

Building Sustainable Transport into New Developments:

A Menu of Options for Growth Points and Eco-towns



Endorsed by



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Preface

In *Homes for the future: more affordable, more sustainable* (July 2007) the Government set out its plans to increase housing growth. As part of its aim to build 3 million houses by 2020, a second bidding round for local councils to apply for Growth Point Status was launched together with an invitation to local authorities and developers to bring forward proposals for new Eco-towns. Eco-towns will be exemplar green developments, designed to meet the highest standards of sustainability, including zero carbon technologies and first-rate public transport.

In *Towards a Sustainable Transport System* (October 2007), the Department for Transport affirmed its commitment to working with CLG to deliver the Government's housing target in a sustainable way. The challenge of providing sustainable transport in Growth Points and Eco-towns represents an exciting opportunity to promote long-term modal shift and change attitudes towards the way we travel. We recognise the scale of this challenge and support ambitious proposals that contribute towards its realisation.

Building sustainable transport into new developments

This document, which forms part of the Government's advice on transport within Eco-towns and New Growth Points, is aimed at all those involved in the planning, design and construction of new housing developments. It sets out advice on how to build an effective sustainable transport system in new developments, from the planning to the implementation stage. It recommends a variety of transport options to integrate and adopt according to the location and needs of the individual development.

The TCPA Eco-towns Transport Worksheet, commissioned by CLG, supplements this initial guidance and concentrates on a route map for Eco-town developers. It provides a 'how to' guide to steer developers and others engaged in planning, delivering and managing eco-towns through the planning process. Both documents should be referred to in conjunction with each other.



Eco homes in south London (Source: CABE/David Millington)

1. Good planning and design

Sustainability can only be delivered through measures that are secure over the long term. Growth Points and Eco-towns should therefore foster an ethos of green travel from the outset by integrating sustainable travel choices into their planning and design process.

Sustainable transport and planning

In order to influence travel behaviour it is imperative that the future needs of a community are considered and captured through good quality planning before infrastructure is put in place. Destination analysis and planning software will enable developers to predict travel behaviour and trip generation. This should ensure that, from inception to maturity, appropriate sustainable travel choices can be provided both within and beyond Growth Points and Eco-towns.

Opportunities must be taken within the planning process to make cycling, walking and public transport the modes of choice. These modes must be made more convenient for the majority of journeys than car usage, in order to promote genuine modal shift. They should be supported by the necessary management and regulatory measures (e.g. Traffic Regulation Orders).

Developer checklist

In the planning process, developers will need to:

- Endeavour to provide a variety of employment opportunities and other community facilities (such as schools, health centres etc) on site. Integration of housing, employment needs and transport facilities is central to both the sustainability of a development and its economic well-being.
- Ensure that Growth Points and Eco-towns are planned to best integrate with existing land-use.
- Consider the location of Growth Points and Eco-towns in terms of their connectivity to large urban areas, major zones of employment, retail/leisure facilities and the existing road and rail network.
- Provide facilities within the development that will reduce the need to travel. These include flexible work/office space within the town and office space/broadband in homes.
- Consult with stakeholders and the general public on plans for the development.

Road building

Plans for new roads to developments should only be considered where they are essential for improved access or the town's economic sustainability and where they would provide more sustainable access for residents and/or businesses. Any road-building should be designed with a high priority assigned to sustainable modes of travel. Measures to calm traffic before entering the development should also be considered. The capacity of any new road should be carefully designed to balance with the flows that are forecast to exist in a fully sustainable scenario.

Designing development in a sustainable way

The layout of a development has a significant impact on how people choose to travel. Good design is key to maximising sustainable transport usage and reducing the need to travel. Streets should be primarily designed to accommodate the needs of pedestrians, cyclists and public transport to make sustainable modes of travel attractive, convenient and accessible.

In March 2007, DfT (in conjunction with CLG and the Welsh Assembly Government) published *Manual for Streets*. This document concentrates on the provision of residential streets with particular emphasis on sustainability (economic, social and environmental) and the importance of considering pedestrians and cyclists in the design process. The Manual provides essential guidance, much of which is specifically relevant to Growth Points and Eco-towns.

User hierarchy in the design process

Manual for Streets suggests that designers should consider the following user hierarchy in the street design process:

<p>Consider first</p> <p>↓</p> <p>Consider last</p>	Pedestrians
	Cyclists
	Public transport use
	Specialist service vehicles (e.g. emergency service vehicles, waste etc)
	Other motor traffic

The *Manual* does not intend for this hierarchy to be rigidly applied but that pedestrian usage should, at least, be considered first followed by consideration for other users in the order given. This helps ensure that the street will serve all of its users in a balanced way.



Pedestrians and cyclists should be considered first in the street design process.
(Source: CABE/Design for homes/Richard Mullane)

Street design

Design features that encourage sustainable transport usage include:

- **Comprehensive direct networks for walking, cycling and public transport**, with routes for private motor traffic taking a lower priority. This may include providing additional routes for sustainable modes. Networks should serve all the key services and trip generators within and beyond the development. Providing sustainable modes with such a ‘permeable’ network can give them an advantage over private car users and so reduce the tendency for people to drive, especially for short journeys.
- **Limited private vehicle access to homes and services.**
- **Situating key services such as health centres and schools in central locations within the town.**
- **Traditional compact town layouts.** Walking neighbourhoods are typically characterised as having a range of facilities within 10 minutes’ walking distance (around 800 metres). However, the propensity to walk or cycle is not only influenced by distance but also the quality of the experience; people may be willing to walk or cycle further where their surroundings are more attractive, safe and stimulating. Developers should consider the safety of the routes (adequacy of surveillance, sight lines and appropriate lighting) as well as landscaping factors (indigenous planting, habitat creation) in their design.
- **Inclusive street environments that aim to integrate the activities of pedestrians, cyclists and motorists.** This might include:
 - **home zones** – homes zones are residential areas whose streets are designed as places for people instead of just motor traffic. Their design should encourage drivers to travel at very low speeds;
 - **shared space streets and squares** – these are intended to reduce the dominance of motor vehicles and so improve conditions for cyclists and pedestrians.
- **Car-free areas within a development.** This may be combined with safe and secure parking provision separate from the residential area, perhaps on the development’s periphery.
- **Pedestrianised shopping areas** (preferably with cycling access if this can be safely accommodated) **which are served by direct cycle routes and public transport.**
- A ‘legible’ development design i.e. it should be easy for people to work out where they are and where they are going in order to navigate easily around the community.
- **Joined-up transport networks, with good interchanges.**

NB: Cul-de-sacs are not generally recommended but they can be useful in keeping motor traffic levels low in a particular part of a development. Where appropriate, they should be linked to the rest of the network with pedestrian/cycle routes. These links should preferably be short, open and well overlooked, with active frontages.



Some streets in Ancoats Village are completely pedestrianised. (Source: CABE/Stephen McLaren)

Street design should be inclusive. Inclusive design means providing for all people regardless of age or ability. There is a general duty for public authorities to promote equality under the Disability Discrimination Act 2005. There is also a specific obligation for those who design, manage and maintain buildings and public spaces to ensure that disabled people play a full part in benefiting from, and shaping, an inclusive built environment.

Pedestrians, cyclists and public transport users need to be and feel safe. It is important that developers design out crime and design in community safety at the earliest stages. *Safer Places: the planning system and crime prevention* sets out some of the key principles around designing out crime. Advice is also provided in *Manual for Streets*.

2. A menu of sustainable transport options

Decisions regarding transport will inevitably depend upon location, the scale and type of development and what (if any) capacity is available on the existing network. The following headings highlight the ways in which sustainable transport can be provided in and around Growth Points and Eco-towns:

- promoting cycling and walking;
- reducing car usage;
- providing access to public transport;
- goods and emergency vehicles.

Promoting cycling and walking

In Growth Points and Eco-towns of up to 10,000 dwellings, the majority of journeys within these developments should be feasible on foot or by bicycle. For larger developments, walking and cycling can still provide an important part of the internal transport infrastructure, but these modes may need to be complemented by other measures, such as internal bus provision or community travel.

How to... make walking and cycling more convenient and attractive

- ✓ Construct cycling and walking infrastructure that offers direct, continuous, and uninterrupted routes to all major trip attractors.
- ✓ Provide secure bike storage inside or outside dwellings and comprehensive coverage of Sheffield-type cycle stands at common destinations throughout the development (outside shops, community facilities etc).
- ✓ Improve existing cycling and walking facilities that link the development to the surrounding area (through road safety improvements, footbridges, lighting etc). Generally, pedestrians and cyclists should be accommodated on the street network, although, where appropriate, it may be useful to provide them with additional links not accessible to motor vehicles.
- ✓ Provide a cycle centre in the development and community bike facilities (e.g. bike rental).



Safe and secure bike storage at homes and schools is key to encouraging people to cycle.
(Source: CABE/ Mark Ellis and Ashley Bingham ICD Ltd; CABE/Andrew Beard)

Best practice: accessible by design

Many aspects of site design at Poole Quarter in Dorset, are intended to create a pedestrian and cycle-friendly neighbourhood and encourage sustainable travel. The 512 home development by Crest Nicholson will have a central focal space, located on a pedestrian and cycle route that provides a central avenue through the site. The route, which will be well lit and well overlooked, will give pedestrians and cyclists an advantage over private car users and is expected to encourage residents to walk or cycle to workplaces and other destinations in the town centre.

Signs at key points throughout the site will facilitate the easy movement of those on foot. A road that passes through the development will have a Toucan crossing for walkers and cyclists. Secure cycle parking for residents and visitors is distributed around the site. The developer will fund a cycle link between the site and a nearby recreation area and provide new bus stops and shelters on the nearby bus route.

Reducing car use

Encouraging a reduction in car dependency is a key component of promoting sustainable transport usage in new developments. Developers will need to decide how best to integrate such measures into the design of their new community

How to... promote a reduction in car dependency

- ✓ Create a completely, or partially, car-free site (possibly using car-free demonstration areas). This might involve restricting car parking to residents with disabilities, visitors and car clubs.
- ✓ Limit car spaces and/or charge for residential car parking. Recent examples of Eco-communities that have limited residential car parking did so at around 0.4–0.7 spaces per unit. As Manual for Streets indicates, provision below demand will only work successfully where adequate alternatives to car usage exist.
- ✓ Restricting car access at certain times of day within the entire development or parts of it.
- ✓ Limiting car access to the periphery of the development (while ensuring that parking remains safe and secure).
- ✓ Non-residential parking restrictions and limited workplace parking.
- ✓ Restricting site access through a limited number of junctions designed to favour low car flow.
- ✓ Giving preferential treatment for small or eco-friendly cars and scooters.

Measures to reduce car dependency must be supported by providing alternative access to cars, particularly for essential journeys. These may include:

- business and residential car clubs;
- local taxi services and on-demand public transport provision;
- establishing a car sharing scheme for the development.

Developers may also consider strategies for encouraging the use of home delivery vehicles where these would prove more sustainable.

Best practice: parking management

Residents at Seldown, a new eco-development in Dorset, have 0.7 parking spaces per home. The spaces will incur charges. Owners of more environmentally friendly vehicles will pay lower charges, and parking revenue will be ring-fenced for sustainable transport measures. To support lower car ownership, the housing association Western Challenge, which is developing the scheme, will provide a car club using two environmentally friendly vehicles with two dedicated parking spaces and an electricity charging point. A controlled parking zone in the adjacent area is expected to contain overspill parking.

Providing access to public transport

New developments must be well connected via public transport from the outset. Developers should seek to provide direct connections to key destinations such as urban centres and major employment and leisure zones. In order to encourage a reduction in car use, public transport will need to be frequent, reliable and easily accessible. Early morning and nighttime transport facilities should be considered in order to provide for residents without cars.

a. Train

Eco-towns and Growth Points need to have links to the rail network. This can be done through:

- cycle tracks/footpaths to the nearest and/or most convenient station;
- a regular shuttle bus linking to the most appropriate station;
- the extension/re-routing of an existing bus route to the station.

Developers should work with Network Rail and the relevant train operating company to establish whether sufficient capacity exists on the trains that will call at the relevant stations to meet the expected passenger demand particularly during peak periods. If not, they should set out what measures will be taken to address this. Extra rolling stock may be required to accommodate the extra demand, which developers/PTEs or local authorities may have to fund.

Liaison with Network Rail and/or the relevant train operating company will also be required in order to establish integrated and easy-to-use transport links around stations. This may include:

- making information about policies for taking bicycles on trains easily available;
- highlighting information about bus routes connecting to stations;
- providing clearly signed cycle routes/walkways to and from the station.



Connecting passengers to the train station by bus in Bristol
(Source: CABE/Stephen McLaren)

Best practice: Aylesbury Vale Parkway

The CLG/DfT Community Infrastructure Fund (CIF) is providing rail infrastructure (track, signalling and platforms) to upgrade an existing 4.75 km freight line for passenger services to access a new Aylesbury Vale Parkway station and park-and-ride facility located adjacent to the new Berryfields development (3,850 new homes in north Aylesbury). The station will be served by half-hourly services at peak time and hourly off-peak.

Chiltern Railway will fund the station construction (through a subsidiary, Aylesbury Vale Parkway Ltd) and Bucks CC are funding highway access roads and a bus-based park-and-ride adjacent to the station.

b. Buses

Providing the right service:

- **Within the development**

Bus services such as minibuses can provide access to local facilities, particularly for the less mobile.

- **Beyond the development**

A range of accessible and reliable bus services will be needed to provide inhabitants with access to local employment, leisure facilities, nearby town centres and connections to key inter-urban routes. This will require close co-operation between the public and private sector to ensure that bus provision matches the community's need.

In order to facilitate this, developers may need to work with operators and the local transport authority to:

- engage in discussions to reroute existing services;
- negotiate the provision of new bus services;
- consider the need to support bus services at the beginning of the development until they become self-sustaining;
- consider alternatives such as community transport and/or car share schemes for off peak travel or less popular routes;
- plan bus routes and the placement of public transport stops during the design process;
- maximise the opportunities for environmentally friendly buses.

Growth Points and Eco-towns may consider drawing on new powers for local authorities provided in the Local Transport Bill (currently before Parliament). The Bill would give local authorities the powers to improve the quality of local bus services, by enabling more effective partnership working between local authorities and bus operators, and making 'quality contracts' schemes a more realistic option.

Beating congestion

Where congestion on the existing road network is likely to challenge the reliability and journey time of services, measures may be needed to ensure that public transport is attractive to users. Bus priority measures include:

- bus priority at traffic lights;
- bus gates;
- bus lanes;
- bus-only roads/segregated busways.

Larger settlements (Cambridgeshire, Leeds) have found that guided buses are a good way of providing services in confined spaces. However, the design of new services should be location-specific and dependent on settlement size and predicted patronage.

Creating a positive bus environment

Bus routes need to serve everyone in the development. Street furniture (stands, shelters etc) needs to be accessible, safe, secure and well lit. High quality information, including the provision of real-time information at stops (and even within homes, shops and schools) will benefit users considerably. Eco-towns and Growth Points should plan to maintain a continual dialogue with bus operators to ensure that changes to timetables and routes are only introduced where necessary and are properly disseminated to users.

Best practice: providing key connections

Residents at the new High Royds development on the edge of Leeds will be encouraged to commute into the city by train, making use of a new, frequent, free shuttle bus running morning and evening to nearby Menston rail station. The bus, to be funded by the developer, Raven Group, will also make journeys during the day to local shopping centres. An extra vehicle will be provided if needed. The development is to be equipped with on-site bus shelters and real time information. The site layout will allow existing bus services to be diverted through the development with the help of bus gates, which cars are unable to cut through. To promote the service, Raven Group will provide each household with a free one year bus/rail pass, while the passenger transport executive Metro will give residents discounts on tickets after that, at 25% for the second year of occupation and 10% for the third. In addition, the developer is contributing £300,000 towards new rolling stock as part of a bid by Metro to increase rail services at peak times. The measures aim to keep pressure off the congested A65.

Best practice: Fastrack

To ensure that residents of new developments enjoy excellent access to high-quality public transport from the outset, a 40 km network of Fastrack busways and priority lanes is being established in Kent Thameside to link communities, local facilities and rail stations. All major new developments are designed around a Fastrack spine on which high-quality and high-frequency services operate, ensuring a credible and attractive alternative to use of the private car for local journeys.

The first phase of Fastrack has been running since March 2006, delivered with DfT funding and support. Fastrack busways and distinctly liveried buses make a bold and visible statement about bus priority and the importance of public transport, and by-pass congestion 'hotspots', resulting in reliable journey times for passengers. The system has already proved very popular, with passenger forecasts exceeded and surveys showing that 19% of passengers had switched from using a car.

In June 2007 the second Fastrack route was launched, this time 100% funded by the developer of The Bridge, a major new development to the north of Dartford. The planning agreement required that Fastrack be fully up and running before any homes were occupied; residents enjoy free use of Fastrack; and information screens are provided in every home, giving 'live' arrival times. Designed from the outset to influence travel behaviour and reduce car use, Fastrack through The Bridge is an excellent practical demonstration of integrated and sustainable land use and transport planning.

For more information see www.go-fastrack.co.uk and www.thebridgedartford.co.uk.



Fastrack busways by-pass congestion 'hotspots', resulting in reliable journey times for passengers. Busways and distinctive buses make a bold and visible statement about bus priority. (Source: Kent Thameside Fastrack)

c. Tram and light rail

The advantage of bus routes is that they are less costly and more flexible than trams or light rail options. Moreover, small settlements, such as Eco-towns, would not warrant the construction of a new tram system.

Developments could use shuttle buses and cycle routes to connect to nearby tram stations. New stations may be considered where existing tramways run through or in close proximity to the development.

For short distances and certainly within the development, consideration may be given to ultra light rail. This could prove to be a viable alternative to buses or cars although remains limited in scope and flexibility.

Best practice: Langdon Park DLR station, Tower Hamlets

The DfT/CLG Community Infrastructure Fund has funded a new DLR station between All Saints and Devons Road, with an upgraded footbridge connecting the station to existing disadvantaged communities in the Lower Lea area and and potential new housing sites in the Ailsa Street area.

Goods and emergency vehicles

Developers should consider strategies to enable goods to be delivered into (and out, where appropriate) the new development while reducing the carbon footprint of the goods moved. This may include freight transfer centres or low-emission delivery vehicles. Access for emergency vehicles should also be considered in design plans.

Becoming an Eco-town transport exemplar

Eco-towns have the opportunity of becoming an Eco-town transport exemplar. Depending on the location of the new build, e.g. by a waterway, innovative possibilities may be considered in order to encourage sustainable travel.

3. Funding

Transport provision in Growth Points and Eco-towns should be aligned with local and regional transport plans. Funding to support such provision will need to be identified:

- within existing local and regional funding streams (including the Regional Funding Allocation);
- through Growth Area Funding;
- via private sector funding (such as developer contributions through Section 106/278, Community Infrastructure Levy and tariffs);
- where relevant and timely, from the Community Infrastructure Fund.

A strong business case that ensures value for money is essential for any proposal where government funding is being sought.

4. Implementation

Once the correct infrastructure has been properly planned and put into place, developers must support a high take-up of sustainable transport options

How to.... support a high take-up of sustainable transport options

Developers should work with local transport authorities, local travel plan advisors, residents and operators to:

- ✓ Ensure that ticketing is quick and easy to use across operators and/or different public transport modes. This could involve joint bus/train tickets or ITSO smartcards.
- ✓ Ensure that interchanges between the different modes is easy. This may include the physical proximity of an interchange as well as co-ordinating bus and train times.
- ✓ Ensure high quality information provision (maps, walking routes, cycle paths, bus/train timetables etc).
- ✓ Provide good advertising and marketing. Recent examples of bus scheme re-branding have triggered a large increase in patronage.
- ✓ Engage local employers, schools and developers in travel planning.
- ✓ Provide facilities to enable people to work from home (broadband access etc) or from the immediate area (local resource centres, technology hubs etc).
- ✓ Provide and promote sustainable transport options for those travelling to school, universities and health centres.
- ✓ Encourage a change in travel behaviour from the outset by implementing personal travel planning for all residents, reducing the cost of transport or providing free use of car clubs and/or public transport in the town's initial stages.
- ✓ Help introduce cycling/walking initiatives such as:
 - bike/walk clubs;
 - Bikeability training;
 - bike/walk buddies.
 - walking buses – a group of schoolchildren chaperoned by two adults (a 'driver' leads and a 'conductor' follows).



Bikeability training (Source: DfT)

Best practice: travel vouchers cut car use

At Beaulieu Park in Chelmsford, residents moving into a new phase of the development were given a year's free bus travel for two people in each household, together with integrated bus and rail information. Residents from the existing development were also given three months' free travel for every household, and a discount on their renewed season tickets. In addition, the developer, Countryside Properties, funded extra morning and evening runs for a bus between Beaulieu Park, the town centre and Chelmsford railway station, and new bus stops were installed on site.

The package has proved successful: the bus service, which was initially guaranteed by the developer for five years, became commercially viable in two and a half.

5. Monitoring

Developers should agree targets for modal share with relevant local partners (such as Government Offices, the Highways Agency, Local Planning or Highways Authority) appropriate to both the implementation and the occupation phases of each community. The actual modal share achieved should be monitored over an agreed period following completion of the development. If it becomes apparent that modal share targets are not being achieved (eg that car use exceeds desired levels), the developer should initiate remedial measures to rectify the situation.

For further information, please consult:

Communities and Local Government, *Eco-towns prospectus, 2007*
<http://www.communities.gov.uk/documents/housing/pdf/ecotowns>

Department for Education and Skills and Department for Transport, *Travelling to School: a good practice guide, 2003*
<http://www.dft.gov.uk/pgr/sustainable/schooltravel/travelling/travellingtoschoolagoodpract5762>

Department for Transport, *Full Guidance on Local Transport Plans. Second edition, 2006*
<http://www.dft.gov.uk/pgr/regional/ltp/guidance/fltp/fullguidanceonlocaltransport3657>

Department for Transport, *Home Zones. Challenging the future of our streets, 2006*
<http://www.dft.gov.uk/pgr/sustainable/homezones/cfos/homezoneschallengingthefutur5739>

Department for Transport, *Making Car Sharing and Car Clubs Work, 2005*
<http://www.dft.gov.uk/transportforyou/roads/planning/makingcarsharingandcarclubsw>

Department for Transport, *Making Personal Travel Planning Work Research Report, 2007*
<http://www.dft.gov.uk/pgr/sustainable/travelplans/ptp/makingptpworkresearch>

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<http://www.dft.gov.uk/pgr/sustainable/travelplans/rpt/mrtpw>

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<http://www.dft.gov.uk/pgr/sustainable/smarterchoices/makingwork/makingsmarterchoicesworkfull5770>

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<http://www.dft.gov.uk/pgr/sustainable/travelplans/work/essentialguide.pdf>

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<http://www.dft.gov.uk/162259/165237/202657/guidanceontapdf>

Department for Transport, Communities and Local Government & the Welsh Assembly Government, *Manual for Streets, 2007*

<http://www.dft.gov.uk/pgr/sustainable/manforstreets/pdfmanforstreets.pdf>

Office of the Deputy Prime Minister/Home Office, *Safer Places, the Planning System and Crime Prevention, 2004*

<http://www.communities.gov.uk/documents/planningandbuilding/pdf/147627>

The Department's series of Traffic Advisory Leaflets covering a wide range of transport-related design issues, available for free download at:

<http://www.dft.gov.uk/pgr/roads/tpm/tal/currentlistofalltrafficadvis4074>.