5. Congestion

> **Objective 2 - Reduce congestion**
>
> Our core objective is to reduce congestion to improve the economy of the county and relieve environmental problems.

Congestion Policies

Policy TC1   **Oxfordshire County Council will manage demand, co-ordinate and, where appropriate, improve the county's road network to reduce congestion and minimise disruption and delays to the travelling public.**

Policy TC2   **Oxfordshire County Council will work with major traffic generators to enable sustainable travel and efficient car use for journeys to employment, health, shopping and education in order to reduce congestion.**

Policy TC3   **Oxfordshire County Council will ensure that travel information is timely, accurate and easily accessible in a range of appropriate formats.**

Policy TC4   **Oxfordshire County Council will manage the parking under its control to reduce congestion.**

Policy TC5   **Oxfordshire County Council will identify suitable and unsuitable routes for freight movement, balancing the needs of businesses with protection of the local environment and maintaining the highway network.**

Congestion Strategy

5.1   Congestion occurs when the demand placed on a part of the transport network exceeds the capacity of the network, or part of the network, to deal with it effectively. While congestion usually refers to road conditions, this can also affect buses approaching bus stops, cyclists approaching key junctions and pedestrians on footways and in busy streets, as well as covering overcrowded

conditions on buses and trains. This chapter will deal with congestion on the roads.

5.2   Congestion can be tackled by either increasing the capacity of the network or reducing the demand. Oxfordshire County Council will apply both these approaches, including:

* traffic reduction through travel reduction measures and widening and promoting travel options to encourage modes other than the private car;
* incident management and co-ordination of roadworks and events;
* co-ordinated network management;
* better information for travellers;
* targeted improvements at bottlenecks;
* coherent parking policies; and
* clear routes for freight traffic;

Traffic Reduction

5.3   Traffic reduction measures can consist of initiatives to reduce the need to travel or measures promoting more efficient modes that place fewer demands on the road network and thus help to reduce congestion.

5.4   Travel reduction measures could include:

a. teleworking - Where people work at home instead of commuting which can reduce overall mileage although there is some evidence that longer peak time commuting trips are sometimes replaced in part by shorter local trips during the day;
b. teleconferencing – Holding meetings and communicating via video or webcam link instead of travelling to an office to reduce the number of trips made by individuals and reduce associated travel and accommodation expenses;
c. improved internet access - providing fast and reliable internet broadband to residential households can reduce the need to travel; and
d. sustainable development – working in co-operation with the district councils to ensure new residential dwellings are located within easy access to essential services and amenities, in order to reduce the need to travel by car.

5.5   Promoting more efficient modes includes:

a. public transport - tackling congestion effectively will involve promoting public transport alternatives, particularly to people who currently never use them;

b. cycling - to reduce congestion there is a strong case for promoting cycling to non-users, particularly for people making short journeys;

c. car share - we have recently launched Oxfordshire Car Share, providing a matching service for all those who live, work and travel in and around Oxfordshire. With links to smaller car share schemes in the county, the scheme aims to take cars off the road by putting users of the same route together;

d. car clubs - these reduce the need for individuals to own their own car and have been shown to reduce members' annual mileage by up to 2,000 miles per year in some studies; and

e. travel plans – assist oranisations achools and employers to encourage staff, students and visitors change their travel habits to ones which cause fewer environmental problems and place less strain on the road network, particularly in peak periods, by a coombinaton of education, promotion and physical measues,

These above measures are outlined in more detail in Chapters 9 – 12 on carbon reduction, reducing the environmental impacts of travel, public transport and walking and cycling.

5.6   Charging mechanisms are another possible approach to help tackle congestion which could include:

a. workplace parking levy – this is a charge on employers who provide free or relatively cheap workplace parking for their employees; and

b. road user charging – this is a mechanism through which road users pay to use a section of road or enter a cordon, usually at particular times of day.

5.7   Although, we do not currently have any plans to introduce any charging measures, it is possible that we may want to investigate these measures at some point over the LTP3 period as support for the strategy outlined in Chapter 13, Oxford.

Co-ordinated Network Management

Network Management Duty

5.8   Even when funding for improvements is available, increasing road space through new roads or road widening schemes can be limited by physical or environmental constraints. Therefore we are seeking to make the most efficient use of current road space through ensuring that roads and junctions are operating at their maximum design capacities. The capacity of the road network can often be increased without major new construction through localised minor changes such as flaring, lining changes or the use of intelligent equipment at signalised junctions.

5.9   In 2004 the Government introduced the Traffic Management Act. The Act introduced a new duty, *the Network Management Duty*, on Local Transport Authorities (LTAs). It applies to all LTAs and encourages them to reduce and manage congestion, manage works on the highway, and have contingency plans.

5.10 Greater importance to Network Management leading to the development of a *Travel and Information Management Policy* and *Network Management Plan*.

Network Management Plan

5.11 The Network Management Plan sets out how we will introduce effective network management in the county. The Plan includes a series of key actions to improve network management in Oxfordshire:

* development of Urban Traffic Management and Control (UTMC) in Oxford;
* undertaking a timing review of traffic signals;
* developing methods to monitor and report levels of congestion;
* developing contingency plans for strategic routes;
* production of a communications plan for unplanned events;
* recording all works on an electronic register;
* reviewing the county's Traffic Sensitive Streets Network;
* producing a guide for event organisers on their traffic management responsibilities; and
* reviewing existing controlled parking zones in Oxford.

5.12 Fundamental to successful network management is the understanding of what is currently happening on the road network and what is planned for the future. The development of communication strategies and ensuring the effective noticing of all works on the highway will be a significant challenge over the next few years (n.b. "Noticing" is the official notification of any activity that is likely to affect the operation of the road network).

Travel Information

5.13 An important element of making the network work as well as possible is ensuring that the travelling public have the information available to allow them to make informed decisions. This is equally important when dealing with the normal working of the network and when there are temporary disruptions such as accidents, roadworks or public events.

Travel and Information Management

5.14 Oxfordshire County Council has developed a Travel and Information Management Strategy. This sets out our vision of how we can make the best use of technology to help manage our roads and provide meaningful, up-to-date information to the public. It sets out our aims and identifies the principles and good working practices to achieve them.

5.15 The strategy paved the way for the creation of a traffic control room where intelligent transport systems enable the network to be managed in real time. The traffic control room manages the whole of Oxfordshire, however currently most of the tools for gathering network data and managing the network are currently focused in and around Oxford. The coverage of network management tools will be increased when opportunities arise.

Communications

5.16 A high quality strategy for communications is also essential for unplanned events, such as accidents. We are responsible for working with our partners to co-ordinate traffic following accidents on the county's network. Effective and efficient response and co-ordination is required to keep disruption to a minimum. Contingency plans are being developed so that quick and effective action can be taken whenever an incident occurs.

5.17 We have excellent real-time journey time data coverage for

Oxford through our journey time management system and through the real-time bus tracking equipment. This can be used for the management of the network on a day-to-day basis along with monitoring general performance and trends.

5.18 Dissemination of information is an important element in managing the network. Information is currently passed to members of the public through electronic variable message signs on the road, real time information displays at bus stops, mobile phone and websites. Information needs to be timely, accurate and consistent. To publicise the information available there is a need to improve good working relationships with radio stations, Thames Valley Police, Highways Agency (HA), bus operators and freight companies. We will also provide greater information coverage to the public with more roadside electronic signs and an enhanced travel website.

5.19 Oxfordshire County Council has produced information and guidance for travel throughout the county on other efficient alternative modes to further enable people to make informed decisions about how they travel. This includes walking and cycling maps and initiatives like our dedicated car share website. These are covered in more detail in Chapters 9 and 12 on carbon reduction and walking and cycling.

Co-ordination of Roadworks and Events

Works register

5.20 Managing and co-ordinating the control of works and events that may impact upon all forms of traffic is a key part of delivering the network management duty. Fundamental to achieving this is the effective noticing of all roadworks on an electronic register, and ensuring that works on site are signed and guarded correctly to ensure safety and reduce delays.

5.21 Oxfordshire County Council is working closely with utility companies and its partners to ensure that accurate and timely notices are submitted for works.

5.22 Information on the most disruptive roadworks is displayed on our website, including the "top ten" works that are being carried out in the county at any time. This information is also fed into the Local Goverment Information Network, *eLGIN* and OCC travel information website where the information can be viewed

alongside works on motorways, trunk roads and neighbouring authority roads.

5.23 We also have a responsibility to co-ordinate events, including filming, with works on the highway. This includes liaising with the district councils, police and event organisers to ensure that the impact on transport is fully taken into account, and that traffic is able to continue to flow.
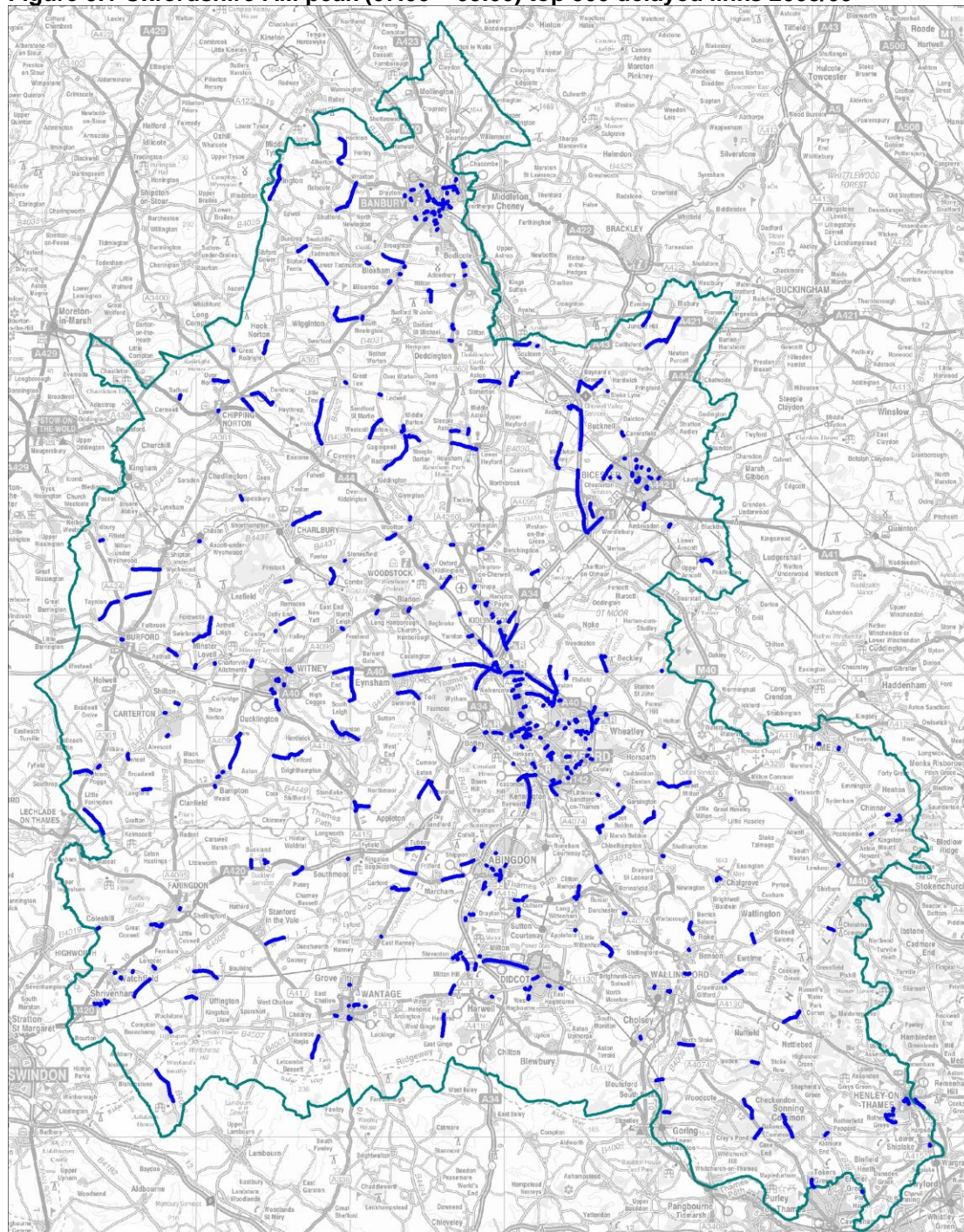
Contingency Planning

5.24 We are currently working on formal diversion routes for our main roads so that when incidents occur we will have permanent signs in place, making diversions faster to implement and diversion routes clearer.

5.25 The effective management of traffic requires the planning of the response necessary following incidents on the highway. This work identifies key diversions and communication strategies to deal with incidents that block or severely affect a lane of the highway. We have already completed plans for sections of the A420, A44 and Oxford ring road. A rolling program will eventually see diversion strategies developed for all the main routes and towns in Oxfordshire. These strategies are being built into the traffic management system so they can be swiftly acted upon. The HA has formal diversion routes agreed with us so that if there is an incident on the A34 or M40 that requires a closure then approved signed diversion routes can be used.

5.26 Modelling of traffic flow patterns is becoming more advanced and its use is becoming more widespread. A micro-simulation model has been produced to help us understand the wider impacts of incidents, planned events and contingency plans. Our longer term aspiration is to link the model with the traffic management database to enable fast testing of contingency plans during incidents or roadworks.
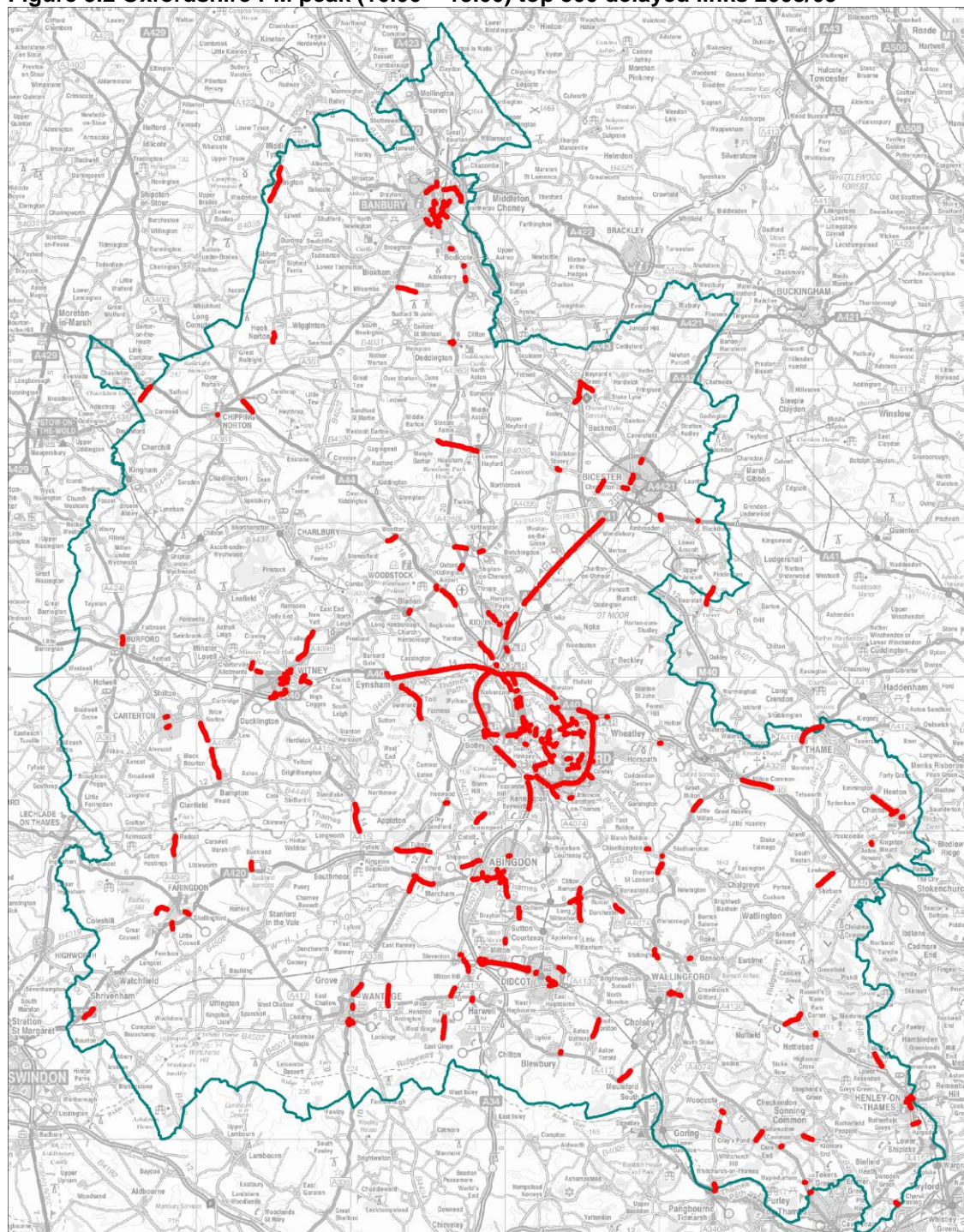
Enforcement of Traffic Orders

5.27 Oxfordshire County Council has a dedicated traffic enforcement team that undertakes civil parking and bus lane enforcement within Oxford. The effective management of parking arrangements and other traffic regulation orders ensure that the highway network is not abused and that traffic continues to flow in the right channels. A project to extend de-criminalised parking to the whole of the county is under way which will give us

enforcement powers to regulate on-street parking countywide. As part of this process we have entered into an agreement with West Oxfordshire District Council to delegate our on-street parking enforcement powers; decisions still need to be made on how parking is enforced across the remaining three districts.

Figure 5.1 Oxfordshire AM peak (07.00 – 09.00) top 500 delayed links 2008/09

Figure 5.2 Oxfordshire PM peak (16.00 – 18.00) top 500 delayed links 2008/09

Targeted Improvements

Road Capacity

5.28 Roads play the major role in transport in Oxfordshire, and this is likely to remain the case throughout the life of this Local Transport Plan. Congestion can be relieved by increasing the local

capacity. However, research has shown that this can also increase traffic levels by inducing more trips. Oxfordshire County Council will therefore consider all other appropriate solutions before considering additional road capacity. We will ensure that care is taken, where new road capacity is provided, to avoid the additional capacity attracting more trips to be made and thereby reducing the benefits of the scheme. This can be done by introducing measures onto the road which has been bypassed to compensate for the new capacity. This type of measure often brings environmental benefits of its own.

Network Improvements

5.29 Every local area will have its own specific needs and the appropriate solutions will be different. However, the range of possible solutions should be looked at in the priority order listed below:

* Changing travel mode – can mechanisms be put in place to encourage greater use of walking, cycling or public transport for all or part of the journey or can the journey be replaced by means such as home working or teleconferencing;
* network management – can changes be made to the way the network is operated to realise the full capacity of a road or junction;
* capacity improvements – can changes be made to the layout of the road within the existing highway boundary to allow more people through the local road network;
* road widening – can local widening at junctions or congested points help alleviate the problem or longer stretches of road widening be considered; and
* new road links or bypasses – can new road connections be used to help direct traffic away from problem locations.

5.30 The over-riding principle for deciding on whether to take action to reduce congestion is to provide a congestion free choice for travellers. Where a congestion free option is available then measures to reduce congestion on alternatives, whatever transport mode is used, will not usually be a priority.

5.31 Oxfordshire County Council has already identified some areas where major network development is required and where work is in progress to identify major strategic improvements for the future:

* approaches to Oxford, including the A34, particularly on the northern and southern approaches to Oxford on the ring road;
* in the Science Vale UK area (Didcot/Harwell/Wantage & Grove) where major housing and economic growth is planned;
* in the Eco-Bicester area where significant new development is planned to be delivered as part of the overall plan 'One Shared Vision' for the town;
* in Witney to improve access to the A40 and relieve traffic in the town centre; and
* in Banbury to relieve pressure on access to the M40.

5.32 In addition we will be identifying other network development needs as part of the development of the district councils' Local Development Frameworks.

Parking

Parking Policy

5.33 Oxfordshire County Council's aim for effective parking management is to reduce congestion, particularly in town centres. Due to the shared responsibility for providing public car parking we will work closely with the district councils to realise this aim.

5.34 In Oxford, we will work with Oxford City Council to provide sufficient parking in the city centre to satisfy access and service needs. Parking charges will continue to be set at a level that discourages long stay parking and encourages the use of park & ride and public transport where this is a viable alternative.

5.35 In other Oxfordshire towns, we will work with the district councils to ensure that there is sufficient parking provision for journeys that are not readily made by public transport.

5.36 The availability of parking plays a major part in drivers' decisions on what trips they make, when they make them and which routes they take. Oxfordshire County Council has developed a parking policy document which, though primarily designed to bring consistency to the way Civil Parking Enforcement (CPE) is or will be carried out throughout the county, will also bring together existing district and county council policies in one document.

5.37 Our parking policy will put in place parking controls designed to reduce congestion, provide parking for activities such as visiting local shops and protect parking in residential streets for those people living there. However, without enforcement, such controls can quickly become ineffective. There are many calls on police resources so that the amount of effort that they can put in to parking enforcement is likely to be limited. A CPE service provides a dedicated team concentrating solely on vehicles parked in contravention of Traffic Regulation Orders.

5.38 Decriminalised Parking Enforcement has been in place in Oxford since 1997 with CPE coming into force in March 2008. West Oxfordshire became a Civil Parking Enforcement Area in 2010. The aspiration of extending CPE to the other districts within Oxfordshire will continue.

5.39 There are four main types of public car parking in Oxfordshire:

* on-street pay & display;
* free or metered on-street parking;
* park & ride; and
* off-street car parks.

5.40 All but the last of these are our direct responsibility (off-street car parks across the county are managed by the district councils). There are a number of off-street car parks throughout the county managed by private companies. A coherent approach to and relationship between all types of parking, particularly car parks and park & ride, is needed.

5.41 To be effective in reducing peak hour congestion, parking needs to be managed so that it encourages drivers to use other means of travel to work. This can be through charging policies or through restricting parking times or duration. For such a policy to be publicly acceptable there needs to be adequate and effective alternatives for drivers to use. By and large Oxford meets this ideal - city centre car park tariffs are set at a high long stay rate and there is no all-day metered parking in the city centre. Instead, there is a highly developed bus network as well as around 5,500 park & ride spaces. The cost of using these services is significantly less than the daily rate for city centre parking.

5.42 Controlled Parking Zones (CPZs) have been introduced in areas of Oxford where there are issues of commuters inappropriately

parking in residential streets. Oxfordshire County Council will continue to use CPZs as a reserve mechanism to help reduce these congestion problems. We would expect that CPZs would offset the cost of their operation and enforcement through charging for the issue of parking permits.

5.43   Outside Oxford, parking enforcement is currently limited and therefore the full benefits of parking policies are not always realised. Banbury and Bicester have parking controls and off-street car parks. There are also residents' parking schemes in Abingdon-on-Thames, Bicester and Henley and one proposed for Banbury but these cannot become fully effective until CPE powers are in place. West Oxfordshire District Council acquired CPE powers in 2010 but, as the District Council does not charge for the use of its car parks, any controls to manage parking are limited to enforcing maximum stay periods. The other district councils provide free parking in towns to varying degrees. This is generally said to be of benefit to businesses but it does encourage car journeys into the towns rather than the use of other modes.

5.44   Some areas of the county have good parking provision for cycles. Cycle parking is covered in more detail in Chapter 12 on walking and cycling. Oxfordshire does not have much motorcycle parking. A small amount of motorcycle parking is provided at several car parks and on-street spaces throughout the county, often without charge or need to display a permit. Oxfordshire County Council will look to improve direction signing of motorcycle parking in appropriate locations as part of the traffic signage reviews that will be undertaken in settlements across the county as part of this Plan.

Park & Ride

5.45   The purpose of park & ride is to intercept journeys that would otherwise continue to a destination by car. It supports the continuing reduction of congestion on radial routes and within the city centre and the development of public transport as an alternative to driving into Oxford.   Oxford was one of the pioneer cities to introduce park & ride on a permanent basis.

5.46   The success of Oxford's park & ride system has meant that the parking sites are regularly reaching capacity. Park & ride availability is influenced by two factors: the physical size of the sites, access to them and the use to which those spaces are put. Three of the five sites - Thornhill (to the east), Seacourt (to the west) and Peartree (to the north) regularly reach capacity every day,

the first two immediately after the morning peak. These two sites are used to a degree for purposes other than to access Oxford. Thornhill is used by people travelling to London and the airports on express coaches and Seacourt is used as convenient parking for nearby offices and businesses.

5.47   Oxfordshire County Council will continue to develop the use of park & ride as a way of reducing traffic growth and congestion in Oxford and the county's main towns. In Oxford, this may involve expanding existing sites (such as is currently planned for Thornhill) or developing new sites. We will explore opportunities to set up remote park & ride sites for Oxford so that trips could be intercepted earlier in their journey. These would normally be served by existing services on Premium Bus Routes, rather than by new bespoke services.

5.48   As part of the ongoing development of the area strategies, we will investigate whether park & ride would be suitable in any of our larger towns; this would be dependent on the introduction of an appropriate complementary parking regime within the town concerned.

5.49   Expansion of park & ride is not a quick process, even if it is desired from a strategic point of view. Oxfordshire County Council's view is that park & ride services should not replace the use of local bus services where these are available for larger parts of a journey. This means that the location and costs of new sites and services needs to be carefully considered before construction or introduction.

5.50   Generally, park & ride sites should be located where they can intercept existing traffic and not where they would generate additional trips. A transport assessment would be required for any site and consideration should be given to reducing town centre parking to avoid a potential overall increase in car-based trips.

Lorry Routeing

5.51   While they usually make up a small proportion of the overall traffic flow (except on specific roads such as the A34), lorries can play a major part in creating congestion as well as contributing to other environmental problems associated with it such as air pollution, noise and damage to road surfaces and verges. Where congestion occurs, though, lorries are often most affected, given that they are usually more constrained than general traffic in the routes they use. However, problems caused by lorry traffic are

seldom easy to remedy without potentially causing difficulties to the local and national economy.

5.52 Oxfordshire County Council has produced an Advisory Lorry Routes Map to guide lorry drivers onto suitable freight routes and diversion routes to help remove these trips from unsuitable rural roads and villages. These advisory lorry routes help us to manage the network regarding maintenance of these routes and day to day operation.

5.53 As a response to this, the Oxfordshire Freight Quality Partnership produced a lorry routeing map in 2006 showing the major locations of lorry trip generators and the preferred routes to get to each of these. This was updated in 2008 and again in 2012. The latest Oxfordshire Lorry Routes Map is in line with similar maps produced by neighbouring counties. It is likely that over the course of the Plan period that there will be opportunities to use new technologies to better publicise and utilise this map. The Department for Transport are currently carrying out research into ways to reduce misdirection of lorries by satnav devices.

Congestion and journey reliability

5.54 Several of the county's major roads currently experience regular congestion: A34 north from Abingdon-on-Thames, A40 between Witney and Oxford, sections of the Oxford Ring Road. Other routes may experience congestion in the future if traffic continues to grow, possibly including the M40 south of Oxford. Congestion on the major routes can often be a cause of drivers seeking to find alternative routes on more minor roads. Measures to reduce overall congestion on these routes would help lorries along with other traffic; it is unlikely that specific measures for allowing lorries to bypass congestion hotspots (such as lorry only lanes) would be generally applicable within Oxfordshire.

5.55 The A34 is a particular problem within Oxfordshire. This is a two-lane dual-carriageway road with a high proportion of heavy goods vehicles (up to 20% of daily trips with higher proportions at some times of the day). The road is subject to congestion caused by the heavy overall traffic flow and the capacity of junctions (particularly at the junction with M40) and by frequent incidents. One significant problem along the A34 that is caused by lorries overtaking each other leading to moving blockages to overall flow along the route. Oxfordshire County Council will work with the HA to identify stretches of the A34 where this frequently disrupts general traffic flow and investigate the potential for a lorry

overtaking ban, similar to bans used elsewhere in the country.   A trial lorry free lane was introduced just south of the county boundary in 2010.

Route information

5.56 The 2004 Transport Networks Review identified a number of locations throughout the county where there was a poor local environment caused by traffic and where HGV traffic was a major contributor to this detrimental environmental impact. These are summarised in the table below.

Settlements in Oxfordshire with high HGV traffic			
Route	**Settlement**	**Environmental impact of traffic**	**HGV traffic level**
A361	Burford	High	High
A44	Woodstock	High	High
A44/A361	Chipping Norton	High	High
A4130/A4155	Henley	High	High
A415	Marcham	High	High
B4009	Watlington	High	High
A329	Little Milton	Medium	High
A329	Stadhampton	Medium	High
A361	Bloxham	Medium	High
A361	Wardington	Medium	High
A44	Enstone	Medium	High
A415	Brighthampton/Standlake	Medium	High
A415	Clifton Hampden	Medium	High
A417/A338	Wantage	Medium	High
A418	Tiddington	Medium	High
A4074	Nuneham Courtnay	Medium	High
A4074/A329	Shillingford	Medium	High
A4095	Bladon	Medium	High
A4095	Long Hanborough	Medium	High
A4130	Nettlebed	Medium	High
A4260	Adderbury	Medium	High
A4260	Bodicote	Medium	High
A4260/B4031	Deddington	Medium	High
A4260	Kidlington	Medium	High
B430/B4030	Middleton Stoney	Medium	High
B4009	Shirburn	Medium	High
B430	Ardley	Low	High
B430	Weston-on-the-Green	Low	High

Source: Transport Network Review 2004.

5.57 As a response to this, the Oxfordshire Freight Quality Partnership produced a lorry routeing map in 2006 showing the major locations of lorry trip generators and the preferred routes to get to

each of these. This was updated in 2008 and is currently being updated to bring it into line with similar maps produced by neighbouring counties. It is likely that over the course of the Plan period that there will be opportunities to use new technologies to better publicise and utilise this advice.

5.58 The use of unsuitable roads by large lorries is an ongoing problem, particularly on rural routes. While weight restrictions can be used to reduce these problems, their use has to be balanced against any costs to the economy and to legitimate needs for access. Weight restrictions are only likely to be acceptable if they do not transfer unwanted traffic onto other similar roads. Oxfordshire County Council will use the latest lorry routeing map when considering whether it is likely to be acceptable to place weight limits on any road.

Satellite navigation systems

5.59 In recent years satellite navigation systems have caused increases in lorry traffic on many unsuitable roads across the country. A current problem is that systems do not generally discriminate in route choice between large and small vehicles. More advanced systems in the future may provide a solution to this but there is also a clear need to ensure that, as far as possible, satellite navigation companies have information on the suitability or otherwise of roads to carry traffic.

Freight consolidation

5.60 Freight consolidation and trans-shipment are methods which have been suggested to reduce lorry numbers on specific roads or in sensitive areas. With consolidation, haulage loads are combined to reduce the numbers of lorries needed; with trans-shipment, final deliveries are made by smaller or more environmentally acceptable vehicles by separating out those which are to be delivered to a defined site or area. Oxfordshire County Council will consider these as potential solutions if opportunities arise and if a viable working business model is developed for either technique.

Rest and layovers

5.61 Lorry drivers are required to take both daily and overnight driving breaks by the *Driver Hours Directive 1985*. For this reason, areas for goods vehicles to stop and park when away from base play a vital part in the national delivery network. However, in recent

years there has been a reduction in the number of rest area sites available for lorries. Many service areas on non-motorway routes are now not available for lorries. Safety and traffic management concerns, relating to the time that lorries take to accelerate out of them and to reduce speed on the main carriageway, have also led to the removal of some roadside lay-bys.

5.62 Well designed and located lorry parks can play a role in reducing the overall mileage travelled by lorries, in promoting driver well-being, in helping with efficient deliveries and in minimising disruption to communities. However, in deciding on whether any particular site was suitable for this use, the benefits of such facilities need to be balanced against the local environmental impacts that they would bring. The Department for Transport has published a strategy (November 2009) to encourage the development and use of secure lorry parking locations. Any proposals within Oxfordshire would need to be in line with this national strategy.