

Norfolk County Council
THE ECONOMIC IMPACTS OF THE NDR



TYM & PARTNERS
Planners and Development Economists

Final Report
June 2005

ROGER TYM & PARTNERS

Fairfax House
15 Fulwood Place
London WC1V 6HU

t 020 7831 2711
f 020 7831 7653
e london@tymconsult.com
w www.tymconsult.com

This document is formatted for double-sided printing.

CONTENTS

EXECUTIVE SUMMARY	1
The need for transport infrastructure investment	1
The effects of the NDR on the existing economy and labour markets.....	1
Findings of our business consultation.....	3
Labour market effects	3
Effects on social exclusion.....	3
Effects on inward investment and property development.....	4
Effects on areas considered peripheral.....	4
Summary	5
1 INTRODUCTION	7
2 METHOD	11
Introduction	11
Evaluating the impact of the Northern Distributor Route	11
Impact Zones	12
3 THE SCHEME	17
Introduction	17
The NDR Project.....	17
4 POLICY CONTEXT	21
Introduction	21
Regional policies.....	21
County policies	24
Local policies	24
Summary	26
5 UNDERSTANDING THE WIDER SOCIAL AND ECONOMIC IMPACTS OF THE NDR	27
Introduction	27
6 TO WHAT EXTENT IS THERE A NEED FOR MORE TRANSPORT INVESTMENT?	29
Introduction	29
Population change	29
Jobs change	32
Projected GVA, investment and income growth.....	34
Where growth is likely to be	35
Increasing demand for transport	35
Summary	36
7 THE ECONOMIC CONTEXT	38
Introduction	38
What are the characteristics of the existing economy?	38
Summary	43
8 HOW WILL THE ECONOMY BE AFFECTED BY THE NDR?	45
Introduction	45
Which sectors of the economy can be expected to be most influenced by road transport infrastructure improvements?	45
To what extent are the sectors positively affected by road infrastructure present in the economy? Where are they located?	46
What effect will the NDR have on the tourism sector?	54
What effect will the NDR have on Norwich Airport?	57
What effects will the NDR have on the city centre?	61
Consultation with businesses.....	62

Summary	66
9 HOW WILL LABOUR MARKETS BE AFFECTED BY THE NDR?.....	69
Introduction	69
Patterns of labour market movement	69
Company growth and unemployment	70
Economic activity	72
Summary	73
10 WILL THE NDR HAVE ANY IMPACTS ON LEVELS OF SOCIAL EXCLUSION?.....	75
Introduction	75
The relationship between social exclusion and transport provision	75
Deprivation in Norwich and Norfolk.....	76
Summary	80
11 HOW MIGHT INWARD INVESTMENT AND NEW GROWTH BE AFFECTED BY THE NDR?	81
The context for inward investment	81
The property market and the effects of the NDR.....	83
Sites potentially influenced by the NDR.....	85
Attracting investment and business start-ups to areas previously considered remote	100
Summary	101

EXECUTIVE SUMMARY

Here we summarise our findings. We have made remarks on route options in bold text.

The need for transport infrastructure investment

Policy and economic/demographic trends and projections suggest that Norfolk and the Norwich Urban area are likely to experience significant growth in future. This translates into strong traffic growth, expected to be an additional 50% in the number of trips in the morning and evening peak periods. Given the likely growth of the urban area, there is clear evidence that additional transport investment should be considered.

The effects of the NDR on the existing economy and labour markets

The NDR will have effects on the existing economy.

In the office sector, infrastructure investment's main impact is to expand labour market catchments. As a result of office employment over-representation in the local economy, Wroxham (including Rackheath and Sprowston) and Thorpe St Andrew are likely to be most affected. In site-specific terms, office developments near the road (such as Broadland Business Park and the Airport Industrial Estate envisaged in the RSS) are likely to be the key areas where most positive benefit is felt.

Industry and warehousing is influenced by improved access to customers and suppliers. **Wroxham (including Rackheath and Sprowston) stands to gain the most from any of the NDR route options, but Spixworth's industrial sector would also benefit from the ¾ and full routes.**

Retail is influenced by improved access to customers. Our analysis indicates that **in the retail sector, the ¾ and full NDR route options will have incrementally greater effects, but none are likely to be very significant.** Of most interest here is likely to be the likely effect on the retail sector of Norwich city centre. The NDR provides small improvements to the accessibility of central Norwich. Shoppers driving into central Norwich will therefore have shorter journeys so increasing the retail catchment for companies in central Norwich. But we must take into account the extent to which the NDR makes radial journeys to out of town shopping sites on the periphery of the city more attractive, which removes trade from the city centre. We do not envisage the NDR having a major impact on the retail trade in central Norwich. **We only have data on the effects of the full (red/blue) transport model on travel times into the city centre, so can only remark on the effects of the full option on the city centre.** Turning to the non-city centre retail trade, we would suggest that the NDR will have little effect on retail in retail sectors in Old Catton and Sprowston West, Thorpe St Andrew and Hellesdon.

Tourism is a hugely important business in the area. The potential impact of the road is that it may increase the number of people who visit the area as it shortens journey times. We explore this possibility by looking at the population catchments, using Cromer as an example to proxy improvements in North-South travel because of the road. The NDR brings an additional 6% or 48,000 people (to a total of 860,000 people) within a typical day trip travel time. But without substantial further study, it is impossible to say how this will affect Cromer's economy. In the case of Norfolk tourism, which relies on natural assets, it is obvious that natural assets are fixed: anyone wishing to visit the North Norfolk coast will have to travel whatever journey that requires, which undercuts the additional value of the new road - the trips might happen anyway. There is also the displacement effect - the NDR might facilitate trips to the northern coast and

Broads around Wroxham, but this might undercut demand for Great Yarmouth, and the area around Acle.

We analysed the effects of different NDR route options on tourism to the Broads and North Norfolk coast.

- In the case of the Broads, the **full route** would maximise the chances of tourists within the region finding the NDR useful; visitors coming from London and the South East will find the **half route option sufficient**; and visitors coming from the East Midlands, West Midlands and Yorkshire are likely to find the **full NDR option** of more use.
- In the case of the North Norfolk coast, the **full route** would maximise the chances of tourists within the region finding the NDR useful; visitors coming from London and the South East will find the **half route option** sufficient; and visitors from the East Midlands, West Midlands and Yorkshire (which we assume are around 27% of visitors) plus other areas in the north of England may **not find the NDR of use, instead going via King's Lynn**.

We looked at effects on the airport. The benefit to the airport is two-fold. Firstly, the NDR will allow growth at the airport - the site is currently constrained due to poor surface access. Secondly, the NDR will increase Norwich Airport's potential customer base (ie, passengers). (The effect on suppliers and labour markets is not found to be significant). Our work indicates that the NDR brings an additional 102,000 residents (17%)¹ into the 45 minute catchment area of Norwich airport. It is however not possible to turn this data into a reliable estimate of increased employment due to the methodological problems of doing so. The NDR releases the airport from planning policy constraints, though, so it can be said to be responsible for jobs growth at the airport generated by additional passenger numbers. Our estimates suggest that if the airport did grow to 1.5mppa by 2015, and we can ascribe this growth to the NDR, then the NDR would be responsible for the creation of an additional 350 direct jobs at the airport.

We analysed the effects of different NDR route options on Norwich Airport.

- Consultation with the airport has suggested that the airport predominantly attracts customers from Norfolk and Suffolk. Customers from Suffolk would only require **the half route option** to be constructed. It is not possible to be specific about which of the route options would best serve customers from Norfolk or Norwich itself, but it is likely that the **full route** would maximise the changes of this group finding the NDR useful.
- The NDR may allow the airport to extend its catchment into areas which would previously have been more likely to use Stansted, Luton or even East Midlands airports. These groups would arrive at Norwich having used the A147, A11 or A140. The **full route** would be most use to these passengers.

We looked at effects on the city centre. Trips from some areas into the city centre will save around 4 minutes, but crude average, unweighted by traffic flows, suggests that the NDR will save road users 57 seconds on their trips into central Norwich by 2025. We would suggest that changes of this magnitude are unlikely to have particularly significant effects on the retail businesses in Norwich (which rely on customer access) or office businesses (which rely on easy labour access). **We only have data on the effects of the full (red/blue) option on access to the city centre**, so have been unable to make remarks about other route options.

¹ This is an increase from 594,000 people to 696,000 people.

Findings of our business consultation

We found that businesses generally support the NDR. We used a number of sources here.

- The public consultation on the NATS strategy found 82% support for the road.
- Consultation for the Norfolk Employment Growth Study suggested that the NDR is not central to the future of many firms in Norfolk. This group of firms was not selected at random. We concentrated on larger companies.
- We were supplied with a second selected list of companies by the client. This group was more positive, finding that 80% finding that their businesses would be positively impacted. Interviews with business representative organisations found that all (100%) thought that transport issues were affecting company profitability by affecting the accessibility of companies to customers, suppliers and labour, and that the NDR represented a solution.

We did not question businesses on the effects of different route options, as the questionnaire would have been too complex to work effectively, and results are likely to have been unreliable.

Labour market effects

We looked at effects of the NDR on labour markets. We found that patterns of movement may alter, in that employment sites and residential areas to the north of Norwich will therefore become quicker to travel between, possibly bringing efficiency gains. The road may open up opportunities for people to commute to employment sites around the NDR from further south, and equally, may allow residents from near the NDR to commute to areas south of Norwich to which they may not have chosen to commute to previously.

The NDR may benefit firms by releasing them from labour market constraints which may have been previously placing a brake on growth. Firms in the area do seem to be suffering from labour market constraints in this respect. These would be most effectively alleviated if the NDR connected an area with an unemployment problem or a surplus of skilled labour with an area with a shortage of labour. But positive effects are likely to be small, for two reasons:

- broadly, the NDR improves links between areas with similarly tight labour markets, meaning benefits to businesses are likely to be small.
- areas near the NDR do have higher than average amounts of unemployment. But given the current levels of transport access in the economy, it is unlikely that accessibility is forming a significant barrier to accessing the jobs market, suggesting in turn that labour constraints to company growth are unlikely to be significantly affected by the NDR.

Regarding levels of economic activity, we would question the extent to which the NDR will have a particular effect on raising levels of participation in the economy - it seems that the area is functioning well in the absence of the additional help that the NDR would provide.

Our remarks in this respect apply to all the route options.

Effects on social exclusion

The effects of the NDR on social exclusion are likely to be slight. Whilst there is deprivation on the North Norfolk coast and in Yarmouth, these areas are too distant from the NDR to be plausibly affected. Conceivable effects are only likely to be found in Norwich itself. But there is very little evidence that deprivation exists in Norwich due

to a deficient demand for labour, or from poor accessibility. Deprivation is likely to exist for a series of more complex social reasons. It is unrealistic to expect that the NDR will have a significant effect in this regard.

Our remarks in this respect apply to all the route options.

Effects on inward investment and property development

We looked at the effects of the NDR on inward investment. Our first step was to contextualise the issue of inward investment. We pointed out that Foreign Direct Investment was falling, and we suggested that it should not be relied on to any degree to boost the local economy - NDR or not. We suggested that UK-based investment from outside the area might be more forthcoming, and there are opportunities for the city given the Lyons Review and congestion in the South East.²

We looked at property market effects as a way of looking at the effects of inward investment. The SACTRA report noted that there are cases in which transport schemes “unlock” additional land for development, but these needed analysis of local property markets. GVA Grimley’s analysis of the property market in Norwich and Norfolk has a number of implications.

- On the one hand, their analysis suggests that the NDR would have positive effects. The business community believes that there is short supply of office accommodation in central Norwich (although as we have described above the effects of the NDR on access to the city centre are relatively limited). There is improving demand for B2 and B8, and the NDR will unlock suitable land for these uses at the airport. There is already speculative development taking place at Broadland Business Park, and analyses of viability suggest that the most positive effects of the NDR will be felt at premium locations such as Broadland Business Park, which are already financially viable and will be made even more attractive due to the increased labour catchments the NDR opens up. (It is important to note, though, that whilst these sites might improve supply, they do not do so in the city centre).
- On the other hand, GVA Grimley’s analysis suggests that the NDR might have fewer positive effects. Much of supply on key sites in Norwich and in Norfolk generally is constrained by factors unrelated to the NDR. Building the NDR would have no effect on whether these sites came forward. This situation also pertains in rural areas to the north of Norwich is weaker, where sites have a package of difficulties which are unlikely to be resolved by the NDR.

This work suggests that the main development effects will be felt at sites such as Broadland Business Park and future development at the Airport and the associated Industrial Estate envisaged in the RSS.

We estimate that, after deadweight is taken into account, the NDR will stimulate site development that will accommodate 1,300 jobs (**full route**) or 1,100 jobs (**three-quarter and half route options**) as a result of this process.

Effects on new business start ups in areas considered peripheral

We looked at peripherality issues and investor perceptions. The evidence about how infrastructure spending affects peripherality is mixed. Some research suggests for the attraction of new business start-ups to an area considered to be peripheral, investor perceptions are important (regardless of *actual* changes in travelling times). Road

² see para 3.102 English Partnerships, Norwich City Council and EEDA for more on the Lyons Review. Para 4.57 states that Norwich should be considered one of the 25 most suitable locations in the UK for higher value back office functions, policy functions and science functions.

travel appears to be important in promoting the perceived accessibility of an area - to a certain extent, it appears that it is less important whether road transport *actually* improves accessibility to any great extent. But as the DfT literature review points out, we do not know how important these effects are.

Our remarks in this respect apply to all the route options.

Summary

There are areas where the NDR will have no clear positive effect.

- We do not envisage the NDR having a major positive impact on the retail trade or office employment in central Norwich. Access improvements from most areas of the city by 2025 are very small.
- Effects on tourism are impossible to quantify. But we would suggest that they would be slight. If we look at, say, Cromer's tourist economy, the NDR brings an additional 6% or 48,000 people (to a total of 860,000 people) within a typical day trip travel time. But when we take into account deadweight (which looks at what would have happened anyway) the benefits are eroded - anyone wishing to visit the North Norfolk coast will have to travel whatever journey that requires, which undercuts the additional value of the new road - the trips might happen anyway. And displacement means that whilst the NDR might facilitate trips to the northern coast and Broads around Wroxham, but this might undercut demand for Great Yarmouth, and the area around Acle.
- The NDR is unlikely to have a great effect on alleviating labour market constraints to company growth. Broadly, the NDR improves links between areas with similarly tight labour markets, meaning benefits to businesses are likely to be small.
- The NDR is unlikely to have a great effect on unemployment. Given the current levels of transport access in the economy, it is unlikely that accessibility is forming a significant barrier to accessing the jobs market, suggesting in turn that labour constraints to company growth are unlikely to be significantly affected by the NDR.
- The NDR is unlikely to have a great effect on economic activity rates. Improvements would require the NDR to be responsible for persuading the currently inactive to return to the labour market. The local economy already performs relatively well on these measures, meaning that any effects of the NDR in this respect are likely to be slight.
- Conceivable effects on deprivation are only likely to be found in Norwich itself. (Other deprived areas are too distant to be plausibly affected). But there is very little evidence that deprivation exists in Norwich due to a deficient demand for labour, or from poor accessibility. Deprivation is likely to exist for a series of more complex social reasons. It is unrealistic to expect that the NDR will have a significant effect in this regard.
- Research has indicated that the effects of infrastructure investment on existing businesses in areas considered peripheral might be low. However, perceptions of peripherality might be reduced by the NDR. The DfT says that the effects of perceived transport quality are not properly understood.

The NDR is likely to have particularly positive effects on

- the development of the airport, where it releases the airport from planning restrictions imposed due to poor surface access. We estimate this to generate 350 jobs by 2015, on the assumption that expected growth in passenger numbers materialises.
- the Airport Industrial Estate proposed in the RSS

- the development of employment sites near the route of the NDR, such as Broadland Business Park, where a wider labour catchment would prove particularly valuable to new businesses. However, many sites have constraints which would not be overcome by the NDR, depressing the positive effect of the NDR in some locations. After deadweight is taken into account, the NDR might stimulate site development that would accommodate 1,300 jobs (full route) or 1,100 jobs (three-quarter and half route options).
- There are likely to be some positive effects for existing businesses located further from the NDR in areas which will have access to major markets improved by the NDR. These businesses are located to the north and north-east of Norwich.

Whether the NDR is considered a helpful project, then, depends on what the policy objectives are.

- If the policy objectives are to grow the city centre, then we would argue that the NDR is not particularly helpful on its own. But growth in the city centre will depend on a package of measures involving skills development, public transport development and site development. The NDR may help push forward this agenda, but it should not be regarded as a main plank of this programme.
- If the policy objectives are to go for growth sub regionally, the NDR can be seen as a more helpful project. Broadland is the area set to benefit most from the project (although obviously, parts of Broadland are within the Norwich urban area, even though they are at the fringe). The NDR is likely to boost growth on the periphery of the city, and will have particularly positive effects on already developing sites such as the Broadland Business Park.

Clearly, there are also positive transport benefits generated by the project. These are captured in the cost/benefit analysis carried out separately. These “value of time” savings show a clear positive result in favour of the NDR, and form the main argument for the project.

1 INTRODUCTION

- 1.1 This report has been commissioned by a team led by Norfolk County Council to look at the economic impact of the Norwich Northern Distributor Route (NDR).
- 1.2 The report is to provide an evidence based assessment of the economic impacts of the NDR around
 - the potential impact on Norwich Airport
 - The potential impact on existing and planned employment areas (including Longwater, Broadland Business Park, and Rackheath)
 - the performance of existing businesses
 - the attraction of new inward investment
 - the impact on the rate of encouraging an increase in new business start ups in areas previously considered remote
 - the effect on maximising Norfolk's tourism potential
- 1.3 Our brief requires us to look at three options for NDR development.
 - from the A1067 eastwards to the A47 at Postwick
 - from A140 eastwards to the A47 at Postwick
 - from the A47 at Easton to the A47 at Postwick
- 1.4 This analysis should be seen within the context of the Employment Growth Study. The Employment Growth study seeks to establish employment targets for Norfolk based on the RSS-related theme of achieving better jobs/worker alignment. The study is then using this analysis to make reasoned recommendations as to the strategy and interventions that are possible and the degree to which this can deliver the desired future economy for Norfolk.

2 METHOD

Introduction

- 2.1 We outline here the methodology we will employ in this study, which falls heavily upon Government guidance for transport appraisal and analysis.

Evaluating the impact of the Northern Distributor Route

- 2.2 In undertaking this analysis, our report will follow the general principles laid out in the Standing Advisory Committee on Trunk Road Assessment (SACTRA) report and the Government's Transport Advisory Group (TAG) guidance, which was set up as a result of recommendations in the SACTRA report. These reports sit within the framework laid out by the Government's New Approach to Transport Appraisal (NATA).
- 2.3 Given the concerns raised in the SACTRA report, it is important to be clear about the ways in which improved transport provision can stimulate the economy. This report will show how different processes link transport improvement to economic vitality. The development might stimulate jobs by:

- Improving accessibility in the local economy. Improving accessibility may make the area more attractive as a business location, so encouraging incoming businesses (inward investors) to locate there, or existing businesses to expand. From businesses' point of view, the transport proposals might:
 - improve companies' access to suppliers
 - improve companies' access to customers
 - improve companies' access to labour

Such effects would improve business efficiency. A more efficient business environment may attract new businesses to the area (so bringing jobs) or stimulate existing businesses within the area (so increasing jobs) due to the presence of the improved transport. These are known as catalytic employment effects - i.e., employment effects attracted to or stimulated by the transport investment. However, catalytic effects are very difficult to quantify accurately. This is unfortunate: the key economic effect of transport improvements is not the jobs that they directly or indirectly support, but the improvements in accessibility that they bring to an area. These impacts cannot be numerically estimated accurately due to the methodological difficulties inherent in such an attempt: business location choices and investment decisions are made for a number of reasons, and it is impossible to isolate the precise effects of transport provision on these factors. We therefore discuss catalytic effects qualitatively.

- Improving the accessibility of available work. From residents' point of view, the scheme could improve the access of residents to job opportunities.
- 2.4 But there are limits to the effects that transport investment can have on an economy. Benefits will not accrue, either at all, or to the same extent, if:
- The local economy is subject to negative structural economic change - such as irresistible competition from abroad.
 - Accessibility is not already an effective constraint to economic activity.
 - There are other, non-transport, constraints on the economy. For example, an area with no business premises available could not be expected to experience an expansion in employment even if accessibility was improved.

- 2.5 This report builds up a picture in two ways. We use:

- Government statistics: areas with different economic profiles can be expected to respond in different ways to improvements in transport infrastructure. We have used central Government statistics to understand the local economy.
- Primary sources: we have undertaken a number of interviews with business to ask about how they regard the possibility of a new NDR. We have also used data from interviews with a large number of Norfolk businesses undertaken as part of separate study on economic development in the county. These interviews specifically approached the issue of the NDR.
- Secondary sources: a body of work exists that gives a valuable insight into how the economy responds to the provision of transport infrastructure that we have been able to draw on. We have attached a list of such sources as an appendix.

Impact Zones

- 2.6 TAG guidance states that the impacts of new transport infrastructure be discussed by generating a number of geographically defined areas.
- 2.7 The TAG guidance requires these areas to be in need of economic regeneration (as defined under policy or IMD designations). We are using a slightly different approach - to define the areas likely to be impacted using origin/destination data from the Mott MacDonald transport model. Rather than these being the "Regeneration Areas" envisaged in the TAG guidance, then, we have termed these areas 'Impact Zones'. The 'Impact Zones' are the areas where it is reasonable to expect an economic impact following the opening of the scheme, even if this area is not specifically in need of regeneration.
- 2.8 The Mott MacDonald model specifies a wide number of origin and destination transport zones. We concentrated on the zones which showed that they accommodated the most substantial number of origins and destinations of traffic. The information given was for origins and destinations of heavy vehicles (defined to be lorries and commercial vehicles) and light vehicles (defined to be cars), for the full-road option, three-quarters road option and half-road option in 2025 for the 7.30-9.30 am peak. Because we selected the most highly impacted origin/destination zones derived from the Mott MacDonald model, this approach did not give blanket coverage of the Norfolk area. We have plugged these gaps by generating our own impact zones, ensuring that we have total coverage of the Norfolk area for both residential and business zones.
- 2.9 We identified the actual zones by:
- a) looking which areas have relatively high densities of origins of either heavy or light vehicles, and
 - b) looking at the destinations of the trips generated.
- 2.10 To derive a) and b) above, we generated GIS maps from the Mott McDonald information using the full length road data. We assume that the most effect will be felt by the full-length road option and we used this to identify the most impact zones i.e. there will be sites that are affected much less - especially to the West - that are not impacted by the half road, but are impacted by full road.
- 2.11 We classified this information by putting it into one of four categories, as identified in Table 2.1 below. We assume and light vehicle origin is likely to be from the residents' home. The destination of light traffic is likely to be their workplace. Heavy vehicles' origins are likely to be a workplace, such as an industrial estate or logistics site. These vehicles are likely to be taking goods to other places of work or to customers i.e. the destination is also a workplace, such as an industrial estate, logistics site, or even shops.

Table 2.1 Zones of Influence Categories

Origins			
Traffic type	Type of premises	Example	Impact Zone type
Light	Residents' homes	Residential areas	Residential
Heavy	Workplace	Industrial estates, logistics sites	Business

Destinations			
Traffic type	Type of premises	Example	Impact Zone type
Light	Workplace	Offices, industrial estates, logistics sites, shops	Business
		Industrial estates, logistics sites, shops	
Heavy	Workplace	Industrial estates, logistics sites, shops	Business

- 2.12 The Impact Zones we identified for the NDR are outlined in Table 2.2 below and their definitions are included in Appendix A. These areas are shown graphically in Figure 2.1.

Table 2.2 Northern Distributor Route - Impact Zones (Business and Residential)

Impact Zones	
Business	Residential
Aylsham	Bowthorpe
Broadlands East	Breckland
Coltishall and Horstead	Buxton
Broadlands North West	Cringelford and Lakenham
Old Catton and Sprowston West	Great Yarmouth
Dereham	North Norfolk
Drayton	Rest of Broadland
Great Yarmouth North	Rest of Norwich
Great Yarmouth South	Rest of South Norfolk
Hellesdon	Poringland and Hempnall
Horsford and Felthorpe	Thorpe St Andrew
North West Norfolk	Thurlton
Norwich	Upper Hellesdon
Rest of Breckland	Wymondham
Rest of North Norfolk	
South Norfolk	
Spixworth	
Taverham	
Thorpe St. Andrew	
Hoveton and Stalham	
Wroxham (incl Rackheath and Sprowston)	
Yarmouth and Caister	

Source: Roger Tym & Partners

- 2.13 The following maps give a schematic view of the Impact Zones.

Figure 2.1 Impact Zones (Business)

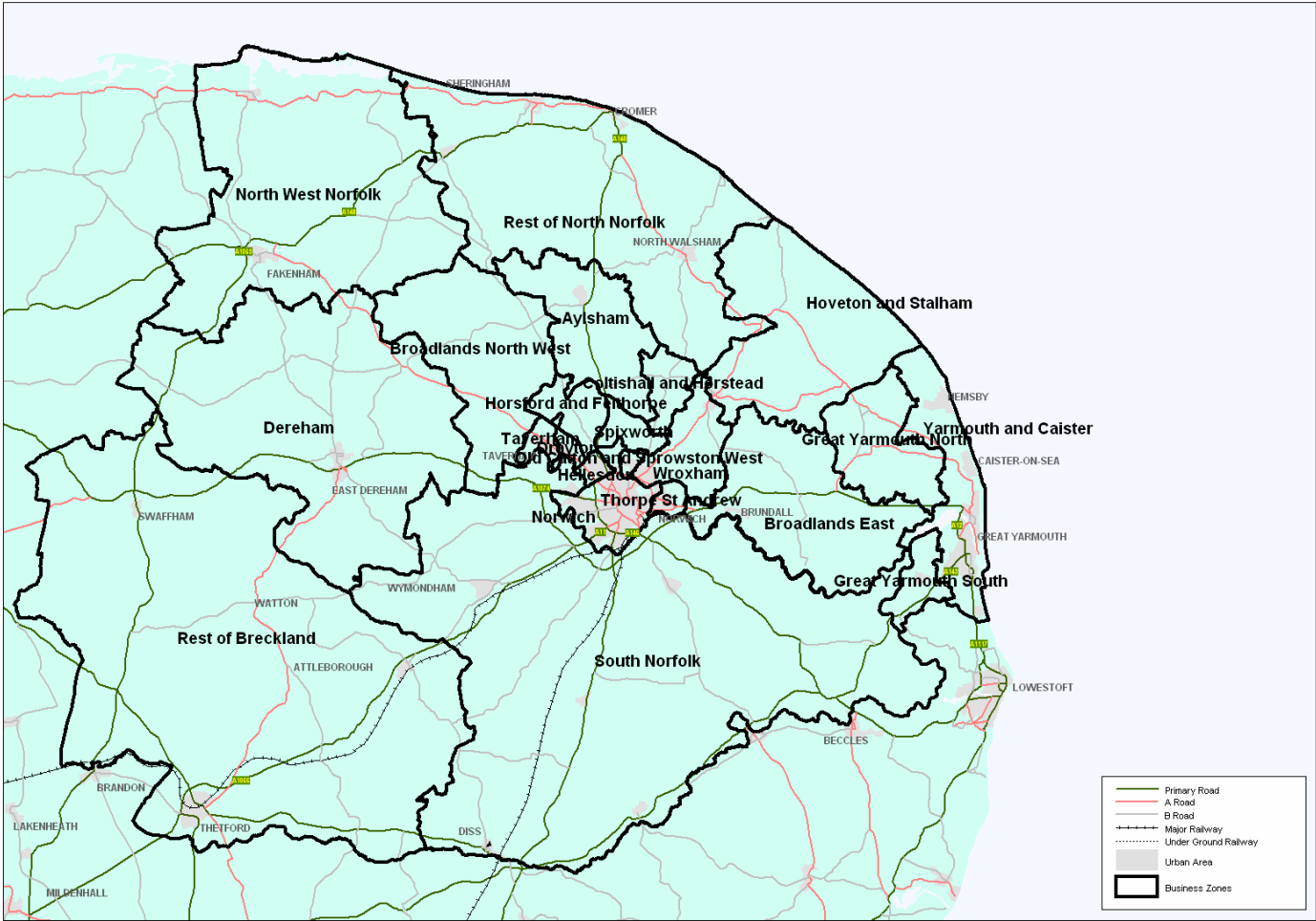
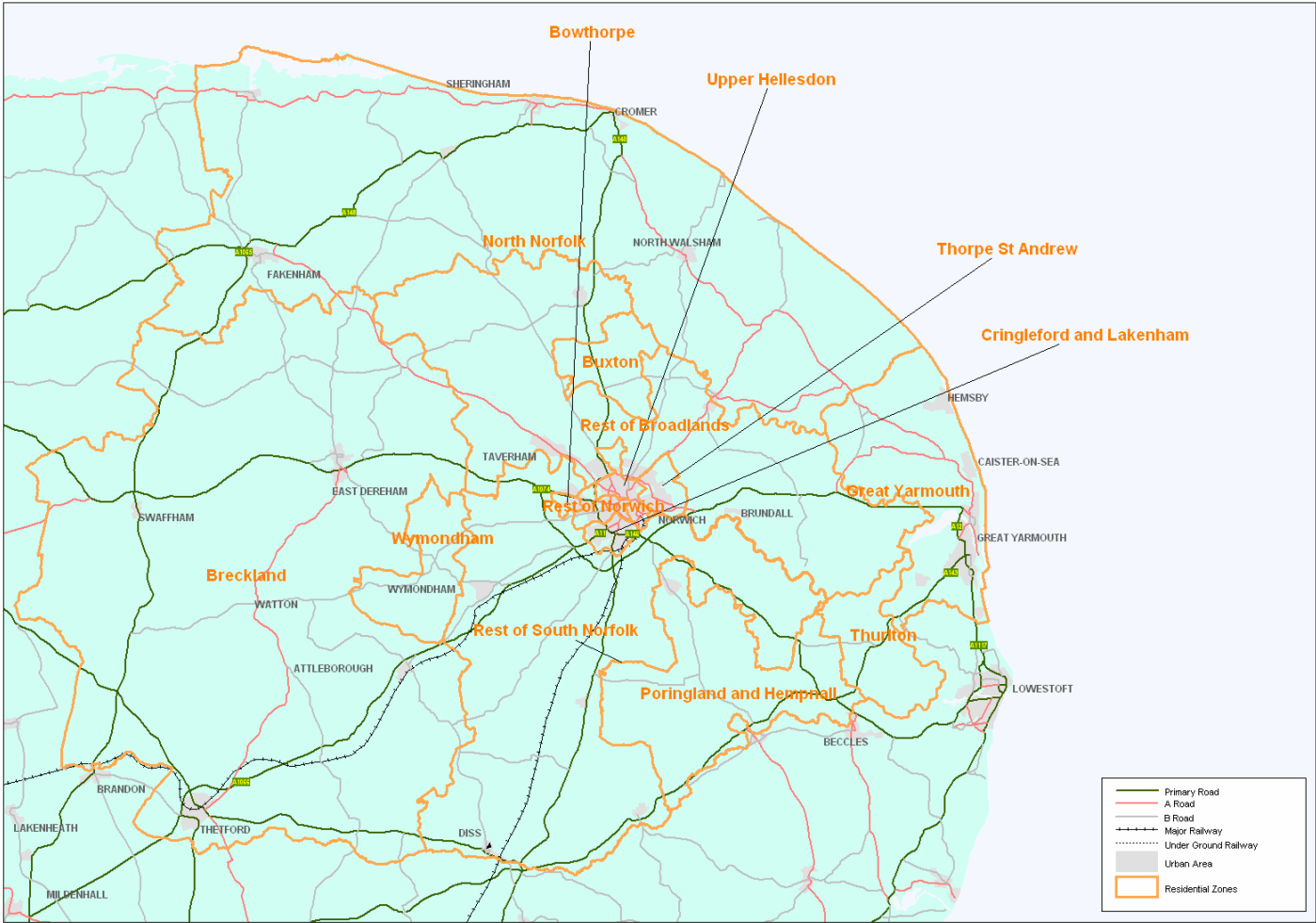


Figure 2.2 Impact Zones (Residential)



Economic Impacts of the NDR
Final report

3 THE SCHEME

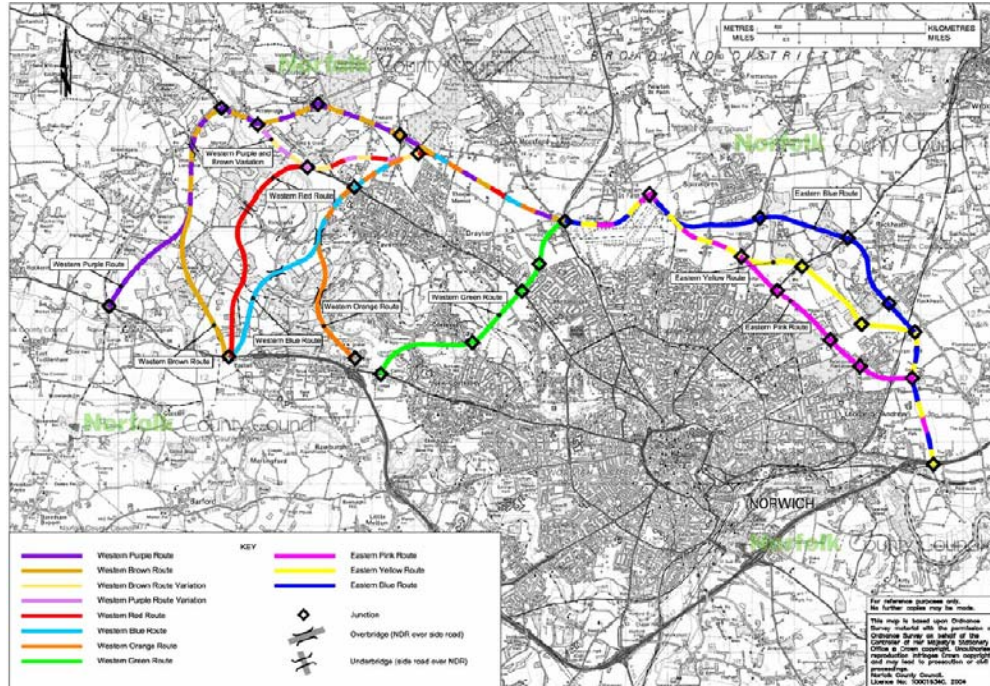
Introduction

3.1 In this section we give an outline of the NDR project.

The NDR Project

3.2 A map of the NDR can be found at Figure 3.1.

Figure 3.1 The Norwich Northern Distributor Route (route alignment)



3.3 Clearly, there are a number of possible options under discussion. We have had to make some assumptions about which route to look at. We have therefore decided to use Eastern Blue and Western Red route options on the attached map as a basis for transport model. However, our conclusions would be broadly similar no matter which route option was chosen. Our choice of options does not indicate any route preference on the part of any of the local authorities.

3.4 Documentation published states that fundamentally, the purpose of the NDR is to³

- reduce through traffic from the city centre; and
- provide a means of travelling between the different routes into north Norwich without having to use urban residential streets or unsuitable country lanes.

3.5 Published sources state that the road would, as part of the wider NATS strategy, create an opportunity to:⁴

- Remove through traffic from residential and city streets
- Improve capacity on existing roads, especially the inner and outer ring roads
- Improve public transport and facilities for cyclists and pedestrians

³ <http://www.norwichareatransport.org/faqs/ndr/default.asp#Q1>

⁴ See p10 NATS 4

- Reduce road accidents
- Make Norwich more accessible from north Norfolk
- Serve the airport and nearby industrial areas
- Improve air quality in the city centre
- Improve the environment in the centre for shoppers, visitors and workers.

3.6 The NDR is included in the NATS strategy to free up road space on the existing network for buses and to give a choice of transport options. Public transport is also an important part of NATS on its own.”⁵

What will the NDR do in transport terms?

3.7 The Mott MacDonald *Norwich Northern Distributor Road Traffic and Economic Assessment Report* states that the NDR will have the effect of attracting orbital traffic that otherwise would route around the northern suburbs. The options also provide an alternative to travelling north-south through the city centre.

3.8 The NDR will have an effect on:

- Predicted traffic flows
- Predicted journey times

3.9 We look at each in turn.

Traffic Flows

3.10 The predicted traffic flows are similar to those experienced with a dual carriageway, with all options attracting a large volume of traffic. Projected traffic flows on the western side of the NDR vary, depending on the option; this is because the more western options are less likely to attract people who otherwise would travel north-south.

Journey times

Current East/West route across the city are speeded up

3.11 The Mott MacDonald report outlines predicted journey times of an east/west route across the city (A1074/A1042) via the northern part of the existing outer ring road when different options of the NDR are in place (i.e. this is the time saving on the current east/west orbital route as a result of the NDR ‘freeing up’ these roads). Mott MacDonald find that the NDR will reduce the average travel time compared with the Do Minimum case for an East-West journey in peak periods across the city by about 10% in 2010 and 13% in 2025. This is a time saving of around 5 minutes by 2025.

Access between the A47 and Norwich Airport route is significantly quicker

3.12 Mott MacDonald also show time savings that could result from switching from existing routes to using the NDR for trips between the A47 east and west of Norwich and the airport. Using the Eastern Yellow and Western Red as examples, this signifies savings of 45% (or 13 minutes 59 seconds) for the former and 40% (or 11 minutes 10 seconds) for the latter.

North/south journeys are quicker (eg between A11 and Norwich Airport)

3.13 On the North/South time savings, Mott MacDonald’s predicted journey times between the A11 and Norwich Airport show savings of 6 minutes 19 seconds under the Western Red route. This varies from 2 minutes up to over 8 minutes depending on which route option is chosen. This indicates the choice of route option may have a significant impact on the time savings. No data is given for North/South time savings with an Eastern option.

⁵ <http://www.norwichareatransport.org/faqs/ndr/default.asp#Q1>

A47 South retains the time advantage for strategic East / West routes

- 3.14 Lastly, Mott MacDonald provided data that compared the journey time for the current A47 to the South to the East/West NDR. This shows that strategic east/west journey times are predicted to be quicker on the A47 than the NDR, ranging from 90 seconds quicker in the morning eastbound, to almost five minutes quicker in the evening westbound.

Table 3.1 Summary of Modelled East/West NDR v. A47 NSB Travel Times, 2025

Period/Direction	Travel Time (seconds)		
	NDR	A47	Difference
AM Eastbound	949	859	90
AM Westbound	1,040	856	184
PM Eastbound	978	842	136
PM Westbound	1,112	821	291

Source: Mott MacDonald

- 3.15 This is important as it suggests that traffic wanting to bypass Norwich would be wise to do so using the southern A47 route, rather than use the NDR. This means that the NDR is more important for local firms and residents to the north of Norwich, rather than strategic through traffic.

4 POLICY CONTEXT

Introduction

- 4.1 In this section, we briefly examine how planning and economic development documents regard the proposed scheme at regional, county and local level.
- 4.2 We consider both existing and emerging policy.

Regional policies

East of England Plan - The Regional Spatial Strategy (RSS)

- 4.3 The draft Regional Spatial Strategy identifies Norwich as:
 - one of the regions key centres on which development will be focused (SS2). In this context it should be noted that the urban area has one of the largest populations in the region and the city centre has by far the largest concentration of retail and office floorspace. Norwich is one of the top ten retail centres in the country and the highest ranking retail centre in the East of England. The RSS allocates more housing growth to Norwich than to any other town or city in the region.
 - a Regional Interchange Centre (SS6)
 - a Priority Area for Regeneration (SS11) On various measures Norwich (district) ranks worst or second worst (after Great Yarmouth) in the region.
- 4.4 Policy NSR4 requires provision for nearly 30,000 dwellings in the Norwich Policy Area. “New allocations will include a major urban expansion in the north east sector of the urban fringe linked to major transport improvements”. In accordance with Policy SS3, this expansion will be mixed use, including employment provision. (It is worth noting that Costessey already has housing allocations totalling 2000 units, which could increase as a result of increased densities and further extensions). Norfolk County Council suggest⁶ that under the draft RSS, Broadland fringe parishes will accommodate 10,500 additional dwellings 2001-2021 and that the majority of this provision is likely to be in the north east sector. This sector will be served by all ½, ¾ and full route options of the NDR.
- 4.5 The draft RSS seeks to “promote the development of Norwich Airport as a regional airport and international gateway with better surface transport links to the rest of the region” (5.56). The airport is identified as a strategic location for employment where “land will be identified to accommodate uses benefiting from an airport related location”(Policy NSR1). It is also identified as an important gateway for the attraction of international visitors(Policy NSR2). Thorpe St Andrew and Longwater, Costessey are confirmed as strategic business park locations.
- 4.6 The draft RSS recognises that “a Norwich Northern Distributor Route is essential to improve the quality of life in residential areas, aid rural regeneration, enhance links to strategic employment areas, facilitate urban expansion and improve access to Norwich International Airport” (5.71).

The Regional Transport Strategy (RTS)

- 4.7 The RTS forms chapter 8 of the Regional Spatial Strategy.
- 4.8 The NDR is included as a prioritised scheme in the RTS. It qualified because it enabled the release of development land identified for meeting the growth area housing targets.⁷

⁶ email 12th May 2005

⁷ p157 *East of England Plan - Draft revision to the Regional Spatial Strategy (RSS) for the East of England*

- 4.9 The Regional Transport Strategy considers demand management will need to be introduced on the strategic road network as well, through road-user charging, probably required post-2010.⁸ This indicates that the traffic growth that is currently used to justify the NDR may be being actively managed at some point after 2010.

Regional Economic Strategy (RES)

- 4.10 The vision and objectives of the draft RES complements the vision, objectives and core spatial strategy of the RSS. The synergy between the two documents is based on work undertaken to align the draft regional spatial strategy with the Regional Economic Strategy 2001. This work developed to give a spatial distribution of job growth required to achieve the RES and other spatial policy objectives.
- 4.11 The Regional Economic Strategy (November 2004) highlights that the region should continue to build on its international gateway role and transport corridors. It does not mention the NDR specifically, but it does state that “the region will accelerate improvements in transport infrastructure, enabling major corridors of economic activity to deliver growth and sustainable communities”⁹. Precisely what type of transport infrastructure is envisaged is not specified.
- 4.12 The RES has 8 strategic goals. These and the relevant objectives are summarised below in Table 3.3. The three sub-regions in Norfolk - King’s Lynn (KL), Norwich (NOR) and Great Yarmouth & Lowestoft (GY&L) - have identified priorities for each of these objectives, and these are also shown in the table. Norwich has a key role to play.

⁸ p154 ibid

⁹ *Regional Economic Strategy*, EEDA, p. 10

Goal	Objectives	Areas
corridors		
Goal 7: A leading information society		
Goal 8: An exemplar for the efficient use of resources		GY&L

Source: Regional Economic Strategy

- 4.13 It also needs to be acknowledged that each sub-region will have additional objectives that are not picked up by the RSS. In Norwich, these include:
- widening career choices;
 - stimulating demand for research and knowledge transfer among SMEs; and
 - supporting homes to support economic growth.
- 4.14 The RES recognises that the region’s sub-regional economic partnerships are the agents for economic development and regeneration. In Norfolk, this is provided by the Shaping the Future Partnership and delivered directly through the County Economic Development Strategy.

County policies

The Norfolk Structure Plan Review

- 4.15 Norfolk Structure Plan Review¹⁰ states that
- 4.16 “the Strategic Road and Rail Network into and through the county is perceived to be poor and a disincentive to new and continuing investment in Norfolk. The perception of being peripheral is important in economic development terms and of great concern to the business community in Norfolk.”¹¹ The NDR is listed as a priority for strategic improvement.¹²
- 4.17 It suggests that “there is a need to set an overall approach to catering for future transport demand in the County...returning to the ‘predict and provide’ approach is not a lasting solution to the problems of rising levels of traffic or congestion. Government policy is to provide for an integrated and sustainable transport system by providing investment in all modes as appropriate.”¹³

Local policies

City Centre Spatial Strategy

- 4.18 The City Centre Spatial Strategy states that much of the traffic in the city centre is through traffic, without origin or destination in the city centre. This is highlighted as a problem when pedestrians and vehicles come together at key points and corridors, causing congestion and accidents. The possibility for increased pedestrian zones in the city centre is considered, as well as measures such as widening pavements but keeping road space.

¹⁰ http://www.norfolk.gov.uk/consumption/idcplg?IdcService=SS_GET_PAGE&nodeId=3397

¹¹ para 5.3 Norfolk Structure Plan Review

¹² para 5.17 Norfolk Structure Plan Review

¹³ para 5.13 Norfolk Structure Plan Review

Norwich Area Transportation Strategy (NATS4)

- 4.19 The Norwich Area Transportation Strategy 4 (NATS4) vision is “to provide the highest possible level of access to and within the strategy area to benefit people’s individual needs and enhance the economic health of the strategy area. To ensure that journeys minimise any adverse impact on people and the built and natural environment.”
- 4.20 The Norwich Area Transportation Strategy (NATS4) states that it has been designed “to help deliver the growth that will happen within the Norwich area and address the problems, such as congestion. The strategy should ensure that Norwich develops as a sustainable urban community, with a transport system that meets its needs. The strategy promotes travel choice, recognising the need to maintain the economic health of the Norwich area, and does not propose radical restrictions on vehicular access. It carries forward the previous policy of accommodating the growth in number of trips by means other than the car.”¹⁴
- 4.21 NATS4 makes the point that “the transport network within the centre needs predominantly to cater for the function of the city centre (business, retail, tourism, leisure etc) rather than as part of the transport network for the area as a whole”, stating that “city centre retail areas are bisected by busy through traffic routes resulting in pedestrians having second best of the infrastructure.”¹⁵
- 4.22 NATS4 states that it will achieve this “through promotion and improvements of other modes, including public transport. A Northern Distributor Road has been identified as an important element to enable growth within and around Norwich. A new road will be delivered in conjunction with traffic management measures in residential roads and minor rural roads around the north of Norwich, to lock in the benefits from a new road.”
- 4.23 The NATS4 Economic vitality objective states that it aims to “improve the competitiveness of the Norwich area as a retail, tourist and business centre, whilst enhancing its image and maintaining a high quality environment.”

Broadland Local Plan Revised Deposit

- 4.24 Broadland does not mention the NDR specifically in its Local Plan. The Revised Deposit draft of the Broadland Local Plan was produced prior to NATS4 but recognises that a review of NATS is underway and is likely to including re-evaluation of a distributor road around the northern fringes of Norwich linked to the A47. The Inspector at the recent Local Plan Inquiry was appraised of the latest position and it can be expected that this will be reflected in the adopted Local Plan. The reason the local plan cannot protect a route is that no route has yet been selected by the County Council.
- 4.25 Broadland District Council has also formally expressed its support for the principle of an NDR. The Council’s resolutions [cabinet minute 93(1/12/2003) and Council minute 96(1/12/2003)] have explicitly supported the NDR when the Council was consulted formally on the Norwich area transport strategy.

Other local plans

- 4.26 Table 3.5 below gives a summary of the main policies in each of the local plans. Broadly speaking, many of the plans have a similar set of themes underpinning them. There is the aim of strengthening the district’s economy by ensuring an adequate supply of land for employment purposes and supporting the retention and expansion of existing businesses.

¹⁴ p1 NATS Executive Summary

¹⁵ p11 NATS

Table 3.5 Summary of Main Points in Local Plans

Local Plan	Policy	Key Points
Norwich City Adopted Nov 2004	EMP1/2/3 - Small scale business development	Small-scale business development recognised
	EMP4 - Prime Employment Areas	4 Prime Employment Areas, including the Airport Industrial Estate (Hurricane Way). Limit on office development outside City Centre of 2,000m ² .
	EMP16 - Office Development	3 sites in City Centre where office development over 2,000m ² will be permitted.
	EMP17/18 - High Technology and Research Facilities	High technology development related to the HE offer/NRP is supported. All developments must have modern telecoms.
South Norfolk Adopted Mar 2003	EMP1 - Employment Land Allocations	140ha of land allocated, with 37ha at Longwater (Costessey), 35ha at Norwich Research Park, 25ha at Wymondham and 22ha at Diss.
North Norfolk Adopted Apr 1998	Policy 72 - Proposed General Employment Areas	36ha of land allocated, with 26ha of this at North Walsham
	Policy 75 - Former Military Airfields	Re-use of existing buildings for employment uses on a series of former military airfields will be permitted
	Policy 76 - Farm diversification	Development proposals for farm diversification will be permitted to provide, amongst other things, tourist accommodation.
Broadland Replacement Plan - Revised Deposit Jan 2004	Main Locations for Growth	The main locations for growth will be the Norwich Policy Area, Aylsham, Acle and Lenwade
	EMP9 - Farm Diversification	Development proposals for farm diversification will be permitted.
Breckland Adopted Sept 1999	Strategic Principle 5 / ECO1	41ha has been allocated for development. The main areas for development are Thetford (18ha), Attleborough (10ha), Dereham and Swaffham

Source: Local Plans

Summary

- 4.27 Policy suggests that Norfolk and the Norwich Urban area are likely to experience significant growth in future.

5 UNDERSTANDING THE WIDER SOCIAL AND ECONOMIC IMPACTS OF THE NDR

Introduction

- 5.1 This section functions as an introduction to subsequent sections which look at how the NDR might stimulate jobs by:
- enabling existing businesses to grow more quickly than they would have without improved transport links; and
 - attracting more inward investment, including property investment, to the economy than would have been possible without the NDR. (We define inward investment broadly, taking it to mean any investment which originates from businesses not already located in the area).
- 5.2 As discussed in Chapter 2, the theoretical mechanism by which improved transport linkages may benefit economies is relatively simple: they improve business' accessibility to a wider number of customers, suppliers and labour, so making an area a more attractive place in which to invest, both for existing and incoming businesses. From businesses' point of view, the transport investment could:
- improve companies' access to suppliers
 - improve companies' access to customers
 - improve companies' access to labour
- 5.3 From residents' point of view, the investment might help individuals travel to work. This would be of particular interest if these individuals were residents of a deprived area.
- 5.4 The *theory* of change in social and economic conditions is therefore relatively straightforward. However, the central question - how the NDR is likely to affect the local economy and society *in reality* - is complex, multi-layered. We have therefore broken it into a number of sub-questions which need to be answered before an overall view can be taken. The questions are as follows:
- To what extent is there a need for more transport investment? This is not an appraisal report, so we are not asking this question in order to judge whether the investment should go ahead or not. Instead, we pose this question in order to judge the scale of the likely socio-economic effects of the NDR. If, for example, population growth was high, there might be a case to suggest that the investment would have a positive economic effect, simply because it might provide services which might be in short supply. On the other hand, TAG Guidance points out that if any region were subject to negative structural change, the economy would be unlikely to benefit from transport investment). The objective is to build up a picture of the economy and the extent to which an expansion in transport could affect the economic prospects of the area.
 - How might the existing economy be affected by the NDR? We will look at whether the areas most affected by the NDR have an economic profile which suggests that they will be positively affected by the scheme. We will be looking at how these changes affect the Impact Zones. In this section we will also be looking at the NDR's effect on Norfolk's tourism potential, and on Norwich Airport.
 - How will local labour markets be affected by the NDR? Here, we will be looking at unemployment, skills and economic activity rates.
 - Will changes in labour markets have any knock-on impacts for deprivation levels?
 - How might inward investment and new growth be affected by the NDR? We will look at likely effects on development at employment areas (including Longwater,

Broadland Business Park and Rackheath). We will also look at the the impact on the rate of encouraging an increase in new business start ups in areas previously considered peripheral.

5.5 We consider these questions in turn in subsequent sections.

6 TO WHAT EXTENT IS THERE A NEED FOR MORE TRANSPORT INVESTMENT?

Introduction

- 6.1 As we have seen above, the Government's TAG guidance requires us to look at the extent to which there is a case for additional transport investment.
- 6.2 To look at this issue, we have examined the performance of the area in terms of
- Population change (both to date and projected)
 - Jobs change (both to date and projected)
 - Projected GVA, investment and household income growth
 - Indications of where growth is likely to be
 - Projected traffic growth - looking at how this growth translates into increased traffic. We look at projections of increased demand for transport published by Mott Macdonald.
- 6.3 We deal with each in turn.

Population change

Population growth since 1991

- 6.4 High population growth may indicate a need for transport improvements. An increasing population would tend to increase the pressure placed on transport infrastructure as people travel to work and pursue leisure. We therefore look at past population change to see if there are increasing or decreasing demand for transport at the moment, and also future population change to see if there is potential for changing demand.
- 6.5 Since 1991, population has grown more strongly in the East of England than the country as a whole, and Norfolk has matched this growth rate. However, population numbers flat for the area within the boundaries of Norwich, with figures remaining at around 119,000 over the following decade.
- 6.6 However, if we look at the urban area as a whole (which incorporates parts of Broadland and South Norfolk) then a picture of growth emerges. Broadland Council points out that this area forms the main concentration of the district's population: "part of Broadland covers the northern and eastern suburban fringe of the City of Norwich. While only 7% of the district area, it houses some 49% of the population"¹⁶. The NATS strategy picks up this point stating that in the Norwich urban area, "the population is rising outside the city boundary. This will affect travel patterns, with a possible increase in commuting into the city centre from the suburbs."¹⁷
- 6.7 There are increases of 13% and 11% in Breckland and Broadland respectively, 8% in South Norfolk. So although the actual City of Norwich did not grow substantially over the decade, neighbouring Districts experienced substantial growth - way over the average growth of the country, and generally above the rate of the County and Region.

¹⁶ Broadland Council CPA Self Assessment
<http://search2.openobjects.com/kbroker/ncc/broadland/kbsearch?qt=economic+development+strategy&sr=0&nh=10&cs=iso-8859-1&sc=broadland&ha=135&mt=0&to=0>

¹⁷ <http://www.norwichareatransport.org/traveltransport/nats/pdf/chapter1.pdf>

Table 6.1 Population Change 1991-2001 in Benchmark Areas

	2001	1991	Change	% Change
Breckland	121,418	107,167	14,251	13%
Broadland	118,513	106,292	12,221	11%
Great Yarmouth	90,810	87,724	3,086	4%
North Norfolk	98,382	90,461	7,921	9%
Norwich	121,550	120,895	655	1%
South Norfolk	110,710	102,612	8,098	8%
Norfolk	796,728	745,613	51,115	7%
East of England	5,388,140	5,055,515	332,625	7%
England	49,138,831	47,055,204	2,083,627	4%

Source: Census 1991 and Census 2001. Note: Data presented here uses ONS statistics from source rather than via MapInfo/GIS

- 6.8 We now turn to look at how population has changed in the areas which, according to the transport model, house those individuals who are most likely to use the NDR to drive to work. These are what we have termed the residential impact zones.
- 6.9 Table 6.2 below shows changes in the residential impact zones. Most have increased in size, except for Cringleford & Lakenham, which has stagnated, and Upper Hellesdon, Buxton, Bowthorpe and Thurlton.

Table 6.2 Population Change 1991-2001 in Impact Zones - Residential

	2001	1991	Change	% change
Breckland	121,418	107,167	14,251	13%
Rest of Broadland	92,677	82,402	10,275	12%
North Norfolk	98,382	90,461	7,921	9%
Thorpe St Andrew	30,560	24,919	5,641	23%
Great Yarmouth	90,810	87,724	3,086	4%
Rest of Norwich	37,168	34,832	2,336	7%
Rest of South Norfolk	82,794	80,688	2,106	3%
Poringland and Hempnall	16,890	16,470	420	3%
Wymondham	5,477	5,425	52	1%
Buxton	5,171	5,939	-768	-13%
Cringleford and Lakenham	28,014	28,844	-830	-3%
Bowthorpe	9,674	10,784	-1,110	-10%
Thurlton	2,652	3,973	-1,321	-33%
Upper Hellesdon	36,803	39,454	-2,651	-7%

Source: Census 1991 and Census 2001 Note: Data uses ONS statistics from source rather than via MapInfo

- 6.10 As can be seen, whilst there are some relatively substantial rises in population in some residential impact zones (for example in Breckland, Rest of Broadland - which includes Taverham, Drayton, Horsford and Old Catton - and North Norfolk), in some cases the absolute change is relatively insignificant. The most substantial increase percentage-wise in population is that of the Thorpe St Andrew zone, which has increased by 5,600 people, or 23%.

Projected population growth

- 6.11 We now turn to look at how population is expected to change in future.
- 6.12 Population changes are determined to some extent by patterns of development - which are themselves determined in part by infrastructure investment. The building of the NDR is itself likely to have some effect on the distribution of population. So in using population projections to look at likely need for infrastructure investment there are some problems with circular reasoning, particularly if we use fine-grained data.

However, there is some value in using more general projections to paint a general picture of likely demand for transport provision in the future.

- 6.13 Population projections were prepared by Anglia Polytechnic University in 2005. These update projections made in 2004 for the draft RSS. We use the 2005 version as they are more up-to-date and based on more recent data available. APU produce different variants of their projections. The two principal variants are 'migration-led' and 'dwelling-led'¹⁸
- 6.14 As we wrote in the Norfolk Growth Study Working Paper (RTP, April 2005)
- In the Migration-Led variants, APU project population by age and sex using assumptions about the scale and composition of in and out-migration. They then calculate numbers of households at each point in time by applying age/sex specific household representation rates. From numbers of households they derive numbers of dwellings, using assumptions about vacancies, second homes etc.*
- The Dwelling-Led variants reverse this process. For each district and each point in time they start with the number of dwellings and then work backwards using a goal-seeking process to determine:*
- The number of households required to fill this number of dwellings.*
The total population (by age and sex) required to generate this number of households.
The level of migration required to produce this total population.
- 6.15 We compare short-term net migration-led population forecasts against dwelling-led (banked RSS annual averages) population forecasts. The former comprise our 'high' scenario and the latter our 'low' scenario.

Table 6.3 Population Forecasts 2001-2021

	High	% growth	% share Norfolk's growth	Low	% growth	% share Norfolk's growth
Breckland	32,377	27%	24%	15,938	13%	24%
Broadland	14,808	12%	11%	12,428	10%	19%
Gt Yarmouth	11,508	13%	9%	6,230	7%	10%
N Norfolk	7,918	8%	6%	1,841	2%	3%
Norwich	8,689	7%	7%	2,324	2%	4%
S Norfolk	23,868	22%	18%	17,176	16%	26%
K Lynn Wst	15,032	11%	11%	6,894	5%	11%
Waveney	18,755	17%	14%	2,450	2%	4%
TOTAL	132,955	15%		65,281	7%	

Source: APU 2005

High Scenario

- 6.16 Under the high scenario, there is 15% growth between 2001 and 2021 in Norfolk and Waveney. Norwich grows by the least amount - 7% (8,700 people), compared to 27% in Breckland (32,400 people) and 22% in South Norfolk (23,900 people).
- 6.17 Of the total growth, Norwich comprises 7% - the second smallest share. The biggest share is in Breckland, which has 24% of the total growth. Broadland and South Norfolk - along with Norwich are both areas that might affect demand for the NDR - comprise almost 30% of the total growth in Norfolk. The Regional Spatial Strategy (draft) seeks to focus a considerable share of the county's growth on major urban areas, principally Norwich, and it is the geography of district boundaries which has resulted in such a high proportion of growth being attributed to Broadland and South Norfolk. In fact it is primarily Norwich urban area growth.

¹⁸ As RTP wrote in the Norfolk Employment Growth Working Paper.

Low Scenario

- 6.18 The low scenario shows 7% growth in Norfolk and Waveney. In this scenario, Norwich grows by just 2% (2,300 people). South Norfolk has the most growth, at 16% (17,200 people).
- 6.19 Of the total growth, Norwich comprises 4%. Broadland and South Norfolk have a joint share of 45%.
- 6.20 Housing growth to accommodate the growth in population and jobs growth will generally take place on the outer edge of Norwich.

Jobs change

Employment numbers

- 6.21 There is an established positive relationship between economic growth and the demand for transport (although it should be noted that it is now a policy concern to break the link between economic growth and demand for transport).¹⁹
- 6.22 We have looked at changes in employment in the business impact zones and benchmark areas. Table 6.4 below shows employment numbers in 2003 and changes since 1995. We have grouped together the zones most likely to respond to investment in the NDR due to their geographical proximity to the proposed route. We have also showed these zones in bold and italic type.

¹⁹ SACTRA report

Table 6.4 Jobs in Impact Zones and Benchmark Areas, 1995-2003

		2003	1995	Change	% change
<i>Wroxham (incl Rackheath and Sprowston)</i>	<i>IZ</i>	<i>13,200</i>	<i>7,100</i>	<i>6,100</i>	<i>86%</i>
<i>Broadland East</i>	<i>IZ</i>	<i>4,200</i>	<i>1,700</i>	<i>2,500</i>	<i>154%</i>
<i>Broadland North West</i>	<i>IZ</i>	<i>4,400</i>	<i>3,400</i>	<i>1,000</i>	<i>28%</i>
<i>Taverham</i>	<i>IZ</i>	<i>1,500</i>	<i>900</i>	<i>600</i>	<i>69%</i>
<i>Horsford and Felthorpe</i>	<i>IZ</i>	<i>900</i>	<i>400</i>	<i>600</i>	<i>157%</i>
<i>Drayton</i>	<i>IZ</i>	<i>1,400</i>	<i>900</i>	<i>500</i>	<i>51%</i>
<i>Old Catton and Sprowston West</i>	<i>IZ</i>	<i>800</i>	<i>700</i>	<i>100</i>	<i>16%</i>
<i>Thorpe St Andrew</i>	<i>IZ</i>	<i>3,900</i>	<i>2,900</i>	<i>1,000</i>	<i>32%</i>
<i>Hellesdon</i>	<i>IZ</i>	<i>5,100</i>	<i>5,300</i>	<i>-200</i>	<i>-4%</i>
<i>Spixworth</i>	<i>IZ</i>	<i>600</i>	<i>500</i>	<i>100</i>	<i>32%</i>
Rest of Breckland	IZ	28,400	21,400	7,000	33%
Yarmouth and Caister	IZ	33,400	28,300	5,100	18%
Rest of North Norfolk	IZ	21,500	17,900	3,700	20%
Dereham	IZ	11,300	8,500	2,800	33%
Great Yarmouth North	IZ	1,200	400	800	216%
North West Norfolk	IZ	7,700	7,000	700	10%
Alysham	IZ	3,100	2,900	200	9%
Hoveton and Stalham	IZ	4,500	4,300	200	6%
Coltishall and Horstead	IZ	600	500	100	11%
Great Yarmouth South	IZ	800	800	0	2%
Breckland	BM	40,300	29,900	10,500	35%
South Norfolk	BM	39,900	25,900	14,000	54%
Broadland	BM	40,600	28,300	12,300	43%
North Norfolk	BM	30,000	24,900	5,200	21%
Norwich	BM	87,900	90,900	-3,000	-3%
Norfolk	BM	315,100	270,900	44,200	16%
East of England	BM	2,328,100	2,012,300	315,800	16%
GB	BM	25,716,248	22,728,869	2,987,379	13%

Source: Annual Business Inquiry, 2003, Annual Employment Survey Rescaled 1995

Note 1: Jobs given to nearest 100. Percentages worked on actual figures. Note 2: Boundary changes occurred between 1995 and 2003 and so there may be some geographical discrepancies between impact zones at the two dates. The smaller the geographical area, the less reliable the data.

- 6.23 The figures suggest that there has been significant growth in jobs in areas to the north of Norwich which are most geographically proximate to the proposed route of the NDR. Broadland East has seen very strong growth - of 2,500 jobs, or 154%. Wroxham (including Rackheath and Sprowston) has also seen strong growth of 6,100 jobs, or 86%. Both of these areas have grown from reasonably substantial bases of 4,200 and 13,200 respectively. Jobs growth in Taverham, Horsford and Felthorpe and Drayton has also been very significant, but from a lower base.
- 6.24 The East of England has grown slightly faster than the country as a whole, and Norfolk has grown in line with the East. Within Norfolk, Norwich is the only of the benchmark areas to have lost jobs (net) between 1995 and 2003; all other Districts have shown strong growth - faster than the County, region and Country. All of the business impact zones have experienced growth since 1995 except Hellesdon which has been unchanged, with particularly large numbers of additional jobs in Wroxham (incl Rackheath and Sprowston), Rest of Breckland and Yarmouth and Caister.

Projected jobs growth

- 6.25 The City Council has work undertaken which states that

- the number of jobs in Norwich is forecast to rise from 108,000 in 2004 to 112,400 by 2015.²⁰
- identifies the sub-sectors that are forecast to increase their share of total employment in 2014 relative to that in 2004.

6.26 This work is shown in the following table.

Table 6.5 Projected jobs growth by sector

Sector	Jobs 2004	Jobs 2014	% change
Retail	12,300	13,000	6%
Distribution	5,800	6,200	7%
Hotels & Catering	6,200	6,400	3%
Other Transport Services	1,700	1,800	6%
Communications	2,400	2,500	4%
Insurance	9,500	9,800	3%
Professional Services	7,000	7,800	11%
Computing Services	600	900	50%
Other Business Services	14,200	15,600	10%
Education	7,900	8,400	6%
Health/Social Care	6,600	7,300	11%
Waste Treatment	100	200	100%

Source: Cambridge Econometrics LEFM (Norwich City Council)

6.27 Retail is expected to grow significantly. The Chapelfield development is expected to generate 2,000 retail jobs and 500 auxiliary-type jobs when it opens in September 2005. The City Council believes that even allowing for a short-term (3-years?) period when trading patterns re-adjust after Chapelfield's opening, this still points to a sustained growth.²¹ The forecast data provided by Cambridge Econometrics does not take this into consideration when predicting future employment levels in Norwich's retail sector.

Projected GVA, investment and income growth

6.28 Norwich is projected to grow strongly in GVA, investment and household income.²²

- Over the period 2000-2015 GVA (Gross Value Added) Cambridge Econometrics forecast a stronger rate of growth for Norwich, at 2.9% per annum, than for the region (2.6%) and the UK as a whole (2.3%).
- Investment in Norwich is also predicted to grow more strongly over the period, at 4.0% per annum, compared to 3.1% for the Eastern region and 2.6% for the UK.

²⁰ Cambridge Econometrics LEFM

²¹ PR/ CP Commentary on growth in employment in Norwich 6 May 2005

²² The following statistics have been provided to us by the City Council.

- Further to this, Real Household Disposable Income is also expected to show a stronger growth rate in Norwich at 3.1% p.a. than for the region (3.0%) and the UK as a whole (2.8%). Household expenditure is predicted to grow at the same rate as at the regional level (2.8% p.a.); this is a stronger growth rate than is predicted for the UK as a whole (2.4% p.a.)

Where growth is likely to be

- 6.29 Unsurprisingly, jobs are concentrated in the city centre. Currently, one-third (36%) of the City's employment is based in Mancroft ward, which covers the City centre. Around 41% of employment in the ward is based in Financial and Business Services and a further 28% of the ward's employment is in the Retail/Wholesale sector (ABI 2003). In employment terms, the second most populated ward is Thorpe Hamlet where almost one-fifth (19%) of the City's employment is based. Catton Grove where Norwich Airport is based is third, with almost 11% of the City's employment. Each of the other Norwich wards provides less than 6% of the City's employment.
- 6.30 Further jobs growth is expected in the city centre. As we noted above, the Chapelfield development is expected to generate 2,000 retail jobs and 500 auxiliary-type jobs when it opens in September 2005. As stated above, the forecast data provided by Cambridge Econometrics does not take this into consideration when predicting future employment levels in Norwich's retail sector.
- 6.31 In September 2004, SQW submitted the draft Norwich and King's Lynn Area Case Studies to EERA. The SQW report considers that the key future drivers for the sub-region, and looks at where they are geographically located.²³
- the city's service centre role for much of Norfolk and parts of northern Suffolk, focused on the expanding retail offer;
 - the attraction of the city as a tourist destination, both in its own right and in combination with the Broads and the north Norfolk coast;
 - the growth sectors of financial services, cultural/creative/media sectors, plant and food biotechnology and advanced automotive engineering;
 - recent infrastructure improvements including the A11, the rail link between Norwich and Cambridge and expansion of Norwich Airport - equally, SQW state that the absence of planned improvements such as the A47 westwards will have an impact;
 - the potential for further population growth, including brownfield land opportunities, expansion of the urban area (particularly to the north east) and in some of the surrounding market towns; and
 - the need to address deprivation.

Increasing demand for transport

- 6.32 As we have mentioned above, there is an established linkage between economic growth and the demand for transport.
- 6.33 The Mott MacDonald study *Norwich Northern Distributor Road Traffic and Economic Assessment Report* shows trips growth projections using TEMPRO (a traffic modelling programme, which includes fuel price and income factors).
- 6.34 TEMPRO is designed as a trip end model. TEMPRO was produced primarily for use in Multi-Modal Studies (hereafter MMS), of which there are 22 nationally. The sectoral

²³ These are two of the six short case studies being completed for EERA as one element of the East of England Sub-Regions Study. As recognised by SQW in their covering letter to EERA dated 3rd September 2004, these studies are little more than high-level analysis of their observations, based on related work undertaken by SQW in the county.

disaggregation of TEMPRO is designed to reflect broad land use types and trip purposes. This is a series of forecasts for four main variables: population, households, workforce and employment projections starting at a Base year of 1998²⁴. The main data inputs used are those supplied by ODPM itself, ONS, Government Actuaries Department (GAD), Census, Annual Employment Survey (AES), Labour Force Survey, and employment projections supplied by Cambridge Econometrics. The data was compiled at DTLR's Integrated Transport Economics and Appraisal (ITEA) team.

- 6.35 These show that based on the Norwich area (Norwich, Broadland and South Norfolk) by 2025, there is forecast to be at least an additional 50% in the number of trips in the morning and evening peak periods.²⁴

Table 6.6 TEMPRO Reference growth multipliers Including Fuel Price and Income Factors (Norwich area)

Period	2002 to 2010	2002 to 2025
AM Peak Period	1.22	1.52
PM Peak Period	1.21	1.50

Source: Mott MacDonald

- 6.36 This work is based on TEMPRO policy data sets (December 2002). We compare the TEMPRO policy data with RSS data below, and have highlighted the two areas most influenced by the NDR.
- 6.37 There are quite significant differences between TEMPRO and RSS predictions of workers and households in Broadland, and between jobs and workers in Norwich.

Table 6.7 Comparison of TEMPRO policy and RSS growth statistics (% change by 2025)

	Workers		Households		Jobs		Total Population	
	Tempro Policy	RSS	Tempro Policy	RSS	Tempro Policy	RSS	Tempro Policy	RSS
BRECKLAND (Authority)	44%	11%	43%	36%	48%	18%	39%	16%
BROADLAND (Authority)	37%	8%	35%	29%	41%	14%	31%	13%
GREAT YARMOUTH (Authority)	8%	3%	9%	18%	13%	15%	6%	8%
KINGS LYNN & WEST NORFOLK (Authority)	30%	3%	14%	21%	12%	4%	12%	6%
NORTH NORFOLK (Authority)	24%	-5%	24%	16%	24%	2%	23%	2%
NORWICH (Authority)	2%	14%	4%	23%	4%	15%	-1%	2%
SOUTH NORFOLK (Authority)	24%	16%	23%	28%	27%	64%	20%	19%

Source: RTP. Numbers have been projected forward to 2025 at the previous run rate

Summary

- 6.38 The economic/demographic trends and projections explored above sees the Norwich urban area as a place of considerable growth in the coming years.
- Whilst the population of the administrative area of Norwich has not grown, the Norwich urban area has growth. Broadland and South Norfolk, parts of which fall within the Norwich urban area, have experienced strong growth, as has Breckland.
 - The high growth scenario shows 15% increase in population in Norfolk. On a per annum basis, this is roughly in line with past population change. The population joins the labour force, which will place demands upon the road infrastructure for people wishing to travel to work. Even under the low growth scenario, the

²⁴ Mott MacDonald, *Norwich Northern Distributor Road Traffic and Economic Assessment Report*, p.13

projections show a 7% increase in population. This is about half the rate that it was for 1991-2001. However, at least half of the additional population is forecast to be in Districts near to the NDR i.e. Norwich, Broadland and South Norfolk. This suggests there will still be concentrated additional pressure that the road may help to alleviate.

- Job numbers have declined in Norwich since 1995. Again, there has been strong growth in other local authority districts closely associated with the Norwich urban area above that of the County, region and country. The figures suggest that there has been significant growth in jobs in areas to the north of Norwich which are most geographically proximate to the proposed route of the NDR.
- GVA, investment, and real household income is expected to grow strongly in Norwich
- Work carried out shows the strong concentrations of employment in the city centre, and current development (eg the Chapelfield development) shows jobs growth in the city. There is the potential for further population growth in expanded urban areas (particularly to the north east, which would be served by all NDR route options)

6.39 This translates into strong traffic growth, expected to be an additional 50% in the number of trips in the morning and evening peak periods.

6.40 Given the likely growth of the urban area, there is clear evidence that additional transport investment should be considered.

7 THE ECONOMIC CONTEXT

Introduction

7.1 This section looks at the economic context in which the NDR will be built. It provides a basis for the analysis in subsequent chapters.

What are the characteristics of the existing economy?

Sectors represented in the economy

7.2 Table 7.1 below shows employment by broad sector at local authority, city and county level in Norfolk.

Table 7.1 Employment by Broad Categories, 2003 (%)

	Breckland	Broadland	Norwich	South Norfolk	North Norfolk	Norfolk	East of England	England
Agriculture & fishing	5	3	0	4	4	1	1	1
Energy and water	0	0	0	1	1	1	1	1
Manufacturing	22	17	11	12	14	14	13	13
Construction	5	6	4	9	7	5	5	4
Distribution, hotels & restaurants	24	23	26	21	28	26	26	25
Transport & communications	7	5	5	3	4	5	6	6
Banking, finance & insurance, etc	12	19	29	14	10	18	20	20
Public admin, educ & health	19	23	20	32	26	25	23	26
Other services	5	4	5	4	6	5	5	5
Total	100	100	100	100	100	100	100	100

Source: Annual Business Inquiry, 2003

7.3 The table shows that:

- **Norfolk** has similar proportions of employees in the broad sectors to the East of England, which in turn has similar proportions of employees in the broad sectors as the country as a whole.
- **Norwich has high concentrations of banking, finance and insurance employment** compared to the other benchmark areas, as well as the County, Region and country. It has lower proportions of employment in manufacturing, as well as public administration, education and health.
- **Breckland and Broadland is over-represented in manufacturing** employment compared to all benchmarks.
- **North Norfolk** is grossly under-represented in banking, finance and insurance employment, but over-represented in agriculture and distribution, hotels and restaurants.
- **South Norfolk** is under-represented in banking, finance and insurance employment, but over-represented in public administration, education and health employment -

compared to other Districts in Norfolk and the County, Regional and national benchmarks.

- 7.4 Clearly, though, not all sectors benefit to the same extent by improved road infrastructure (agriculture/fishing and energy/water, for example, are likely to respond very little to improved road infrastructure, whereas manufacturing is likely to respond better). It is therefore necessary to isolate which sectors are likely to respond best to road infrastructure improvements, in order to judge what economic impacts the NDR could have. We consider this question further in section 8.

How do labour markets work?

- 7.5 This section draws on data assembled for the Norfolk Employment Growth Study (Stage 1 report).

Unemployment

- 7.6 Table 7.2 shows the unemployment rate for each of the districts and comparator areas.
- 7.7 According to the ILO²⁵ measure, unemployment at the time of the 2001 Census is similar in Norfolk to the national average but slightly higher than the regional average. The unemployment rate within the district varies considerably. South Norfolk and Broadland have the lowest unemployment rates (3% of all comparators, whereas Great Yarmouth's unemployment rate is almost three times greater than this figure).

Table 7.2 ILO Unemployment, 2001

	Unemployment Rate
Breckland	4%
Broadland	3%
Great Yarmouth	8%
King's Lynn and West Norfolk	4%
North Norfolk	4%
Norwich	6%
South Norfolk	3%
Waveney	6%
Norfolk	5%
East of England	4%
England and Wales	5%

Source: Office for National Statistics, 2001

- 7.8 Unemployment in the Norfolk area is higher than the national average - but even so is low by historic standards, and at or below the level previously considered to represent a reasonable level of frictional unemployment.
- 7.9 We have had to use Census unemployment data rather than the more recently-available Labour Force Survey as it is available at the fine-grained level we need to look at the Residential Impact Zones. We should point out that the latest National Statistics data on unemployment for January 2005 shows Norfolk has a claimant count of 2.3%²⁶, compared to 1.8% in the region as a whole and 2.4% nationwide. Within

²⁵ Unemployment based on the definition provided by the International Labour Organisation (ILO) and taken from the Census 2001, measure the number of people that cite they are economically active, currently not working and actively seeking work. This is the 'official' definition of unemployment used by the government

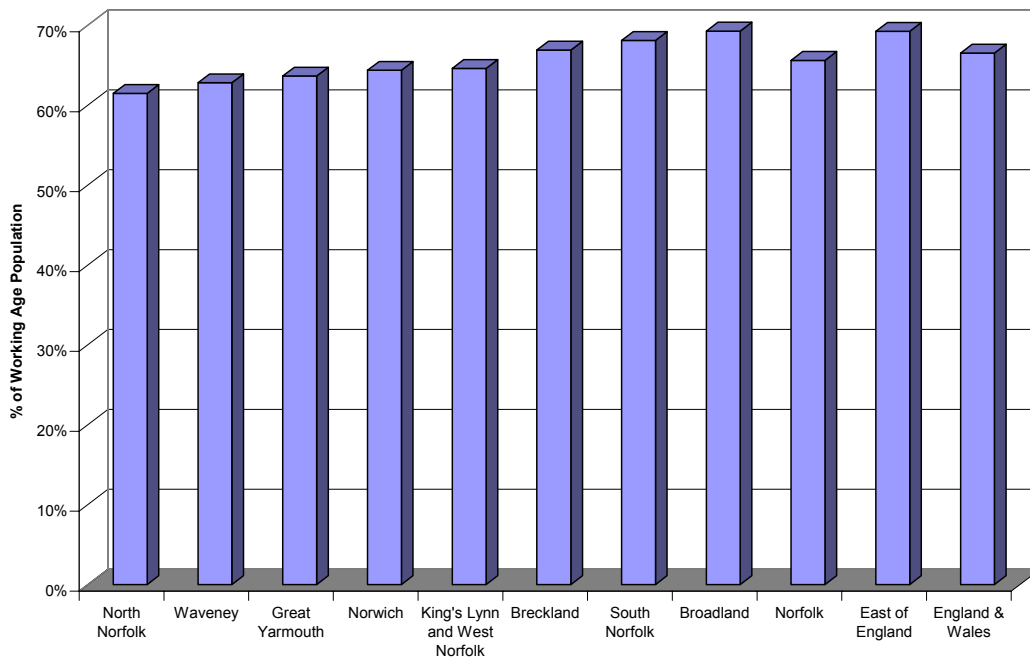
²⁶ Claimant count as a percentage of working age population. This is different to ILO unemployment as it is the number of people who receive benefits, rather than count all of the people who are not employed but are

Norfolk, the highest figures were 5.7% in Great Yarmouth and 3.4% in Norwich. The relative position of the different Districts therefore reflect the same pattern as the ILO unemployment.

Economic activity

- 7.10 Economic activity rates account for those working age residents currently in employment or working age residents who are not employed but willing to work and are available to commence employment within two weeks. Economically inactive people comprise the retired, students, those looking after home/family, the permanently sick/disabled and others. Very broadly, low rates of economic activity generally follow disadvantage, where older unskilled or poorly skilled workers conclude that they are better off on disability benefit or simply cannot find a suitable job.
- 7.11 An indicator of an economy's labour supply is the economic activity rate. Figure 7.1 shows economic activity rates for all the Norfolk districts and compares them against other benchmark measures.

Figure 7.1 Economic Activity Rates, 2001



Source: Census 2001

- 7.12 Figure 7.1 shows economic activity rates within Norfolk are below the regional and national average of 69% and 67% respectively. At District level the economic activity rates ranges from 61% in North Norfolk to 69% in Broadland. Only Breckland, South Norfolk and Broadland are above the county average; however, these are also above the national average.²⁷

Commuting patterns

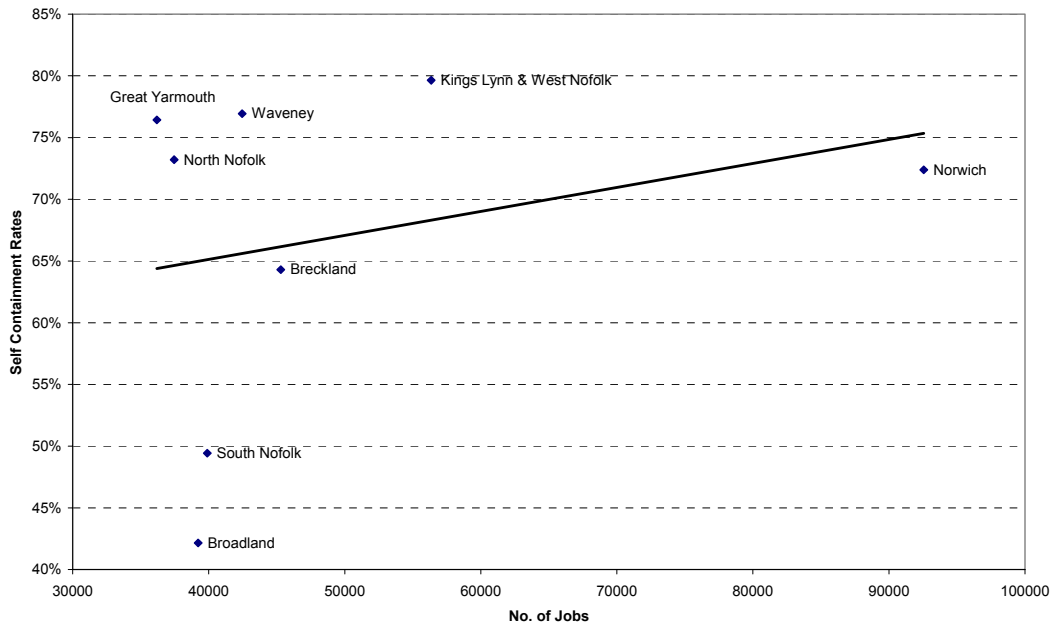
- 7.13 We have analysed recently published travel-to-work data from the 2001 Census. Information on travel-to-work patterns between Norfolk districts can be found in Appendix A.

seeking work (this latter definition means the figures are higher for ILO as not everyone who is unemployed receives benefit).

²⁷ Again, this is for working age population aged 16-74, rather than women aged 16-59 and men aged 16-64 as is used in Table 7.6.

- 7.14 Whilst 72% of workers in Norwich also live in Norwich, it is clear from this matrix that in-commuting, particularly from Broadland, is an important part of the Norwich economy: 11% of jobs in Norwich are filled by workers from Broadland.
- 7.15 Figure 7.2 shows the self-containment²⁸ rates of all districts in the area and plots them against the number of workplace jobs in each district. The numbers of jobs will vary slightly from those quoted earlier from the Annual Business Inquiry, as this assessment is based on 2001 Census figures which take a slightly different definition. Broadland and South Norfolk have the lowest self containment rates amongst the districts, reflecting the high numbers of people that commute into the Norwich administrative area to work (although it should be borne in mind that, as parts of Broadland and South Norfolk form parts of the Norwich urban area, many of these commutes are intra-urban in nature). Conversely, King's Lynn and West Norfolk has the highest level of self-containment as there are relatively fewer other opportunities outside the district yet within reasonable commuting distance.

Figure 7.2 Self-Containment Rates against Number of Workplace Jobs



Source: Census 2001

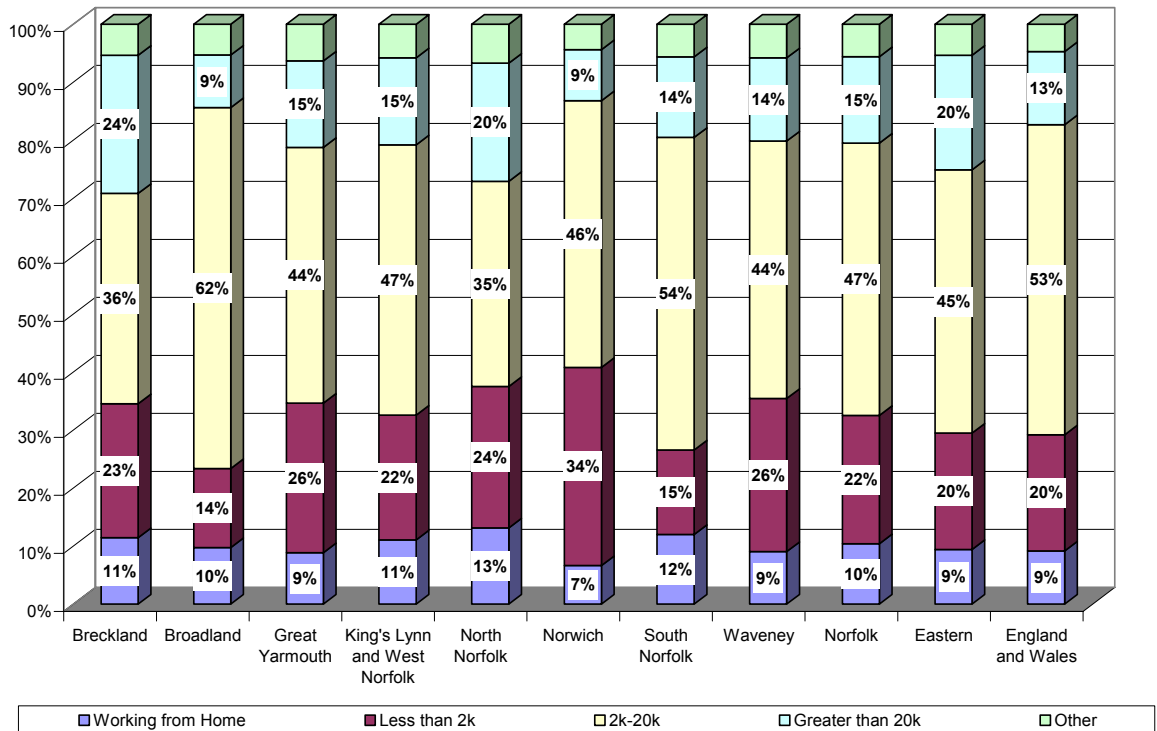
Distance travelled when commuting

- 7.16 As was pointed out above, looking at commutes across administrative boundaries can fail to pick up some of the realities of commuting journeys. For example, many trips from Broadland and South Norfolk over the administrative border into Norwich can more properly be seen as trips within the urban area of Norwich.
- 7.17 An alternative perspective of commuting is to assess the mode and distance travelled by area of residence.
- 7.18 The distribution of distances travelled (Figure 7.3) reveals the following points:
- The first is the variation between region and County. In the East of England region, 20% of trips are greater than 20km. This is higher than the national and county average of 13% and 15% respectively.

²⁸ The proportion of self containment is the number of people that live and work in an area, divided by the resident workforce.

- It is clear that employed residents of Norwich travel the fewest miles to work; 41% are either working from home or travel less than 2km. This group comfortably exceeds that of any other area: the nearest other area with commutes as short as this is North Norfolk, with 36% of employed residents with commutes of 2km or less.
- Broadland has the highest proportion of residents that travel further than 2km. Equally, though, it has the joint lowest percentage of residents that travel more than 20km. This could perhaps suggest that the Norwich and Broadland economies are closely related.

Figure 7.3 Distance Travelled to Work, 2001



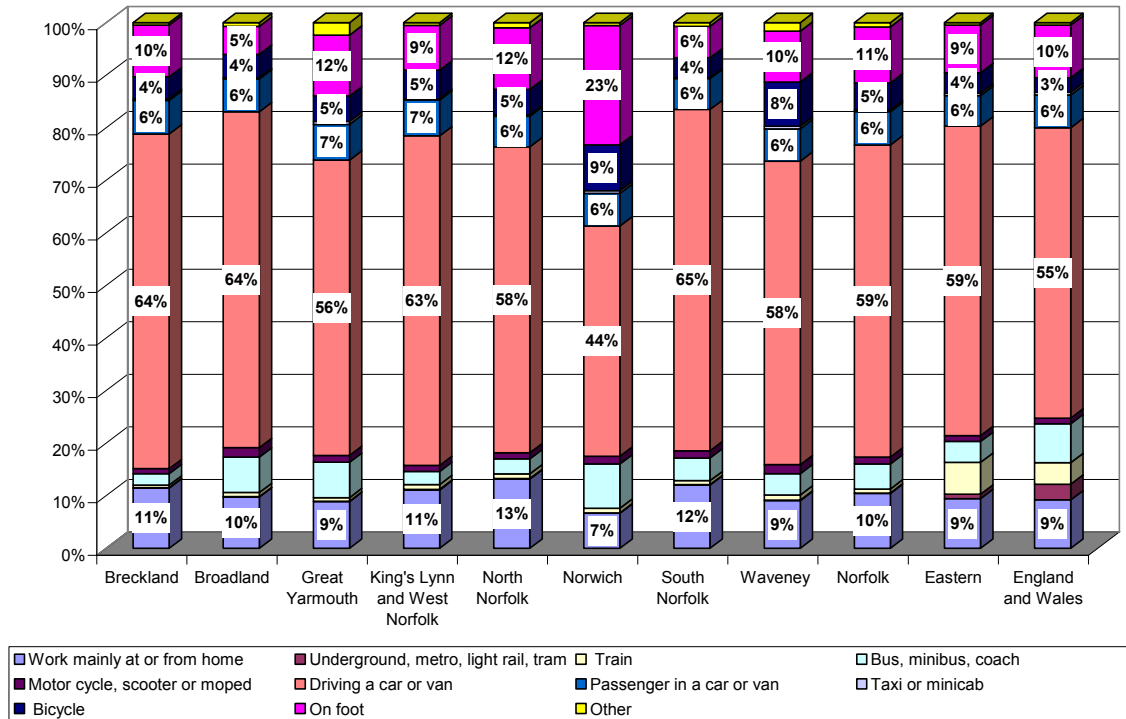
Source: Census 2001

Mode of transport when commuting

7.19 Mode of transport also shows variations across areas:

- The proportion of residents driving a car or van in Norfolk is 59%, which is identical to the East of England region but slightly higher than the national average.
- Public transport accounts for 14% of journeys to work at a national level but in Norfolk county it is around half this level. At district level most are similar to the Norfolk average, with only Norwich City and Broadland having slightly higher proportions.
- The same measure shows that Norwich is relatively non-dependent on car or van drivers. Only 44% of Norwich journeys to work rely on this method, against a national average of 55%.
- The proportion of Norwich journeys to work using bus, minibus or coach are, at 8%, slightly higher than the national average of 7%.
- A prominent feature of Figure 7.4 is the proportion of Norwich City's residents that commute to work on foot, which is double the average all other assessed areas.

Figure 7.4 Mode of Travel to Work, 2001



Source: Census 2001

Summary

7.20 The above analysis has shown that:

- Norwich has high concentrations of banking, finance and insurance employment. Breckland and Broadland is over-represented in manufacturing employment compared to all benchmarks. North Norfolk is over-represented in agriculture and distribution, hotels and restaurants.
- Unemployment is low, but higher than the national average.
- Economic activity rates in Norwich are below the national average.
- The Norwich economy relies to some extent on in-commuters. 28% of jobs in Norwich are taken by those living outside Norwich, predominantly residents of Broadland (who take 11% of Norwich jobs) and South Norfolk (who take 7% of Norwich jobs). Facilitating inward commutes, particularly from areas to the North such as Broadland, could be of assistance to the economy located in Norwich, although it should be borne in mind that, as parts of Broadland and South Norfolk form parts of the Norwich urban area, many of these commutes are intra-urban in nature).
- Norwich is relatively non-dependent on car or van drivers. Only 44% of Norwich journeys to work rely on this method, against a national average of 55%.

8 HOW WILL THE ECONOMY BE AFFECTED BY THE NDR?

Introduction

8.1 This section looks at how the existing economy might be affected by the NDR.

8.2 We have worked through this question in a logical sequence.

- Firstly, we look at which sectors of the economy can be expected to be most influenced by road transport infrastructure improvements.
- We then turn to look at the extent to how those strongly affected sectors are distributed geographically.
- As requested by the brief, we then focus on the effects of the NDR on the tourism sector and on Norwich Airport.
- We then report on the consultation undertaken with businesses.

8.3 We discuss the effects of the different route options throughout.

Which sectors of the economy can be expected to be most influenced by road transport infrastructure improvements?

8.4 Research has been carried for the DfT on the effects of road transport provision on different industries. We can use this work to judge the likely effects of the NDR on different local economies. Findings of this work are as follows.²⁹

- **Business services:** literature reviewed by the DfT suggests that transport and communication are the first ranked factors in choice of location for business service sectors. There are very few heavy goods trips for this sector. Instead, transport aids this sector in accessing a skilled workforce and facilitating communications with customers. We can expect this sector to be positive in its response to road investment.
- **Retail:** retail differs from manufacturing and industrial requirements, as it is the customer who collects goods, rather than the producer that delivers them. Transport influences on location are as much to do with consumer accessibility as producer supplier requirements. As the Mott MacDonald transport model work indicates that the NDR will to some extent improve the accessibility of central Norwich to consumers the retail sectors in these areas can be expected to benefit.
- **Manufacturing:** Different types of manufacturing respond to transport investment in different ways. These are as follows.
 - Heavy industries have the highest transport costs, and so can be expected to respond to changes in transport costs most clearly.
 - Light industry seems to be particularly influenced by the quality of road infrastructure. The DfT states that “investment in road infrastructure is a key to the location values of light industrial and commercial businesses”.
- Manufacturers less influenced by transport infrastructure are as follows:
 - Industries dependent on natural resources are, as one would expect, less influenced by transport (ship building is given as an example - obviously, it requires the sea and certain port characteristics).
 - Knowledge dependent industries exhibit tendencies to cluster, to take account of external economies such as a liquid, highly skilled labour market and to

²⁹ The following research is summarised from DfT *The Importance Of Transport In Business' Location Decisions*

facilitate face-to-face contact. This sector takes account of external economies such as a liquid, highly skilled labour market and the ability to make face-to-face contact with others in the same industry. Accordingly, these industries can be expected to prioritise the transportation of people rather than goods - meaning that the passenger transport services could have some impact. But whilst these industries *are* critically dependent on an ability to access skilled labour, the DfT states that for this sub-sector, "transport is a secondary location factor", and such firms will tend to locate in areas which have existing clusters.³⁰

- Transport, storage and communications: the DfT Literature Review makes no mention of transport, storage and communications as a sector in its own right. However, we believe that this sector is more likely to prioritise road investment, with other types of infrastructure improvement being relatively unimportant.

- 8.5 Leisure and tourism is particularly important in the area. Transport infrastructure can attract tourists by lowering the costs (both financial and time costs) associated with tourism activity. However, the DfT admits that there is little clear evidence about precisely how important transport is to tourism activity. We have therefore included this sector in our analysis, but only make tentative conclusions about the influence of the NDR on the sector. We discuss this sector specifically in paragraph 8.16 onwards.
- 8.6 The above research suggests, then, that the sectors of the economy which are the heaviest road users are business services, most categories of manufacturing, and transport, storage and communications. The question, then, is how well represented these economic sectors are in the economy, particularly the Impact Zones.

To what extent are the sectors positively affected by road infrastructure present in the economy? Where are they located?

- 8.7 We have undertaken this analysis by presenting an economic profile of employment in the business impact zones and benchmark areas in 2003. The data presented is in Table 8.1.
- 8.8 This work looks at employment in sectors research has shown respond positively to road investment. We have grouped these sectors together under the headings of office employment, industrial and warehousing employment, and retail and tourism employment. Those with over-representation in sectors that benefit from road improvements are therefore more likely to benefit from the NDR.
- 8.9 The office, industrial and warehousing employment sectors are defined using definitions Roger Tym & Partners use in employment land studies³¹. These are effectively employment sectors that correspond to employment in offices, factories and warehouses (see Appendix C for the list of sectors included). Retail employment is defined as Standard Industrial Classification 52. We use the South West Regional Development Agency (SWRDA) definition of tourism³².
- 8.10 We have grouped together the zones most likely to respond to investment in the NDR due to their geographical proximity to the proposed route. We have also showed these zones in bold and italic type.

³⁰ p45 DfT *The Importance Of Transport In Business' Location Decisions*

³¹ e.g. Greater London Authority Industrial and Warehousing Study

³² These jobs comprise hotels and restaurants, youth hostels, camp sites, other provision of lodgings, travel agencies, artistic and literary creation, fair and amusement parks, libraries and archives, museum activities, botanical and zoological gardens, operation of sports arenas and stadiums, other sporting activities, gambling and betting activities, and other recreational activities. SIC codes 551, 5521, 5522, 5523, 6330, 9231, 9232, 9233, 9234, 9251, 9252, 9253, 9261, 9262, 9271 and 9272. It is important to note that this definition of tourism is not exhaustive. For example, it does not include catering or bars, which would obviously be affected by tourism. However, in some respects it is also an over estimate as not all of the jobs in this definition will be supported by tourism alone i.e. the resident population will also use the services.

Table 8.1 Employment in Business Sectors (to nearest 100 employees), 2003

		Total Jobs	Offices	% total	Industrial	% total	Warehousing	% total	Retail	% total	Tourism	% total
<i>Wroxham (incl Rackheath&Sprowston)</i>	<i>IZ</i>	13,200	5,100	39%	2,300	17%	1,400	11%	1,100	8%	300	2%
<i>Broadland East</i>	<i>IZ</i>	4,200	700	17%	800	19%	400	10%	300	7%	100	2%
<i>Broadland North West</i>	<i>IZ</i>	4,400	300	7%	2,900	66%	200	5%	100	2%	200	5%
<i>Taverham</i>	<i>IZ</i>	1,500	200	13%	100	7%	100	7%	100	7%	*	*
<i>Horsford and Felthorpe</i>	<i>IZ</i>	900	*	*	400	44%	100	11%	*	*	*	*
<i>Drayton</i>	<i>IZ</i>	1,400	100	7%	200	14%	*	*	100	7%	100	7%
<i>Old Catton and Sprowston West</i>	<i>IZ</i>	800	200	25%	*	*	*	*	200	25%	*	*
<i>Thorpe St Andrew</i>	<i>IZ</i>	3,900	1,000	26%	300	8%	*	*	600	15%	300	8%
<i>Hellesdon</i>	<i>IZ</i>	5,100	500	10%	500	10%	400	8%	1,300	25%	300	6%
<i>Spixworth</i>	<i>IZ</i>	600	100	17%	200	33%	*	*	*	*	*	*
Aylsham	<i>IZ</i>	3,100	394	13%	572	18%	147	5%	275	9%	179	6%
Coltishall and Horstead	<i>IZ</i>	600	100	17%	*	*	*	*	100	17%	*	*
Dereham	<i>IZ</i>	11,300	2,100	19%	1,400	12%	800	7%	2,000	18%	400	4%
Great Yarmouth North	<i>IZ</i>	1,200	200	17%	100	8%	100	8%	100	8%	100	8%
Great Yarmouth South	<i>IZ</i>	800	100	13%	100	13%	*	*	100	13%	300	38%
North West Norfolk	<i>IZ</i>	7,700	1,100	14%	1,600	21%	600	8%	1,000	13%	600	8%
Rest of Breckland	<i>IZ</i>	28,400	3,300	12%	8,600	30%	3,100	11%	3,300	12%	1,100	4%
Rest of North Norfolk	<i>IZ</i>	21,500	2,500	12%	3,000	14%	800	4%	3,100	14%	1,900	9%
Spixworth	<i>IZ</i>	600	100	17%	200	33%	*	*	*	*	*	*
Hoveton and Stalham	<i>IZ</i>	4,500	500	11%	1,000	22%	200	4%	700	16%	400	9%
Yarmouth and Caister	<i>IZ</i>	33,400	5,600	17%	3,600	11%	2,000	6%	4,500	13%	3,400	10%
Breckland	<i>BM</i>	40,300	5,300	13%	10,000	25%	3,800	9%	5,300	13%	1,500	4%
South Norfolk	<i>BM</i>	39,900	6,100	15%	5,800	15%	2,500	6%	3,700	9%	1,800	5%
Broadland	<i>BM</i>	40,600	8,600	21%	8,300	20%	2,800	7%	4,200	10%	1,300	3%
Great Yarmouth	<i>BM</i>	35,600	5,800	16%	3,800	11%	2,100	6%	4,700	13%	3,700	10%
North Norfolk	<i>BM</i>	30,000	3,500	12%	4,600	15%	1,300	4%	4,100	14%	2,400	8%
Norwich	BM	87,900	27,400	31%	10,900	12%	4,800	5%	12,300	14%	3,300	4%
Norfolk	<i>BM</i>	315,100	63,100	20%	52,700	17%	19,800	6%	40,200	13%	15,900	5%
East of England	<i>BM</i>	2,328,100	518,700	22%	343,500	15%	180,600	8%	298,200	13%	90,200	4%

Source: Annual Business Inquiry, 2003. * denotes figure less than 50. Figures in red denote areas with proportions higher than the national average.

Note 1: IZ - B denotes Industrial Zone - Business; 'BM' denotes benchmark areas. Note 2: Figures in red denote sectors with higher proportions than the national averages.

- 8.11 Table 8.1 shows that, unsurprisingly, the different categories of employment are unevenly distributed around the area.
- 8.12 Of the areas geographically proximate to the NDR (and so most likely to benefit), the numbers indicate that
- Office employment: The numbers show that office employment is not particularly strong in the business impact zones, except in **Wroxham (incl Rackheath and Sprowston)**, which has almost twice the national proportion, and **Thorpe St Andrew**, which has just over the national proportion. There are a significant number of jobs here - over 6,000. **Norwich city centre** also has strong employment in offices. The city has particular strength in financial services which is widely regarded as a local cluster in addition to other sectors including business services and to a lesser extent ICT and the creative industries. Old **Catton and Sprowston West** and **Thorpe St Andrew** also have above average office employment, but this is from a smaller base.
 - Industrial employment: **Many business impact zones** are strongly industrial, with higher representation than the national average. **Broadland North West** in particular has very strong industrial representation, with 66% of jobs in this sector (2,900). **Wroxham (incl Rackheath and Sprowston)** also has slightly above average industrial employment, and accommodates 2,300 jobs. Coltishall and Horstead, Old Catton and Sprowston West, Hellesdon, Taverham and Thorpe St. Andrew have proportions in industrial employment that are particularly lower than the national average.
 - Warehousing employment: **Wroxham (incl Rackheath and Sprowston)** is over-represented, and has 1,400 jobs in this category. **North West Norfolk, Horsford and Felthorpe, rest of Breckland and Broadland East** are also over-represented but from a smaller base. However, most business impact zones have proportions of employment in warehousing in line with or lower than the national average. This is not unexpected; concentrations of logistics companies tend to be located in areas that have large catchments in all directions e.g. the East and West Midlands.
 - The retail sector: **Norwich** is a regional centre for retail provision with a significant hinterland stretching across Norfolk and beyond. The GVA Grimley Strategic Sites study found that the forthcoming Chapelfield development is likely to elevate Norwich's standing from its current position (9th) in a national rank of retail centres. A significant proportion of employment in Norwich is focussed in retail and related sectors. **Dereham, Hellesdon, Hoveton and Stalham, Thorpe St. Andrew and Yarmouth & Caister** are over-represented in retail employment compared to Great Britain.

8.13 We look at tourism in detail in paragraph 8.16 below.

How do the different NDR construction options affect existing companies?

8.14 The effects of the different route options are most simply laid out as a table below.

8.15 To summarise, it is clear that different NDR route options are likely to have different effects.

- **In the office sector**, infrastructure investment's main impact is to expand labour market catchments. Our analysis indicates that in the retail sector, the ¾ and full NDR route options will have incrementally greater effects. As a result of office employment over-representation in the local economy, Wroxham (including Rackheath and Sprowston) and Thorpe St Andrew are likely to be most affected. In site-specific terms, (such as Broadland Business Park and the Airport Industrial Estate envisaged in the RSS) are likely to be the key areas where most positive benefit is felt.

- **Industry and warehousing** is influenced by improved access to customers and suppliers. Wroxham (including Rackheath and Sprowston) stands to gain the most from any of the NDR route options, but Spixworth's industrial sector would also benefit from the $\frac{3}{4}$ and full routes.
- **Retail** is influenced by improved access to customers. Our analysis indicates that in the retail sector, the $\frac{3}{4}$ and full NDR route options will have incrementally greater effects, but none are likely to be very significant. Of most interest here is likely to be the likely effect on the retail sector of Norwich city centre. The NDR provides small improvements to the accessibility of central Norwich (see 8.55 onwards). Shoppers driving into central Norwich will therefore have shorter journeys so increasing the retail catchment for companies in central Norwich. But we must take into account the extent to which the NDR makes radial journeys to out of town shopping sites on the periphery of the city more attractive, which removes trade from the city centre. We do not envisage the NDR having a positive impact on the retail trade in central Norwich. (It is important to note that we only have data on the effects of the full (red/blue) transport model on travel times into the city centre, so cannot remark on the effects of the $\frac{1}{2}$ and $\frac{3}{4}$ option on the accessibility of the city centre).³³ Turning to the non-city centre retail trade, we would suggest that the NDR will have little effect on retail in retail sectors in Old Catton and Sprowston West, Thorpe St Andrew and Hellesdon.

³³ The Mott MacDonald work on the travel time savings of radial journeys is discussed in section 3.7 onwards.

Table 8.2 Effects of different NDR construction options on existing companies

Office sector									
Sector	Transport effects	Business Impact Zone	Notes	Jobs in sector	Total Jobs in zone	% total	Effect of 1/2 route	Effect of 3/4 route	Effect of full route
Office sector	Office markets predominantly respond to transport through improved labour access.	Wroxham (incl Rackheath&Sprowston)	The 1/2 route would connect the A47 to the A1151, facilitating radial commutes from the S and East of Norwich. The 3/4 and full routes would further open labour market catchments to areas around the north-west and west of Norwich.	5100	13200	39%	Medium	Higher	Higher
		Old Catton and Sprowston West	The 1/2 route would connect the A47 to the B1150 facilitating radial commutes from the S and East of Norwich. The 3/4 and full routes would further open labour market catchments to areas around the north-west and west of Norwich.	200	800	25%	Medium	Higher	Higher
		Thorpe St Andrew	Thorpe St Andrew is located relatively close to the A47. NDR would improve the labour catchment to the North and North West.	1000	3900	26%	Medium	Higher	Higher
		Norwich	The NDR provides small improvements to the accessibility of central Norwich (see the body text of document). Office workers driving into central Norwich will therefore have shorter commutes, so increasing the labour market catchment for companies in central Norwich. We only have data on the effects of the full (red/blue) transport model.	27400	87900	31%	no data	no data	Lower

Industrial sector									
Sector	Transport effects	Business Impact Zone	Notes	Jobs in sector	Total Jobs in zone	% total	Effect of 1/2 route	Effect of 3/4 route	Effect of full route

Economic Impacts of the NDR
Final report

Industrial sector	Industrial sectors respond to transport investment through improved access to suppliers and customers	Wroxham (incl Rackheath&Sprowston)	The 1/2 route would connect the A47 to the A1151, facilitating links to major markets to the South of Norwich. (London and SE down the A140 and A11). Markets in the midlands would be linked by the full option, although vehicles could complete a full radial journey to get to the A47 west.	2300	13200	17%	Higher	Higher	Higher
		Broadland East	Broadland East access to major markets is likely to be predominantly via the A47 south. NDR may ease access to East of Norwich but this unlikely to be a significant route; trips south and east to Midlands (prob more prevalent) may be aided by Western route - part of full package.	800	4200	19%	Lower	Lower	Lower
		Broadland North West	NDR may ease access to East of Norwich but this unlikely to be a significant route; trips south and east to Midlands (prob more prevalent) may be aided by Western route - part of full package.	2900	4400	66%	Lower	Lower	Higher
		Horsford and Felthorpe	NDR may ease access to East of Norwich but this unlikely to be a significant route; trips south and east to Midlands (prob more prevalent) may be aided by Western route - part of full package.	400	900	44%	Lower	Lower	Higher
		Drayton	NDR may ease access to East of Norwich but this unlikely to be a significant route; trips south and east to Midlands (prob more prevalent) may be aided by Western route - part of full package.	200	1400	14%	Lower	Lower	Higher
		Spixworth	The 1/2 route would connect the A47 to the B1150 facilitating links to major markets to the South of Norwich. (London and SE down the A140 and A11). Markets in the midlands would be linked by the full option.	200	600	33%	Medium	Higher	Higher

Warehousing Sector

Sector	Transport effects	Business Impact Zone	Notes	Jobs in sector	Total Jobs in zone	% total	Effect of 1/2 route	Effect of 3/4 route	Effect of full route
Warehousing sector	Warehousing sectors respond to transport investment through improved access to suppliers and customers	Wroxham (incl Rackheath&Sprowston)	The 1/2 route would connect the A47 to the A1151, facilitating links to major markets to the South of Norwich. (London and SE down the A140 and A11). Markets in the midlands would be linked by the full option, although vehicles could complete a full radial journey to get to the A47 west.	1400	13200	11%	Higher	Higher	Higher
		Broadland East	Broadland East access to major markets is likely to be predominantly via the A47 south.	400	4200	10%	Lower	Lower	Lower

Economic Impacts of the NDR
Final report

Horsford and Felthorpe	NDR may ease access to East of Norwich but this unlikely to be a significant route; trips south and east to Midlands (prob more prevalent) may be aided by Western route - part of full package.	100	900	11%	Lower	Lower	Higher
------------------------	--	-----	-----	-----	-------	-------	--------

Retail sector

Sector	Transport effects	Business Impact Zone	Notes	Jobs in sector	Total Jobs in zone	% total	Effect of 1/2 route	Effect of 3/4 route	Effect of full route
Retail sector	Retail sectors respond to transport investment through improved access to customers	Old Catton and Sprowston West	The 1/2 route would connect the A47 to the B1150 facilitating radial patterns of customer access from the S and East of Norwich. The 3/4 and full routes would further open retail catchments to areas around the north-west and west of Norwich.	200	800	25%	Lower	Medium	Medium
		Thorpe St Andrew	Thorpe St Andrew is located relatively close to the A47. NDR would improve the retail catchment to the North and North West.	600	3900	15%	Lower	Medium	Medium
		Hellesdon	Hellesdon is located near to the existing outer ring road. The NDR may facilitate customer access to this area, with radial journeys taking place and then trips into Hellesdon on the A140 or B1150.	1300	5100	25%	Lower	Medium	Medium
		Norwich	The NDR provides small improvements to the accessibility of central Norwich (see the body text of document). Shoppers driving into central Norwich will therefore have shorter journeys so increasing the retail catchment for companies in central Norwich. We must take into account the extent to which the NDR makes radial journeys to out of town shopping sites on the periphery of the city more attractive, which removes trade from the city centre. We only have data on the effects of the full (red/blue) transport model.	12300	87900	14%	no data	no data	Medium

What effect will the NDR have on the tourism sector?

- 8.16 Our brief requires us to pay particular attention to the tourism sector. As we see above, tourism is an integral part of the Norfolk economy, with the SWRDA definition of tourism jobs comprising 5% of total jobs, compared to regional and national averages of 4%.
- 8.17 We have looked at various local policy documents in order to judge the importance of tourism to the local economy.
- The County's *Shaping the Future* Economic Development Strategy states that almost 27 million visitor nights are spent by tourists in Norfolk each year and 25 million day trips are made. This makes Norfolk the largest tourism destination in the East of England and a destination of national importance. Visitors to the area are predominantly domestic holiday makers. However although only 12% of bed nights are from overseas visitors, they account for 17% of expenditure. In 2001 the Norfolk Tourism Partnership commissioned the East of England Tourist Board to carry out a volume and value survey of the Norfolk tourism industry and discovered that the industry generated over £2bn of visitor expenditure, which supported the employment of 42,000 people (29,000 full time equivalents) and included 3,800 SMEs.³⁴
 - 4% of total employment in Norwich is in tourist-related (SWRDA-defined) jobs. The Deposit Version of the Local Plan estimates that tourism contributes £189 million to the local economy³⁵. However, it also points out tourism can cause problems, such as traffic congestion, parking and pressure on local facilities. It suggests that some developers and operators target a car-borne market, and it states that '*Tourist-related development should, rather, be planned on the principles of sustainability: in particular facilities must be sited so that they are accessible to those walking or using public transport, as well as to car users*'.
 - North Norfolk - with 8% of its employment in tourism jobs as defined by SWRDA - places tourism as one of its top ten priorities in its Economic Development Strategy to 2007. The sector was worth £186 million to the District in 1999³⁶. The strategy seeks to promote tourism further in North Norfolk, seeking to benefit from the increasing numbers of short break holidays and outdoor pursuits.
 - Broadland Council states that tourism is essential to the district's economy. The Norfolk Broads is the district's most well known tourist attraction. In 1999, 268,000 UK residents visited the Broadland area, staying a total of 879,000 nights and spending £22.3 million. During the same year Broadland welcomed 15,000 overseas visitors, staying a total of 135,000 nights and spending £4.6 million.³⁷
 - Great Yarmouth Adopted Local Plan (2001) estimates the Borough attracts 1 million staying visitors and 2 million day trippers each year³⁸. 11% of its employment is in tourist-related jobs. The Local Plan aims to maintain current tourism numbers but also fulfill the potential for growth (whilst taking steps to conserve the local environment, which it recognises may discourage tourists if over-development occurs). Great Yarmouth has received £16.3 million to invest in the seafront and town centre. The Integreat Project includes improvements which aim to create a safe, quality led, integrated destination including changes to the

³⁴ p35 <http://www.shaping-the-future.org/downloads/strategy.pdf>

³⁵ Source: Norwich Local Plan Second Deposit Version September 2002, p. 103

³⁶ Source: North Norfolk Economic Development Strategy 2003-2007, p. 109.

³⁷ p4 Broadland Council CPA Self Assessment

<http://search2.openobjects.com/kbroker/ncc/broadland/kbsearch?qt=economic+development+strategy&sr=0&nh=10&cs=iso-8859-1&sc=broadland&ha=135&mt=0&to=0>

³⁸ Source: Great Yarmouth Local Plan Adopted 2001, p. 133

seafront Golden Mile, with a major revamp of the Jetty forecourt, a brand new landau station and a tourism centre³⁹.

- 8.18 Our analysis in Table 8.1 has indicated that **Great Yarmouth South, Great Yarmouth North, Yarmouth and Caister, North West Norfolk, rest of North Norfolk and Hoveton and Stalham, Broadland North West, Drayton, Old Catton and Sprowston West, Thorpe St Andrew and Aylsham** are over-represented in tourism employment.

Potential Impact of the Road

- 8.19 Norfolk has a wide range of visitor attractions spread around the county. Transport infrastructure can influence their growth in broadly the same way - the potential impact of the road is that it may increase the number of people who visit the area as it shortens journey times for some visitors.
- 8.20 Broadly speaking, journeys which may be most affected are those to the Broads, rural areas to the north of Norwich, and the North Norfolk coast. (We are assuming that trips from the South and West of Norwich to Great Yarmouth will continue to use the A47, which travels to the south of Norwich). We look at the effects on the two main areas below - the Broads and the North Norfolk coast.

Effects on journey times

- 8.21 We explore this possibility by looking at the population catchments, using Cromer as an example to proxy improvements in North-South travel because of the road. (We do not undertake a similar analysis for Great Yarmouth as the Mott MacDonald transport model shows that the existing A47 south of Norwich will be quicker than the NDR in 2025 by 1½ to 5 minutes. We cannot argue here that the NDR will speed access to Great Yarmouth from the west or south).
- 8.22 According to the Countryside Agency's *Leisure Day Visits 2003/04*, the average length of time someone will travel to a seaside location for a day visit is 2 hours 30 minutes round trip. We therefore look at the population catchment within 1 hour 15 minutes of Cromer (to assess its present catchment) and then the catchment within 1 hour 21 minutes (to assess the future catchment if the Western Red route is built⁴⁰).
- 8.23 The question, then, is how far the tourist economy may grow given that there is a greater catchment population now able to travel to the tourist sites thanks to the improved linkages. Increasing the catchment of the area by building the road and making tourism destinations quicker to get to potentially increases the number of visitors, thereby increasing spending, with its knock-on stimulation of economic activity.
- 8.24 Economic activity increases as a result of spending by visitors in tourist locations. This spending supports jobs in the tourist destination - directly in tourism related businesses, or indirectly in suppliers of goods and services.

³⁹ Source: www.greatyarmouthlive.com

⁴⁰ We showed in Chapter 3 that Mott MacDonald estimate a 6 minute journey time saving between the A11 and Norwich airport in 2025 if the Western Red route is built.

Figure 8.1 Population Catchment - within 1 hour 15 and 1 hour 21 minutes of Cromer



Source: RTP

- 8.25 The one-hour fifteen minute population catchment reaches 812,219 people from Cromer. Adding on six minutes to account for the north-south time-savings brings this catchment to 860,270 - a 6% increase (48,000 people).
- 8.26 There is a question around the extent to which this will affect the tourist economy.
- In the case of Norfolk tourism, which relies on natural assets, it is obvious that natural assets are fixed: anyone wishing to visit the Broads will have to travel whatever journey that requires, which undercuts the additional value of the new road - the trips might happen anyway.
 - There is also the displacement effect - the NDR might facilitate trips to the northern coast and Broads around Wroxham, but this might undercut demand for Great Yarmouth, and the area around Acle.
 - In contrast, it has been put to us that comparable tourism hotspots in the UK all benefit from motorway access to get people at least close to their destinations (for example, the M5 to Exeter and A30 goes deep into Cornwall before it peters out, the Lake District has the M6 and dualled A591 virtually to Windermere and Blackpool has the M55). Tourists coming to many of Norfolk's key locations have to contend with some non-dualled roads and then crossing or going round a regional city to reach their destinations.
- 8.27 Without substantial further study, it is impossible to say how this will affect the tourist economy. As the SACTRA report points out, we simply do not know how transport improvements affect tourism (the SACTRA report called for further study on this issue)⁴¹. But some scale of positive effect is possible.

⁴¹ 10.169 SACTRA full report

How do the different NDR construction options affect tourism?

The Broads

8.28 The origins of visitors to Broadland are presented below.

Table 8.3 Origins of British visitors to Broadland

UK Residents	Visitors %
Eastern	33
East Midlands	14
South East	13
London	11
Yorkshire	9
West Midlands	4
Other	16
Total	100

Source: Broadland Council website quoting East of England Tourism Agency 2000
(<http://www.broadland.gov.uk/broadland/council.nsf/pages/Broadlan151711.html#visitors>)

8.29 We have assumed that the bulk of British visitors are heading for the Wroxham/Hoveton area of the Broads.

- British visitors to Broadland predominantly come from within the region (33%). Given the geography of Broadland, this would suggest that many will need to drive around Norwich to get to the Broads. It is not possible to be specific about which of the route options would best serve this group, but it is likely that **the full route** would maximise the chances of this group finding the NDR useful.
- the 24% of visitors coming from London and the South East will find the **half route option sufficient** (travelling northbound on the A11 or A140, anti-clockwise on the A47, and on the NDR, changing on to the A1151).
- the 27% of visitors coming from the East Midlands, West Midlands and Yorkshire are likely to find the **full NDR option of more use**, travelling to the area on the A47, and wishing to travel around Norwich clockwise on the NDR.

8.30 The route choices of the remaining visitors are difficult to discern.

The North Norfolk Coast

8.31 Assuming that British visitors to the North Norfolk coast come from similar areas to those from visitors to Broadland, we would suggest that

- visitors to Broadland predominantly come from within the region (33%). Given the geography of Broadland, this would suggest that many will need to drive around Norwich to get to the Broads. Again, it is not possible to be specific about which of the route options would best serve this group, but it is likely that **the full route** would maximise the changes of this group finding the NDR useful.
- the 24% of visitors coming from London and the South East will find **the half route option sufficient** (travelling northbound on the A11 or A140, anti-clockwise on the A47, and on the NDR, changing on to the A1151).
- visitors to the North Norfolk coast (eg Cromer) from the East Midlands, West Midlands and Yorkshire (which we assume are around 27% of visitors) plus other areas in the north of England **may not find the NDR of use**. These visitors are likely to go via King's Lynn on the A148.
- The route choices of the remaining visitors ("other" at 16%) are difficult to discern.

What effect will the NDR have on Norwich Airport?

8.32 Our brief requires us to look at effects on Norwich Airport in particular detail.

- 8.33 Norwich Airport is located north of Norwich city centre, just south of Horsham St. Faith and west of Drayton. In 2001, there were 49,450 total aircraft movements from Norwich Airport (1.4% of the UK total). This equates to 390,593 passengers. Freight movements through Norwich airport are relatively small, with 1,637 tonnes transported in 2001 (less than 0.1% of the UK total).
- 8.34 Norwich Airport has been seen as an important contributor to the local economy. For example, the 2003 Arup study⁴² estimates that the airport supports 1,197 direct jobs, including 200 jobs on the airport site. It also creates nearly 1,100 indirect jobs and 2,100 induced jobs. Income effects sum to £88.5 million, comprising £23.9 million direct, £21.9 million indirect and £42.7 million induced.
- 8.35 Norwich Airport is constrained by its location. Surface access is seen as a particular problem. Arup report that the Outer Ring Road is generally at capacity in peak periods. The airport junction is unlikely to be able to accommodate significant increases in peak traffic flows without major implications in property and land take, although some increases could be accommodated. The NDR would play a role in alleviating the surface access problems of the airport, and thereby alleviate one of the airports constraints on growth. As the Arup report states, 'Growth projections of 4.4m⁴³ are unlikely to be realistic unless there is major investment in transport infrastructure'.
- 8.36 There is currently approximately 2.5 hectares of outstanding allocated employment space next to the airport as part of Hurricane Way and Norwich International Business Park⁴⁴. There is already substantial employment space in this area. Proximity to the airport and improved access from the NDR may help to bring forward the sites for development. We deal with how the NDR might assist in developing this business space in section 1.

The way in which the NDR may affect the growth of Norwich Airport

- 8.37 We explore here the way in which the NDR may affect the growth of Norwich Airport.
- 8.38 Following the Government's TAG guidance, we have looked at how the NDR may improve the airport's access to its customers (i.e. passengers), suppliers and labour force.
- Access to customers. The economic benefit that access to a larger customer base will bring is manifested in the airport's demand for labour. This is largely dependent on increasing the number of passengers flying through the airport.
 - Access to suppliers: this benefit of improved accessibility would be the supply-side benefit of allowing the airport to work more efficiently.
 - Access to labour: this benefit of improved accessibility would be manifested in allowing the airport to access a broader labour pool. This would be of particular importance if the airport's growth was constrained by labour shortages.

- 8.39 We discuss these impacts in turn.

The airport's links to customers

- 8.40 The airport's demand for labour broadly tracks the number of passengers that the airport handles (although over time there can be expected to be considerable productivity effects which proportionately reduce the airport's requirement for staff). Very generally, then, if the number of passengers at the airport grows, then employment at the airport will grow.

⁴² *Norwich Airport: Economic and Environmental Impact Study*, Arup, 2003

⁴³ One of the options in the South East of England Regional Air Services Study is for Norwich to grow to 4.4 million passengers per annum.

⁴⁴ Source: Norfolk County Council employment land database

- 8.41 The Government's aviation policy is expansionary. The Aviation White Paper states that "Norwich provides domestic and European short-haul services and offers the potential to interline to long haul destinations through a continental hub."⁴⁵ Again, we believe that there is scope for the airport to grow to satisfy local demand. As part of the White Paper process, the airport has been required to produce a Masterplan, which is due in early summer. Next decade is expected to see a period of quite considerable growth. Passenger numbers are expected to grow from about 0.5 million passengers per annum in 2005, to 1mppa by 2007/8, and 1.5mppa by 2015.⁴⁶
- 8.42 This growth is dependent on planning approval for terminals. Planning approval is dependent to some extent on surface access concerns being addressed. These centre on the ability of the local road network to cope with the volume of incoming passengers. Without the NDR the surface transport network would be unlikely to cope with growing passenger numbers, and consequently the airport would be unlikely to expand.
- 8.43 According to the Chief Executive of Norwich Airport, the NDR is needed to improve surface access problems that currently restrict expansion at the airport. For example, increasing the passenger numbers is likely to increase the demand for parking and put extra pressures on the existing road junctions. The NDR would help to alleviate this.
- 8.44 Quite apart from any concerns around planning regulations, the NDR would help the airport 'access' its customers by widening catchment. Customers may be more likely to go to Norwich rather than Luton or Stansted if links are better. The NDR would certainly improve access east and west of Norwich, and the links from the south would be better.
- 8.45 Consultation with the airport indicates that the airport currently predominantly attracts passengers from Norfolk and Suffolk. However, the NDR may extend that catchment into areas which would previously have been more likely to use Stansted, Luton or even East Midlands airports. We have undertaken an exercise showing the population in a 45 minute catchment from Norwich Airport. Although far from an exact science, we have chosen 45 minute catchment on the basis that the airport is under competitive pressure, particularly from Stansted, which is 1.5hrs from the Norwich Airport. Passengers resident to the south of the city and past the 45 minute "tipping point" will therefore tend to travel to Stansted. There is also competitive pressure from Luton (which is 2.5hrs surface travelling time from Norwich airport).
- 8.46 To account for the effects of the NDR, we also consider the catchment when people can travel to the airport more quickly. Mott MacDonald estimate the journey time between the A47 East and the Airport is quicker by 13 minutes 59 seconds when using the Eastern Yellow route compared to do minimum. They also estimate a 6 minute saving with the Western Red route compared to the do minimum between the A11 and Norwich Airport.⁴⁷ To account for these time savings, we consider the catchment with an additional 14 minutes (i.e. 59 minutes), and the catchment with an additional 6 minutes (i.e. 51 minutes). We cut off the catchment level with the southernmost part of the 51 minutes to account for the fact that only an additional 6 minutes is gained to the south as a result of the NDR. This then gives an estimate of the effect of the NDR.
- 8.47 Our work indicates that the NDR brings an additional 102,000 residents (17%)⁴⁸ into the 45 minute catchment area of Norwich airport. Obviously, this will not necessarily directly translate into a 17% increase in passengers - passenger choices are made on

⁴⁵ Section 11.97 Aviation White Paper

⁴⁶ Telephone consultation with Chief Exec of NIA

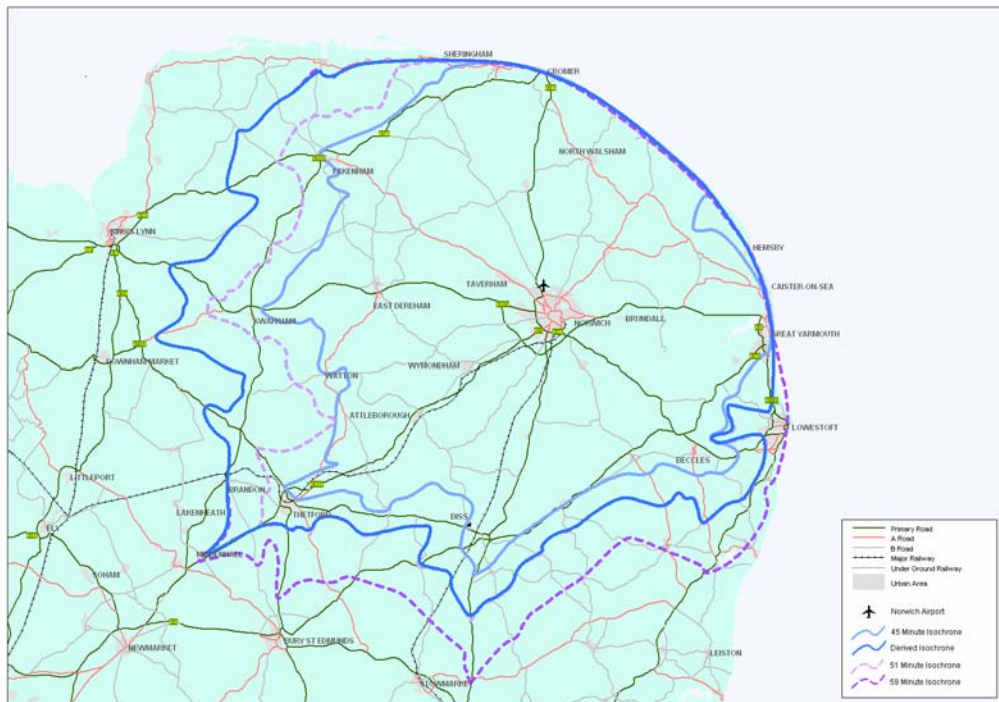
⁴⁷ Our brief required us to investigate a half route option running from the A47 at Postwick to the A140. The Mott Macdonald *Traffic and Economic Assessment Report* does not provide specific traffic modelling on this section of the NDR route, and therefore we have not been able to remark on airport access from the A11 anticlockwise to the airport.

⁴⁸ This is an increase from 594,000 people to 696,000 people.

a complex series of criteria. Indeed, passenger growth may outstrip this rate - as the airport Chief Executive points out, releasing the airport from surface-transport related planning constraints would allow a possible passenger growth from about 0.5 million passengers per annum in 2005, to 1mppa by 2007/8, and 1.5mppa by 2015. We can estimate the jobs impact of this additional 1 million passengers by 2015 by using known relationships between air passengers and jobs.

- 8.48 SERAS⁴⁹ finds that of the on-site employees, low-cost airlines themselves employ dramatically fewer people than the old airline/airport business model: at Heathrow, for example, 685 jobs are created per mppa, whilst at Luton, Easyjet employ 345 per mppa.⁵⁰ Work by McKinsey indicates that it is this low-cost business model which will be pursued by all airlines in future⁵¹, suggesting that if the airport did grow to 1.5mppa by 2015, and we can ascribe this growth to the NDR, then the NDR would be responsible for the creation of an additional 350 direct jobs at the airport.

Figure 8.2 Airport Catchment - 45 minutes and NDR affected



Source: RTP

The airport's links to suppliers

- 8.49 The Chief Executive estimated that the NDR would not affect links to the airport's suppliers significantly.

The airport's links to labour

- 8.50 As we have seen above, the airport is a significant local employer, creating 1,197 jobs directly.
- 8.51 The airport recruits in two broad categories.
- Low skilled jobs at the airport. These tend to be taken by local residents, predominantly from the north Norwich area. The airport states that staff turnover in

⁴⁹ Halcrow Group Ltd *Airport Employment Forecasting Stage Two* January 2002

⁵⁰ NERA *The Impact of Easyjet Services on the Luton Economy* July 2000

⁵¹ McKinsey Quarterly 2002 No.4 *Hyped Hopes for Europe's Low Cost Airlines*

these occupations is high. However, we suggest that the NDR is likely to have a relatively small role in assisting the airport recruit or retain these staff members.

- Higher skilled jobs. For these jobs, staff come from further away, generally from Broadland and other areas north of Norwich, but with some staff travelling from as far afield as Lowestoft. Traffic modelling work has suggested that the NDR could affect the ability which these types of journeys are made. However, the extent to which these benefits will translate into an ability of the airport to recruit or retain higher skilled airport staff is difficult to estimate.

8.52 Tangible benefits of the NDR in this respect are difficult to identify. It is difficult to make a clear case that labour accessibility is constraining airport growth, so building the NDR will have little palpable benefit in this respect.

How do the different NDR construction options affect the airport?

8.53 As we have seen above, it is the ability of the NDR to link the airport to its customer base that is the critical consideration. Consultation with the airport has suggested that the airport predominantly attracts customers from Norfolk and Suffolk. **Customers from Suffolk would only require the half route option** to be constructed. It is not possible to be specific about which of the route options would best serve **customers from Norfolk or Norwich itself**, but it is likely that **the full route** would maximise the changes of this group finding the NDR useful.

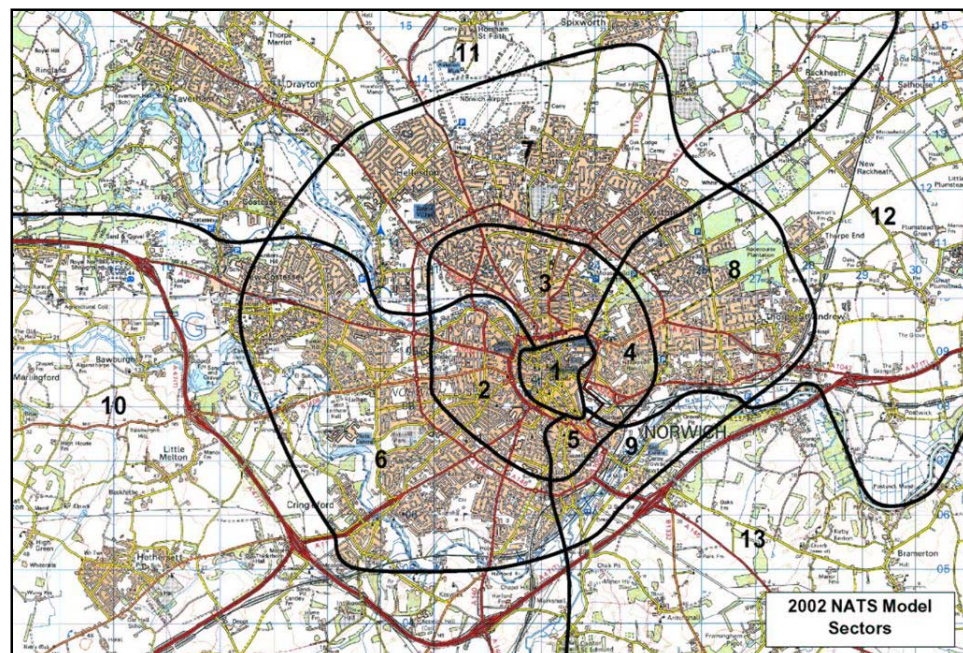
8.54 The **NDR may allow the airport to extend its catchment into areas** which would previously have been more likely to use Stansted, Luton or even East Midlands airports. These groups would arrive at Norwich having used the A47, A11 or A140. The **full route** would be most use to these passengers.

What effects will the NDR have on the city centre?

8.55 As we have established in section 6, the city centre is a very important component of the economy of the sub-region.

8.56 Mott MacDonald has looked at sector to sector average travel times with and without the NDR (Red/Blue Option) in place in 2025 (AM Peak). Sectors are shown in Fig 8.3.

Figure 8.3 Sector definitions



Source: Mott MacDonald

- 8.57 The table below shows the predicted effects on travel times (in seconds) to the city centre (Sector 1). The spreadsheet shows the sector definitions. Please note that that the outermost sectors extend beyond the area shown to include all trips in Norfolk and indeed the UK.

Table 8.4 Time savings (seconds) to sector 1 (2025 am peak)

From Sector	Time savings (seconds) to sector 1
1	-13
2	-43
3	-21
4	-25
5	-48
6	-77
7	-237
8	-34
9	-42
10	-103
11	-113
12	42
13	-29
AVERAGE (unweighted)	-57

Source: Mott MacDonald

- 8.58 We have highlighted the origin areas which can expect to save more than one minute travelling into the city centre in green. Trips from sector 7 will have the greatest saving at nearly 4 minutes. Trips originating in sector 12 can expect an increase in travelling time into the city centre. A crude average, unweighted by traffic flows, suggests that the NDR will save road users 57 seconds on their trips into central Norwich by 2025.
- 8.59 We would suggest that changes of this magnitude are unlikely to have particularly significant effects on the retail businesses in Norwich (which rely on customer access) or office businesses (which rely on easy labour access).
- 8.60 We only have data on the effects of the full (red/blue) option on access to the city centre, so have been unable to make remarks about other route options.

Consultation with businesses

- 8.61 Businesses have been consulted regarding their views on the NDR in a number of ways. We discuss each source.
- The public consultation on the NATS strategy. Some questions specifically focused on the NDR. This consultation benefited from having a large number of responses (474 businesses responded).
 - Interviews undertaken for the RTP Norfolk Employment Growth Study. This was a separate study on economic development in the county. A number of interviews with business to ask about how they regarded the possibility of an NDR. In total we interviewed thirty-two companies and local organisations. Twenty-one were private companies and of these, fourteen were in manufacturing or distribution sectors. This group of firms was not selected at random. We concentrated on larger companies.
 - Interviews undertaken for this study. Many of the businesses interviewed for the RTP Employment Study were relatively distant from the NDR. The client therefore provided us with a list of ten businesses that would be “more directly affected by

the NDR.”⁵² These businesses were variously located, including businesses located near the airport, in Aylsham, Wroxham, Rackheath and Horsford. We undertook two sets of interviews.

- We interviewed ten businesses by telephone regarding their opinions on the NDR.
- We interviewed five business representative organisations (including the Norfolk Chamber of Commerce, the Shaping the Transport and Europe and International Groups, the Broadland Business Forum, and the Norwich Economic Round Table).

We used a semi-structured approach for both interviews and have attached the templates used as Appendix F.

Findings of the public consultation on the NATS strategy

- 8.62 This consultation found strong support for the NDR.
- 8.63 The public consultation on the NATS strategy⁵³ found that 63% of the 474 businesses responding strongly supported the NDR, and 19% supported it. This equates to 82% support for the road.

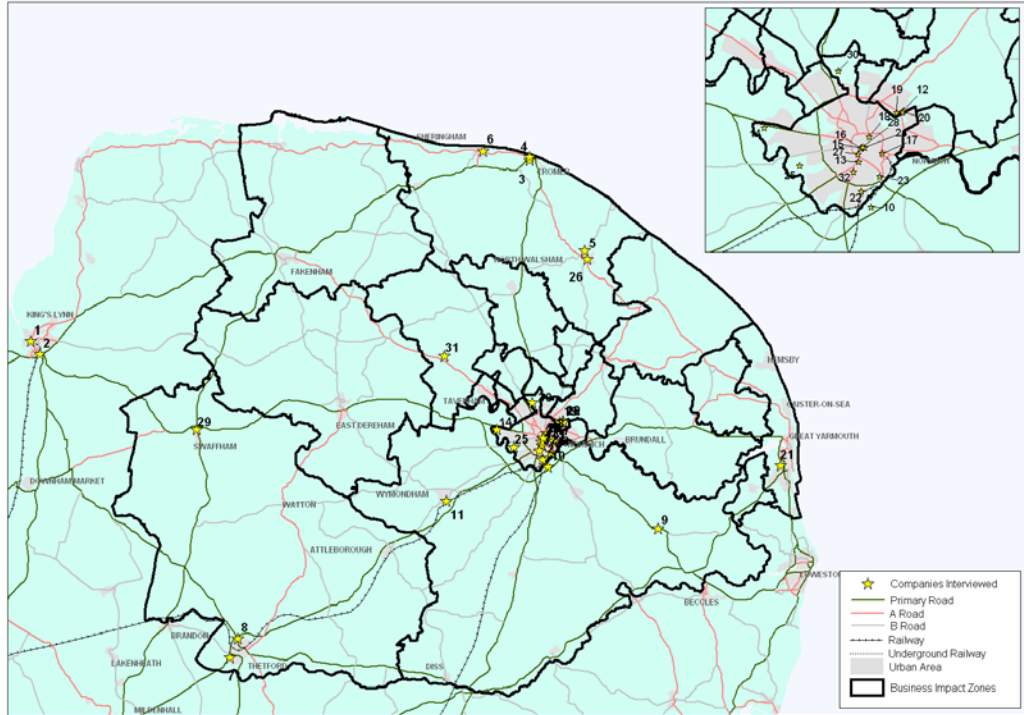
Findings of the interviews undertaken for the RTP Norfolk Employment Growth Study

- 8.64 Companies interviewed for this study tend to have large markets and supplier bases, some from within the local area but primarily from outside the area, in both UK and global markets. The rest of the firms were in financial and business services or tourism/leisure. Five of the companies were in business or finance, and one apiece in leisure and transport. The rest of the interviewees were either from the public sector - four in education and seven in business support groups.
- 8.65 The location of the interviewees is shown in Figure 8.4 below.

⁵² email

⁵³ Mott MacDonald 2003

Figure 8.4 Location of Companies Interviewed (showing business Impact Zones)



Source: RTP

- 8.66 The interviewees were asked specifically about the NDR and whether it would impact their business by changing accessibility to their customers, suppliers and/or labour force. Seventeen (53%) of the interviewees did not have comments on the NDR at all.
- 8.67 Four interviewees (13%) suggested the road would have a positive impact on their company aside from their staff's journey to work. The reasons were that current congestion in the area impacts on the company's profitability. The specific mechanisms by which it did this were as follows.
- The NDR would decrease congestion in the city centre, encouraging more people in to shop, benefiting their company (retail division).
 - It would be a general transport improvement for the North of Norwich, which currently is difficult to access as travelling through the City gets congested. It was argued that this is particularly important with poor rail alternatives.
 - It would help the deliveries gain access to the A47 and A11 more quickly which would benefit the company as they rely on just-in-time deliveries.
- 8.68 Six interviewees (19%) claimed the road would improve the journey to work for their staff or themselves.
- 8.69 One company (3%) suggested their labour pool would increase because of the NDR and one suggested it would improve access to their suppliers. This is not a significant number in the sample.
- 8.70 Some remarks were based on external perceptions of the area. One respondent stated that the NDR would bring the road system in Norwich into the 'twenty-first century'. 'We are seen as the back end of the country (or in the South at least) and this image holds us back.'
- 8.71 Nine interviewees (28%) stated the NDR would have no impact on their business, despite the fact that several of these companies were manufacturing or distribution companies with a reliance upon deliveries of supplies and distribution of goods.

- 8.72 The emphasis during many of the interview was on other roads. Eleven interviewees (34%) mentioned that other roads currently cause problems for them or their company - generally through congestion, or slowing down time to get to other areas e.g. Cambridge. The A11 and A47 were both specifically mentioned as requiring work or dualling. Three companies (10%) also mentioned that the road network in the area is unreliable for just-in-time delivery or being sure of arrival times because of congestion.

Interviews undertaken for this study

Business interviews

- 8.73 Most businesses reported difficulties recruiting and retaining staff of relevant skills levels, although a number were unsure as to the extent to which this reflected local skills problems or was simply a reflection of the national situation.
- 8.74 Six businesses (60%) thought that congestion and journey times affected company profitability, and a similar number categorised the impacts as "serious". Eight businesses thought that the NDR would positively affect their businesses in some way, with all replying that relationships with suppliers would be positively affected, 70% saying that relationships with customers would be positively affected, and 60% saying that relationships with their labour force would be positively affected.
- 8.75 Regarding the knock-on effects of the NDR, no businesses thought that they would relocate and 10% of businesses thought that the NDR would have an effect on recruitment patterns or allow the company to do business more easily with other parts of the country. The facilitation of growth at the airport was not a major concern to these businesses - two (20%) of the sample businesses thought that the airport was significant to their business.

Interviews of business representative organisations

- 8.76 We asked the business representative organisations which issues they felt were important to the business environment in Norfolk and Norwich. Four out of five (80%) felt that transport was the most important issue.
- 8.77 All (100%) thought that the area was suffering from recruitment and retention issues, with all believing that these issues were felt across the board at all skills levels.
- 8.78 All (100%) thought that transport issues were affecting company profitability by affecting the accessibility of companies to customers, suppliers and labour. Of this group, four (80%) thought that profitability was affected by wasting employees' time. One thought that the road would improve profitability as the road would allow better access to labour - employees would live in cheaper accommodation further out from the city. We asked whether these effects should be thought of as serious or not so serious. Three called the effects serious (though one thought congestion was better than London and the same as everywhere else in the UK) and one thought them moderately serious. One did not like to categorise them, saying that there was no benchmark.
- 8.79 Effects on the city centre were viewed as positive, generally because less traffic would be in the city, so improving access to the city centre. One thought that the NDR would mean that fewer solicitors and accountants would be likely to move to business parks on the periphery of the city, as access to the centre would be improved. Another was positive about the overall effects of the NDR but feared that the NDR would encourage out of town development, citing work which suggested that a B&Q on the cattle market site would reduce trade in the city centre by 2%. One thought that there should be more parking provided in the centre to encourage trade into the city centre.
- 8.80 Consultees were unanimous on the importance of Norwich Airport to business, with all seeing the airport as very important to local businesses.

Summary

8.81 The question we asked in this section was whether the NDR would help existing businesses develop. We looked at the following issues.

- **Heavy road users** are over represented in parts of the local economy. The impacts of the NDR are likely to be concentrated in these sectors. Of the areas reasonably proximate to the NDR, office sectors are over represented in Wroxham (including Rackheath and Sprowston), Old Catton and Sprowston West, Thorpe St Andrew and Norwich. Industrial sectors are over-represented in Wroxham (including Rackheath and Sprowston), Broadland East, Broadland North West, Horsford and Felthorpe. Drayton and Spixworth. Warehousing is over represented in Wroxham (including Rackheath and Sprowston), Broadland East and Horsford and Felthorpe. Retail is over-represented in Old Catton and Sprowston West, Thorpe St Andrew, Hellesdon and Norwich city centre itself. These geographical areas can be expected to be most influenced.

Different NDR route options are likely to have different effects on the existing local economy.

- **In the office sector**, infrastructure investment's main impact is to expand labour market catchments. Our analysis indicates that in the retail sector, **the ¾ and full NDR route options will have incrementally greater effects**. As a result of office employment over-representation in the local economy, Wroxham (including Rackheath and Sprowston) and Thorpe St Andrew are likely to be most affected. In site-specific terms, (such as Broadland Business Park and the Airport Industrial Estate envisaged in the RSS) are likely to be the key areas where most positive benefit is felt.
- Industry and warehousing is influenced by improved access to customers and suppliers. **Wroxham (including Rackheath and Sprowston) stands to gain the most from any of the NDR route options, but Spixworth's industrial sector would also benefit from the ¾ and full routes**.
- Retail is influenced by improved access to customers. Our analysis indicates that **in the retail sector, the ¾ and full NDR route options will have incrementally greater effects, but none are likely to be very significant**. Of most interest here is likely to be the likely effect on the retail sector of Norwich city centre. The NDR provides small improvements to the accessibility of central Norwich. Shoppers driving into central Norwich will therefore have shorter journeys so increasing the retail catchment for companies in central Norwich. But we must take into account the extent to which the NDR makes radial journeys to out of town shopping sites on the periphery of the city more attractive, which removes trade from the city centre. We only have data on the effects of the full (red/blue) transport model, so can only remark on the effects of the full option on the city centre.
- **Tourism**. Tourism is a hugely important business in the area. The potential impact of the road is that it may increase the number of people who visit the area as it shortens journey times. We explore this possibility by looking at the population catchments, using Cromer as an example to proxy improvements in North-South travel because of the road. The NDR brings an additional 6% (48,000 people, equating to a total of 860,000 people) within a typical day trip travel time. But without substantial further study, it is impossible to say how this will affect Cromer's economy. In the case of Norfolk tourism, which relies on natural assets, it is obvious that natural assets are fixed: anyone wishing to visit the North Norfolk coast will have to travel whatever journey that requires, which undercuts the additional value of the new road - the trips might happen anyway. There is also the displacement effect - the NDR might facilitate trips to the northern coast and Broads around Wroxham, but this might undercut demand for Great Yarmouth, and the area around Acle.

We analysed the effects of different NDR route options on tourism to the Broads and North Norfolk coast.

- In the case of the Broads, **the full route** would maximise the chances of tourists within the region finding the NDR useful; visitors coming from London and the South East will find the **half route option sufficient**; and visitors coming from the East Midlands, West Midlands and Yorkshire are likely to find the **full NDR option of more use**.
 - In the case of the North Norfolk coast, **the full route** would maximise the chances of tourists within the region finding the NDR useful; visitors coming from London and the South East will find the **half route option sufficient**; and visitors from the East Midlands, West Midlands and Yorkshire (which we assume are around 27% of visitors) plus other areas in the north of England **may not find the NDR of use**, instead going via King's Lynn.
- **The airport.** The benefit to the airport is two-fold. Firstly, the NDR will allow growth at the airport - the site is currently constrained due to poor surface access. Secondly, the NDR will increase Norwich Airport's potential customer base (ie, passengers). (The effect on suppliers and labour markets is not found to be significant). Our work indicates that the NDR brings an additional 102,000 residents (17%)⁵⁴ into the 45 minute catchment area of Norwich airport. It is however not possible to turn this data into a reliable estimate of increased employment due to the methodological problems of doing so. The NDR releases the airport from planning policy constraints, though, so it can be said to be responsible for jobs growth at the airport generated by additional passenger numbers. Our estimates suggest that if the airport did grow to 1.5mppa by 2015, and we can ascribe this growth to the NDR, then the NDR would be responsible for the creation of an additional 350 direct jobs at the airport.

We analysed the effects of different NDR route options on Norwich Airport.

- Consultation with the airport has suggested that the airport predominantly attracts customers from Norfolk and Suffolk. **Customers from Suffolk would only require the half route option** to be constructed. It is not possible to be specific about which of the route options would best serve **customers from Norfolk or Norwich itself**, but it is likely that **the full route** would maximise the changes of this group finding the NDR useful.
 - The **NDR may allow the airport to extend its catchment into areas** which would previously have been more likely to use Stansted, Luton or even East Midlands airports. These groups would arrive at Norwich having used the A147, A11 or A140. **The full route** would be most use to these passengers.
- **The city centre.** Trips from some areas into the city centre will save around 4 minutes, but the crude average, unweighted by traffic flows, suggests that the NDR will save road users 57 seconds on their trips into central Norwich by 2025. We would suggest that changes of this magnitude are unlikely to have significant effects on the retail businesses in Norwich (which rely on customer access) or office businesses (which rely on easy labour access). We only have data on the effects of the full (red/blue) option on access to the city centre, so have been unable to make remarks about other route options.
 - **Business consultation.** Businesses support the NDR. We used a number of sources here.
 - The public consultation on the NATS strategy found 82% support for the road.

⁵⁴ This is an increase from 594,000 people to 696,000 people.

- Consultation for the Norfolk Employment Growth Study suggested that the NDR is not central to the future of many firms in Norfolk.
- However, a more targeted set of interviews with selected companies in the NDR area was more positive, finding that 80% finding that their businesses would be positively impacted. Interviews with business representative organisations found that all (100%) thought that transport issues were affecting company profitability by affecting the accessibility of companies to customers, suppliers and labour, and that the NDR represented a solution to some of their problems.

9 HOW WILL LABOUR MARKETS BE AFFECTED BY THE NDR?

Introduction

- 9.1 We now turn our attention to how labour markets might be affected by the NDR. Obviously labour market effects are very much part of the wider economic effects discussed above; but these effects are complex and need teasing out separately.
- 9.2 Transport schemes might affect patterns of labour market movement around the city could be affected. This has a number of consequential effects.
- Unemployment could be affected
 - Economic activity rates could be affected.
- 9.3 We look at the effects of the NDR on each of the above categories.

Patterns of labour market movement

- 9.4 We have already seen in Chapter 3 that Mott MacDonald's work indicates that the NDR will:
- Encourage orbital commuting patterns
 - Facilitate access into the city centre, as strategic through traffic no longer need go through central Norwich
- 9.5 We examine each of these in turn. But first, it is worth noting that people are unlikely to use the NDR on strategic, longer distance journeys to travel from the East to the West (e.g. from Swaffham to Great Yarmouth) as the route is quicker to the south on the A47. In this respect the road makes little difference to existing use patterns. In this way, benefits are brought mainly to the employment sites and residential zones near to the NDR.

Encourage orbital commuting patterns

- 9.6 Orbital commutes would be facilitated by the NDR.
- Cross city north-south commutes would be facilitated. We know that if the Western route is built, time savings are likely to be in the region of 6 minutes from the A11 to Norwich Airport. Again, this may open up opportunities for people to commute to employment sites around the NDR from further south, and equally, may allow residents from near the NDR to commute to areas south of Norwich to which they may not have chosen to commute to previously. This is only relevant to the Full Option (the full option is the only option that include the Western portion of the road). Either of the shorter options will not have the same effect as the time saving is for the Western Option. We do not have data for time savings using the Eastern Option from, for example, the A146. South Norfolk Council believes the NDR would allow more commuters to travel to the North of Norwich for work (for example at the airport). This option is currently not attractive as people tend to have to travel into Norwich City Centre and out again.
 - Radial commutes (which skirt around a portion of the city) will be facilitated, for example from Taverham to Broadland Business Park or Costessey and Norwich Research Park. North Norfolk Council believes that their residents will be helped to reach job opportunities in at the strategic employment areas of Longwater, Norwich Research Park and the Norfolk and Norwich hospital. For the latter, North Norfolk Council believes that a full route NDR would significantly improve access and journey times for patients, visitors and staff travelling from north of the city

(strictly speaking, though, this is not an economic issue and is dealt with under the Accessibility heading of TAG methodology).

- 9.7 This is likely to have a positive effect on widening the labour market pool from which companies located outside the city centre of Norwich can recruit. In this sense, the NDR is likely to assist the growth of these companies.

Trips into Norwich city centre

- 9.8 Trips into Norwich centre would be facilitated, particularly from the north and west of Norwich. However, time savings are relatively modest - as we have seen in section 8.55, a crude average (unweighted by traffic flows) suggests that following the NDR, (Red/Blue Option) access to central Norwich will be around 1 minute quicker in 2025. The best time saving will be from north and north east Norwich, saving around 4 minutes.
- 9.9 This is likely to have a modest effect on widening the labour market pool from which companies in central Norwich can recruit.

Company growth and unemployment

- 9.10 Company growth and unemployment can be affected by transport investment in two ways.

- Firstly - from the point of view of local firms - infrastructure improvements can extend local labour markets, making those markets more liquid. This may benefit firms by releasing them from labour market constraints which may have been previously placing a brake on growth. These effects will only be seen in companies experiencing recruitment shortages, by allowing them access to a larger pool of labour.
- Transport schemes might improve links between areas with an unemployment problem, and areas which are short of labour.

Helping local companies experiencing a labour shortage grow by improving access to labour

- 9.11 As we have seen above, the NDR may be of use to local firms who are constrained in their growth by shortages of suitable labour. The extent of this effect relies on the extent to which company growth is already being constrained by labour shortages.
- 9.12 We have the following sources to help us understand whether labour shortages are slowing company growth.
- The survey undertaken for this study with 10 companies found that five companies reported difficulties recruiting.
 - The survey undertaken for this study with five business representative organisations found that all organisations reported general recruitment difficulties for the businesses they represented.
 - The relatively low level of unemployment in the sub-region suggests that businesses are finding that labour markets are tightening, suggesting that labour shortages are an issue.
- 9.13 The above analysis indicates that a more liquid labour market would be helpful to companies in the Norwich area. Companies would have a broader choice of labour, which would suggest that the labour market would become more efficient. As we have discussed above, there may be more particular benefits to some companies, making them relatively more attractive. This depends on where they are located - for example, there appear to be likely to be benefits to companies located on the edge of Norwich near the two roads, and some less clear benefits to those located in the city centre.

9.14 However, there are limits to what a transport scheme can achieve in this respect. If the road simply improves links between two areas with equally tight labour markets, then there may be no particular general benefit experienced by the business community. The question is therefore whether the NDR extends catchments into areas with surplus labour.

9.15 We look at this question below.

Reducing unemployment by providing links between areas with surplus jobs and areas with surplus labour

9.16 The impacts of the NDR would be greatest if it connected an area with an unemployment problem with an area with a shortage of labour.

9.17 Table 9.1 looks at unemployment in the residential impact zones. We have marked the areas most geographically proximate to the route of the NDR in bold and italic.

Table 9.1 ILO unemployment rates - Impact Zones (Residential)

		Economically active	Economically active, unemployed	Unemployment rate
<i>Bowthorpe</i>	<i>IZ - R</i>	<i>4,260</i>	<i>304</i>	<i>7.1%</i>
<i>Upper Hellesdon (incl New Catton)</i>	<i>IZ - R</i>	<i>19,342</i>	<i>1,295</i>	<i>6.7%</i>
<i>Rest of Norwich</i>	<i>IZ - R</i>	<i>17,018</i>	<i>1,134</i>	<i>6.7%</i>
<i>Thorpe St Andrew (incl Sprowston)</i>	<i>IZ - R</i>	<i>14,503</i>	<i>531</i>	<i>3.7%</i>
<i>Rest of Broadlands</i>	<i>IZ - R</i>	<i>46,765</i>	<i>1,339</i>	<i>2.9%</i>
<i>Cringleford and Lakenham</i>	<i>IZ - R</i>	<i>13,033</i>	<i>724</i>	<i>5.6%</i>
Thurlton	IZ - R	1,345	63	4.7%
Wymondham	IZ - R	2,460	77	3.1%
South Norfolk West	IZ - R	42,506	1,276	3.0%
South Norwich	IZ - R	8,092	235	2.9%
Buxton	IZ - R	2,713	70	2.6%
Breckland	BM, IZ - R	58,063	2,294	4.0%
Broadland	BM	59,810	1,697	2.8%
Great Yarmouth	BM, IZ - R	41,250	3,425	8.3%
North Norfolk	BM, IZ - R	43,302	1,808	4.2%
<i>Norwich</i>	<i>BM</i>	<i>57,824</i>	<i>3,700</i>	<i>6.4%</i>
South Norfolk	BM	54,403	1,651	3.0%
Norfolk	BM	377,571	17,075	4.5%
East of England	BM	2,689,756	101,023	3.8%
England and Wales	BM	25,022,204	1,261,343	5.0%

Source: Census 2001

9.18 The table shows that areas near the NDR do have higher than average amounts of unemployment. Bowthorpe (7.1% or 300 people), Upper Hellesdon (6.7%, or 1,300 people), rest of Norwich (6.7% or 1,100 people) and Cringleford and Lakenham (5.6%, or 700 people) also have higher than average amounts of unemployment. In theory, improving the road system might open up employment opportunities to some of these groups of these people who might otherwise remain unemployed.

9.19 It is important to point out, though, two key points.

- the absolute levels of unemployment are relatively low. There are 5,300 people unemployed in the zones likely to be strongly affected by the NDR. Please note that these numbers have been taken from the Census 2001, as this is the only source which gives us information at the level of detail we need it. Unemployment has fallen considerably since 2001.
- given the current levels of transport access in the economy, it is unlikely that accessibility is forming a significant barrier to participating in the jobs market.

Economic activity

- 9.20 High levels of economic inactivity is a national problem that has come to the fore as levels of unemployment have fallen. It is therefore worth examining this issue in detail.
- 9.21 Economically inactive people comprise the retired, students, those looking after home/family, the permanently sick/disabled and others. Very broadly, low rates of economic activity generally follow disadvantage, where older unskilled or poorly skilled workers conclude that they are better off on disability or other benefit. The question, then, is the extent to which the NDR can increase the levels of economic activity by persuading members of these groups to return to or join the labour market.
- 9.22 Before we turn to look at economic inactivity rates that can be affected by the NDR, we need to factor out the retirement groups. It is unrealistic to expect these groups to be brought back into the labour market (the Government's recent effort on increasing activity rates is concentrated at low skilled males between 40-60 who are claiming disability benefit; there is little chance that older retired individuals will wish to return to the labour market). Table 9.2 shows retirement rates in the residential impact zones. A number of areas have retired people as a proportion of the working age population at a rate much higher than the county or regional average.
- 9.23 When reviewing economic activity rates in the residential impact zones, we need to take this into account.

Table 9.2 Retired People as Proportion of Working Age Population - Impact Zones, Residents

		Economically inactive and retired	Retired as % of WAP
<i>Bowthorpe</i>	<i>IZ- R</i>	<i>662</i>	<i>10%</i>
<i>Upper Hellesdon</i>	<i>IZ- R</i>	<i>2,751</i>	<i>10%</i>
<i>Rest of Norwich</i>	<i>IZ- R</i>	<i>2,904</i>	<i>10%</i>
<i>Thorpe St Andrew</i>	<i>IZ- R</i>	<i>4,405</i>	<i>20%</i>
<i>Rest of Broadlands</i>	<i>IZ- R</i>	<i>11,234</i>	<i>17%</i>
<i>Cringford and Lakenham</i>	<i>IZ- R</i>	<i>3,218</i>	<i>16%</i>
South Norwich	IZ- R	2,133	18%
Wymondham	IZ- R	640	17%
South Norfolk West	IZ- R	10,244	17%
Thurlton	IZ- R	327	16%
Buxton	IZ- R	545	14%
Breckland	BM, IZ - R	14,443	17%
Broadland	BM	14,724	17%
Great Yarmouth	BM, IZ - R	10,508	16%
North Norfolk	BM, IZ - R	15,373	22%
Norwich	BM	10,995	12%
South Norfolk	BM	13,344	17%
Norfolk	BM	97,340	17%
East of England	BM	543,197	14%
England and Wales	BM	5,118,950	14%

Source: Census 2001

- 9.24 When taking into account the above levels of retirees, Table 9.3 shows that economic activity rates in the NDR residential zones of influence are generally in line with or higher than the national rate. The exceptions include Wymondham, Bowthorpe, the rest of Norwich, North Norwich and Great Yarmouth. This suggests the existence of a labour force which is generally economically engaged. We would question, then, the extent to which the NDR will have a particular effect on raising levels of participation in the economy - it seems that the area is functioning well in the absence of the additional help that the NDR would provide.

Table 9.3 Economic activity rates - Impact Zones - Residents

		Working Age Population	Economically Active	Economic Activity Rate
Bowthorpe	IZ - R	6,716	4,260	63%
Upper Hellesdon	IZ - R	27,470	19,342	70%
Rest of Norwich	IZ - R	28,327	17,018	60%
Thorpe St Andrew	IZ - R	22,241	14,503	65%
Rest of Broadlands	IZ - R	67,410	46,765	69%
Cringleford and Lakenham	IZ - R	20,180	13,033	65%
Buxton	IZ - R	3,810	2,713	71%
South Norfolk West	IZ - R	61,931	42,506	69%
Thurlton	IZ - R	1,993	1,345	67%
South Norwich	IZ - R	12,132	8,092	67%
Wymondham	IZ - R	3,827	2,460	64%
Breckland	BM, IZ - R	86,783	58,063	67%
Broadland	BM	86,322	59,810	69%
Great Yarmouth	BM, IZ - R	64,808	41,250	64%
North Norfolk	BM, IZ - R	70,438	43,302	61%
Norwich	BM	89,832	57,824	64%
South Norfolk	BM	79,883	54,403	68%
Norfolk	BM	575,464	377,571	66%
East of England	BM	3,884,104	2,689,756	69%
England and Wales	BM	37,607,438	25,022,204	67%

Source: Census 2001

Summary

9.25 We looked at the following issues.

- Patterns of movement may alter, in that employment sites and residential areas to the north of Norwich will therefore become quicker to travel between, possibly bringing efficiency gains. The road may open up opportunities for people to commute to employment sites around the NDR from further south, and equally, may allow residents from near the NDR to commute to areas south of Norwich to which they may not have chosen to commute to previously.
- Company growth and unemployment. The NDR may benefit firms by releasing them from labour market constraints which may have been previously placing a brake on growth. Firms in the area do seem to be suffering from labour market constraints in this respect. These would be most effectively alleviated if the NDR connected an area with an unemployment problem with an area with a shortage of labour. Areas near the NDR do have higher than average amounts of unemployment. But given the current levels of transport access in the economy, it is unlikely that accessibility is forming a significant barrier to accessing the jobs market, suggesting in turn that labour constraints to company growth are unlikely to be significantly affected.
- Economic activity. We would question the extent to which the NDR will have a particular effect on raising levels of participation in the economy - it seems that the area is functioning well in the absence of the additional help that the NDR would provide.

10 WILL THE NDR HAVE ANY IMPACTS ON LEVELS OF SOCIAL EXCLUSION?

Introduction

- 10.1 TAG guidance makes clear that the total level of economic activity is not the only criterion upon which transport investment is to be judged. The *location* of that activity is also important. Transport investment which brings jobs to areas with concentrations of socially excluded individuals, or helps the residents of those areas to access work, is to be prioritised. As well as looking at the local economy overall, then, we have looked at patterns of deprivation, and how the NDR proposals might ease that deprivation.

The relationship between social exclusion and transport provision

- 10.2 It is important to be very clear about what social exclusion actually is. Only then can we be precise about how it might be affected by the NDR. The Government admits that social exclusion is “a shorthand term”⁵⁵ which “is about more than income poverty.” According to the Government, “social exclusion happens when people or places suffer from a series of problems such as unemployment, discrimination, poor skills, low incomes, poor housing, high crime, ill health and family breakdown. When such problems combine they can create a vicious cycle.”⁵⁶ Academics have attempted to develop the definition, pointing out that there are a number of other factors to take into account, amongst them “soft” factors related to individual behaviour, such as punctuality and broader attitudes to work and society.⁵⁷
- 10.3 The bulk of these factors - discrimination, poor skills, poor housing, high crime, ill health and family breakdown - will not be significantly affected by the NDR. The main positive effect is likely to be through reducing unemployment, and its consequential effects on improving incomes. Even then, though, research indicates that residents of deprived areas are not generally excluded from the labour market due to poor transport connections.⁵⁸
- 10.4 The additional points should be borne in mind.
- Individuals considered deprived do not generally own cars. Investment in road expansion is therefore of less importance to these groups than investment in public transport provision.
 - Individuals at the bottom end of the labour market do not tend to travel far for work. Low pay makes the trips disproportionately expensive as a proportion of overall pay.
 - Education, skills and working culture are more important factors in reducing social exclusion. Research in both the UK and the US has found that, on its own,

⁵⁵ Social Exclusion Unit (ODPM) 2004 *Tackling Social Exclusion: Taking Stock and Looking to the Future* March 2004

⁵⁶ <http://www.socialexclusionunit.gov.uk/page.asp?id=213>

⁵⁷ Atkinson (1998) Social Exclusion, Poverty and Unemployment, in Atkinson, Hills (eds) *Exclusion, employment and Opportunity* CASE paper 4 LSE cited Kleinman (2000) *ibid*

⁵⁸ See, for example Dabinett, Gore, Haywood, Lawless (1999) Transport Investment and regeneration in Sheffield 1992-1997. *Transport Policy* 6; and Sanchez, Shen and Peng (2004) Transit Mobility, Jobs access and Low Income Labour Participation in US Metropolitan Areas *Urban Studies* 41

transport investment has relatively little effect on deprivation levels in a given area.⁵⁹

- 10.5 However, it is important to test these general statements by looking at the individual circumstances of each case.

Deprivation in Norwich and Norfolk

- 10.6 There are problems of deprivation and social exclusion in the sub-region.
- Residents of Norwich are among the more deprived of those in the country. Norwich is ranked 61st (out of 354 local authorities) most deprived local authority area on the Index of Multiple Deprivation 2004, placing it in the most deprived quartile.⁶⁰
 - The city is identified as a Priority Area for Regeneration in the draft Regional Spatial Strategy.
 - Breckland and North Norfolk tend towards the middle quartiles, ranking at 222nd and 180th respectively.
 - Broadland and South Norfolk, on the other hand, are much less deprived, ranking 302nd and 281st respectively - both in the least deprived quartile.
- 10.7 We see which areas are socially excluded by considering the indices of multiple deprivation for both the business impact zones and the resident impact zones (please refer to the following maps). They show that the highest concentrations of deprivation are generally in the Norwich urban area, although there are pockets of deprivation in Yarmouth and the North Norfolk coast. (However, we believe that the North Norfolk coast is too far from the NDR for deprivation to be significantly affected; and access to and from Great Yarmouth is not likely to be significantly affected by the NDR).
- 10.8 The case for the NDR relieving deprivation therefore rests on how deprivation in the Norwich urban area is affected. We have therefore provided a close-up map showing Norwich area deprivation at Figure 10.3.
- 10.9 We see two mechanisms by which social exclusion could be affected by the NDR (via its employment effects):
- By improving accessibility for socially excluded individuals to be able to access work; and
 - By helping to encourage businesses to locate in socially excluded areas.
- 10.10 We look at each of these aspects in turn.

⁵⁹ See, for example Dabinett, Gore, Haywood, Lawless (1999) Transport Investment and regeneration in Sheffield 1992-1997. *Transport Policy 6*; and Sanchez, Shen and Peng (2004) Transit Mobility, Jobs access and Low Income Labour Participation in US Metropolitan Areas *Urban Studies 41*

⁶⁰ This uses the 2004 Index of Multiple Deprivation post-corrections.

Figure 10.1 Index of Multiple Deprivation 2004 showing Business Impact Zones

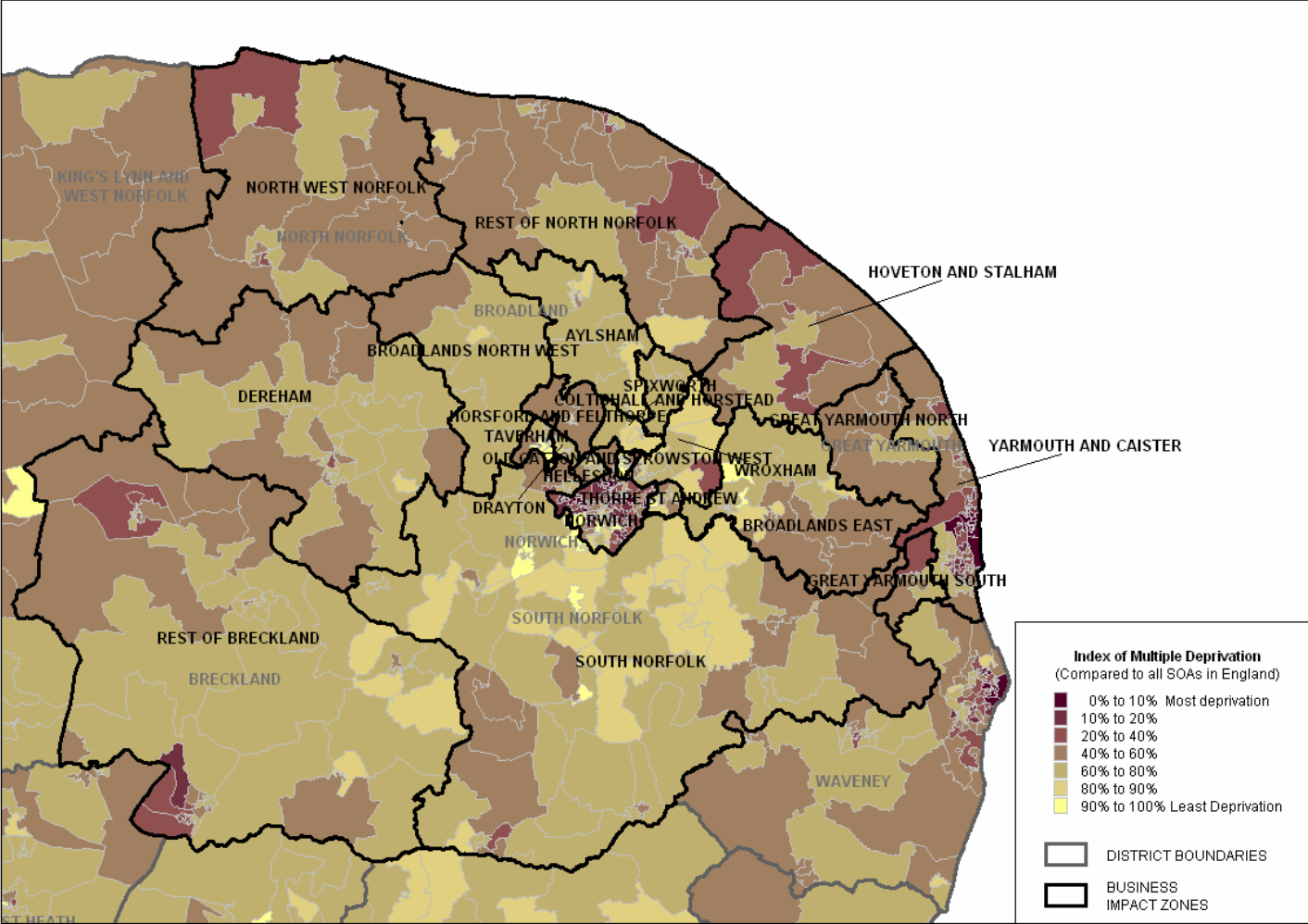


Figure 10.2 Index of Multiple Deprivation 2004 showing Residential Impact Zones (Norfolk)

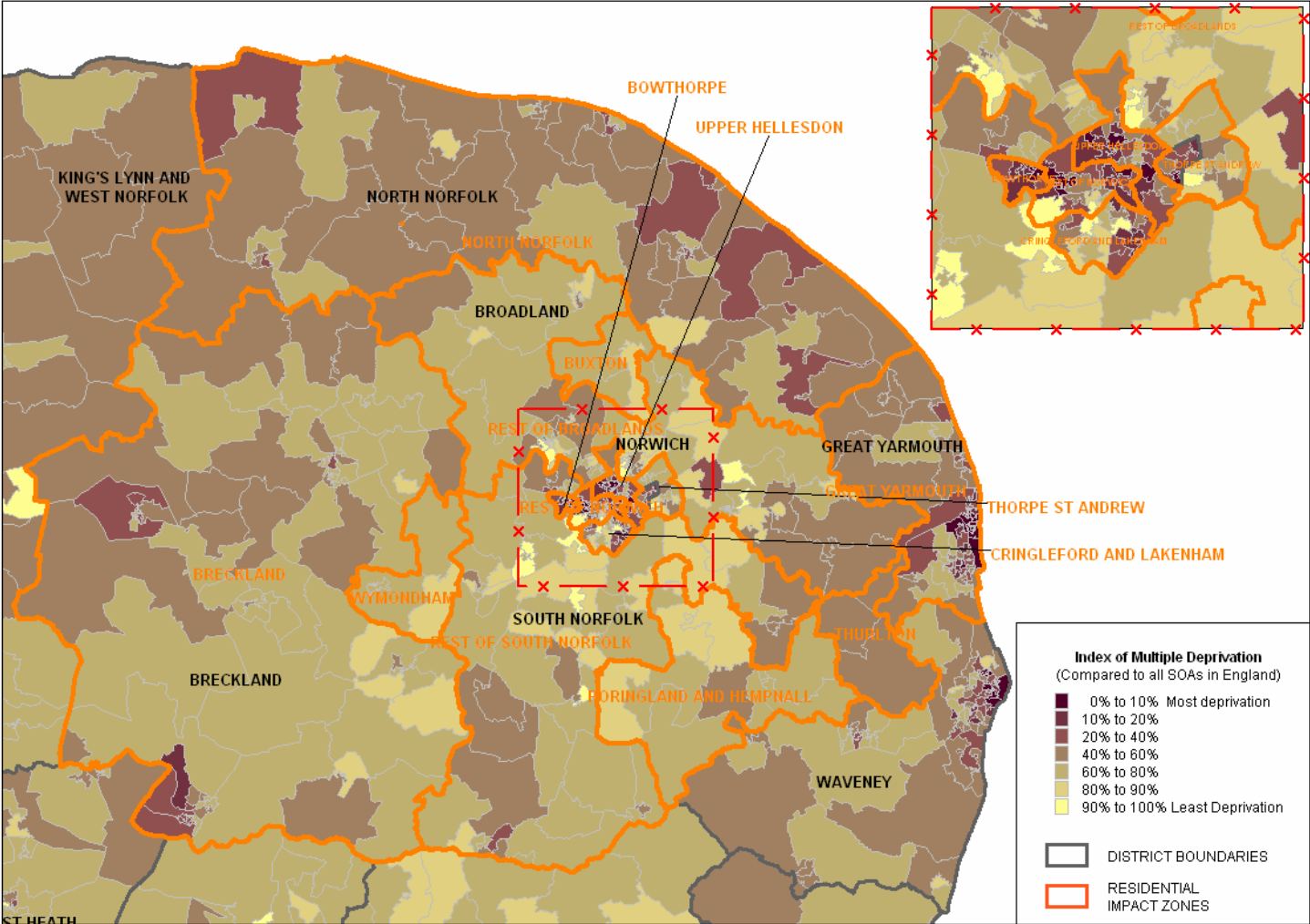
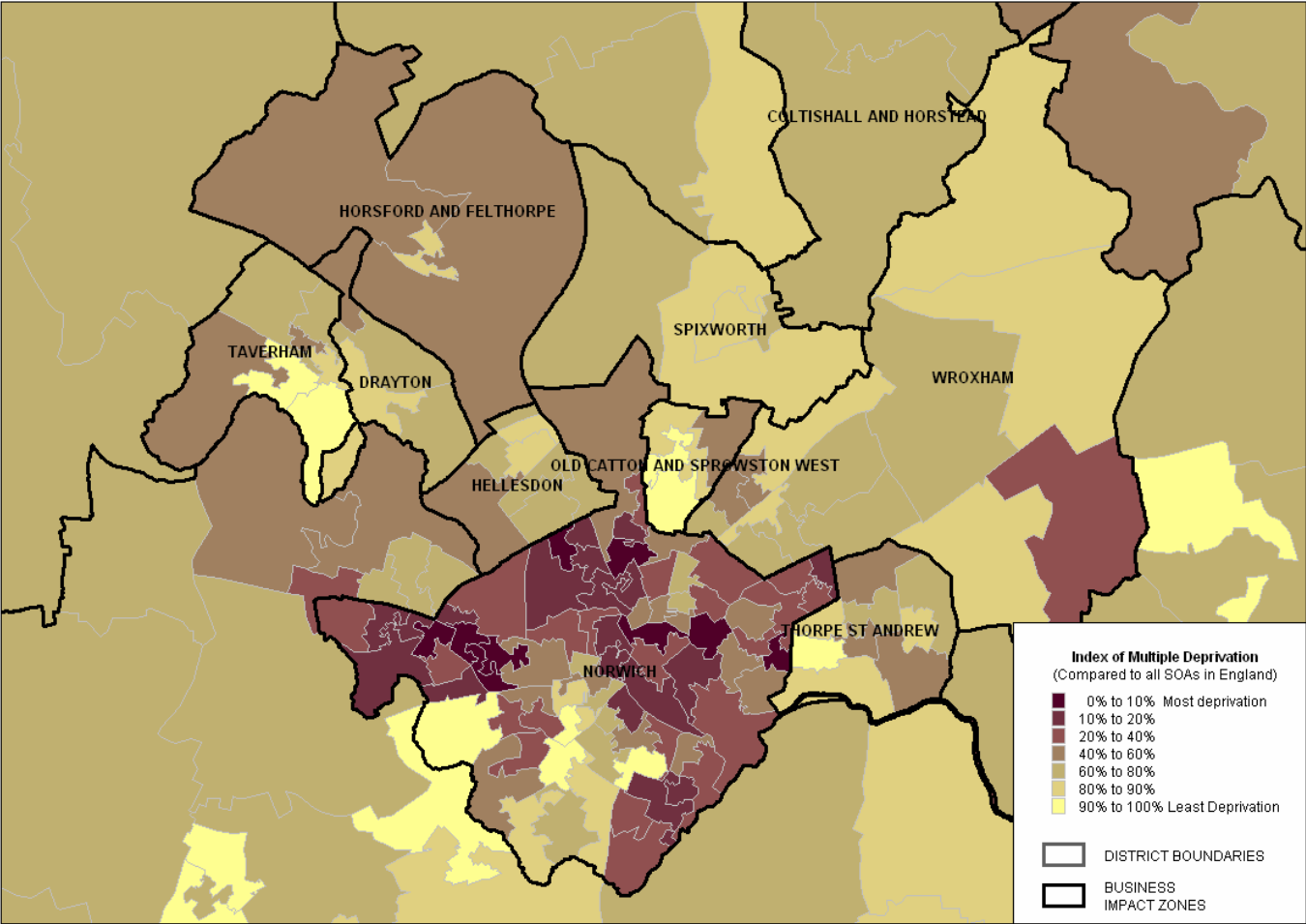


Figure 10.3 Index of Multiple Deprivation 2004 showing Business Impact Zones (Norwich)



Improving accessibility to work

- 10.11 The highest concentrations of deprivation are generally in the Norwich urban area. Although these are deprived areas, they are areas that are already linked to employment areas to the north of Norwich via arterial road links, and are already close to employment areas in central Norwich. It is not clear that access is the problem causing deprivation in these areas.
- 10.12 It is therefore not clear that the NDR represents a lowering of barriers by linking currently socially excluded areas to areas of work such that deprivation will be significantly affected.

Encouraging business location and growth in a deprived areas

- 10.13 The highest concentrations of deprivation are within the areas of Earlham, Bowthorpe, Upper Hellesdon, parts of Sprowston, and the area within and around the central ring road.
- Bowthorpe and Earlham and central Norwich are not likely to see a particular benefit from the NDR. These areas are relatively distant from NDR. Access to no major markets would be assisted with any of the NDR options, so there is no particular reason to suggest that the area will become significantly more attractive to businesses.
 - Upper Hellesdon may benefit from growth at the airport facilitated by the NDR, and from growth which takes place at the airport industrial estate. A number of our business consultees in the survey thought that north Norwich generally would benefit from the NDR being in place. Benefits in to the airport, and so **Hellesdon, would depend to a large degree on the full (western) route being in place.**
 - **Sprowston** may see some benefits from the NDR being in place. **Some benefits may be gained from any of the 1/2, ¾ and full route options.** Access to and from south and west on A11 and A47 would be facilitated, and the NDR would facilitate access to less significant markets to north and east.
- 10.14 It should be stressed though that these benefits are not clear. To affect deprivation, any businesses attracted to the above areas would need to be employing those individuals who are currently deprived. But there is very little evidence that deprivation exists in Norwich due to a deficient demand for labour, or from poor accessibility. Deprivation is likely to exist for a series of more complex social reasons. It is unrealistic to expect that the NDR will have a significant effect in this regard.

Summary

- 10.15 The effects of the NDR on social exclusion are likely to be slight. Whilst there is deprivation on the North Norfolk coast and in Yarmouth, these areas are too distant from the NDR to be plausibly affected. Plausible effects are only likely to be found in Norwich itself. But there is very little evidence that deprivation exists in Norwich due to a deficient demand for labour, or from poor accessibility. Deprivation is likely to exist for a series of more complex social reasons. It is unrealistic to expect that the NDR will have a significant effect in this regard.

11 HOW MIGHT INWARD INVESTMENT AND NEW GROWTH BE AFFECTED BY THE NDR?

- 11.1 The brief requires us to look at how the NDR might affect inward investment and new growth.
- 11.2 It is important to define our terms at the outset of this section. Here, we define “inward investment” broadly, looking at all investment which comes from businesses not currently operational in the area. This therefore includes foreign direct investment (FDI) and investment from elsewhere in the UK.
- 11.3 Work by the DfT has found that the location of foreign investment in the UK is influenced by air transport, workforce, and premises, whereas domestic investment is more dependent on road transport.⁶¹

The context for inward investment

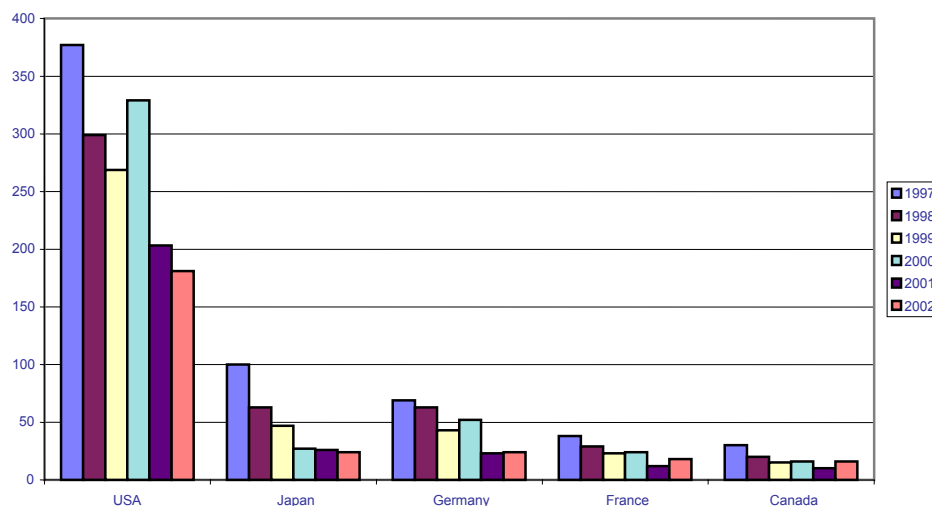
- 11.4 There are two sources from which inward investment may come:
- Foreign direct investment and
 - UK-sourced inward investment.

Foreign Direct Investment

- 11.5 We look first at the prospects for Foreign Direct Investment (FDI). This gives a general context for the FDI market, and the potential likelihood of attracting it to the area.
- 11.6 There is an ongoing debate in economic development circles about the role of FDI in the development of the local economy.
- One school of thought suggests that inward investment is now passé and the focus should be on encouraging and nurturing indigenous investment by stimulating start-up ventures and SME development.
 - Another school of thought still sees inward investment as the salvation or fix for dealing with economic blackspots or areas going through rapid structural change.
- 11.7 We tend to subscribe to the former view, because the inward investment market appears to be undergoing structural change as EU new accession states provide cheap entry to European tariff areas and China provides an increasingly convincing base for manufacturing investment. The UK is likely to be less attractive as a result. Support for this view is found in the falling levels of inward investment to the UK (see Figure 11.1). This graph illustrates the general downward trend. Every country has provided fewer FDI projects over the period.

⁶¹ p48 DfT *The Importance Of Transport In Business' Location Decisions*

Figure 11.1 Number of inward investment projects to the UK by country of origin



Source:

Ernst & Young/ SWRDA

11.8 We would suggest that the scale of impact brought by the NDR is likely to be relatively small. Our analysis suggests that it would be a mistake to place too much emphasis on FDI being a major contributor to jobs growth in the area, irrespective of any access improvements that airport development might bring. This is for the following reasons:

- As we have seen, the FDI market - for manufacturing in particular - is decreasing in importance.
- The labour market is relatively tight in absolute terms, suggesting that a large FDI project might struggle to source labour.

UK-sourced inward investment

11.9 Our analysis above places particular emphasis on UK-based investment from outside the area.

- There may also be opportunities to attract some Government functions moved out of the south east in the Lyons Review. However, these opportunities are impossible to quantify, and we would point out new opportunities in the Thames Gateway and the ODPM's Sustainable Communities plan is likely to begin, over time, to reduce congestion pressures in the South East, so making the reasons to move out of the South East less compelling.
- A number of opportunities for investment may emerge, particularly, we would suggest, as the South East continues to grow and becomes more congested. The NDR may make the area more attractive to incoming investors, but this would be only one of a very wide number of factors which contributed to any location decision.

11.10 We note additionally that a Government review suggested that falling environmental quality could have a negative effect on inward investment through its negative effects on the local environment.⁶² It seems reasonable to suggest that the area will continue to offer a high quality of life for its inhabitants making any negative effects in this regard insignificant.

⁶² Studies in the UK have found that the quality of life and environment was an attraction for inward migration and inward investment. (p30 DfT *The Importance Of Transport In Business' Location Decisions*) In one report 57% of executives surveyed quoted this as the most important factor in relocation decisions. The importance of scenery in attracting investment has been noted in an extensive consultation conducted by Scottish Natural Heritage (1997), concluding that it is an intrinsic element of the package that helps to make Scotland an attractive place for inward investment. The precise effects of the NDR in this respect are difficult to quantify.

The property market and the effects of the NDR

- 11.11 We look at property market effects as a way of looking at the effects of inward investment.
- 11.12 The SACTRA report noted that there are cases in which transport schemes “unlock” additional land for development.⁶³ This is not simply a case of justifying transport development by pointing out that values of properties adjacent to transport facilities have risen: the SACTRA committee found that changes in land values are not additional to the primary transport benefits/disbenefits, as they do not represent additional economic activity. This is simply a capitalisation of the user benefits. The SACTRA report pointed out that cases can “arise in which there are few or no available sites for particular sorts of investment and that transport investments can, as a by-product, create genuinely new opportunities which could not otherwise be satisfied.”
- 11.13 The SACTRA group thought that claims for genuine economic additionality brought by transport investment was conceptually possible, but where any claims which are made must be assessed within the property market context. They suggested that this involve consideration of:
- the supply of potentially competing sites (and vacant premises). Transport investment which improves access to certain sites can be expected to have a greater effect if sites generally are in short supply.
 - the extent to which there is an unmet demand for sites, either currently or in prospect. Transport investment can be expected to have a greater effect when there is generally strong demand for sites.
 - the rentals likely to be available and typical land prices, and thus how far the development would be likely to be viable in the light of these. Transport investment can only be expected to have an effect if prevailing rents made development viable.
- 11.14 The SACTRA committee also stated that “the case for unlocking land must anyway be judged in the context of Government planning policy, which currently gives priority to development on the most accessible sites in existing urban areas, and only permits edge of town and out of town development where such sites are not available (the sequential test).”⁶⁴
- 11.15 We examine local conditions below. Here we rely on GVA Grimley, authors of the Norwich Strategic Sites Study and wider property work in Norfolk.

Supply

- 11.16 We examine property supply in Norfolk and Norwich in turn, and then look at the implications for the economic impact of the NDR. GVA Grimley suggest the following.
- Norfolk: There is currently a reasonable supply of sites allocated for B1, B2 and B8 uses throughout Norfolk. It is likely that existing supply is sufficient to meet prevailing demand. However, many of the sites suffer from constraints, including a requirement for major infrastructure works to improve immediate site access, land ownership issues and remoteness making development viability difficult and / or appeal to the market negligible. The NDR is generally unlikely to overcome many of these issues.
 - Norwich: The supply of sites for B1, B2 and B8 uses in Norwich is poor. The City is almost entirely developed up to its administrative boundary and the remaining employment sites are significantly constrained negating private sector led development in the short and medium term. One effect of this has been the drift of new employment development to business parks on the periphery of the City, largely outside the Norwich City Boundary.

⁶³ para 10.171 onwards - SACTRA full report

⁶⁴ *ibid*

- The NDR will not affect development at the strategic Norwich employment sites of Deal Ground, Utilities sites, and Anglia Square. Constraints on these sites are not related to strategic transport issues. Instead, the access constraints that exist are very localised in nature - related to bridges and immediate site access.
- Hurricane Way is located to the north of Norwich, and so can be seen as within the NDR's impact zone. Constraints here are related to site clearance. As a result, the Colvill report states that the project is not commercially viable without some public sector support, but GVA Grimley suggest that "in the event these negotiations prove abortive it is our view that the site may come forward for alternative employment led uses through the normal operation of the market." (Appendix C GVA Grimley for English Partnerships, Norwich City Council and EEDA (April 2005) Norwich Strategic Sites Study).

Implications for the economic impact of the NDR

- In rural areas to the north of Norwich, this analysis indicates that the property development effects of the NDR on sites might be slight. Supply is plentiful. Allocated sites suffer from constraints which would not be addressed by the NDR.
- Within the Norwich area, supply of sites is poor. There is a prima facie case for justifying transport infrastructure. However, the NDR is unlikely to "unlock" strategic employment sites within the city boundary. Hurricane Way does have constraints but these are not transport related in the first instance. The site is likely to come forward to market irrespective of the NDR. The additional value of the NDR is therefore low in this respect.
- GVA Grimley have identified a drift to city-periphery business parks. The NDR will improve access to some of these sites, making them relatively more attractive. We note the SACTRA committee's statement (see the previous subsection) which suggests that, given the current planning stance, the infrastructure development is difficult to justify on the grounds of its effects of out-of-town business parks of this type. (However, it should be noted that the airport business park is prioritised in the RSS - and we would suggest that the NDR would be important for growth on this site).

Demand

11.17 We examine property supply in Norfolk and Norwich in turn, and then look at the implications for the economic impact of the NDR. GVA Grimley suggest the following.

- Norwich: Demand for office space in and around Norwich is improving. However, the office stock within Norwich is often historic and relatively poor quality. GVA Grimley's recent report states that "we understand that the Council is regularly lobbied by representatives of the business community over the lack of modern high quality office accommodation within the city. We note the potential implications of this for the city in terms of its ability to attract and retain businesses".⁶⁵ GVA Grimley suggest that this has resulted in demand focusing on out of town locations - for example, GVA Grimley were advised that speculative office development is being progressed at Broadland Business Park.
- Demand for general industrial (B2) floorspace has declined significantly in recent years with a corresponding increase in the proportion of this space left vacant.

Demand for storage and distribution floorspace (B8) is strong. This is likely to be a result of Norwich's key strategic position within the hierarchy of regional storage and distribution centres.

⁶⁵ para 3.50 GVA Grimley for English Partnerships, Norwich City Council and EEDA (April 2005) *Norwich Strategic Sites Study*

- Norfolk: Whilst GVA Grimley's Norwich study did look at property market conditions, the Norfolk study did not. It has not therefore been possible to make any statements about the nature of the market in the wider Norfolk area. Generally, though, brownfield sites in Norfolk to the north of Norwich generally have abnormal development costs generally related to site clearance, localised access from sites to the road network and site remediation. These factors alone, coupled with low market values, are sufficient to mean that developer demand is likely to be slight irrespective of improved access to the strategic highway network provided by the NDR.

Implications for the economic impact of the NDR

- 11.18 Here we would need to demonstrate that the NDR is unlocking sites that might meet excess demand. Within the Norwich area, this appears to be the case with regard to the airport industrial land expansion (discussed in the RSS policy NSR1), assuming B8 was to be provided. B1 office development at Broadland Business Park would be made more attractive, potentially meeting some of the demand for office space. But the extent to which this represents new growth, rather than growth displaced from the city centre, is questionable: Broadland Business Park may be growing at the expense of central Norwich.⁶⁶ Demand for sites in more rural areas to the north of Norwich is weaker, with sites having a package of difficulties which are unlikely to be resolved by the NDR.

Viability

- 11.19 GVA Grimley suggest the following.
- The development market across the County and City is relatively tentative.
 - Speculative development is only likely to come forward at premium locations close to Norwich such as Broadland Business Park and this trend has only recently picked up. One of the consequences of these market conditions is that employment development is often only viable where landlords or agents have secured pre-lets or where employment development is cross-subsidised by other value generating uses such as residential.
 - Another consequence of these market conditions is that physical or environmental constraints to development such as those noted above can often quickly render sites un-viable.

Implications for the economic impact of the NDR

- 11.20 Both within Norwich and in areas further out, generally low site viability means that the additional boost provided by the NDR might be insufficient to secure development.

Sites potentially influenced by the NDR

- 11.21 Having put the development market in context, we have developed a development database which draws on the annually compiled Norfolk County Council database. We looked at all sites in Broadland, Norwich and South Norfolk which we believed might be affected by the NDR. The data in the table was checked with officers at Norwich, Broadland and South Norfolk.⁶⁷
- 11.22 The database details outstanding allocations of land from the relevant Local Plans. We have calculated the number of jobs each development could accommodate based on standard plot ratios and employment density ratios for different types of activity⁶⁸. We believe, from advice by officers in Norfolk, that because some of the employment sites are

⁶⁶ See, for example, GVA Grimley's comments in the previous section.

⁶⁷ We excluded Cawston from the database on the recommendation of an officer from Broadland as it is no longer allocated as an employment site.

⁶⁸ Sources include: 'The Use of Business Space' Roger Tym & Partners for SERPLAN and work by Arup Economics and Planning for English Partnerships. Where no more detailed information is available, we use approximations of 40% B1, 40% B2 and 40% B8. The plot ratio approximation is 40%.

rural in nature, in a significant number of cases the plot ratio is likely to be much lower than 40% as development is not particularly concentrated. This means that many of our estimates are likely to be on the high side. However, many of the development sites e.g. Broadland Business Park are likely to have higher concentrations than the rural sites, and so we would suggest that the standard 40% plot ratio is realistic overall.

- 11.23 Having obtained this information, we have assessed each of the key employment sites in detail to understand the extent to which they are likely to be impacted upon by the proposed NDR routes. Each site has been considered individually and had the impact of the NDR rated as either high, medium, low or insignificant. In broad terms these ratings reflect proximity to the NDR, and the likely effects of the NDR on improving access to customers, suppliers and labour. We have presented this information in a table (see Table 11.1).
- 11.24 It is important to note that if we for example rate the NDR as having a given impact on a site, it does not mean that this site will *only* come forward if the NDR is built, or that the site will *definitely* come forward if the NDR is built - even when the NDR is rated as having a high impact. All we are doing is seeking to establish some kind of ranking between the effects on different sites.
- 11.25 We have broken out our analysis in order to show the economic effects that different route options will generate.

Table 11.1 Outstanding Allocations of Employment Sites in Norfolk that may be affected by the NDR

Map Ref Number	Site name	Notes	Effect on Customer/Supplier Access	Effect on Labour Access	Area (ha)	Use	Potential Jobs	Positive Impact of 1/2 route	NDR Impact Positive Impact of 3/4 route	Positive Impact of full route
1	Sweet Briar Road	4 parcels of land left. For 'prime employment' of B1/B8.	Site on West of Norwich. Access to no major markets assisted. Relatively distant from NDR	Relatively distant from NDR. Radial commutes could be assisted.	2.2	B1, B8	386	Insig	Insig	Low
2	Bowthorpe Emp Area	Most of emp area already developed. Close to Western end of NDR. Would facilitate movement of goods East, North of Norwich if full road developed. Already close to A47 to the East and South.	Site on West of Norwich. Access to no major markets assisted. Relatively distant from NDR	Relatively distant from NDR. Radial commutes could be assisted.	3.1	B1, B2, B8	443	Insig	Insig	Low
3	Airport Ind Estate	Very close to NDR in all scenarios	Major markets to the south and west - access improved via link to A47. A11, A140. 1/2 and 3/4 options likely to be of less use in this respect	Labour predominantly local, though some radial commuting effects from all elements of the scheme	0.2	B1,B2, B8	29	Medium	Medium	High
4	Trowse (Deal ground)	This is a key regeneration site and allocated as a high quality business park. There may be some houses included in the development, as well as rail freight. There are some constraints to the site. Unlikely to be impacted by NDR as it already has good access to the A47 to the South although local roads may be alleviated.	Unlikely to be impacted by NDR as it already has good access to the A47 and onwards to major markets in the South and West although local roads may be alleviated.	Possible radial commuting	8.4	Mixed	1,200	Insig	Insig	Insig

Economic Impacts of the NDR
Final report

Map Ref Number	Site name	Notes	Effect on Customer/Supplier Access	Effect on Labour Access	Area (ha)	Use	Potential Jobs	Positive Impact of 1/2 route	NDR Impact Positive Impact of 3/4 route	Positive Impact of full route
5	Former Livestock Market	Allocated as a high quality employment site.	Already has good access to the A47, so unlikely to be affected significantly by the NDR.	Possible radial commuting	9.5	B1,B8	1,668	Insig	Insig	Insig
6	Former Abattoir, Old Hall Road	Possibly for relocating the livestock market. Allocated for employment at present. To the South of Norwich, unlikely to be significantly affected by the NDR	Already has good access to the A47, so unlikely to be affected significantly by the NDR.	Possible radial commuting	1.6	B1,B2, B8	229	Low	Low	Low
7	Hurricane Way	2 small sites near airport. Located very close to the NDR in all scenarios. GVA Grimley state that "the delivery of the Hurricane Way proposals being promoted by CEC will be subject to the successful conclusion of the negotiations between the respective parties. In the event these negotiations prove abortive it is our view that the site may come forward for alternative employment led uses through the normal operation of the market.(see Appendix to Norwich Strategic Sites Survey). " GVA Grimley: "Development density will be low due to the need to accommodate the TPO protected trees on site". Therefore jobs reduced by 30%.	Major markets to the south and west - access improved via link to A47. A11, A140. 1/2 and 3/4 options likely to be of less use in this respect	Possible radial commuting	2.3	B1,B2	282	Medium	Medium	High
8	Norwich International Business Park	Small site left. Already lots of development on this site. Very close to NDR.	Major markets to the south and west - access improved via link to A47. A11, A140. 1/2 and 3/4 options likely to be of less use in this respect	Possible radial commuting	0.2	B1,B2, B8	29	Medium	Medium	High

Economic Impacts of the NDR
Final report

Map Ref Number	Site name	Notes	Effect on Customer/Supplier Access	Effect on Labour Access	Area (ha)	Use	Potential Jobs	Positive Impact of 1/2 route	NDR Impact Positive Impact of 3/4 route	Positive Impact of full route
9	Guardian Road Employment Area	Likely to be a redevelopment/extension of employment already there. Already good access to many of the employment areas. Nearby roads could be alleviated but insignificant direct impact	Site on West of Norwich. Access to no major markets assisted. Relatively distant from NDR	Relatively distant from NDR. Radial commutes could be assisted.	2.1	B1,B2	369	Insig	Insig	Low
10	Cremore Lane (Former Utilities Site)	Serious constraints on this site. Close to Norwich city centre, already access to A47 to South. May be secondary effect of freeing up traffic in city centre but impact insignificant	Unlikely to be impacted by NDR as it already has good access to the A47 and onwards to major markets in the South and West. Some access improvements due to traffic alleviation on routes into central Norwich but transport model shows these effects to be slight	Possible radial commuting	6.9	B1,B2, B8	986	Insig	Insig	Insig
11	Anglia Sq (Botolph St/Pitt St)	Little effect as is Norwich City Centre office site. Effect of NDR at this site could be negative insofar as NDR encourages out of town office development at sites such as Broadland, although this site may benefit from additional capacity into central Norwich. Situated on inner ring road.	Some access improvements due to traffic alleviation on routes into central Norwich but transport model shows these effects to be slight	Distant from NDR. Some access improvements due to traffic alleviation on routes into central Norwich but transport model shows these effects to be slight	0.6	B1	114	Insig	Insig	Insig

Economic Impacts of the NDR
Final report

Map Ref Number	Site name	Notes	Effect on Customer/Supplier Access	Effect on Labour Access	Area (ha)	Use	Potential Jobs	Positive Impact of 1/2 route	NDR Impact Positive Impact of 3/4 route	Positive Impact of full route
12	Greyfriar's Road/Rose Lane	This site has permission for flats and B1 development. Effect of NDR at this site could be negative insofar as NDR encourages out of town office development at sites such as Broadland, although this site may benefit to additional capacity into central Norwich.	Some access improvements due to traffic alleviation on routes into central Norwich but transport model shows these effects to be slight	Distant from NDR. Some access improvements due to traffic alleviation on routes into central Norwich but transport model shows these effects to be slight	2.5	B1	476	Insig	Insig	Insig
13	Whitefriars/Barrack St	This has outline permission for a mixed development, with B1 still predominant. City Centre office site so NDR little effect. Effect of NDR at this site could be negative insofar as NDR encourages out of town office development at sites such as Broadland, although this site may benefit to additional capacity into central Norwich.	Some access improvements due to traffic alleviation on routes into central Norwich but transport model shows these effects to be slight	Distant from NDR. Some access improvements due to traffic alleviation on routes into central Norwich but transport model shows these effects to be slight	2.8	B1	533	Insig	Insig	Insig
14	Vulcan Rd/Fifer's Lane	To south of proposed route and airport. Potentially better access around the North of Norwich but still need to use local access roads to get to NDR.	Major markets to the south and west - access improved via link to A47. A11, A140. 1/2 and 3/4 options likely to be of less use in this respect	Labour predominantly local, though some radial commuting effects from all elements of the scheme	2.3	B1,B2, B8	329	Medium	Medium	Medium

Economic Impacts of the NDR
Final report

Map Ref Number	Site name	Notes	Effect on Customer/Supplier Access	Effect on Labour Access	Area (ha)	Use	Potential Jobs	Positive Impact of 1/2 route	NDR Impact Positive Impact of 3/4 route	Positive Impact of full route
15	Weston Road	Industrial estate just south of A140 and A1042 so already good links East and West.	Major markets to the south and west - access improved via link to A47. A11, A140. 1/2 and 3/4 options likely to be of less use in this respect. Existing strong outer ring road links so impact of NDR may be eroded - already good links to south and west, even if congested	Labour predominantly local, though some radial commuting effects from all elements of the scheme	0.6	B1,B2, B8	86	Low	Low	Low
16	Bayer Cropscience	Single user site but surplus land possibly available for employment. Already near A140 so good ring routes around Norwich.	Site on West of Norwich. Access to no major markets assisted. Relatively distant from NDR	Relatively distant from NDR. Radial commutes could be assisted.	17.3	B2	1,922	Insig	Insig	Insig
20	Felthorpe, The Street		NDR may ease access to East of Norwich but this unlikely to be a significant route; trips south (prob more prevalent) may be aided by Western route - part of full package.	May assist in accessing labour resident to east of Norwich. Labour to west of Norwich can use minor roads - less impact	1.0	B1	189	Insig	Insig	Medium
21	Acle	Distant from the NDR	Main markets to S and West can use A47. Prob too distant to have effect.	Too distant to have plausible effect	3.4	B1,B2	512.698	Insig	Insig	Insig

Economic Impacts of the NDR
Final report

Map Ref Number	Site name	Notes	Effect on Customer/Supplier Access	Effect on Labour Access	Area (ha)	Use	Potential Jobs	Positive Impact of 1/2 route	NDR Impact Positive Impact of 3/4 route	Positive Impact of full route
21A	Alderford	Site allocated for Bernard Matthews potential expansion.	NDR may ease access to East of Norwich but this unlikely to be a significant route; trips south (prob more prevalent) may be aided by Western route - part of full and 3/4 route package.	May assist in accessing labour resident to east of Norwich. Labour to west of Norwich can use minor roads - less impact	11	B2	1222.22	Low	Low	Medium
22	Gt Witchingham		Full route could help access to A47, A11 and A140 South. 3/4 and 1/2 routes likely to be less use as smaller markets to the East.	full route would help access from South, 3/4 route will facilitate labour access from North and East of Norwich.	0.4	B1,B2, B8	57	Low	Low	Medium
23	Honingham	Not far from Easton (point at which NDR joins A47 W of Norwich)	Site to West of Norwich. Major markets to west and south - access not affected by NDR.	Relatively distant from NDR. Radial commutes could be assisted.	0.0	B1	6	Insig	Insig	Low
24	Aylsham	To north of Norwich. Too distant from the NDR to have plausible high impact. Broadland officer believes general access has been problem in the past and explains low take-up on the site as it is on the 'wrong side' of Norwich for transport links.	Access to major markets to south and west could be assisted. 1/2 route could help clockwise trips to A140. Full route required for anticlockwise trips to/from the west and south.	Contra-flow (northbound) radial commutes could be assisted	8.0	B1,B2, B8	1,143	Medium	Medium	Medium

Economic Impacts of the NDR
Final report

Map Ref Number	Site name	Notes	Effect on Customer/Supplier Access	Effect on Labour Access	Area (ha)	Use	Potential Jobs	Positive Impact of 1/2 route	NDR Impact Positive Impact of 3/4 route	Positive Impact of full route
25	Horsham St. Faiths	Located to the North of Norwich and the NDR. Would ease access to the East and West of Norwich.	Major markets to the south and west - access improved via link to A47. A11, A140. 1/2 and 3/4 options likely to be of less use in this respect	Radial commuting could be assisted	1.2	B1,B2	185	Medium	Medium	High
26	Little Plumstead, Manor Farm	Area to East of Norwich and NDR. Would improve access around Norwich to North and across to the West. Geographically quite close to A47 South but local roads more difficult.	Access to major markets to south and west already in place due to A47	Radial commuting could be assisted	0.75	B1	143	Medium	Medium	Medium
27	Horsford		NDR may ease access to East of Norwich but this unlikely to be a significant route; trips south (prob more prevalent) may be aided by Western route - part of full package.	May assist in accessing labour resident to east of Norwich. Labour to west of Norwich can use minor roads - less impact	3.2	B1,B2, B8	457	Insig	Insig	Medium
27A	Morton (Lenwade)	Full route could help access to A47, A11 and A140 South. 3/4 and 1/2 routes likely to be less use as smaller markets to the East. Regarding labour access, full route would help access from South, 3/4 route will facilitate labour access from North and East of Norwich.	NDR may ease access to East of Norwich but this unlikely to be a significant route; trips south (prob more prevalent) may be aided by Western route - part of full package.	May assist in accessing labour resident to east of Norwich. Labour to west of Norwich can use minor roads - less impact	2.3	B1, B2, B8	329	Insig	Insig	Medium

Economic Impacts of the NDR
Final report

Map Ref Number	Site name	Notes	Effect on Customer/Supplier Access	Effect on Labour Access	Area (ha)	Use	Potential Jobs	Positive Impact of 1/2 route	NDR Impact Positive Impact of 3/4 route	Positive Impact of full route
28	Rackheath	Located on A1151 to North-East of Norwich. Near to NDR. Broadland officer commented the site might benefit from improved road links, reflected by upgrading the current stock.	NDR would help access to major markets- southbound A47 East to trips to South and East of Norwich. Southbound trips depend on 1/2 route only, eastbound on full.	Radial commuting assisted	4.5	B1,B2, B8	643	Medium	Medium	High
29	Reepham	Distant from the NDR, to the NW of Norwich	Access to/from major markets in west and south not affected by NDR	Radial commuting assisted but insignificant impact given distance from NDR.	2.8	B1,B2, B8	400	Insig	Insig	Insig
30	Hellesdon Park Ind. Est	Located close to A140. Poor access to the South and West, although not necessarily helped by the NDR in this respect given inner location.	Access to and from south and west on A11 and A47 facilitated. Less significantly, trips to east of Norwich potentially facilitated but small markets in this direction	Orbital commutes facilitated	2.5	B1,B2, B8	357	Medium	Medium	Medium
30A	St Andrews Business Park	We understand this is already in the process of being developed.	n/a - developed so no additional job effects	n/a - developed so no additional job effects	1.0	B1	190	Insig	Insig	Insig
31	Sprowston	Located relatively near to potential route.	Access to and from south and west on A11 and A47 facilitated. Will facilitate access to less significant markets to north and east.	Orbital commutes facilitated	8.1	B1,B2, B8	1,157	High	High	High

Economic Impacts of the NDR
Final report

Map Ref Number	Site name	Notes	Effect on Customer/Supplier Access	Effect on Labour Access	Area (ha)	Use	Potential Jobs	Positive Impact of 1/2 route	NDR Impact Positive Impact of 3/4 route	Positive Impact of full route
32	Broadland Business Park	High quality business park allocation. Close to Eastern end of NDR where joins at Postwick. Would allow good access to other sites along NDR, but already has good access West on A47 South. Comment from Broadland officer that access already good on A47 and most companies in Broadland serve markets to the South e.g. London and Essex so improving links to the North might have limited benefits. Site is progressing.	Effect on main markets to south and west limited (able to use existing A47 south around Norwich). Will facilitate access to less significant markets to north.	NDR useful for labour access from the North, NE and NW of Norwich	40.8	B1,B2, B8	5,829	High	High	High
33	Meridian Business Park, Thorpe	As 32 above. Site is progressing.	Effect on main markets to south and west limited (able to use existing A47 south around Norwich). Will facilitate access to less significant markets to north.	NDR useful for labour access from the North, NE and NW of Norwich	1.8	B1,B2, B8	259	High	High	High

Economic Impacts of the NDR
Final report

Map Ref Number	Site name	Notes	Effect on Customer/Supplier Access	Effect on Labour Access	Area (ha)	Use	Potential Jobs	Positive Impact of 1/2 route	NDR Impact Positive Impact of 3/4 route	Positive Impact of full route
34	Colney, Watton Road	Allocated for R&D development. Located to the South West of Norwich. NDR would allow access to the sites to the North of Norwich, although it is currently located close to the A47 South for East-West access.	NDR would allow access to the sites to the North of Norwich, although it is currently located close to the A47 South for East-West access. Trips to north of Norwich would be assisted by NDR but these unlikely to be significant. Access to major markets in south and west not affected by the NDR.	Orbital commutes facilitated by full route only	5.5	B1b	647	Insig	Insig	Insig
34	Colney Hall, Colney	Allocated for offices. Located to the South West of Norwich.	NDR would allow access to the sites to the North of Norwich, although it is currently located close to the A47 South for East-West access. Trips to north of Norwich would be assisted by NDR but these unlikely to be significant. Access to major markets in south and west not affected by the NDR.	Orbital commutes facilitated by full route only. Unlikely to be significant due to distance from NDR.	15.0	B1	2,857	Insig	Insig	Insig

Economic Impacts of the NDR
Final report

Map Ref Number	Site name	Notes	Effect on Customer/Supplier Access	Effect on Labour Access	Area (ha)	Use	Potential Jobs	Positive Impact of 1/2 route	NDR Impact Positive Impact of 3/4 route	Positive Impact of full route
34	Colney, NRP	Allocated for R&D. Located to the South West of Norwich. NDR would allow access to the sites to the North of Norwich, although it is currently located close to the A47 South for East-West access. Trips to north of Norwich would be assisted by NDR but these unlikely to be significant. Full route may be of some use for labour access, but unlikely to be significant.	NDR would allow access to the sites to the North of Norwich, although it is currently located close to the A47 South for East-West access. Trips to north of Norwich would be assisted by NDR but these unlikely to be significant. Access to major markets in south and west not affected by the NDR.	Orbital commutes facilitated by full route only. Unlikely to be significant due to distance from NDR.	17.4	B1b	2,047	Insig	Insig	Insig
35	Longwater	Located to the West of Norwich, close to the A47. Would have direct access to the NDR so able to access sites to the North of Norwich. According to South Norfolk DC, site is currently constrained by over-crowded Junction. Land been available for whole of last Local Plan but little take-up. Needs better infrastructure.	Trips to South and East will take place on A47 - A47 of more use to manufacturing and distribution. Access to major markets in south and west not affected by the NDR.	labour market access from North and NE would be assisted by full route only.	31.0	B1,B2, B8	4,429	Insig	Insig	Low

Impacts on property development

11.26 We find that

- for the full NDR option, approximately 8,400 jobs may be accommodated on sites that we see the NDR as having a 'high' impact upon.
- for the three-quarter NDR option, approximately 7,200 jobs may be accommodated on sites that we see the NDR as having a 'high' impact upon.
- for the half NDR option, approximately 7,200 jobs may be accommodated on sites that we see the NDR as having a 'high' impact upon.

11.27 The detailed findings are presented below by district.

Table 11.2 Positive impact of full route on jobs accommodated (by district)

District	Impact of full route	Total
Broadland	High	8072
	Insig	1103
	Low	6
	Medium	3897
Norwich	High	339
	Insig	6900
	Low	1512
	Medium	329
South Norfolk	Insig	5551
	Low	4429
Grand Total		32138

Table 11.3 Positive impact of three-quarter route on jobs accommodated (by district)

District	Impact of 3/4 route	Total
Broadland	High	7245
	Insig	2083
	Low	1279
	Medium	2470
Norwich	Insig	8098
	Low	314
	Medium	668
South Norfolk	Insig	9980
Grand Total		32138

Table 11.4 Positive impact of half route on jobs accommodated (by district)

District	Impact of 1/2 route	Total
Broadland	High	7245
	Insig	2083
	Low	1279
	Medium	2470
Norwich	Insig	8098
	Low	314
	Medium	668
South Norfolk	Insig	9980
Grand Total		32138

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,⁶⁹ 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.
- 11.30 We must put these findings in the context of the overall job forecasts for the local authority areas. These job forecasts give an overall picture for the demand for additional labour in the area - the jobs accommodated numbers shown above must work within the overall picture established by these projections. Work carried out indicates that there will be an additional
- 15,000 jobs in Norwich
 - 15,000 jobs in South Norfolk (11,000 of which have already come forward)
 - 5,000 jobs in Broadland
- 11.31 Our work indicates that the NDR is likely to contribute towards the overall achievement of these forecasts. Contribution to the total in Norwich itself is not likely to be very significant. The major effects are felt in Broadland, where the full NDR will contribute to the accommodation of around 1,200 jobs (after deadweight is taken into account). This represents around a quarter of the overall Broadland jobs target.

Attracting investment and business start-ups to areas previously considered remote

- 11.32 The precise linkage between peripherality, business location choices, business start-up rates and economic growth is not clearly understood. Ireland, for example, is a peripheral area but has grown strongly in recent years. Giving a view of the precise effects of the NDR on investment in peripheral areas is therefore not possible. This investment relies on a series of very complex interactions and is unlikely to result from a single investment in transport infrastructure.
- 11.33 However, we look at some of the evidence around how infrastructure provision affects existing businesses and business start-ups below.

Effects on existing businesses in peripheral areas

- 11.34 We have looked at existing research to help us look at this question. A Pidea study reported (1984) the findings of a major survey of manufacturing businesses in three peripheral regions of Europe (Scotland, Northern Ireland and the Republic of Ireland) and one central location (the Ruhr in Germany).⁷⁰ The study examined the role of transport costs on business location decisions and sought to determine what, if any, disadvantages were faced by peripheral regions seeking to attract business investment. The report found that
- Businesses in peripheral regions did not face substantially higher transport costs.

⁶⁹ See for example, 'Analysis of Transport Schemes: Economic Impact Studies' - David Simmonds Consultancy for DETR (1999)

⁷⁰ page 59, DfT (undated) The Importance of Transport in Business' Location Decisions, Pidea Peripherality Study

- Most businesses did not regard transport costs as a major factor in location decisions.
 - Most businesses regarded transport costs as relatively unimportant to competitiveness compared with other factors, e.g. marketing
 - Where transport was mentioned, the most important factors were reliability, with speed and cost less important.
 - Peripheral areas were not generally perceived to have higher transport costs than the central region.
 - Where transport *was* mentioned as a significant factor, potential shipment distance was the main determinant of businesses perceptions of transport costs.
- 11.35 This suggests that businesses already existing in peripheral areas might not consider the NDR to be very important.
- Effects on business start-ups in peripheral areas*
- 11.36 The work above suggests that *existing* businesses might not find the NDR very important. But how do *new* businesses to an area considered to be peripheral respond?
- 11.37 The mechanism by which the NDR is likely to affect new business start ups in peripheral areas is the same to the mechanism discussed above - that is to say, transport affects linkages between businesses and their customers, suppliers and labour. Positive impacts will be felt to the extent that the NDR affects these linkages.
- 11.38 This approach to the question has the merits of being a clear, concrete and relatively empirical method of approaching of what is a complex problem, and allows us to strip away some of the less coherent ways of thinking about infrastructure provision. This is the perspective generally endorsed by the SACTRA committee and taken up in the Government's Transport Advisory Group guidance. However, there are also non-economic determinants of business location. Research has found that investor *perceptions* are important (regardless of *actual* changes in travelling times). These might be particularly important in areas considered peripheral.
- 11.39 Road travel appears to be important in promoting the perceived accessibility of an area - to a certain extent, it appears that it is less important whether road transport *actually* improves accessibility to any great extent. The very fact of the NDR's existence on a map might improve the environment for business start ups. But we would not expect the effect to be perceivable. The DfT literature review states baldly that we simply do not know how important perceived relative to actual transport quality is in the location decisions of investors.⁷¹

Summary

- 11.40 Our first step was to contextualise the issue of inward investment. We pointed out that Foreign Direct Investment was falling, and we suggested that it should not be relied on to any degree to boost the local economy - NDR or not. We suggested that UK-based investment from outside the area might be more forthcoming, and there are opportunities for the city given the Lyons Review and congestion in the South East.⁷²
- 11.41 We look at property market effects as a way of looking at the effects of inward investment. The SACTRA report noted that there are cases in which transport schemes "unlock" additional land for development, but these needed analysis of local

⁷¹ *ibid* 45

⁷² see para 3.102 English Partnerships, Norwich City Council and EEDA for more on the Lyons Review. Para 4.57 states that Norwich should be considered one of the 25 most suitable locations in the UK for higher value back office functions, policy functions and science functions.

property markets. GVA Grimley's analysis of the property market in Norwich and Norfolk has a number of implications.

- On the one hand, their analysis suggests that the NDR would have positive effects. The business community believes that there is short supply of office accommodation in central Norwich (although as we have described above the effects of the NDR on access to the city centre are relatively limited). There is improving demand for B2 and B8, and the NDR will unlock suitable land for these uses at the airport. There is already speculative development taking place at Broadland Business Park, and analyses of viability suggest that the most positive effects of the NDR will be felt at premium locations such as Broadland Business Park, which are already viable and will be made even more attractive due to the increased labour catchments the NDR opens up.
- On the other hand, GVA Grimley's analysis suggests that the NDR might have fewer positive effects. Much of supply on key sites in Norwich and in Norfolk generally is constrained by factors unrelated to the NDR. Building the NDR would have no effect on whether these sites came forward. This situation also pertains in rural areas to the north of Norwich is weaker, where sites have a package of difficulties which are unlikely to be resolved by the NDR.

11.42 We turned to look at how property development (a manifestation of investment) might be influenced by the NDR. The SACTRA report notes that a case for genuine economic additionality can only be made with reference to the local property market. Our work suggests that there is only a limited case to be made here: whilst we find that there are 8,400 jobs on sites that are highly influenced by the full NDR (and 7,200 on the $\frac{3}{4}$ and $\frac{1}{2}$ routes) we need to take account of deadweight (ie, what would have happened anyway). Once this is taken into account, then the full option could be responsible for stimulating around 1,300 jobs, the $\frac{3}{4}$ option and $\frac{1}{2}$ option could be responsible for stimulating 1,100 jobs.

11.43 We then looked at peripherality issues and investor perceptions. The evidence about how infrastructure spending affects peripherality is mixed. Some research suggests that, for the attraction of new businesses to an area considered to be peripheral, investor perceptions are important (regardless of *actual* changes in travelling times). Road travel appears to be important in promoting the perceived accessibility of an area - to a certain extent, it appears that it is less important whether road transport *actually* improves accessibility to any great extent. But as the DfT review points out, we do not know how important these effects are.

APPENDIX A

Impact Zone Ward Definitions

Impact Zones - Business

Zone	Name	Wards 2003	Wards 1991
1	North West Norfolk	Astley Briston Gaunt Lancaster North Lancaster South Priory The Raynhams Walsingham Wensum	Astley Blakeney Four Stowes Fulmodeston Lancaster The Raynhams Walsingham Wells Wensum Valley
2	Dereham	Dereham-Central Dereham-Humbletoft Dereham-Neatherd Dereham-Toftwood Eynsford Hermitage Launditch Shipdham Springvale and Scarning Swanton Morley Taverner Two Rivers Upper Wensum Upper Yare	Beetley and Gressenhall East Dereham-Neatherd East Dereham-St. Withburga East Dereham-Toftwood East Dereham-Town Eynsford Hermitage Launditch Mattishall Shipworth Springvale Swanton Morley Taverner Two Rivers Upper Wensum Upper Yare
3	Drayton	Drayton North Drayton South	Drayton
4	Horsford and Felthorpe	Horsford and Felthorpe	Horsford and Felthorpe
5	Aylsham	Aylsham Hevingham Buxton	Aylsham Buxton Hainford Hevingham
6	Spixworth	Spixworth with St Faiths	St. Faiths Spixworth
7	Wroxham	Wroxham Sprowston Central Sprowston East Plumstead	Plumstead Rackheath Sprowston Central Sprowston East Sprowston South Wroxham
8	Hoveton and Stalham	Happisburgh Hoveton Sheringham South Stalham and Sutton Waterside Waxham	Bacton Catfield Happisburgh Hickling Horning Horsefen Hoveton Neatishead Stalham
9	Yarmouth and Caister	Bradwell North Bradwell South and Hopton Caister North Caister South Central and Northgate Claydon East Flegg Gorleston Magdalen Nelson Ormesby St Andrews Southtown and Cobholm Yarmouth North	Bradwell North Bradwell South and Hopton Caister North Caister South Claydon Gorleston Hemby Lichfield and Cobholm Magdalen East Magdalen West Nelson Northgate Ormesby Regent St. Andrews Winterton and Somerton Yarmouth North

10 South Norfolk	All	All
11 Norwich	All	All
12 Great Yarmouth South	Lothingland	Lothingland
13 Great Yarmouth North	Fleggburgh West Flegg	Fleggburgh Rollesby
14 Broadland East	Blofield with South Walsham Acle Burlingham Brundall Marshes	South Walsam Acle Burlingham Blofield Freethorpe
15 Coltisham and Horstead	Coltishall	Coltishall
16 Broadlands North West	Eynesford Great Witchingham Reepham	Foulsham Great Witchingham Reepham Cawston
17 Hellesdon	Hellesdon North West Hellesdon South East	Hellesdon North Hellesdon Southeast Hellesdon West
18 Taverham	Taverham North Taverham South	Taverham
19 Thorpe St. Andrew	Thorpe St Andrew North West Thorpe St Andrew South East	Thorpe St Andrew North East Thorpe St Andrew North West Thorpe St Andrew South
20 Rest of Breckland	All Breckland minus Dereham	All Breckland minus Dereham
21 Rest of North Norfolk	All North Norfolk minus NW Norfolk	All North Norfolk minus NW Norfolk
22 Old Catton and Sprowston West	Old Catton and Sprowston West	Sprowston West Catton

Impact Zones - Residential

Zone	Name	2003 Wards	1991 Wards
1	Wymondham	Hingham and Depham Wicklewood	Hingham Forehoe Wodehouse
2	Bowthorpe	Bowthorpe	Bowthorpe
3	Cringleford and Lakenham	Eaton Town Close Lakenham	Eaton St Stephen Town Close Lakenham
4	Upper Hellesdon	Thorpe Hamlet Sewell Mile Cross Catton Grove	Thorpe Hamley Mousehold Coslany Mile Cross Catton Grove
5	Thorpe St Andrew	Sprowston East Crome Thorpe St Andrew North West Thorpe St Andrew South East	Sprowston East Crome Sprowston South Thorpe St Andrew South Thorpe St Andrew Northeast Thorpe St Andrew Northwest
6	Buxton	Buxton Hevingham	Hainford Hevingham Buxton
7	Poringland and Hempnall	Brooke Ditchingham and Broome Earsham Gillingham Hempnall Poringland with the Framinghams	Rosebery Brookwood Hempnall Ditchingham Valley Waveney Chet
8	Rest of Broadland	Acle Aylsham Blofield with South Walsham Brundall Burlingham Coltishall Drayton North Drayton South Eynesford Great Witchingham Hellesdon North West Hellesdon South East Horsford and Felthorpe Marshes Old Catton and Sprowston West Plumstead Reepham Spixworth with St Faiths Sprowston Central Taverham North Taverham South Wroxham	Acle Aylsham Blofield Brundall Burlingham Catton Cawston Coltishall Drayton Foulsham Freethorpe Great Witchingham Hellesdon North Hellesdon Southeast Hellesdon West Horsford Plumstead Rackheath Reedham Reepham St. Faiths South Walsham Spixworth Sprowston Central Sprowston West Taverham Wroxham
9	Rest of Norwich	Wensum University Nelson Mancroft	Hiegham Henderson Nelson University Mancroft

10 Thurton	Thurton	Clavering Marshland
11 Rest of South Norfolk	Abbey Beck Vale Bressingham and Burston Burwell Chedgrave and Thurton Cringelford Cromwells Dickleburgh Diss Easton Forncett Harleston Hethersett Loddon Mulbarton New Costessey Newton Flotman Northfields Old Costessey Rockland Roydon Rustens Scole Stoke Holy Cross Stratton Tasburgh Town	Abbey Abbeyfield Beauchamp Beckhithe Beck Vale Boyland Broads Clavering Cringelford and Colney Cromwells Crown Point Depwade Dickleburgh Diss Town Harleston Humbleyard Kidner Long Row Marshland Mergate New Costessey Northfields Old Costessey Rustens Smockmill Springfields Stratton Tasvale Town Westwood
12 Great Yarmouth	All	All
13 North Norfolk	All	All
14 Breckland	All	All

APPENDIX B

Travel to Work Patterns

APPENDIX C

Definitions of B-Space Employment

Industrial Sectors	SIC (1992)	Activities
Manufacturing	15.11-37.20 (ex publishing, 22.11-22.15)	<ul style="list-style-type: none"> ▪ Includes all manufacturing, including recycling, but excludes publishing)
Some construction	45.33-45.45	<ul style="list-style-type: none"> ▪ Plumbing ▪ Other building installation ▪ Plastering ▪ Joinery installation ▪ Floor and wall covering ▪ Painting and glazing
Motor vehicle activities	50.20, 50.40	<ul style="list-style-type: none"> ▪ Maintenance and repair of motor vehicles ▪ Sale, maintenance and repair of motor cycles and related parts and accessories
Sewage and refuse disposal	90.00	<ul style="list-style-type: none"> ▪ Sewage and refuse disposal, ▪ Sanitation and similar
Warehousing Sectors	SIC (1992)	Activities
Wholesale	51.11-51.70	<ul style="list-style-type: none"> ▪ Wholesale on a fee contract basis ▪ Wholesale of goods
Freight transport by road	60.24	
Cargo handling	63.11	
Storage and Warehousing	63.12	
Other supporting land transport activities	63.21	
Post and courier activities	64.11-64.12	
Office Sectors (including R&D)	SIC (1992)	Activities
Financial and business services	65-67, 70-74	<ul style="list-style-type: none"> ▪ Financial intermediation etc ▪ Insurance and pension funding ▪ Activities auxiliaries to financial intermediation ▪ Real estate activities ▪ Renting machinery, equipment etc
Publishing	22.1	
Administration of the State and the economic and social policy of the community	75.1	<ul style="list-style-type: none"> ▪ General (overall) public service activities ▪ Regulation of the activities of agencies that provide health care, education, cultural services and ▪ other social services

excluding social security

- Regulation of and contribution to more efficient operation of business
 - Supporting service activities for the government as a whole
-
-

APPENDIX D

Written sources

We list below the academic and other general sources we have used in this study. Local policy sources are not listed here.

Full listings are available in footnotes.

Arup (2003) *Norwich Airport: Economic and Environmental Impact Study*

Atkinson(1998) Social Exclusion, Poverty and Unemployment, in Atkinson, Hills (eds) Exclusion, employment and Opportunity CASE paper 4 LSE cited Kleinman (2000) *Include Me Out - the new politics of Place and Poverty* Urban Studies 6

Dabinett, Gore, Haywood, Lawless (1999) *Transport Investment and regeneration in Sheffield* Transport Policy 6

Shanchez, Shen and Peng (2004) *Transit Mobility, Jobs access and Low Income Labour Participation in US Metropolitan Areas* Urban Studies 41

DfT (2004) *Aviation White Paper*

DfT (Undated) *The Importance Of Transport In Business' Location Decisions*

DfT (Undated) *Economic Impacts Sub-Objective*, TAG Unit 3.5.8. www.webtag.org

Greater London Authority (undated) *Industrial and Warehousing Study*

Halcrow Group Ltd *Airport Employment Forecasting Stage Two* January 2002

McKinsey Quarterly 2002 No.4 *Hyped Hopes for Europe's Low Cost Airlines*

NERA *The Impact of Easyjet Services on the Luton Economy* July 2000

Roger Tym & Partners for SERPLAN (undated) *The Use of Business Space*

Standing Advisory Committee on Trunk Road Assessment (SACTRA) (1999) *Transport and the Economy*

Social Exclusion Unit (ODPM) 2004 *Tackling Social Exclusion: Taking Stock and Looking to the Future*

APPENDIX E

Interviews

Business interviews

Cooks Brushes
Premier Fireplaces
Anglian Windows
Ben Burgess Ltd
Zenith Windows
Sontec Electronics
E C Landamore & Co Ltd
Mastercote Ltd
Pronto Joinery
Polyprint Mailing Films Ltd

Business representative organisations interviews

Caroline Jarrold - Chair, Norwich Economy Round Table
John Alston - Chair, County Strategic Partnership
Peter Briggs - Chair, Broadland Business Forum
Caroline Williams - Chief Executive, Norfolk Chamber of Commerce
Terry Millard - Chair, STF Transport Group
Andrew Wood - Chair, STF Europe and International Group

APPENDIX F

Business questionnaire

**NDR STUDY
ISSUES TO DISCUSS WITH BUSINESSES**

Intro

We are undertaking a study on the economic impact of the proposed Northern Distributor Route. Business input is important to our findings. We'd like to take a few minutes to ask you some questions about specific issues you face as a business in Norfolk and also about business conditions generally.

Name of contact:

Name of organisation:

1. Profile
<ul style="list-style-type: none"> ▪ Describe the profile of your business: <ul style="list-style-type: none"> ○ Activities - main sectors
<ul style="list-style-type: none"> ○ Operations (i.e. day/night, heavy manufacturing, processing, etc)
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ How many people do you employ?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ Where are your principal markets/customers?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ Where are your principal suppliers located?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ How do you transport your goods?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ How are supplies delivered?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ How often are supplies delivered?
<ul style="list-style-type: none"> ▪
2. Business environment
<ul style="list-style-type: none"> ▪ What are the three most important issues facing businesses in Norfolk?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ Please rank these issues.
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪
2. Staff/Training
<ul style="list-style-type: none"> ▪ Where do your staff live?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ Where do you recruit your staff from?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ Do you have problems recruiting/retaining staff? Why?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ If so what particular types of staff?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ Are there the skills locally to fulfil your staffing requirements?
<ul style="list-style-type: none"> ▪
3. Infrastructure
<ul style="list-style-type: none"> ▪ Does congestion or erratic journey times on the roads affect your profitability? In

<p>what way? If yes, are these impacts serious, or not particularly serious?</p> <ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ Would the proposed Northern Distributor Route affect your business? If yes, would it improve accessibility to a) your customers b) your suppliers, or c) your labour force?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ If the Northern Distributor Route was built, how might your business react? (Eg. would you move site? Would you alter where you recruited your workers? Would you do business with others in different parts of the country?)
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ Would a wider range of destinations from the airport be important to your business?
<p>4. Broader effects</p>
<ul style="list-style-type: none"> ▪ Do you think that the NDR will affect particular business sites or areas? How will it affect them?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ What effect do you think that the NDR will have on the city centre? Why?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ Is there a shortage of suitable sites for business expansion in Norwich? What effect do you think the NDR will have on the development of property?
<ul style="list-style-type: none"> ▪
<ul style="list-style-type: none"> ▪ How important is Norwich Airport to businesses?
<ul style="list-style-type: none"> ▪