *What budget provision has been made for maintaining the new cycle paths and bridle ways associated with the NNDR? Lack of maintenance will soon cause the cycle routes to become neglected and decay.*

Applicant's comment

- 1.2.1. The County has a legal responsibility for the highway network in terms of keeping the routes available and safe for passage for the travelling public. It undertakes this duty in its role as the Highway Authority. Norfolk County Council's Transport Asset Management Plan 2013/14 to 17/18 (TAMP) sets out an approach for the management of its transport asset and includes details of the frequency and type of Highway Inspection schedules (including shared use footway/cycleways, bridleways and other public rights of way) for both condition and schedules.
- 1.2.2. Capital funding for transport schemes is largely provided by government via grants in two blocks for schemes under £5m; the Highways Maintenance block and the Integrated Transport block, both determined through government formula. These capital allocations are not ring-fenced for transport and can be used to fund other County Council services. Allocations have now been published in the TAMP up to 2014/15.
- 1.2.3. The total structural maintenance funding for 2013/14 was £27,554,000 and for 2014/15 is £35,984,940 although this may be subject to change and agreement approved by County Council Members. Funding for future years will be subject to County Councillor agreement annually.
- 1.2.4. Maintenance of the proposed new MNU routes as a result of the NDR will be undertaken in line with the TAMP and in the same manner as it would for other similar routes across the county.

Representation

1.3. *Will the Inquiry instruct NCC to provide the appraisal of the NNDR using the DfT “The Speed Limit Appraisal Tool” to show journey times, accident rates etc.*

Applicant’s comment

- 1.3.1. The Department of Transport’s Speed Limit Appraisal Tool is to “enable local highway authorities to assess the full costs and benefits of introducing a change in speed limits and make robustly defensible decisions on whether or not to introduce them” (The Speed Limit Appraisal Tool: User Guidance – January 2013).
- 1.3.2. The Scheme has been appraised using the appropriate transport and modelling methodologies detailed in DfT’s Transport Analysis Guidance. Therefore NCC considers that it is not necessary to carry out an appraisal using the Speed Limit Appraisal Tool.

Representation

1.4. *Has the COBA, TRADS, TUBA and SATURN software been audited, verified or approved by an independent body such as the UK Statistics Authority or the National Audit Office?*

Applicant’s comment

- 1.4.1. These software products (COBA, TUBA and SATURN) have not been audited, verified or approved by an independent body such as the UK Statistics Authority or the National Audit Office as far as we are aware. However, that is less relevant than its pedigree and its standing in the professional transport planning area. All these software products are based on a substantial body of academic research, much of which has been published in peer-reviewed scientific journals and is available in the public domain.

- 1.4.2. These products have a large user base, and have been applied in many previous Public Inquiries; they have also been used in the preparation for funding in a large number of Major Scheme Business Cases that have been approved by the Department for Transport.
- 1.4.3. These products are firmly embedded in professional practice and other applications have been subjected to scrutiny and peer review by independent experts on behalf of third parties. As far as we are aware this has never led to concerns about the credibility of these software products.
- 1.4.4. TRADS is not a software product but rather a database.

Representation

1.5. *The plans for the cycle routes associated with the NNDR do not meet the requirements of accessibility or convenience. They do not link origins and destinations, poor provisions for crossing busy roads (the NNDR itself), they offer no advantage in directness, reduce delay for cyclists or provide a positive advantage given over private cars.*

There is a lack of connectivity between the cycling routes identified by the Developer and the Norwich Pedalways.

The cycle paths planned for the NNDR follow the route west-east but the major centre of housing, work, entertainment, shopping, higher education and services etc is Norwich ie North-south.

Applicant's comment

1.5.1. The needs of cyclists including those addressed as part of the Scheme have been developed through consultation with interested parties. During the April/ May/ June 2012 public consultations NCC had various requests for improved walking and cycling facilities as part of the proposals for the NDR. As a result a strategy was developed to consider and prioritise these consultation requests. The strategy published as part of the February/ March 2013 public consultations identified a network of routes to link areas that generate NMU's (such as villages, employment areas, future development) with each other, the Norwich Cycle Network and the Marriott's Way. Part of these routes utilised narrow country lanes, roads closed to motor vehicles and existing public rights of way. NCC has prioritised NMU improvements on this network, and these improvements have included new NMU facilities as part of the proposals.

- 1.5.2. Approximately 25 kilometres of new links suitable for use by pedestrians, cyclists and equestrians where permitted would be provided alongside, over, and connecting with, in places, the NDR route, together with improved surfacing provided on some existing rights of way. The scheme includes seven grade separated crossings of the NDR and two grade separated crossings of the A47. Various NMU at grade crossings of NDR and side roads are also proposed. The NMU proposals are shown on the General Arrangement Plans (Document Ref. 2.6).
- 1.5.3. A key element in this NMU strategy was the Norwich Cycle Network. The Norwich Cycle Network was launched in 2012, with the aim of encouraging more cycling. It features 7 main routes called pedalways linking with a number of local neighbourhood routes. These provide a network of cycle routes connecting the main urban area of Norwich. The Norwich Cycle Network was developed as part of the Norwich Area Transportation Strategy through extensive consultations with other local authorities and cycling groups.
- 1.5.4. Future longer distance strategic routes have also been considered as part of the NMU provision. For example the Joint Core Strategy has identified a proposed green infrastructure network for the whole of the Greater Norwich Area. This includes Sub Regional and Local Green Infrastructure Corridors.
- 1.5.5. One Sub Regional Green Infrastructure Corridor is identified from North East Norwich via Wroxham to North Walsham. Norfolk County Council, as part of its Norfolk Trails initiative, has a longer term aspiration to provide a NMU route from Wroxham (as a key tourist destination in the Broads area) to Norwich (by linking into the already agreed Norwich Cycle Network). The exact route for this has not yet been determined but initial examination has identified that it is likely to be located in the corridor between the A1151 Wroxham Road and C283 Salhouse Road.

- 1.5.6. The NDR scheme proposals have provided two grade-separated crossing points of the NDR in this corridor that could be utilised by this route. These are:
- Newman Road Bridge, which provides a combined private means of access and bridleway over the NDR,
 - a bridleway adjacent to the Norwich to Sheringham railway line, between Green Lane East and Plumstead Road, which passes under the NDR Bridge (Over Railway Line).

Representation

1.6. *The plans for the cycle routes associated with the NNDR do not meet the requirements of Safety. The 70 mph speed on the NNDR will not be perceived to be safe by cyclists trying to cross at the roundabouts the poor quality surface specified for the cycle routes will develop surface defects.*

There appears to be a provision for a cycle path around the roundabouts, however, it is recognised (TRL Report PPR 580)[14] that the point at which a cycle path rejoins the carriage way is a major risk for cyclists.

Applicant's comment

- 1.6.1. Sections 1.5.1 to 1.5.5 above describe NCC's strategy for developing facilities for NMU's. These improvements have included new grade separated crossings at strategic locations where NMU routes cross the NDR (e.g. Marriotts Way, Bell Farm Bridge, Buxton Road Bridge, Newman Road Bridge and under the Norwich to Sheringham railway line bridge).

- 1.6.2. NCC has undertaken pedestrian crossing assessments of the roundabout junctions with the main radial routes. These assessments helped inform the decision on the proposed crossing facilities. Unlike the locations where grade separated crossing facilities are provided (as outlined above), vehicles speeds are considered to be lower at the roundabout junctions as vehicles are required to slow to negotiate the roundabout. The crossings are generally positioned where there are splitter islands or central reserves so that NMUs would not need to cross the dualled section of the NDR a single go.
- 1.6.3. Norfolk County Council has considered the provision of signalised crossings at the junctions. If a signalised crossing was introduced that is not frequently used this can present its own safety problem as drivers who become accustomed to not being stopped at the crossing may begin to ignore its existence (as suggested in Local Transport Note 1/95 Paragraph 4.2.4).
- 1.6.4. Norfolk County Council has also considered the provision of underpasses at the roundabout junctions. In addition to having perceived personal security issues, the order of cost for each underpass carrying a 3.5m wide combined footway cycleway under the NDR is estimated to be £500,000 to £750,000 depending on topography of the location. There are also future maintenance costs to consider.
- 1.6.5. Whilst pedestrian footway/cycle bridges would have reduced personal security issues, the order of cost for each bridge carrying a 3.5m wide combined footway/cycleway over the NDR is estimated to be £500,000 to £900,000 depending on topography of the location.
- 1.6.6. Therefore Norfolk County Council's proposed scheme includes the provision of new segregated shared use footway/cycleways around the perimeter of the roundabouts with crossing facilities which are at grade and unsignalised.

- 1.6.7. This arrangement is considered appropriate provision to cater for the anticipated level of usage. These proposals were subject to a safety audit in November 2013. This is contained in Road Safety and Audits and Briefs (Document Ref 10.1).

Representation

- 1.7. *Most of the new cycle paths, described as bridle ways, will have a loose shale surface and will be shared with horse riders. The paths will not be usable by cyclists riding road machines with tyres between 23 – 32 mm. This surface will not be weather-proof; it will not be rideable for some periods of the year and will become potholed and rutted. This specification does not meet the requirements of DfT Local Transport Note 2/08 Section 8.*

Applicant's comment

- 1.1.1. The preferred surface for use on the combined NMU routes which are designated as bridleways, which form majority of the NMU provision on the scheme, would be compacted recycled road planings to a depth of 150mm. In determining the preferred bridleway preference NCC has considered the Department for Transport (DfT) Design Manual for Roads and Bridges TA91/05 Provision for Non-Motorised Users (NMUs) which identifies this surface as a good compromise towards meeting the requirements of pedestrians, cyclists and equestrians because it provides a hardened surface which benefits cyclists with good surface texture which benefits equestrians.

Representation

1.8. *There has been hardly any consultation about the cycle routes with local cyclists. I can contrast the situation with the NNDR the proactive work done by Norwich City Council officers with regard to the Norwich Pedalways.*

Applicant's comment

1.8.1. The consultations undertaken with regard to the NDR are outlined in Section 3.0 and 4.0 of the Pre-application Consultation Report (Document Ref 5.1). These consultations have included cyclist representative organisations, and the comments received have helped inform the development of the NDR proposals.

1.8.2. In particular the comments and requests for NMU facilities following the April/May/June 2012 consultations resulted in the development of the NMU strategy described in Section 1.5.1 to 1.5.5 above.

Representation

1.9. *The NNDR, running west-east, cuts the radial roads and the National cycle way One, which run roughly north-south. There are two bridges planned and ten roundabouts. These radial roads are already perceived to be dangerous by cyclists to ride at busy periods – two cyclists have been killed in recent times.*

Applicant's comment

1.9.1. National Cycle Route 1 uses Marriotts Way and the NDR does not act as a barrier to it. This is because Marriotts Way would be carried over the NDR on a new Green Bridge. Table 12.7 of Volume 1 Environmental Statement (Document Ref 12.7) identifies that the scheme is considered to have a slight beneficial impact upon Marriotts Way. This is because connectivity is maintained, and it will also link to new bridleways either side of the NDR in this area.

1.9.2. NCC does not agree that only two bridges are proposed as part of the schemes. Grade separated crossings are provided at the following locations:

- Marriotts Way Bridge – which carries Marriotts Way and National Cycle Route 1 over the NDR,
- Bell Farm Bridge – which carries Horsford Restricted Byway No. 5 and a private means of access over the NDR,
- New Cromer Road Bridge – which provides a shared use footway/cycleway adjacent to the A140 Cromer Road over the NDR,
- Buxton Road Bridge - which provides a shared use footway/cycleway adjacent to Buxton Road over the NDR,
- Newman Road Bridge, which provides a combined private means of access and bridleway over the NDR,
- a bridleway adjacent to the Norwich to Sheringham railway line, between Green Lane East and Plumstead Road, which passes under the NDR Bridge (Over Railway Line),
- a shared use footway/cycleway adjacent to Plumstead Road, which passes under the NDR Bridge (Over Plumstead Road),
- Middle Road Bridge, which provides a shared use footway/cycleway adjacent to Middle Road over the NDR.

Representation

1.10. *There is no provision for separate cycle routes along these radial roads although land is available in many cases.*

There is no provision for cyclists along the A1067, Reepham Road, A140, B1150, A1151, and the Plumstead Road.

Applicant's comment

1.10.1. Proposals for improved cycle routes on radial routes are considered to be outside of the scope of the NDR scheme. Any proposals for these would need to be considered and prioritised by NCC alongside other requests for highway improvements.

Representation

1.11. *Almost all of the new housing developments planned are within 10 km of the Norwich ring road – about 30 minutes moderate cycling. However, cyclists will have to cross the NNDR. The dangers on these radial roads will be exacerbated by the roundabouts and the 70mph speed limit on the NNDR.*

Applicant's comment

1.11.1. The majority of development identified in the Joint Core Strategy is located inside the NDR and therefore would not need to cross the NDR when travelling to the city centre. The main development located outside of the NDR and future provision for crossing the NDR has been provided at:

- Newman Road Bridge, which provides a combined private means of access and bridleway over the NDR,
- a bridleway adjacent to the Norwich to Sheringham railway line, between Green Lane East and Plumstead Road, which passes under the NDR Bridge (Over Railway Line).

Representation

1.12. *The junction on the Cromer Road Sheet 5 is dangerous for cyclists with high-speed traffic being fed into the A140 along a road which is already overloaded. This road leads to the Airport Park and Ride which could attract more cyclists if there was safe and convenient access.*

Applicant's comment

- 1.12.1. NCC has previously undertaken a preliminary feasibility study into cycle facilities between the existing Cromer Road Roundabout South and the Norwich Cycle Network at Fifers Lane which while identifying a possible route, was not progressed due funding priorities at that time.
- 1.12.2. The NDR scheme, as proposed, does not prohibit the introduction of this facility. However, it would need to be considered and prioritised by NCC alongside other requests for highway improvements.

Representation

1.13. *There is also a dangerous junction further south at Fifers Lane. Cyclists wishing to proceed south have to ride in the middle of the road with fast moving traffic on both sides.*

Applicant's comment

- 1.13.1. The two major arms of this junction are Fifers Lane and St Faiths Road. Appendix I of the Traffic Forecasting Report (Document Ref 5.6) shows a reduction in forecast flows on these roads in both 2017 and 2032 as a result of the NDR when compared to a do minimum scenario.
- 1.13.2. Norfolk County Council has mechanisms in place for considering and prioritising road safety improvements. If an adverse situation were to arise in the future at any junction on the highway network it would need consider the implementation of remedial works to address the problem and prioritise these against other highway improvements schemes.

Representation

1.14. *How will traffic leave the new housing development to the south and east of the proposed North Walsham Road Roundabout (Sheet 8)?*

Applicant's comment

1.14.1. The development in the Broadland Growth Triangle for 3,500 dwellings known as North Sprowston and Old Catton (which is south of the NDR and has a Broadland District Council resolution to grant planning permission) will include an internal east west street which will ultimately span four radial routes from St Faiths Road to Wroxham Road. This will enable a balanced distribution of traffic onto the highway network.

Representation

1.15. *The Wroxham Road Roundabout diagram (Sheet 9) shows that the lane from Rackheath Church will be stopped up. This is a loss of amenity for cyclists as it could provide a route from Wroxham and the Broads to Norwich.*

Applicant's comment

1.15.1. NCC has been unable to identify the lane to Rackheath Church that is being referred to above. However, NCC, as part of its Norfolk Trails initiative, has a longer term aspiration to provide a NMU route from Wroxham (as a key tourist destination in the Broads area) to Norwich (by linking into the already agreed Norwich Cycle Network). The exact route for this has not yet been determined but initial examination has identified that it is likely to be located in the corridor between the A1151 Wroxham Road and C283 Salhouse Road.

- 1.15.2. The NDR scheme proposals have provided two grade-separated crossing points of the NDR in this corridor that could be utilised by this route. These are:
- Newman Road Bridge, which provides a combined private means of access and bridleway over the NDR,
 - a bridleway adjacent to the Norwich to Sheringham railway line, between Green Lane East and Plumstead Road, which passes under the NDR Bridge (Over Railway Line).

Representation

1.16. *The claim that the new provisions of west-east cycle ways would compensate for increases in journey times is irrelevant if cyclists want to go north-south to the City. Also the claim that the seven crossings of the NNDR are in some way an improvement is doubtful if a cyclist has to divert a mile or more from the direct route.*

There are many minor roads and bridle ways which are planned to be closed and this represents a loss of amenity for cyclists. These closures conflicts with the NCC "Rights of Way Improvement Plan 2007-2017"

Applicant's comment

- 1.16.1. Sections 1.5.1 to 1.5.5 above describe NCC's strategy for developing facilities for NMU's. Table 2.9 in Chapter 2 of the Environmental Statement (Document Ref 6.1) identifies the road closures proposed as part of the scheme. These are summarised within the flowing table together with the alternative route that has been provided.

Closure	Chainage	Alternative Route
Breck Farm Lane (U57168) to the south of the NDR	2525	Alternative provided for NMUs via Breck Farm Lane and new Bridleways linking to Furze Lane via the Marriotts Way Overbridge
Furze Lane (U57168) to the north of the NDR	2525	Alternative provided for NMUs via Furze Lane and new Bridleways linking to Breck Farm Lane via the Marriotts Way Overbridge
Drayton Lane (C282) south of its junction with Reepham Road	5350	Norfolk County Council proposes an amendment to scheme which involves removal of this closure. This is detailed in Proposed Minor Change to the Application for Development Consent: Drayton Lane (south) (Document Ref 5.13).
B1149 Holt Road to north of the NDR	6600	NMUs will be able to continue to use Holt Road as a substantially traffic free route, which then links to a proposed cycle track (with right of way on foot) at Cromer Road Roundabout North
Holly Lane (U57142) to the South of the NDR	6600	NMUs will be able to continue to use Holly Lane as a substantially traffic free route, which then links to a proposed footway/cycleway at Cromer Road Roundabout South
Bullock Hill (C251) to the North of the NDR	8900	Alternative provided via a bridleway on the north side NDR with at grade crossing at the Airport Roundabout
Quaker Lane (U57188) to the North of the NDR	9820	Alternative crossing of NDR provided by Buxton Road Overbridge with links to Quaker Lane (a substantially traffic free route) and new bridleway adjacent to the south side of the NDR

St. Faiths Road (C251) to the South of the NDR	9990	Alternative crossing of NDR provided by Buxton Road Overbridge with links to Quaker Lane (a substantially traffic free route) and new bridleway adjacent to the south side of the NDR
Broad Lane (C258) at its junction with Plumstead Road/Norwich Road (C874)	17010	Alternative provided by bridleway adjacent to Norwich to Sheringham railway line between Plumstead Road and Broad Lane/Green Lane East
Low Road (U59392) to the east and west of the NDR	18380	Alternative crossing of NDR provided by Middle Road Overbridge with bridleways on either side of the NDR linking to Low Road
Smee Lane (U59400) to the east and west of the NDR	9000	Alternative crossing of NDR provided by Middle Road Overbridge with bridleways on either side of the NDR linking to Smee Lane
A length of the existing A47(T) eastbound diverge slip road, from the A47(T) connection point with the new eastbound diverge slip road, eastwards to the existing Postwick North West roundabout	19500	Pedestrians and cyclists are not disadvantaged by this closure as it is proposed that a shared use facility should be provided along the line of the existing slip road
A length of the existing A47(T) eastbound merge slip road, from its junction with Postwick North West roundabout, eastwards to the connection point with the new A47(T) eastbound merge slip road	19500	New slip form Postwick North East roundabout with links to a proposed cycle track (with right of way on foot) adjacent to the NDR and to a proposed footway/cycleway

1.16.2. Chapter 12 of the Environmental Statement (Document Ref 6.1) identifies the public rights of way that are affected by the NDR. In the majority of instances where a public right of way has been severed an alternative diverted route has been provided, as summarised in the table below.

Severed Right of Way	Chainage	Alternative Route
Attlebridge Restricted Byway No 3	760	A diverted route provided adjacent to the NDR to the proposed A1067 Fakenham Road Roundabout
Marriotts Way Permissive Path	2390	New bridge provided over the NDR (Marriotts Way Overbridge)
Drayton Restricted Byway No 6	3000	A diverted route provided to the Reepham Road Roundabout
Horsford Restricted Byway No 5	4000	New bridge provided over the NDR (Bell Farm Overbridge)
Horsford Restricted Byway No 7	5300	Remaining length to connect with new Drayton Lane (north) Link Road and NMU facility on west side of this road
Postwick Footpath No.2	19000	New cycle track (with right of way on foot) to be provided adjacent to the east side of the NDR

1.16.3. There are two public rights of way that are substantially removed by the proposals but alternative routes have been provided, as summarised in the table below.

Substantially Removed Right of Way	Chainage	Alternative Route
Spixworth Bridleway No1 and Horsham St Faith and Newton St Faith Bridleway No 6	9800	New PMA combined with bridleway provided on north side of NDR linking to Quaker Lane
Great and Little Plumstead Footpath No.5	18750	New bridleway provided adjacent to the east side of the NDR

- 1.16.4. During development of the scheme proposals Norfolk County Council has tried to keep the number of road closures to a minimum. They are generally only provided for reasons of highway safety where minor roads are severed by the NDR or to encourage traffic to use more appropriate routes.
- 1.16.5. In a number of instances Norfolk County Council has listened to the comments from the local community regarding severance and amended the proposals. For example:
- following the April/May/June 2012 consultations Norfolk County Council responded to concerns regarding the reduced local connectivity with Gt Plumstead by proposing an all user bridge over the NDR at Middle Road rather than the originally proposed agricultural vehicles and NMU bridge at Low Road,
 - following the April/May/June 2012 consultations Norfolk County Council responded to concerns regarding the reduced local connectivity between Horsford and Horsham St Faith by removing the proposed closure of Church Street and proposing to monitor the road after implementation of the NDR (with consideration to implementing the closure if appropriate),
 - following the February/March 2013 public consultations Norfolk County Council responded to concerns, particularly from local businesses, regarding the severance of Fir Covert Road by proposing a new roundabout at the junction of Fir Covert Road with the NDR.

- 1.16.6. The assessment presented within Volume 1, Chapter 13 of the Environmental Statement (Document Ref. 6.1) concludes that a Slight Adverse but not significant impact is anticipated for All Travellers during construction for a temporary period, as a result of construction delays, route diversions and the presence of construction plant. However, once the Scheme is operational, it is considered that there would be a Moderate Beneficial and therefore significant impact for All Travellers. This is as a result of reduced traffic and congestion on radial routes, improved amenity for Non Motorised Users (NMUs) and relief from existing severance within and between communities and facilities caused by existing high traffic levels.
- 1.16.7. Because suitable alternative routes are to be provided for the minor highways and public rights of way that will be severed or otherwise closed as a result of the NDR, NCC does not consider that there will be adverse effects on the connectivity of communities in terms of access to health, education, social, and recreational facilities and opportunities.

Representation

1.17. *The traffic forecast is difficult for a lay person to understand. Public servants have a responsibility to communicate clearly with the public and this document fails on every count.*

Applicant's comment

- 1.17.1. A large amount of information is collected and prepared to develop a transport model covering a large network and urban area. Further data is collected to validate the base model that forms the basis for carrying out the forecasts. The forecasts require information on future network changes, developments that will generate traffic as well as forecast information produced by the Department for transport, for example on the growth of heavy goods vehicles. The forecast models are used to assess the transport system with and without an intervention.
- 1.17.2. It is accepted that there is a large amount of information that is presented in the submission related to the model building and forecasting. Separate reports are produced on survey data, model validation and forecasting which is standard practice in the industry. The outcomes from the forecasts have been presented in the Traffic Forecasting Report(TFR) (Document 5.6) and a significant effort was made to present results in easily understandable formats. Section 7 of the TFR contains tables diagrams (See Appendix I) and graphs to accompany the commentary. Therefore it is not accepted that the submission fails to communicate the forecasts clearly.

Representation

1.18. *The data set is very small and therefore must lead to potentially large errors. There does not appear to be stress testing of the figures.*

Applicant's comment

1.18.1. The data collected for the development of transport models follow the Department of Transport's guidance. More details on the data used in model development can be found in Section 3 of Document Ref 5.9. Large numbers of sensitivity tests have been carried out and reported in the Summary Results of Sensitivity Tests report (Document Ref 5.11).

Representation

1.19. *Traffic counts were taken in October and November (avoiding the half term). This is the beginning of the Sugar Beet Campaign with around 100 HGVs per day moving west-east to the factory at Cantley. This must skew the figures for the demand for west-east trips. Also the time of the year means that traffic will be depressed when compared with high summer.*

Applicant's comment

1.19.1. Allowance for seasonal variations in traffic flows used to build the traffic model has been made as follows:- a) where possible traffic surveys were carried out in October or November, which are designated as 'neutral' or representative months in terms of seasonal variation (see DfT's Transport Analysis Guidance Unit M1.2 - Data Sources and Surveys - section 3.3.6); b) where traffic surveys had been carried out in other months, the results were normalised as described in the Highway Model Local Model Validation Report (Document 5.9) sections 3.7.1 to 3.7.3; c) annualisation factors used to produce annualised traffic flows were calculated as described in the Economic Appraisal Report (Document 5.7) Appendix A.

- 1.19.2. Traffic resulting from future developments was included in the transport model, and is detailed in sections 5.3 to 5.6 and appendices C to F of the Traffic Forecasting Report (Document 5.6).

Representation

1.20. *There do not appear to be traffic counts on the Aylsham Road, the Holt Road, the Buxton Road, the Plumstead Road or the Yarmouth Road – all radial roads to Norwich and bound to be effected by the NNDR.*

Applicant's comment

- 1.20.1. Figure 3.1 and Table 3.2 in the NDR Highway LMVR, Doc 5.9 show the 2006 Roadside Interview sites where Automatic Traffic Count (ATC) surveys have been undertaken in 2012. ATC surveys were undertaken for the following sites:
- Site 7 - C874 Plumstead Road Between Dussindale Drive and Green Lane North
 - Site 20 - A1402 Aylsham Road Between Boundary Road and Spynke Road
 - Site 23 - A1242 Yarmouth Road Between Stanley Avenue and Harvey Lane
- 1.20.2. In addition, paragraph 3.6.1 of the report explains that Turning counts were carried out at the A140 Cromer Road/Holt Road Roundabout.
- 1.20.3. As with regard to Buxton Road, although no survey was undertaken on this road, but as part of the model validation, a traffic count was undertaken on Spixworth Road Between Church Street and The Warren (site V.7) as shown in Table 3.3 of the report. The location of this site is just to the south of Buxton Road.

Representation

1.21. *The traffic forecast appears to predict that a high percentage of traffic will flow west-east when the NNDR is completed. Why? – the centre of employment (60% of the Norfolk’s jobs are in Norwich), health care, shopping, entertainment, higher education, administration etc is in Norwich which is on the north-south axis.*

Applicant’s comment

1.21.1. The surveys carried out for the base model capture the existing travel patterns. In the forecast years these are added to by the proposed JCS development trips generated by new housing and employment development, much of this in the NDR corridor. Whilst it is true there are large radial movements into the city centre, there are also significant orbital movements which will be increased by the new development.

Representation

1.22. *The illustration at 5.6 Vol 2 Figure F.1 omits the Barrack Street, Anglia Square, and St Marys developments along the Norwich inner ring road, which will generate many vehicle movements along the radial roads from the NNDR which are not accounted for. Even if these vehicles use the NNDR at some point they will eventually use the radial roads to Norwich.*

Applicant’s comment

1.22.1. The Traffic Forecasting Report, shows forecasts for a selection of road network links (see figures I.1 to I.5 in the Doc. Ref 5.6, Vol. 3). Just because traffic model outputs are not shown for a particular link does not mean that traffic on that link is not accounted for.

Representation

1.23. *The forecast does not appear to take into account the unusual pattern of car ownership in the Broadland District Council area. Also it does not appear to take into account the demographic changes taking place.*

Applicant's comment

1.23.1. Section 5.7 of the Traffic Forecasting Report, Doc Ref 5.6, Vol 1 states that future growth in the NDR traffic models have made use of the Department for Transport National Trip End Model (NTEM) v 6.2. NTEM6.2 growth has been used for Broadland, Norwich and South Norfolk. The NTEM forecasts are based on future predictions of population, employment, household by car ownership, trip ends and traffic growth factors and this information is used in predicting the future trip end growth for the three districts mentioned above. In addition the future changes in spatial allocation of growth due to the Joint Core Strategy are taken into account by explicitly locating the proposed developments. It is considered, therefore, that the forecasts do account for patterns of car ownership and demographic changes.

Representation

1.24. *In general all traffic forecasts are unreliable. In 2008 the Highways Agency commissioned transport consultants Atkins to examine their “one-year after” reports in some detail. They discovered that traffic levels were unpredictable but were generally higher than forecast. The Developer should stress test the traffic forecast model and publish a worse case scenario.*

Applicant's comment

- 1.24.1. Post Opening Project Evaluation (POPE) of major Schemes, meta-analysis 2013 (Highways Agency, 2013) looked at forecasting accuracy by allowing comparisons between the forecast scheme impacts and observed outcomes. It found that the majority of schemes accurately forecast traffic flows (to within +/- 15%), but there is much variability in accuracy between schemes. It also states that there is evidence to suggest that the accuracy of traffic forecasting improved over time.
- 1.24.2. It is accepted that there is uncertainty in forecasting and the forecasts have been ‘stress tested’ for low and high forecasts. The results are contained in Summary of Results of Sensitivity Tests (Document Ref. 5.11).

Representation

1.25. *The costings (4.2 Funding Statement section 2) do not show the costs of the replacement radar for Norwich International Airport quoted in the local press as £1.9 million.*

Applicant's comment

1.25.1. The cost of the radar was included within the Funding Statement (Document Ref 4.2). An increase in the estimated cost of the replacement radar was reported to Norfolk County Council's Cabinet on 14 April 2014. This increased cost was not known at the time the Funding Statement was submitted as part of the DCO application. The report to Cabinet explained that the increased costs of the radar could be absorbed within the budget already agreed by Cabinet as a result of savings identified elsewhere. There is no increase in the overall project cost, which remains at £148.55m.

Representation

1.26. *The costings allow for inflation at 2% but construction cost indices available on the internet predict 4% increase in 2015. Another web site indicates that cement will rise by 7%. There are reports in the press of wage inflation in the construction industry running at 7-10%.*

Applicant's comment

1.26.1. An explanation of the adjustment for construction inflation is contained within Section 4.3 of the Economic Appraisal Report (Document Ref 5.7).

Representation

1.27. *NCC are planning to make massive cuts in the road maintenance budget to find some of the money. How will the Council maintain the NNDR?*

Applicant's comment

1.27.1. The Local Highways Maintenance grant is calculated, for the A class road network, purely on length. Therefore the NDR, a future A class road, would attract extra funding through this formula.

Representation

1.28. *NICE public health guidance 41 "Walking and cycling: local measures to promote walking and cycling as forms of travel or recreation" has not been taken into account in the plans for the NNDR.*

Applicant's comment

1.28.1. NICE public health guidance 41 sets out how people can be encouraged to increase the amount they walk or cycle for travel or recreation purposes. This will help meet public health and other goals (for instance, to reduce traffic congestion, air pollution and greenhouse gas emissions).

1.28.2. The NDR forms a key part of the Norwich Area Transportation Strategy NATS and the NATS Implementation Plan (NATSIP), which was updated in November 2013 (Cabinet Report 4 Nov 2013) Appendix D. NATSIP sets out the relationship between the NDR and NATS and identifies those elements of NATSIP that cannot be delivered without the NDR. The NDR therefore allows the full range of NATSIP measures to be delivered.

- 1.28.3. NATSIP has been developed to deliver the required step-change in transport provision to realise the full potential of, and cater for, the transport needs of a vibrant and growing regional centre including Bus Rapid Transit (BRT) Cycle Network and Public Realm Improvements. The NDR, with its associated NATS measures underpins the opportunity to deliver a high quality living environment in sustainable developments based around walking, cycling and public transport.

Representation

1.29. *There are problems with accident data. Although it is generally agreed that fatalities are recorded accurately it is now understood that there are considerable margins of error in the recording of serious and slight injuries. In light of these margins or error NCC should apply “what if” tests to the data to see what happens if the variations in inputs are taken into account. NCC should present a worse case scenario.*

Applicant's comment

- 1.29.1. The accident data used by Norfolk County Council is based on personal injury accidents reported to the police. It does not include non-reportable incidents which include non-injury collisions, near misses and accidents that take place on private land away from the highway.
- 1.29.2. There are long standing issues with under-reporting of personal injury accidents both nationally and internationally, particularly with less serious injuries. The data set is reliant on drivers reporting the accident to the police, of which there is presently no legal obligation to do so in Great Britain. Hence, some accidents, particularly those involving single vehicles, which should have been reported to the police will not be reported.

- 1.29.3. In addition, it is often difficult for a police officer to judge whether a casualty should be classified as having a serious or slight injury, particularly if this does not become apparent until some time after the road incident. The above issues are less likely to occur with the more serious and fatal casualties, and it is generally agreed that all fatalities are recorded.
- 1.29.4. Nevertheless, police accident data represents the best source of information we have to investigate the causes of personal injury accidents and to analyse accident trends. It is collected across Great Britain in a consistent way using a form known as STATS19 and in most cases a police officer will have attended the accident site to obtain the relevant information. The completed form provides a wide range of contributory factors and details that enable an informed, evidence based assessment of the accident. This breadth of information and level of detail cannot presently be obtained from other data sources. Furthermore, the level of under-reporting has been found to be consistent across the country, so meaningful comparisons between different locations can still be made

Representation

1.30. *Section 5.6 page 31 – an assertion “as the route (NNDR) will provide quicker access to key employment sites. No evidence offered! The trips quoted are untypical – most work trips will be along the radial roads to Norwich (which has 60% of Norfolk’s jobs).*

Applicant’s comment

- 1.30.1. Section 7.5 of the TFR gives comparisons of forecast highway journey times between selected locations, and these are detailed in Tables 7.6 and 7.7 for AM and PM peak periods respectively. Journey times between locations on the strategic highway network (A47(T)W, A11(T), and A47(T)E and the airport, Broadland Gate, the airport, and Rackheath are important for both existing and proposed employment sites. It can be seen from the tables that in the great majority of cases, forecast journey times for 2017 and 2032 with the Scheme are less than those in the Do Minimum situation, and the majority for both forecast years are less than the 2012 base year journey times.
- 1.30.2. There are currently estimated to be around 370,000 jobs in Norfolk of which a little under 95,000, or around 25%, are in Norwich City Council area (see attached extracts from the East of England Forecasting Model – row “Total employment – jobs”). Although there is a concentration within the city centre, these jobs will be distributed across the City Council area. There is a particular concentration around the northern section of the outer ring road and south of the Airport.
- 1.30.3. The Broadland District Council area contains around 55,000 jobs, many of which can be expected to be within the Norwich Policy Area where the principal centres of population and major business parks are located.

- 1.30.4. For the future, around 135ha of employment land remains to be developed in close proximity to the NDR:
- an approved 15ha extension of Broadland Business Park known as Laurel Farm and a further permission of 25ha known as Broadland Gate,
 - new allocations for 25ha at Rackheath within the growth triangle and 30 ha associated with Norwich International Airport,
 - a permission for Norwich Aeropark of 40ha,
 - In addition, the Beyond Green (Old Catton North Sprowston) application for part of the growth triangle includes 16,800m² of employment space and a further 8,800m² of other commercial development. Planning permission has also been granted for 5ha of office development on the north side of the old St Andrews Hospital (adjacent to Broadland Business Park).

Representation

1.31. *At Section 3 Cycle Proofing Roads, 3.2 – “Making greater provision for cycling on the strategic road network by correcting historic problems, retrofitting the latest solutions and ensuring that it is easy and safe for cyclists to use junctions” How will these new requirements be incorporated into the NNDR?*

Applicant’s comment

- 1.31.1. In the Department for Transport’s “Briefing on the Government’s ambition for Cycling” (12 August 2013) cycle proofing is defined as taking action on a variety of fronts. Examples of action were identified as:
- designing road improvements with cyclists in mind as well as motorists and to use traffic management tools and techniques to manage the needs of all road users,

- making greater provision for cycling on the strategic road network by correcting historic problems, retrofitting the latest solutions and ensuring that it is easy and safe for cyclists to use junctions,
- ensuring cyclists have access to adequate training to enable them to safely and confidently cycle on the road,
- encouraging a culture of sharing the road amongst all users.

1.31.2. The response to Question 6.6 explains how Norfolk County Council considered the design of the NDR with cyclists, pedestrians and equestrians in mind throughout the design process. This strategy was also used to help prioritise the requests for various NMU facilities during the consultations.

1.31.3. Norfolk County Council and Norfolk Constabulary are working together to raise awareness of safety issues amongst cyclists and drivers. They have developed a three-strand intervention which will be launched on 27th August 2014 and run for at least the next five years. The three strands are:

- **Drivers** - Norfolk County Council will be running a media campaign highlighting the need for cyclists to be given due space and consideration. The media will build upon the already successful 'Keep Your Mind on the Road' branding. Norfolk County Council will also be enhancing the direct education given to the 25000+ drivers who attend court diversion courses every year.
- **Cyclists** - Norfolk County Council will be offering free workplace seminars to commuter cyclists (or potential cyclists), which will cover the economic, health and environmental benefits of cycling, whilst providing advice on equipment, routes and behaviours. This will be delivering key safety messages amongst other pieces of advice that the riders would want to know. As a follow up the cyclists will be offered an on-road session, which there will be a charge for this

element. This will explore the potential routes for the commuter journey and establish the best choice for safety and convenience, whilst promoting best practice behaviours. Norfolk County Council will also be delivering cyclist training to 4500 Norfolk children in this service plan year, assisted by hundreds of community volunteers around the county.

- **Enforcement** - Norfolk Constabulary will maintain their ongoing commitment to treating all road users equally.