

# Chapter 6

## Central Oxfordshire

### Sub-Region

#### Chapter Overview

This chapter looks at the challenges facing the Central Oxfordshire Sub-Region, which overlaps with all the districts, focusing on the future impacts of growth in the area and the effect that these may have on Oxford's role as a Regional Hub.

#### Background

The Central Oxfordshire Sub-Region (COSR) is one of nine areas defined in the South East Plan (which includes the South East Regional Transport Strategy). The sub-regions are highly significant in land use and transport planning terms; they are where the bulk of the region's housing growth and economic development are targeted and where supporting transport investment is most needed. Oxford is also defined in the Regional Transport Strategy as a Regional Hub - and many of the roads within the sub-region are seen as principal spokes linking Oxford to surrounding areas. However, in SEERA's advice to Government on Regional Funding Assessments Central Oxfordshire is one of the few sub-regions where no regionally prioritised transport investment is planned for this LTP period.

The need to enhance transport provision is essential to the economic importance of the area - both in and around Oxford but also notably in the south of the county, where the major high value international business centres at Harwell and Milton Park are located. Proposed provision of substantial new housing will affect virtually all main routes and services in the COSR, and transport movements into and around Oxford and in the Didcot and Grove/Wantage areas will require particular consideration. The limitations identified on the A34 corridor also mean that development of other solutions, for example Premium Bus Routes / Remote Park & Ride, rail schemes (in particular East-West Rail) and improvements to alternative highway routes will need to be taken forward.

As a centre for employment, education, commerce, leisure, tourism and healthcare, as well as home for almost a quarter of the county's population, Oxford's influence extends well beyond the county boundary (into Buckinghamshire in particular) and it plays a key role in the heart of Oxfordshire and the sub-region. It benefits hugely from this position but

consequently also suffers from traffic congestion, air pollution and road safety problems. The need to improve access to Oxford is therefore of great importance.

However, although the COSR focuses upon access to Oxford, it also includes other transport movements vital to the county and the Oxfordshire sub-region, in particular:

- > Trips in the Didcot and Grove/Wantage area, linking these growth settlements with Harwell International Business Centre and Milton Park. This area, which is bisected by the A34, is currently the subject of a more detailed study to identify the public and private transport measures that will be required to support the considerable growth and development taking place up to 2026.
- > Orbital movements around Oxford. In particular, the A415 between Witney and Abingdon has been identified through the Transport Networks Review as a key corridor where projected trip growth will require significant improvements to be made as part of the Council's longer term strategy.

### Description and Current Situation

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The Central Oxfordshire Sub-region is defined as the area most heavily influenced by the city and regional transport hub of Oxford, especially in terms of travel patterns. The 2001 Census confirmed the strong links between Oxford and the main towns of Abingdon, Bicester and Witney. There are also important links between Oxford and other settlements, for example Didcot (although these are less significant in terms of actual trip numbers), and between settlements themselves - Didcot, Grove/Wantage and nearby major employment areas, in particular. These links will continue to strengthen as the county incurs additional growth pressures.

The Central Oxfordshire transport network functions on national, regional and local levels. The national motorway (M40) and trunk road (A34) network form an important part of Central Oxfordshire's road network, connecting the area to London, the Midlands and the South Coast. Within the COSR a network of county roads plays a crucial role in enabling people to access Oxford. Due to the heavy demand placed on these roads, many of them (in particular the A34 and A40) suffer from some of Oxfordshire's worst congestion problems. Much of the recent significant growth has occurred without sufficient upgrading of supporting infrastructure - and consequently, capacity of key routes has gradually been used up.

The Great Western main railway line runs along the south of the sub region and connects it to Reading, London, South West England and South Wales. Oxford is generally well located on the railway network with connections to Birmingham and the north southern England via Didcot and the Cotswold Line up to Hereford. The Chiltern Line passes through the sub-region in the

north-east with a station at Bicester. Oxford and Bicester are connected by rail but this is a low standard line.

Oxford has a high standard internal bus network. It is also well connected by bus to Abingdon, Bicester, Witney, Kidlington and Wantage/Grove. Oxford also has frequent high standard coach connections to London and the main airports.

## A34

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The A34 forms the north-south spine of the road network through the Central Oxfordshire Sub-Region and therefore functions on a number of important levels. It is a regionally important route as it connects the South Coast to the Midlands but it also forms a vital part of Oxfordshire's road network as it provides local access to many of the settlements in the COSR and beyond as well as forming part of Oxford's Ring Road. Unfortunately, the A34 is already operating at or over capacity and traffic routinely experiences considerable delay, especially in the morning and evening peak hours. Recent improvements at the A34's junction with the M4 at Chieveley and also at the nearby A43 have and will continue to increase the pressure on the A34 through Oxfordshire.

The A34 north of Southampton had originally been identified for a multi-modal study. However, this did not proceed and in 2003 the Government Office (GOSE) and Regional Assembly (SEERA) jointly commissioned a scoping study. The scoping study reviewed the key issues affecting the A34 corridor and assessed the case for further study work as well as the appropriate scale of that work. It considered a wider corridor than the A34 Route Management Strategy and took a longer-term, more strategic viewpoint. The scoping study recommended that focused local studies of problems in and around the Oxford and South Hampshire areas should take place. The Secretary of State for Transport has recently decided to not press ahead with study work at the present time, but to consider how the corridor's potential needs rate against other projects in the region.

The County Council and the Highways Agency are working on the assumption that the A34 will not be widened during the next 20 years. It is important therefore that the parallel rail corridor is developed to enhance its role for passengers and freight. Schemes such as East-West Rail, Southampton to the Midlands gauge enhancement and Oxford Station capacity improvements will need to be given priority. It is considered essential that road and rail measures comply with policy T4 of the South East Plan.

### **SOUTH EAST PLAN**

#### **POLICY T4 REGIONAL SPOKES**

Relevant regional strategies, Local Development Documents and Local Transport Plans will include policies and proposals that support and develop the role of regional spokes by:

- i providing a level of service that supports the role of regional hubs as a focus of economic activity;

- ii delivering improvements in journey time reliability that supports the rebalancing of the transport network in terms of non-car modes;
- iii developing a complimentary and integrated network of rail and express bus services, along spokes and inter-regional corridors;
- iv addressing identified bottlenecks
- v improving access to international gateways.

The A34, as well as being a major strategic route also forms the backbone of Oxfordshire's road network. In light of the recent decisions, the County Council is working closely with the Highways Agency to investigate options for dealing with acute and growing traffic pressures on the A34. A workshop held on A34 issues concluded that priority should be given to investigating the following:

- > A bus lane on the A41 approaching M40 Junction 9 from Bicester
- > A safety and congestion study looking at access to Oxford issues and, in particular, the potential for bus priority on the approaches to Hinksey Hill roundabout
- > Collaboration on modeling in the Didcot/Wantage area.

The Highways Agency is scheduled to start work on an improvement to M40 junction 9 in 2006/07. HA predict that this will free up flows on the junction circulation, and therefore on the A34. However the Transport Networks Review has predicted that there will be an increase in demand on this route which could lead to the carriageway itself being above capacity by 2021.

The County Council will continue to work with the Highways Agency throughout the Plan period to develop a long term strategy for this important route.

## Oxfordshire Housing Growth 2006-26

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In its submission to the South East England Regional Assembly on the South East Plan, the County Council set out proposals for housing growth for the period 2016-2026. This builds on and incorporates the allocations set out in the recently adopted Structure Plan which covers the period to 2016.

The South East Plan requires that provision should be made in Central Oxfordshire for 1,700 new dwellings per year, and 660 new dwellings per year for the rest of Oxfordshire, a total annual requirement of 2,360 dwellings. The housing distribution proposed allows for 4,300 new dwellings to be built in Bicester, about 7,300 at Didcot, and about 3,400 at Wantage & Grove from 2006 to 2026 in line with the spatial strategy. The provision will be distributed as follows:

District	Central Oxfordshire 2006-2026	Rest of Oxfordshire 2006-2026	DISTRICT TOTAL
Cherwell	5,800	6,000	11,800
Oxford	7,000	N/A	7,000
South Oxfordshire	7,500*	2,700	10,200
Vale of White Horse	10,500*	1,000	11,500
West Oxfordshire	3,200	3,500	6,700
<b>TOTALS</b>	<b>34,000</b>	<b>13,200</b>	<b>47,200</b>

*\* About 3,000 dwellings are proposed at Didcot 2016 - 2026 - for illustrative purposes this has been split equally between South Oxfordshire and the Vale of White Horse districts.*

In the main towns an appropriate provision will be made for employment development to achieve a balance between the number and types of jobs and the size and skills of the workforce and to support the development of science-based or other important business clusters. The precise locations and form of the development will be decided in the relevant local plans or local development frameworks.

The Structure Plan requires that developments are only permitted if they provide for the mitigation of any adverse transport impacts that they cause. This policy has proved difficult to enforce in the past with the consequence that the County Council has been required to provide completion funding for a number of schemes which had been identified as being funded through developer contributions.

The Central Oxfordshire Sub-Region suffers from all of the problems that this Plan is trying to resolve. The strategic nature of many of the transport movements through this area mean that issues relating to congestion and poor accessibility are more easily recognisable and can be dealt with at a more strategic level. Whilst problems exist for road safety, air quality and street environments, these tend to be more local in nature. In line with the timescales of the South East Plan, it is necessary to take a longer term view of the transport issues in the COSR and the solutions and strategies required to address them, as part of the County Council's Longer Term Strategy. These will need to take account of the following in particular:

- > Housing growth identified through South East Plan period
- > Significant employment growth in the south of the county (especially at Harwell IBC , Milton Park and on edge of Oxford)
- > Development of Oxford city centre - this includes the proposed expansion of the Westgate Shopping Centre in 2010 (retail), the development of the longer term West End regeneration project and the expansion of employment in the Headington area

Transport is a potential major constraint on the sub-region's economy and ability to deal with the allocated growth. To reflect this, the County Council is developing a transport strategy for the sub-region.

## Strategy

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The aims of the transport strategy for the Central Oxfordshire Sub-region are:

- > To reduce existing problems of congestion and accessibility within Central Oxfordshire;
- > To create the conditions that will enable transport networks to cater for the additional demands placed on them by the proposed developments to take place in Central Oxfordshire.

While the emphasis is on congestion and accessibility issues the Strategy will seek to meet these aims in ways that reduce air quality, road safety and street environment problems wherever possible.

These aims are not mutually exclusive; indeed, unless the current problems in the area are dealt with then many of these will inevitably be made worse following the development. The schemes which meet these aims will, in many cases, be the same.

The Strategy has been developed on the assumption that there is unlikely to be any significant increase in the capacity of the A34 and M40 before at least 2026. An improvement of the junction between these two routes (M40 junction 9) is already programmed by the Highways Agency for 2006/07. This will increase the capacity of this junction and should reduce queueing on all approaches. It is, though, unlikely to provide sufficient capacity to deal with the increased demand for travel through the area that will result from the proposed developments (and that from the adjoining South Midlands/Milton Keynes/Aylesbury growth area).

Given this, the heart of the Strategy will be to:

- > Selectively improve critical parts of the network to remove bottlenecks or encourage traffic away from stress points in the network;
- > Improve public transport to encourage more local trips to use modes other than the private car, together with longer term measures to encourage more longer distance trips to use public transport; and
- > Improve traffic management and provide travellers with better information to improve the efficiency of the current network and reduce the impact of incidents on traffic.

Schemes on the inter-urban networks will be complemented by additional measures within the Oxford Ring Road implemented through the Oxford Transport Strategy programme. In addition, the County Council will be developing an overarching strategy for the Didcot and Grove/Wantage area



(including Milton Park and Harwell IBC), incorporating the individual strategies for Didcot and Grove/Wantage.

The Strategy will not be able to be delivered within a single Local Transport Plan period. It is envisaged that the strategy outlined below will continue to be developed and implemented, in response to ongoing developments within the Central Oxfordshire area, over at least a 15-20 year period.

### Network Improvements

Improve the highway network by:

- > **A40 (east of Oxford) corridor** - A significant enhancement at the Green Road Roundabout, to start construction in 2006/07 to give significant reductions in congestion and resolve, in whole or part, air quality and road safety problems ;
- > **A40 (west of Oxford) corridor** -
  - delivering improvements to the Cassington junction (including bus priority) in 2006/07;
  - developing significant junction enhancement schemes to reduce overall delays and improve bus priority at the Cutteslowe and Wolvercote Roundabouts - the County Council is looking to identify a preferred scheme during 2006. Realistically, planning for a scheme of this significance would extend beyond this Plan period, with any funding for such a scheme (which would be subject to detailed justification) likewise only potentially being available in the future. Progress will be dependent upon the scheme being successful in the Regional Prioritisation Process for 2011-2016. This will allow for the future assessments of the need for other significant improvements, such as A40 dualling.
  - It is expected that these schemes will also bring significant reductions in delays and queues on the A40 from the east (Northway), A44 from Woodstock, Banbury Road and Woodstock Road. ;
- > **A34 (south of Oxford) corridor** - Development of Oxford Southern Approaches roundabout improvement schemes, to include improvements at:
  - Hinksey Hill (2007/08); and
  - Heyford Hill (2010/11, subject to confirmation)
- > and, , in partnership with the Highways Agency, to investigate the potential for bus priority measures on the approach to Hinksey Hill Interchange;
- > **A41/A34 (north of Oxford) corridor** - Working with the Highways Agency to ensure that the improvements at M40 junction 9 improve bus times and improve bus reliability from Bicester;
- > **A415 corridor** - development of an A415 Route Improvement for delivery in the 2011-2016 period. The County Council is looking to identify a preferred scheme for this improvement during 2006 and 2007 and, providing the scheme is successful in the Regional

Prioritisation Process, proposals will be developed for implementation in 2011-2016. The improvement would possibly include:

- Marcham Bypass,
  - Newbridge Replacement,
  - Kingston Bagpuize Link Road,
  - Standlake/Brighthampton Bypass and
  - Cokethorpe Improvement
- > It is considered that the maximum benefits for the Sub-Region, and the minimum potential disbenefits, would be achieved by constructing the improvement as a single scheme. The Newbridge Replacement, however, is planned to be provided separately (in 2009/10) from the Bridge Maintenance budget because the current bridge, a Scheduled Ancient Monument, is deteriorating quickly.
- > **A420 corridor** - improvements at the junction of the A420 and A34 at Botley, to be explored further with the Highways Agency.

### Public Transport

Improve public transport by:

- > **A40 (west of Oxford) corridor:**
- introduce a premium bus route from Oxford to Witney via Eynsham;
  - provide better-informed travel choices, for example by extending the Real Time Bus information system to the A40 corridor;
  - potential expansion of the Seacourt Park & Ride site to meet demand arising from city centre development; and
  - Remote Park & Ride between Witney and Eynsham.
- > **A44 corridor:** investigate potential for introducing bus priority measures on Woodstock/Yarnton Premium Route.
- > **A34 (north of Oxford) corridor:**
- introduce a premium bus route from Oxford to Bicester, potentially including bus priority on the A41 and A34;
  - investigate the potential of a Remote Park & Ride in the Bicester area;
  - continue to press for the East-West Rail scheme to be taken forward;
  - enable passengers to make better informed travel choices, for example by the planned extension of the Real Time Passenger Information System along the Oxford-Bicester corridor.
- > **A40 (east of Oxford) corridor:**
- Green Road Roundabout Improvement;
  - enhancement of Thornhill Park & Ride from 2007/08 by provision of a full transport interchange to provide high quality access for express coach services as well as Park & Ride buses plus investigation of the potential for expansion of the site;
  - Implement a premium route between Oxford and Thame.
- > **A4260 corridor:** Implement a premium bus route between Oxford and Kidlington in 2006/07;



- > **A34 (south of Oxford) corridor:** bus priority measures (for example on the approach to Hinksey Hill interchange);
  - further measures to enhance public transport (for example, development of the Abingdon/Didcot to Oxford Premium Bus Route);
  - improvements to rail stations including Didcot Parkway forecourt improvements;
  - Remote park & Ride in Abingdon/Didcot area;
  - Provision of bus priority will in appropriate cases include considering the potential for sections of segregated bus way; for example, as the “expressway” tier of premium route services where there is a compelling need for attractive and reliable end-to-end journey times as a means of achieving modal shift.

### Traffic Management

Improve the flow of traffic by:

- > **A34 (north and south), A40 (east and west), A44 and A4074 corridors** - Introduction of intelligent traffic management and information measures, for example the development of a real-time, reactive Variable Message Signing system for relaying traffic and parking conditions. The County Council intend to investigate these means of traffic management and control, in association with the Highways Agency with respect to the A34, during 2006/07 and begin introduction of a pilot scheme in 2008/09. If these are successful then the County Council would expect to extend this system in future years;

### Within Oxford

Measures will be complemented by:

- > A more detailed study to evaluate potential solutions for problems on Botley and Abingdon Roads; these are likely to be focused on measures to assist buses, cyclists and pedestrians, for implementation in a future Plan period.
- > Introducing the North Summertown Controlled Parking Zone by 2007/08 to encourage more use of public transport and other modes;
- > Measures identified through the London Road Study to improve bus reliability and create safer and more attractive conditions for pedestrians and cyclists, with implementation of measures programmed from 2007/8 onwards;
- > Introducing Controlled Parking Zones in the Headington and Marston areas to protect residential areas from the impact of development related traffic and encourage other modes including Park and Ride;
- > Public transport priority and traffic management measures agreed through the Woodstock and Banbury Road Corridors study - initially a scheme to upgrade the Premium Bus Route and the street

environment in Summertown is planned to be introduced from 2007/08.

### Didcot/Wantage Strategy

This area of the county is of critical importance to the Central Oxfordshire Sub-Region, as it includes:

- > significant proposals for housing through the Structure Plan and South East Plan for both the Didcot and Wantage/Grove areas;
- > employment developments, in particular the International Business Centre at Harwell and Milton Business Park which are both identified for significant growth in the coming years;
- > The location for a proposed new Upper Thames Reservoir, which is of regional significance, planned for during the South East Plan period.

The County Council is taking a comprehensive, strategic approach to managing transport and trip movements in this area, with the aim of tackling these problems and addressing the transport issues arising as a result of planned housing development at Grove and the expansion of employment areas.

The study is also taking into account proposals in the emerging South East and South West Plans in the period up to 2026. This will be achieved through further development of transport strategies for Didcot and Grove/Wantage, which are being brought together via a comprehensive modelling exercise being developed in partnership with the Highways Agency and a complimentary public transport study. Whilst significant solutions are likely to fall outside the timescale of this Plan, shorter term measures would be taken forward, including investigation of improvements to the circulation at the Milton interchange with the A34, in conjunction with committed development proposals.

**Didcot Area** - Stage 2 of the Integrated Transport Study for the Didcot area (covering the area to the east of the A34 and including Milton Park) is now underway; a provisional list of transport measures has been agreed, which includes:

#### Network Improvements:

- > Improvements to capacity at key junctions, including Marsh Bridge Roundabout, Foxhall Bridge Roundabout, Manor Bridge Roundabout, Power Station Roundabout and Rowstock Roundabout;
- > Completion of Northern Perimeter Road; and
- > An eastern bypass for Harwell village and a southern relief road for Harwell village.

#### Public Transport Improvements:

- > Enhanced bus services to Didcot rail station, with improved interchange facilities for all modes at the station;

- > Investigation of measures to improve bus journey time reliability; and
  - > Improved information provision including potential provision of Real Time Passenger Information at bus stops.
- Influencing Travel Behaviour:
- > Promotion and encouragement for further development and implementation of Travel Plans including investigation of role of car share schemes.

**Grove/Wantage Area** - Stage 1 of the Wantage and Grove Area Strategic Transport Study resulted in a provisional strategy to deal primarily with east-west movements through Wantage & Grove and beyond to Harwell IBC, Milton Park and Didcot, and north-south movements towards Oxford and Abingdon. At this early stage no route alignments have been identified, as schemes have only been identified in principle and work on specific routes, engineering feasibility and public acceptability will need to be further developed, modelled and tested in Stage 2. This work will also consider how the future transport network and mix of land uses can be planned to bring the greatest level of transport benefits.

The following potential strategic schemes were identified in Stage 1 (for funding and delivery in association with proposed developments in the local area):

### *Network Improvements*

- > Wantage Eastern relief road - a north-east bypass of the town centre linking Mably Way to A417;
- > Wantage Western relief road - link from A417 to join eastern relief road (thus forming a full Wantage relief road);
- > Northern Grove Link Road - to link the planned housing development area to the A338;
- > Junction improvements at the A4185/A417 Rowstock roundabout, as also identified through the Didcot Area Study work;
- > High quality cycle links to Abingdon, employment sites and between Wantage & Grove; and
- > Potential Steventon Road realignment (if an Upper Thames reservoir is developed).

### *Public Transport Improvements:*

- > Wantage-Grove-Oxford Premium Bus Route (and enhanced east-west bus services); and
- > Re-opening of Grove & Wantage rail station.

### *Influencing Travel Behaviour:*

- > Promotion and encouragement for further development and implementation of Travel Plans including investigation of role of car share schemes.

## Impact of Strategy

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The County Council's Transport Networks Review showed that the majority of the current traffic congestion problems in the Central Oxfordshire Sub-

region, except in peak hours, were related to the capacity of junctions, in particular at:

- > M40 Junction 9;
- > A34 Pear Tree Interchange;
- > A34 Botley Interchange;
- > A34 Hinksey Hill Interchange;
- > A34 Marcham Interchange; and
- > A40 Wolvercote, Cutteslowe and Green Road roundabouts.

Generally the capacity of the roads themselves was sufficient to cater for the traffic demands placed upon them. The Highways Agency's schemes for Junction 9 of the M40 and the proposals outlined in this Strategy for schemes at the Wolvercote/Cutteslowe Roundabouts and the Southern Approaches to Oxford should therefore reduce or remove the current problems at these pinchpoints as well as providing for some additional traffic throughput at critical points in the network.

However if the effects of traffic growth and additional development are taken into account then by 2021 the Transport Networks Review suggested that by 2021, if nothing is done, then the roads themselves would be running at capacity either for extended periods or throughout the day on:

- > most of the A34 between Didcot and M40;
- > the A40 between Witney and Oxford;
- > the A415 between A338 and A34;
- > the A44 south of Yarnton;
- > M40 south of Junction 8 and north of Junction 9; and
- > the A4074 between Shillingford and Sandford-on-Thames
- > as well as at more individual junctions or pinchpoints.

The A415 route improvement is likely to reduce the pressure on the A40 and the A34 between Marcham and Pear Tree Interchanges. However, in the absence of major route capacity increases on the A34 and/or A40 it is clear that network increases for general traffic will not be sufficient to cater for the increased pressures in an acceptable manner.

A proportion of the trips that are made in the Central Oxfordshire Sub-Region could transfer onto public transport which would result in some of the predicted network overloads being reduced or, indeed, not occurring. The County Council will develop and encourage schemes and initiatives to transfer local trips onto public transport. This can either be for the whole of the journey, such as through the introduction of improved services and priority on the Premium Bus Routes, or part of the journey, such as through the enhancement and expansion of existing Park and Ride sites and the development of remote sites onto which longer distance car travellers can transfer onto bus for a longer part of their journeys.

The rail improvements included within the Strategy will help to make traffic more attractive for local traffic, through, for instance, the improvements to the interchange facilities at Didcot Parkway Station. They also provide a

means by which longer distance travel can be diverted off of Sub-Region's roads:

- > Increases in the rail freight capacity between the south coast ports and the midlands and north would reduce heavy goods vehicle traffic on the A34 and M40; and
- > East-West Rail would provide a more direct and attractive alternative for many cross-country movements as well as improving the connections between the Sub-Region to the Milton Keynes/Aylesbury/South Midlands Growth Area.

In addition the County Council is developing strategies aimed at dealing with the local impacts of developments within the Sub-Region. It is likely that additional road and public transport schemes will be identified as a result, particularly within the Bicester, Didcot and Grove/Wantage areas.

