

Linking sustainable transport and housing growth

Sustrans workshop for the Coast to Capital Local Enterprise Partnership

The STDEP toolbox

Sustrans is producing a toolbox for STDEP designed to demonstrate the benefits of sustainable transport and help LEPs and local delivery partners strategically invest in sustainable transport schemes.

They include:

- Key messages
- Statistics and evidence
- Signposting to tools and case studies

This workshop shares our thinking on Linking Sustainable Transport and Housing Growth.

This is divided into three parts:

- Part 1: Aligning housing growth and sustainable transport
- Part 2: Planning housing growth to enable sustainable transport
- Part 3: Sustainable transport planning in new housing developments

Linking sustainable transport and housing growth

Part 1: Aligning housing growth and sustainable transport

Population growth and housing demand

- The UK population will rise by approximately 10 million over the next 25 years putting greater pressure on existing transport networks.
- This means we need to fully integrate housing growth and planning with transport objectives

The role of spatial planning

Spatial planning helps integrate sustainable transport and housing growth by overlaying competing needs to:

- Reduce the need and distances required for people to travel
- Maximise the efficiencies
- Increase provision and capacity for travel modes that are the most sustainable
- Create better places, where people and employers want to live and work
- Consider the needs of both present and future generations
- Design healthy weight environments

Planning policy context

The National Planning Policy Framework (NPPF) is broadly supportive of integrating local housing growth and sustainable transport.

NPPF core planning principles include to:

“actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable”



Cycling and walking policy context

The Cycling and Walking Investment Strategy

Under the Infrastructure Act 2015, the government is required to set a cycling and walking investment strategy (CWIS) for England.

The draft CWIS sets out the following ambitions:

- double cycling and reverse the decline in walking
- reduce the rate of cyclists killed or seriously injured
- increase the percentage of children aged 5 to 10 that usually walk to school

Local Cycling and Walking Infrastructure Plans

- The government is also expected to publish non-statutory guidance and support to assist local authorities develop Local Cycling and Walking Infrastructure Plans (LCWIPs).

The potential of sustainable transport

Cycling, walking and public transport offers more efficient modes of travel for many local journeys.

This reduces pressure on the road system from private vehicle use.

Sustainable transport can also:

- Improve air quality
- Improve health
- Accessibility for all communities
- Reduce carbon emissions

Great potential exists for increasing cycling and walking:

- Sustrans' Bike Life survey - found that nearly a third (28%) of people would like to ride a bike but nearly eight in ten (79%) people however said they wanted improved safety for people riding bikes
- When safe, continuous and attractive cycling infrastructure is implemented usage can be high, for example on the Victoria Embankment cycle modal share is now at 52% during rush hour periods



Practical approaches to align housing growth and sustainable travel

There are many practical approaches to align housing growth and sustainable travel.

Some of the common success factors include:

- Effective leadership
- Integration of health, transport and planning teams and objectives

Case Study: Stoke-on-Trent

To improve public health Stoke-on-Trent recognised the need to better integrate spatial planning, health and transport. They did so by recruiting a Health Psychologist to:

- provide evidence for the inclusion of health in the Local Plan and planning decisions
- act as a planning specialist and consultant throughout the development management process
- enhance sustainable transport considerations in new developments



Case Study – Transit Oriented Development

Transit oriented development (TOD) is an urban planning principle widely used in the USA and increasingly used in Europe.

TOD helps authorities align housing development, wider regeneration and sustainable transport goals.

The **Transit Oriented Development Standard** provides an accreditation to incentivise developers and local planning authorities to use TOD

Principle	Objectives
Walk - develop neighbourhoods that promote walking	The pedestrian realm is safe and complete; active and vibrant; temperate and comfortable
Cycle - Prioritise non-motorised transport networks	The cycling network is safe and complete; cycle parking is ample and secure
Connect - Create dense networks of streets and paths	Walking and cycling routes are short, direct and varied, and are shorter than motor vehicle routes
Transit - Locate development near high quality public transport	High quality accessible transit is accessible by foot
Mix - Plan for mixed use	Trip lengths are reduced by promoting diverse and complementary uses and lower income groups have short commutes
Densify - Optimise density and transport capacity	Residential and job densities support high quality transit and local services
Compact - Create regions with short commutes	The development is in an existing urban area and Travelling through the city is convenient

Case Study: Hammarby Sjostad, Stockholm

Hammarby Sjostad in Stockholm is a development that when complete, will house 11,000 residential apartments.

The development is primarily aimed at young families and to alleviate housing pressure in Stockholm.



A comprehensive Masterplan was developed around eco-principles includes:

- cycling and walking provision
- transport targets for an average car ownership of 0.5 cars per unit,
- two new bus routes, a car sharing scheme,
- a free ferry service, and
- a new tram line.

80% of commuter journeys are made by public transport, cycling or walking.

Key messages

- The UK population will rise significantly over the next 25 years
- This will put greater pressure on existing transport networks
- Sustainable transport has a vital role to play in making transport more efficient
- It is therefore essential that we align our objectives for housing growth and sustainable transport to meet mobility needs whilst creating attractive, economically vibrant places for people to live

Linking sustainable transport and housing growth

Part 2:

Planning housing growth to enable
sustainable transport

The location and design of new developments

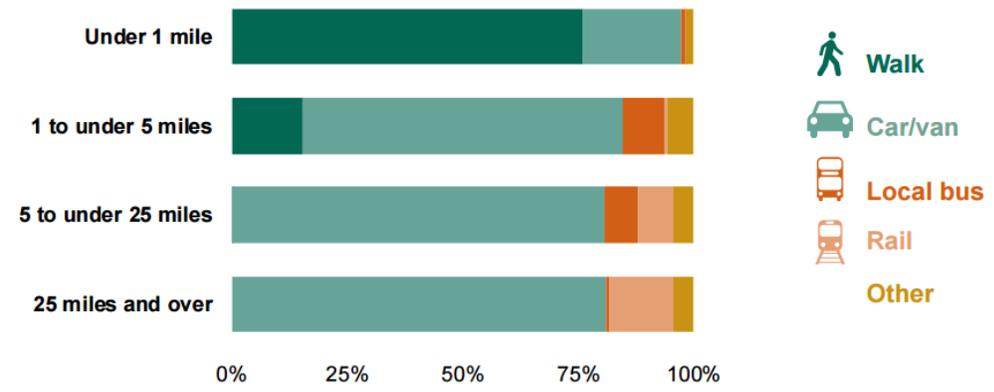
Building in urban areas and the importance proximity

The location and design of new housing developments will have a significant role in influencing how people travel.

Building new homes within existing towns means people are located nearby day-to-day destinations.

- This reduces overall distances that people are required to travel and makes walking and cycling viable.
- A concentration of people also supports demand and viability for public transport.

Modal share for different trip distances, The National Travel Survey 2014



Benefits of proximity, CPRE, 2008

• greater social contact and connectivity	• creates a safer and more secure environment
• services (shops, schools, healthcare) are close at hand	• preserves distinctiveness of rural and urban areas
• drives innovation	• community energy schemes are feasible
• reduces land-take	• reduces carbon emissions from buildings and transport
• supports existing settlements	• makes public transport viable

The importance of density

- To increase proximity we need to build more compact cities through appropriate high density development.
- Studies have shown as density decreases the number of vehicle miles increases.
- Higher densities also:
 - reduce the need to develop on undeveloped land
 - creating a more intense and varied urban environment which is visually and socially exciting and better suited modern lifestyles

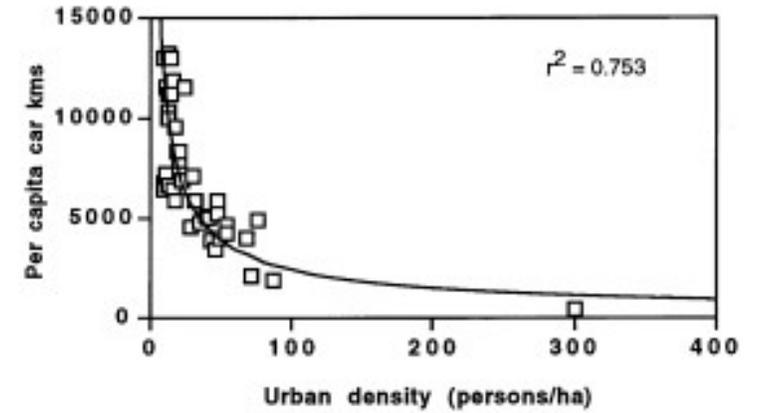
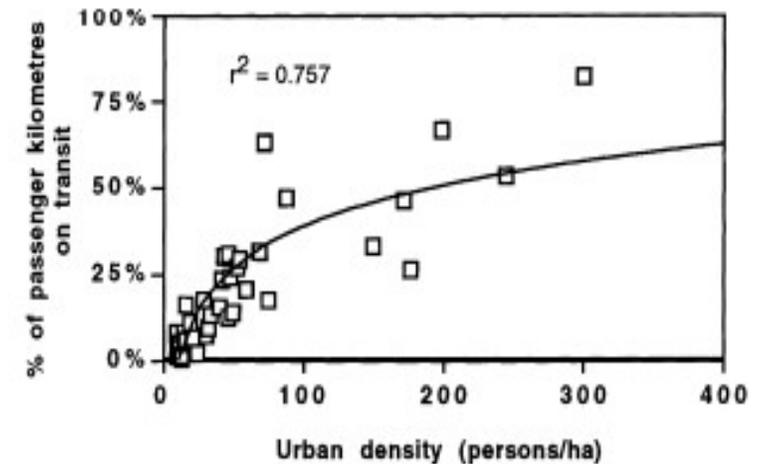


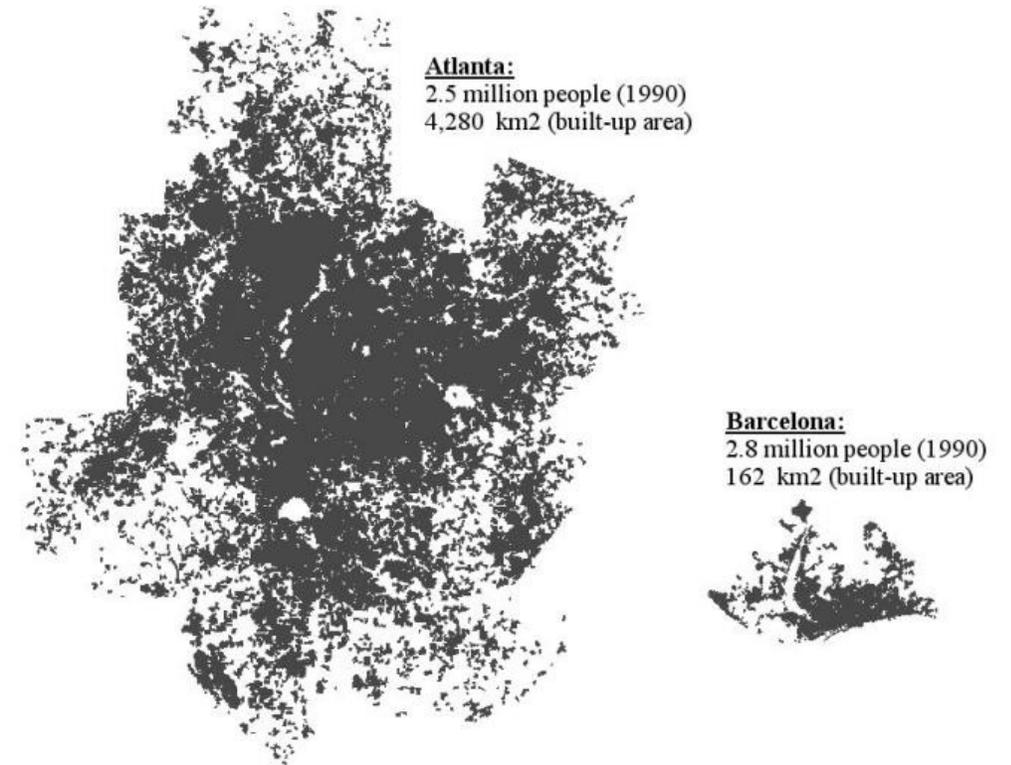
Fig. 4. Urban density versus car use in developed cities, 1990.



Urban density verses car use and transit use in developed cities. Kenworthy and Laube, 1999.

Case Study: Barcelona and Atlanta

- In 2004:
 - Barcelona's metro network was 99kms in length. 60% of the city's population lived within 600 metres of a station.
 - Atlanta's metro network was 74km in length, however only 4% of the population live within 800m of a station.
- Only 4.5% of trips in Atlanta are made by public transport in contrast to 30% of trips in Barcelona.
- If Atlanta wanted to ensure 60% of the population lived within 600m of a metro station (i.e. the same as existed in Barcelona) it would have to build an additional 3,400km of track and about 2,800 metro stations.
- Barcelona has 136 stations.



The cities of Atlanta and Barcelona at the same scale. Bertaud, 2004.

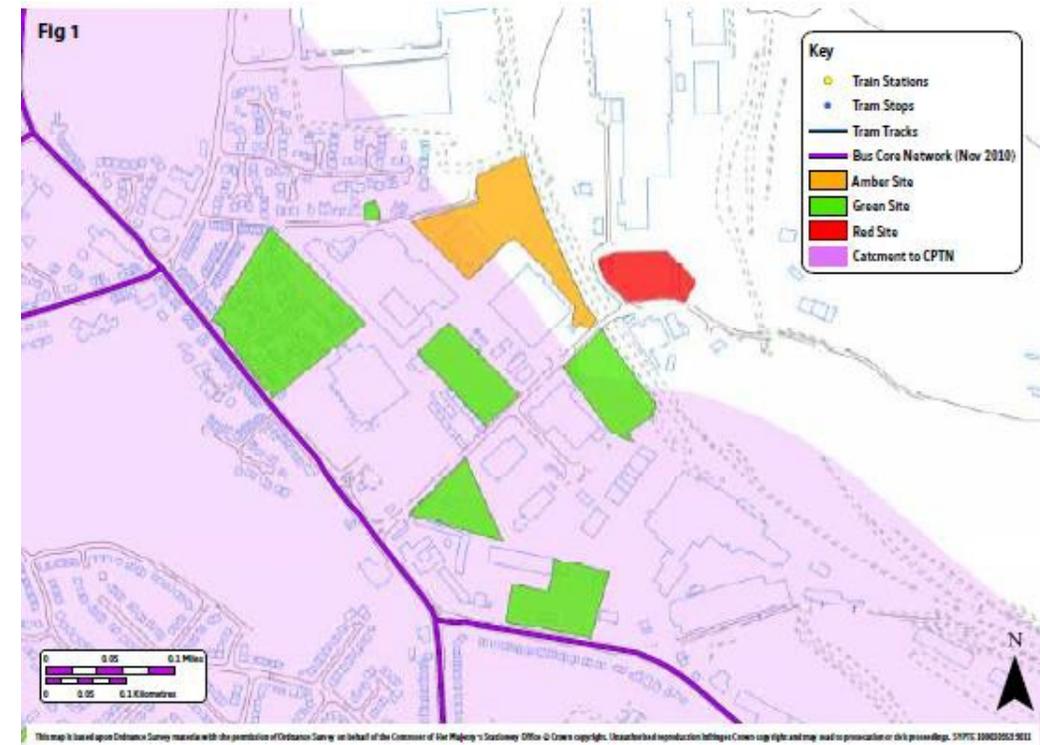
Densities of different cities

- Barcelona – 16,000 people/km²
- London – 5,510 people/km²
- Bristol – 4,085 people/km²
- Atlanta – 243 people/km²



The appropriate density

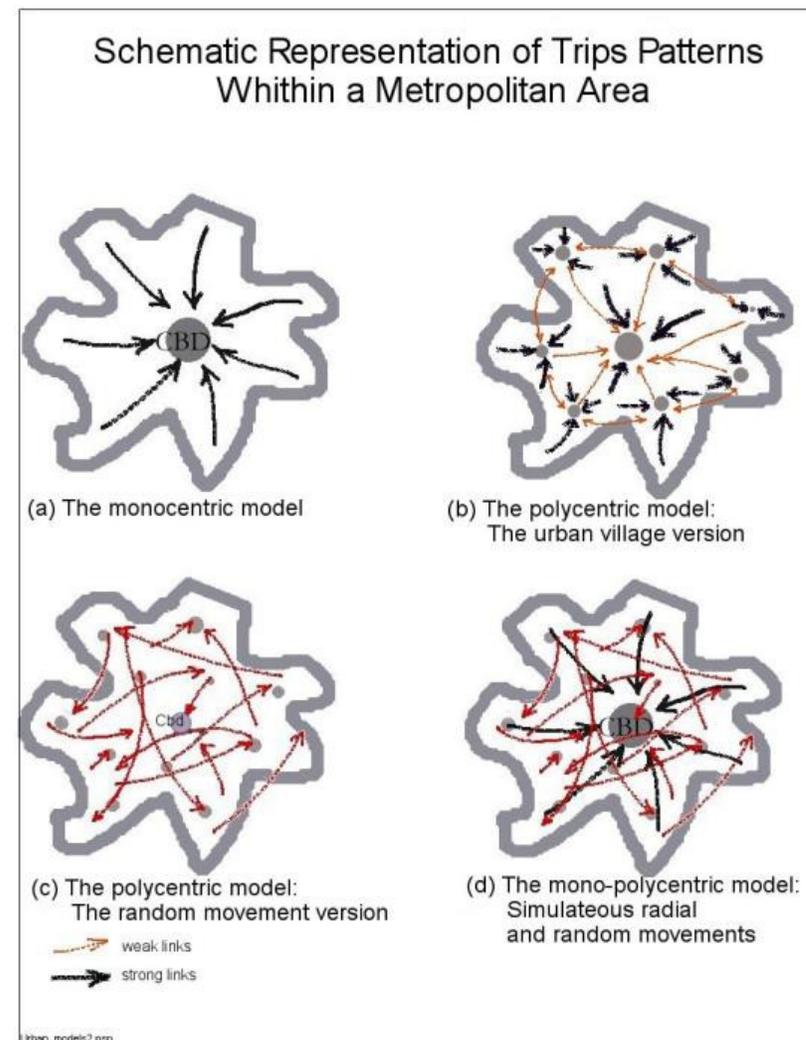
- Higher density however also means more pressure and demand on transport/mobility.
- If not managed this can lead to congestion, poor air quality and reductions in liveability.
- Transport and housing (or employment) therefore need to be planned together.



South Yorkshire's Land Use and Transport Integration System

Mixed use developments

- ‘Zoned development’ often means people have to move more and longer distances
- This underlines the desirability of mixed use developments as they contribute towards increasing proximity and the ‘internalisation’ of more local journeys within the development itself
- In reality its more complicated and movements will depend on a variety factors including:
 - where people want to live
 - housing stock availability and cost
 - employment opportunities



Schematic representation of trips patterns within a metropolitan area, sourced from Bertaud, 2004.

Building outside of existing settlements

- Many barriers exist that can make building new homes within existing settlements difficult
- For example private land ownership, or the cost for remediation of former industrial brownfield sites
- To keep up with housing needs we need to also build beyond existing settlements

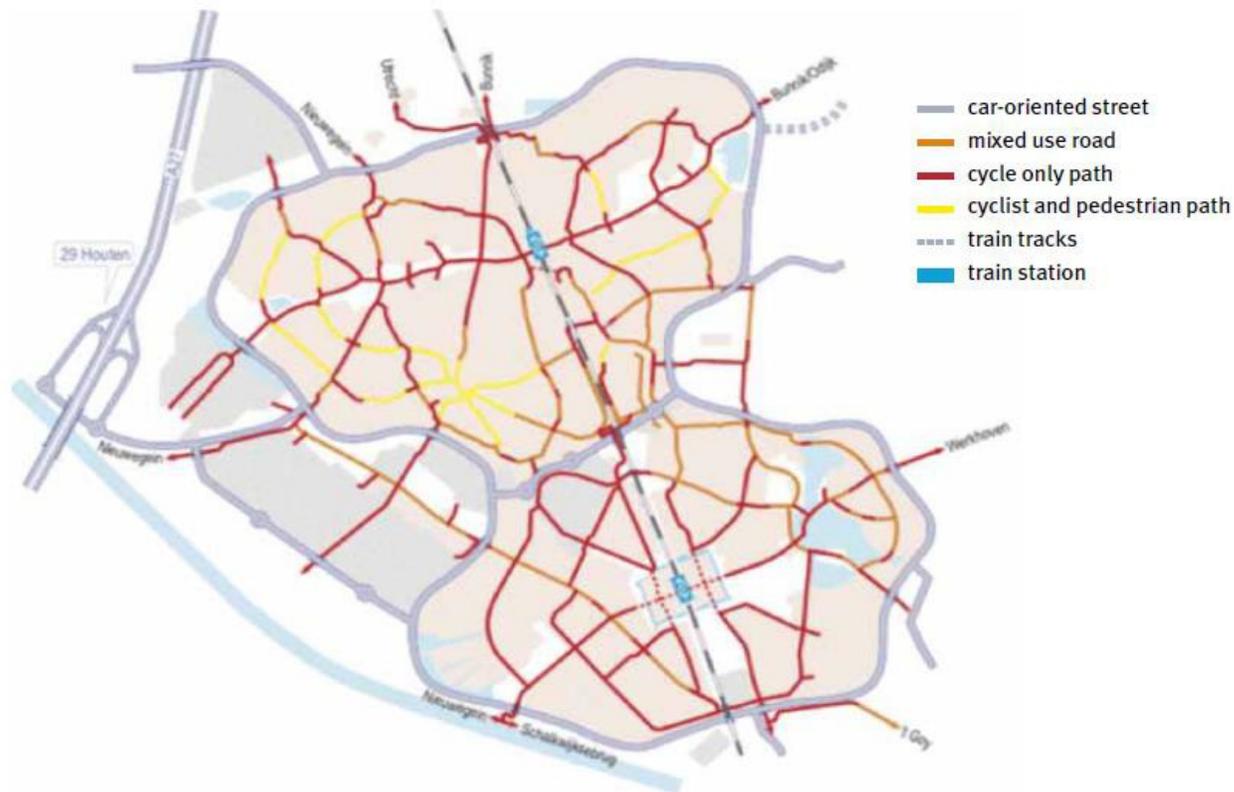
There are three overlapping approaches to this:

- Build adjacent to existing settlements
- Build along existing or planned public transport corridors
- Build whole new settlements designed to prioritise sustainable transport, e.g. Garden Villages



Case Study: Houten, Utrecht

- 66% of trips in Houten are made without the use of a car
- The town was built on a rail corridor with the addition of two train stations
- Houten was designed as a network of low-speed streets where cycling and walking can be prioritised within a ring-road
- This layout makes it far more convenient to travel actively for all internal journeys in Houten



Street Layout of Houten, sourced from Houten, Utrecht Case Study, ITDP Europe

Key messages

- The location and design of new housing developments influences how people travel
- Building to an appropriate higher density, encourages more compact settlements thereby increasing proximity
- This can enabling active travel, and the viability of public transport through higher levels of customer demand
- Building outside of existing settlements will also be necessary to meet our housing needs
- Larger developments should be mixed use, thereby encouraging the internalisation of trips
- New developments outside of existing towns and cities should also be built wherever possible along public transport corridors

What barriers exist that stop you practically building in the most appropriate areas to enable sustainable transport in the Coast to Capital area?

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Part 3: Sustainable transport planning in new housing developments

Building appropriate transport infrastructure

Sustainable transport planning in new developments

Sustainable travel infrastructure should be planned and built into new developments from the outset.

This should include:

- Walking provision
- Cycling infrastructure
- Public transport provision
- Vehicle management
- Integration of sustainable transport modes



Walking

Walking design principles

- Streets should have a movement and a place function
- Walking routes should be coherent, direct, safe, comfortable and attractive
- The design of walking routes within new developments should be clear to understand and enable through routes and permeability
- Vehicle speeds should be reduced to 20mph within all housing developments

Case Study: Gateshead Exemplar Neighbourhood

Gateshead's Exemplar Neighbourhood is a 40-hectare site on the edge of Gateshead town centre.

The Supplementary Planning Document says that pedestrian access must be fully integrated into the development of the site by:

- improving and creating new **crossing points** (e.g. across the railway line),
- **landscaping pedestrian routes** as part of a wider green infrastructure network and
- **'filtered permeability'** to connect people to local facilities while restricting passage and movement of motorised vehicles.



Cycling

- Safe, direct and attractive cycle routes should be provided alongside convenient and secure cycle parking.
- New developments should aim to make walking and cycling more convenient than using a car



Case study: Cycle Parking Guides for new residential developments in Cambridge

Nearly 20% of trips within Cambridge are made by bicycle.

One initiative to support cycling is a Cycle Parking Guide for developers that recommends cycle parking is:

- is conveniently situated, assessable and easy to use
- is safe, secure and covered
- fit for purpose
- managed and well maintained
- is attractive and in keeping with surroundings

Public transport

Developments should also fully consider public transport provision, including to:

- research take-up of potential bus/train travel
- high quality and appropriate infrastructure provided
- make public transport more convenient than using a car, for example by using filtered permeability

Case Study - South Yorkshire Developers Guide

South Yorkshire's Developers Guide helps developers design and develop new housing developments that support public transport use.

This insures applications are in line with existing planning policy therefore speeding up the planning process.

For example on site layout:

- site entrances and exits should be situated nearby public transport access points;
- accessible attractive, direct and safe walking routes should link the site to public transport stops
- within the site high density buildings should be placed closest to public transport access points.

Case Study: Nottingham – Workplace Parking Levy



Nottingham's tram system, Source Geograph: Creative Commons

So far Nottingham City Council is the only local authority to have introduced a WPL. This is an annual charge paid for by employers in the city with more than 10 parking spaces.

The WPL was set up in 2012 to tackle problems associated with traffic congestion and provides around £9m each year in funding for local transport including rail, bus and tram infrastructure and simultaneously acts as an incentive for employers to manage and reduce workplace parking.

Impact

- Jobs have increased in the city whilst traffic has declined by 8% and public transport is now above 40% of city journeys.
- Satisfaction from customers of Nottingham City Transport's Bus network, at 97%, is the highest in the UK.

Motor vehicle management

Good sustainable transport provision should be accompanied by managing private motor vehicle use.

This can be achieved by:

- Reducing traffic speeds and redesigning streets for people
- Reducing through traffic on local streets
- Managing car parking
- The provision of on site car clubs



Case Study: Vauban, Freiburg.

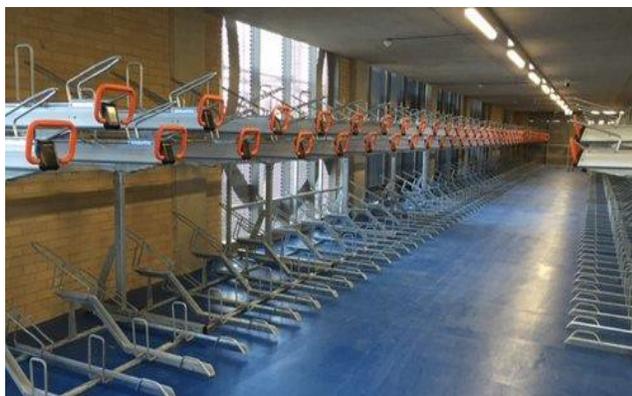
Vauban is a residential development on the southern edge of Freiburg containing 5,000 residents.

- If households would like to own a car and park it in Vauban a parking space costs around 17,000 euros, plus a monthly fee.
- Private cars must be parked in a parking garage on the edge of Vauban. You can drive within the development to drop off and pick up, but not to park.
- As a result most residents use public transport, walking and cycling to get around. This has resulted in there being only 164 cars per 1,000 people in Vauban.

The integration of sustainable transport

Many journeys are composed of more than one mode of transport, especially longer journeys which can include multiple stages from door to door.

It is therefore important to integrate sustainable transport modes including walking, cycling, bus and train travel in the context of new housing developments.



Case Study: Cambridge Cycle Point

Cambridge Cycle Point was modelled on European style cycle parking facilities and also features on-site maintenance, a cycle hire facility and a cycle shop.

Cycle Point is run by Abellio and provides space for 2,850 bicycles over three floors protected by CCTV.

It will be open 7 days each week from the first to the last trains of each day. All parking is free of charge.

Key messages

- In order to maximise sustainable travel, it is important to ensure:
 - the right transport infrastructure is built into new developments from the outset; and
 - new developments are connected to existing sustainable transport networks to enable people to reach their destination.
- Walking, cycling and public transport routes should be coherent, direct, safe, comfortable and attractive.
- Private motor vehicle use should also be managed.
- Active travel provision should also integrate with public transport to enable attractive sustainable modes from door to door.

How receptive are developers in prioritising sustainable transport in their proposals and what could be done to increase this?