

EU Green Capital Competition 2015

Section 2 Local Transport

A. Describe the present general features of the current transport systems and key operative transport plans.

Bristol's and the wider City Region's transport system is key to its highly successful and growing economy. The city has a population of 428,000 and lies at the heart of a city region of 1.1m (Figure 1).

Bristol City Council (BCC) is reducing the transport system's dependency on fossil fuels and enabling the transport system to support its citizens in a different way.

Critically, given the local and regional nature of commuting and other travel patterns, Bristol's mobility plans have been developed in formal partnership with neighbouring municipalities. The City region has a high level of self-containment (89%).

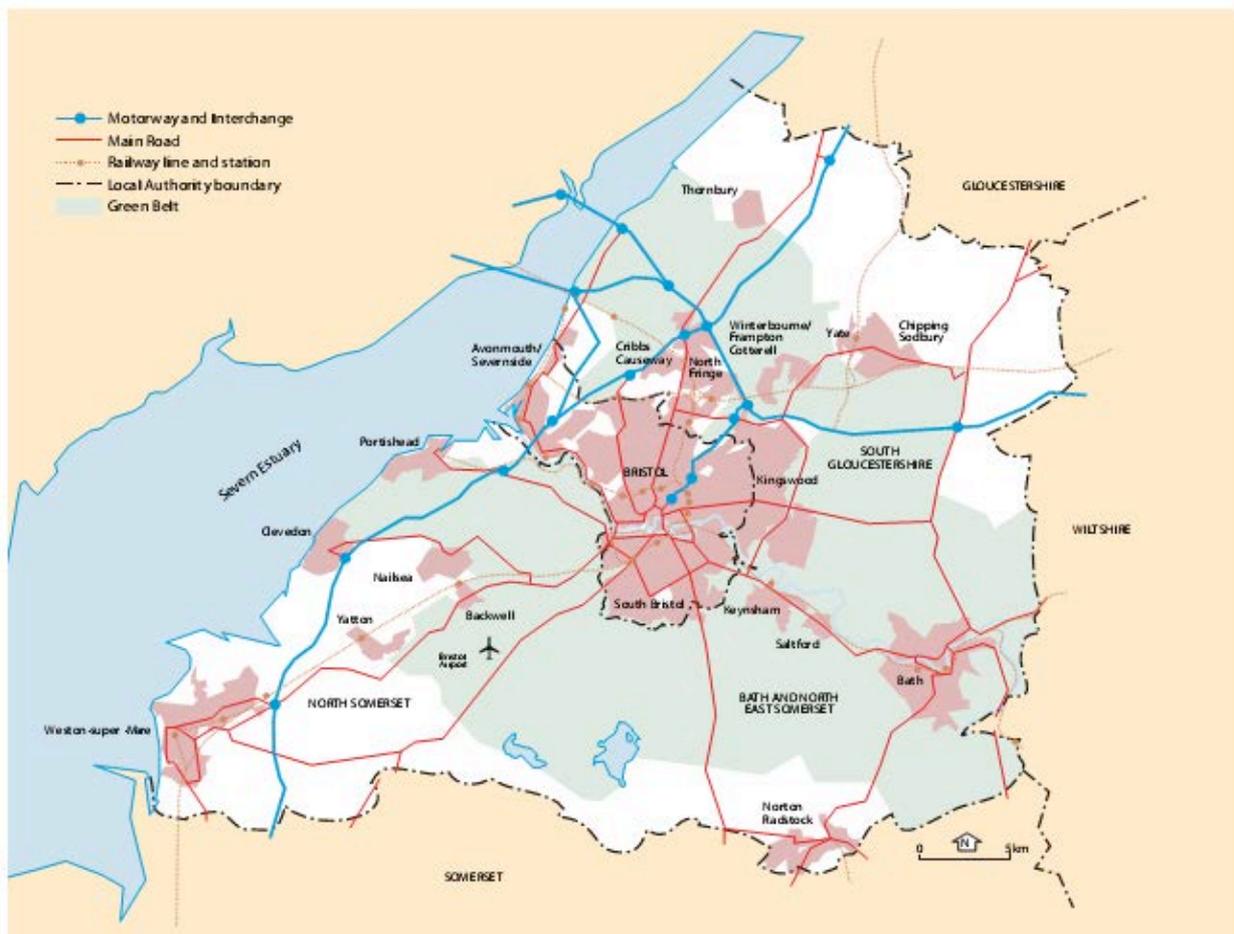


Figure 1: Bristol and the wider City Region

Mobility Plans

The current mobility plan is the Joint Local Transport Plan (JLTP3)(WOE 2011) and is delivering the following goals:

- **Reducing Carbon Emissions.** Transport interventions focussing on the promotion of lower carbon travel choices, alternatives to the car, influencing travel behaviour and managing demand
- **Supporting Economic Growth.** Tackling congestion and improving journey times for all travellers, to support the economy and access to employment, but also to reduce pollution and improve air quality
- **Accessibility.** To improve access to key services, education and employment for all residents, promoting shorter journeys and access to local facilities to particularly assist the needs of younger and older travellers.
- **Safety, Health and Security.** To reduce road casualties but also to encourage and facilitate more physically active travel through more walking and cycling
- **Quality of Life.** To enhance the public realm and minimise the impact of transport on the natural and historic environment.

Although the mobility plan is joint between the 4 municipalities of the city region, BCC plays a key leadership role, particularly with regards to reducing carbon emissions, where it has set a more stretching target than the joint plan (40% reduction by 2020 rather than 16%). BCC is also leading through reducing city car parking capacity and enhancing public transport for the many travellers arriving in Bristol from the wider area.

The JLTP sets the strategy 2011 to 2026. It includes a series of focused strategies for walking, public transport etc and a £420m, 3 year deliver plan (Figure 2). The Mobility plan is investing in new public transport infrastructure but also in softer measures to promote modal shift and behaviour change. Bristol was the UK's demonstration city for cycling and is now delivering a £41million integrated package of sustainable transport measures, through the Local Sustainable Transport Fund (LSTF). This package is being independently monitored and evaluated by the University of the West of England, Bristol (UWE), a technical university with international expertise in mobility studies



Figure 2: Mobility Plans Structure

Legislative Features

While BCC's action to create a sustainable transport are being successful, a principal barrier to achieving further results is the legal framework in which UK transport authorities (outside London) can intervene in local public transport provision. Both bus and rail provision in the UK are privately operated, making strategic planning of public transport more difficult, and BCC has not been permitted to operate commercial public transport services itself. However, the advantage of the involvement of the private sector is that this can enable additional capital funding, for example for new buses. BCC and private operators are working in partnership, including looking at options recently made available under UK law for greater local regulation of bus services to enable greater influence on fares, routes and service frequencies.

Public funding for major capital investment in transport has been controlled by the UK government with municipalities competing for funding project by project. In July 2012 Bristol City Region has secured a commitment from Government to a 10 year transport funding allocation post 2014 and additional transport powers including new powers over rail planning and delivery, significantly enhancing the city's ability to deliver the goals of its mobility plan

Energy Use and Carbon Emissions

Bristol's local road transport system is responsible for 27% of the city's energy use and 20% of the city's CO₂ emissions, producing 1 tonne per capita. CO₂ emissions have been reduced by 15% (2005-10) and is the lowest emission of the eight major English cities outside London. The City Region CO₂ emissions are 1.2t/capita and have been reduced by 12% (2005-10).

A1. Cycle Network

Bristol has 0.6m of cycle lanes per capita of which 0.2m is physically separated (Table 1).

Cycle Lanes	Total Length (km)	m/Capita
Physically separated, designated lanes along streets and roads	111	0.25
Marked and signed only, designated cycle lanes on streets and roads	148	0.34
Designated cycle lanes removed from road network (e.g. in parks and recreational trails)	20	0.05
Other lanes for bicycle use (e.g. mixed with pedestrians; light motorised, buses, etc.)	20	0.05

Table 1: Bristol's Cycle Network

In 2008 Bristol became the UK demonstration Cycling City, showing other UK municipalities the benefits of investing in cycling. £22m was invested in

infrastructure and cycling promotion. This significantly improved cycling levels as shown in Figure 3, which shows continued improvements.

Bristol City Council introduced two trial 20 mph areas to reduce the impact of cars in residential areas and to encourage walking and cycling. The zones increased cycling levels by 8-27% in year one and 75% of residents supported the 20mph zones overall. It is now being implemented city wide (Section C).

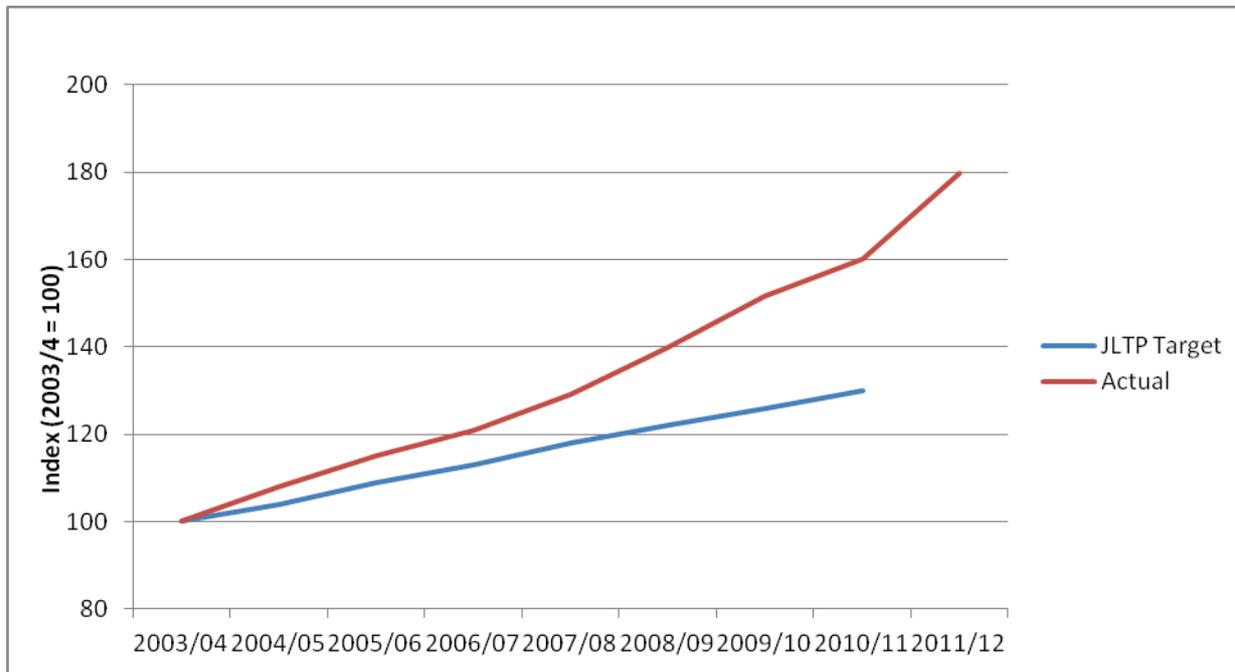


Figure 3: Cycling in Central and Inner Bristol (BCC 2012)

A2. Public transport service

Bristol has a comprehensive bus network, operated commercially. Figure 4 shows an extract of the network. Bristol has a limited local rail network, however plans are in place to enhance this (see Section C).

In implementing its Bus Strategy as part of its Mobility Plan BCC has completed a £70m investment in the local bus network (Section B).

Based on 2010 data 76% of people in Bristol are within 300m of an hourly (or more frequent) public transport service. This has improved from 71% in 2006. New 2011 census data is due in November 2012.

In 2011 there were 26m journeys by bus each year in the BCC area, up 9% since 2006.

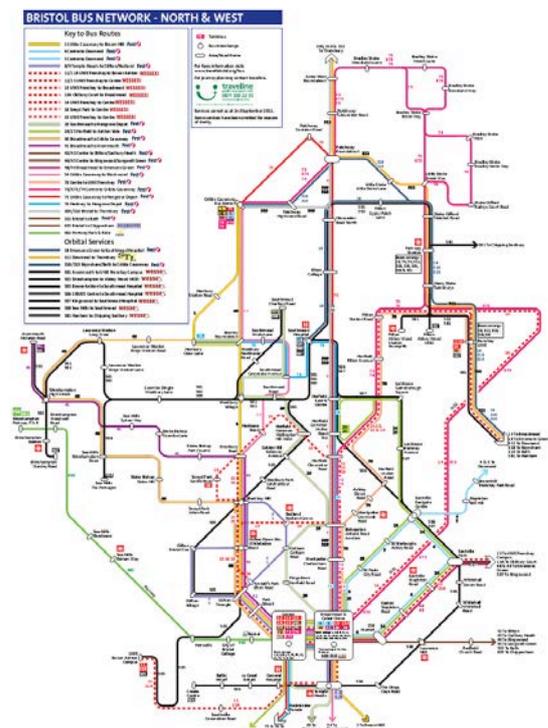


Figure 4: Extract of bus network

A.3 Proportion of all journeys under 5 km undertaken by private car

BCC estimate that just over 25% of all journeys to work under 5km are by private car. This is based on the 2001 census and travel diary information from 2009 (Table 2). The 2011 census data is not yet available but is expected to show reductions.

Mode	%
Car Driver	26.5
Car Passenger	13.6
Walk	49.8
Bicycle	5.1
Bus/ Rail	3.4

Table 2: Travel Diary Data (2009)

A.4 Low emission public transport vehicles

All bus services in Bristol are privately owned. BCC commissions only a small percentage of services, providing extensions to commercial services to meet social needs. The scale is not appropriate to justify a dedicated bus fleet.

The main private operator, First Bus, has trialled CNG and bio-diesel buses. The company is reducing fuel consumption (and thus the tailpipe emissions) powertrain optimisation, eco-tyres, electric ancillary drives, and an award-winning DriveGreen programme to improve driver behaviour.

Bristol City Council has funded the development of an innovative zero-emissions hydrogen waterbus.



Bristol innovative new hydrogen powered 'waterbus'

Performance Monitoring

Bristol monitors and reports transport performance publicly. Targets were set for the 2006-11 mobility plan and Table 3 shows the achievement of 14 of the 17 targets. New targets and monitoring are in place for the new mobility plan.

Objective & Target <i>By 2011 unless otherwise stated</i>	Target	Actual	Achieved	Comments
Tackling Congestion				
Traffic				
Restrict traffic growth across the JLTP area	+12%	+0.1%	Yes	Over achieved - despite population growth of 9%.
Limit the increase in journey times on the network by 2014/15	+14%	-9%	Yes	Over achieved – actually a 9% decrease
Ensure there is no increase in peak period flow to Bristol City Centre	<0%	-4%	Yes	Over achieved – actually a 4% decrease in traffic
Public Transport				
Increase bus patronage	+3%	+6%	Yes	Over achieved – 2 x the target
Increase bus satisfaction from 38% to 44%	+6%	+9%	Yes	Over achieved – 1.5 x the target
Increase the proportion of buses running on time	>0%	+16%	Yes	Increased from 59% to 75%
Increase park and ride journeys	+16%	+15.3%	No	Target missed by only 0.7%
Increase the number of community and demand responsive passenger journeys	+50%	+150%	Yes	Over achieved – 3 x the target
Increase the number of rail trips	15%	65%	Yes	Over achieved – 4 x the target
Cycling				
Increase the number of cycling trips	30%	63%	Yes	Over achieved – 2 x the target
Travel to School				
Ensure there is no increase in the number of children being driven to school	<0%	-19%	Yes	Decreased by 19% from 2005
Delivering Accessibility				
Increase the proportion of households within 30 minutes public transport travel time of health facilities	+7%	0%	No	No increase due to changes to the commercial bus services.
Increase the proportion of households within 40 minutes public transport travel time of key employment sites	+5%	+12%	Yes	Over achieved – 2 x the target
Safer Roads				
Reduce the number of people killed or seriously injured on roads	-25%	-39%	Yes	Over achieved
Reduce the number of children killed or seriously injured on roads	-25%	-61%	Yes	Over achieved – over 2 x the target
Ensure there is no increase in the number of slight injury casualties	<0	-25%	Yes	Over achieved
Better Air Quality				
Reduce the concentration of NO2 in Bristol Air Quality Management Area	-4%	0%	No	No improvement, despite the reduction in traffic volumes and congestion. However, similar to trend in nearly all major UK cities.

Table 3: Joint Local Transport Plan Targets and Progress

(Word count 1028)

B. Measures implemented over the last five to ten years

In the past ten years Bristol City has implemented two successful Transport Plans, as shown in Table 4, and in achieving our target as shown in Table 3. Bristol's actions have focussed on managing demand, improving public transport and cycling, and encouraging 'active travel' to successfully reduce private car use

Document name	Content	Status
Bristol Local Transport Plan 2001-06	Detailed Transport Policies with associated delivery plan and investment programme.	Adopted July 2000. Followed by Joint Local Transport Plan below.
Joint Local Transport Plan 2006-11	Detailed Transport Policies across Bristol and its neighbouring municipalities including associated delivery plan and investment programme.	Adopted March 2006. Followed by Joint Local Transport Plan below.
Joint Local Transport Plan 3 - 2011-2026	Transport strategy for Bristol and its neighbouring municipalities taking a longer-term view up to 2026. Delivery Plans setting out investment programmes over the shorter term.	Adopted March 2011, replaces parts of Bristol Local Plan 1997. Developed alongside the Local Development Framework below, to ensure synergy between land-use and transport planning.
Local Development Framework Core Strategy 2011	Spatial strategy and strategic planning policies to 2026.	Adopted in June 2011, replaces parts of Bristol Local Plan 1997.

Table 4: Transport plans in Bristol

Reducing commuting by car

This has been a key focus for the city's travel plans and the city has successfully reduced commuting by private car, as shown in Figure 5. Although also affected by economic factors, the underlying trend is reducing.

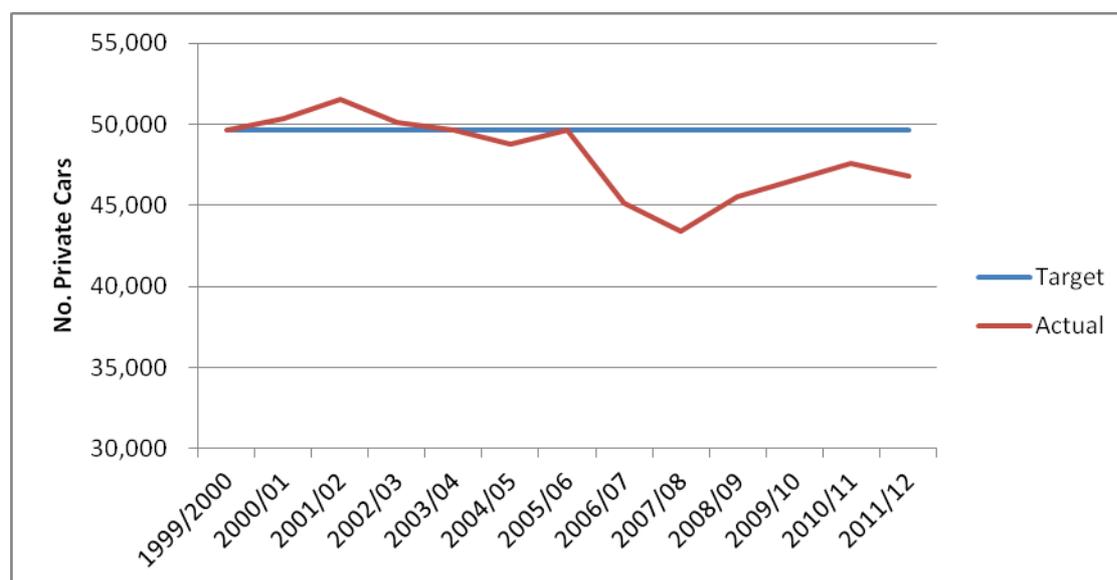


Figure 5: Peak Period Car trips into Central Bristol

Improving Public Transport

Bristol has invested £70m with adjoining municipalities to create the 'Greater Bristol Bus Network'. This has created more frequent and reliable bus services, better conditions for pedestrians and cyclists and improve public realm. Works have included bus priority measures; raised kerbs and real time information; advanced stop lanes for cyclists at traffic lights; improved pedestrian crossing facilities; road narrowing to manage speed and street tree planting.

Monitoring of these bus priority corridors shows a 12 –16% increase in passenger numbers.

Bristol's local rail network is limited but services have been improved (e.g. provision of more carriages) resulting in 20% passenger growth in the last 3 years.

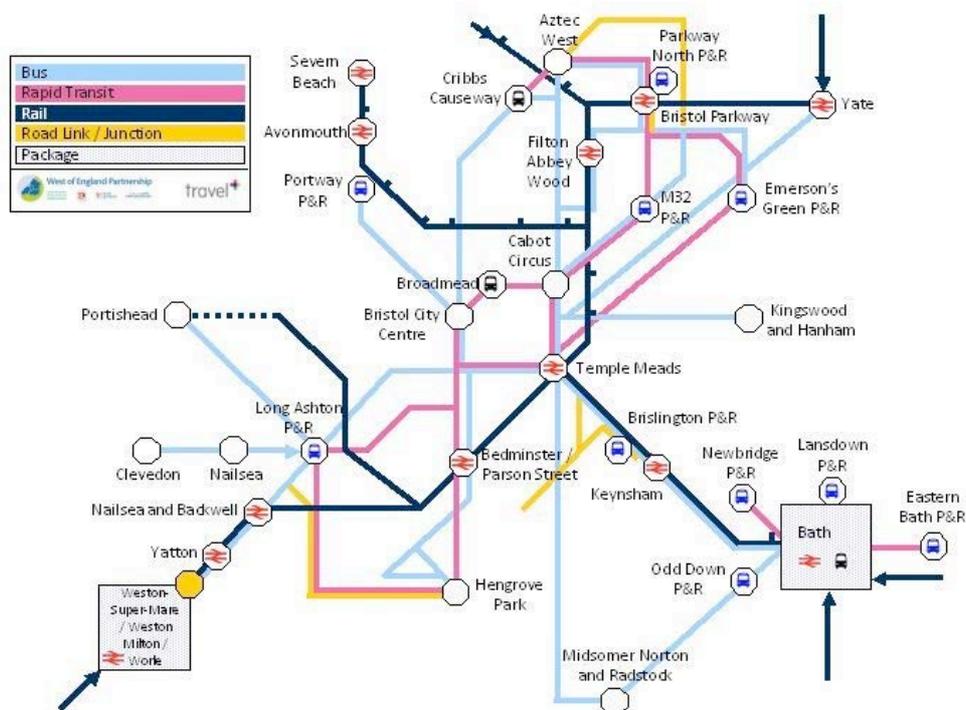


Figure 6: Planned Bristol West of England Public Transport Network (also showing existing network)

Improving Cycling

As Britain's official demonstration Cycling City, £22m was invested during 2008-11. As well as significantly enhancing cycle infrastructure in Bristol, the aim was to create a cycling 'buzz', overcoming decades of decline in cycling across the UK. Key actions were:

- New 200km cycle network - 61km of which are segregated routes
- Two 20mph pilot areas cover one sixth of homes in the city
- Cycling promotion under a single clear brand "Better by Bike" including:

- o a dedicated 'road show' team able to go to people in businesses and communities
- o loan bikes for people to give cycling a go
- o training for children and adults
- o cycling festivals and cultural events
- Improving access to bikes for low income households through cycle refurbishment schemes, one of which provides prisoners with employment training.



Figure 7: Cycling City Communication

The results show impressive growth in cycling 2007-10:

- to work, 46%.
- in city centre, 30%
- within 20 mph areas, 12%
- more female cyclists

And overall and 80% increase in cycling since 2004.

Changing travel culture

Bristolians' attitudes to travel have been changed due to the work of the City Council and many community and voluntary sector groups. Bristol has:

- Reduced space for cars in the city centre – closing and removing roads to create civic recreational spaces – like Queens Square, where a 1950's dual carriageway was removed to create a public green park and cycle and pedestrian route
- Created new pedestrian and cycle links – like the Brunel Mile which links the railway station to key leisure and business areas on Bristol's waterfront.



Figure 8: Queens Square

- Bristol is home to the 2 third sector organisations that are leading a culture change across the UK promoting community car free days; closing roads to

allow street parties and organised children’s play in the streets. BCC is working closely with the city’s third sector on this issue. One example of support is new, streamlined road closure processes.

As a result of this collaboration Bristol has more street parties than any other UK city.

- Engaged 15-17 year olds through a young person led project to help shape attitudes and behaviour before they have a driving licence
- Created a partnership of colleges, universities and the employment service to strengthen the link between sustainable travel and life opportunities, embedding sustainable travel in the culture of young people at the transition from school to adulthood
- Promoted the health benefits of active travel as a key motivator for people to change their habits
- Achieved a step change in policy making through embedding staff from the health service within the City Council transport and planning teams to increase these professions’ understanding of health issues

Working with business

Many Bristol businesses are actively managing the travel of their employees. For several years BCC has worked with the Bristol Workplace Travel Network to help employers with commuting and business travel efficiency. BCC has recently enhanced this programme with Area Travel Plans – focusing on key business growth areas of the city.

Reducing the environmental impact of transport

Bristol’s transport CO2 emissions per capita have been reduced by 15% 2005-2010 – the year which this data is available. Approximately 10% of this is a result of national improvements in fleet and is evident in all local authorities whilst 5% is a local effect. An intermediate performance is shown by the City Region.

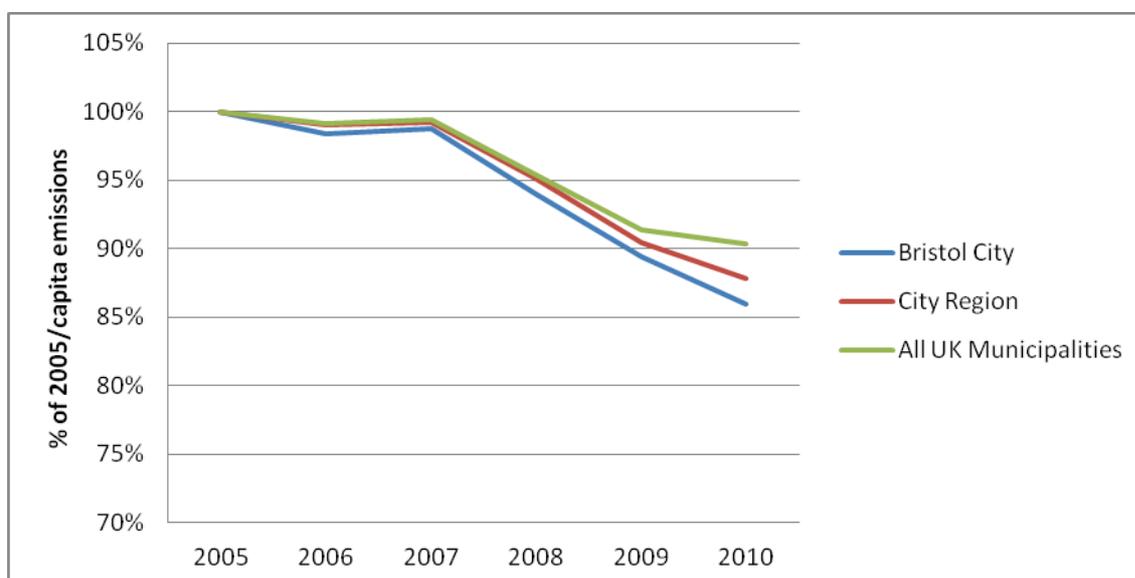


Figure 9: Per capita CO2 emissions from transport (DECC 2012)

Bristol is an exemplar, encouraging and assisting the take up of sustainable transport measures by our partner local authorities. Building on Bristol's experience, Bath and North East Somerset Council has extended the Bristol Freight Consolidation Service using electric vehicles to serve Bath city centre reducing carbon emissions and air pollution.

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C. Describe the short and long term objectives for the future and proposed approach to achieve these

Bristol City Region's Mobility Plan 2011-2026 builds on the momentum and success achieved over recent years. It aims to:

- Reduce Carbon Emissions.
- Support Economic Growth
- Enhance Accessibility.
- Improve Safety, Health and Security.
- Increase Quality of Life.

A 3 year £420m Action Plan (2012-15) includes targets to increase:

- Cycling by 76% by 2016
- Bus use by 11% by 2016
- Rail use by 41% by 2019

This forms the first phase of a programme to 2026.

UK government has controlled major capital investment in transport, with municipalities competing for piecemeal project funding. In July 2012 Bristol City Region secured a 10-year programme allocation post-2014 and additional powers including rail planning and delivery, significantly enhancing the ability to deliver its mobility plan.

C1. Reducing demand for transport

Bristol is integrating its Mobility and Land Use plans to create a city of sustainable communities. This builds on the success of the last decade when urban population densities have been increased by 10% and over 5,000 homes built in the city centre.

Bristol is also developing ICT infrastructure reducing the need to travel, particularly for businesses, through super-fast connectivity. Over £30m of investment is planned, with the initial £10m already secured.

C2 & C3 Reducing individual motorised transport and promoting rail, bus, cycling, walking

Bristol's mobility plan takes an integrated approach to reducing individual motorised transport and promoting rail, bus, cycling and walking.

Spatial Strategy

Bristol's mobility plan has been fully integrated with land use plans, and this is evident in new city centre proposals. BCC's City Centre Public Realm and Movement Framework (2012) proposes to significantly reduce traffic in the city centre and to reduce its speed – rebalancing the space in favour of pedestrians and cyclists.

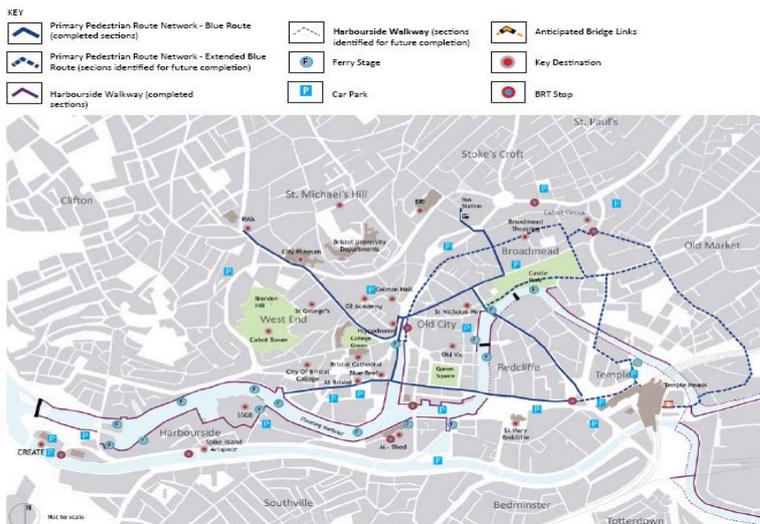
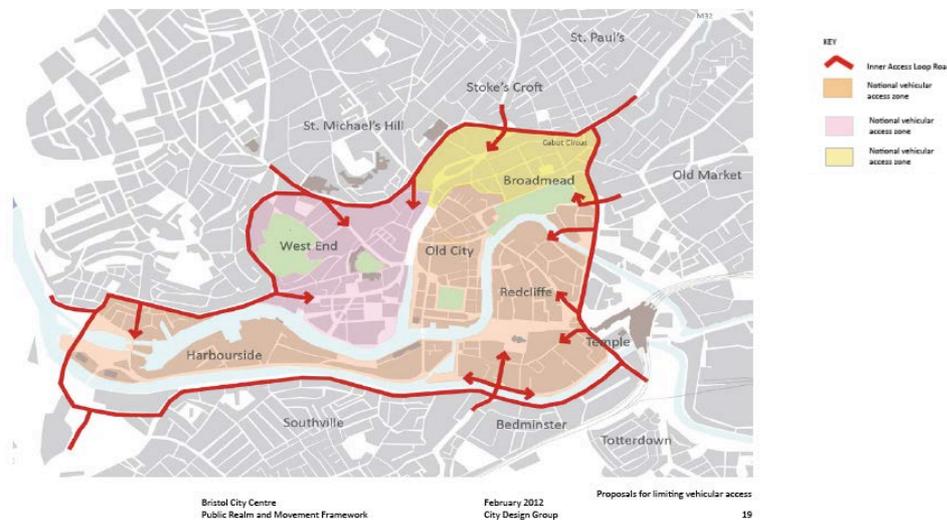


Figure 10: Inner Access Loop and Primary Pedestrian Route Network (BCC 2012)

Parking Strategy

Bristol is reducing city centre parking and improving park and ride facilities:

- **Park and ride:** The successful park and ride system will be improved by integration with the regional rail system to allow train-bus interchange.
- **City Parking Control:** After two successful pilots BCC is planning to implement residents parking zones around the city centre to discourage commuting by car.

Behaviour Change

A £41m package will help people change from private cars to more sustainable travel. It builds on the success and experience of the Cycling City project and includes:

- Working with employers in three key growth areas
- Targeting 11 key commuter corridors – integrating sustainable transport components linked to the capital programme for public transport
- Developing a shared fleet of electric pool vehicles for use at work
- Supporting young people to develop sustainable travel habits – when they start secondary school, enter work or start college

Reducing traffic speeds

To encourage cycling and walking BCC plans to extend the successful pilot of 20 mph zones to all residential areas. Citizen consultation is taking place. The committed budget is £2.3m.



Figure 11: Mayor and Vice Mayors Announcing 20mph plans

Investment in Public Transport

Achieving significant modal shift requires an improved attractive public transport system. Bristol, with its adjoining municipalities, is implementing a Greater Bristol Public Transport network (Figure 12) combining:

- A recently enhanced bus network linking residential areas with key employment and service areas
- A £195m rapid transit network offering fast, frequent and reliable services in low carbon vehicles. Three lines crossing the city to link employment and retail areas with residential areas and integrating with park and ride sites
- Major enhancement of the local rail network with frequent cross-Bristol services and new lines and stations to create the Greater Bristol Metro
- Integrated smartcard ticketing

Funding for the Rapid Transit network is committed.

Bristol has also secured investment from UK Government in electrification of the main rail line between Bristol and London enhancing the potential for integrated local transport.

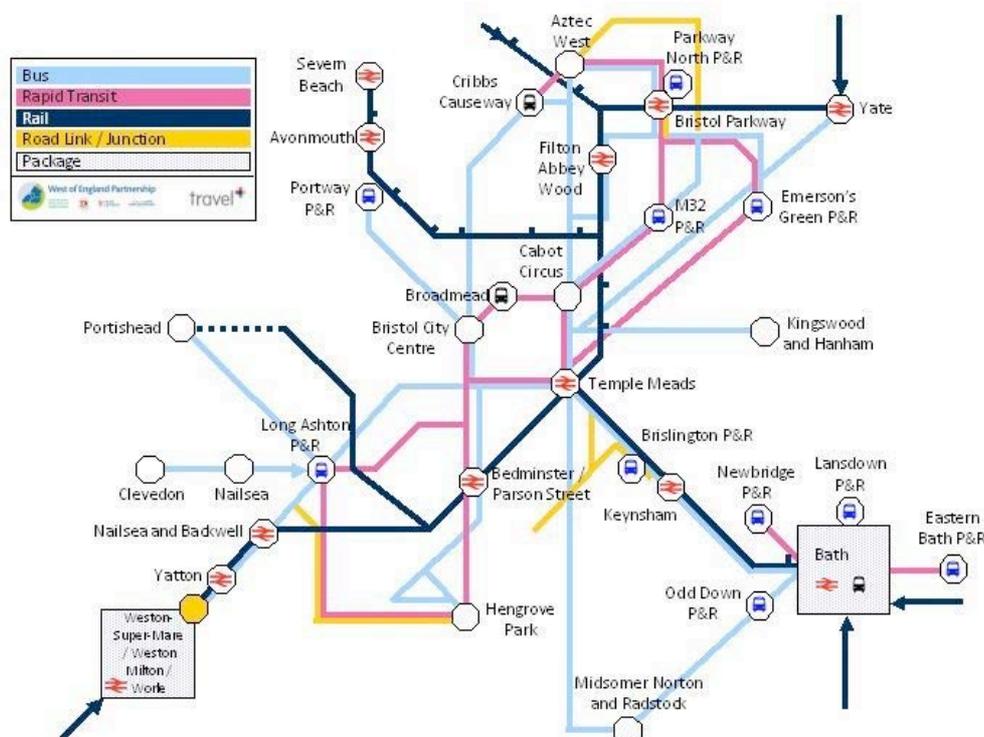


Figure 12: Planned Bristol City Region Public Transport Network

C4. Promotion of less polluting technologies, fuels, and practices

Bristol's strategy is primarily focused on demand management and modal shift, but also includes demonstration projects for new technologies, e.g:

- **Source Bristol:** A European demonstration electric vehicle programme developing a smart-phone application to check charging point availability
- **Bristol Freight Consolidation Centre:** Electric delivery service for city centre shops (Figure 13)
- **Hydrogen Ferry:** A pilot harbour passenger ferry funded by the city council and expected to enter commercial service.



Figure 13: Bristol and Bath Freight Consolidation Centre Electric Lorry

Evaluation

The impacts of Bristol's plans are monitored rigorously, using:

- Transport monitoring - such as automatic cycle counters, roadside surveys and continuous air quality monitors
- Social and economic monitoring – of population, development and business activity and access to services, especially for disadvantaged communities
- Public attitude monitoring – such as satisfaction with bus services, attitudes towards cycling and barriers to change.

Table 3 above shows the public performance reporting undertaken for Bristol's mobility plan.

Lessons learned

Bristol has evaluated past investment and identified these key factors:

- **Strategic planning:** Developing measures as part of strategic spatial and long term plans
- **Leadership:** Effective political leadership to secure funding and win public support for change
- **Know your customers:** Using professionals with expertise in behavioural change to develop communications campaigns
- **Partnership:** Working with businesses, communities and other stakeholders multiplies the effectiveness of the municipality.

(Word count 799)

D. List how the information provided above can be documented

The sections above refer to various documents and sources, which are available if required. The key documentation includes our Joint Local Transport Plan.

BCC 2012a: Bristol City Council – Cycle Monitoring Indicator CD122

BCC 2012b: Bristol City Council – Traffic flow indicator CD362

DECC 2012: UK Dept of Energy & Climate Change (DECC) August 2012
http://www.decc.gov.uk/en/content/cms/statistics/local_auth/co2_las/co2_las.aspx

WOE 2011: **West of England Joint Local Transport Plans 3, 2011 – 2026**
<http://travelplus.org.uk/our-vision/joint-local-transport-plan-3>

Targets set under the JLTP3 can be found in the associated **Delivery Plan**,
<http://travelplus.org.uk/media/245864/jltp3%20delivery%20plan%20final%20marc h%202012.pdf>

Information on previous targets and achievements can be found in the **5 Year Delivery Report** on our previous Joint Local Transport Plan:-
<http://www.westofengland.org/transport/joint-local-transport-plan/joint-5-year-progress-report-2011>

In terms of our other plans and documents:

Details on the **Local Sustainable Transport Fund (WEST)** project:-
<http://www.travelplus.org.uk/local-sustainable-transport-fund>

BCC 2012: **Public Realm and Movement Framework**
<http://www.bristol.gov.uk/page/planning-and-building-regulations/bristol-central-area-action-plan>

Further information on our major transport projects including the **Greater Bristol Bus Network** and **Rapid Transit** Major schemes:-
<http://www.travelplus.org.uk/>

For details on the **Cycling City Project**, please see:-
<http://www.betterbybike.info/>

and for the **Cycling City End of Project Report**
<http://www.dft.gov.uk/publications/cycling-city-and-towns-end-of-programme-reports/>

Our proposals for the **Citywide Rollout of 20mph** can be found at:-
<http://www.bristol.gov.uk/page/20-mph-rollout>

Information included in the sections above on **CO₂ emissions** have been sourced from the UK government Department of Energy and Climate Change:-
http://www.decc.gov.uk/en/content/cms/statistics/climate_stats/gg_emissions/laco2/laco2.aspx

Smart City:

ICT 4 EVEU www.ict4eveu.eu/

Bristol Freight Consolidation Centre

http://www.start-project.org/local_freight_networks.html

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