

Major Scheme Business Case Norwich Northern Distributor Route

Executive Summary



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Executive Summary

1 Introduction

The Norwich Northern Distributor Route (NDR) is the key piece of major infrastructure necessary to secure implementation of the agreed Norwich Area Transportation Strategy (NATS). It will also be an essential component for the successful delivery of the significant growth in jobs and housing planned for the Norwich Area in the period to 2021 and beyond.

The recently agreed East of England Plan (EEP) allocates a minimum of 33,000 additional dwellings to the Norwich Policy Area (NPA) 2001-21. The emerging Local Development Framework Joint Core Strategy looks forward to 2026 and therefore includes a further 9,000 dwellings. Of the 35,000 additional jobs targeted by the EEP at the wider Norwich area, the vast majority are expected in the NPA. Two of the strategic employment locations identified in the EEP, Norwich Airport and Thorpe St Andrew, are directly served by the NDR.

The scale of proposed growth has resulted in Norwich's designation as a Growth Point by central Government. The economic potential and regional significance of Norwich is recognised by its designation as an "engine of growth" in the regional economic strategy (RES). Norwich's success as an "engine of growth" is critical to the RES as the main driver of growth in the north-east of the region. The City's success is, in turn, dependent on the NDR scheme.

Development of the evidence base for the Greater Norwich Joint Core Strategy (JCS) has confirmed the importance of the NDR scheme in delivering growth. The Growth Infrastructure Study, produced by the Greater Norwich Development Partnership provides a high level analysis of the infrastructure requirements of planned growth in the NPA. It concluded that the NDR scheme:

- should be delivered as soon as possible in the medium term (after 2011)
- "is needed to ensure that traffic in the northern part of the NPA can be removed from unsuitable local roads and thereby provide efficient access and movement, including meeting the needs of planned development over the wider area" and
- with other strategic improvements, is required to provide better accessibility to employment locations.

The Greater Norwich Employment Growth and Sites & Premises Study (by Arup) confirms the importance of Norwich International Airport to the local economy. In order to cater for employment growth it recommends (*inter alia*) a new business park location at the airport (approximately 35ha) and an extension to the business parks at Thorpe St Andrew. It also predicts significant growth in employment in the City Centre. The NDR scheme is critical to the viability of each of these sites as locations for significant employment growth.

At present transport problems are causing access constraints for businesses in the Norwich area, and in particular those situated close to Norwich International Airport. An NDR scheme implemented as part of the NATS strategy and alongside complementary measures will also enable the removal of through traffic (around 19,000 vehicles per day) from the city centre, and allow access improvements by all modes that will benefit city centre businesses and their employees.

The high level of housing provision required by the EEP makes further significant allocations in Broadland inevitable. Indeed, the Issues and Options consultation, carried out over the winter 2007/08, highlighted a large urban extension north east of Norwich as one of the better opportunities for large-scale growth. A major development of over 6,000 houses in the north-east of Norwich is included in all options being considered. The proposed growth cannot be delivered in any practicable way without building the NDR, as part of implementing the NATS strategy.

The strategic significance of the NDR scheme is endorsed by all key partners. It is supported by the Greater Norwich Development Partnership (GNDP), East of England Development Agency (EEDA) and East of England of Regional Assembly (EERA). The GNDP have made the Postwick Hub (including the eastern section of the NDR) their top priority for Community Infrastructure Fund (CIF2) funding. Postwick Hub has been given “gold” priority status by EERA, in recognition of its ability to provide, in conjunction with the NDR scheme, direct strategic access to a growth area that could provide between 7,000 and 10,000 dwellings. In addition it will unlock employment land that will contribute between 2,000 and 3,000 jobs.

The scheme has the full backing of Shaping Norfolk's Future Transport Forum, the Norfolk Chamber of Commerce, including the Norwich Chamber, and the City Centre Management Partnership are also very supportive of the scheme and keen to see its early implementation.

The strategic case for the scheme is overwhelming. In addition, the NDR scheme stands up as a transport scheme in its own right. Our recent policies and approach through NATS have been highly successful in reducing the amount of traffic entering the Norwich city centre. Investment in park and ride, Norwich bus station and real time information have contributed to significant growth in bus patronage, and held city centre traffic levels to 20% below their 1998 levels. This success has been supported by close partnership working with bus operators and local planning authorities, particularly the City Council.

Despite this success, traffic in the wider Norwich area has grown significantly with rising incomes and car ownership. Significant progress has been made in implementing the NATS strategy but further significant progress cannot be made without the NDR scheme. The NDR scheme is essential to:-

- relieve the northern suburbs and adjacent ring of villages of ‘rat running’ traffic,
- relieve congestion on the inner and outer ring roads and key radials,

- create the “elbow room” in Norwich for a further phase of bus, cycle and pedestrian prioritisation,
- facilitate further enhancements to the public realm.

In July 2006 the scheme was given regional priority through inclusion in the Eastern Region Funding Allocation as a Priority 1A scheme for construction in the period from 2011/12 to 2015/16. The current funding allocation constitutes 60% of the overall scheme cost. The County Council has progressed the scheme over the last 3 years from its own resources to a point where it is in the advance stages of selecting a contractor under an ECI contract. Key to progressing the scheme further will be the acceptance by the Department for Transport (DfT) of this Programme Entry Major Scheme Business Case (MSBC). The MSBC has been prepared in accordance with the DfT guidance for local authorities seeking Government funding for major transport schemes.

Scheme Description

The proposed NDR scheme comprises a new road around the north and east of Norwich and significant traffic management in the city centre, plus the northern and western suburbs.

The NDR is predominantly a dual carriageway road approximately 20km long. At its western end, the existing single carriageway A1067 Fakenham Road will be realigned to join Fir Covert Road at a new roundabout junction. The A1067 will then link back to Taverham along an improved Fir Covert Road. The proposed NDR will then proceed eastwards, passing to the north of Thorpe Marriott before joining the A140 Cromer Road at a new grade separated junction, close to Norwich Airport. The route then continues eastwards to pass to the south of the communities of Horsham St Faith, Spixworth and Rackheath before joining the A47 Trunk Road at the existing Postwick Interchange. New at-grade roundabouts will be constructed where the NDR crosses the main radial roads linking the north and north east of Norfolk to Norwich City Centre.

The complementary traffic management measures have been reviewed as part of NATS. Their aim is to manage traffic volumes and speeds on the existing highway network and to benefit sustainable transport modes such as walking, cycling and public transport. Proposals have been developed as part of NATS and will be funded through the LTP and other sources including developer contributions. Where it is anticipated schemes will be implemented before the NDR scheme, these have been included as part of the Do Minimum Scenario. The County Council is fully committed to delivery of those measures and recognise their importance for realisation and ‘locking-in’ of the scheme benefits.

2 Scheme Background, History and Objectives

The NATS strategy adopted by Norfolk County Council in October 2004 includes a NDR, together with complementary traffic management measures, to:-

- reduce congestion on strategic routes to the north of the city
- reduce noise, air pollution and accidents for communities in the northern suburbs of Norwich and villages outside
- enable the removal of through traffic from the city centre, and implementation of widespread pedestrianisation/bus priority measures
- provide direct access to growth locations, providing a key element to deliver significant housing and employment growth
- support the continued success of the Norwich economy as the driver to growth across the north of the region
- provide improved access to north and north east Norfolk in particular to and from the national trunk road network via the A47 and A11.

The proposed NDR is located within the Broadland District Council area of Norfolk adjoining the City of Norwich district council. The route lies between the northern urban fringe of Norwich and a ring of outlying communities. The route has been chosen to relieve residential and other roads, both in communities in the urban fringe and in the outlying villages, from extraneous traffic which uses inappropriate routes through these communities to avoid congestion in Norwich itself and on the radial roads outside Norwich.

Norwich is a key functional centre in the eastern region for a range of services, as well as the administrative and operational headquarters for a number of organisations. It is a city of considerable historic importance and the city centre, in particular, retains many historic features. The historic core has a pattern of narrow streets within the city walls lined by many mediaeval and Georgian buildings and churches.

Transport plays a crucial role in allowing the Norwich area to fulfil its potential but also causes problems, such as traffic congestion and noise and air quality within the urban and suburban areas.

Norwich is also the gateway to North Norfolk for the strategic routes from the south and west.

The societal change to more flexible working patterns and a 24 hour economy is resulting in trips being distributed throughout the day. The availability and affordability of travel has led to a dramatic rise in the extent of travel. The rural nature of Norwich's wider hinterland which is difficult to serve by public transport is adding to the problems on the road network, with the main method of getting to work being by car.

Proposals for an NDR first came to prominence as an issue for the Norwich area in the 1991 NATS. The preferred strategy produced by consultants after a 2 year study recommended inclusion of an NDR scheme but the scheme was not included as part of the adopted strategy pending further investigation into its impact. Reviews of the NATS strategy in 1994 and 1997 maintained this position until NATS 4 strategy was reviewed and adopted in 2004. The NDR scheme was included in NATS 4 as a means of achieving other elements of the strategy, which had not been successfully achieved under NATS 3.

The inclusion of the NDR scheme took place after a rigorous process of review, following webTAG guidance, which involved the appraisal of six strategic options including a number based around public transport. The preferred strategy option including the NDR scheme was deemed to best meet the aims and objectives of the NATS strategy, and following extensive public consultation, was adopted by the County Council in October 2004.

The public consultation for the NATS Review invited consultees to comment on whether an NDR scheme should be part of the strategy. To help consultees come to a view, a number of route corridors were included in the consultation document – 3 to the east and 4 to the west. Whilst there was strong support for an NDR scheme (78% of respondents) there was no strong preference on which route should be preferred and a large number of variations were proposed.

Having adopted the preferred NATS strategy, the County Council then undertook a Stage 2 Assessment of the route alternatives prior to carrying out an extensive public consultation on a number of possible routes. That consultation resulted in strong environmental concerns being expressed about the impact of a new road across the River Wensum Special Area of Conservation (SAC) to which the County Council responded by carrying out further assessment beyond a Stage 2 level to ascertain whether the impact on the SAC could be mitigated. The conclusion was that it could not be demonstrated that the new road would not affect the integrity of the SAC. Alongside this, traffic modelling indicated that a road starting at the A1067 in the west rather than the A47 gave significant benefits and delivered most of the objectives of the NDR scheme and these were key factors in the decision to choose the preferred route as now proposed.

Removing motorised through traffic from the city centre is an essential element of NATS in support of policies within the City of Norwich Local Plan and City Centre Spatial Strategy to make the city centre a more liveable space. The construction of the NDR scheme will enable measures to be implemented to deter through traffic from travelling via the city centre, creating a safer and more environmentally attractive environment for residents, pedestrians and cyclists.

Norwich International Airport is located immediately to the north of the existing urban fringe. Its links to the strategic road network to the south, west and east is via the existing congested Inner and Outer Ring Roads. The Airport contributes towards unlocking potential of the Norwich economy. Airport related industries are expanding and existing Local Plans allow for further airport related development within the curtilage of the airport. Passenger numbers are forecast to grow to by 35% in the period up to 2012. The NDR will provide the strategic link necessary for the Airport and its related activities to develop to their full potential.

Other key employment sites, including the Norwich Research Park, the University of East Anglia, the Norfolk and Norwich Hospital and Business Parks close to the A47 at Thorpe St Andrew in the east and Longwater in the west will be increasingly constrained by the current limitations of the transport network.

3 Scheme Appraisal and Value for Money

The NATS Saturn traffic model was updated in 2002 following an extensive traffic survey and informed the 2004 strategic review. In discussion with DfT, whilst this model update would have sufficed for the MSBC, it would be out of date by the time a public inquiry could happen. For this reason the 2002 model has undergone a major update using data from an extensive traffic survey carried out in the spring/autumn of 2006. The model has been updated by Mott MacDonald and validated to ensure compliance with the latest DfT guidance on traffic models.

The comprehensive update of the model has involved building new demand matrices from some 46 Roadside Interview Survey sites in 2006. At the request of the Highways Agency (who have contributed to the survey work) the survey cordon was extended beyond the A47 Southern Bypass to include all the A47 links and junctions within the simulation zone.

The model has been validated to compare journey times, volumes and delays on links and junctions. The results show a good correlation between modelled and measured flows and the model gives a realistic representation of current traffic patterns in the Norwich area.

The traffic model has been used to provide forecasts of traffic flows across the highway network for scenarios with and without the NDR scheme and for the low cost and next best options. The model, in conjunction with the public transport model, has been used to test the public transport option against the preferred scheme.

Growth forecasts took account of projected Regional Spatial Strategy growth within the Norwich area as included in TEMPRO growth indices. The broad location of significant housing growth is still subject to the outcome of the Joint Core Strategy (JCS) but the scheme appraisal has considered the scenario that impacts most on the road network. All practicable scenarios to deliver the growth requires an NDR scheme.

Sensitivity tests have been carried out on the proposed scheme with different allowances for optimism bias. These were carried out to reflect the fact that many of the risks built into the optimism bias at programme entry have been already been mitigated on the scheme. On that basis, this Business Case sets Optimism Bias at 25%. The sensitivity tests have been carried out for Optimism Bias set at 18.8%, 25% and 44% and indicate that even with 44% the benefit to cost ratio is in the 'high' value for money category.

Model forecasts have therefore been provided for a range of scenarios, providing a robust number of separate model forecasts as follows:

- Future scenarios – a 'Do Minimum' scenario and separate scenarios for the proposed scheme, the low cost and next best options and the public transport option.
- Time periods – a morning peak hour, an interpeak and an evening peak hour.
- Forecast years – 2012 (opening year) and 2027 (design year).

The results of the traffic forecasting were used to evaluate the benefits of the proposed scheme and the three other alternative options (Next Best, Low Cost and Public Transport). A full benefit to cost analysis was undertaken in accordance with DfT guidance. The TUBA (Transport User Benefits Assessment) was used to calculate travel time benefits and scheme costs. COBA (Cost Benefit Analysis) was used to predict the benefits from a predicted reduction in accidents on the network.

The analysis indicates that the proposed scheme performs significantly better than the other options including the public transport option, in benefit to cost terms and operational and safety terms.

The Present Value of Costs (PVC) for the proposed scheme was calculated in the order of £99 million. This includes the estimated capital and operating costs incurred by the public sector.

The Present Value of Benefits (PVB) for the proposed scheme was calculated in the order of £258 million. Travel time saving comprise the majority of benefits.

The Net Present Value (NPV) (ie the difference between benefits and costs) of the proposed scheme was calculated in the order of £159 million.

Hence the benefit to cost ratio (BCR) is in the order of 2.6 indicating that the NDR scheme represents good value for money in accordance with the DfT guidance.

4 Project Management and Delivery

Robust project management arrangements have been in place for the last 3 years and to date have delivered the project so far on time and to budget. The project management structure for the next phase of the project has been developed along the lines of the County Council's recently adopted corporate project management guidelines. The structure includes arrangements for day-to-day and strategic decision making and approvals with active engagement of politicians in the process.

The project structure has been endorsed by the Gateway Review Team as an example of good practice. The County Council has also appointed an independent consultant to give oversight of the procurement process. A project delivery plan has also been developed to ensure all key activities and stage completions are programmed and the necessary resources are in place to deliver the project to the agreed programme.

Management of risk is a key element of project management and the NDR scheme is included in risk registers at a corporate as well as at the scheme level. These registers identify the risks to the County Council of the scheme not progressing as planned as well as the specific risks associated with the scheme itself through the Quantified Risk Assessment. The regular review and recording of risks as the scheme progresses is undertaken as part of the risk management strategy.

A communications plan has been developed to ensure ongoing and meaningful engagement with stakeholders and the general public through regular newsletters and public information exhibitions. The development of the scheme has been driven by consultation with local people.

The County Council has agreed the overall procurement strategy with DfT and has successfully completed the first stage of long listing. The procurement timetable allows for a contractor to be appointed once the decision on this major scheme business case is known, after which the contractor will become part of the delivery team under the Early Contractor Involvement (ECI) process.

A detailed estimate of the scheme costs has been produced. The works element has been produced by the County Council's Contractor Partner who has engaged with the local supply chain. This gives confidence that the estimate has included all those elements a contractor would expect to find leading to certainty on cost. This estimate has been scrutinised by an independent cost consultant who has verified the estimate. Costs include an allowance for risk and inflation, as well as the cost of preparation work and construction.

5 Quantified Cost Estimate £m

The Quantified Cost Estimate for the proposed road has been produced in accordance with the DfT guidance and is in the order of £116.6m. This figure is based on an outturn cost updated to Quarter 3 2007 price base, using 4.5% inflation.

These costs will be shared between the County Council and developer funding, which will provide a local contribution of a minimum of 10%, the DfT through the Eastern Regional Funding Allocation and the Department of Communities and Local Government through its Growth Point and Community Infrastructure Funds.

6 Requirements for Programme Entry

The DfT has identified seven qualifying criteria for a scheme to be considered for major scheme funding. The way in which the NDR scheme proposals meet these criteria is summarised below:

- *“It must be promoted by an LTP authority or Metropolitan District as lead partner.”*

The NDR scheme is promoted by Norfolk County Council within its Local Transport Plan. The County Council has the support of all local district councils and the scheme is a priority for investment within the Greater Norwich Programme for Development.

- *“It must have been prioritised by the appropriate regional bodies within the relevant Regional Funding Allocation.”*

The NDR scheme is included in the Eastern Regional Funding Allocation as a Priority 1A scheme with funding allocated in the period 2010/11 – 2015/16.

- *“The requested DfT contribution should be consistent with the spend profile and within the total amount endorsed for the scheme by the region through the RFA process.”*

The spend profile for the NDR scheme is consistent with the spend profile within the current RFA.

- *“It should be supportive of, and aligned with, the promoting authority’s Local Transport Plan and in most cases should already have been identified within the LTP.”*

The NDR scheme is included in the Norfolk County Council LTP and is consistent with the LTP objectives and those of the developing Joint Core Strategy of the three district councils of Broadland, Norwich City and South Norfolk. The scheme is consistent with the East of England Plan objectives for Norwich as a Centre for Development and Change.

- *“It must be supported by a local contribution of at least 10% of the total scheme cost, or a sum equivalent to not less than 100% of the authority’s IT Block in the year which Programme Entry is sought, whichever is the smaller. The contribution must be underwritten by the Local Authority.”*

The RFA allocation represents 60% of the Quantified Scheme Estimate. The remainder will be covered from other government sources and at least 10% will come from the County Council’s own resources or through long term developer contributions. The County Council has resolved to underwrite the non-committed funding.

- *“New light rail schemes must be supported by a local contribution of at least 25% of the total scheme cost.”*

Not applicable to the NDR scheme.

- *“It must have a total scheme cost of at least £5 million.”*

The current Quantified Cost Estimate of the NDR is in the order of £116.6 million.

The DfT has also stated that in order to grant Programme Entry, the Department will expect to be satisfied that the scheme proposal meets ten assurance criteria. The way in which the NDR scheme proposals meet these criteria is summarised below. The criteria relating to PFI schemes and rail schemes are not applicable and have not been included below:

- *“It represents value for money. Normally this will mean medium or high value for money.”*

The proposed option for the NDR scheme offers good value for money with a benefit to cost ratio in the order of 2.6, significantly higher than the value of 2 that the DfT considers gives ‘high’ value for money.

- *“It is based on robust cost estimates.”*

Detailed cost estimates have been prepared in consultation with the County Council’s Contractor Partner in discussion with the local supply chain. These have been subject to an independent scrutiny by a cost consultant who has verified the cost estimate.

- *“It is affordable within the relevant Regional Funding Allocation.”*

The scheme is included in the Eastern Region RFA and the Regional Assembly has confirmed its support of the scheme and its endorsement of the £69 million allocated within the RFA.

- *“It is deliverable by the authority to time and budget.”*

The County Council has had in place strong project management arrangements which have delivered the project to a stage beyond normal Programme Entry. These arrangements will continue into the future and the County Council has already committed to procuring a contractor, at its own risk, to ensure the scheme remains on target for the projected start of construction and budget. The County Council has a strong record of project delivery and the delivery of the Local Transport Plan is graded as “Excellent”.

“It does not expose the Department to any unacceptable financial, reputational or delivery risks.”

The DfT has agreed the procurement process for the NDR and the County Council is now in the tender phase. The procurement and planning for the scheme are relatively straightforward and there are no sites of national importance affected by the scheme.

Norfolk County Council will bridge the funding gap resulting from the difference between the DfT Major Schemes funding and the scheme cost and cost over-runs, should any transpire. Robust measures are in place to control the scheme costs and minimise cost over-runs.

Risks are limited and financial risks are built into the cost estimate.

The scheme is well supported locally and significant effort has been made in engaging with the public over a long period resulting in wide ranging support.

The impact of the Local Government Review (LGR) has been looked at and is closely managed through the comprehensive involvement and support of the local stakeholders, which are likely to be affected by any future changes resulting from the LGR.

There are no complicated technical issues associated with its construction.

- *“It has been subject to an appropriate Gateway review or has a review planned.”*

The NDR scheme has successfully been through the Gateway 0 and Gateway 1 review stages. Action plans have been or are being implemented to deliver the actions suggested by the review team.

- *“It includes an evaluation plan that will determine whether the predicted key benefits are realised.”*

Evaluation objectives and an indication of the monitoring and evaluation process that would be required are described in section 4, Delivery Case of the Business Case.

Norfolk County Council is confident that the proposed NDR scheme satisfies the DfT qualifying criteria and assurances and presents the proposals for consideration for programme entry to the DfT’s Local Authority Major Schemes Programme.