Chapter Six

Central Oxfordshire Transport Area

Background

Oxford's influence extends way beyond its administrative boundaries and beyond the county boundary, into Buckinghamshire in particular. As a centre for employment, education, commerce, leisure, tourism and healthcare, as well as home for almost a quarter of the county's population, it plays the key role in the heart of Oxfordshire and the sub-region. It benefits hugely from this position but also suffers from some of the worst effects of success, characterised by traffic congestion, air pollution and road safety problems. The need to improve access to Oxford is therefore of great importance.

Solutions to these, and other transport related problems, inevitably cross-administrative boundaries and are therefore best presented through a wider Central Oxfordshire Transport Area (COTA). This area is defined as the area most heavily influenced by the City 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, for example. These links will continue to strengthen as the county incurs additional growth pressures, both in the City itself but also in other parts of the county.

The plan below identifies the Central Oxfordshire Transport Area as represented by that area that has a medium and a high relationship to Oxford:

In terms of their impact on the highway network, journeys to work by car are the most significant. However, as they represent a large number of trips to common destinations, at regular times, they also provide the greatest potential for a switch to public transport. Consequently, through the Central Oxfordshire Transport Area, the LTP aims not only to address the worst congestion problems on the main routes approaching Oxford and on its ring road but also to make public transport faster, more reliable and more welcoming.

Regional Importance of the Central Oxfordshire Transport Area

Transport movements and policy priorities from the emerging South East Plan, the Regional Transport Strategy for the South East, the County Council's corporate plans and the longer term transport strategy for Oxfordshire (outlined in Chapter 2) demonstrate the importance of improving access to Oxford, in the context of its role as a Regional Hub. Although not identical to the Central Oxfordshire Sub-Region, the COTA closely mirrors it – in particular it includes the same principal settlements – with the main difference being its natural extension beyond the county boundary, reflecting the importance of some cross-boundary movements, particularly for trips to Oxford.

The need to enhance transport provision is also 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.

As also outlined in Chapter 2, the need to plan and provide for future development through the South East Plan is of major importance. Proposed provision of substantial new housing will affect virtually all main routes and services in the COTA, and transport movements in the Didcot, Grove/Wantage and Bicester 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 and improvements to alternative highway routes need to be taken forward. Therefore, although the COTA focuses upon access to Oxford, it also includes other transport movements vital to the county, in particular:

- Trips in the Didcot and Grove/Wantage area, linking these growth settlements with key employment sites at Milton Park and Harwell International Business Centre. This area of movement, which is bisected by the A34, is currently the subject of a more detailed County Council study to identify the public and private transport measures that will be required to support the considerable growth and development taking place in this area up to 2026.

- Orbital movements around Oxford. In particular, the A415 between Witney and Abingdon has been identified through the TNR as a key

corridor where projected trip growth will require significant improvements to be made.

Central Oxfordshire Transport Area – Description and Current Problems

The transport network in the Central Oxfordshire Transport Area functions on national, regional and local levels. The national motorway (M40) and trunk road (A34 & A43) network form an important part of Central Oxfordshire's road network, connecting the area to London, the Midlands and the South Coast. Within the Central Oxfordshire Area is a network of County Roads that play a crucial role in enabling people to access the City of Oxford. These include the former trunk roads of the A40, A41 and A420 as well as the A44 and A4074. Due to heavy demand placed on these roads, many of them (in particular the A34 and A40) suffer from some of Oxfordshire's worst congestion problems

The A34 forms the north-south spine of the road network through the Central Oxfordshire Transport Area 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 is also forms a vital part of Oxfordshire's road network as it provides local access to many of the settlements in the Central Oxfordshire Transport Area 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 County Council will therefore continue to work in partnership with the Highways Agency and other important stakeholders to ensure that the A34 is able to continue to function on all levels.

There have been significant additions to Oxfordshire's transport infrastructure over the past 15 years, including the construction of the M40 extension, the dualling of the A34 and the expansion of Oxford's Park & Ride system. However, 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.

Congestion pressures now and in the future have been identified through a variety of sources. The County Council's Transport Networks Review predicted that congestion on the road network in Central Oxfordshire will get significantly worse. Delays are already commonplace at the junctions on the M40 and predicted traffic growth will mean that the motorway itself will be operating over capacity in the early part of the plan period. Congestion on the A40 to the west of Oxford is also a major problem.

LTP Objectives in the Central Oxfordshire Transport Area

- Tackling Congestion
- Delivering Accessibility
- Safer Roads
- Better Air Quality
- Improving the Street Environment

The Central Oxfordshire Transport Area suffers to a degree 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 those that are most 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. Therefore, the solutions identified in this chapter are primarily linked to improving congestion and accessibility, with other measures covered within the individual chapters for each District.

Towards Solutions – Overview

The Central Oxfordshire Transport Area will aim to reduce congestion and improve accessibility to the City of Oxford and on other key corridors, especially for journey to work trips. The Central Oxfordshire Transport Area will be enhanced in this Plan period through:

- Improvements to the Public Transport Network through delivery of Premium Bus Routes, additional park and ride sites (focusing on sites remote from Oxford) and improvements to the rail network;

- Highway Link Improvements – for example to the A40, A415 and Junction Improvements – for example at the A34/M40 J9, and at Cutteslowe, Wolvercote and Green Road roundabouts;

- Influencing travel behaviour – For example by extension of Real Time Information for buses, use of Variable Speed Limits, and development / implementation of Workplace Travel Plans.

Towards Solutions – Trips to/from Oxford

The sections below describe the principal problems affecting the major approaches to Oxford, both outside and inside the ring road, and identify solutions to be introduced in this Plan period or developed for future implementation.

From the West (Carterton, Witney, Eynsham)

A40 West of Oxford

Congestion on the A40 between Witney and Oxford, following the County Council's Priorities for Action process (chapter 5), has been highlighted as the number one transport problem in Oxfordshire. Flows on the A40 single-carriageway between Witney and Oxford are approximately 23,000 – 29,000 vehicles per day. This high flow, combined with capacity problems at the Wolvercote and Eynsham Roundabouts and Cassington Turn, lead to this being one of the most congested routes in the county in terms of queue length and duration. The high level of congestion on this route leads to many vehicles, including the frequent buses between the two settlements, taking an alternative, less-direct route to avoid the congestion and subsequently journey time delays.

To tackle this problem, a staged approach is proposed to implement the following actions and potential solutions during the Plan period:

- Manage, develop and maintain the road network, initially by introducing junction capacity improvements to Cutteslowe Roundabout, followed by improvements (including a possible gyratory system) to the Wolvercote Roundabout. Further schemes will be investigated should the above improvements not provide demonstrable benefits;

- Improve public transport by introduce a premium bus route from Oxford to Witney via Eynsham and investigate the potential of a remote Park & Ride in the Witney area;

- Provide better-informed travel choices, for example by extending the Real Time Bus information system to the A40 corridor.

This will allow for the future assessments of the need for other significant improvements, such as dualling. 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.

From the North / West (Chipping Norton, Woodstock, Yarnton)

A44 Yarnton to Oxford

The A44 is the main access route into Oxford from the north-west of the county and the Cotswolds. Due to the carriageway narrowing from a dual to single carriageway at Yarnton and the high traffic flow (25,000 vehicles per day) which is experienced, congestion is a frequent problem on this stretch of road, especially during the peak hours, affecting the Chipping Norton – Woodstock - Oxford bus service, a proposed Premium Bus Route. To address these problems, the County Council will look at potential measures to improve the road network and public transport, although these are likely to be taken forward in a future Plan Period.

Woodstock Road, Oxford

Although there is an inbound bus lane between Wolvercote Roundabout and Moreton Road, congestion in the morning peak occurs beyond this to St Margaret's Road. The main source of delays to buses is outbound in the pm peak where slow moving queues back up from the Wolvercote roundabout to Moreton Road. Measures agreed through the Woodstock and Banbury Road Corridor study to look at improved public transport priority and traffic management on this routes could be introduced.

From the North/East (Banbury, Bicester and Kidlington)

A34/M40 (J9) to Oxford and Kings End, Bicester / A41 to A34/M40 (J9)

Over 65,000 vehicles per day use this two-lane dual carriageway section of the A34. The three on-slips (Kidlington, Islip and Weston on the Green) all have link capacity problems, especially in the morning and evening peaks. At the junction of the A34 with the M40, capacity problems can, at its worst, lead to queues of over five kilometres, causing severe delays to journey times, which affect the high frequency bus services between Bicester and Oxford.

King's End and the A41 together comprise the main route out of Bicester towards the M40/A34, and carry around 34,000 vehicles per day including Bicester – Oxford bus services. Queues, especially in the morning peak stretching back from the M40 junction, can be as long as three kilometres, consequently, having an impact on access to Oxford.

To tackle these problems, the County Council will continue to work in partnership with other Agencies to implement the following actions and potential solutions during this Plan period:

- Develop and maintain the road network - an improvement to the capacity of junction 9 of the M40 is programmed by the Highways Agency to begin in spring 2006.

- Improve public transport
    - Introduce a premium bus route from Oxford to Bicester.
    - Investigate the potential of a Remote Park & Ride in the Bicester area.
    - Ensure that the East West Rail scheme is taken forward.

- Better informed travel choices, for example by the planned extension of the Real Time Passenger Information System outside the city along the Oxford-Bicester corridor.

A4165 Kidlington Roundabout to Cutteslowe Roundabout

This section of the A4165 has daily flow of about 20,500 vehicles. In the morning peak, traffic queues the entire length of this road (approximately two kilometres). There is a dedicated inbound bus lane but despite this there can be delays to the high frequency services (about 30 an hour) that operate on this route, which include those to/from Water Eaton Park & Ride near the Kidlington end. At the Cutteslowe end the A4165 meets the A40 Oxford Ring Road at a limited capacity roundabout leading to extensive queues, especially in the morning peak.

To tackle congestion along this route the County Council will be looking to implement the following actions and subsequent solutions:

- Develop and maintain the road network - Deliver improvements to the Cutteslowe Roundabout in 2007/08 to improve the traffic flow;

- Improve public transport - implement a premium bus route between Oxford and Kidlington in 2006/07 which will significantly improve bus reliability between the two settlements;

- Better informed travel choices - Improve the signing at Water Eaton Park & Ride to inform drivers of its location and services that are available and introduce free parking at the site to attract passengers.

- Manage parking - implement Controlled Parking Zones in the North Oxford area in 2007/08, to encourage more use of the Park & Ride.

Banbury Road, Oxford

Inbound congestion in the morning peak period affects buses on the approach to Marston Ferry Road. Outbound congestion in the evening peak causes queues back from Cutteslowe Roundabout, which can tail back through the Summertown shopping area to beyond Marston Ferry Road.

Measures agreed through the Woodstock and Banbury Road Corridor study, which has examined improved public transport priority and traffic management on this route, are likely to be the principal solutions on this route. As outlined above, the implementation of Controlled Parking Zones in the residential areas primarily to the east of Banbury Road will also be important in helping to reduce congestion on this route.

From the East (Aylesbury, Thame, Wheatley)

M40 (J8) / A40 to Green Road Roundabout

The A40 is regularly congested from approximately 3km east of the Oxford ring road during the morning and evening peaks. This congestion also causes significant delay to a number of key bus services - including:

- Arriva's 280 service linking Aylesbury, Thame and Wheatley to Oxford (three per hour)
- Express coaches between Oxford, London and the London airports (over ten per hour)
- Park and Ride services from Thornhill to Headington and Oxford City Centre (six to eight per hour)

To tackle congestion along this route the County Council will implement the following actions and solutions during the Plan period:

- Develop and maintain the road network - Deliver improvements to the Green Road Roundabout in 2006/07 to improve the traffic flow;

- Improve public transport and better informed travel choices - enhance Thornhill Park & Ride in 2006/07 by implementing a full transport interchange to provide high quality access for express coach services as well as Park & Ride buses.

London Road, Oxford

Although there is significant inbound and outbound bus priority on this corridor, congestion can cause queuing along the entire length of the road. A comprehensive study of this route is currently underway to address these issues, as well as accessibility, safety and streetscape problems.

Key measures identified through this process will be taken forward for implementation in this and subsequent Plan periods.

From the South/East (Reading, Henley, Wallingford)

A4074 south-eastern approach to Oxford

Congestion here affects journeys from the various settlements along the A4074 by bus and car. This also affects access to Oxford Science Park - one of the city's largest centres of employment.

Solutions to be considered further are likely to include junction improvements (in particular at the A4074/ring road junction at Heyford Hill, which also has a poor accident record), and measures to assist buses.

From the South (Didcot Area, Abingdon)

A34 South of Oxford

Severe peak hour congestion can affect the A34 over most of the section between Oxford and Didcot. For much of the day the road is also working at or close to its capacity and with a very heavy HGV flow it is highly susceptible to incidents. There are capacity problems at both the Marcham and Milton Interchanges (for access to Abingdon and Didcot respectively), although these rarely affect flows on the trunk road, which are on average between 55,000 and 60,000 vehicles per day. At peak times the flows on the road can reach capacity levels affecting flows.

To develop solutions, the County Council will continue to press for further, more detailed study work to be undertaken on the A34 corridor, whilst continuing to work with the Highways Agency to develop shorter term schemes which could be taken forward during this Plan period. These might include bus priority (for example on the approach to Hinksey Hill interchange, which would benefit the Abingdon to Oxford Premium Route bus services) or other traffic management measures. For the longer term, the potential for alternative schemes that would relieve the A34 (for example, a new highway connection and river crossing between Didcot and the A4074) could also be considered, alongside further measures to enhance public transport (for example, development of the Didcot to Oxford Premium Bus route)

Abingdon Road, Oxford

There is considerable inbound queueing in the morning peak (and at weekends) along the whole length of the road from the junction with Oxpens Road in the city centre. This affects the high frequency bus services (around 30 an hour) that operate on this route (from Wantage, Abingdon and Redbridge Park & Ride). Outbound in the evening peak there is also slow moving or queued traffic along this entire length on most days. Bus priority is very limited, with only a short section on the inbound approach to the Weir's Lane traffic signals.

A more detailed study is required to evaluate potential solutions, which are likely to be focused on measures to assist buses, cyclists and pedestrians, for implementation in a future Plan period.

From the South/West (Swindon, Faringdon)

A420 Botley Link Road, Oxford

The Link Road connects the A34 and A420 into Oxford and carries in excess of 20,000 vehicles per day. Although it benefits from significant inbound priority for Park & Ride / bus users, the road can be subject to congestion throughout the day, which can affect traffic on the Botley Road, one of the main radial routes into Oxford, as well as flows on the A34 and A420.

Potential solutions are likely to be focused on improvements at the junction, potentially including signalisation, which would be explored further with the Highways Agency.

Botley Road, Oxford

This route is subject to considerable congestion both inbound and outbound for much of the day. Although there is significant inbound bus priority, buses are often heavily delayed on the approaches to the city centre where this is not provided and there is only one short section of outbound bus priority, resulting in delay to outbound buses along almost the entire length of the Botley Road in the evening peak.

A more detailed study is required to evaluate potential solutions, which are likely to be focused on measures to assist buses, cyclists and pedestrians, for implementation in a future Plan period.

Towards Solutions – Trips around Oxford

A415 Witney-Abingdon

Capacity constraints on the A34 and A40 in particular will mean the need to make better provision for through traffic in Oxfordshire on alternative routes, in particular the A415 linking Witney (to the west of Oxford) with Abingdon to the south, as identified through the Transport Networks Review. Although an 'A' Class road, it is not of the required standard to cater for these movements, as it is characterised by:

- Numerous pinch points, notable the signal-controlled shuttle working section across the River Thames at Newbridge and the traffic signal junction with the A338 at Frilford;
- Narrow carriageway alignment on key sections, in particular the section through Marcham Village;

- Poor environmental conditions in the villages it passes through, in particular Standlake and Marcham;
- Structural deficiencies, with Newbridge requiring replacement (via an alternative crossing as the current bridge is a listed 12th Century structure);

The TNR proposed a corridor improvement for this route, which could comprise a number of schemes to be taken forward together or separately. For this Plan period, the following schemes are proposed:

- Potential Implementation of the A415 Marcham Bypass (including improvements at the A338/A415 Frilford junction) through a separate Major Scheme funding bid. This would depend on the assessment of the scheme through the Regional transport prioiritisation process. If not progressed, this scheme would be deferred for consideration as part of the wider improvement of the A415 in a future Plan period.
- Replacement of the Newbridge River crossing with a new structure and approach roads to the north and south. The approach to/from the north would be designed to tie in with a future bypass of Standlake Village, which would be a scheme to be taken forward in a future Plan period.

A423 Hinksey Hill to Heyford Hill

This section of the Oxford Ring Road connects the A34 with the Abingdon Road, Oxford and the A4074 and carries between 40,000 and 50,000 vehicles per day. It is congested along its entire length during morning and evening peaks, severely affecting access into the city from the south and south east.

Solutions to be considered further are likely to include junction improvements (in particular at the A4074/ring road junction at Heyford Hill, which also has a poor accident record) and measures to assist buses, particularly on the section between Hinksey Hill and Redbridge Park & Ride.

Oxford Ring Road – A44 (Peartree Interchange) to Headington (Green Road Roundabout)

The problems on this route are chiefly congestion-related: queues on A44 approach to Wolvercote roundabout, the A40 approach to Cutteslowe roundabout (both east and west) and the A40 western approach to Green Road roundabout.

Solutions planned for these three junctions outlined above will also be designed to benefit these movements.

Towards Solutions – Travel in the Didcot and Grove/Wantage Area

Didcot Area

Work on an Integrated Transport Study for the Didcot area (covering the town centre and around 20 of the surrounding villages) is ongoing. Phase 1 of the study, covering mostly small scale schemes to be taken forward in the short to medium term, was completed in March 2004. Phase 2 is now underway and a provisional list of transport solutions has been produced and agreed, which include:

- Improvements to capacity at key junctions;
- Enhanced bus services to Didcot rail station, with better interchange facilities for all modes;
- Potential new/improved access to / egress from the A34, to be considered further in partnership with the Highways Agency;
- A eastern bypass for Harwell village (with potentially a southern bypass 'extension').

In addition, the case for a western perimeter road for Didcot, to link with the Harwell bypass, is being examined in the context of significant proposed housing development in this area. The need for this scheme has not yet been agreed, but it may form part of the Phase 2 Strategy.

Grove / Wantage Area

The Grove/Wantage area lies immediately to the west of the Didcot Area. It extends outwards from Wantage & Grove to include consideration of trips between the principal settlements and major employment sites at Harwell International Business Centre and Milton Park. Work on a strategic transport study for this area started in December 2004, with the aim of 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.

Stage 1 of this work was recently completed. This used census and other data to build up a picture of current movements and identify congestion and accident hotspots. Although the Census data only covers journeys to work, these are the most significant movements during the peak periods when the transport network is at its most congested.

A list of potential strategic schemes was assessed against the LTP objectives as well as three further assessment criteria: affordability/financial sustainability; practicality/public acceptance; and relationship with local plans and strategies. 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 and tested in stage 2. This work will also consider how the future configuration and mix of land uses in the Harwell IBC and Milton Park areas can be planned to maximise the transport outcome.

The result of the Stage 1 work is 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. It includes the following potential strategic schemes:

- 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;
- Wantage – Grove – Oxford Premium Bus Route (and enhanced east – west bus services)
- High quality cycle links to Abingdon, employment sites and between Wantage & Grove
- Re-opening of Grove rail station
- Potential Steventon Road realignment (would only go ahead if an Upper Thames reservoir was developed)

Further study and consultation work is planned for 2005/2006 to complete the both the Didcot and Grove/Wantage Area Strategies. This will include the development of a transport model covering both study areas with the aim of developing a comprehensive approach to catering for and managing trip movements in this area. Whilst significant solutions are likely to fall outside the timescale of this plan, shorter term measures would be taken forward, including:

- Local schemes to improve accessibility by bus, walk and cycle
- Improvements to the circulation at the Milton interchange with the A34, in conjunction with committed development proposals
- Management measures to protect villages from the adverse effects of traffic