



Transport Plan for Thetford

Final Report

December 2010
Norfolk County Council

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Executive Summary

The Breckland town of Thetford is set to experience significant growth in both housing and jobs to 2026 as detailed in the Thetford Area Action Plan. In order to support this forecast growth a Transport Plan for Thetford (TPfT) has been developed, which investigates the improvements and changes in highways and transportation infrastructure and services that are likely to be required with the Sustainable Urban Extension (SUE) in place.

This Transport Plan has been developed by Norfolk County Council and Mott MacDonald, in partnership with a range of stakeholders for the area, including Breckland Council, the Highways Agency and key landowners. These stakeholders formed the Transport Steering Group, intended to develop and agree the study as a partnership as the project progressed.

This Transport Plan has been delivered in a number of reports covering the following issues:

- Town centre car parks
- Station car parking
- Cycle routes
- Highways
- New station in the SUE
- Buses
- Smarter Choices
- Modelling of the impact on the A11
- Funding

Different issues have been studied to different levels of detail as has been appropriate to provide sufficient evidence to support the drafting of the Thetford Area Action Plan policies. In particular sufficient work has been carried out to provide evidence to the Highways Agency that suitable mitigation to the A11 junctions around Thetford can be delivered.

The work has identified a package of measures to accommodate the planned growth for Thetford in a sustainable manner and reflecting current transport policies. A summary of this package is set out below.

Proposed Interventions

Intervention	Measure
Walking and Cycling	Increase Off-Street cycle provision Increase On-Street cycle provision Utilise existing public rights of way Implement crossing points
Public Transport - Buses	Confirm proposed days and hours of operation of all bus services as per Public Transport report for both the external and internal proposals. Develop robust cost estimates for each individual bus route based on agreed days and hours of operation and route mileage for both the external and internal proposals. Investigate potential to integrate proposed external services with existing bus services on corridors concerned. Develop demand forecasts for each bus route based on agreed days and hours of operation and development trajectory. Implement two services from SUE to town centre via both Norwich Road and Croxton Road every 10 minutes Implement a service from SUE to TEP Develop and review services to Watton and Swaffham, Attleborough, Diss, Bury, and Brandon and Mildenhall
Public Transport - Rail	Further investigation of new rail station and potential for increase in rail patronage
Smarter Choices	Develop Smarter Travel Thetford strategy Develop Residential Hub travel plans and the Business Travel Plan Network Strategies Develop Individual Organisation Travel Plans Develop Personal Travel Plans Establish a Smarter Travel Thetford team
Car parking	Develop and implement a Car Parking Strategy
Highways	Improve junctions on A11 Improve junctions on the internal road network Increase capacity on Norwich Road Work to investigate measures to minimise the impact of general congestion on public transport movements around the town centre

An overview of the work carried out is provided in this report and further details are provided in the background reports which form part of this Transport Plan.

1. Introduction

The Breckland town of Thetford is set to experience significant growth in both housing and jobs to 2026 as detailed in the Thetford Area Action Plan. In order to support this forecast growth a Transport Plan for Thetford (TPFT) has been developed, which investigates the improvements and changes in highways and transportation infrastructure and services that are likely to be required with the Sustainable Urban Extension in place.

This Transport Plan has been developed by Norfolk County Council and Mott MacDonald, in partnership with a range of stakeholders for the area, including Breckland Council, the Highways Agency and key landowners. These stakeholders formed the Transport Steering Group, intended to develop and agree the study as a partnership as the project progressed.

1.1 Summary of Deliverables

This Final Report is a summary of various detailed analysis reports that have been produced as part of the development of the Transport Plan for Thetford to support Thetford's planned growth. These reports, set out below, have been presented during the course of the project as draft for comment. These, as with this Final Report, are now issued as Final copies.

- Town Centre Car Parks
- Station Car Parking
- Cycle Route Study
- Highway Interventions
- Proposed New Station at Thetford North
- Public Transport: Opportunities for Buses
- Smarter Choices
- A11 VISSIM Scenario Modelling Report
- Funding

1.2 Report Structure

This Final Report sets out the full range of transportation interventions that have been identified through the Transport Plan process. It also provides a policy framework as a context for this future development. The remainder of the report is set out as follows:

Section 2 provides a background to the project and sets out the aims and objectives of the project;

Section 3 details the existing conditions in Thetford;

Section 4 provides details of the package of interventions that has been identified across all areas of transportation in Thetford;

Section 5 details the estimated costs of delivering this package of interventions;

Section 6 sets out the recommendations of the project and identifies next steps to progress the Transport Plan.

2. Background

2.1 Background to Moving Thetford Forward

In 2006 Thetford achieved Growth Point Status, with a target of achieving 6,000 new homes between 2001 and 2021 and a further 1,878 new homes by 2026, almost double the current 9,950 households in the town. Thetford will also seek to boost employment levels with approximately 5,000 new jobs created by 2021.

Meeting these growth targets will involve a significant level of change and require the funding and provision of extensive supporting infrastructure. The impact of transport choices and how movement takes place around the area is at the core of a growth strategy of this magnitude.

The Growth Point status of Thetford has so far been allocated funding of £7million for 2008/09, 2009/10 and 2010/11. It is envisaged that further funding from Central Government may be available in the future, while the growth itself will generate substantial developer contributions for infrastructure and services. There is thus an opportunity to both achieve an innovative pooling of contributions and implement a well planned programme of transport interventions and infrastructure delivery.

2.2 Aim of the Project

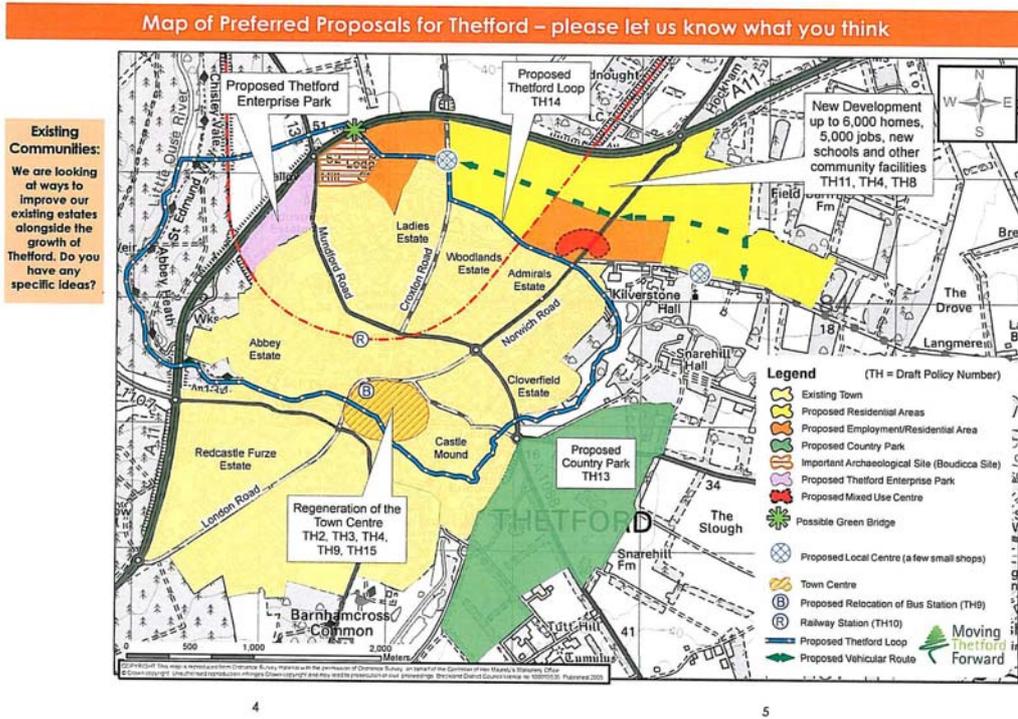
The aim of this project is to assess and develop a Transport Plan for Thetford to assist in the delivery of the Thetford Area Action Plan (TAAP).

The Plan will set out an agreed transport vision for Thetford as a whole and develop a strategy and programme to deliver the vision.

The Plan will assess the current situation and the preferred option for the growth in Thetford and its likely impacts on the traffic and transportation networks. It will also identify what infrastructure or mitigation measures would be required to enable the preferred option to be developed satisfactorily.

The preferred growth option at this project initiation stage is shown in figure 2.1, below, with the growth being mainly in the Sustainable Urban Extension (SUE) to the north of the existing settlement boundary and within the A11 boundary. The SUE includes 'Gallows Hill' newly designated a Scheduled (Ancient) Monument in September 2009.

Figure 2.1: Preferred Growth Option for Thetford



Source: From 'TAAP preferred options summary leaflet 2009'

2.3 Moving Thetford Forward Objectives

Moving Thetford Forward (MTF) has four main objectives, these are:

- Facilitate and accelerate the delivery of growth and economic development of Thetford;
- Assist the regeneration and renaissance of Thetford for all its residents, existing and new;
- Positively engage with all those with an interest in Thetford, including the public, local businesses landowners and public bodies; and
- Positively 'sell' the benefits and potential of Thetford to the wider world, in order to raise its profile, encourage investment and increase confidence in the town.

The above objectives encourage the Thetford of the future to look outward as a service provider and to play a part in the development of Norfolk.

The Thetford Area Action Plan defines a vision for the sustainable growth and regeneration of Thetford.

2.4 Transport Plan for Thetford

The objectives of the proposed Transport Plan for Thetford are to inform and provide an evidence base to assist in the development of and support the TAAP and provide a framework for more detailed work that would be included in the planning applications for the SUE. The study addressed the following:

- Develop a Transport Vision for Thetford;
- Identify current and future transport related issues and problems;
- Develop a costed, and deliverable transport infrastructure programme;
- Engage with stakeholders;
- Contribute to the wider socio/economic development of Breckland District and Norfolk;
- Build on the extant LTP2 and emerging LTP3.

Norfolk County Council, through their Strategic partner Mott MacDonald, carried out the study in collaboration with Breckland Council, The Highways Agency, and a consortium of landowners and their consultants. Elements of their detailed work, which would be required for any future planning applications, are being undertaken by this consortium.

2.5 Transport Vision for Thetford

The outcome of this study is to ensure transport plays its full part in contributing to the overall vision for Thetford as set out in the Draft Final Thetford Area Action Plan.

“To deliver a thriving 21st century market town at the centre of life in the East of England by implementing the sustainable growth and comprehensive social, economic and environmental regeneration of Thetford.

By 2026 Thetford will become a well planned, self contained sustainable town where people feel part of the community and where they continue to enjoy living and working. It will be a place people will be attracted to with its renowned natural and historic environment qualities.

Thetford will be an important town for jobs, shops, services, schools and tourism, and will continue to be the fourth largest town in Norfolk. Thetford will be known as a town where healthy lifestyles are at the heart of what people, communities and businesses do.

Thetford's reputation will be improved”.

3. Existing Conditions

3.1 Introduction

The study area encompasses the town of Thetford and its immediate hinterland. It is broadly bounded by the A11 to north and west, the A1075 to the east and the Street to the south. The location and the extent of the study area are shown below.

Figure 3.1: Location Plan for Thetford



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The town centre has a large mixture of historic and new land uses, with man-made and natural barriers which influence existing movement patterns, including the rivers and rail line, which form barriers to movement.

3.2 Residential Population

According to the 2001 Census data the total population of Thetford was 25,390 (total of the five wards comprising Thetford). Of these, 17,900 residents of Thetford are economically active (70% of the total population). Table 3.1 below shows that there are 10,700 dwellings in Thetford.

Table 3.1: Thetford Population and Economically Active

Area	Dwellings (thousands)	Population (thousands)	Economic active (thousands)	Economic active as % of population
Thetford	10.7	25.3	17.9	70%

Source: ONS, 2001

3.3 Key Demographics

Table 3.2 shows travel to work statistics for Breckland. This highlights that 23% of residents in Breckland travel less than 2km to work. This is a higher proportion than England (20%) and the East of England (20%). However, the percentage of Breckland residents travelling between 2 and 5kms to work (9%) is significantly lower than the East of England (17%) and England (20%). There are a higher proportion of residents who travel between 20 and 30km to work.

Table 3.2: Breckland Residents Distance Travelled to Work

	Breckland	Breckland (%)	East of England (%)	England (%)
Works mainly at or from home	6377	11%	9%	9%
Less than 2km	12843	23%	20%	20%
2km to less than 5km	5237	9%	17%	20%
5km to less than 10km	5500	10%	14%	18%
10km to less than 20km	9439	17%	15%	15%
20km to less than 30km	7145	13%	8%	5%
30km to less than 40km	2454	4%	4%	2%
40km to less than 60km	1618	3%	4%	2%
60km and over	2028	4%	4%	3%
No fixed place of work	2785	5%	5%	4%

Source: ONS, 2001

Table 3.3 shows the distance travelled to work by people who work in Breckland. This shows a broadly similar profile to residents travel to work data. This highlights that 28% of employees in Breckland travel less than 2km to work, this is a higher proportion than England (22%) and the East of England (20%). However, the percentage of Breckland employees travelling between 2 and 5kms to work (11%) is significantly lower than the East of England (18%) and England (20%).

Table 3.3: Breckland Employees Distance Travelled to Work

	Breckland	Breckland (%)	East of England (%)	England (%)
Works mainly at or from home	9162	20%	16%	14%
Distance travelled to work: Less than 2km	12837	28%	22%	20%
Distance travelled to work: 2km to less than 5km	4960	11%	18%	20%
Distance travelled to work: 5km to less than 10km	5062	11%	15%	18%
Distance travelled to work: 10km to less than 20km	6726	15%	15%	15%
Distance travelled to work: 20km to less than 30km	3356	7%	7%	5%
Distance travelled to work: 30km to less than 40km	1325	3%	3%	2%
Distance travelled to work: 40km to less than 60km	1159	3%	2%	2%
Distance travelled to work: 60km and over	712	2%	3%	3%

Source: ONS, 2001

Table 3.4 shows the percentage journey to work modal split for Thetford. This data shows that the majority drive to work (60%), followed by walking and cycling (22%). Utilisation of the bus in Thetford is particularly low (2%).

Table 3.4: Existing Journey to Work Mode Share in Thetford

	Mode Share (%)
Walking and Cycling	22%
Bus	2%
Homeworking	6%
Train, Taxi and motor cycle	3%
Car driver	60%
Car passenger	7%

Source: ONS, 2001

A key challenge for the TPfT is to provide the transport connections to encourage higher mode share for the more sustainable travel options and to reduce the amount of 'medium' distance commuting by taking advantage of the environment and mix of land-use the SUE will create, by reducing the need to commute by single occupancy car.

3.4 Transport Infrastructure

3.4.1 Introduction

This section summarises the current situation with regards to the highway and public transport network and services.

3.4.2 Walking and Cycling

Thetford currently has a few on road or traffic free cycling routes, terminating in the town centre and extending to the north and east of the town. Currently there are no designated cycle routes located to the south of the town centre. The cycle network around the suburbs of Thetford is predominantly made up of on-road, generally unprotected, cycling routes.

There is a designated cycle route, National Route 13, which runs from the town centre and along Croxton Road to the north of Thetford. This links Thetford town centre with residential areas in the northern suburbs and the village of Croxton, located to the north of the A11 trunk road. Croxton Road is subject to a 30mph speed limit within the northern suburbs of the town. However, from the junction with House Lane the speed limit changes to 60mph. This road benefits from street lighting in the residential suburban areas of the route but, despite its National Cycle Route designation, there is a poor level of cycle provision along this route. The route across Mundford Road from Croxton Road to the town centre is well signed, with a number of shared use routes allowing easier access to the town. There is also an underpass below Mundford Road to allow safer crossing of this road.

In addition to these routes there are several sections of on-and off-street cycling infrastructure in the town. However, they do not tend to form coherent routes between residential origins and key destinations.

Cycle parking facilities in the town are limited, although there is a scattering of cycle parking in the town centre in the form of Sheffield stands.

There is some under used and poor quality cycle parking at the station on the platforms, as well as a limited number of cycle lockers available.

3.4.3 Public Transport

Bus

Bus travel within Thetford is not currently perceived as an attractive option. Services suffer from low patronage and the bus station facility is in need of improvement or replacement. Links between the bus interchange and the rail interchange are currently poor and need to be reviewed.

Most bus stops do not provide any information relating to services or timetables. There is a mobile phone text service available that provides up to date bus information relevant to the stop that passengers are waiting at.

There is a 'Flexibus' service in operation which provides a 'ring and ride' service in the Wayland area.

Rail

Thetford is served by regular services on the Norwich – Ely – Cambridge line. Services are operated by National Express on the Norwich – Cambridge line, and by East Midlands trains which travel to and from Norwich via Ely. Both Ely and Cambridge provide connections to the wider rail network servicing destinations such as London via Cambridge, and the national rail network and destinations such as Birmingham and Liverpool via Ely and Peterborough.

The majority of trips from Thetford are to Norwich, with other stations within Norfolk proving popular destinations too. This concentration of originating demand on a small number of relatively short-distance flows is typical of a station serving regional flows. Also notable is the dominance of destinations with direct trains from Thetford: even London has a relatively low share at 8%, reflecting the absence of through services.

Norwich is the most important source of rail journeys to Thetford, but its dominance is much less pronounced than for journeys originating in Thetford meaning there is more out commuting by rail to Norwich than in commuting from Norwich direction. In general, the market for journeys to Thetford is more diverse and, as shown above, smaller than that for trips originating here; 13% of journeys originate in London and some 8% of journeys originate in Cambridge.

3.4.4 Smarter Choices

Current smarter travel activity in Thetford is fairly limited, however there are a few schemes running which can be built upon or added to.

Norfolk County Council's Smarter Travel officers have produced the Thetford Green Travel Map which shows short cuts for pedestrians, cycle facilities and bus and train information.

Sustrans are active in Thetford schools, providing a Bike It! Officer as part of the Healthy Town project. Sustrans works directly with schools who want to increase levels of cycling. This is done by helping schools to make the case for cycling in their school travel plans, supporting cycling champions in schools and demonstrating that cycling is a popular choice amongst children and their parents. Sustrans aim is to create a cycling culture in the school which continues long after the Bike It officer has left. They provide cycle training and advice on cycle parking facilities as well as running cycle promotion events in schools.

Car Share Norfolk operates in the county (Commonwheels), and information on this organisation can be found at www.carsharenorfolk.com.

Thetford Healthy Town operates in the area providing advice on a healthy lifestyle from Living to Food and Travel. The travel aspect provides advice on cycling, walking and green ventures which operates a bicycle recycling scheme.

Norfolk County Council has undertaken a number of initiatives at county level that can be applied to Thetford:

- Encouraging cycling through events such as Bike Week
- Norfolk Schools Green Travel Week
- Walk to School Initiative for Norfolk primary schools
- Safe and healthy routes to schools

Promoting and supporting the writing of travel plans for schools and businesses

3.4.5 Car Parking

There are a number of small car parks within Thetford town centre, most of which are not signed and provide free parking. As part of the study an observational survey of parking in Thetford was undertaken in November 2009 to confirm the status of the existing off street public car parks and observe their usage.

The survey confirmed that there are a total of 800 off street public car parking spaces, distributed over 14 locations. All these car parks are free and, with the exception of the council offices on St. Nicholas Street, are open 24 hours a day. Disabled spaces are provided at a minority of locations and CCTV coverage is provided at a minority of locations.

The results of the survey suggest that demand exceeds capacity at the weekend and this will lead to congestion and have environmental impact as cars circulate to find and wait for a space. Demand approximates to capacity during the middle of the day of weekdays, and given the number of locations with no space again this will lead to congestion and have environmental impact as cars circulate to find a space.

There is more than sufficient capacity for commuters parking before 0900, and the early and late surveys suggest that only St. Nicholas Street car park and St. Giles Street are being used mainly by commuters working a normal length day. This suggests that the majority of weekday demand is a combination of shoppers, visitors and those working shorter days.

The observations suggest that there is no current 'parking problem', i.e. capacity is probably not considered a major constraint by Thetford residents. However the observations alone suggest there are the following issues:

- Excessive traffic movements within the town centre
- Congestion

- Environmental impact.

A detailed analysis of the survey and findings can be found in the Town Centre Car Parks Report.

3.4.6 Highways

Existing traffic flows at the nine main junctions within Thetford and its surrounds have been obtained from surveys that were undertaken as part of the Transport Plan project. The evidence based work carried out to date has confirmed that the majority of highway junctions both on the Strategic Road Network (A11) adjacent to Thetford and the significant ones within the town will be over-capacity at 2026, without the traffic generated by the TAAP, at that end of TAAP date. In addition the work confirms that the junctions would be congested due to the additional traffic associated with the TAAP.

4. Interventions Package

4.1 Introduction

The Transport Plan for Thetford (TPfT) investigates the improvements and changes in highways and transportation infrastructure and services that are likely to be required with the Sustainable Urban Extension (SUE) in place.

This Transport Plan has been delivered in a number of reports covering the following issues:

- Town centre car parks
- Station car parking
- Cycle routes
- Highways
- New station in the SUE
- Buses
- Smarter Choices
- Modelling of the impact on the A11
- Funding

4.2 Walking and Cycling

There are existing designated cycle routes in Thetford and with the planned increase in population that has been outlined for the area through its growth point status, an opportunity arose for a cycling study to be produced for the town to identify infrastructure improvements which could be implemented to support and encourage cycling in the area.

The study's aim was to identify gaps in the existing cycle network and suggest routes to provide a coherent cycle network for the town to encourage cycling between key origins and destinations.

The report describes existing conditions and suggests potential improvements and interventions both on- and off-street, as well as possible upgrades to existing infrastructure.

Plans showing proposed interventions are located in Appendix A.

4.2.1 Utilising Existing Public Rights of Way (PROW)

There are 12 PROW in the Thetford area and potentially some of these could be used as cycle routes. Bridleway 1 in the centre of town and Bridleway 2 to the east are used at present. Croxton FP1 has potential to be used as it is within the proposed SUE site. The existing, Thetford FP1, FP7, FP8, FP9, FP10, FP11 and FP18 are all being utilised at present by walkers and have been identified as routes to be shared by cyclists.

4.2.2 Increasing Off-Street Provision

The growth identified at the SUE, as well as the projected infill development that will be delivered at Thetford is likely to increase the traffic levels on the network. In addition, the small size of the network, as well as existing geometric constraints, means that reducing the volume of traffic in Thetford is unlikely to be achievable against this background of significant growth. However, when formulating potential new cycle

routes consideration has been given, where possible to ensure HGV and bus routes are avoided. Because of these constraints under the hierarchy the following types of measures have been identified, including:

- The use of existing public footpaths that intersect the proposed SUE site;
- Mandatory cycle paths developed in the SUE;
- Investigate potential route from Mundford Road/Station Lane to Brickfields Way along the boundary with the Fison Industrial Estate; and
- A 3m segregated cycle track from Maidens Walk to the proposed SUE development

4.2.3 Increasing On-Street Provision

Details of on-street provision recommendations to be developed and assessed are located in the background Cycling and Smarter Choices reports.

4.2.4 Creating Coherent Routes

As well as providing on-and off-street cycle lanes, a number of crossing points could also be provided at a number of locations. These are detailed in the background Cycling report.

4.3 Public Transport

Bus

The 'Public Transport: Opportunities for Buses' report considered how bus travel from the proposed Sustainable Urban Extension, Thetford Enterprise Park and existing settlement could be best developed to bring about modal shift towards more sustainable modes as part of the Transport Plan for Thetford.

Potential levels of patronage for the key corridors serving the SUE were considered, as were requirements of existing housing estates to ensure that the potential for modal shift in Thetford can be achieved. Bus routes and frequencies were recommended in this study, along with outline costs, the number of vehicles required to operate the service and specifications for size and type of vehicles.

In summary it is recommended that a 10 minute service frequency is provided from the SUE down Norwich Road. Alternate buses could serve existing residential areas by diverting of Norwich Road via Cloverfields and Admirals Way. This would provide a 20 minute service frequency in these areas. To serve the western part of the SUE a similar service is proposed down Croxton Road that could additionally serve Anne Bartholomew Road and Woodlands Drive.

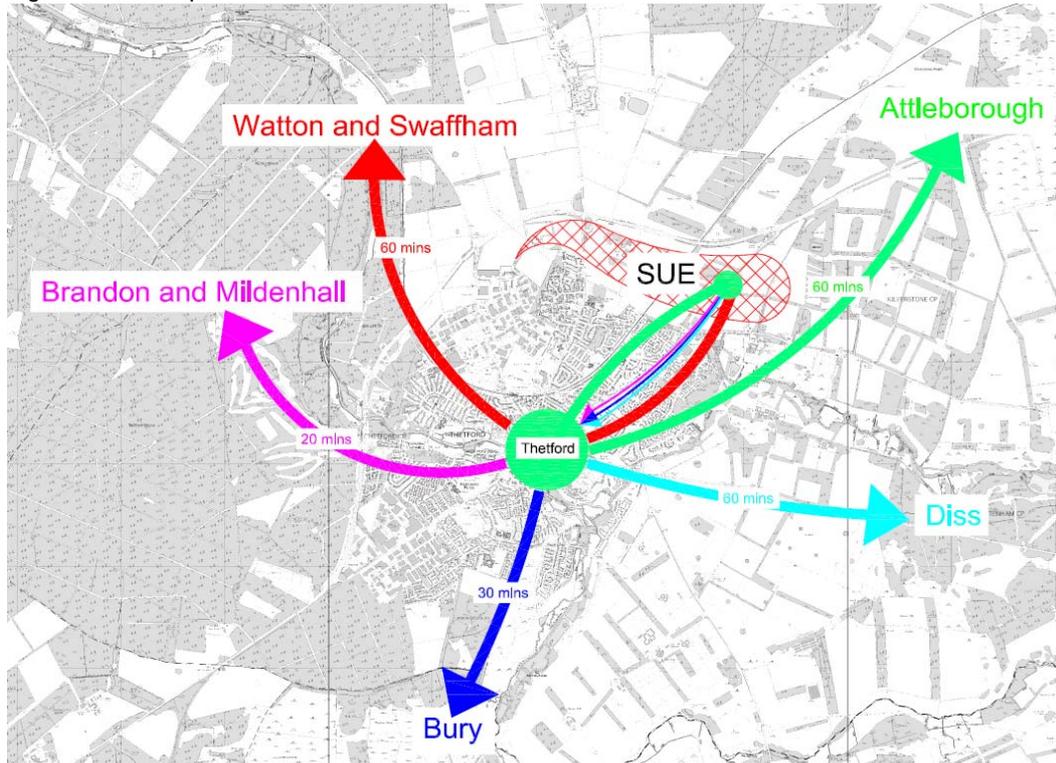
Given the likely demand for bus services it is proposed that services to external destinations should encompass pick-up points both within the SUE and the town (bus station). Whilst this may increase the overall journey time it is unlikely that external services would become sustainable with a restricted market.

To provide optimum coverage between Thetford, the SUE and external locations which generate sufficient levels of movement, the following routes are proposed:

- SUE – Bus Station – Brandon – Mildenhall
- SUE – Bus Station – Bury St Edmunds
- SUE – Bus Station – Diss
- Bus Station – SUE – Watton – Swaffham

- Bus Station – SUE – Attleborough (potential to extend to Wymondham and Norwich, UEA and NNUH if demand can be generated).

Figure 4.1: Proposed directions of routes outside Thetford



Source: 1:10000 scale map provided by Norfolk County Council – License Number 100019340, 2010

Proposed frequencies are shown in Table 5.1 below for these services operating to and from Thetford town centre and the SUE, assuming a vehicle with a seating capacity of 45 seats.

Table 4.1: Proposed Frequencies for External Routes to/from Thetford/SUE

Route	Frequency	
	Peak	Off Peak
SUE – Bus Station – Brandon – Mildenhall	20 mins	30 mins
SUE – Bus Station – Bury St Edmunds	30 mins	30 mins
SUE – Bus Station – Diss	60 mins	60 mins
Bus Station – SUE – Watton – Swaffham	60 mins	60 mins
Bus Station – SUE – Attleborough	60 mins	60 mins

It is proposed that the services on the Brandon / Mildenhall and Bury St Edmunds corridors, where there are existing services to build upon, would operate between 0600 and 2000, Monday to Saturday, with services on the other three corridors initially operating between 0700 and 1900.

Consideration should be given to the extension of some journeys on the SUE - Bury St Edmunds service to West Suffolk College and/or West Suffolk Hospital where practicable and it is possible to co-ordinate these

services with existing bus routes serving these destinations in a way that would avoid undermining the viability of existing bus services within Bury St Edmunds.

As part of the masterplan for the growth area, a possible link road for a public transport corridor which includes a new bridge over the railway is proposed. This will allow public transport access through the SUE growth area but not for private vehicles and link the SUE with the proposed Thetford Enterprise Park. The nature of bus services on this link, which will span between Mundford Road and Norwich Road, cannot be determined until the precise nature of the development proposals are known.

Rail

Preliminary studies into the possibility of providing a new railway station at Thetford North, between the existing Thetford station (which would be retained) and Harling Road have also been carried out. This work included analysing the usage of the existing station, in terms of establishing its catchment area and what types of journeys are being made, and then considering the impacts of adding a new station. This has covered assessing the impacts of extended journey times for existing rail passengers, as a result of the additional station stop, and analysing whether the amended journey times could be accommodated within the existing service structure without unacceptable impacts on the timetables of this and adjoining lines. Finally, we have built upon our assessment of the catchment area of the existing station, and have made a high-level estimation of the likely catchment of a new station at Thetford North.

In relation to railway provision, on the limited evidence so far considered there is no obvious reason why a new station at Thetford North should be a fundamentally flawed idea from the points of view of the size of its potential market and of the operability of the timetable in roughly its present form. Indeed, it would appear that there may be the potential for such a station, if centrally located within the new development, to serve a useful role in attracting those travelling from there into Norwich away from the car and onto rail, and to do this more effectively than the existing station would be likely to manage.

Given the considerable uncertainties in delivering a new station however it is recommended that at this time land is safeguarded for a station with further study work when the demographics of the SUE occupiers is established.

4.4 Smarter Choices

The proposed growth provides the town with significant transport challenges. However, it also provides the opportunity to implement a town wide smarter travel programme. The aim of the Smarter Choices report was to outline how the planned growth within the town can be facilitated through smarter travel measures, identifying a range of potential smarter choices measures appropriate to Thetford (based on the current data available) that could have a significant impact on travel behaviour.

A well designed smarter travel programme can deliver significant modal shift and other benefits - including carbon emissions reductions, decreased congestion and health benefits.

Smarter Travel Thetford will be key to deliver a 10% reduction in driver trips for external trips, and a 25% reduction in driver trips internally in the whole of Thetford. This will be offset by a rise in walking and cycling, and a smaller increase in public transport use and home working.

This report analysed journey to work data and identified that 60% of journeys to work are by single occupancy car drivers – a significant proportion of which are less than 10km. Furthermore, it highlighted

specific areas of infrastructure which could be improved and help to reinforce the Smarter Travel programme. This has formed the foundation upon which Smarter Travel Thetford could be built.

Given the quantity of growth forecast, it is imperative that a robust set of smarter travel measures are implemented to minimise car use and hence impact on Thetfords transport network. A summary of the overarching smarter travel measures are set out in Table 5.2. Details of Package of measures, including Strategies, Overarching measures and the soft and hard measures for each hub are set out in the ‘Smarter Choices Report’. It is recommended the measures developed under an overall marketing and branding exercise for the whole of Thetford. This would include the development of unique brand / logo and website for smarter travel Thetford as well as setting up a dedicated Team to market and implement smarter choices in Thetford.

Examples of the measures that would be included in the Smarter Choices are summarised in Table 5.2

Table 4.2: Package of measures for each Hub

	Soft Measures	Hard Measures
Town wide Overarching measures	Travel planning; Promote smarter working amongst businesses; Smarter working amongst individuals to encourage home working as a method of trip suppression Support cycling and walking soft measures Establish a car sharing database Expand the Norfolk car club scheme Develop a marketing and communications strategy Develop Thetford Smarter Travel Web Site Smarter Travel Thetford Team	Support cycling and walking infrastructure Public transport infrastructure development Provide car share / car club infrastructure ie priority parking spaces; Signage

4.5 Car Parking

There are nearly 800 off-street public car parking spaces in Thetford town centre. Observations show that demand currently approximates to capacity on weekdays and exceeds capacity at weekends which leads to various issues.

The near doubling of population as Thetford grows will exacerbate the existing problems and require intervention. Consequently it is recommended that there should be a more detailed town centre car park strategy for Thetford which will also consider the developing Civil Parking Enforcement for Norfolk.

An observational survey of the car parking around the railway station has also been undertaken to better understand levels of use at the railway station.

Car parking interventions would aim to remove traffic from sensitive streets, provide parking directly off approach roads: ‘drive to, not through’ and provide preferential access to public transport. Overall levels of parking provision should be determined taking account of public transport accessibility of the retail area and the retail floor area and the need to provide for mobility impaired, bicycles, powered two wheelers, taxis and freight.

To this end these objectives would be satisfied by providing parking at the edge of the town centre in a few locations, eg adjacent to London Road in the southwest, and Norwich Road to the northeast of the town centre, with Urban Traffic Management to inform drivers of spaces available at each of these locations.

4.6 Highways Infrastructure

Overall it is concluded that the proposed TAAP will have an impact on the operation of the local highway network, however the work has shown that the majority of junctions are forecast to be operating over their theoretical capacity without development generated traffic. Therefore without any growth the Thetford transport network is likely to experience problems. As a result of the work undertaken a number of junction improvements as well as other highway interventions and soft measures have been proposed and, shown to improve, the operation of these junctions to a level where they achieve 'nil detriment' on the road network.

A VISSIM model was produced for 5km of the A11 at Thetford which was used to develop a package of highways measures to address the detail of the trunk road junctions.

The 'A11 VISSIM Scenario Modelling Report' provides details of traffic survey and Base Scenario assumptions. It also provides a description of the capacity assessments that have been undertaken in relation to future growth in the town, associated with the Thetford Area Action Plan (TAAP). The forecast effects of the TAAP on traffic flows within the town and on the A11 were analysed using operational capacity assessments at a total of nine junctions. A series of mitigation measures and interventions have been developed and tested in order to accommodate the likely increase in traffic flows. These are summarised below in Table 4.3. They are detailed in the 'Highways Interventions Report'

Overall the Highways Agency (HA) have confirmed that the work carried out to date has shown a reasonable confidence that at grade junction improvements for the A11 will mitigate the impact of the SUE. They have issued a Position Statement on the Thetford Area Action Plan which includes the statement *"the Highways Agency considers that the work completed to date constitutes a sufficient evidence base at this stage to provide a reasonable indication that the potential impacts on the A11 have been identified and measures to mitigate that impact appear to be deliverable"*

A11 Improvements

The mitigation measures and results of the operational capacity assessments for the A11 junctions are summarised in Table 4.3:

Table 4.3: A11 Junction Improvements

Location	Mitigation
A11 / London Road junction	3 lane approaches on the A11 arms and increased ICD to 100m, results in all arms operating within their theoretical capacity in both of the peak periods for all of the Scenarios.
A11 / Brandon Road	Roundabout signalised, with four circulating lanes. A11 approaches widened to four lanes. Western Brandon Road approach widened to four lanes. Eastern Brandon Road approach widened to three lanes.
A11 / Mundford Road	Roundabout signalised, with four circulating lanes. A11 approaches widened to four lanes. Southern Mundford Road approach widened to four lanes. Northern Mundford Road approach widened to three lanes.

Location	Mitigation
A11 / Croxton Road Slips	Signalisation of junctions between slips and Croxton Road. Tapers increased to current standards
A11 / Norwich Road	Roundabout signalised, with four circulating lanes. A11 approaches widened to four lanes. Remaining two approaches widened to three lanes.

The Highways Agency has stated that the proposed TAAP and SUE development should cause 'nil detriment' on the A11 junctions, ie after interventions the A11 must be no worse than if the TAAP had not been adopted.

Physical interventions have been designed based on a review of available land against the measures required to ensure each junction operates within its theoretical capacity or at a level which achieves 'nil detriment' when compared to the 2026 base scenario.

Assessment work undertaken shows that of the five A11 junctions modelled, two of the junctions remain above their theoretical capacity and at a marginally worse level than is forecast in the Base Scenario, these are the A11 with A134 Brandon Road junction and the A11 with Mundford Road junction (both in the PM peak period).

Internal Network Improvements

All of the internal junctions are forecast to operate either within their theoretical capacity or at a reduced level when compared against the Base Scenario. The mitigation measures and results of the operational capacity assessments for the local road network are summarised in Table 4.4:

Table 4.4: Local Road Network Mitigations

Location	Mitigation
Croxton Road / Mundford Road	Signalisation of the junction with 2 lanes on Croxton Road approach, Mundford Road west and on Mundford Road east.
Brandon Road / Bury Road / London Road	Additional lane added on Brandon Road and London Road as well as signal stage and phasing adjustments.
Norwich Road / Mundford Road / Hurth Way	Signalised Hamburger roundabout.
A1066 / A1088 / Hurth Way / Castle Street	No physical interventions, junction operates within its theoretical capacity in all of the Scenarios.
A1075 Norwich Road	Capacity improvement from SUE access to A11 junction Southbound bus lane on approach Hurth Way Roundabout
Norwich Road between Hurth Way roundabout and town centre	Further work to identify measure to minimise the impact of congestion on public transport movements
Mundford Road	Increasing capacity of link between A11 and Wyatt Way, by dualling and enlarging the proposed roundabout at Wyatt Way.

All of the internal junctions are forecast to operate either within their theoretical capacity or at a reduced level when compared against the Base Scenario with interventions. However, the section of Norwich Road between the Hurth Way Roundabout and the town centre even with the proposed interventions is shown to be overcapacity as would be the case without any SUE development. Further work will be undertaken to minimise the impact of this congestion on public transport movements. This could possibly be carried out in conjunction with the town centre masterplan work.

Whilst the proposed package will achieve a scenario of “nil-detriment” it should be recognised that with general growth in the demand for travel, conditions on the transport network, even without the SUE development, will be significantly worse than today.

5. Delivery

5.1 Costs

Within each intervention report, costs have been assessed both in terms of capital, and revenue (where possible) for the cost of the package. Further details can be found in each of the background reports, however a summary is given below.

5.1.1 Cycling

Table 5.1 provides the indicative, high level guideline costs that have been estimated for each of the potential interventions proposed. However, these do not include for on going the maintenance. Once feasibility studies and more detailed design work is undertaken on these potential schemes, it is possible that some may not be achievable due to issues such as visibility constraints or other factors.

Table 5.1: High Level Indicative Scheme Costs (includes design, preliminary works/construction and legal orders)

Scheme	Indicative Cost (£)
A 2m mandatory cycleway along Admirals Way	18,000
Shared use track on Churchill Road	15,000
A 2m mandatory use track on Croxton Road, National Cycle Route 13	22,000
From Mundford Road to Ladies Estate along Howlett Way and St Helens	25,000
Two 2m mandatory cycleways on Croxton Road to Hardy Close and to Woodland Drive	17,000
A 2m mandatory cycleway along Canterbury Way	36,000
A 2m mandatory cycleway along Station Road	16,000
A shared use track from Croxton Road to Newtown, stopping up Whitehart Street to vehicles	18,000
A shared use track from Canterbury Way along Station Road to Croxton Road	14,000
A shared use track from Green Lane along Hurth Way and Norwich Road to existing cycleway	16,000
A shared use track from Arlington Way along Castle Street, Melford Bridge Road and Grove Lane to the existing cycle facility on Norwich Road opposite the school	20,000
A shared use track from Queensway along Bury Road through the allotments to Mill Lane	18,000
Castle Lane – Castle Street to Green Lane – toucan crossing without refuge	100,000
Norwich Road – from Tesco to Cedar Row footway – toucan crossing utilising existing refuge	100,000
Norwich Road in proposed SUE – toucan crossing with refuge	100,000
Mundford Road/Station Lane – toucan crossing with refuge	100,000
Joe Blunt's Track/Croxton Road – toucan crossing without refuge	90,000
Woodlands Drive/Croxton Road – toucan crossing utilising existing refuge	100,000
Churchill road/Mundford Road – toucan crossing with refuge	100,000
Canterbury Way to the immediate north of the bridge over Little Ouse River – toucan crossing without refuge	90,000
Brandon Road/Canterbury Way – toucan crossing without refuge (remove existing refuge)	100,000
Bury Road/Kingsway to allotment gardens – toucan crossing without refuge	90,000

Scheme	Indicative Cost (£)
Total Indicative Costs	£1,205,000

5.1.2 Public Transport

Table 5.2: Proposed Town Bus Services

Route	Frequency (mins)		Cycle Time (mins)	Vehicle Requirement	
	Peak	Off Peak		Peak	Off Peak
Town Centre - Norwich Road and SUE East	10	10	40	4	4
Town Centre - Croxton Road and SUE West	10	10	30	3	3
SUE - TEP	10	10	30	3	3
All Routes				10	10

The estimated annual cost for operation of the above services with conventional diesel powered full size single deck bus based on the costs set out in Table 7.2 of the Public Transport report and the assumptions set out in the table footnotes is:

- Raw cost (no profit) £86,000 x 10 = £860,000
- Assuming 15% profit margin for operator £989,000

These costs are based on an average annual mileage of 71,000 km (44,400 miles) per vehicle. The actual average annual mileages for the town bus services have not been calculated but are unlikely to differ significantly from this assumption. However, fuel and tyre mileage contract costs will be commensurately higher with increases in annual mileage.

It is recommended that further work is undertaken to prepare robust cost estimates for each route based on accurate route mileages and agreed assumptions regarding days and hours of operation.

Table 5.3: Proposed External Bus Services

Route	Frequency (mins)		Cycle Time (mins)	Vehicle Requirement	
	Peak	Off Peak		Peak	Off Peak
SUE - Bus Station - Brandon - Mildenhall	20	30	120	6	4
SUE - Bus Station - Bury St Edmunds	30	30	90	3	3
SUE - Bus Station - Diss	60	60	120	2	2
Bus Station - SUE - Watton - Swaffham	60	60	180	3*	3*
Bus Station - SUE - Attleborough	60	60	120	2*	2*
All Routes				16	14
All Routes (Swaffham and Attleborough services interworked)				15	13

* - The Swaffham and Attleborough routes do not cycle efficiently at a 60 minute frequency, but can be interworked to save one vehicle compared to the requirements for the individual routes.

The estimated annual cost for operation of the above services with conventional diesel powered full size single deck bus based on the costs set out in Table 7.2 of the Public Transport report and the assumptions (other than average annual mileage per vehicle) set out in the table footnotes is:

- Raw cost (no profit) £1,539,000
- Assuming 15% profit margin for operator £1,770,000

The average commercial speed of operation of the external bus services is significantly higher than for the town bus services and the average annual mileage per vehicle will therefore be commensurately higher. Fuel and tyre mileage contract costs will thus be higher than those for the town bus services.

The above costs are based on rough estimates of route mileages obtained using the route planner on the website www.theaa.com. It is recommended that further work is undertaken to prepare robust cost estimates for each route based on accurate route mileages and agreed assumptions regarding days and hours of operation.

5.1.3 Rail

With regard to a new railway station no costs are available as a result of this small initial survey. However it would be possible to appraise at a high level the socio-economic case for the new station, in accordance with the WebTAG criteria prescribed by DfT and applied by Network Rail to projects of this type. We would generate results for monetised costs and benefits in the form of benefit:cost ratios and net present values of benefits. In addition, if desired, we would carry out high-level appraisal of the non-monetised elements of a WebTAG-compliant appraisal, including the environmental and social impacts which appear as 'scores' on the standard DfT Appraisal Summary Table.

5.1.4 Smarter Choices

It cannot be stressed too much that investment in infrastructure to support the softer measures is also critical. The DfT Smarter Choices 2004 report (Changing the way we travel) notes that hard infrastructure measures lock in the benefits of softer measures and behaviour change campaigns. Additionally, softer measures and behaviour change campaigns exploit the benefits of hard infrastructure ie both are mutually re-enforcing.

Table 5.4: Cost Summary

Measure	Cost
Smarter Travel Thetford Team (STT)	£152,500 per annum
Training / Toolkit and Survey Programme Development	£50,000
Marketing Budget	£75,000 per annum
Smarter Travel Web Site	£20,000 set up
Car Sharing Web site	£20,000 set up
Travel Plan Support Budget (quick wins)	£100,000 per annum
Personalised travel planning	£25,000 – £50,000 per annum
Developer Contribution	Unknown – to be confirmed by District Council
Individual organisations / businesses	Costs as appropriate for enhancing sustainable transport opportunities at their own location
Schools	£25,000 per school for quick win initiatives

5.1.5 Car Parking

The capital costs of multi-storey car parks are in the order of £10 000 per space, ie for Thetford £8 million to re-provide the existing number of spaces, or £40 million to provide capacity equivalent to Bury St

Edmunds. Specialists could advise if the revenue for selling for development surplus town centre land, currently used for parking, would fund the multi-storey car parks.

Assuming charging for car parking spaces, which local authorities may do under section 35 of the 1984 Road Traffic Regulation Act, then sources of revenue available are:

- Parking fees; barrier or pay and display.
- Resident parking zone permits etc.
- Penalty charge notices.

It has been estimated that revenue costs per space exceed £2 000 per annum, ie more then £5 perday; in Bury St Edmunds the charges for stays over 4 hour are only £1.90 or £2.70.

At the current time further study work is recommended to develop a car parking strategy for Thetford. Cost implications for implementing this car parking strategy will be identified as part of this work.

5.1.6 Highways Infrastructure

Various junction and link improvements involve a capital cost but no ongoing revenue costs as summarised in Table 5.5 below.

Table 5.5: Highways Costs

Table Heading Left	Indicative Cost (£)
A11 London Road roundabout	£2,310,000
A11 Bury Road roundabout	£2,320,000
A11 Mundord Road roundabout	£3,320,000
A11 Croxton Road slips	£160,000
A11 Norwich Road roundabout	£2,940,000
Croxton Road / Mundford Road junction	£350,000
Brandon Road / Bury Road / London Road junction	£590,000
Norwich Road / Mundford Road / Hurth Way roundabout	£1,380,000
Norwich Road	TBA
Croxton Road	TBA

5.1.7 Summary of Likely Costs

Table 5.6: Summary of Likely Costs

Intervention	Capital	Revenue	Comments
Walking / cycling	£1.205 million	-	Investment in new infrastructure will require on-going mainatnce Revenue implications for Bike It officer
Public Transport	None currently idenitified.	£2.759 million per annum	Investment in new infrastructure will require on-going mainatnce Potential revenue subsidy required. On-going after agreed developers contribution.
Smarter Choices	£90K (start-up costs). £25K per school	£377K per annum.	Significant on-going revenue implications.
Car parks	No costs available	-	Revenue implications for enforcement

Intervention	Capital	Revenue	Comments
Highways	£13.37 million	-	CPE costs Investment in new infrastructure will require on-going mainatnence. Some costs still to be determined.

It should be noted that the Transport plan will need to look beyond the life of the developers contributions to revenue interventions for which The Planning and Transport Authorities must consider when approving schemes.

5.2 Funding

To deliver the proposed measure for the Transport Plan for Thetford, significant investment in both capital and revenue will be required to deliver the Vision of Thetford and the proposed growth. The need for investment is not only just for transport, as set out in the Transport Plan for Thetford, but also other infrastructure and services, such as utilities, schools and health facilities.

In the current economic climate, funding is both a constraint and challenge for public services. It is clear that funding opportunities and access to finance will be a challenge for local authorities who will also need to prioritise investment and spend within a constrained budget.

A review of funding and finance sources has been undertaken as part of the Funding Report. However, key for further investigation to finance this plan at this stage are:

- Developer contributions / CIL
- Local Transport Plan
- Tax Incremental Financing
- Local Sustainable Transport Fund
- Regional Growth Fund
- New Homes Bonus
- EU funding

There is also the opportunity to investigate non-traditional sources of funding and finance, such as working with charities, community funds, other agencies, eg NHS Trusts.

5.3 Phasing

Based on information in the proposed Thetford Area Action Plan, the following indicates a possible phasing of transport interventions to mitigate the impact of the planned growth. This is merely indicative at this stage and may alter significantly depending upon the nature of the detailed development phasing proposed when a Planning Application is submitted and the more detailed Transport Assessment (TA) work submitted as part of the planning process. This phasing also does not refer to the trunk road junction improvements as the phasing of these will need to be considered in view of these detailed development proposals and determined in conjunction with the Highways Agency.

Pre first phase:

- Develop car parking strategy
- Commence Smarter Choices work
- Implement any walking and cycling measures already identified in existing programmes

- Devise town centre Masterplan

Phase 1 – Land between railway and A1075 Norwich Road 1100 dwellings and 4ha of employment

- Bus service from SUE via Norwich Road
- Mundford Road/Hurth Way roundabout improvement
- Commence implementation of parking strategy and town centre Masterplan measures
- Commence implementation of walking and cycling improvements on key routes and as part of the SUE development
- Continue Smarter Choices work

Phase 2 and 3 – Land between railway and Croxton Road 1900 dwellings and 17ha of employment

- Bus service from SUE via Croxton Road
- Enhance frequencies of external bus services to destination outside of Thetford
- Croxton Road/Mundford Road improvement
- Internal link road bus corridor within SUE
- Rail bridge inside SUE to provide bus link between two areas
- Improvement to Brandon Road/Bury Road/London Road junction
- Consider need for new railway station based on demographics of SUE residents
- Continue implementation of walking and cycling improvements on key routes and as part of the SUE development
- Continue Smarter Choices work

Phase 4 and 5 – Land east of A1075 Norwich Road 2000 dwellings and 7ha of employment

- Capacity improvements along A1075 Norwich Road
- Bus priority improvement on A1075 Norwich Road approach to Hurth Way Roundabout
- Continue implementation of walking and cycling improvements on key routes and as part of the SUE development
- Continue Smarter Choices work

6. Recommendations

In order to support this forecast growth this Transport Plan for Thetford (TPfT) has proposed a package of improvements and changes in highways and transportation infrastructure and services that are likely to be required with the Sustainable Urban Extension (SUE) in place, which are set out in Section 5 and summarised in Table 6.1, below.

Table 6.1: Proposed Interventions

Intervention	Measure
Walking and Cycling	Increase Off-Street cycle provision Increase On-Street cycle provision Utilise existing public rights of way Implement crossing points
Public Transport - Buses	Confirm proposed days and hours of operation of all bus services as per Public Transport report for both the external and internal proposals. Develop robust cost estimates for each individual bus route based on agreed days and hours of operation and route mileage for both the external and internal proposals. Investigate potential to integrate proposed external services with existing bus services on corridors concerned. Develop demand forecasts for each bus route based on agreed days and hours of operation and development trajectory. Implement two services from SUE to town centre via both Norwich Road and Croxton Road every 10 minutes Implement a service from SUE to TEP Develop and review services to Watton and Swaffham, Attleborough, Diss, Bury, and Brandon and Mildenhall
Public Transport - Rail	Further investigation of new rail station and potential for increase in rail patronage
Smarter Choices	Develop Smarter Travel Thetford strategy Develop Residential Hub travel plans and the Business Travel Plan Network Strategies Develop Individual Organisation Travel Plans Develop Personal Travel Plans Establish a Smarter Travel Thetford team
Car parking	Develop and implement a Car Parking Strategy
Highways	Improve junctions on A11 Improve junctions on the internal road network Increase capacity on Norwich Road Work to investigate measures to minimise the impact of general congestion on public transport movements around the town centre

Breckland District Council have set out a Draft Final Thetford Area Action Plan (TAAP), and subject to approval, this is to be consulted on in January 2011. Within this Final Draft are a number of policies that specifically set out in a policy context how this TPfT is to be implemented.

The following table details how the measures in the TPfT support the policies in the TAAP.

Table 6.2: Final Draft TAAP policies

Policy	Heading	TPfT Comment
Policy TH 2	Transport – Achieving Modal Split	Supports
Policy TH 3	The Thetford Loops	Supports
Policy TH 4	The Impact of change on pedestrians, cyclists and buses	Supports
Policy TH 5	Thetford Bus Interchange	Supports
Policy TH 24	Walking and cycling	Supports
Policy TH 25	Buses	Supports
Policy TH 26	Bus Design Principles	Supports
Policy TH 27	A new train station in the Urban Extension	Supports
Policy TH 28	Changes to A11 Trunk Road	Supports The Highways Agency (HA) has accepted the principle of providing at-grade junction upgrade schemes in context with the TAAP development. The HA has accepted the principle of signalisation of the A11 Thetford Bypass junctions in the context of the TAAP development, provided this is shown to be beneficial in comparison with other deliverable options. The HA recognises that grade separation is unlikely to be deliverable in terms of cost and therefore may not be a reasonable option for the A11 Thetford Bypass junctions in the context of the TAAP development. The HA would at this stage seek a more generic wording part (b) of this policy to be: “the five junctions of the A11 Thetford Bypass must be improved as appropriate (to be agreed with the Highways Agency).....”.
Policy TH 29	Improvements to the local road network	Supports

6.1 Next Steps

This study has identified an overall package of transport interventions to mitigate the impact of planned growth in Thetford, however to continue progressing towards delivery it is recommended that the following is undertaken

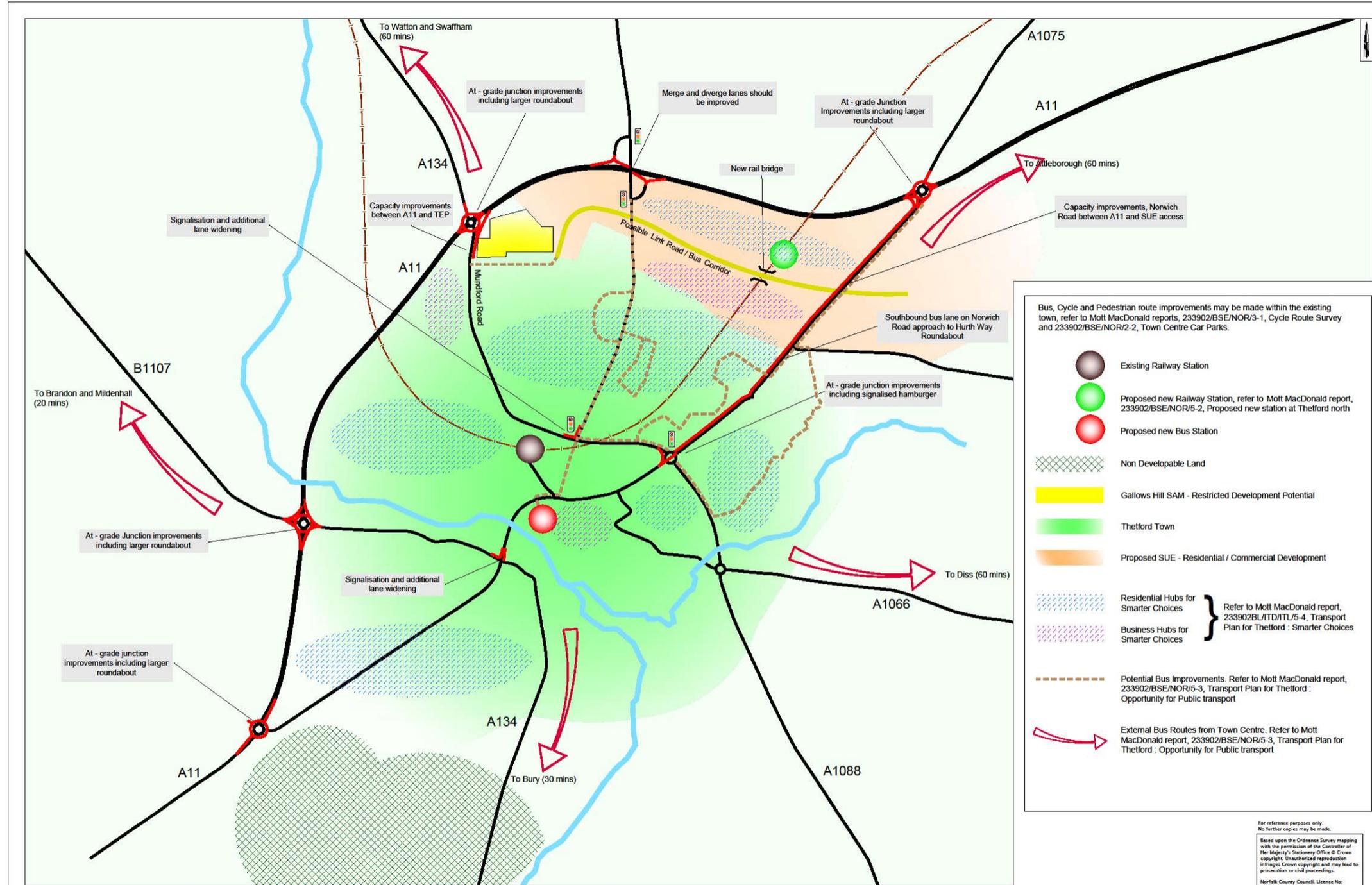
- Investigate all possible funding sources to finance the intervention package
- Develop a car parking strategy in conjunction with the town centre masterplan
- Further work to investigate measures to minimise the impact of general congestion on public transport movements on Norwich Road in the town centre
- Continue to work with the HA as the trunk road junction proposals are refined
- Implement any walking and cycling measures already identified in existing programmes
- Work in partnership to further develop smarter choice proposals

Appendices

Appendix A. Summary Plans of Possible Interventions _____ 30

Appendix A. Summary Plans of Possible Interventions

Proposed Interventions



Bus, Cycle and Pedestrian route improvements may be made within the existing town, refer to Mott MacDonald reports, 233902/BSE/NOR/3-1, Cycle Route Survey and 233902/BSE/NOR/2-2, Town Centre Car Parks.

- Existing Railway Station
- Proposed new Railway Station, refer to Mott MacDonald report, 233902/BSE/NOR/5-2, Proposed new station at Thetford north
- Proposed new Bus Station
- Non Developable Land
- Gallows Hill SAM - Restricted Development Potential
- Thetford Town
- Proposed SUE - Residential / Commercial Development
- Residential Hubs for Smarter Choices
- Business Hubs for Smarter Choices
- Potential Bus Improvements. Refer to Mott MacDonald report, 233902/BSE/NOR/5-3, Transport Plan for Thetford : Opportunity for Public transport
- External Bus Routes from Town Centre. Refer to Mott MacDonald report, 233902/BSE/NOR/5-3, Transport Plan for Thetford : Opportunity for Public transport

Refer to Mott MacDonald report, 233902BL/ITD/ITL/5-4, Transport Plan for Thetford : Smarter Choices

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DRAWING TITLE
Possible Interventions

REV.	DESCRIPTION	CHECKED	DATE
P1	First Issue	CJ	04/10
P2	Updated	CJ	04/10
P3	Scale changed, further interventions added.	CNJ	08/10
P4	Interventions amended	CNJ	10/12

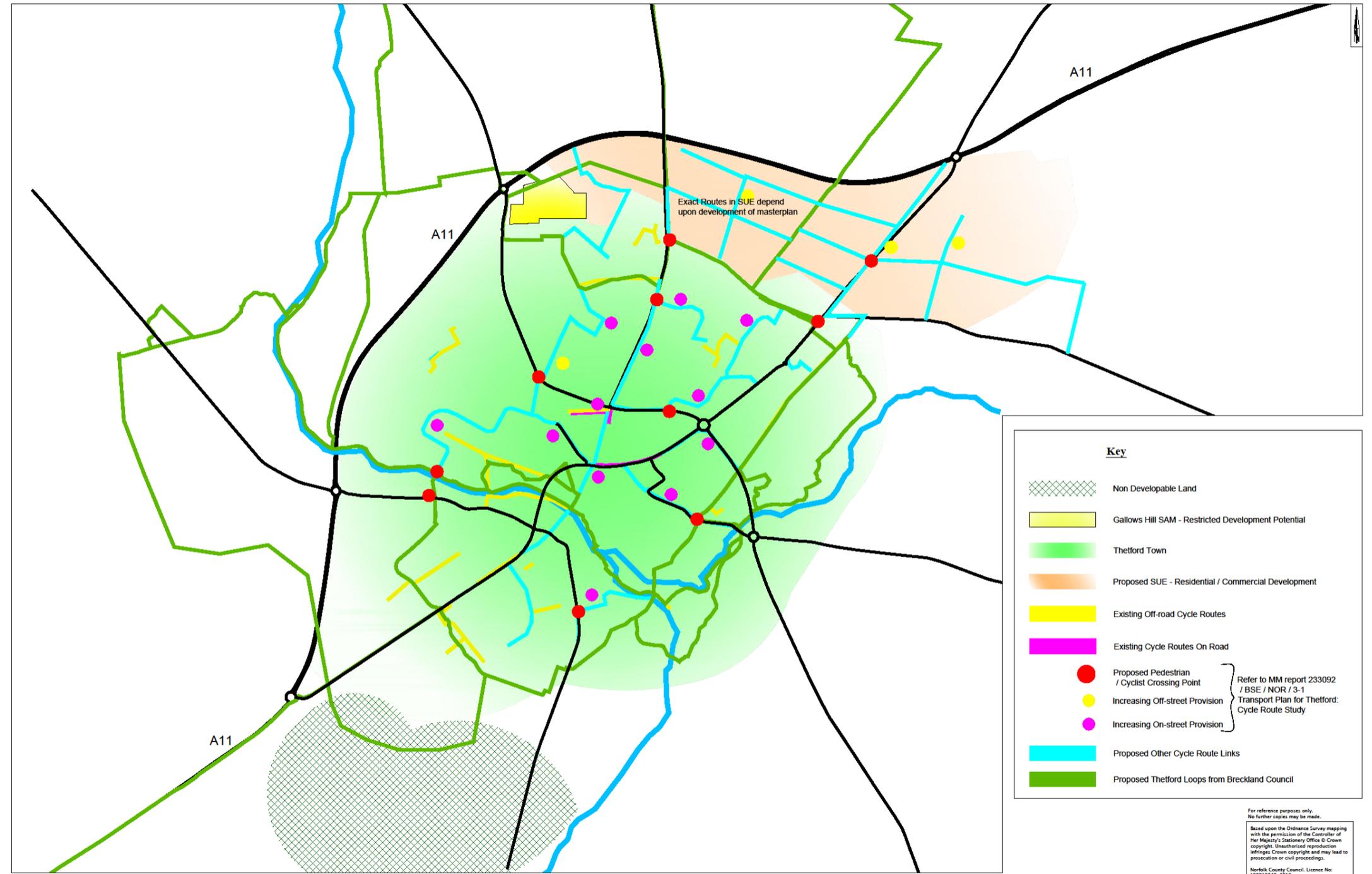
INIT.	DATE	DRAWING No.
IH	04/10	233902 BL01 100
IH	04/10	PROJECT TITLE
CJ	04/10	Transport Plan for Thetford
CJ	04/10	SCALE AT A1
ET	04/10	FILE No.
		233902 BL01

ORIGINAL SIZE: A1

30/06/2009

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Cycle Interventions



Key

- Non Developable Land
- Gallows Hill SAM - Restricted Development Potential
- Thetford Town
- Proposed SUE - Residential / Commercial Development
- Existing Off-road Cycle Routes
- Existing Cycle Routes On Road
- Proposed Pedestrian / Cyclist Crossing Point
- Increasing Off-street Provision
- Increasing On-street Provision
- Proposed Other Cycle Route Links
- Proposed Thetford Loops from Breckland Council

Refer to MM report 233092 / BSE / NOR / 3-1 Transport Plan for Thetford: Cycle Route Study

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DRAWING TITLE
Possible Cycle Interventions

REV.	DESCRIPTION	CHECKED	DATE

INIT.	DATE	DRAWING No.
IH	12/12	233902 BL01 101
IH	12/12	PROJECT TITLE
CJ	12/12	Transport Plan for Thetford
ET	12/12	SCALE AT A1
		FILE No.
		233902 BL01

