9. Carbon Reduction

Objective 6 - Reduce carbon emissions from transport

Our core objective for carbon reduction is principally focused on encouraging trips to either not be made, or to be made by less carbon intensive transport modes. Our policies to reduce congestion (outlined in Chapter 5) will also have an impact, although this is likely to be of a lesser order.

Policies

Policy CBR1 **Oxfordshire County Council will work with local communities and employers to promote sustainable travel for journeys to work, education, health and other facilities.**

Policy CBR2 **Oxfordshire County Council will support the use of low carbon forms of transport and associated infrastructure.**

Policy CBR3 **Oxfordshire County Council will seek to reduce the carbon footprint of its operation of the transport network.**

Carbon Reduction Strategy

9.1 Our strategy for carbon reduction includes:

* The continued promotion and development of travel planning
* Promotion of modal switch by encouraging low and non-carbon travel
* Providing for low and zero carbon vehicles

9.2 The UK Climate Impacts Programme's prediction is that Oxfordshire's temperature increase by 2050 is unlikely to be less than one to two degrees. One of the main conclusions of the Stern Report on the economic impacts of climate change is that the benefits of strong, early action on climate change

considerably outweigh the costs. It proposes that one percent of GDP per annum needs to be invested in order to avoid the worst effects of climate change, and that failure to do so could risk global GDP being up to 20 percent lower than it otherwise might be.

9.3 An effective policy on the street environment and public realm (as set out in Chapter 10) can make a contribution to combating climate change by reducing traffic and favouring smarter choice options such as walking, cycling and public transport.

Travel Planning

9.4 Travel planning is a process where, by a combination of education, promotion, physical measures and incentives, people are encouraged to change their travel habits to ones which cause fewer environmental problems.

9.5 Travel planning has been a component of Oxfordshire County Council's transport planning approach for many years. In addition to meeting the statutory requirement for travel plans to be prepared for new housing and commercial developments, the focus over the first two Local Transport Plans has been in developing School Travel Plans in response to the national Travel to School Initiative (TTSI).

School Travel Planning

9.6 A School Travel Plan is a document produced and adopted by a school. Plans aim to increase levels of walking, cycling and coach/bus travel as appropriate, in order to bring about improved health and greater independence, whilst educating pupils about road safety skills. They identify the potential for replacing car travel to school with other modes of travel. Plans contain a series of actions to achieve the targets to be carried out by the school and other parties.

9.7 School Travel Plans also identify:

* barriers to safe and sustainable travel, e.g. crossing roads or lack of cycle storage;
* potential areas where investment or supporting measures (e.g. cycle and pedestrian training) can help deliver outcomes;

* other associated school travel issues e.g. car parking on pavements

9.8 New processes have been developed to update all school travel plans on timescales in line with the size and needs of the school so plans for larger schools with more complex travel needs are updated more frequently.

9.9 Overall car use for journeys to school has stabilised. Oxfordshire's level is one of the lowest in the South East and below that of comparable shire authorities nationally. The number of pupils cycling to school is over three times the national average of 2.5 percent and steadily rising.

9.10 Overall, the data support the finding that the production of school travel plans alone does not result in reductions in car use. Reductions at Oxfordshire schools vary widely, with some recording increases. A significant number of schools do not follow through on the action plans they agree to deliver while the most successful schools are those with a clear and enthusiastic commitment to reducing car use.

9.11 Distance to school is the key factor affecting how pupils travel. The extension of parental choice, moves towards centralised childcare and larger schools will all increase distances travelled to school sites. A cross-council approach to counter this trend is essential if it really is a priority to achieve the congestion and health benefits of travel to school. Reducing the distance travelled, providing more local education services and building housing developments which support walking and cycling to education sites would have the most significant impact in the long term.

9.12 Our studies show that there is potential for over 30 percent of children currently driven to school in Oxfordshire to walk or cycle, as they live within 15 minutes walking or cycling distance of their secondary school. Our current *'In the Zone'* activity involves engaging with them and their parents to consider walking and cycling instead.

Workplace Travel Planning

9.13 Workplaces are second only to schools as an established focus for travel planning, despite school travel plans having received most of the time, attention and resources in the UK and elsewhere. The 'traditional' approach to travel planning for workplaces is very

similar to that for schools. The basic steps are:

* Carrying out a 'before' staff survey to assess how people currently travel;
* Describing the background to the travel opportunities/obstacles at the site;
* Setting targets for changing travel to work; and
* Drawing up an action plan containing initiatives to encourage employees (and sometimes visitors) to replace single-occupancy car travel.

9.14 Some workplace plans are more sophisticated, using more extensive surveys of travel patterns or motivations and also addressing travel at work (business travel) as well as travel to work (home to office).

9.15 Typical outcomes are new public bus or rail services linking to the site; dedicated 'work buses' shuttling between the site and the town centre; giving all staff public transport information; offering personalised journey plans to staff; interest-free season ticket loans; special deals to reduce the cost of bus and rail travel for employees; secure cycle parking; changing facilities, showers and lockers; business cycle mileage allowance; car share, lift share and car club schemes; preferential car parking for sharers; parking 'cash out' (paying employees a small sum on days they do not drive); car parking restricted to essential users; parking charges; services on site to reduce the need to travel (e.g. cafeteria, cash dispenser, convenience store); encouraging teleworking; and variations on the five-day week e.g. compressed working hours.

9.16 In studies of workplace travel planning the following five factors are associated with 73 percent of the reported reduction in car use:

* Employees were offered incentives to give up parking voluntarily
* The business was a public sector organisation
* The workforce consisted of over 70 percent women
* Cycling access was initially poor
* Monitoring was carried out over a long period

9.17 The most recent reliable data about how people travel to work in Oxfordshire come from the 2001 census:

Mode	%age
Walk	11
Cycle	8
Bus	7
Train	1
Car (as driver)	65
Car (as passenger)	6
Otter	2

9.18 The data suggest that car use on the journey to work is high and offers potential to work with employers to reduce it, cycling to work is already high compared with other parts of the UK and approaches targeted towards larger businesses will offer the best balance between effort and return.

9.19 Working with workplaces is very much a matter of being able to show what benefits will result for the organisation if it does so. Despite the widespread adoption of corporate social and environmental responsibility policies, there are still perceptions that travel plans are only worthwhile if permission is required for a new development. The ability to help reduce the cost of their company business travel can be a major selling point to commercial concerns.

9.20 Measures for workplace travel planning include:

* Encouraging larger organisations and groups of employers to prepare and implement travel plans, especially in areas identified as important to Oxfordshire's future economic prosperity.
* Offering workplace travel planning services to external customers, especially other Government departments and agencies, including:
    - Travel surveys, travel plan production, implementation and management,
    - Advice on management of travel expenditure for businesses,
    - Increasing non-car travel for health purposes, and
    - Contributing to health targets to encourage exercise, improve fitness and reduce obesity.

Residential Travel Planning

9.21 Residential travel planning is a package of measures designed to reduce car use originating from housing areas by supporting alternative forms of transport and reducing the need to travel in the first place.

9.22 Residential Travel Planning begins with the siting of new housing as well as the design of the built environment. It is therefore a mixture of personalised travel planning, developer guidance/conditions and land use strategy. As already discussed for journeys to school, distance is the fundamental factor determining choice of travel mode. If housing is further from workplaces, schools, shopping (and even public transport) then walking and cycling will be much less likely and car journeys more likely. No amount of improved infrastructure, travel planning co-ordination or services can compensate for longer journey distances. The design of the built environment can facilitate or hinder direct access by active modes (which again affects journey distances), thus promoting or hindering walking, cycling and public transport journeys versus car travel. Again, no amount of promotion of active modes will overcome flaws in the built environment.

9.23 Aspects of residential travel planning could include:

* Influencing the design and location of major new residential developments, to maximise walking, cycling and bus use and minimising the need to travel by car.
* Influencing travel plans written by developers to help them deliver low carbon/low car outcomes.
* Developing and implementing personalised travel planning approaches to influence those relatively few occasions when individuals actually reconsider travel decisions, e.g. house move, school move, job move.
* Developing and introducing more sophisticated measurement techniques to capture changes in journey patterns, including travel diaries, trip counts and destination surveys.
* Developing processing for personalised travel planning for individuals, including addressing the potential of journey chain modification to reduce car use on longer journeys
* Promoting low carbon travel

Personal travel planning

9.24 In considering the likely impact of personal travel planning in Oxfordshire, we need to understand how many new residential dwellings are likely to be built over the plan period, and also whether elements of residential travel planning are already incorporated in the planning process.

9.25 However, the data available on the impact of residential travel planning is inconclusive because:

* developments are not readily amenable to case-control or randomised analysis,
* residential travel planning is a relatively new concept and little data exists, and
* where data does exist, it typically only shows 'number of trips'.

9.26 Reference is often made to the experience at three *'Sustainable Travel Towns'* (Darlington, Worcester and Peterborough), where personalised travel planning techniques are being applied on a widespread basis, particularly in existing residential areas. In the first years of their programmes, these towns have seen reported reductions in car journeys averaging nine percent, and increases in walking (thirteen percent), cycling (fifteen percent) and public transport (twelve percent) across a total targeted population of 56,560 households.

9.27 While undoubtedly positive, these outcomes should be treated with caution. Apart from the statistical caveats, Sustainable Travel Towns were chosen as locations with conditions particularly favourable to increasing sustainable travel, and they have benefited from availability of resources and capital funding at levels which are unlikely to be replicated elsewhere.

Encouraging alternative modes

9.28 Walking and cycling are virtually carbon-free forms of transport and encouraging trips to be made by these modes rather than by private vehicle will contribute to reducing the carbon emissions from transport in Oxfordshire. Our strategies for travel planning outlined above, re-enforced by the strategy for promoting these modes sets out in Chapter 12 therefore have a major role to play in carbon reduction.

9.29 Public transport is usually less carbon intensive than private travel, particularly when dealing with large flows along particular corridors. The policies in Chapter 11 on promoting public transport will also play a part in carbon reduction.

9.30 Apart from traditional transport schemes, there are a number of other initiatives which can be used to reduce carbon emissions from travel:

* Telecommuting, where people work at home or at local "hubs" instead of commuting, can reduce overall mileage although there is some evidence that longer peak time commuting trips are replaced in part by shorter local trips during the day.
* Car clubs - these reduce the need for individuals to own their own car and have been shown to reduce members' annual mileage by over 2,000 miles per year in some studies.
* Car sharing - schemes to encourage car sharing will reduce trips, particularly for commuting. Oxfordshire County Council launched a website to match potential car sharers in August 2010. There is some evidence that each active member of a car sharing scheme reduce their overall personal mileage by more than 2,500 miles a year.

These initiatives are also dealt with in Chapter 5 on reducing congestion.

Providing for low and zero carbon vehicles

9.31 The UK does not perform well in terms of the average carbon emissions of cars purchased here and is currently ranked 16th in Europe. This is because, although modern engines are more fuel efficient, this has been partly offset by the choice of larger and more powerful cars that now weigh on average 30% more than in 1970. There UK does have a graduated vehicle excise duty which provides some incentive to choose more efficient vehicles, and the European Union has targets for average car carbon emissions.

9.32 The composition of the vehicle fleet is more easily influenced by national and European measures such as these than by local transport policy. Some local authorities have sought to encourage cars with lower carbon emissions through differential car parking charges that favour more fuel efficient vehicles and penalise those with high carbon emissions but these attempts

have proved controversial and are in any case less effective than Vehicle Excise Duty which applies to all UK vehicles regardless of where they are parked.

9.33 One option which could be pursued would be to provide a network of refuelling points for vehicles using alternative fuels (lpg, bio-fuel etc.) or recharging points for electric vehicles. However, this would be expensive to implement and not easy to justify as a good use of scarce resources. There are also serious concerns about how sustainable bio-fuels are, particularly those imported from developing countries where the plantations displace food crops or forest causing major social and environmental problems. Unless it became clear that any new fuel was likely to be widely used and durable then it would be questionable to invest public funds in its distribution.

9.34 Even for electric vehicles the impact on carbon emissions would depend on the mix of power stations generating the electricity. However, providing the national power mix was suitably low carbon then this would be one way of reducing the carbon intensity of travel. Charging points in Oxfordshire would however be isolated from other ones at the moment, with the nearest ones to the east at Milton Keynes, Watford and Uxbridge and long distances without points to the north, west and south. Electric vehicles do have an advantage in that they are also effectively zero emission at point of use, meaning that they would bring local air quality as well as carbon reduction benefits. Charging points could be considered in partnership with the private sector, particularly if charging points are also introduced in adjacent local authority areas. If opportunities arise, then we will work with Oxford City Council and other district councils to identify suitable locations for public charging points.

9.35 It is also important to remember that large vehicles are also significant in terms of carbon emissions. This is particularly the case for heavy goods vehicles, although the scope for local authority intervention is probably limited to those vehicles used to deliver local services such as refuse collection. Lower carbon buses can also be encouraged through quality partnerships, such as the new hybrid buses being introduced in Oxford by Stagecoach.

9.36 Oxfordshire County Council will continue to work with the bus operators and hauliers to encourage them to reduce the carbon emissions from their vehicles by the use of more efficient vehicles and forms of operation and may consider introduction forms of

regulation on less efficient vehicles if sufficient progress is not forthcoming.