Getting Around Bath: Supporting Document

A Transport Strategy for Bath

October 2014

Bath and North East Somerset Council

Mott MacDonald

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Content

1. Introduction

Efficient transport is vital for Bath's future as an economic powerhouse, centre of learning, retail centre and high quality place of live, all framed by the World Heritage Site status of its built environment and surrounds.

This Transport Strategy has been devised to give direction to transport initiatives to address current and future needs. It has been built on the wealth of data available and the views of the many stakeholders involved. It is intended to provide the basis for initiatives to make the city function effectively and sustainably. This will enable it to grow, absorbing new demands into the established and unique city. This strategy has emerged alongside the masterplan for the Bath Riverside Enterprise Area and in doing so has sought to interlink transport options with those for this important area. An integrated approach, making the connections between land use and transport, is essential in understanding the many travel demands in relation to land use decisions. Looking to the future, this Strategy places an emphasis on enabling people to travel by sustainable means, reducing carbon emissions and air pollution and supporting a healthier city.

This report provides evidence and technical analysis to support the development of the strategy. The overall strategy has been reported separately as the 'Getting Around Bath' Launch Document in April 2014 (revision E).

A summary of recommendations made to address specific points identified in the Brief is provided as Appendix A.

2. Vision and Objectives

2.1 Vision

In developing a vision, it is important to set it in the context of progress made to date through various successful initiatives promoted through successive Joint Local Transport Plans and these include the three established Park and Ride sites, an ongoing parking strategy, Local Sustainable Transport Fund projects and Better Bus Area funding. In addition, the emerging Core Strategy reflects the changes in the planning system manifest through the National Planning Policy Framework that supports the principles of sustainable development.

A strategy needs a vision, in effect a statement that outlines the main aims. In this context, the proposed transport vision reflects the wider vision for a healthy, prosperous and unique city:

Bath will enhance its unique status by adopting measures that promote sustainable transport and reduce the intrusion of vehicles, particularly in the historic core.

This will enable more economic activity and growth while enhancing its special character and environment and improving the quality of life for local people.

Bath is unique but faces significant transport challenges. The current traffic volumes and congestion cause delays and localised air quality problems which reduce the quality of life for residents, affect the attractiveness of the city and degrade the built environment. The transport strategy will seek to address existing problems and will define a sustainable way of managing the impacts of future growth.

The health and wellbeing of everyone is of primary concern and so the strategy will focus on changing established travel habits. The significant challenge of managing car trips within Bath means that difficult decisions have to be made. The promotion of sustainable travel is vitally important, with better walking and cycling routes providing the best alternative to using a car for many short, local trips. This will be supported by a public transport network that provides good access to all parts of the city and its surrounds.

The strategy will make the city a safer and healthier place for all, whilst helping to protect the historic environment that merited World Heritage Site status.

2.2 Objectives

There are inevitably a wide range of objectives that need to be considered. However, some are accorded greater priority than others simply because they offer the greatest scale of change and contribute most to a culture and structure of sustainability.

Transport issues in Bath have been the subject of debate for many years. The third West of England Joint Local Transport Plan (JLTP3) sets out some high level objectives which provide a starting point for this strategy; the JLTP3 provides the framework for transport spending decisions and the policy context but is not intended to determine the wider strategy for Bath. Its aims are to:

- Create a step change in public transport providing an attractive alternative to the private car;
- Reduce congestion and improve air quality;
- Bring environmental improvements; and
- Create an effective and efficient transport system that will support the Bath Western Riverside regeneration project and other future developments.

Expanding these helps to illuminate the level of detail required from the possible initiatives, giving the following objectives that are proposed for the Bath Transport Strategy:

- Supporting and enabling economic growth, competitiveness and jobs;
- Promoting sustainable mobility;
- Widening travel choice;
- Widening access to opportunities: jobs/learning/training;
- Improving air quality & health, reducing vehicle carbon emissions;
- Safeguarding and enhancing the unique historic environment and World Heritage Site status; and
- Improving the quality of life in the city.

3. Policy Context

3.1 National Planning Policy Framework (NPPF)

The National Planning Policy Framework (Department for Communities and Local Government, March 2012) represents a significant change to the planning system that had evolved over many years. It is based on the principle that there is a presumption in favour of sustainable development that is to address positively the development needs of an area. For Bath, the Core Strategy process by which development sites are identified has yet to be determined. A consequence is that development sites are likely to come forward in the absence of an approved plan. Therefore it is important that the transport strategy provides sufficient direction for current development opportunities, emerging proposals through the Core Strategy Process and subsequently as part of the Placemaking Plan that will assess each site in more detail.

While NPPF offers limited guidance on transport and its relationship with planning, it does provide support for sustainable transport:

> *'Encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport.' (para. 30)*
>
> *'Plans and decisions should ensure developments that generate significant movement are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised.' (para. 34)*

The NPPF states that the location of the development and the land use mix are important to encourage the use of sustainable modes and states:

> *'Planning policies should aim for a balance of land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities.' (para. 37)*

Reference is also made to the application of travel plans and the importance of applying appropriate parking standards for residential and non-residential development sites.

3.2 Core Strategy

Planned development for Bath is set out in the Bath and North East Somerset Core Strategy, adopted July 2014.

"Plan for an overall net increase in jobs of 7,000, rising from 60,200 in 2011 to 67,200 in 2029, with significant gains in business services tempered by losses in defence and manufacturing.

Enable the development of about 7,020 new homes, increasing the overall stock of housing from about 40,000 to 47,000. The following distribution of housing will be planned for:

- *Large sites in the Central Area and Enterprise Area – 3,300*

- *Large sites in the outer neighbourhoods, including former MoD land and the extension to MoD, Ensleigh – 2,100.*
- *Small scale intensification distributed throughout the existing urban area -1,150*
- *Land adjoining Odd Down – 300."*

3.3 Placemaking Plan

The Placemaking Plan will complement the Council's Core Strategy by setting out the development aspirations and the planning requirements for the delivery of key development sites and updating and reviewing the planning policies used in the determination of planning applications. It will focus on creating the conditions for better places, and on providing greater clarity to enable developments to be delivered. It provides the detail to show how development can benefit and enhance local communities.

The Core Strategy forms Part One of the Local Plan, with the Placemaking Plan as Part Two for which the Launch Document was published in July 2013 as a discussion document, designed for community and stakeholder engagement and to generate the content for the next stage of the Placemaking Plan.

The Placemaking Plan raises a number of questions on how sites should be developed within the City Centre and Enterprise Area, for which a detailed Masterplan was commissioned in November 2013.

3.4 West of England Joint Local Transport Plan

The JLTP has been formed for four Councils in the South West (Bath and North East Somerset, Bristol City, North Somerset and South Gloucestershire) which will set out transport plans for the next five years (2006 – 2011) and their vision for the next twenty to thirty years. The area is vital to the economy of the South West and the United Kingdom with a heavy focus on cultural activities, education and tourism; with Bath designated as the only city World Heritage Site in the UK. The economic success for the South West has resulted in increased pressure on infrastructure and concern for future prosperity within the area. The area has over £3 billion of potential development sites available, of which will be managed appropriately over the next twenty to thirty years to sustain growth.

Achieving the Plan's overall objectives and vision requires a variety of major schemes to be delivered across a broad range of areas including bus, rail, park and ride, bus rapid transit and trams as well as roads. This is critical when focusing on reducing large volumes of traffic within certain communities and essentially preserving the area's natural environment. By obtaining sufficient measures across a large scale, demand and capacity issues can be met from the strategic transport network, fulfilling its function linking the South West with the rest of UK.

JLTP Aims and Objectives	
Aim	**Objective**
To tackle congestion	Promote use of alternatives to the private car Encourage more sustainable patterns of travel behaviour Manage the demand for travel by the private car
To improve road safety for all road users	Ensure significant reductions in the number of the most serious road casualties Achieve improvements for road safety for the most vulnerable sections of the community
To improve air quality	Improve air quality in the Air Quality Management Areas Ensure air quality in all other areas remains better than the national standards
To improve accessibility	Improve accessibility for all residents to educational services Improve accessibility for all residents to health services Improve accessibility for all residents to employment
To improve the quality of life	Ensure quality of life is improved through the other Shared Priority objectives, contributing towards the enhancement of public spaces and of community safety, neighbourhood renewal and regeneration, healthier communities, tackling noise and protecting landscape and biodiversity Achieve balanced and sustainable communities.

3.5 The Economic Strategy for Bath and North East Somerset 2010–2026

The key objectives of the Economic Strategy are to:

- Improve local prosperity & well-being through a more productive , competitive and expanded economy
- Increase overall productivity & average wage levels
- Build on strengths in ICT / Creative Industries / Financial & Business Services to deliver a higher value added economy.

These objectives will be achieved through a number of key actions:

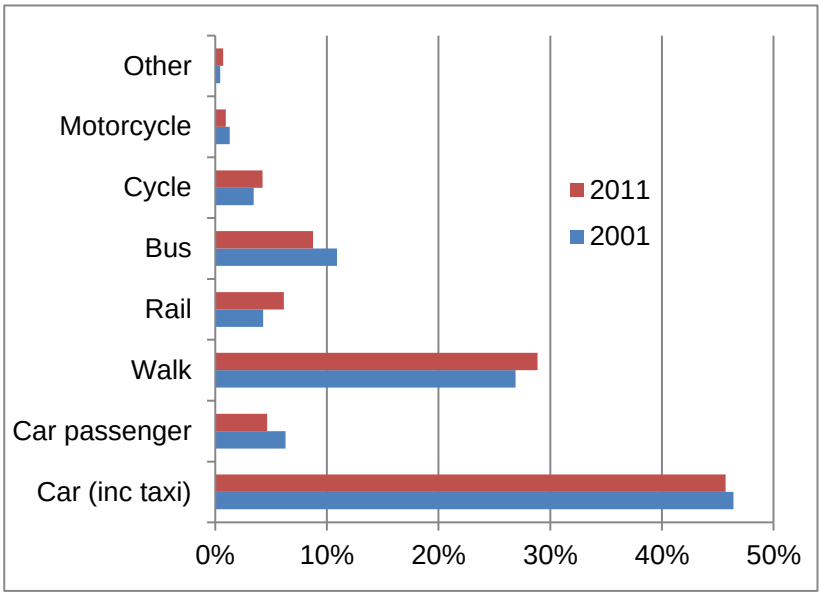
- Promote B&NES as a location for inward investment to assist in achieving future employment growth targets
- Improve the availability & quality of business premises
- Facilitate new city centre and edge of centre commercial quarters in Bath
- Launch the Bath Riverside Enterprise Area
- Develop a plan to support the delivery of the Bath EA.

4. Background Data

4.1 Existing Travel Modes

Census data for 2001 and 2011 gives the proportion of Bath Residents travelling to work by car as shown below. A small reduction in car use is evident but walking, cycling and rail use are shown to have increased, but there is also a significant reduction in bus use. Between 2001 and 2011, the number of Bath residents who travelled to work increased from around 32,300 to 38,600 (excluding those that worked from home). This meant that the number of residents who drove to work increased in absolute terms by 18%, despite the small reduction in mode share.

Figure 4.1: Mode Share of Travel to Work by Bath Residents



Source: Travel to Work Census data, 2001 (T203) and 2011 (QS701EW)

More detailed information on travel modes by all people working in Bath and those living and working in Bath is also available but only for 2001 (the 2011 results are yet to be published). Further details on this are included in Section 6.

The 2011 Census data on car ownership has been published and shows that 30% of Bath households have to rely on non-car modes as they do not own a car, with a further 45% having one car per household i.e. many more residents will not have use of car during the working day. The figures for 2001 are similar, with no overall increase in car ownership level between 2001 and 2011. However, there were 1,000 more households in Bath in 2011, giving an increase of 1,000 cars in absolute terms.

Table 4.1: Car Ownership in Bath

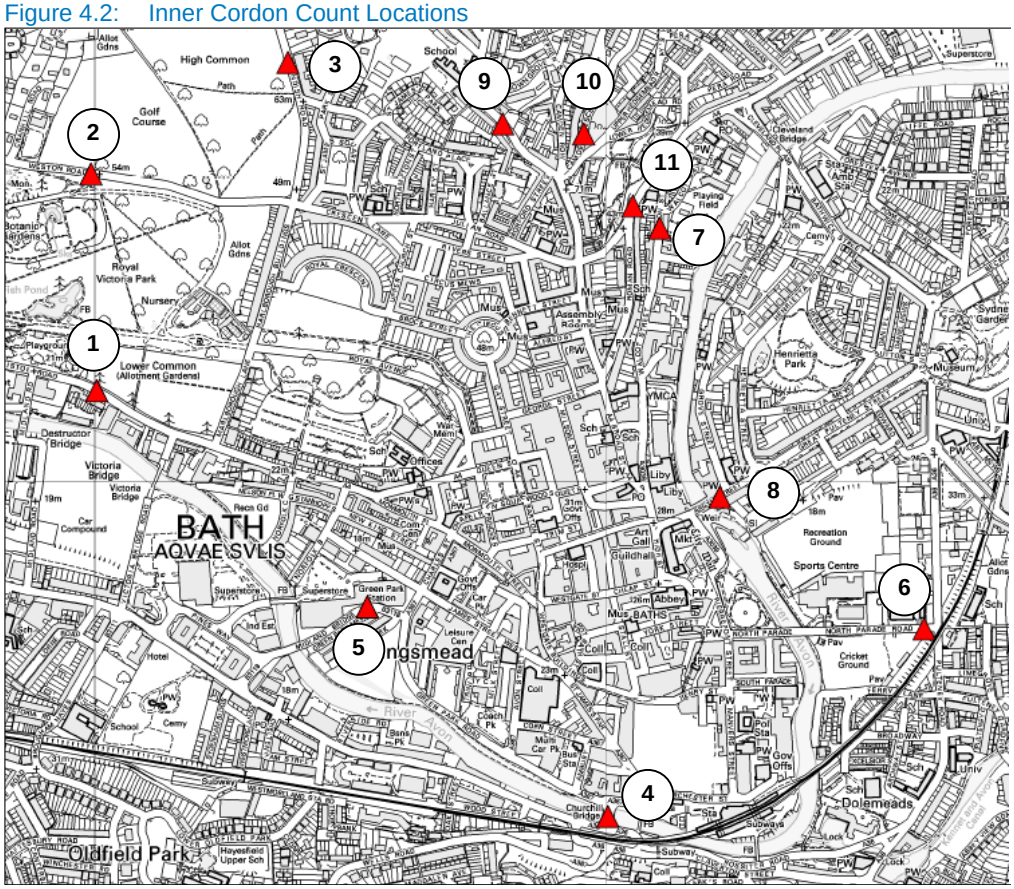
Number of Vehicles	2001 Census	2011 Census
No cars or vans in household	29%	30%
1 car or van in household	47%	45%
2 cars or vans in household	20%	20%
3 cars or vans in household	3%	4%
4 or more cars or vans in household	1%	1%
Average number of cars/household	1.1	1.1

Source: Car Ownership Census data, 2001 (S062) and 2011 (KS404EW)

4.2 Traffic Levels

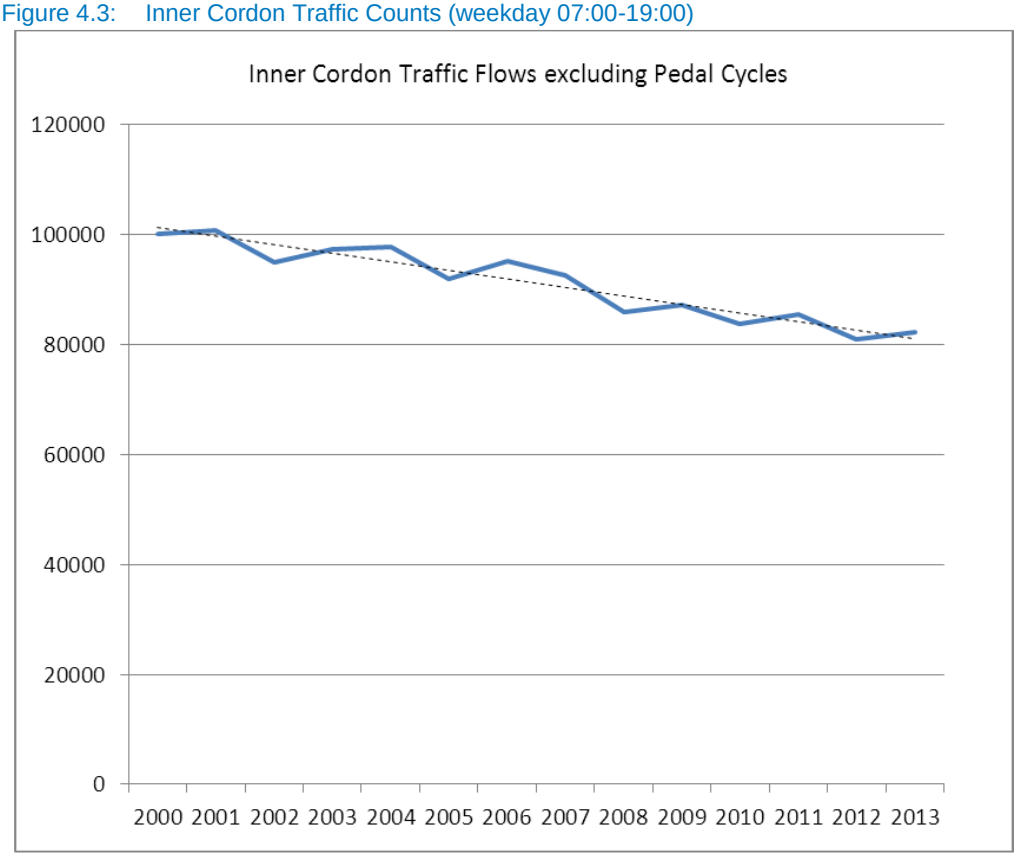
Traffic levels entering and leaving the city centre have been recorded by monitoring surveys every year since 2000, at the 11 locations shown below:

Figure 4.2: Inner Cordon Count Locations



Source: B&NES data

Figure 4.3: Inner Cordon Traffic Counts (weekday 07:00-19:00)



Source: B&NES data

The total traffic volume (weekday 12-hour total 07:00-19:00) shows a trend of decreasing steadily from around 100,000 vehicles/day in 2000 to the current level of around 80,000 vehicles/day i.e. a 20% reduction.

4.3 Traffic Composition

Of the total traffic entering/leaving the city centre, the vehicle classes are shown below for each of the sites, as well as for the cordon as a whole, where:

- 'Light' = cars and other light vehicles,
- HGV = heavy goods vehicles over 3.5 tonnes,
- M/C = motorcycles.

Overall, a low proportion of traffic in the city centre is heavy goods vehicles (3%).

Table 4.2: Traffic Composition Entering/Leaving the City Centre (weekday 07:00-19:00)

		Two-way Volume 0700:09:00					Vehicle Class Proportion			
Site	Location	Light	HGV	Bus/ coach	M/C	Total	Light	HGV	Bus/ coach	M/C
1	A4 Upper Bristol Road	12088	594	623	208	13513	89%	4%	5%	2%
2	Weston Road	8450	110	68	84	8712	97%	1%	1%	1%
3	Cavendish Road	3239	132	7	26	3404	95%	4%	0%	1%
4	A376 Churchill Bridge	10646	553	782	122	12103	88%	5%	6%	1%
5	B3118 Midland Bridge Road	7905	190	756	99	8950	88%	2%	8%	1%
6	North Parade Road	5236	198	382	45	5861	89%	3%	7%	1%
7	A3039 Walcot Street	3650	75	286	50	4061	90%	2%	7%	1%
8	Pulteney Bridge	551	44	100	3	698	79%	6%	14%	0%
9	Lansdown Road	7472	184	194	45	7895	95%	2%	2%	1%
10	Camden Cresent	4886	77	50	35	5048	97%	2%	1%	1%
11	A4 Paragon	11311	505	64	148	12028	94%	4%	1%	1%
	Cordon Total	75434	2662	3312	865	82273	92%	3%	4%	1%

Source: B&NES data for Inner Cordon March 2013

Other traffic counts are also available for roads that are believed to carry higher volumes of HGVs. Classified counts from 30 May 2012 showed the following volumes (two-way totals for 07:00-19:00):

- A36 Warminster Road 724 HGVs, 6.9% of total flow of 10,486 vehicles
- A4 London Road 1,056 HGVs, 5.1% of total flow of 20,742 vehicles.

Therefore, the A36-A4 route does carry a significantly higher proportion of HGVs than the routes to/from the city centre, with both the A36 and A4 carrying a higher absolute number of HGVs than any of the other routes.

4.4 Through Traffic

Recent traffic surveys (May 2012) have given detailed information on the movement of vehicles into and through parts of the city centre (by way of matching vehicle registration plates into and out of a survey cordon). A summary of the results that were used for the Bath Transport Model is given below:

- Traffic matched between the following sites:
  - A36 Lower Bristol Road - West
  - A4 Newbridge Road
  - A431 Newbridge Hill
  - A367 Wellsway
  - A3062 Prior Park Road
  - A36 Warminster Road
  - A4 London Road
- Over the whole day, 12% of all traffic entering the city centre on these routes is through traffic
- HGVs account for 3.5% of all traffic entering the centre
- 27% of HGV movements are through traffic, which equates to 0.9% of all traffic entering the centre.

5. Stakeholder Views

5.1 Key Issues

- Have key stakeholders been involved?
- Have the views expressed been recorded and used as the strategy has been developed?
- How will progress be reported back to stakeholders?

5.2 Stakeholders Consulted to Date

The following groups have been consulted during the development of the strategy:

Public Transport Organisations
- First Bristol & Avon
- Confederation of Passenger Transport
- First Great Western

Residents
- Federation of Bath Residents' Associations
- Valley Parish Alliance

Business Groups
- Chamber of Commerce/B&NES Initiative

Other Stakeholders
- Cycle Bath Campaign
- Bath Transport Commission
- World Heritage Site Steering Group
- Bath Tourism Plus
- RUH
- University of Bath
- Bath Spa University

B&NES Council
- Leader of the Council
- Transportation Planning Dept
- Regeneration Dept
- Public Transport Dept
- Parking Services Dept
- Heritage Services Dept

5.3 Future Consultation Requirements

To be successful, the strategy will need to be the subject of a public engagement programme so that as many people as possible feel they have a stake in the outcomes. This has started with a Stakeholder

Workshop held on 26 June 2014 and Public Exhibitions on 30 June and 11 July 2014 including production of a Non-Technical Summary leaflet suitable for public consumption.

6. Enterprise Area

6.1 Key Issues

- Is the scope of the Enterprise Area agreed?
- What are the transport implications of the EA?
- How can the EA contribute positively to sustainable transport?
- How will the EA be integrated with wider transport initiatives?

6.2 Integrating Land Use Proposals with Transport

The development of the transport strategy has taken place alongside the emergence of the masterplan for the Enterprise Area (EA), however the masterplan is still in its early stages. The EA is a massive opportunity for the city with space available for major employment, housing and other uses all located along the riverside corridor. Other sites, including those used formerly for Ministry of Defence purposes, are also becoming available and need to be considered in terms of how people will travel to/from them.

6.3 Enterprise Area

6.3.1 Scope of the EA

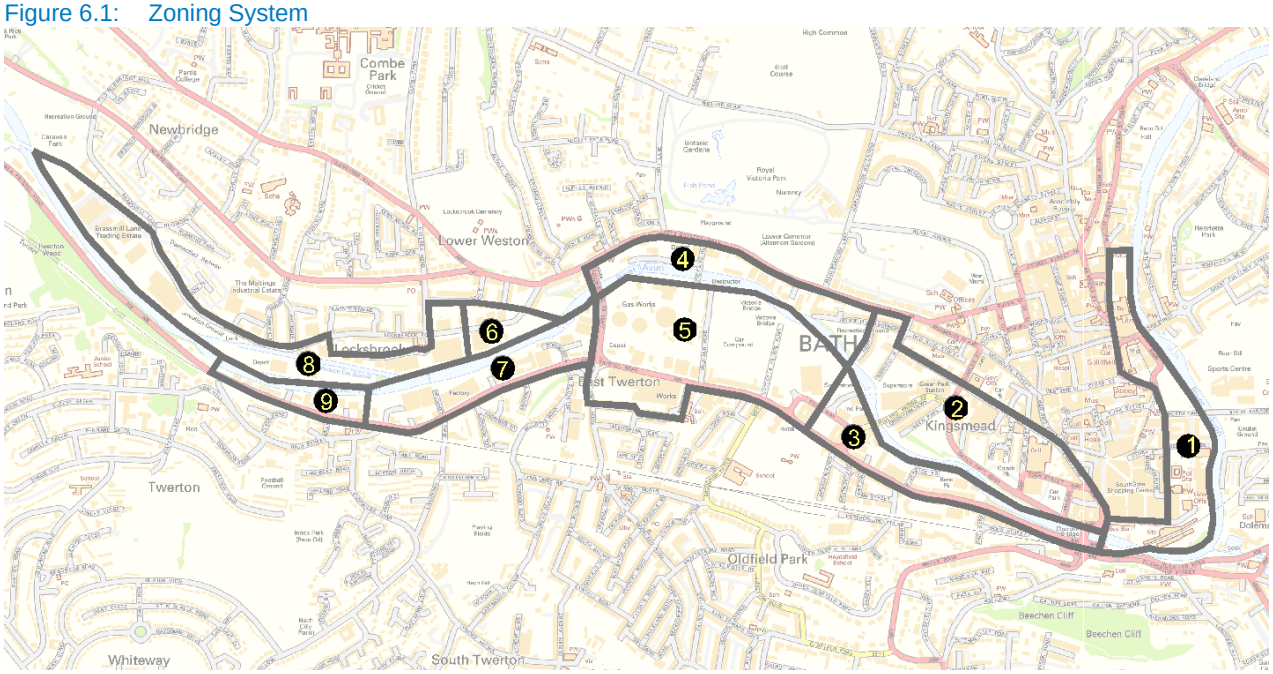
The EA comprises redevelopment of a number of major sites within Bath, for which development assumptions were provided by the Council. A full list of the development sites and areas is provided at Table 6.1 below, with Figure 6.1 showing the zoning system that was used for the purposes of traffic generation.

It is recognised that the exact quantum of development and allocation of uses to particular sites is likely to be amended as the Masterplan is developed more fully. Therefore, there may be need for one or more iterations between the Masterplan and the assessment of its transport implications.

Table 6.1: EA Development Sites

Zone	Site	Sqm or housing units	Planning Definition	Bath Strategy Definition
1	Manvers Street	1456	A3	Restaurants and cafés
1	Manvers Street	9077	B1	Offices
1	Manvers Street	74	C3(a)	Dwelling houses
1	Manvers Street	6480	C1	Hotels
1	Cattlemarket site	1745	A3	Restaurants and cafés
1	Cattlemarket site	2080	C1	Hotels
1	Cattlemarket site	54	C3(a)	Dwelling houses
2	Green Park Station West	9471	B1	Offices
2	Green Park Station West	31786	A1	Shops
2	Green Park Station West	446	C3(a)	Dwelling houses
2	Green Park Station West	405	A3	Restaurants and cafés
2	Green Park Station West	7432	A1	Supermarket
2	Green Park Station East	3152	A1	Shops
2	Green Park Station East	103	C3(a)	Dwelling houses
2	Green Park Station East	12160	B1	Offices
2	Green Park Station East	596	A3	Restaurants and cafés
2	North Quays	15435	B1	Offices
2	North Quays	2036	A3	Restaurants and cafés
2	North Quays	70	C3(a)	Dwelling houses
2	North Quays	7762	C1	Hotels
2	North Quays	3993	B1	Innovation / workspace
3	South Quays	427	A3	Restaurants and cafés
3	South Quays	11025	B1	Offices
3	South Quays	8985	B1	Innovation / workspace
3	South Bank	61	C3(a)	Dwelling houses
3	South Bank	21752	B1	Offices
3	South Bank	964	A3	Restaurants and cafés
5	Bath Press	88	C3(a)	Dwelling houses
5	Bath Press	23659	B1	Innovation / workspace
5	BWR Crest Phase 1 (secured)	240	C3(a)	Dwelling houses
5	BWR Crest Phase 2 (un secured)	1982	C3(a)	Dwelling houses
7	Roseberry Place	681	A3	Restaurants and cafés
7	Roseberry Place	4207	A1	Shops
7	Roseberry Place	408	C3(a)	Dwelling houses

Figure 6.1: Zoning System



Each of these sites will have different travel characteristics but their location along the river means that access across it is of particular importance. The refurbishment of existing bridges and creation of new bridges will enable all parts of the EA to be accessible and allow them to function efficiently.

The majority of planned development is in Zones 1-5 which are closest to, and include parts of, the city centre. This offers the greatest opportunities for short journeys that can be made on foot with connections to the rail station, city bus routes, bus station and many parts of the city. Some new housing is in place already in the City Gateway area where there can be less reliance on car use and a strong emphasis on sustainable modes. The fact that housing and jobs will both be located in the EA means that there is significant opportunity for people to live near their place of work, reducing the need for in-commuting and supporting sustainable means of travel. This is an underlying feature of the EA that needs to be considered strongly in the masterplan and placemaking processes.

6.3.2 Identifying the Impacts of the EA

Considerable analysis was undertaken for the Bath Western Riverside proposals including a full Transport Assessment. For the purposes of this strategy, a high level approach has been used to understand the implications of the overall development on the existing transport networks and to identify the expected impacts of initiatives designed to support sustainable transport for journeys to and from the site.

The model used is a simple assignment model using Census data to give a distribution of trips to/from the areas within and outside of the city. A full description of the modelling process is provided below:

Stage 1: Development Trips

B&NES provided a summary of proposed land uses within the EA, shown at Table 6.1. The 2013 TRICS database was interrogated to identify similar land uses located in urban areas, based on sites within England excluding Greater London. This included data from the regions South East, South West, East Anglia, East Midlands, West Midlands, Yorkshire & North Lincolnshire, North West and the North, when available. All data were based on surveys undertaken on weekdays only (Monday-Friday) for 'multi-modal' trips for all land use types.

Multi-modal survey data was selected in order to identify **person trips** rather than just **vehicle trips** for each site. This allows the model to manipulate the number of trips by each mode and test the outcomes of strategy options. A summary of the trip rates used is provided below for reference.

Table 6.2: Commercial Trip Rates (2013 TRICS)

TRICS Data: Non-Residential Person Trips (per 100sqm)									
	AM Peak 0800-0900			PM Peak 1700-1800			Daily 0700-1900		
	arrive	depart	total	arrive	depart	total	arrive	depart	total
B1 Business Park	1.96	0.32	2.28	0.24	1.65	1.89	7.44	7.44	14.88
B1 Office	2.94	0.27	3.21	0.20	2.50	2.71	13.53	13.31	26.84
B2 Manufacturing	0.39	0.16	0.55	0.05	0.27	0.32	2.59	3.04	5.63
B8 Warehousing	0.04	0.02	0.06	0.02	0.05	0.07	0.51	0.54	1.05
Leisure/restaurant *	0.50	0.50	1.00	5.54	5.06	10.59	68.53	68.29	136.82
Hotel/conference	0.57	0.64	1.21	0.70	0.50	1.19	9.07	9.09	18.16
Food retail	1.85	0.94	2.78	5.21	5.80	11.01	58.92	57.52	116.44
Mixed Shopping Mall +	0.33	0.12	0.44	0.26	0.44	0.69	5.35	5.62	10.97
Car Show Rooms	0.47	0.21	0.69	0.21	0.40	0.62	4.77	4.65	9.42
* no restaurant trips between 8-9 therefore 9-10 used in the model									
+ very limited multi-modal data available for weekdays, therefore person trip rate shown is an estimate based on vehicle trip rate									

Table 6.3: Residential Trip Rates (2013 TRICS)

TRICS Data: Residential Person Trips (per dwelling)									
	AM Peak 0800-0900			PM Peak 1700-1800			Daily 0700-1900		
	arrive	depart	total	arrive	depart	total	arrive	depart	total
Urban Centre									
Flat: privately owned	0.09	0.50	0.59	0.51	0.20	0.71	2.46	2.65	5.11
Flats: rented	0.19	0.51	0.70	0.33	0.33	0.66	2.97	3.17	6.14
House: privately owned	0.28	0.86	1.14	0.63	0.37	1.00	4.44	4.56	9.00
House: rented	0.17	0.57	0.74	0.37	0.35	0.72	2.86	3.00	5.86

Stage 2: Trip Origins (External or Internal)

The trip distribution process splits trips based on whether they are have an origin or destination outside of Bath City or are contained within Bath City. To estimate the proportion of trips generated by zones outside Bath City, 2001 Census data was interrogated. A table summarising the proportions for those that work and live in Bath is provided below for reference (excluding those that work from home as they do not generate trips to work).

Table 6.4: Origin of Internal and External Generated Trips

Data Set	Live in Bath	Live Externally	Total
Work in Bath	21,960 (43.8%) *(65.1%)*	28,145 (56.2%)	**50, 105**
Work Externally	11, 784 *(34.9%)*	-	-
Total	**33, 744**	**-**	-

Source: Travel to Work Census data, 2011 (WU03EW)

These proportions were applied to the trips generated in Stage 1 to determine the volume of trips likely to be generated within the city and from external zones. For trips within the city, the Bath wards were used as the zones.

Stage 3: Mode Split

The 2011 Travel to Work Census data was used as the starting point to determine the mode split for trips into Bath from external and internal city zones. These are presented in Table 6.5. The Bath wards were further categorised to enable the spreadsheet model to reflect the dominance of walking in the city centre, with the wards of Abbey and Kingsmead classed as 'Centre' and all others as 'Outer'.

For the EA development areas, Zones 1-5 were classed as being in the Centre with Zones 6-9 in the Outer Bath area.

Table 6.5: 2011 Mode Share for Trips to/from Bath

	Live in Bath	Live External	Live in Bath	Live in Bath	Live in Centre	Live Outer
Mode	Work External	Work in Bath	Work in Centre	Work Outer	Work in Bath	Work in Bath
Car (inc taxi)	69.3%	71.9%	20.8%	42.0%	16.3%	32.7%
Car passenger	4.4%	4.7%	5.0%	5.1%	2.0%	5.3%
Walk	0.0%	0.0%	53.5%	34.8%	64.0%	42.6%
Rail	17.5%	12.0%	0.7%	0.5%	0.7%	0.6%
Bus	4.8%	7.1%	13.3%	10.8%	9.4%	12.2%
Cycle	2.5%	2.7%	5.6%	5.6%	6.9%	5.5%
Motorcycle	1.2%	1.4%	0.8%	1.0%	0.4%	1.0%
Other	0.4%	0.2%	0.2%	0.2%	0.3%	0.2%

*It is assumed that there will be no walking trips to the EA from zones outside of the city

Source: Travel to Work Census data, 2011 (WU03EW)

With the proposed Transport Strategy measures in place, the mode shares should change with a further switch away from car. Based on the following assumptions the resultant mode shares with the Strategy are shown in Table 6.6:

- 144% increase in rail use for commuting trips into Bath and 33% out of Bath (same as 2001-2011 change in Census);
- 37% increase in cycle use for trips into city centre by residents and 43% increase by city centre residents travelling to work (2011 Census)
- 108% increase in cycle use for trips into Bath from external areas and 56% increase out of Bath (2011 Census)
- 16% increase in internal walking trips into the centre (2011 Census) and 10% by city centre residents (assumption);
- Assumptions:
- 10% increase in all external bus trips and 5% increase in internal bus trips;
- 2.5% increase in car sharing for commuting trips into Bath;
- 5% reduction in external car trips due to peak spreading in AM and PM peak hours;
- 5% reduction in external commuting car trips into Bath and 2.5% reduction in out-commuting trips due to smarter choices and increased working from home;
- 400 more trips using Park & Ride in peak hours – note shown as an increase in bus.

Table 6.6: Estimated Mode Share with Transport Strategy for Trips to/from Bath

	Live in Bath	Live External	Live in Bath	Live in Bath	Live in Centre	Live Outer
Mode	Work External	Work in Bath	Work in Centre	Work Outer	Work in Bath	Work in Bath
Car (inc taxi)	58.1%	17.6%	9.5%	29.9%	7.1%	14.8%
Car passenger	4.4%	4.8%	5.1%	5.3%	2.0%	5.3%
Walk	0.0%	0.0%	62.0%	44.2%	69.8%	57.7%
Rail	23.3%	29.2%	0.7%	0.5%	0.7%	0.6%
Bus	5.3%	33.9%	14.0%	11.3%	9.9%	12.8%
Cycle	3.9%	5.6%	7.7%	7.7%	9.8%	7.7%
Motorcycle	1.2%	1.4%	0.8%	1.0%	0.4%	1.0%
Other	0.4%	0.2%	0.2%	0.2%	0.3%	0.2%

*It is assumed that there will be no walking trips to the EA from zones outside of the city

Source: Estimates based on Travel to Work Census data, 2011 (WU03EW)

6.3.3 Trip Generation Results

Trip generation results have been produced by applying the trip rates to the EA development areas and then the mode shares, with and without the Transport Strategy in place. In both cases the reduction in net increase in traffic demand due to existing uses of the development sites has been taken into account (although the current trip generation is estimated to be relatively low).

Table 6.7 shows the total estimated trips associated with the new commercial and residential EA development with no interventions, split down into person trips by mode, with the corresponding trips with the interventions in place in Table 6.8.

In the peak hours, the strategy is shown to reduce the number of car trips generated to less than half that without the strategy in place.

Table 6.7: Total Estimated Net EA Person Trips WITHOUT Transport Strategy Interventions

Bath Enterprise Area	AM Peak 0800-0900			PM Peak 1700-1800			Daily 0700-1900		
	arrive	depart	total	arrive	depart	total	arrive	depart	total
Car (inc taxi)	1,511	866	2,377	1,038	1,714	2,752	13,462	13,651	27,113
Car passenger	145	75	220	93	163	256	1,268	1,284	2,552
Walk	814	819	1,633	847	1,010	1,857	8,438	8,683	17,121
Rail	217	150	367	168	253	421	2,035	2,072	4,107
Bus	302	187	489	219	346	565	2,733	2,777	5,510
Cycle	131	112	243	120	158	278	1,291	1,322	2,613
Motorcycle	35	18	53	22	38	60	305	306	611
Other	6	5	11	5	6	11	70	71	141
Total	**3,161**	**2,232**	**5,393**	**2,512**	**3,688**	**6,200**	**29,602**	**30,166**	**59,768**

Table 6.8: Total Estimated Net EA Person Trips WITH Transport Strategy Interventions

Bath Enterprise Area	AM Peak 0800-0900			PM Peak 1700-1800			Daily 0700-1900		
	arrive	depart	total	arrive	depart	total	arrive	depart	total
Car (inc taxi)	496	583	1,079	676	623	1,299	7,454	7,595	15,049
Car passenger	147	77	224	94	165	259	1,293	1,310	2,603
Walk	936	915	1,851	953	1,152	2,105	9,603	9,875	19,478
Rail	494	230	724	291	545	836	4,198	4,242	8,440
Bus	723	201	924	233	784	1,017	3,716	3,764	7,480
Cycle	212	164	376	181	249	430	2,025	2,069	4,094
Motorcycle	35	18	53	22	38	60	305	306	611
Other	6	5	11	5	6	11	70	71	141
Total	**3,049**	**2,193**	**5,242**	**2,455**	**3,562**	**6,017**	**28,664**	**29,232**	**57,896**

The proposed Transport Strategy should also be successful in influencing mode choice for existing trips. Therefore, the additional car trips shown in Table 6.8 will be offset to some extent by a switch away from car for existing trips on the road network.

7. Urban Extensions

7.1 Key Issues

- How can the Transport Strategy influence trips generated at urban extensions?
- How can sustainable transport principles be incorporated into proposals?

The Core Strategy allows for the development of about 7,020 new homes in Bath, with the following distribution:

- Large sites in the Central Area and Enterprise Area – 3,300
- Large sites in the outer neighbourhoods, including former MoD land and the extension to MoD, Ensleigh – 2,100.
- Small scale intensification distributed throughout the existing urban area -1,150
- Land adjoining Odd Down – 300.

Travel to work trips into Bath from these locations has been taken into account when assessing the EA in Section 6.

In terms of providing sustainable transport options for these sites, measures should be included that complement the overall Transport Strategy for Bath, as reported in the Strategy and Vision Report. As the sites are away from the city centre, key measures will include:

- Good links into the wider cycle network, together with on-site cycle routes through the development, as off-road facilities where possible;
- The potential for local bus services to be diverted through or closer to the sites;
- Good pedestrian routes to local amenities, such as schools, shops, health centres and leisure facilities;
- Improved local bus stops and pedestrian links to them;
- Suitable on-site parking standards;
- Residential Travel Plans.

For each development site a full Transport Assessment will be required to determine whether the above measures can successfully mitigate the effects of new trips generated. It is likely that improvements to local junctions will be required at some of the sites and/or traffic management measures.

8. Walking

8.1 Key Issues

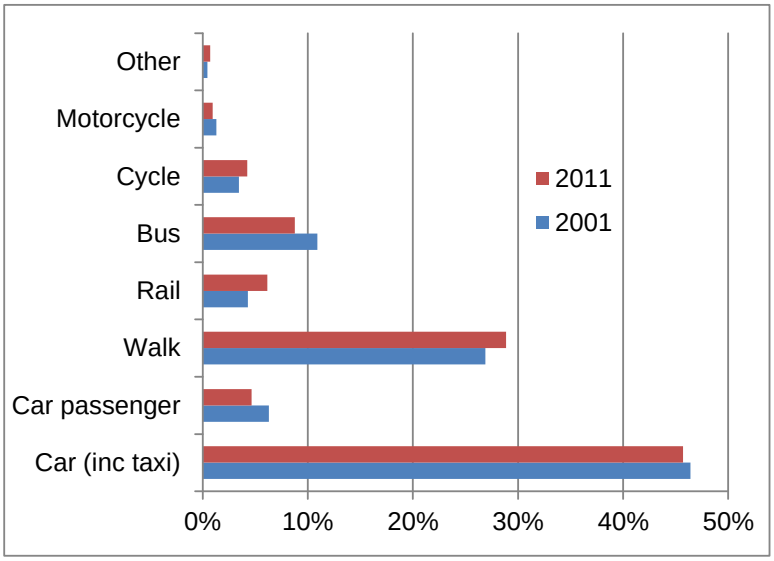
- What are the perceptions and realities of walking in the city centre and remainder of the city?
- Are there particular locations where there are barriers to walking e.g. road crossings?
- Is there a clear network of routes giving good access to bus stops, rail stations and major employment, health, retail and education locations?
- Which routes should be given priority for pedestrian and public realm improvements?

8.2 Number of Walking Movements

The proportion of journeys made on foot is high compared with other cities. The layout and size of Bath are conducive to walking and the streetscene is in many places of unsurpassed value. Walking is key to the activities that take place and could be even more widely adopted for short journeys within the built-up area. Walking is therefore of major importance.

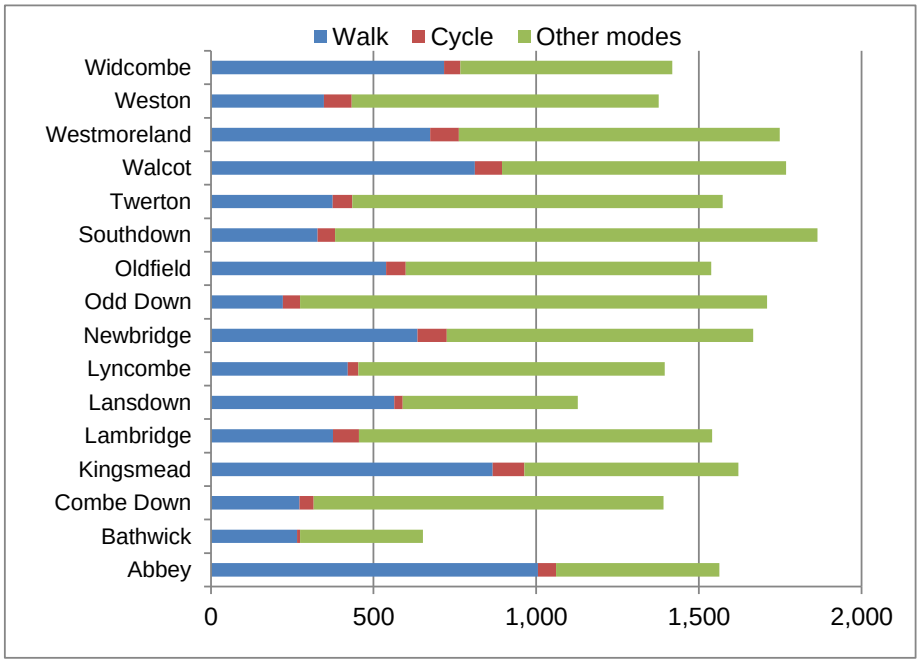
2011 Census data show that a high proportion of all Bath residents walk to work (28.9%) and that this has increased from 26.9% in 2001.

Figure 8.1: Mode Share of Travel to Work by Bath Residents



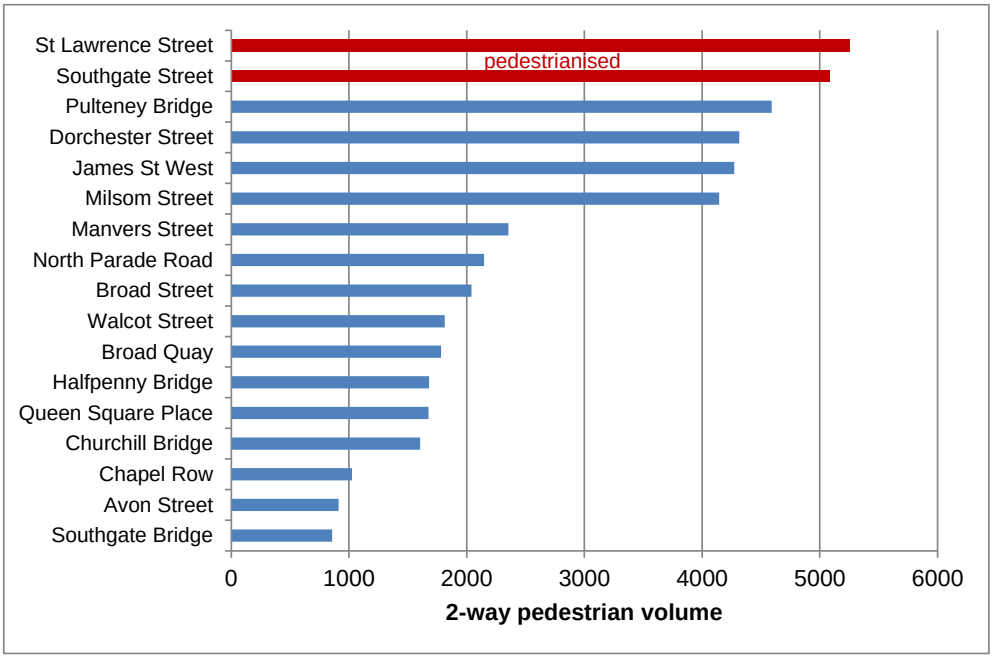
In 2001, approximately 24,000 people lived and worked in Bath (excluding those that worked at home), of which over 8,400 walked to work (35%). Figure 8.2 shows that the majority of wards in the city had over 400 people walking to work, with all wards having over 200 people walking to work.

Figure 8.2: Mode Share to Work in Bath from Bath Wards



A count of a city centre cordon shows very high pedestrian numbers on the main links to/from the centre, during the lunch time and evening peak periods. The volumes shown are two-way totals for the surveyed hours of 13:00-15:00 and 16:00-18:00, based on counts undertaken on weekdays in March 2011.

Figure 8.3: Pedestrian Counts



8.3 Existing Provision for Pedestrians

In the retail heart of the city, there are pedestrianised areas catering for very large numbers on foot but these are intertwined with or crossed by trafficked routes, giving a lack of consistency for those walking. Other routes carry large volumes of both pedestrians and traffic, such as James Street West, but this is not in itself a problem if suitable pedestrian facilities and crossings are provided.

In some areas the perception is that the car dominates, either due to traffic volumes and congestion such as on George Street / Gay Street, or because of the width of the road or adjacent parking areas, such as around Laura Place on Great Pulteney Street.

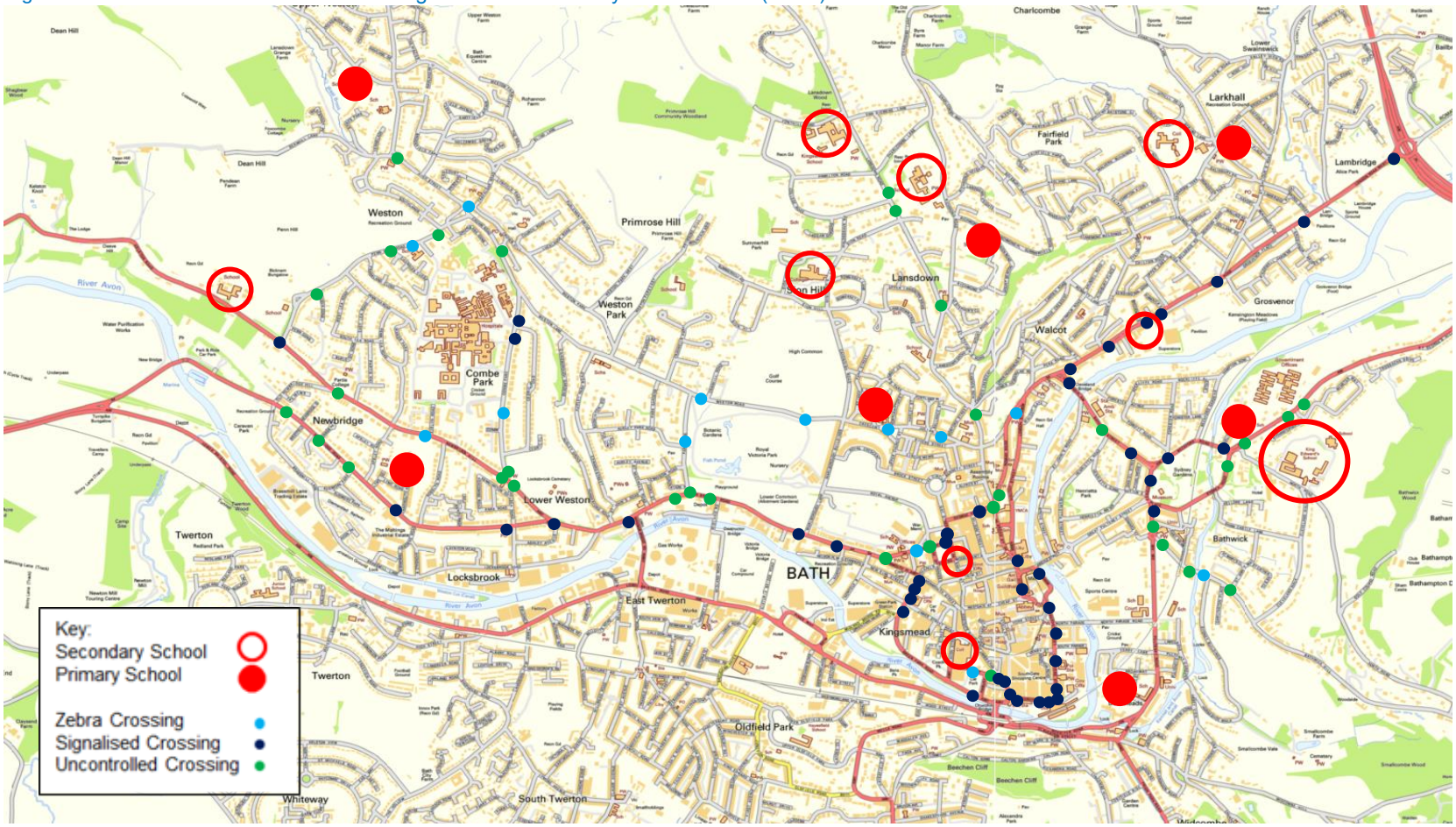
A review of the pedestrian crossings on each of the key routes in Bath reveals that there does generally seem to be adequate provision of such facilities, both in the centre and on the routes to the centre from the surrounding residential areas (Figure 8.4 and Figure 8.5). The locations of the secondary schools and colleges are also highlighted.

However, there may be exceptions at individual locations which generate a perception of poor pedestrian amenities, such as at the corner of Gay Street and George Street.

Another example of where traffic is given priority over pedestrians is at the Churchill Bridge gyratory where the A367 meets the A36. Large numbers of pedestrians walk to the centre from Wells Road and Holloway but have to use the subway and long ramps where there is the potential for a direct surface route through the railway arches. The gyratory also experiences traffic congestion, with long queues on the eastbound approach from Lower Bristol Road in the morning peak in particular. It should be possible to improve conditions for both pedestrians and vehicles, through a carefully designed and assessed traffic management scheme, such as signalisation of part or all of the gyratory.

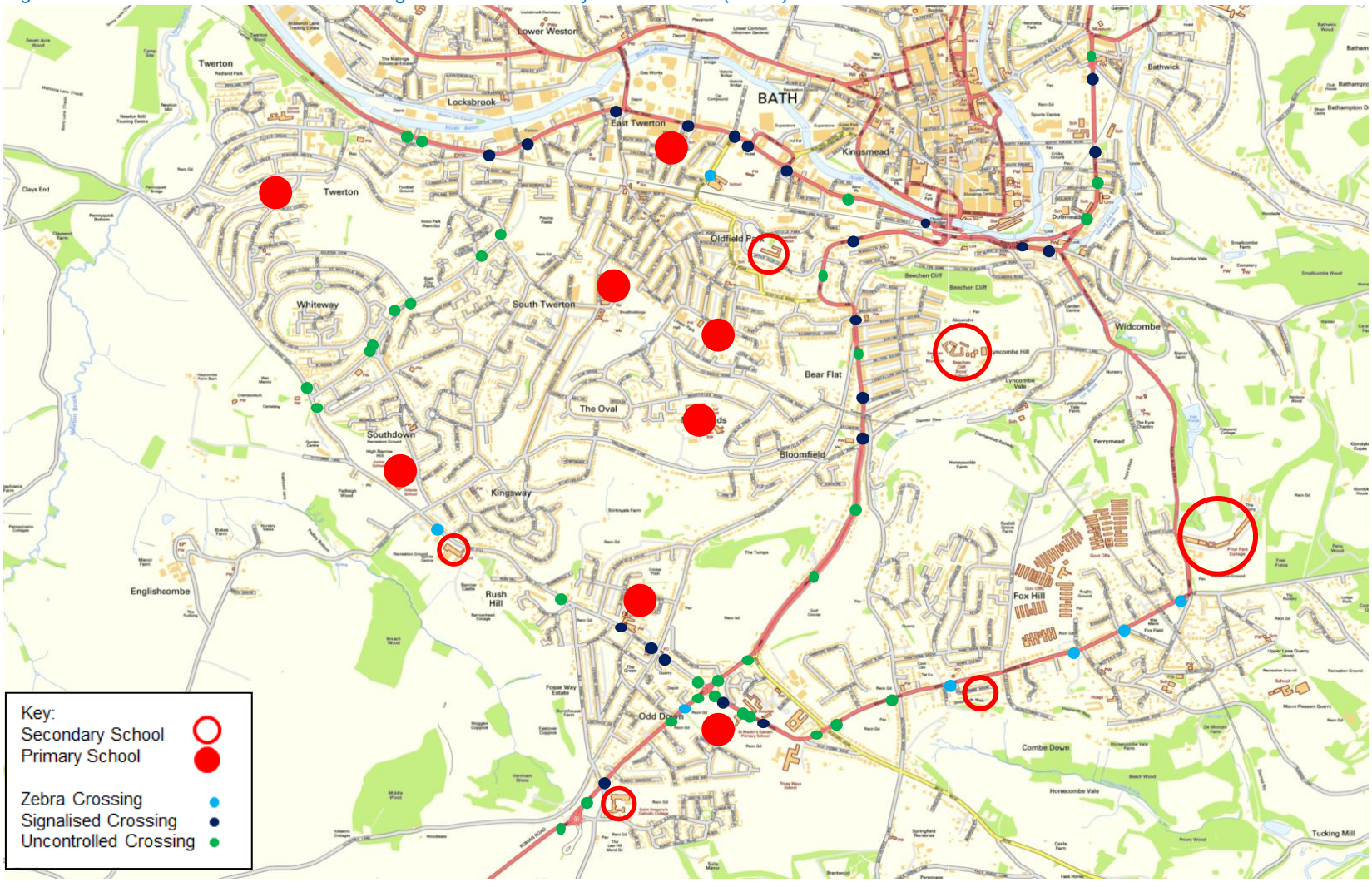
Access to the bus and rail stations has recently been improved but the numerous signalised crossings give the impression that car is still dominant, rather than that of a pedestrian-friendly environment. Signalised crossings are not always the best solution to improve pedestrian facilities, particularly where traffic volumes are relatively low: use of shared spaces or other features such as road narrowing may be more appropriate at such locations. Any potential changes would need to be assessed in light of the actual traffic volumes on Dorchester Street, taking into account existing or proposed restrictions to through traffic movements.

Figure 8.4: Location of Pedestrian Crossing Facilities on the City's Main Roads (North)



Source: MM analysis

Figure 8.5: Location of Pedestrian Crossing Facilities on the City's Main Roads (South)



Source: MM analysis

8.4 Public Realm and Movement Strategy (PRMS)

The Public Realm and Movement Strategy (B&NES Council, City ID and AGA, July 2010) provides the context for improvements to the infrastructure and function of streets and public spaces. It includes four aims:

- To provide a public realm and movement framework that helps to reinvigorate levels of social activity within the city's streets and spaces;
- To provide the basis for a refashioned public realm that reflects the unique values and essence of the city;
- To raise the quality of the public realm, and streetscape to a level commensurate with World Heritage Site Status; and
- To develop a walkable city that is engaging, distinctive and well connected.

The PRMS reviewed the fabric of the city's walking opportunities and the role that they play in providing the sense of place for Bath. Public realm values include the concept of a walkable city, one which is connected, compact and legible i.e. where walking is an effective means of movement and one that is available for a wide range of journeys. This is supported by providing adequate space for people to walk, identifying appropriate routes and enabling social interaction with formal and informal settings. This addresses the objective of transforming the public realm and movement system to revitalise the city commensurate with its status as a World Heritage Site. It also supports the economic, social and cultural wellbeing of the city's communities, businesses and institutions and provides the basis for a sustainable lifestyle, personal health and wellbeing.

There is an emphasis in the PRMS on reanimating the city centre with the identification of spaces which could be improved, including the riverscape, with improved and new infrastructure and landscaping while reducing the impact of vehicle movements. Walking is the essence of the PRMS with a scale and quality that reflects people rather than traffic and the social interaction that walking achieves. The PRMS also defined the hierarchy of the city centre streets.

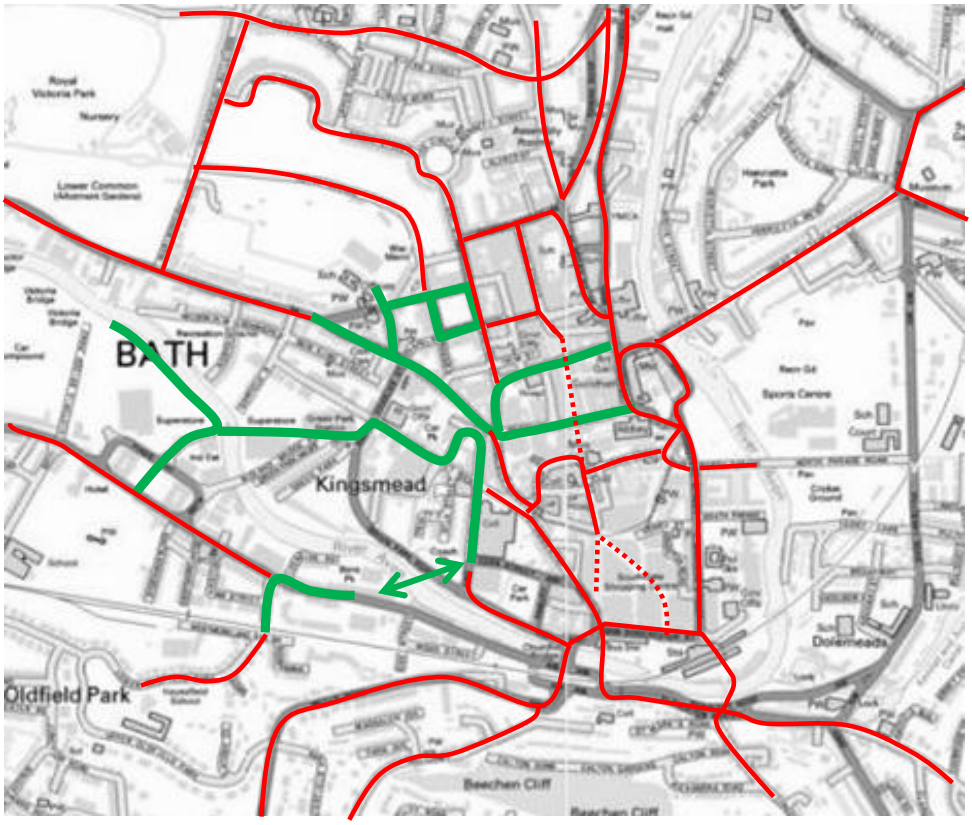
The first phase of work has been completed on the High Street, together with a new system to improve the legibility of the city centre on foot:

Further public realm improvements are planned subject to funding opportunities. Whilst these are welcome in the city's retail and historic centre, it is important that new routes and better streets can be also be achieved throughout the city, particularly in relation to regeneration sites.

8.5 Proposed Priorities of Pedestrian Improvements

Based on the above and Enterprise Area proposals, the following priority areas have been identified for pedestrian improvements based solely on addressing transport issues:

Figure 8.6: Plan of Key Walking Routes



Key:

key routes	
proposed prioritised improvement	
existing pedestrianisation	

8.5.1 Improve East-west Connections in the City Centre

In the city centre there is a well-defined north-south pedestrian spine but this is not the case for east-west movements. A potential public realm scheme has been identified for Westgate Street and Cheap Street which would provide a good route from the High Street to Monmouth Street and Kingsmead Square; improvements for the latter are already in hand as part of the Cycle Ambition scheme. James St West has

very high pedestrian flows (Figure 8.3), therefore an improved route from here to the centre would give large benefits.

If the public realm scheme included traffic restrictions, such as the 10:00-18:00 traffic ban on High Street, by implication traffic would also be removed from Saw Close and Upper Borough Walls, as these form part of a one-way loop with Westgate Street. This would also enable Saw Close car park to be closed (only 24 spaces) and the site redeveloped. It should be noted that the one-way system already has on-street parking restrictions for most of its length (double yellow and single yellow lines) so is used by very low traffic volumes anyway. Therefore, making the change to removing traffic altogether should not be as controversial as for other well-trafficked routes. However, it is recognised that access may need to be retained for the Royal National Hospital for Rheumatic Diseases located on Upper Borough Walls.

Restricted access to Upper Borough Walls would further improve east-west links, with or without public realm improvements on this street.

Such east-west improvements would cross the main north-south pedestrian route from Stall St to Union St and improve access to all of the retail areas contained within the Cheap Street, Westgate, Upper Borough Walls loop. They would also improve the setting of the Abbey and access to the Roman Baths and Pump Room from Terrace Walk. Another potential benefit would be reduced congestion at the High Street signals, with less traffic passing through this area.

8.5.2 Improve East-west Connections to Bath Riverside

Good links between the city centre and Bath Riverside and Green Park EA sites to the east will be essential with the planned development of these sites.

A riverside path is available from Bath Riverside but it is not attractive as it runs next to the DIY superstore car park from where the pedestrian links through the Green Park Station area are very poor. The route is through Sainsburys car park and then through the Green Park Station building but it is understood that this is not a public right of way and it is not open 24 hours/day. Currently it is not clear that there is an alternative route to the north of the Station but in any case this route is away from the natural desire line.

There is also a need to improve the route from Green Park Station to Lower Bristol Road – it currently runs through the DIY superstore car park and around the Pinesway gyratory, although most pedestrians take the direct route across the main Bath Riverside access and through the petrol station. The alternative route is via Midland Bridge Road but this is not attractive as it is dominated by traffic.

Therefore, clear and direct high quality pedestrian routes need to be created as part of the development proposals for these sites and the potential removal of the Pinesway gyratory.

8.5.3 Improve River Crossings

It is understood that a new pedestrian/cycle bridge is proposed as part of the Bath South Quays EA development. Whilst this will obviously improve accessibility to the site itself, the opportunity should be taken to incorporate the bridge into the wider pedestrian network and provide a more attractive route from the residential areas south of Lower Bristol Road, such as Oldfield Park.

As part of the BWR development, improved pedestrian/cycle river crossings are already being provided. Again the opportunity should be taken to maximise the benefits of this new investment by ensuring that routes link into a coherent and complete high quality pedestrian network in the local area.

8.5.4 Improve Route to Charlotte Street Car Park

With reduced off-street parking in the city centre and further relocation of long stay parking to Park & Ride, greater use of Charlotte Street car park for short stay is proposed. The routes from this car park into the city centre via both Monmouth Place and Queen Square should be improved. This should be possible to achieve with modest improvements along Monmouth Place/Street by widening footways and addressing specific pedestrian pinch points. This route would then link into the proposed improvements on Westgate/Cheap Street to give a good route between Upper Bristol Road and the city centre.

A potential public realm scheme for Queen Square would also improve the route from Charlotte Street to Milsom Street and the northern part of the main retail area. Therefore, it is recommended that traffic management measures to remove or reduce traffic levels on two sides of Queen Square are investigated further, as part of a public realm scheme, whilst taking into account the need to minimise the impact on overall capacity for through traffic.

8.5.5 20 mph Limits in Residential Areas

The Council has made a commitment to provide 20 mph speed limits in residential areas in Bath. This should be a good way of improving the perception of walking as a safe way of travelling, particularly for children. However, 20mph speed limits are much more effective if 20mph 'zones' are created with speed-reducing features, such as raised tables and carriageway narrowing which can also provide suitable crossing points (formal signalised or Zebra crossings are not always required, particularly with low speeds).

Other measures could include footway widening to increase separation of pedestrians and vehicles. Alternatively, on-street parking can be retained or introduced to reduce vehicle speeds and provide a buffer between vehicles and pedestrians.

Therefore, as part of plans for 20mph speed limits it is recommended that the opportunity to create 20mph zones is reviewed, with speed reducing features introduced on the routes considered to be a priority for walking and/or road safety.

8.5.6 Progressing Pedestrian Schemes

The areas described above have been identified as having priority for pedestrian improvements. However, other issues need to be considered when progressing the schemes including:

- Linking with traffic management proposals and possible changes to parking arrangements, to help reduce traffic levels in the city centre;
- Identifying areas which are a priority for improving air quality, and if traffic management measures could help in this regard;
- The timescale for development proposals coming forward.

All of the above should be considered as part of a comprehensive Traffic Management Plan for the city centre as a whole.

9. Parking

9.1 Key Issues

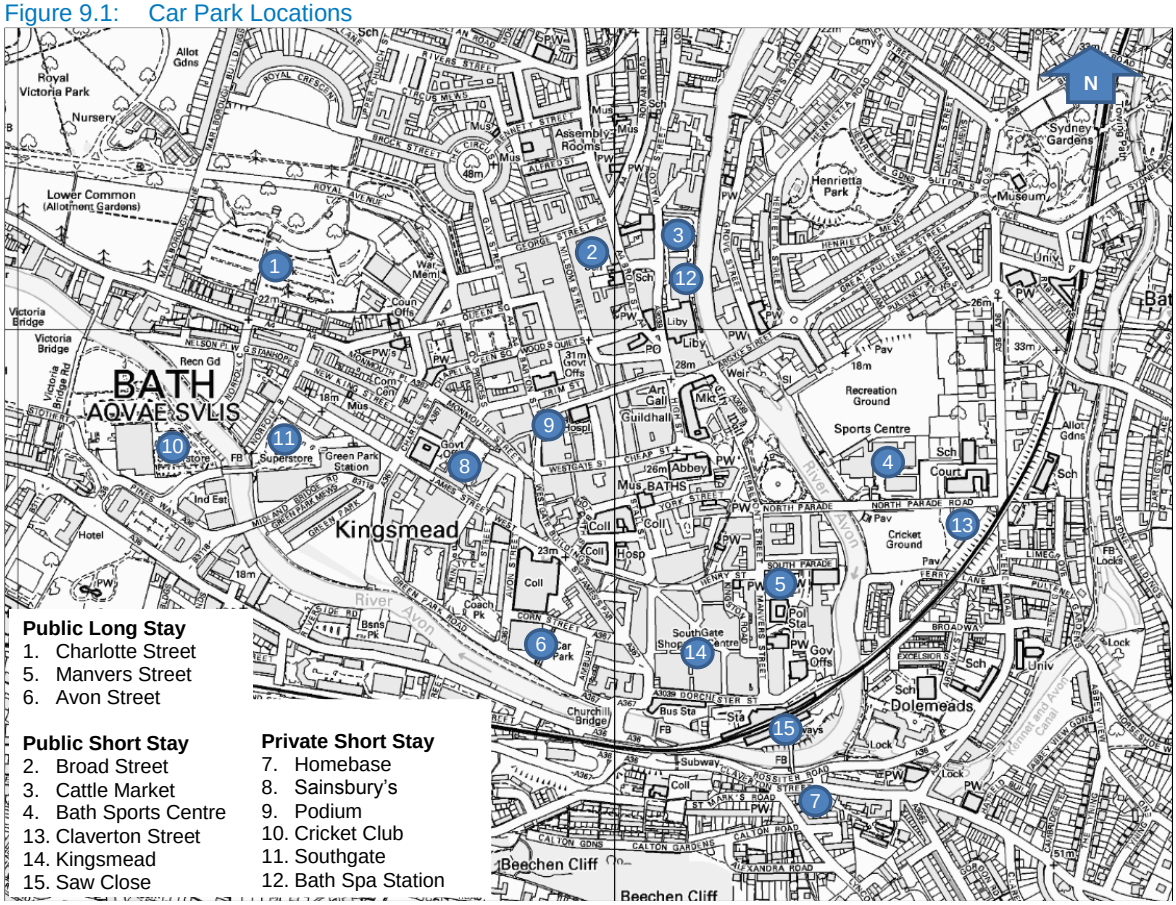
- What are the existing car park occupancy rates?
- Is the current public parking supply appropriate in relation to demand?
- How can parking supply and demand be adjusted as part of a wider strategy?
- What is the journey purpose of users?
- What are the origins of users?
- Have car users other travel options available?
- What are user views of the parking options available?

Parking is a contentious issue with many facets: residential parking availability, parking at the workplace, public car parks for commuters, shoppers and visitors, Park and Ride and parking standards for new developments. All are linked but it is clear that there are limits on the space that is or could be made available for parking. The availability and cost of parking are major determinants of whether or not a car is used for a particular journey.

9.2 Existing Parking Provision and Demand

Figure 9.1 shows the location of all off-street car parks within the city centre, with details of the different types of parking available in Bath provided below, showing capacity and charging tariff. Charges generally apply Monday to Sunday 08:00 to 20:00.

Figure 9.1: Car Park Locations



Source: B&NES

Table 9.1: Short Stay Parking and Pricing in the City Centre

Car Park	No. of Spaces	1 Hour	2 Hours	3 Hours	4 Hours
Sports & Leisure Centre	134	£1.60	£3.10	£4.30	£5.40
Kingsmead Square	90	£1.60	£3.10	£4.30	£5.40
Broad Street	51	£1.60	£3.10	£4.30	£5.40
Cattle Market	40	£1.60	£3.10	£4.30	£5.40
Saw Close	24	£1.60	£3.10	£4.30	£5.40
Claverton Street	11	£1.60	£3.10	--	--
Henrietta Street	On-street	--	£2.50	--	£4.90
Royal Avenue	On-street	--	£2.50	--	£4.90
Royal Victoria Park	On-street	£1.00	£2.00	£3.00	£4.00
Podium Shopping Centre*	550	--	--		£5.50
SouthGate* (see Note 1)	876	--	£3.30	£4.50	£5.50

*Not managed by B&NES.

Note 1: SouthGate has 140 spaces dedicated for rail users. It also accommodates long stay users: £8.00 for 6 hours, £10.00 for 8 hours and £13.00 for 24 hours. In addition, evening stays cost £2.00 and overnight stays cost £5.00.

Source: http://visitbath.co.uk/travel-and-maps/parking-in-bath; http://www.bathnes.gov.uk/services/parking-and-travel/carparking/parking-bath ; http://en.parkopedia.co.uk/parking/

Table 9.2: Long Stay Parking and Pricing in the City Centre – Council Controlled

Long Stay Car Park	No. of Spaces	2 Hours	3 Hours	4 hours	6 Hours	8 Hours	10 Hours	12 Hours
Charlotte Street	1,075	--	--	£5.40	£6.40	--	--	£8.50
Avon Street	512	£3.10	£4.30	£5.40	£7.40	£9.90	--	£12.50
Manvers Street	161	£3.10	£4.30	£5.40	£7.40	£9.90	--	£12.50
Marlborough Lane		--	--	£4.90	£7.20	--	£9.50	--

Source: http://visitbath.co.uk/travel-and-maps/parking-in-bath; http://www.bathnes.gov.uk/services/parking-and-travel/carparking/parking-bath

Table 9.3: Long Stay Parking and Pricing – Non-Council Controlled

Long Stay Car Parks (not B&NES)	No. of Spaces	Pricing
Bath Cricket Club	150	2 hours £3.10, 4 hours £5.80, 8 hours £10.80, 24 hours £15.00, overnight £3.00
Bath Spa Rail Station	359	Mon-Fri £10.10, Sat/Sun £6.90, weekly £50.50
University of Bath Mon-Sat	100	£1.00 per hour, max 6 hours
University of Bath Saturdays only	600	£1.00 per hour, £1.50 per 90 minutes, £2.00 flat rate
Royal United Hospital		20 mins free, 30 mins £1.00, 2 hours £3.00, 4 hours £4.00, 8 hours £6.00

Source: http://en.parkopedia.co.uk/parking/, http://www.bathcricket.com/about-bath-cricket-club/Car-park

Table 9.4: Bath Multiple Day Parking Prices

Multiple Day Stay Car Parks	2 Days	3 Days	4 Days	5 Days	6 Days	7 Days
Avon Street	£25.00	£37.50	£50.00	£62.50	£75.00	£87.50
Charlotte Street	£17.00	£25.50	£34.00	£42.50	£51.00	£59.50
Manvers Street	£25.00	£37.50	£50.00	£62.50	£75.00	£87.50

Source: http://www.bathnes.gov.uk/services/parking-and-travel/car-parking/parking-bath

Table 9.5: Bath On-Street Parking Charges

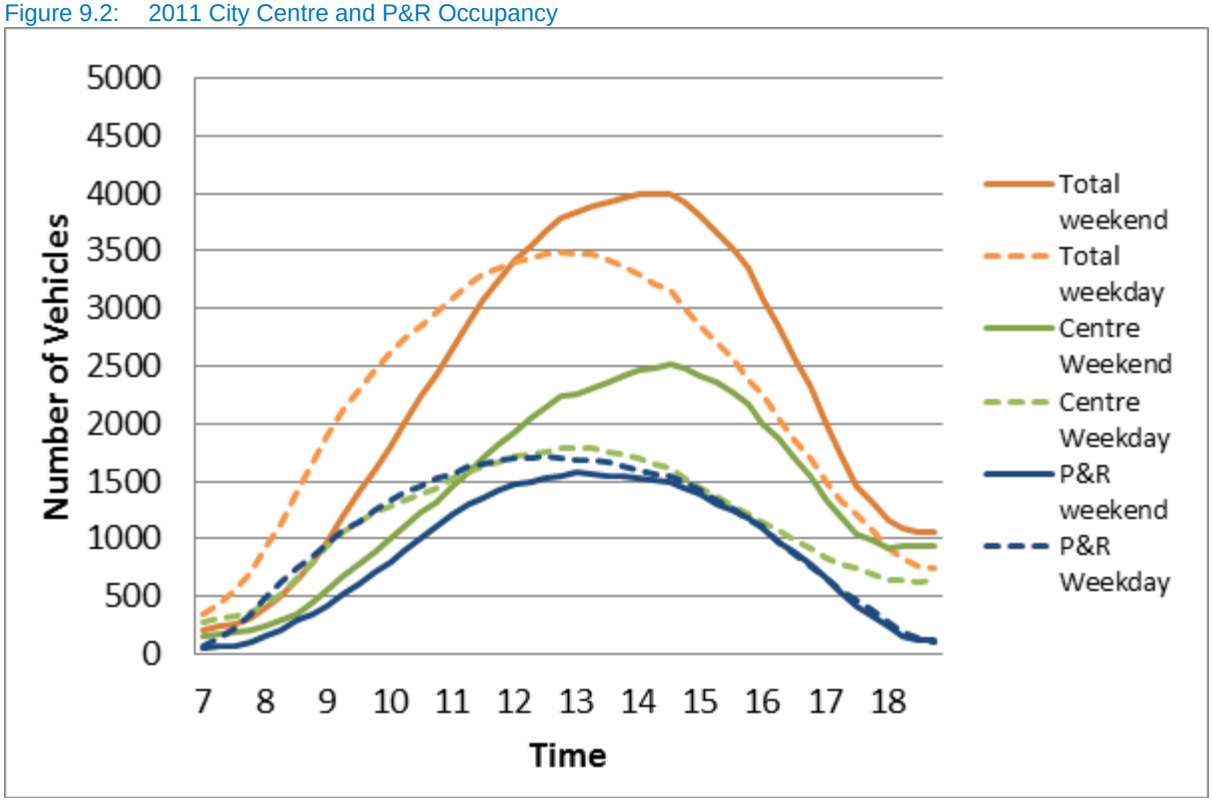
On-Street	Price 30 minutes	Price 1 hour	Price 1 hour 30 minutes	Price 2 hours
Inner Central Zone	£1.50	£2.90	--	--
Outer Central Zone	£1.30	£2.40	£3.10	£3.70

Source: http://www.bathnes.gov.uk/services/parking-and-travel/car-parking/parking-bath

In total the Council controls 2,098 off-street parking spaces in the city centre, comprising 350 short stay and 1,748 long stay spaces. The total provision of off-street parking increases to 3,674 spaces with the inclusion of the non-council car parks at Podium, Southgate and the Cricket Club. 140 spaces at Southgate are reserved for Bath Spa rail users, with a further 359 spaces at the station itself.

Surveys in November 2011 recorded the occupancy levels throughout a weekday and Saturday at all of the Council run car parks in the city centre (total capacity of 2,628 spaces) and at the Park & Ride sites (capacity of 1,978 spaces at that time). Taking all car parks together, the city centre was nearly at capacity on a Saturday (96%), whilst the P&R sites were busier on weekdays (87% of capacity). Taking the total for the city centre and P&R, 87% of capacity was used on a Saturday and 76% on a weekday (note that the P&R capacity was before the recent expansion of the P&R sites at Lansdown and Odd Down).

Figure 9.2: 2011 City Centre and P&R Occupancy



Source: Car park surveys November 2011

Data are now available from the recently installed car park management system. On a Saturday in November 2013 the city centre car parks were at capacity, with P&R operating at around 63% of capacity (which includes the additional spaces at Lansdown and Odd Down). On a Friday, both city centre and P&R car parks were operating at around 75% of capacity. However, the Newbridge P&R site was close to capacity on both Friday and Saturday demonstrating the need for its expansion. The majority of spare capacity in the city centre on Friday was at the Charlotte Street and Avon Street car parks.

9.3 Origins of Parking Trips

In 2009, detailed surveys of use of all car parks were undertaken, including interviews with drivers to understand the characteristics of trips using city centre and P&R car parks.

The origins of weekday users of the city centre car parks are shown in Figure 9.3 for the local area and Figure 9.4 for the wider area.

Figure 9.3: Origins of City Centre Car Park Trips in Local Area

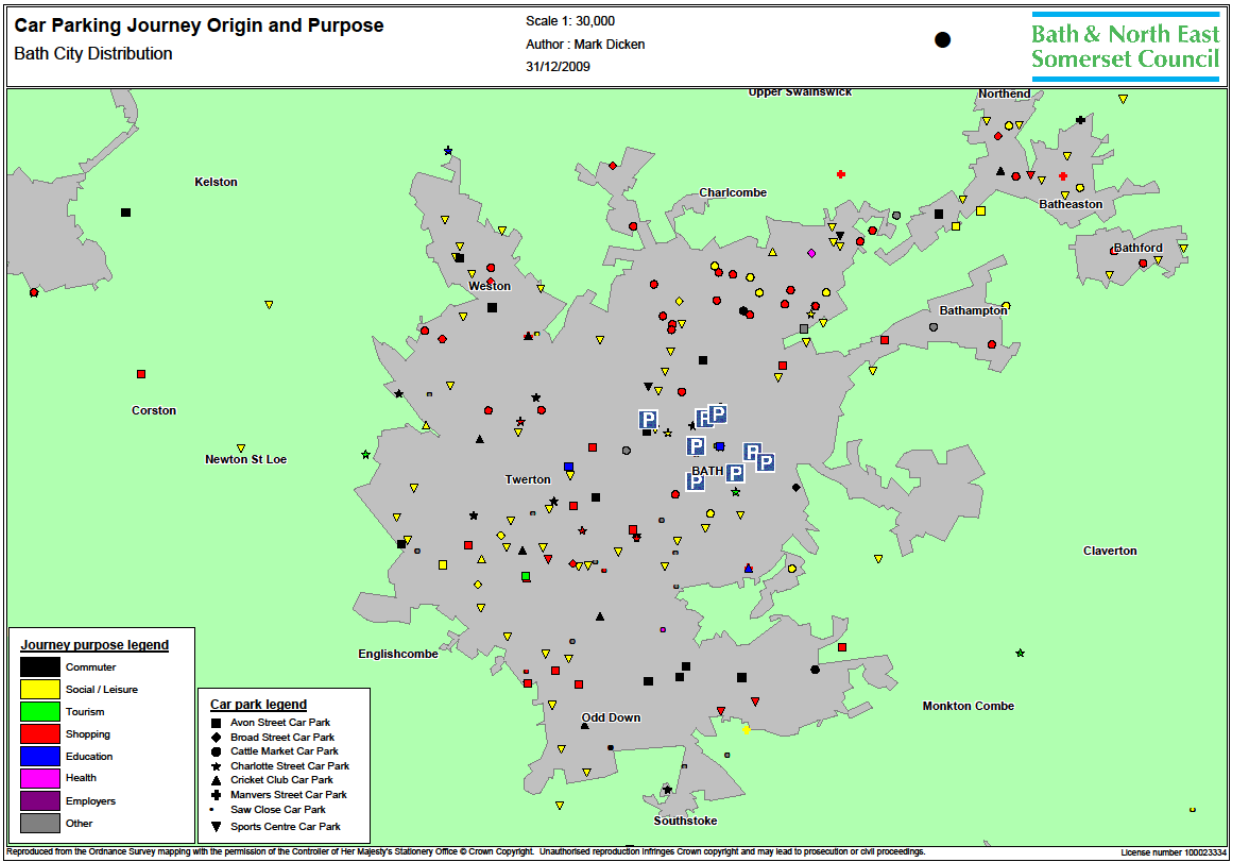
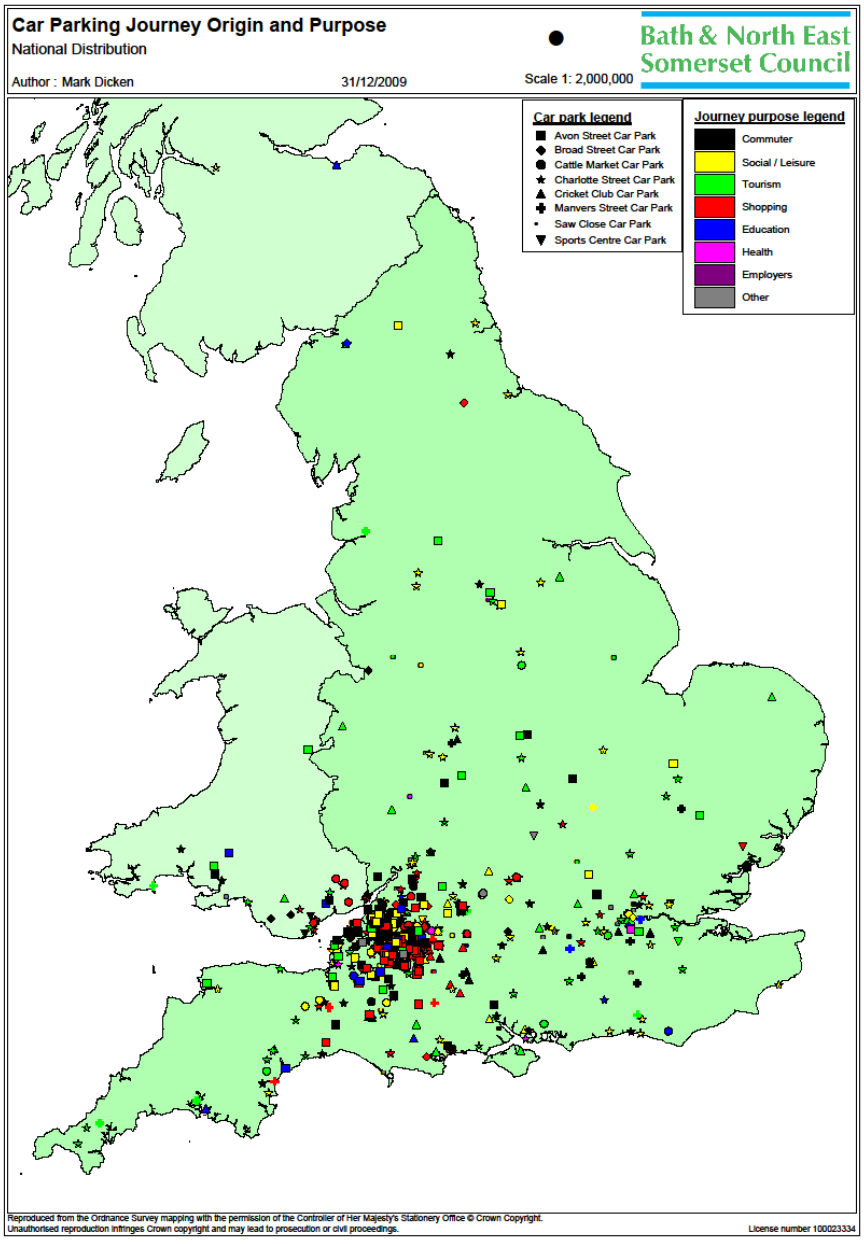


Figure 9.4: Origins of City Centre Car Park Trips over Wider Area



9.4 Views on Parking

The Bath Parking Survey (2012) provided the views of over 5,000 residents and nearly 350 businesses and organisations.

From the residents' responses, 77% agreed that P&R should be expanded, with 6% disagreeing (the remainder being neutral).

For businesses and organisations, views expressed were wide-ranging with support for stronger enforcement but also for more spaces and better management of the spaces available. However, 87% stated that parking was not too expensive, 90% that parking capacity was sufficient but 10% that a business permit is needed for visitor use (*does not specify for what type parking).* 5% of respondents would like to see Park and Ride operate longer

Concerns regarding a lack of parking and the threat it poses to businesses primarily relate to a lack of *customer* parking; with 4% of businesses concerned that parking costs have driven away customers, 5% believing customers find it difficult to park and 3% believing a lack of parking will force business to move from Bath.

Regarding the Controlled Parking Zone (CPZ), most respondents (61%) agreed or strongly agreed that the CPZ improved the quality of parking availability and quality of life for residents. However, parking for visitors and members of the household was more problematic, particularly in the Central Zone. Overall, 40% stated that visitors could not park conveniently.

9.5 Future Demand for Parking

The increase in parking demand in the future has been estimated based on the predicted number of additional jobs and houses that will created in the city. The calculation of demand is outlined in the flow charts overleaf, based on estimating how many new residents will live and work in Bath, using the following data sources and assumptions:

- Around 7,000 new houses in Bath (Core Strategy)
- Around 7,000 net new jobs associated with the Enterprise Area (Council estimate)
- Average number of employed residents per house (2011 Census data)
- Proportion of residents who also work in Bath, split into residents of central area (Abbey and Kingsmead wards) and the rest of Bath (2011 Census data)
- Car mode share for trips to work in Bath, split into Central residents, rest of Bath and living outside Bath (2011 Census data)
- Proportion of employees who travel to work on an average day, allowing for holidays, sick leave, working from home or away from normal work base (assumption)

The calculations result in an estimate of total parking demand with all of the EA development in place of around 5,700 spaces.

Figure 9.5: Flow Chart of Estimate of Commuting Parking Demand

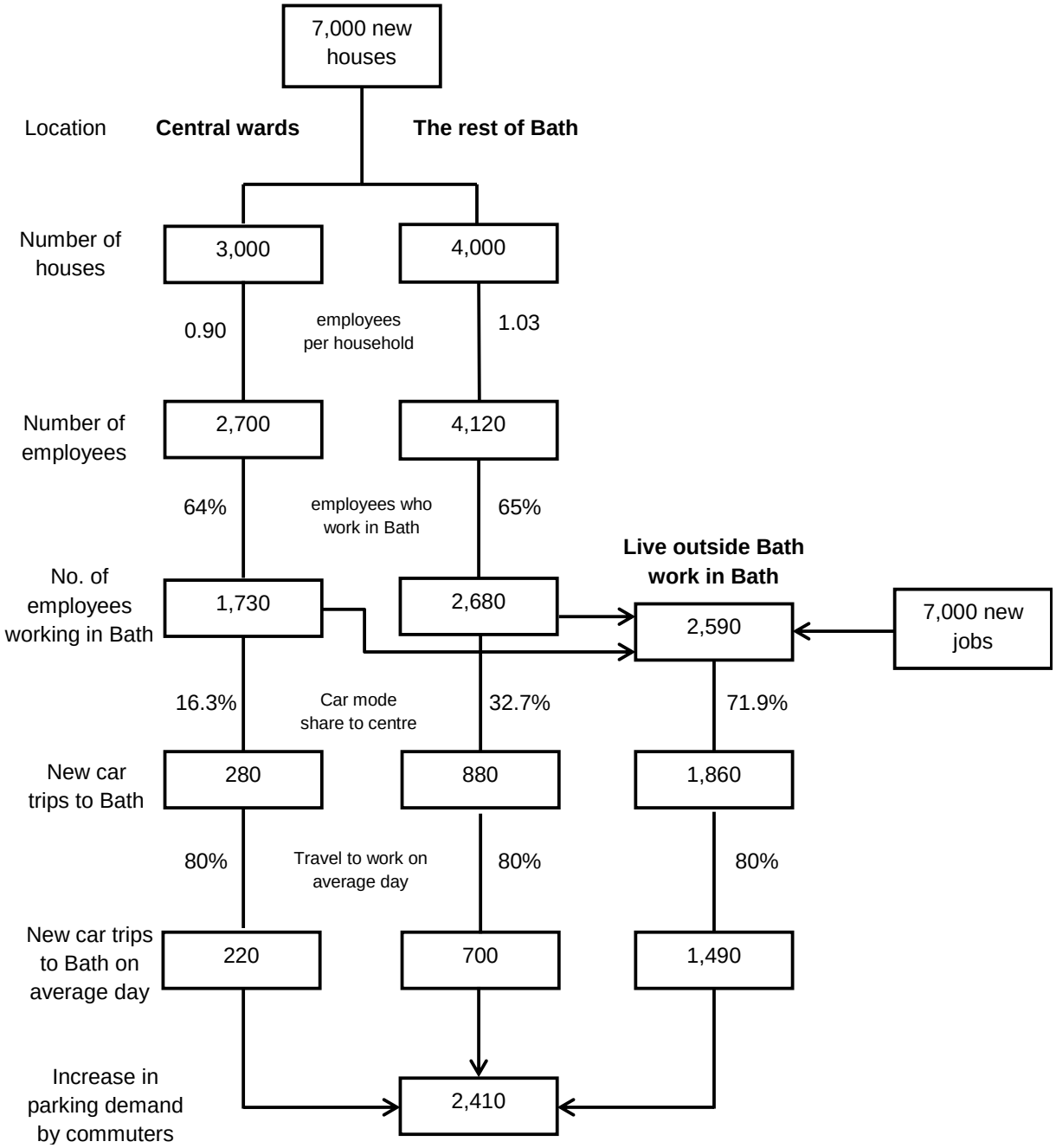


Figure 9.6: Flow Chart of Total Parking Demand Estimate

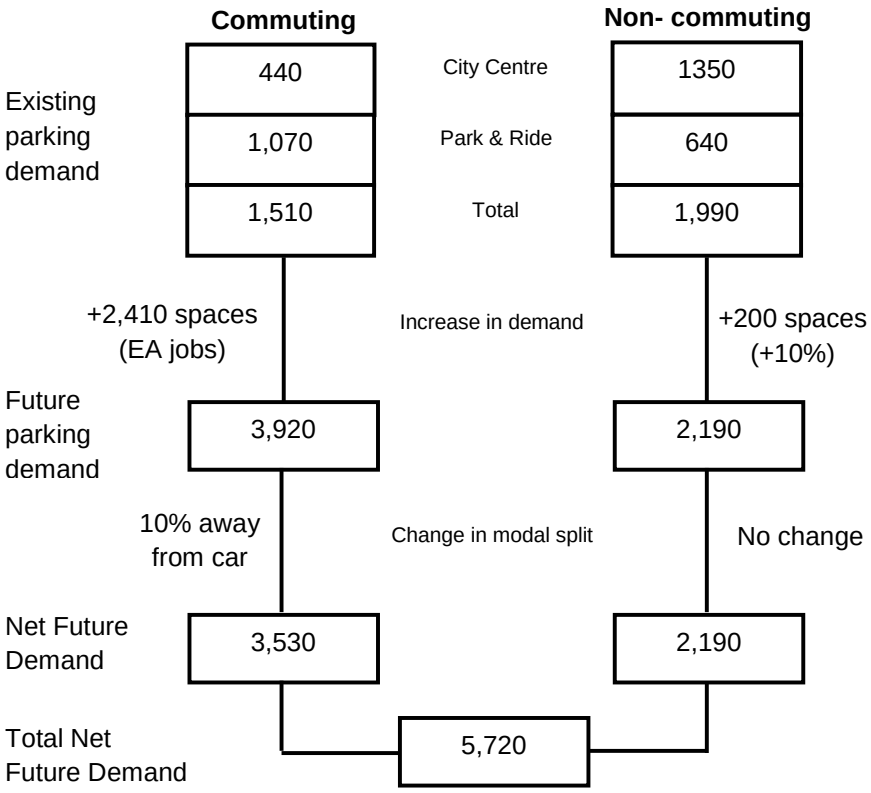


Table 9.6: Estimate of Non-Commuting Parking Demand (based on Peak Weekday Occupancy in November 2011)

Location	Commuter	Non-commuting	Total Occupied Spaces	Capacity
City Centre	439 (25%)	1346 (75%)	1785	2628
Park & Ride	1073 (63%)	643 (37%)	1716	1978
Total	1513	1988	3501	4608

With the planned expansion of the Newbridge P&R site, the total parking capacity will be around 5,480 spaces. However, as part of the planned redevelopment of sites for the Enterprise Area, it is likely that 860 city centre spaces will be lost (Avon Street, Manvers Street, Cattle Market and Saw Close), giving a future capacity of 4,620 spaces. When car parks approach 100% of capacity operational problems occur, as drivers have to search for a long time for a space resulting in congestion. Allowing for the car parks to be running at a maximum of 90% of capacity gives an operational capacity of around 4,160.

Therefore, there is a net shortfall of around 1,600 spaces to meet the estimated demand with the EA, which would increase to around 2,000 spaces if there is no change in mode split by commuting trips.

9.6 Parking Management

With the anticipated reduction in city centre off-street parking capacity, greater use of Park & Ride will need to be made and encouraged, particularly for those staying 3 hours or more. However, good provision for shorter stays should remain in the city centre, whilst aiming to reduce traffic levels in the centre itself. As such, it is proposed that use of Charlotte Street car park for short stay is encouraged (requiring a change to the charging structure, as it currently only has one rate for up to 4 hours).

All car trips into the city centre requiring parking could then be directed to the nearest car park on the edge of the centre, based on their incoming route:

- Southgate for trips from the south and east
- Podium for trips from the north
- Charlotte Street for trips from the west.

With the above system, the need for traffic to pass through and circulate around the city centre should be reduced. However, it is recognised that locals and regular visitors to Bath will make a decision on which car park to use based on several factors, including cost, likely number of free spaces, proximity to destination etc, rather than just their route into the centre. Nevertheless, other visitors and tourists are likely to follow directional signing, so the above strategy should help to reduce vehicle volumes circulating within the city centre.

The timing of the reductions in city centre off-street parking will be dictated by the EA development proposals and, for Avon Street, the proposed flood alleviation scheme. However, before any reductions can occur the Council needs to ensure that the remaining capacity is sufficient, particular on Saturdays, through greater use of P&R and provision of expanded P&R capacity.

9.7 Parking Standards for New Developments

Based on a review of existing parking standards and those adopted for similar developments in other locations, with PPG13 shown for comparison, the following parking standards are proposed for the Enterprise Area developments:

Table 9.7: Proposed EA Parking Standards

Land Use	B&NES	PPG13	Bristol Temple Quay	Proposed EA Standards
Retail (Non Food)	1 space per 20 sqm	1 space per 13 sqm	1 space per 20 sqm	1 space per 20 sqm
Retail (Food)	1 space per 14 sqm	1 space per 18 sqm	1 space per 14 sqm	1 space per 20 sqm
Office	1 space per 30 sqm	1 space per 30 sqm	1 space per 200 sqm	1 space per 200 sqm
Residential	1 bed - 1 space 2/3 beds - 2 spaces 4+ beds - 3 spaces per dwelling	1 space per dwelling	1 space per dwelling	0.7 space per dwelling* *As adopted for Bath Riverside

Note - residential standards exclude disabled and visitor spaces

10. Park and Ride

10.1 Key Issues

- What are the P&R occupancy rates?
- How does the pricing structure compare with city centre locations?
- What is the journey purpose of users?
- What are user views of the P&R service?
- Is it desirable and feasible to expand the existing sites: Newbridge (west), Lansdown (north), Odd Down (south)?
- Is a fourth P&R site to the east a means of reducing city centre traffic?
- What impacts might this have on other P&R sites?
- Is an appropriate site available and what are the environmental impacts?
- Is there scope for bus priority measures for P&R services?
- What are stakeholder views?

10.2 Existing Park and Ride Provision

Bath has an excellent P&R system that was awarded best P&R in the UK in the National Highways and Transport Survey 2013. The service is continually improved where possible, with Sunday operation introduced in September 2012. Details of the system are given below:

Newbridge P&R Service 21 operated by First
- 473 parking spaces (will be expanded to 721 spaces);
- Travel time 10 minutes;
- Mondays to Fridays first bus from P&R 0615, last bus from city centre 2030, every 15 minutes;
- Saturdays first bus from P&R 0615, last bus from city centre 2030 every 15 minutes before 0900 and after 1800, every 10 minutes between 0900 and 1800; and
- Sundays and most public holidays first bus from P&R 0930, last bus from city centre 1800, every 15 minutes.

Lansdown P&R Service 31 operated by First
- 878 parking spaces;
- Travel time 10 minutes;
- Mondays to Fridays first bus from P&R 0615, last bus from city centre 2030, every 15 minutes;
- Saturdays first bus from P&R 0615, last bus from city centre 2030 every 15 minutes; and
- Sundays and most public holidays first bus from P&R 0930, last bus from city centre 1800, every 15 minutes.

Odd Down P&R Service 41 operated by First
- 1,246 parking spaces;
- Travel time 10 minutes;
- Mondays to Fridays first bus from P&R 0615, last bus from city centre 2030, every 15 minutes until 0700 and after 1800, every 12 minutes between 0700 and 1800;

- Saturdays first bus from P&R 0615, last bus from city centre 2030 every 15 minutes before 0900 and after 1800, every 12 minutes between 0900 and 1800;
- Sundays and most public holidays first bus from P&R 0930, last bus from city centre 1800, every 15 minutes;
- Service 42 provides a separate route to the Royal United Hospital, running every 30 minutes from 0640-1900, Monday-Friday only.

10.3 P&R Pricing Structure

For all three sites, parking is free with fares of £3.20 return Mondays to Fridays and £2.50 return Saturdays, Sundays and public holidays. A ten single journey ticket is also available costing £13 and national concessionary scheme pass holders travel free after 0900.

This compares favourably to all day parking charges in the city centre, for example 6 hours in Charlotte Street car park costs £6.40 or £7.40 in the Avon Street or Manvers Street car parks, the latter rising to £9.90 for 8 hours' parking. For other car parks not managed by the Council, daily prices are comparable, for example £6.00 for 8 hours at the Royal United Hospital.

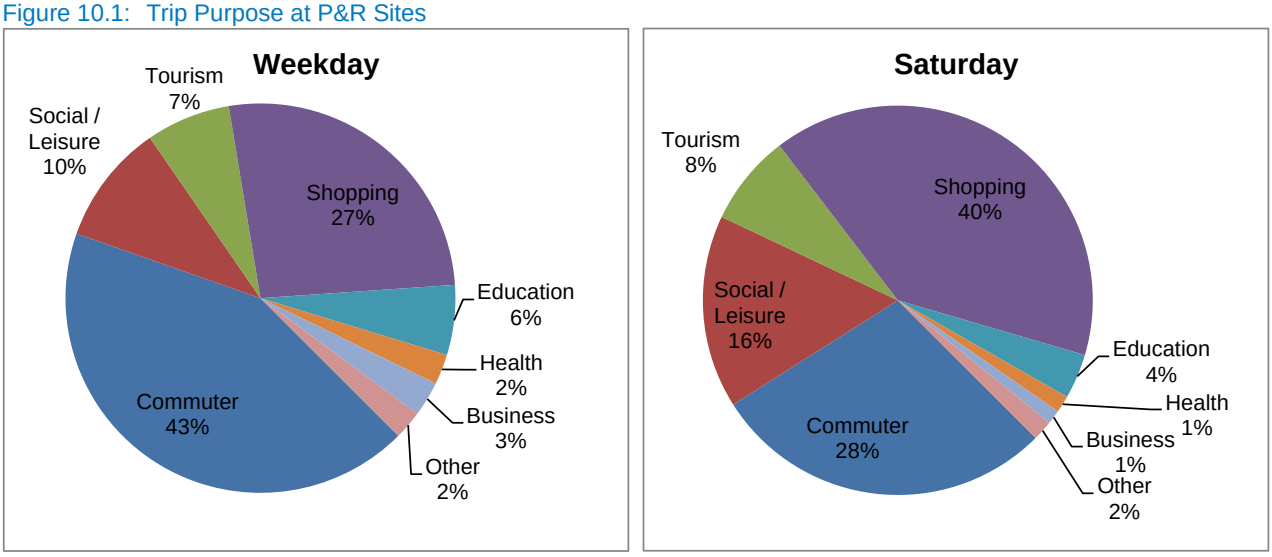
This price differential is important in helping to attract users to P&R although charging fares per person rather than per car means that prices are less attractive when there are one or more passengers in the vehicle.

10.4 P&R Journey Purpose

Journey purpose is shown in Figure 10.1 which suggests that nearly half of weekday users are commuters but that retail, leisure and tourism activities are also important determinants of P&R use. This has implications for the demand profile which avoids a pronounced peak that could be associated with commuters (i.e. before 0900). On Saturday there is still a significant demand by commuters but retail and leisure trips are much higher than on weekdays.

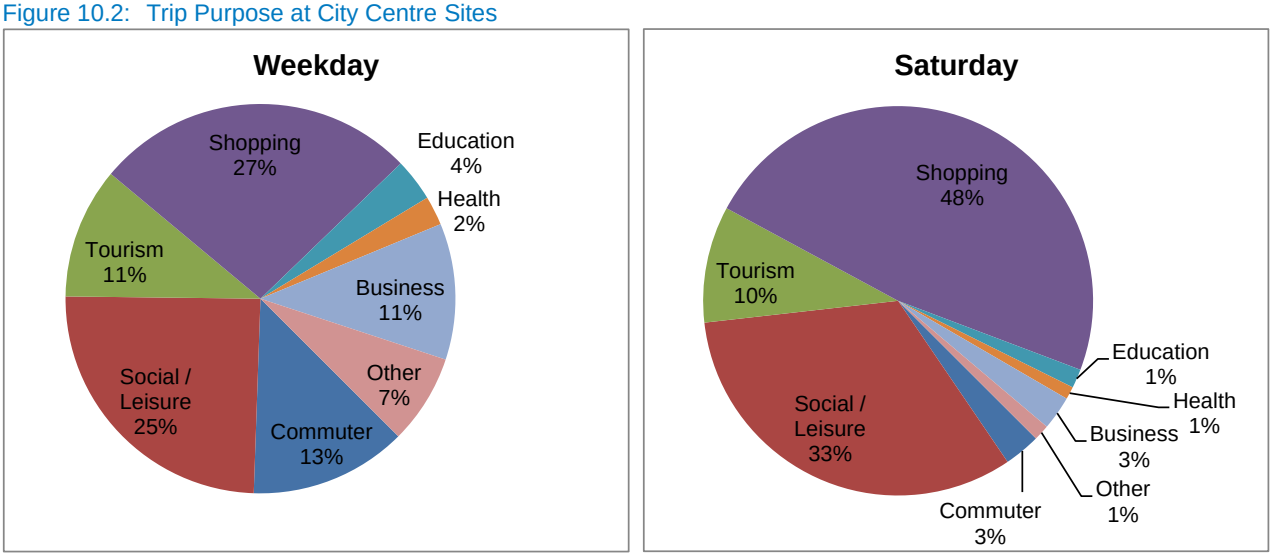
Data for the city centre car parks shows that the proportion of commuter trips is much lower than for Park & Ride, with corresponding increases in leisure and business trips.

Figure 10.1: Trip Purpose at P&R Sites



Source: 2009 interview surveys

Figure 10.2: Trip Purpose at City Centre Sites

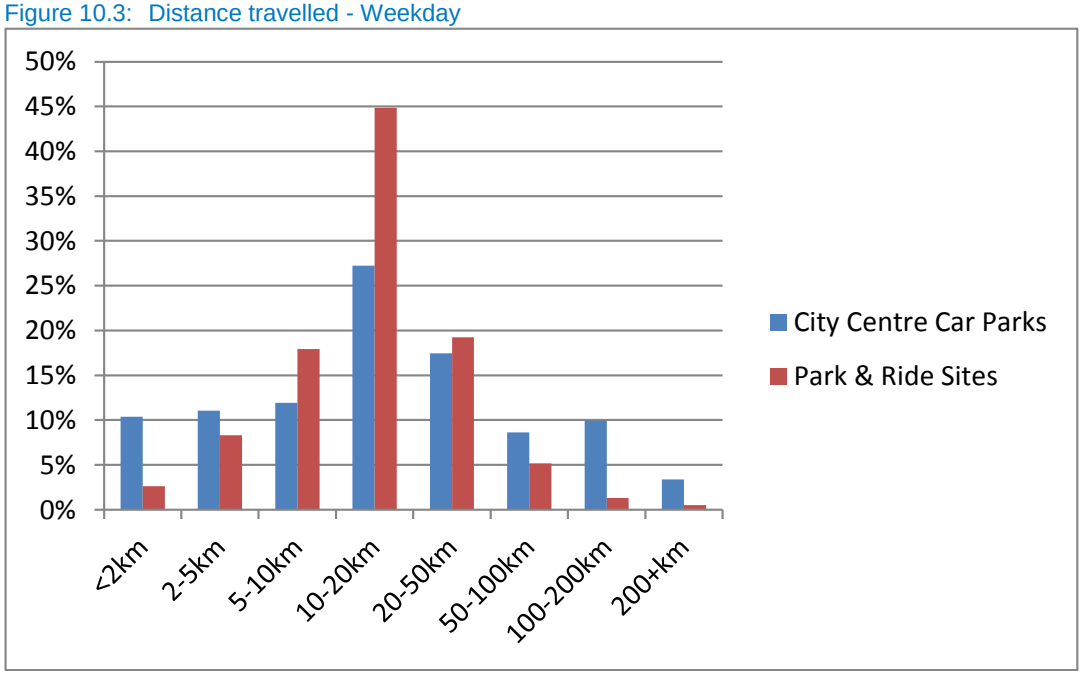


Source: 2009 interview surveys

10.5 Distance Travelled to Car Parks

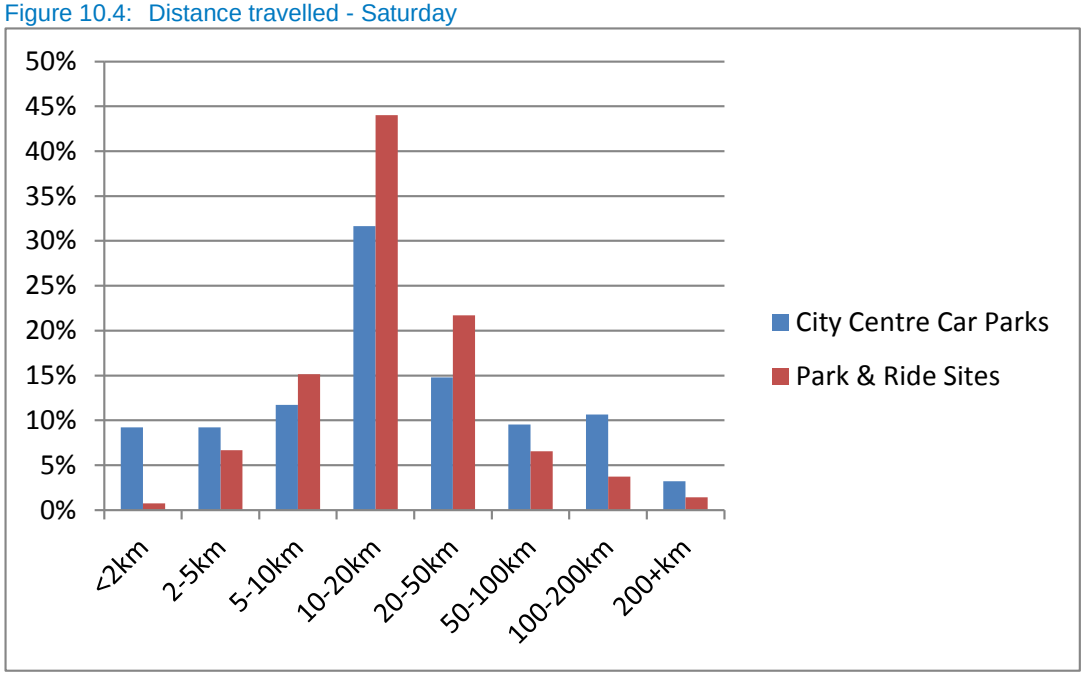
Nearly half of all P&R users travel 10-20km to the sites, with around 15% travelling 5-10km and around 20% travelling 20-50km. Comparison with city centre sites shows larger numbers travelling shorter distances to use these car parks, as expected, but those travelling over 50km comprise a higher proportion of city centre car park users in comparison to P&R. This could be partly explained by tourists and visitors who stay overnight in Bath and park in the centre, as they are unlikely to leave their vehicles at the P&R site (indeed it is discouraged by the operator as there is no security presence overnight).

Figure 10.3: Distance travelled - Weekday



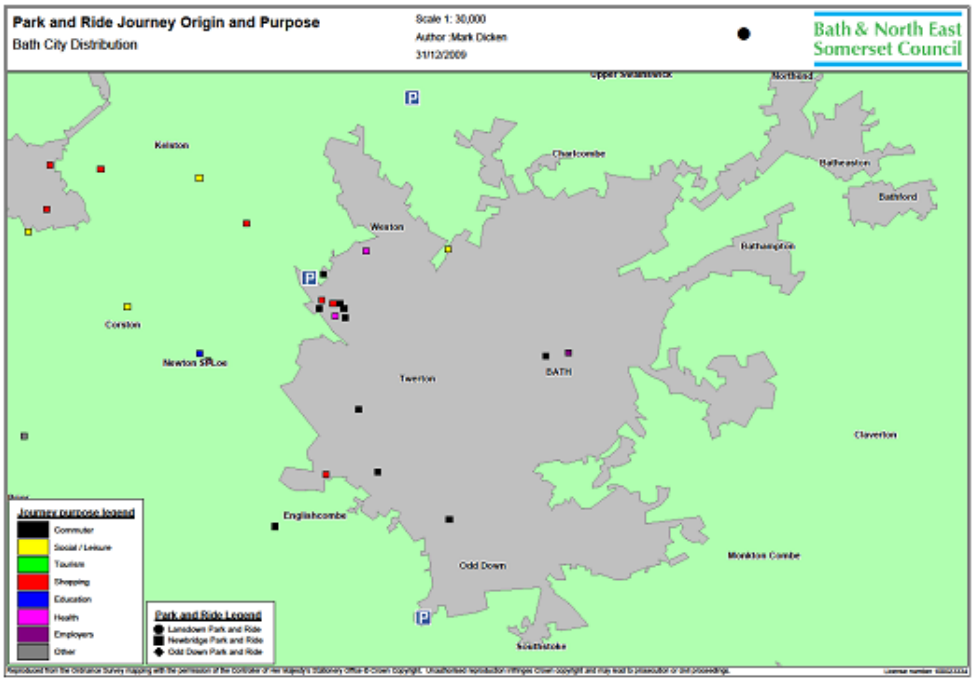
Source: 2009 interview surveys

Figure 10.4: Distance travelled - Saturday



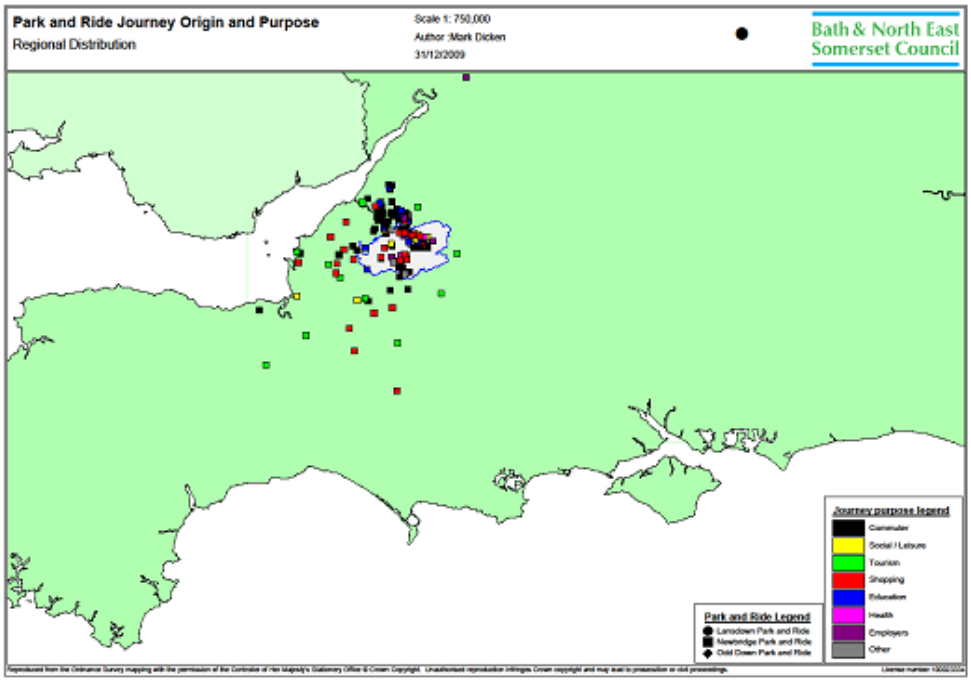
Source: 2009 interview surveys

Figure 10.5: Newbridge P&R User Origins



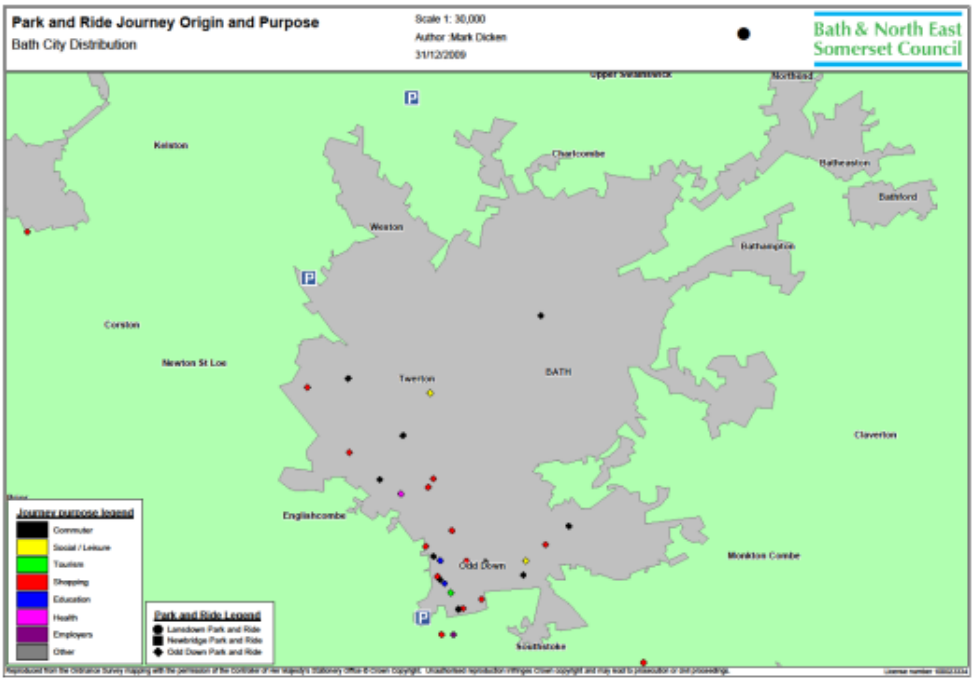
Source: 2009 interview surveys

Figure 10.6: Newbridge P&R User Origins



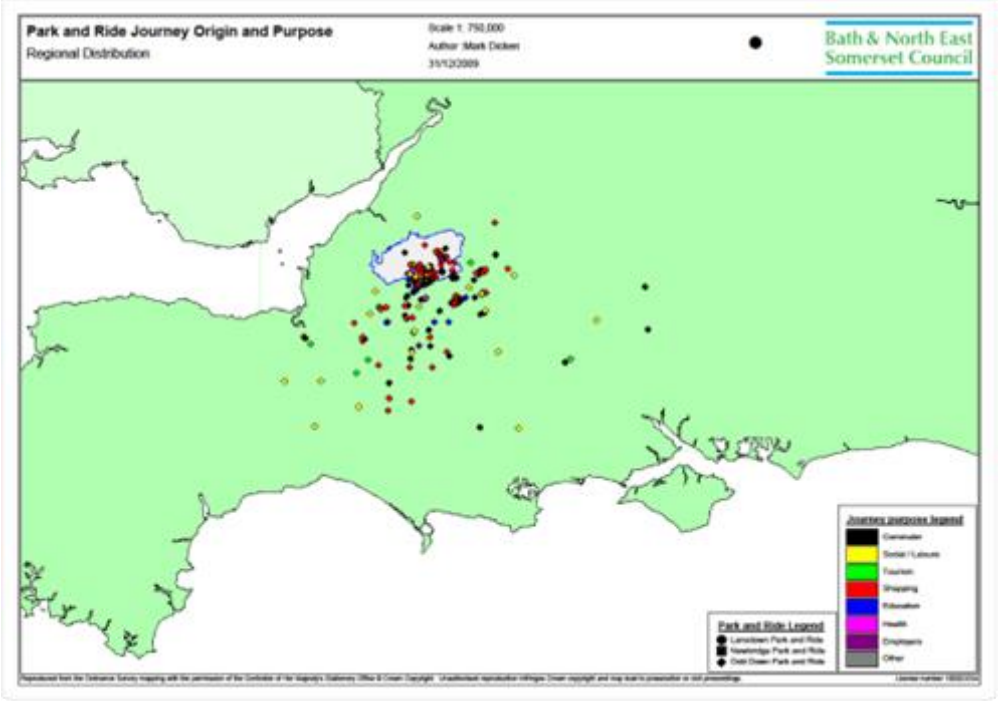
Source: 2009 interview surveys

Figure 10.7: Odd Down P&R User Origins



Source: 2009 interview surveys

Figure 10.8: Odd Down P&R User Origins



Source: 2009 interview surveys

Table 10.1: Newbridge P&R Duration of Stay

Duration (Weekday)	No. of Respondents	Per Cent of Total
1 hour	4	2
2 hours	17	7
3 hours	26	11
4 hours	33	14
5 hours	18	8
6 hours	26	11
7 hours	13	6
8 hours	63	27
9 hours	14	6
10 hours	6	3
11 hours	5	2
12 hours	5	2
Total	**230**	**100**

Source: 2009 interview surveys

10.6 Potential Park and Ride Opportunities

10.6.1 Expanding Existing P&R Sites

Respondents to the 2012 Bath Parking Survey indicated that 77% would be in favour of expanding Park and Ride with 6% disagreeing. The views of businesses and organisations were also obtained by the survey; 78% supported the expansion of Park and Ride and 8% were opposed.

The planned expansion of the Newbridge P&R site was delayed due to objections raised to the proposal on environmental grounds but the planning application was approved in November 2013. Recent evidence from the car park management system shows that there is little or no spare capacity at Newbridge, prior to the planned expansion.

Relocating long stay parking from the centre to park and ride is achievable. A site to the east would complete the picture, allowing people to choose not to drive into the centre and thus contribute to a better city environment. Data shows that many trips originate from the east and that some motorists choose to use the Park and Ride facilities at Odd Down and Lansdown in the absence of a facility to the east. A designated site will need to be adopted, enabling bus and/or rail links to serve the city centre. The three existing park and ride sites may need to be expanded further; planning consent has recently been granted for an expanded Newbridge facility. There may be scope to reassess journey patterns, for example providing separate Park and Ride services to the hospital (as the Odd Down P&R buses do) or other destinations, in addition to those serving the city centre.

10.6.2 P&R to the East of the City

Bath has a clear commitment to P&R as a measure to reduce traffic flows into the city centre with three established sites. These have had the effect of reducing traffic movements by around 2,000 cars in each direction daily. The total incoming traffic is estimated to be around 40,000 daily (based on 2013 Inner

Cordon traffic count) so P&R makes a valuable contribution to reducing traffic levels at critical times, enabling complementary measures to be introduced in the city centre.

As P&R parking capacity expands, it can be expected that parking supply in the centre will be reduced by a commensurate amount. This will enable car parks to be redeveloped for other uses and help to restrain demand for car use into the centre.

The data on current P&R users shows that some users originate to the east of the city. This suggests that a new site would appeal to them and that there would be some abstraction from the established sites. However, it is likely that any capacity freed up would be taken up by new users.

The levels of use of the three established P&R sites and the need to create more capacity has indicated that P&R is popular with users and effective in reducing traffic levels in the central area. This enables other measures to be considered in the city centre that will enhance mobility and help to preserve the historic core. A significant proportion of car journeys originate from the east side of the city and some currently divert to P&R sites at Odd Down and Lansdown as there is no available site to the east. The number of cars entering the city from the east is expected to increase over time as development takes place in the west Wiltshire towns for which Bath is an attractive destination. An additional P&R site to the east can be justified on this basis but is also important to enable growth in Bath, notably the Enterprise Area in which parking will be constrained. Here businesses and other activities will be accessed by walking, cycling and bus, integrated with the city centre and rail stations and journeys that would otherwise be made by car will be redirected to new P&R capacity.

A number of sites to the east of the city have been considered. There are inevitably constraints and environmental impacts associated with each of them but if the principle of Park and Ride is considered to be acceptable, then those impacts can be addressed through mitigation measures. From the transport point of view, Park and Ride should be located where it is visible from the radial route, have adequate space to accommodate demand with room for later expansion if needed and have suitable access arrangements for cars and buses. Landscaping measures can include screening with vegetation, careful lighting design, etc.

There are few opportunities to introduce bus lanes. However, there may be scope for priority measures at junctions, particularly if traffic volumes are reduced due to the diversion of cars to Park and Ride.

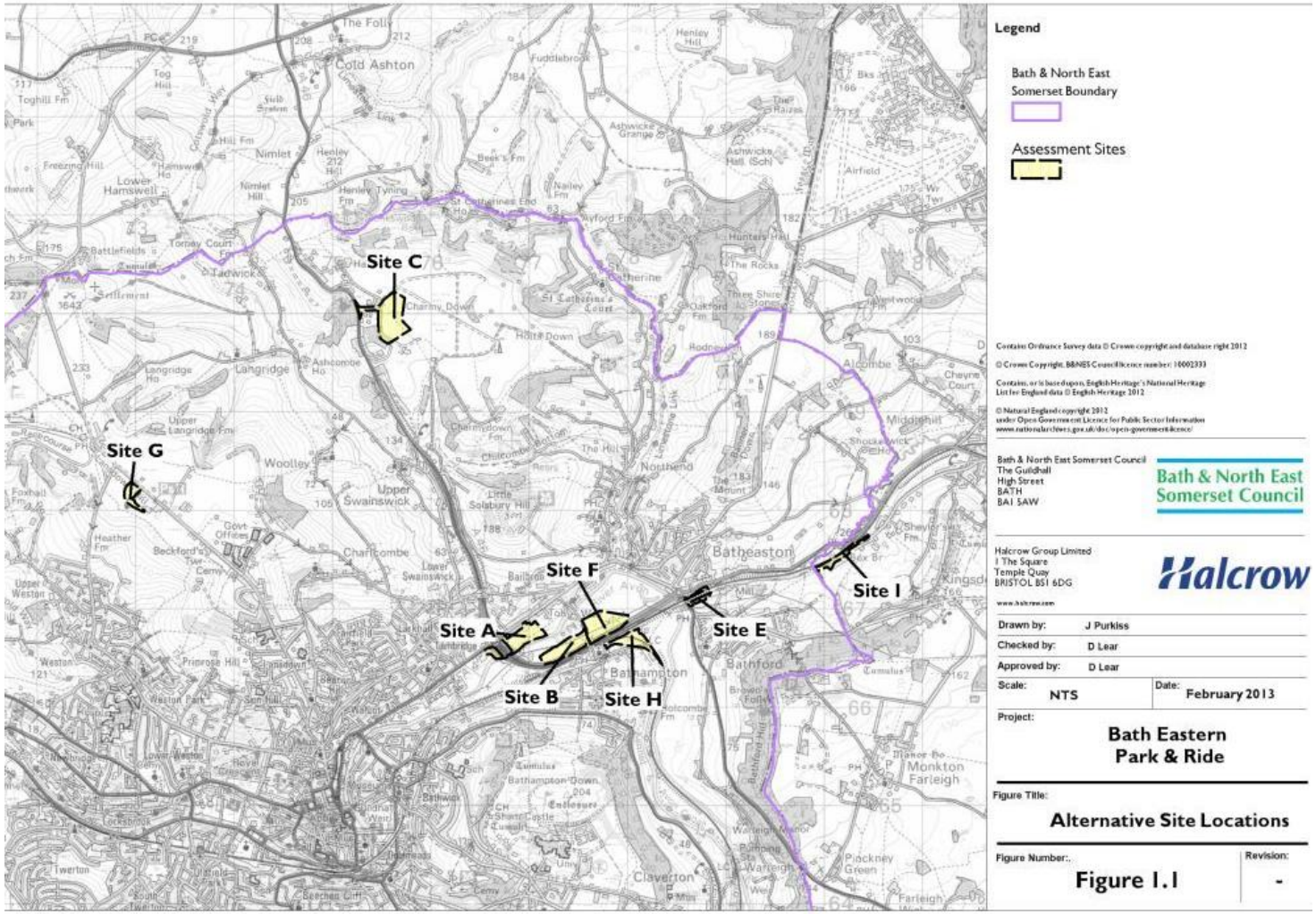
A review has been undertaken by Halcrow for B&NES Council in May 2013 (Bath Eastern Park and Ride Sites – Site Options: High Level Review) of possible sites serving the east, using the site adjacent to the A4 – proposed previously by the Council but subsequently rejected – as a comparator (see Figure 10.9):

- Site A Batheaston, south east corner of A4/A46 junction;
- Site B A4 Batheaston Bypass west of Mill Lane;
- Site C A46 Charmy Down;
- Site E A363 Bathford;
- Site F Bath Package – application site for comparison purposes only;
- Site G Expansion of Lansdown P&R additional to proposed Bath Package expansion;
- Site H Bathampton Junction; and
- Site I Land south of railway, Box Bridge.

(Site D on the A4 to the east of the A363 junction, the ‘Gatehouse’ site, was not included.)

A number of high level considerations were applied including highway access, planning and land issues, flood risk, landscape impacts, feasibility of operating a cost-effective bus service and other potential construction issues or problems. Each site was reviewed against these criteria.

Figure 10.9: Location of Eastern P&R Sites Considered



Source: Bath Eastern Park and Ride Sites – Site Options: High Level Review

Of the sites available, Site B adjacent to the A4 Batheaston Bypass offers a number of advantages in terms of access from the highway network, capacity and location in relation to the city centre. It also offers potential for links to the railway and river transport being located between the two. Key findings arising from the comparison of sites in relation to Site B include:

- A new highway access would be required to the A4(T). A junction to the east of Mill Lane Bridge would be required with a new bridge under Mill Lane. Relatively favourable in comparison with other options.
- No risk from flooding unlike most of the other sites;
- In Green Belt along with all the other sites considered and with high to moderate landscape quality. As with other sites, land scape and visual mitigation works are possible;
- Relatively few properties affected nearby but more at a distance i.e. better than some sites but worse than others;
- The site has no heritage or built environment designations, similar to most of the other sites;
- The site is wholly within the Bath Hot Springs Protection Area so pollution prevention is important. Most of the other sites have similar issues; and
- Business case potential is good with appropriate site capacity unlike some of the other sites.

Recent inputs from stakeholders has indicated that a new P&R site to the east of the city is supported and should be a priority of the Transport Strategy.

10.6.3 Rail-Based Option at Bathampton

A large P&R site has been proposed for Bathampton to the east of the city in conjunction with a new rail station, linking the site to Bath Spa station. The car park would be constructed in the divergence of the Great Western Main Line and Westbury route railways although this would require the realignment of the latter (moving the junction 200m west) and the construction of a new two-platform station on the Westbury line. Another option is the rearrangement of trackwork to provide a bi-directional loop on the main line and a reversing 'Y' with a single platform for Park and Ride purposes on the Westbury line, as put forward by Dorian Baker (Bathampton Parkway note, January 2012). The forthcoming electrification of the main line provides an opportunity for some reconstruction but a strong business case would be needed as justification. Adding a turnback facility and platform with associated track and signalling is a high cost scheme and realignment of the Westbury route would be a substantial project with little betterment for Network Rail other than raising line speeds through the junction.

The proposal raises a number of very significant difficulties:

- Considerable cost in the order of £50 million (rail reconstruction works, provision of a new station and construction of a 3,000 space car park with access from the A4);
- Revenue risk of failing to attract a sufficient number of users; and
- Commitment of a train operator to provide the necessary service to Bath Spa and Bristol;
- Programme problems involving Network Rail and the Highways Agency, both of which have higher priorities and other resource commitments.

A detailed analysis has been undertaken with a car parking capacity of 1,850 initially with scope for a further 1,000 spaces (Bathampton Station Park and Ride Scheme GRIP Stages 1 and 2 (equivalent) Report, OTB Engineering UK LLP, Servant Transport Consultants and MDS Tranmodal Ltd for B&NES Council, February 2013). Capital costs have been estimated as £46.7 million for Phase 1 plus £12.0 million for Phase 2. The Highways Agency has expressed concerns about the impacts of the scheme on the trunk road network, particularly on the eastern approaches to the site and in providing access to and from the A4. The Agency suggests that more evidence on the expected highway impacts would be required plus a commuted sum to cover ongoing maintenance costs of new structures and highway. The Agency may accept the scheme if there is no detriment to the safe operation of its network and that capacity is available. However, in the absence of a Transport Assessment and appropriate rail demand forecast, the Highways Agency does not feel informed sufficiently to support the scheme.

Each element of the proposal would need to be considered in sufficient detail from which robust conclusions can be drawn before any decisions can be made regarding the value for money or the contribution to the wider transport strategy. The analysis will also involve the Department for Transport, Highways Agency and Network Rail as key stakeholders. The lead time from concept to delivery of both road and rail projects of this type is extensive, including a lengthy planning process.

Even if a rail-based P&R scheme were to be pursed, the P&R site should be introduced using buses as an interim measure, given the time that would be needed for the design, approval and construction stages of a rail scheme.

11. Buses

11.1 Key Issues

- What are local bus patronage data/trends?
- What is the number of city centre bus movements and stop arrangements?
- Are there indicators of the quality of bus services?
- Is there punctuality data?
- What are user views?
- What are operators' views?
- What priority measures are in place?
- What scope is there for additional priority measures?
- Is there data on fare indices?
- What bus service information e.g. real time displays are in place and what is planned?

11.2 Levels of Bus Use

Patronage data is aggregated for commercial reasons but gives an indication of the levels of use for Joint Local Transport Plan monitoring purposes as shown in Table 11.1. Nearly one third of all journeys are made by concessionary card holders (free travel started in April 2006 and the National Concessionary Scheme started in April 2008). The level of patronage has been fairly constant in recent years although short terms fluctuations are common, particularly in response to factors such as fare changes.

Table 11.1: B&NES Bus Patronage

Period	No. of Single Passenger Journeys* Concessionary Journeys	No. of Single Passenger Journeys* Non-Concessionary Journeys	No. of Single Passenger Journeys* Total
2005/06	n/a	n/a	10,303,228
2006/07	2,239,043	9,477,560	11,716,603
2007/08	2,209,640	9,353,103	11,562,743
2008/09	3,530,887	8,222,317	11,753,204
2009/10	3,636,574	7,643,130	11,279,704
2010/11	3,746,221	8,151,297	11,897,518
2011/12	3,911,323	8,002,113	11,913,436
2012/13	3,741,032	7,274,169	11,015,201

* Total single passenger journeys starting in B&NES on registered local bus services.

Source: JLTP Monitoring

While national trends indicate that bus use in England outside London continues to decline, services in the B&NES area appear to be retaining users which suggests that there may be some growth offsetting the wider trend. More detailed data would be helpful to identify those sectors of the market that are gaining (possibly younger age groups and students) and those which are declining. This would also enable more targeted marketing to be used to grow patronage. It is expected that with the increase in the number of concessionary journeys that the number of core full fare payers is declining, a worrying trend if the market is to be consolidated and built up. Table 11.2 - Table 11.4 show the numbers of users recorded for B&NES in comparison with wider trends.

Table 11.2: Passenger Journeys on Local Bus Services 2009/10 to 2012/13 (millions)

Area	2009/10	2010/11	2011/12	2012/13
Bath and NE Somerset	11.4	11.5	11.6	10.2
South West	202..3	206.4	209/6	202.6
England	4,637.8	4,643.8	4,665.6	4,598.3

Source: Department for Transport (Bus Statistics Table BUS019a)

Table 11.3: Older and Disabled Passenger Journeys on Local Bus Services 2009/10 to 2012/13 (millions)

Area	2009/10	2010/11	2011/12	2012/13
Bath and NE Somerset	3.6	3.6	3.6	3.7
South West	71.2	73.1	74.0	71.4
England	1,054.3	1,051.9	1,065.7	1,027.3

Source: Department for Transport (Bus Statistics Table BUS0113)

Table 11.4: Passenger Journeys on Local Bus Services Per Head 2009/10 to 2012/13 (number of trips per year)

Area	2009/10	2010/11	2011/12	2012/13
Bath and NE Somerset	65.7	66.0	66.1	57.4
South West	38.7	39.2	39.5	37.9
England	88.9	88.2	87.9	86.0

Source: Department for Transport (Bus Statistics Table BUS0110a)

Fares are an important determinant of bus travel. Department for Transport data shows that local bus fares in English non-metropolitan areas have risen by 2.9% from 1995 to 2013 (Bus Statistics Table BUS0405b). This compares with the total England increase of 15.5% over the same period and was less than the increase in metropolitan areas and London. However, there have been many local variances and fluctuations over the period so identifying actual fare changes locally is not straightforward.

The Council has no influence on the fare levels set by operators on a commercial basis unless it can provide some form of subsidy beyond the English national concessionary travel scheme. However, the cost of travelling by bus for younger age groups can be restrictive in terms of their opportunities to find and retain training or jobs. Further exploration of fare options will be discussed with operators.

Fares can be complicated for users to understand and are perceived to be high. A recent review by First in Bristol resulted in simplified fares with reductions in pricing for some journeys. However, First has indicated that these will be reviewed further with the possibility of increasing them. Dialogue with First and other operators in Bath would help to establish what users consider to be an incentive to travel by bus when compared with other options and to ensure stability of pricing over longer periods.

11.3 Bus Service Availability and Punctuality

A number of operators provide services, the most numerous being First Somerset and Avon. Punctuality surveys indicate the level of compliance in the periods 17 May to 1 June and 4 to 15 November between 0730 and 1030 and between 1500 and 1800. Where compliance is very high or relatively low, in some cases this is related to the small number of journeys being operated on that route. Overall scores are good but may underplay the impact of particular incidents affecting departure time or the fact that for some longer services, a delay at the start has little impact subsequently.

Table 11.5: Services to Bath Bus Station

Destination	Service	Departures on Time May 2012	Departures on Time Nov 2012	Overall Departures on Time
Combe Down	1	88%	87%	87%
Upper Weston	1			
Bathampton	4	100%	88%	92%
Whiteway	5	97%	94%	95%
Fairfield Park and Larkhall	6	100%	92%	96%
Larkhall and Fairfield Park	7	92%	96%	94%
Southdown	10	86%	96%	90%
Odd Down	14	88%	80%	84%
RUH and Weston	14			
Malmesbury/Stanton St Quintin	76, 76A	n/a	n/a	n/a
Chippenham via Marshfield	79	100%	100%	100%
Trowbridge via Freshford	94	n/a	50%	50%
Wells	173	63%	50%	57%
Bristol via Radstock	178	88%	47%	70%
Midsomer Norton	179	87%	100%	91%
Frome via Radstock	184	69%	67%	68%
Weston-super-Mare	191	n/a	n/a	n/a
Colerne	228	75%	100%	86%
Chippenham	231	88%	83%	86%
	232	89%	82%	86%
Warminster for Salisbury	264	100%	67%	83%
	265	67%	75%	70%
Frome	267	100%	67%	83%
Melksham	271	75%	50%	67%
	272	73%	70%	72%
Cribbs Causeway	319	83%	83%	83%
Bristol via Bitton	332	100%	100%	100%
Bristol via Keynsham	338	n/a	61%	61%
Bristol via Keynsham	339	n/a	n/a	n/a
Old Sodbury	620	100%	100%	100%
Sion Hill	700	100%	67%	83%
Newbridge	716	100%	100%	100%
Bathwick	734	n/a	n/a	n/a
Hinton Blewett	752	100%	0%	50%
Peasedown St John	757	n/a	n/a	n/a
Clutton	768	67%	100%	83%
Bristol via Saltford	X39	n/a	n/a	n/a

Source: B&NES Council (May 2013) Bus stop map, B&NES punctuality surveys

11.4 Improving the Attractiveness of Bus Use

A number of initiatives are helping to attract more users to bus services. Improved punctuality helps to give the impression that buses can be relied on while the adoption of smart card technology offers major advantages for users and operators. The introduction of smart card readers on all buses in Bath means that a universal ticketing structure can be introduced and tickets such as the BathRider multi-operator ticket can be translated to smart cards. The benefits to users include rapid transactions on boarding, easy payment, flexible use and confidence in the system. The significant benefit to operators is that the data available can be used to monitor every journey and to help assess the performance of the network. It also provides marketing opportunities and a fresh image for users. Real time service information is also being provided on key routes in the city as part of the Bath Package Improvements.

The scope for bus lanes is limited given the constraints of the road network. However, the measures that have been introduced have helped give buses an advantage over other traffic to maintain punctuality and an image of journey time reliability compared with car use. The successful bid for Better Bus Area funding will allow further enhancements to be introduced by extending the existing bus lanes on London Road and the A36 approach to the Windsor Bridge Road junction.

The Better Bus Area bid also includes network-wide initiatives (over the West of England area):

- RTPI equipment on 190 vehicles
- 'Next Stop' display within 150 vehicles
- Wifi capability within 230 vehicles
- Improved bus lane enforcement.

The route map of the city is comprehensive and any new services are a matter for commercial operators to consider should a sufficient demand base become evident. However, increasing the number of journeys on established routes, such as during evening periods, may help to promote buses as a viable option. In addition to bus services, the voluntary sector and community transport, possibly in the form of demand responsive transport (with pick-up on routes as required) could provide services where there is not a regular bus or where individual needs are to be addressed. However, services such as demand responsive transport are likely to require subsidy to cover their operating costs.

11.5 Bus Routes to Serve New City Centre Developments

It is likely that only the largest development sites would generate a large enough number of trips for additional services to be provided. In Bath, this is likely to include the Enterprise Area for which links to the city centre and rail station will be important.

The EA Masterplan is yet to be finalised so it is very difficult to assess if existing bus routes should be diverted to serve new developments. However, on the east-west corridor alongside the River Avon the bus routes follow either the Lower or Upper Bristol Road. Therefore, most developments on this corridor are likely to be within a short walking distance of both sides of the river, so should have good access to bus services. A key part of the accessibility to EA sites will be ensuring that an excellent pedestrian network is provided, including new or improved river crossings to minimise walking distances and ensure that natural desire lines can be followed. The EA could also incorporate a new bus corridor such as that identified previously for the bus rapid transit scheme.

12. Coach Parking

12.1 Key Issues

- What are the origins of coaches?
- Does the Avon Street Coach Park function effectively?
- How many coaches use the Avon Street coach park?
- What are the main drop-off/pick-up locations and why?
- What are the views of coach operators?
- Are there other possible locations for the coach park?

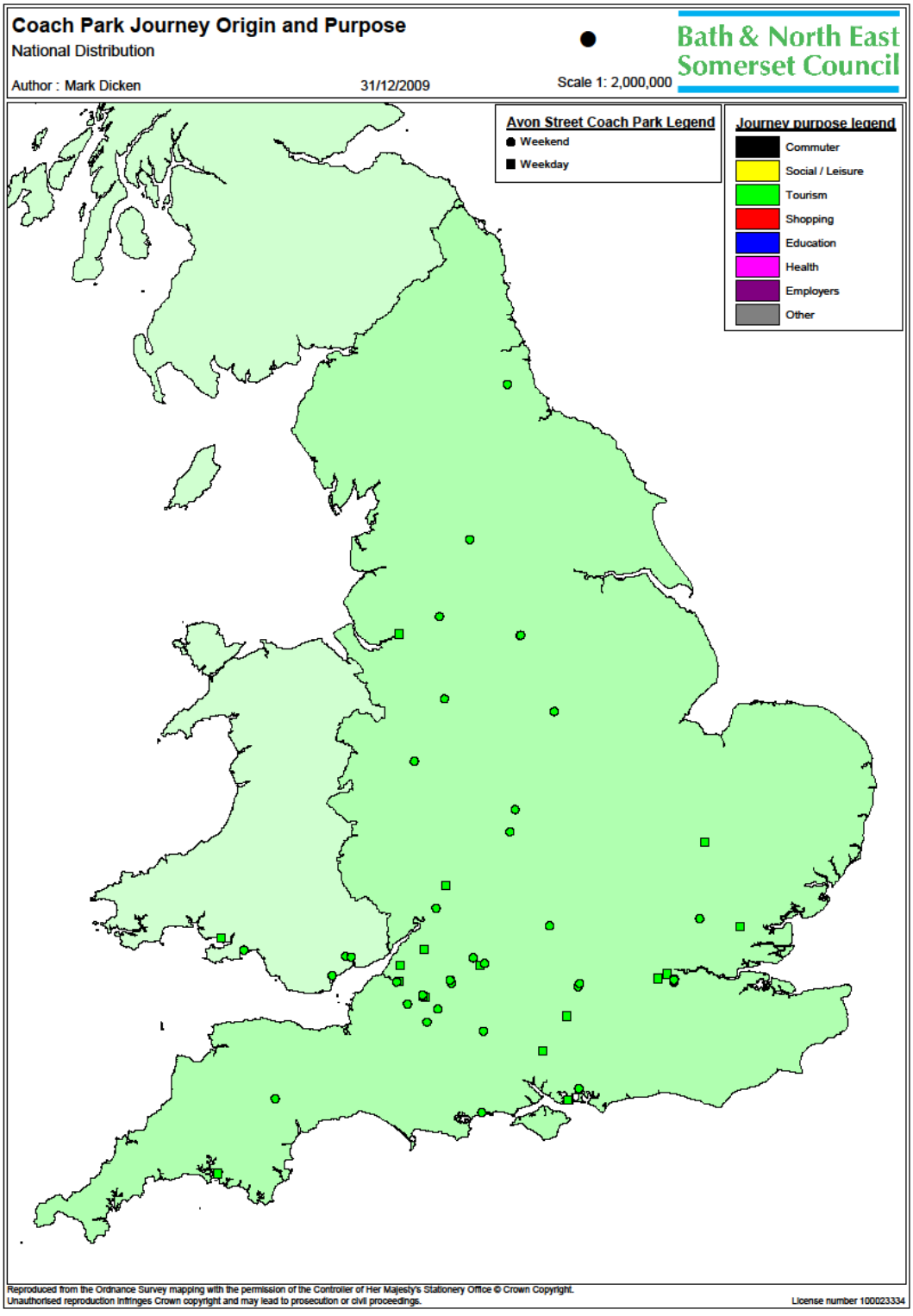
12.2 Existing Situation

- 500,000 annual coach visitors to Bath (source: B&NES Heritage Services, 2006, *The value of coach business to the Council*)
- Value of Coach Tourism to Bath's economy - £25 m per annum (source: Group Travel Report 2003)
- 19% of visitors to Bath arrive on organised coach tours (national average 9%) (source: Bath Visitors' Survey 2006)
- Council's annual revenue from coach visitors £2.3 million (admission ticket and retail revenue at Council's tourist attractions) (source: B&NES Heritage Services, 2006, *The value of coach business to the Council*)
- Average daily number of coaches visiting Bath in peak season is 55, double that on busiest days which occur in the summer holidays and during the Christmas market.

12.3 Visitor Coach Origins

Many coaches originate in the south of England and further afield as shown by survey data and all require access in the city within a short distance of the main attractions. Avon Street coach park has insufficient space for the number of coaches arriving and at least five bays are required in the city centre. Dialogue with visitor attractions indicates that coaches are a major component of their success but that an easily accessible unloading point in the city centre is essential, linked to a more remote coach parking facility.

Figure 12.1: Origin of Coach Trips to Bath

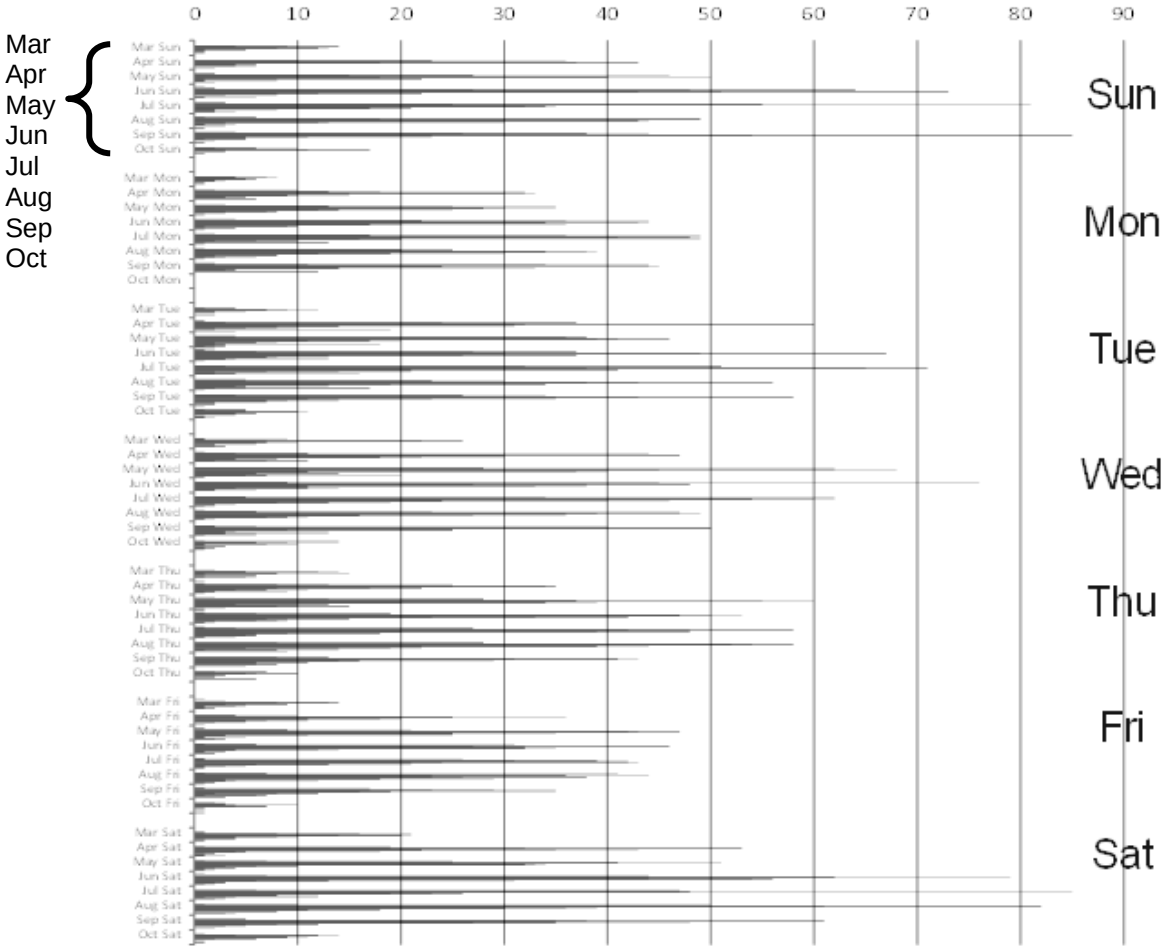


Source: B&NES Council survey data.2009

12.4 Avon Street (Riverside) Coach Park

Avon Street Coach Park charges £5.00 for 2 hours, £8.00 for 4 hours, £11.00 for 6 hours, £14.00 for 8 hours and £16.00 maximum. Overnight parking is permitted free if parked during the day but for £2.00 if not parked during the day (http://en.parkopedia.co.uk/parking). Figure 12.2 shows the tickets issues for parking by day of the week.

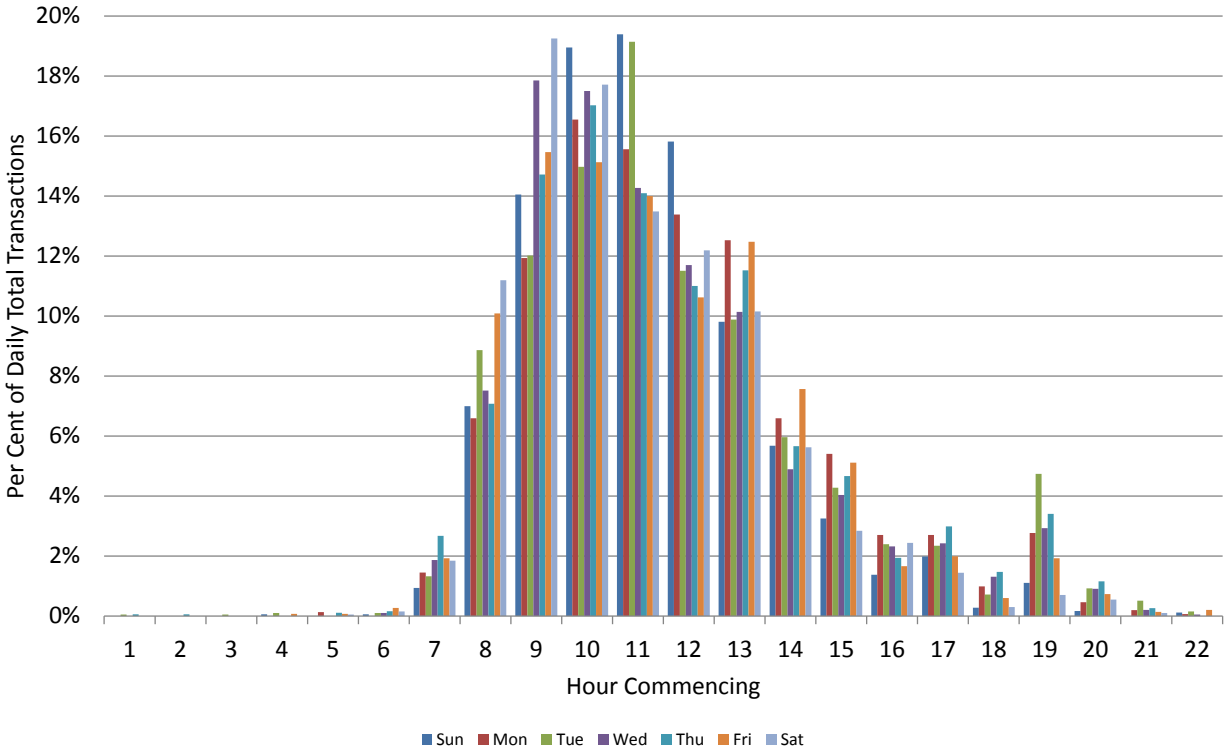
Figure 12.2: Ticket Transactions at Riverside Coach Park 2013 by Day



Source: B&NES Council survey data.

This shows the popularity of the coach park on Saturdays and Sundays but also mid-week. Figure 12.3 shows the times at which transactions are made. Most coaches arrive throughout the morning but the early arrivals – from 0800 – should be noted plus those arriving in the late afternoon/early evening.

Figure 12.3: Times of Coach Ticket Transactions at Riverside Coach Park 2013



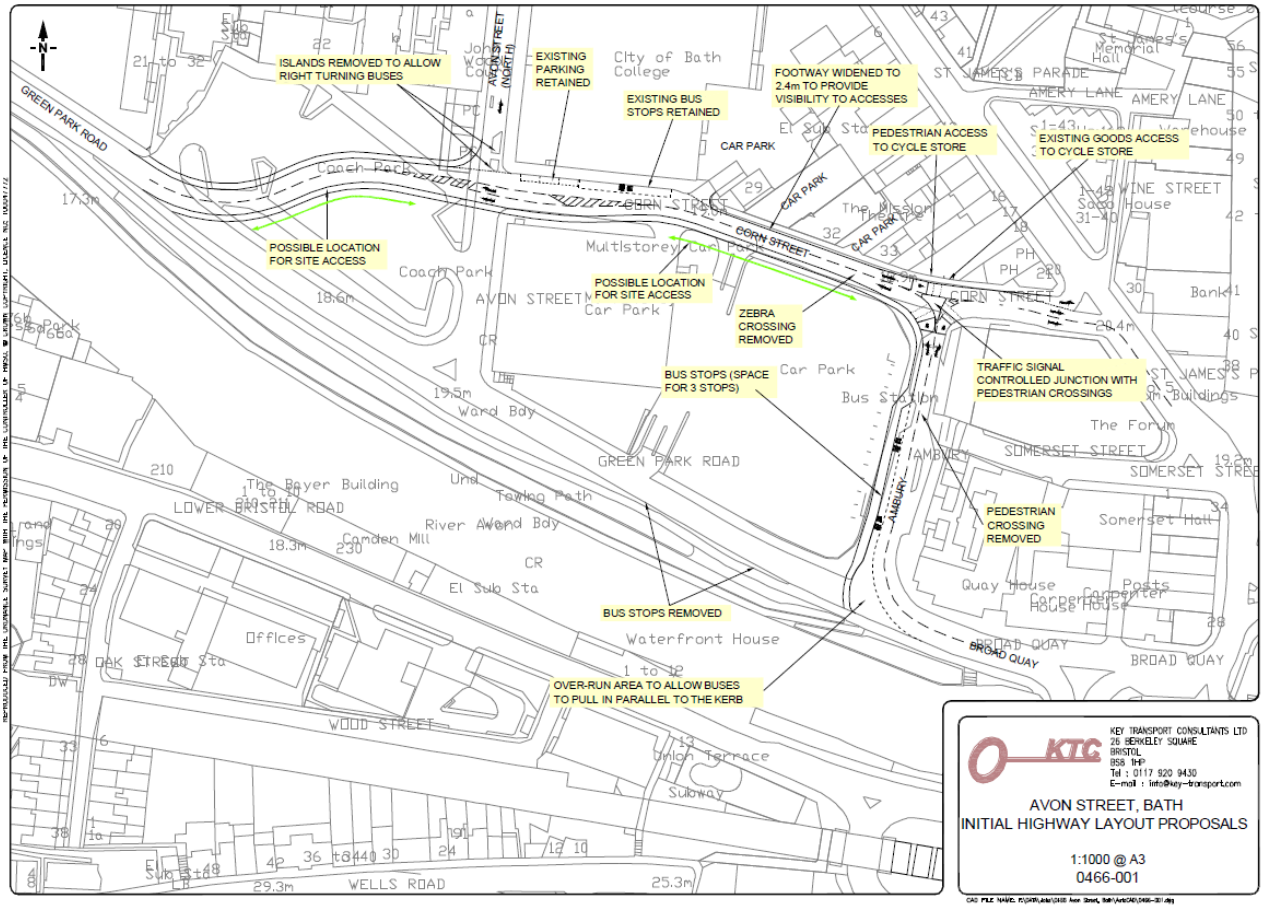
Source: B&NES Council survey data

12.5 Coach Parking in the Future

As part of flood alleviation measures there are proposals to divert Avon Street away from the river's edge (Figure 12.4). The current plan is that the Avon Street coach and public car parks would be redeveloped (included in Enterprise Area) with the loss of the parking capacity.

The closure of the Avon Street coach park requires both a short term solution and a permanent solution. This also needs to consider options for loading/unloading coaches in the city centre. Orange Grove has been altered to create a high quality public realm and accommodates some bus services including tours hence is no longer available for coaches. A temporary scheme at Terrace Walk has not been entirely successful due to space constraints. However it is well placed in relation to major destinations and adjustments could be made to accommodate at least five coach bays. A reserve area for short-term waiting could be provided, for example at Manvers Street car park to avoid congestion at Terrace Walk and to ensure that pick-up and drop-off is regulated effectively.

Figure 12.4: Proposed Diversion of Avon Street



A short term solution to the loss of the Avon Street coach park could be a temporary site at Twerton Fork. However, a more permanent solution is needed which could be the use of the First bus depot at Weston Island or providing parking space for around 50 coaches plus driver facilities at Odd Down Park and Ride.

Options for parking coaches close to the city centre are limited. A multi-site solution may be possible, combining a smaller coach park than the current Avon Street facility and a peripheral site with a possible second peripheral site or on-street parking for days when demand is high. Possible central locations could include Avon Street post-development, Charlotte Street car park on its current site or expanded and with the use of Odd Down P&R site and/or a site at Twerton Fork or Wellsway.

There may be difficulties with splitting the coach park facility in that operators would need to be fully informed about the availability of spaces. Peripheral sites incur additional driving time which may be restricted by drivers' hours regulations for tours from more distant origins. Also, drivers need suitable facilities including access to the city centre. In many ways, Avon Street is well located, being within walking distance of a wide range of facilities. The principle of having a single coach park is attractive provided that it is well located, has adequate facilities for drivers and sufficient capacity to meet demand most of the time.

The overall recommendation is that a replacement coach park should be provided at either Weston Island or Odd Down Park and Ride site. The city centre set down/pick up point should remain at Terrace Walk (with some adjustments).

12.6 Other Improvements for Coaches

It is clear that current driver facilities at the Avon Street coach park are inadequate and do nothing to encourage the coach industry to view Bath favourably. Any new coach park (wherever it is located) should provide much improved facilities, including a driver rest area and toilets.

Other suggestions raised by Stakeholders and B&NES Council have included:

- Providing signposted coach routes into the city;
- Improving communication with coach operators and drivers;
- Adopting a code of practice for coaches in Bath. Many other English historic towns and cities have produced a code of practice as recommended by the Coach Operators Federation;
- Reducing the impact of coaches on sensitive historic areas. Traffic Orders could be introduced to restrict coach movements in certain areas; and
- Prioritising the enforcement of traffic conditions relating to coaches.

These could be introduced without difficulty and improve the relationships between coach operators and the city and ensure that the arrangements for coaches are understood and managed appropriately.

Many of the issues surrounding coach operation were investigated by the Council in 2006, with a Coach Strategy document produced, most of which was not implemented but many of its conclusions remain valid.

13. Cycling

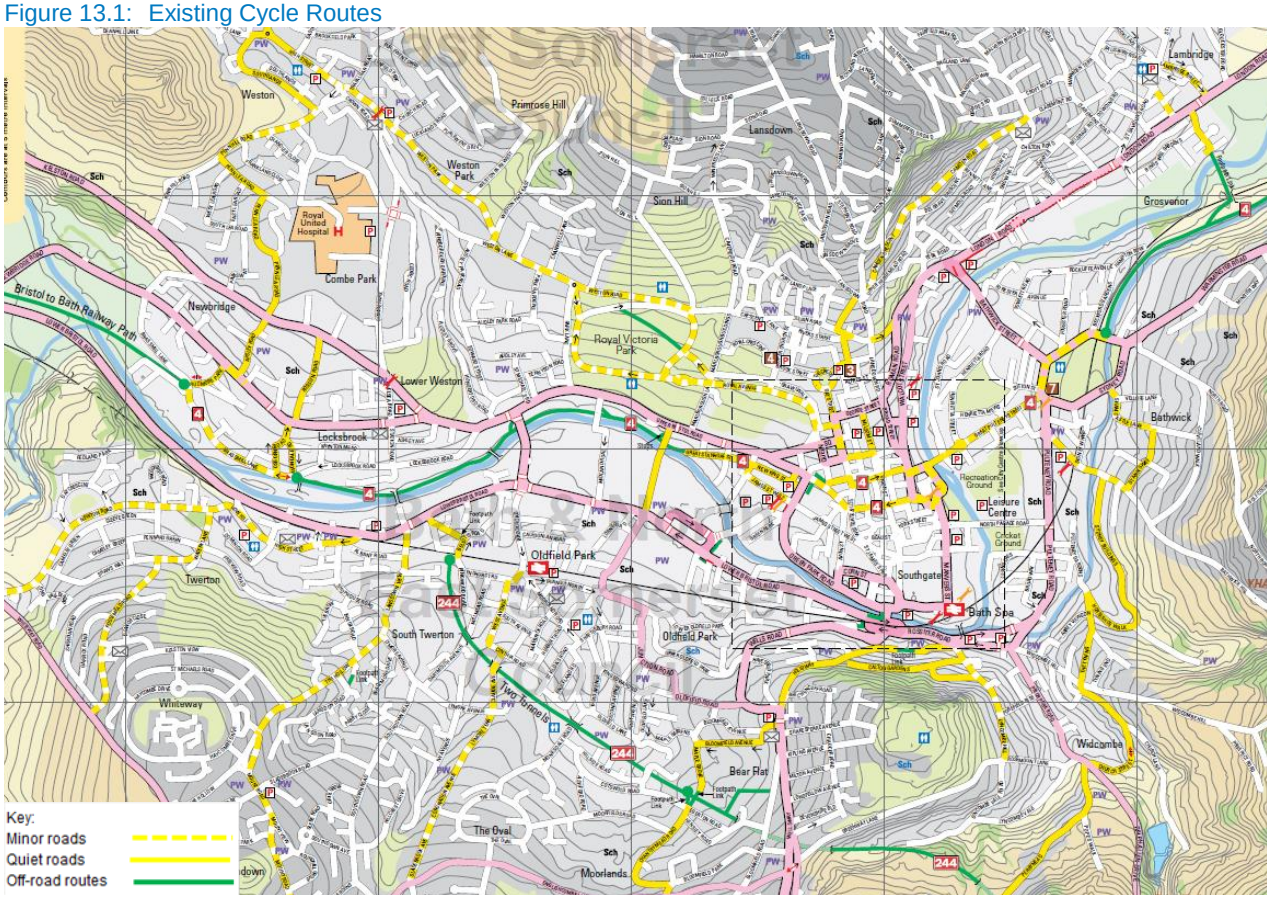
13.1 Key Issues

- What data is available on cycle use and cycle parking?
- Is there a clearly defined network for cycling?
- What are the constraints on cycling?
- What representation is there by cyclists?
- What measures have been proposed and delivered?
- What parking facilities are available for rail users?
- Are cycle hire options available?
- Are there cycle initiatives included in school/college and workplace travel plans?

13.2 Existing Cycle Facilities

Current cycle route facilities in Bath are limited as shown in Figure 13.1, noting that a link between NCN4 and NCN244 has now been completed.

Figure 13.1: Existing Cycle Routes



Source: extract from www.betterbybike.info/sites/default/files/file/Bath.pdf

Whilst topography is raised as a constraint to cycling by many, there are also a number of routes that follow contours or are relatively level. National Cycle Network Route 4 (NCN4) runs east-west through Bath, with the sections either side of the city centre being off-road routes along the canal, river and former Bristol-Bath railway line. In addition, the recently opened Two Tunnels scheme forms part of NCN244. Within the city it forms a good link from the Bear Flat area to Upper Bristol Road, passing close to Oldfield Park rail station, and has recently been connected into NCN4.

The cycle map also shows location of cycle parking, with the largest provision being at Bath Spa rail station which has around 170 cycle stands.

A new bike hire scheme is being delivered by an independent company working with Bath & North East Somerset Council. The scheme, operated by 'nextbike', is part funded by Bath & North East Somerset Council through the Department for Transport's Local Sustainable Transport Fund, although it is hoped that it will become fully self-sufficient within a couple of years.

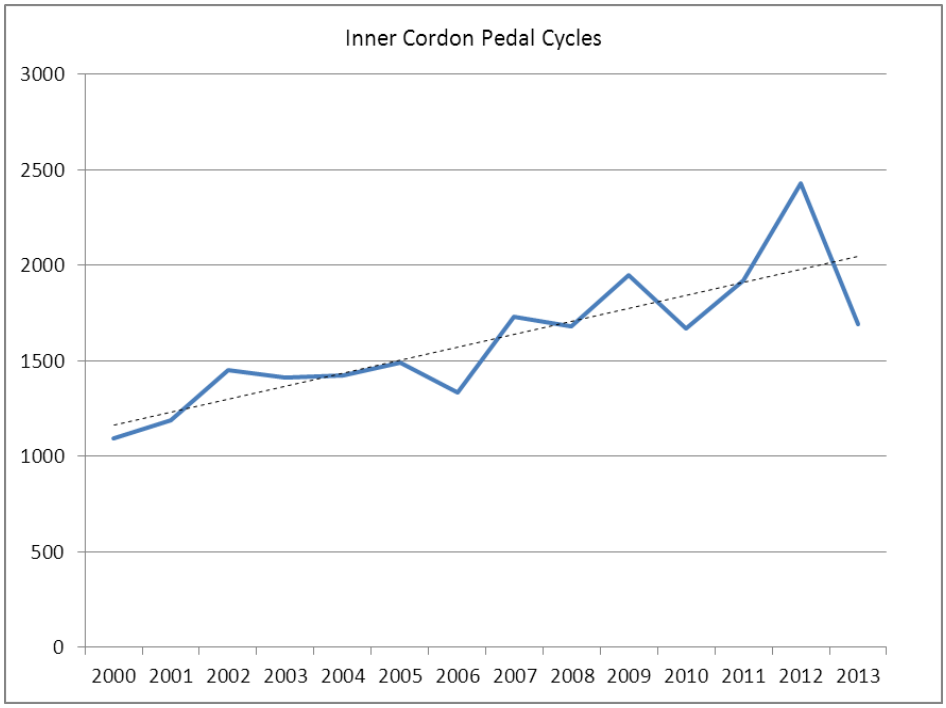
The Council is supporting the nextbike initiative as part of its commitment to tackling congestion in Bath and getting more people moving around the city – through a variety of transport options – to support local businesses. It is designed with visitors and students in mind, but local businesses and organisations are also being encouraged to use the bikes.

The 'nextbike in Bath' scheme will see 100 bikes docked across 9 rental locations including Bath Spa railway station, various city centre locations, Bath Spa University and the Royal United Hospital. The bikes are available 24 hours a day and users can register and hire bikes in just a couple of minutes.

13.3 Cycle Monitoring

The majority of adults, 56%, now have access to a cycle and 48% of children under 16 (source: Bath Parking Survey 2012). Regular surveys are undertaken to ascertain trends in cycle use in the city and these show that cycling has nearly doubled since 2000:

Figure 13.2: Number of Cycles to/from City Centre



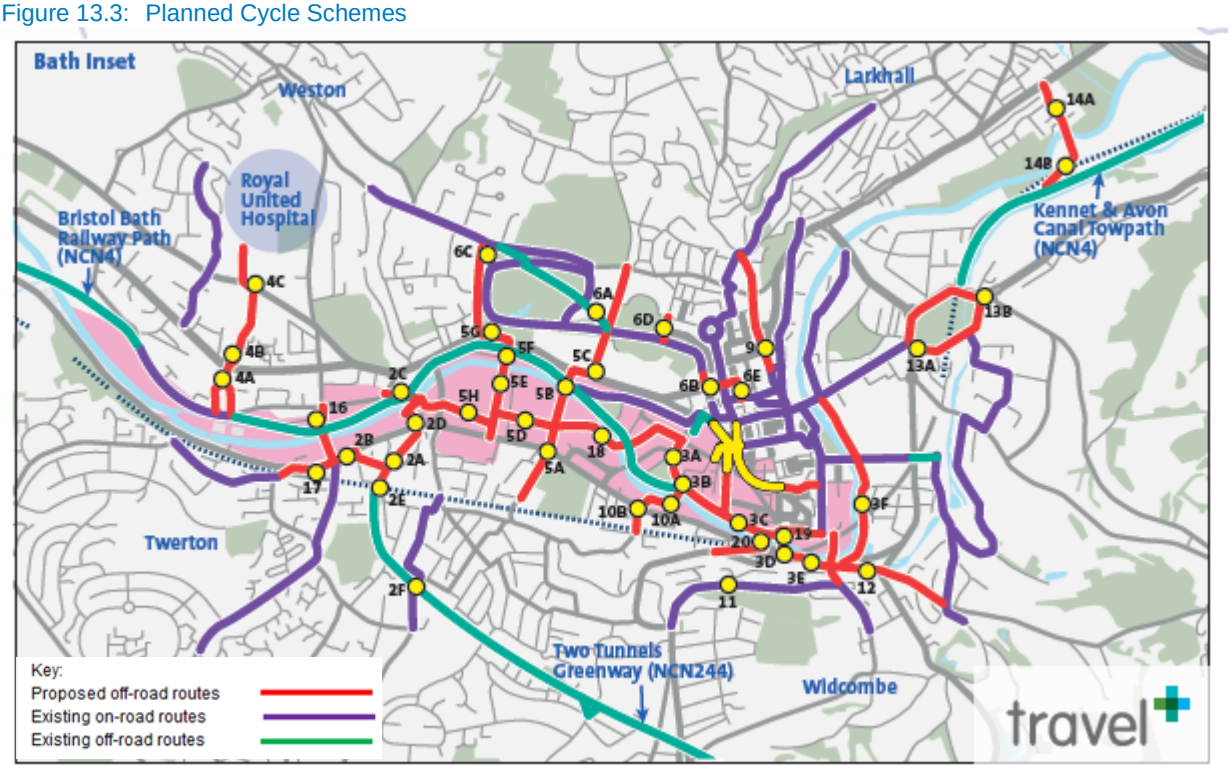
Source: B&NES Surveys, two-way count 07:0019:00

13.4 Planned Cycle Facilities

Figure 13.3 shows the Council's aspirations for cycle routes in Bath, with proposed off-road routes to complement the existing on-road and off-road routes. A number of these schemes are already being implemented or have funding allocated, as shown in Figure 13.4.

To the east of the area shown, a further improvement is being implemented with a new pedestrian/cycle bridge over the Avon at Batheaston and an off-road link to Mill Lane.

Figure 13.3: Planned Cycle Schemes



Source: West of England Cycle Transformation, Cycle City Ambition Grant Bid

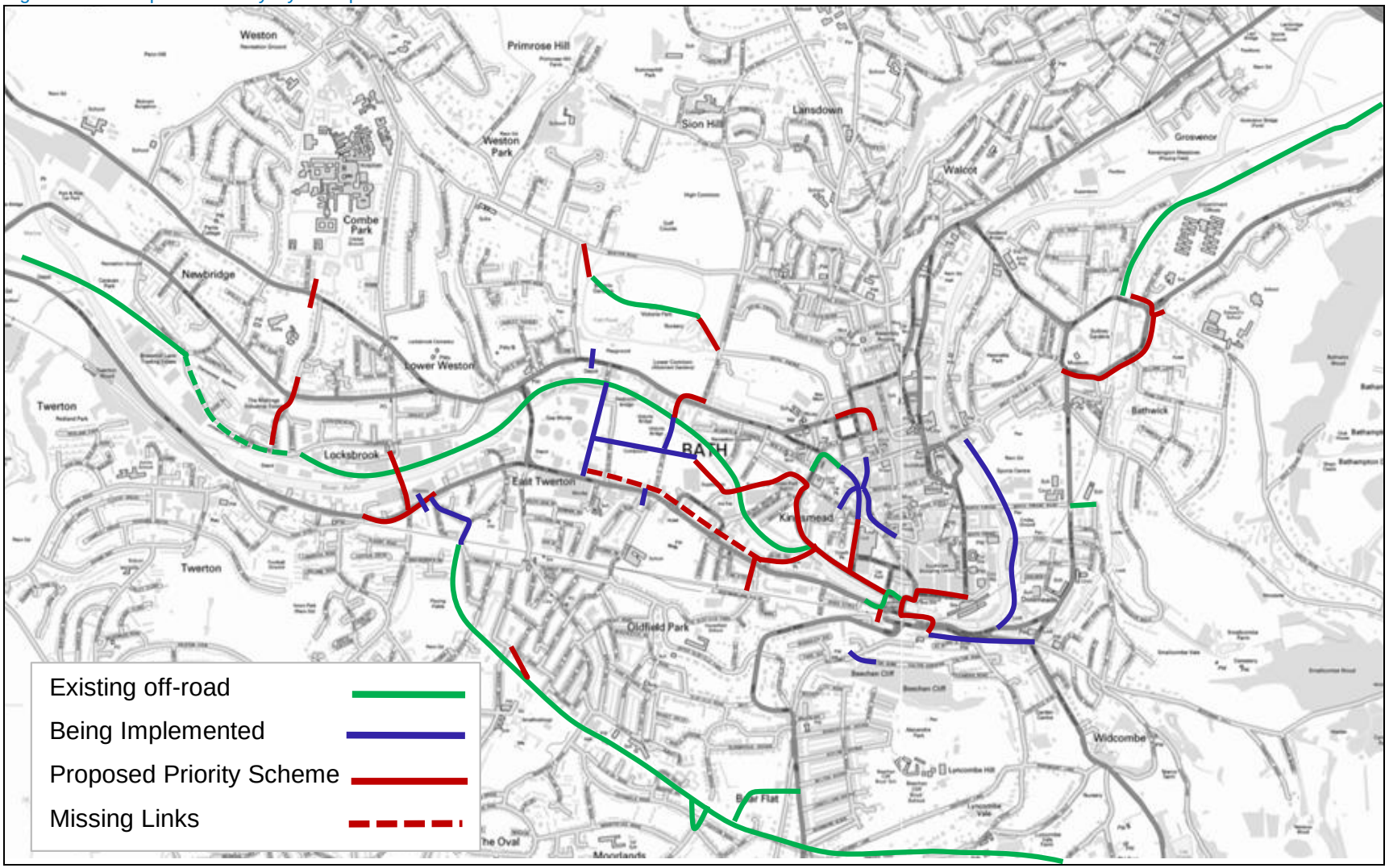
13.5 Proposed Priority Cycle Schemes

A review of the proposed improvements has been made. To maximise the benefits of the schemes that are being progressed and to develop a basic network of high quality off-road routes, a number of the other proposed schemes have been recommended as being priorities in the short term. These are shown in red in Figure 13.4. The overall concept is to produce a continuous off-road route from Pulteney Bridge via the Rail Station to Newbridge and onto Bath Spa University and ultimately Bristol via NCN4.

Great Pulteney Street is a low-trafficked route which should form an adequate cycle route to link into NCN4 running east along the canal towpath, via an improved route on Sydney Road, continuing the east-west route to Bathampton and Batheaston. Other priority schemes shown are based around linking the city centre, development sites and residential areas into this east-west 'spine'.

The above recommendations will need to involve route audits where appropriate and build on local knowledge from users, to develop the basic network of high quality routes that will meet users' needs and maximise benefits from the investment in the short term. A recent review of the cycle network has also been undertaken by Sustrans, which should be taken into account when assessing medium and long term schemes.

Figure 13.4: Proposed Priority Cycle Improvements



Source: MM analysis of plan in Cycle City Ambition Grant Bid

14. Taxis

14.1 Key Issues

- What trip purposes are generally served by taxis?
- How many vehicles are licenced?
- How many taxi journeys are made?

Taxis are important for a number of reasons:

- To serve people who cannot access buses, either because they are too far from a route or have mobility impairments that make bus travel difficult
- To provide a service after bus operating hours, particularly important for the night economy
- For tourists and visitors arriving by train who are unfamiliar with the area or require specific destinations
- For those without access to a car who have bulky goods or shopping.

Nevertheless, taxis should work as part of the network, not in direct competition with buses, and could play a stronger role in 'formal' transport such as providing night services after bus operating hours.

14.2 Licenced Vehicles

There are currently 122 Hackney carriages and 370 Private Hire Vehicles operating in the city (source: B&NES Council licencing department). It is not clear what proportion of these is fully accessible or have provision for wheelchair users.

No data on patronage levels are available from the Council, nor are taxis recorded as a separate vehicle class in traffic counts, so it is very difficult to quantify the level of taxi use in the city.

14.3 Taxi Ranks

Ranks for Hackney carriages are available at the following locations:

- Abbey (Orange Grove)
- Bath Spa Station (under the control of First Great Western)
- Cheap Street (Horse and Carriage only)
- George Street (night time only)
- Henry Street
- Milsom Street
- Queen Square
- Southgate Street (9:45 pm to 6:00 am only)
- Walcot Street (night time only)
- Westgate Buildings

To determine if additional ranks and/or increased capacity at existing ranks is required a detailed review of the use and occupancy of these ranks would been to be undertaken.

14.4 Taxi Fares

Fares for Hackney carriages are subject to strict conditions and are based on an initial cost plus a charge for each subsequent part of mile or minute, as specified by the Council. The table below gives an indication of a typical fare for one passenger at the time specified:

Table 14.1: Taxi Tariff Rates

Tariff Rate					
Miles	Day	Evening	Night	Public Holiday	Xmas & New Year
1	£4.40	£4.90	£5.40	£6.30	£8.40
2	£6.40	£6.90	£7.40	£9.30	£12.40
3	£8.60	£9.10	£9.60	£12.60	£16.80
4	£10.60	£11.10	£11.60	£15.60	£20.80
5	£12.80	£13.30	£13.80	£18.90	£25.20
10	£25.60	£26.10	£26.60	£38.10	£50.80
15	£38.20	£38.70	£39.40	£57.30	£76.40

15. Rail

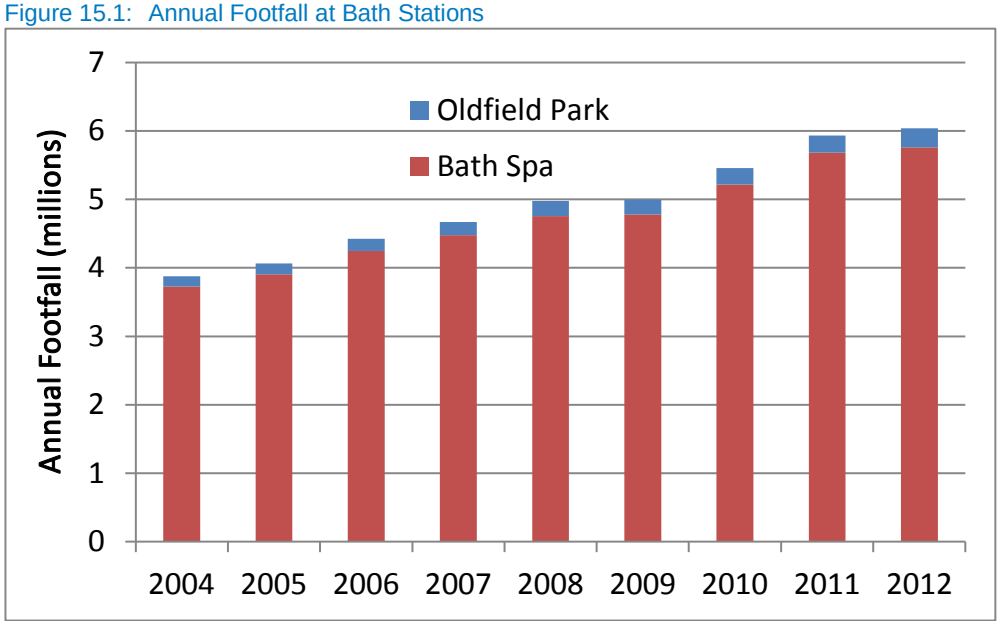
15.1 Key Issues

- How many train journeys are made?
- How punctual are rail services?
- How have fare levels changed?
- What measures are being proposed to improve access to, and frequency and capacity of, train services?

15.2 Number of Rail Users

The annual number of station entries and exits by passengers is available year on year, as shown below for Bath Spa and Oldfield Park:

Figure 15.1: Annual Footfall at Bath Stations



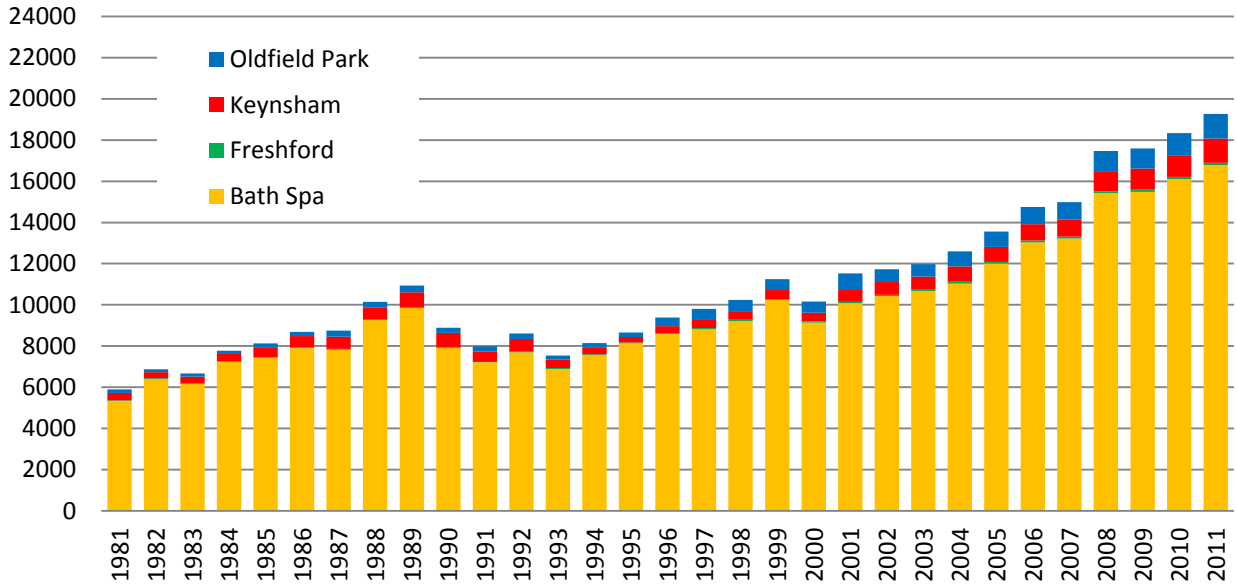
Source: West of England Partnership

Rail use is increasing nationally, reflected by the number of users recorded for local stations. Bath Spa is a major hub with over 5.7 million users annually, indicating the importance of providing links to origins and destinations within the city on foot, by cycle, by bus and for motorists who park at the station.

The demand growth during the current Great Western franchise for Bath and its nearby stations is high given the relatively static train provision over this period. Compared against a UK wide rail network increase in passenger journeys of 27.5%, or 23.3% for the region (i.e. not London & South East or Long Distance), 33.7% growth for Bath is significantly higher. Therefore all of the stations in the area are outstripping national demand growth.

Data is also obtained for rail use on an annual basis each November with boarding/alighting surveys and a biannual questionnaire survey. Figure 15.2 shows the daily patronage figures obtained, showing that there has steady growth since the low point of demand in 1993.

Figure 15.2: Daily Rail Station Use (Arrivals and Departures) 1981 to 2011



Source: West of England Partnership (March 2011) Rail survey report DRAFT

Some headline results from the questionnaire survey indicate that:

- The main mode of transport to stations across the area remains on foot at 55% but bus is particularly prominent at Bath Spa;
- 77% of trips were conducted for work purposes with social and education purposes second;
- 45% of trips were conducted five or more times per week, mainly at the smaller stations;
- The highest number of rail journeys is between Bristol Temple Meads and Bath Spa, with the stations in between (Oldfield Park and Keynsham) also having significant numbers.

Looking to the future, the Network Rail produced Great Western Route Utilisation Strategy (RUS) predicted significant growth in passenger demand around Bristol, with forecast peak demand growth of 44% by 2019.

15.3 Station Facilities

In addition to a car park, **Bath Spa** station has sheltered cycle storage with 170 stands and cycles can be carried without charge on trains. A cycle hire outlet is located outside the station and taxis are available at the station entrance (source: www.nationalrail.co.uk). Information is available on walking routes and local buses. Bath bus station is located very close to the rail station enabling onward journeys.

Oldfield Park has 12 unsheltered cycle stands and CCTV coverage but no car parking. **Keynsham** station has 50 parking spaces (£2.30 per day) and 12 sheltered cycle stands and CCTV coverage. **Freshford** is offers minimal facilities with cycle parking for two cycles and five car parking spaces.

15.4 Rail Punctuality Data

Pubic Performance Measure (PPM) is used as a tool to measure punctuality of train services, measuring the performance of individual trains advertised as passenger services against their planned timetable. The PPM shows the percentage of trains which arrive at their terminating station on time, and combines figures for punctuality and reliability into a single performance measure. It is the industry standard measurement of performance.

According to Network Rail, "*a train is defined as on time if it arrives at the destination within five minutes (ie 4 minutes 59 seconds or less) of the planned arrival time for London and South East or regional services, or 10 minutes (ie 9 minutes 59 seconds or less) for long distance services*".

Punctuality data for services in the region is given below.

Table 15.1: Train Punctuality and Reliability – Passenger Charter Result 27 April 2014 - 24 May 2014

Service	Punctuality %	Target Punctuality	Reliability %	Target Reliability
High Speed services	91.0	90.0	99.5	99.2
Bristol suburban services	91.5	92.0	99.3	99.5
South Wales and South Coast services	92.1	92.0	99.3	99.5

Source: http://www.firstgreatwestern.co.uk/About-Us/Our-business/Performance

Table 15.2: Train Punctuality and Reliability – 12 Months Moving Average from 26 May 2013

Service	Punctuality %	Target Punctuality	Reliability %	Target Reliability
High Speed services	87.3	88.0	99.4	98.2
Bristol suburban services	88.5	89.0	99.1	98.5
South Wales and South Coast services	90.9	89.0	99.1	98.5

Source: http://www.firstgreatwestern.co.uk/About-Us/Our-business/Performance

15.5 Fare Indices

Rail fares have increased substantially in recent years although this does not appear to have dampened demand. An index of fares (base of 100 in January 1995) indicates that fares over the period to January 2013 have an index of 237.3 for long distance operators and 207.1 for all operators (source: House of Commons Library, Standard Note SN/SG/6384 (23 September 2013) *Railways: fares statistics*). This represents an increase of in fares of 137% and 107% respectively over the 18 year period.

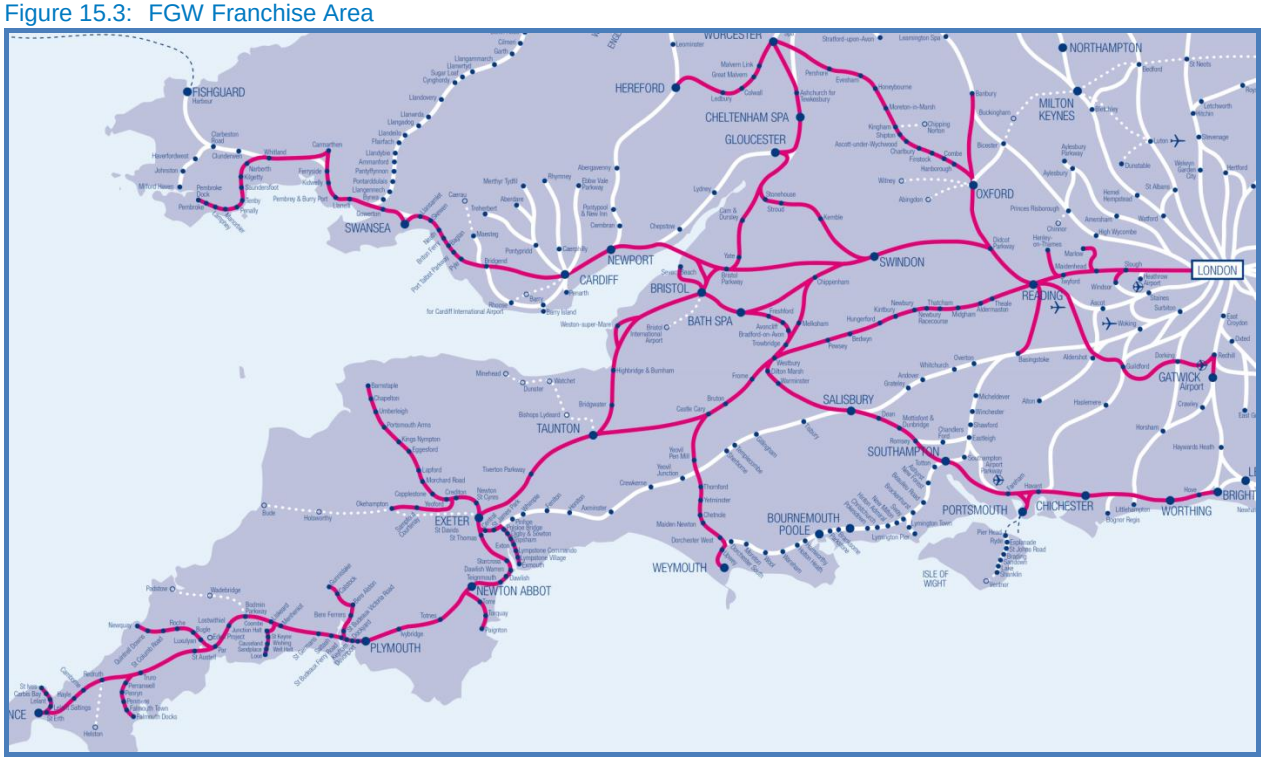
15.6 Existing Rail Services

Bath Spa is the principal railway station serving the city of Bath, in South West England and is served mainly by First Great Western (who also manage the station) as well as South West Trains and CrossCountry. It is situated on the Great Western Main Line and connects to the Wessex Main Line via Bradford-on-Avon.

The station has regular (approximately half-hourly each way) inter-city services to London Paddington via Swindon, Reading and Chippenham and to Bristol Temple Meads (with some extensions to Weston-super-Mare, Taunton and beyond).

It is also served hourly (two-hourly on Sundays) by the Cardiff Central to Portsmouth Harbour and Gloucester and Bristol to Westbury and Weymouth regional trains, plus a limited service to London Waterloo via Salisbury and Basingstoke operated by South West Trains. South West Trains operate three direct services per day Monday to Saturday and two on Sunday. In addition there is an early morning Basingstoke to Bristol Temple Meads service which calls at Bath Spa.

Figure 15.3: FGW Franchise Area



Source: http://www.firstgreatwestern.co.uk/Your-journey/Route-Maps

The franchise commenced in April 2006 and was due to end in March 2013 with an option for an extension for 3 years, which First Group decided not to exercise due to the impact of the recession. DfT has recently agreed an extension until September 2015 with associated limited station improvements, in particular the continuing assistance with the Network Rail redevelopment of Reading station and the surrounding track layout, and a major refurbishment of Bristol Temple Meads station, wifi and some incremental extra capacity.

The current average train service provision for the local stations is as follows:

Table 15.3: Existing Service and Train Provision

	London-Bristol	Cardiff-Portsmouth	Westbury/Weymouth-Glouceser/ Great Malvern via Bristol	Waterloo-Salisbury-Bristol
Operator	First Great Western	First Great Western	First Great Western	South West Trains
Keynsham services	n/a	Limited calls	1 tph	3 tpd
Oldfield Park services	n/a	n/a	1 tph	n/a
Bath Spa services	2 tph	1 tph	1 tph	3 tpd
Train types used	HST	Class 158 (3-car)	Class 150/158	Class 159 (3-car)
Seating capacity	472	200	141/134	194
Year of construction	1976	1989	1986/1989	1992-93
Note	All trains have been internally refurbished tph = trains per hour tpd=trains per day			

In the peak period (07:00-09:00) the service frequency steps up to provide the following numbers of trains between Bath Spa and Bristol Temple Meads:

- Bath Spa 9 (over 2 hours)
- Oldfield Park 6
- Keynsham 7

15.7 Future changes

A series of future changes are expected along the Great Western Main line, summarised as being:

- Additional platforms at Bristol Temple Meads
- Four tracking of Filton bank
- Electrification to Oxford, Bristol and Newbury by 2016 (including route through Bath)
- Electrification to Cardiff/Swansea by 2017
- New ERTMS in cab signalling system by 2019
- New Super Express Trains (SET) by 2017

Within these upgrades are an implied cascade of rolling stock with the electrification of the Great Western line to Oxford and Newbury displacing diesel units: it is fully expected that a cascade of rolling stock would occur, leading to 1990's built Network Turbo trains of classes 165 and 166 moving to the Bristol area to replace the existing sprinter trains and provide additional capacity. A class 165 provides either 182 seats in 2-car formation or 288 seats in 3-car formation, whilst a class 166 provides 259 seats all in 3-car formation.

The current diesel High Speed Train (HST) fleet operating Bristol-Bath-Paddington services are due to be replaced by new Hitachi built Super Express Trains (SET) which will be provided in either 5-car or 9-car formations, and either all electric or hybrid (both diesel and electric).

The Intercity Express Programme (IEP) introduces two fast services per hour from Bristol-Parkway-Badminton line-Paddington, with the Bristol-Bath-Paddington route planned to run on a half-hourly basis

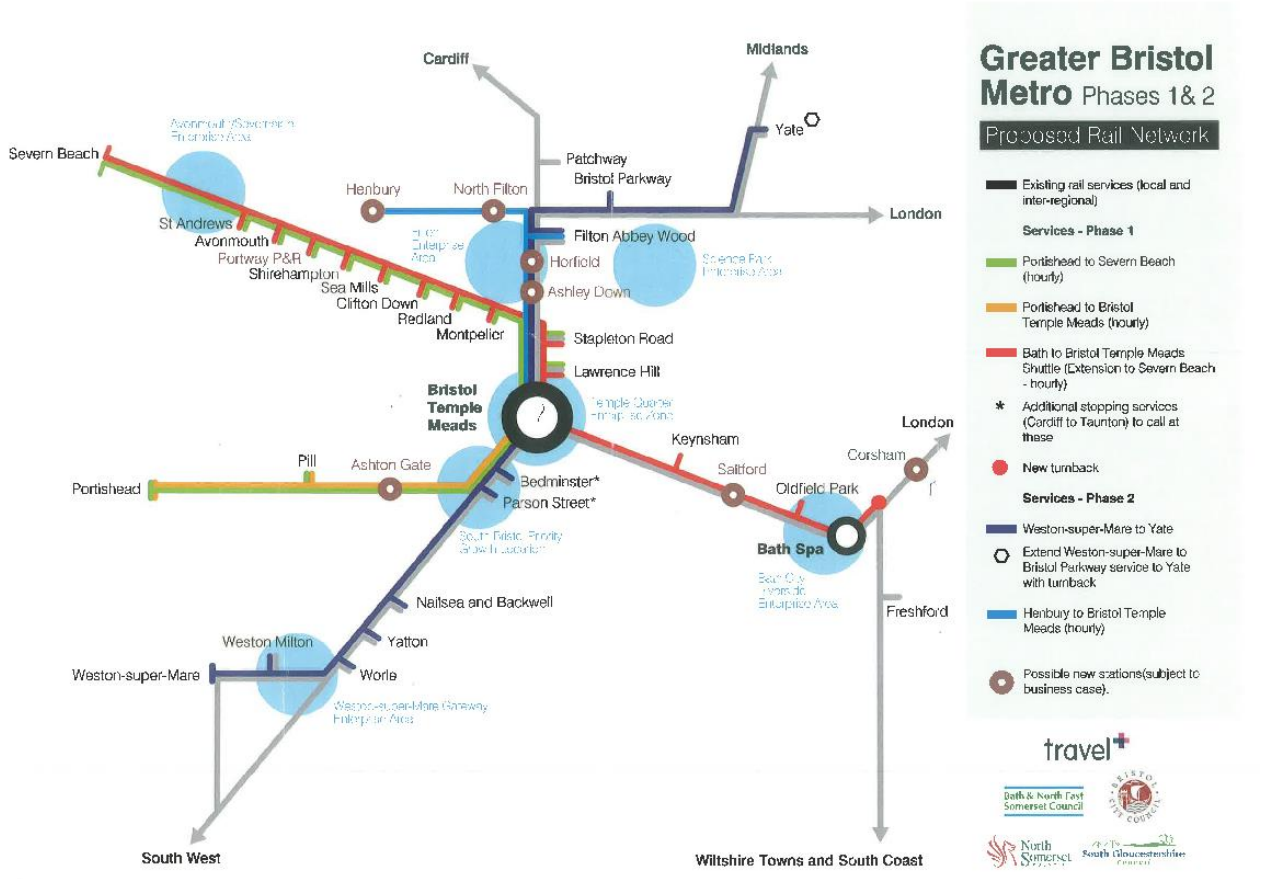
using 9-car electric. Today's service consists of half-hourly HSTs, each with a capacity of 472 seats, giving 944 seats per hour Bristol-Paddington in total. This will become 4 trains per hour with 627 seats per train, equating to a total hourly capacity of 2,508. This will be split equally between the Bath Spa and Badminton routes, resulting in a capacity of 1,254 per hour on the Bristol-Bath Spa-Paddington, an increase of 310 seats per hour.

Not only would the Bath Spa route see more capacity provided under SET, the total demand between Bristol and Paddington would be split over twice as many trains, freeing up even more capacity on the Bath Spa route. Therefore the level of standing between Bristol, Bath, Chippenham, Swindon, Reading and Paddington would be expected to be reduced significantly. The new trains are also expected to reduce the journey time from Bath Spa to Paddington by 8 minutes.

15.8 MetroWest Proposals

The MetroWest proposals link a number of Enterprise Zones including the Bath Enterprise Area (see Figure 15.4).

Figure 15.4: Greater Bristol Metro Proposals



The MetroWest project is a phased approach to new lines and new services in the West of England area, funded by the West of England councils with support from the Department for Transport, at a total cost of around £100m. The MetroWest proposals include the provision of an additional hourly service between Bath Spa and Bristol Temple Meads, stopping at Oldfield Park and Keynsham and giving a half-hourly service for these stations. New train services could start operating from May 2019, subject to funding and meeting all of the regulatory and technical requirements.

There is also the desire of linking the Severn Beach line with the Bath Spa line, with trains turning back at Bath Spa or Bathampton Junction, but the ability to operate such a service is currently uncertain given the need to cross the throat of Bristol Temple Meads to facilitate such a movement.

15.9 Potential New Stations

The electrification of the Great Western Main Line will reduce journey times and add capacity to the network. In doing so, the opportunity arises to add new stations where there is likely to be sufficient demand to justify the cost of construction and the longer journey times incurred by other users. Any new station proposal needs to be considered in the context of the local network, particularly the MetroWest proposals that would see new services being accommodated. There are a number of restraints in terms of track capacity, signalling and stations. Of these, the arrangements at Bristol Temple Meads restrict the service options that could be worthwhile as some options would involve reversal, incurring time delays and occupying platform space.

A new station has been proposed for Saltford, replacing that which closed in 1970, between Keynsham and Oldfield Park, although demand is likely to be very limited given the other options available and the size of Saltford itself (population of only 4,200). While feasibility studies are underway, a positive business case will be needed to justify the costs. It is assumed from an informal survey that a station could have around 400 users per day from the local population but that the Bath Spa University's Newton Park campus would add to demand; the adjacent A4 carries 20,000 vehicles per day, some of which could be intercepted to a new station as a Park and Ride facility.

There is also a proposal for a new station at Corsham (Wiltshire) between Bath and Chippenham. Other opportunities include the better use of the Westbury route, linking the west Wiltshire towns with Bath and providing an effective alternative to car use for commuting and other purposes. In addition, Wiltshire Council's Core Strategy contains a policy to open a new station at Royal Wootton Bassett.

The possibility of a new station at Bathampton to the east of Bath has been raised as a Park and Ride option (see Park and Ride chapter).

15.10 Improvements at Local Stations

Access and facilities at the local stations will need to be improved to take advantage of the increased frequency and range of direct routes available. Specific measures include:

- Improved walk/cycle/bus access to Bath Spa and Oldfield Park, including from the Enterprise Area;
- Introducing ticket machines at Oldfield Park as the ticket office is only manned on weekdays from 06:30-10:30;
- Increased cycle parking at Bath Spa, including covered and secure parking at the front of the station;
- Station capacity management e.g. event days.

16. Travel Plans

16.1 Key Issues

- Are travel plans in place for schools/colleges/workplaces/etc?
- Where should Travel Plans be used?

Travel plans can contribute to people understanding their travel options and moving towards sustainable modes. Workplace travel plans for major education and workplaces including those in the Enterprise Area will need to identify sustainable transport options. This may include better travel information to widen choice, changing the opening times of shops, offices and businesses to help spread peak demand and measures to enable the uptake of public transport use or cycling, such as through interest free loans for season tickets or cycle purchase.

Workplace travel plans can also promote reduced travel during the day, such as through video-conferencing, or for trips to/from work by allowing and encouraging working from home. Encouraging car sharing through a well-managed car share database of employees can also reduce the numbers of staff driving to work as sole occupants of a car.

The impact of travel plans can be demonstrated by lasting changes in travel behaviour, supporting sustainable travel choices and reducing peak time car travel. Information has been obtained regarding existing travel plans and experience from other parts of the country indicates how travel plan initiatives can be successful in reducing car dependency. For example, the University of Bath's travel plans show a reduction of 7.5% in staff sole occupant car trips in two years.

Specific measures will include promoting travel plans through a travel forum:

- Workplaces;
- Education establishments;
- Healthcare and Royal United Hospital catchment issues;
- Rail stations/neighbourhoods.

Any travel plans will need to comply with current travel plan good practise and guidelines and will need to include meaningful and achievable targets with an agreed approach for monitoring the success of the travel plan against those targets.

17. Freight Movements and Deliveries

17.1 Key Issues

- How many freight movements take place within the city?
- How is the DHL Consolidation Centre performing?
- Do electric vehicles and/or cycle deliveries have a wider role?
- Can the impact of HGVs in the centre be reduced?

Freight movements are essential to keep the economy moving. A consolidation centre has been established for city centre retailers which has reduced vehicle movements dramatically but more businesses could be involved which would enable it to operate without subsidy. From the initial involvement of around 30 businesses, several hundred will be needed to make the scheme a commercial proposition. This could be supported through further dialogue with potential users but also an understanding of possible traffic management and enforcement changes such as restrictions on loading and unloading, emissions standards or vehicle size/weight limits. Electric delivery vehicles and cycle delivery of parcels could be promoted for the city centre.

Loading and unloading restrictions are in place but are contentious – businesses cannot always specify delivery times or incur additional costs to meet the on-streets constraints. While many businesses operate with specific delivery arrangements, problems can result from smaller delivery vehicles, notably the expansion in parcels and courier services and also one-off activities such as builders' vehicles which can cause obstructions. Such obstructions, although temporary, add to traffic congestion and the vehicles increase traffic movements in the city centre, where there is a desire to reduce vehicle activity, particularly during peak shopping hours. This unregulated loading/unloading is difficult to manage but a permit scheme limiting access to pre-defined times and locations may be desirable if the problem becomes widespread.

Before any changes to permissible loading/unloading and delivery areas and/or time periods are made a bespoke survey of the current activity should be undertaken. Using actual data, rather than anecdotal evidence or just views of businesses, would then allow discussion over potential changes to be made in an informed way. The inconvenience of restricted activities would be offset by an improved pedestrian environment that should be conducive to increased retail activity. The Council should work in partnership with the business community to investigate further restrictions, with the aim of developing a mutually beneficial system.

Food and other retail deliveries are becoming more popular as internet access increases. This has generated delivery van activity but not necessarily a reduction in visits to shops as people view potential purchases before the transaction is made from home, particularly for one-off purchases. However, the timing of retail visits may be changing as internet shopping becomes more widespread.

Although overall the number of heavy vehicles is small, their impact can be considerable so enabling the use of smaller vehicles has significant benefits. However, large vehicles such as those on London Road do not wish to negotiate the city's streets unless they have a particular need to be there.

Specific measures will include:

- More cycle deliveries;
- Consolidation centre used for more businesses;
- Possible out-of-hours deliveries;
- P&R retail collection points;
- Working partnership with businesses and operators; and
- Restricted unloading hours with enforcement (experimental schemes).

18. Air Quality

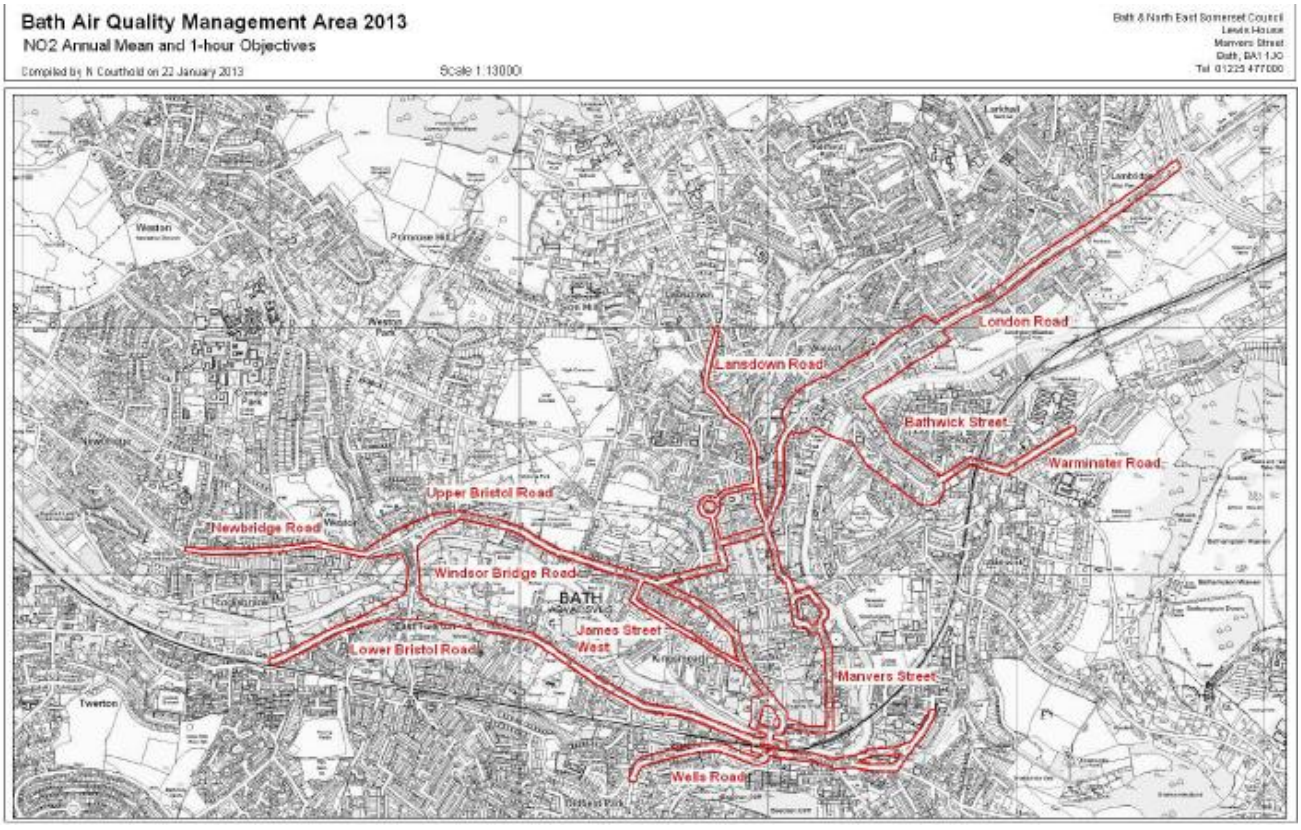
18.1 Key Issues

- What AQMAs are designated?
- What monitoring takes place and what are the trends identified?
- What progress has been made with a Low Emission Zone?

18.2 Air Quality Management Area

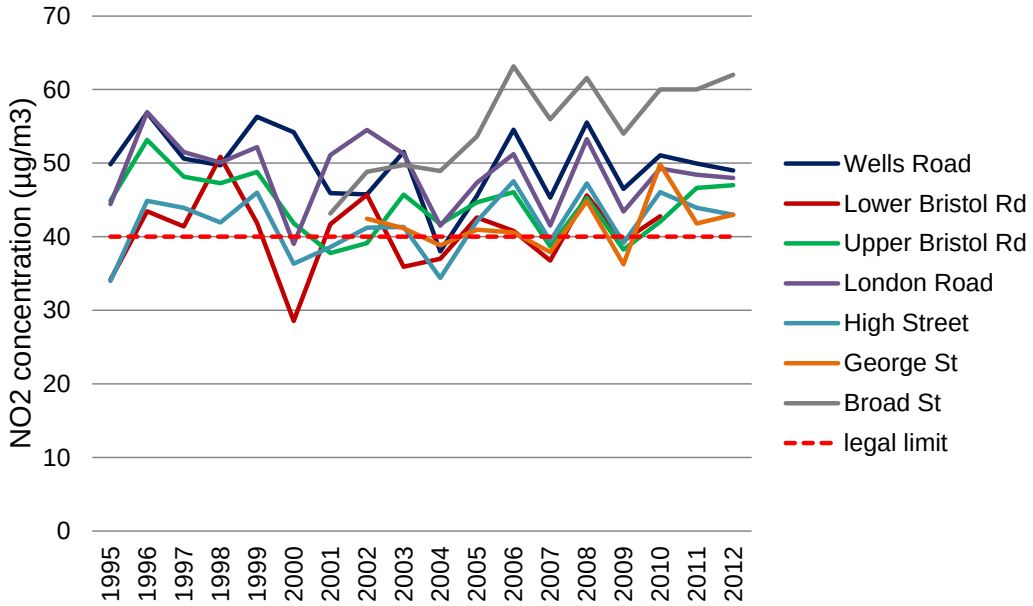
Much of the main road network in central Bath is part of an Air Quality Management Area (AQMA). Local pollution is from vehicle emissions and while engine technology has improved air quality for some years, particularly emissions from buses, emissions continue to damage the built environment and adversely affect people's health. The designated AQMA is shown in Figure 18.1. The volumes of traffic, idling vehicles and vehicle maintenance standards all affect emissions and air quality.

Figure 18.1: Bath Air Quality Management Area



Regular monitoring has taken place for many years at a large number of sites. Levels of carbon monoxide, benzene, sulphur dioxide and particular matter do not present a problem in the city. However, results from nitrogen dioxide show exceedences of the annual average objective at various locations within the AQMA, according to the Council's 2013 Air Quality Progress Report.

Figure 18.2: Nitrogen Dioxide Levels 1995 to 2012



Source: B&NES data

The 2013 Air Quality Progress Report details progress that is being made to address this problem:

The LSTF WEST (Local Sustainable Transport Fund) bid submitted to DfT (Department for Transport) in December 2011 was successful with B&NES Council being awarded £180,000 for electric vehicle infrastructure. Charging points have been installed and are in operation at a number of sites in the city.

Other progress includes the continued growth of the Freight Transhipment Scheme, with 30 retailers in Bath now supplied by an electric vehicle (compared with 19 in 2012). The reduction in oxides of nitrogen emissions has increased due to the scheme, to 23.43kg per month in April 2013 compared to 12.92kg in April 2012. Over 50% of retailers achieve a 20 minute time saving on each delivery.

As part of the Bath Transport Package, 890 spaces have been added to Park and Ride sites (50% capacity increase) along with variable message traffic signs, pedestrian-friendly city centre road layout works, consultation on timed access restrictions and real time information on key bus commuter routes.

The CIVITAS Renaissance project also included a variable message sign and automatic number plate recognition cameras at Upper Bristol Road/Windsor Bridge Road to discourage heavy goods vehicles from using the central A4 corridor where a traffic regulation order exists. This trial has finished, however the findings are being taken into account for the Low Emission Zone Feasibility Study. Also part of the

CIVITAS Renaissance, following a successful trial of a hybrid diesel-electric double decker bus, all but one of the Park and Ride buses in operation are hybrid diesel-electric buses.

The Bath and North East Somerset Corporate Travel Plan commenced with phase 1 in April 2012 and is scheduled for completion of phase 4 by March 2014.

The next steps in terms of the main tasks are the completion of the Low Emission Zone Feasibility Study; further expansion and promotion of the Freight Transhipment Scheme; and completion of the upgrading of the air quality website.

A Low Emission Zone (LEZ) has been proposed but this will need to demonstrate that it can be managed effectively and that its benefits would be clear. Initial modelling suggests that an LEZ may not be as beneficial as hoped and restricting access to the city to some vehicles may be problematic in practice.

Appendices

Appendix A. Summary of Recommendations

The recommendations included here are responses to the study brief based on the evidence obtained; it should be noted that these do not necessarily reflect exactly (but are aligned with) the wording of the recommendations included in the Transport Strategy.

Tasks in Brief	Recommendations
a. Assess the effect of the EA on the City's transport network to 2029.	That the Enterprise Area is developed as part of an integrated approach with strong sustainable transport links to the city centre and rail stations. The development should focus initially on office and related development at the eastern end of the site and have limited car parking. Subsequent housing development should also focus on accessibility by non-car modes. Specific measures will include: ▪ Ensuring that development sites have sustainable transport options through design, planning conditions such as travel plans and limited car parking; ▪ Designing for sustainable transport in the Enterprise Area: strong and attractive walking and cycle routes to the city centre and Bath Spa and Oldfield Park stations, secure cycle parking, good links to bus services; ▪ Integrating new sites within the city by incorporating routes that link to established routes and destinations; ▪ Proportionate and complementary parking provision in new developments: link to off-site P&R capacity; and ▪ Developing appropriate parking standards.
b. Cumulative impact of Core Strategy	That sustainable transport measures should be included for residential sites on the edge of the city that complement the overall Transport Strategy for Bath, as reported in the Strategy and Vision Report. As the sites are away from the city centre, key measures will include: ▪ Good links into the wider cycle network, together with on-site cycle routes through the development, as off-road facilities where possible; ▪ The potential for local bus services to be diverted through or closer to the sites; ▪ Good pedestrian routes to local amenities, such as schools, shops, health centres and leisure facilities; ▪ Improved local bus stops and pedestrian links to them; ▪ Suitable on-site parking standards; ▪ Residential Travel Plans. For each development site a full Transport Assessment will be required to determine whether the above measures can successfully mitigate the effects of new trips generated. It is likely that improvements to local junctions will be required at some of the sites and/or traffic management measures.

Tasks in Brief	Recommendations
c. Identify key priority cycling routes	That cycling be promoted through better cycling routes with appropriate infrastructure where needed, building a cycling culture for people of all abilities. Specific measures will include: ▪ Linking together existing and planned cycle schemes to give a basic network of high quality routes in the short term (proposed network plan has been identified); ▪ Develop the network in the medium to long term, taking into account the recent review undertaken by Sustrans; ▪ Overcoming problem locations e.g. junctions where cyclists are vulnerable; ▪ Reducing traffic levels on certain routes to create an environment that is conducive to cycling; ▪ Provide additional secure cycle parking at workplaces, leisure facilities, rail stations, city centre locations; ▪ Workplace shower facilities; and ▪ An inclusive training programme.
d. Identify key priorities for those on foot and with mobility difficulties	That walking be given highest priority in the strategy. It creates a healthier population, an ambience to the historic core of the city and reduces the number of local car journeys. Bath should be an exemplar walking city demonstrating commitment to sustainable transport at a European level. To achieve a walking-friendly city, the strategy will: ▪ Enable walking to the centre and within the city; ▪ Define the walking network – utility and leisure routes – Effective maintenance; – New infrastructure: crossings, shared space, lighting; – Contribute to health and accessibility; ▪ Improve pedestrian facilities in the city centre, based on a proposed network of prioritised routes; ▪ Deliver the Public Realm and Movement Strategy; ▪ Extend the principles of the Public Realm and Movement Strategy to core routes throughout the city; and ▪ Engender a cultural shift to walk as the first choice for many journeys.

Tasks in Brief	Recommendations
e. Review Coach drop-off locations	That a city centre set down/pick up point should be available. Other coach measures will include: ▪ Possible short-term waiting area at Manvers Street car park (subject to redevelopment proposals); ▪ Provision in Enterprise Area (e.g. hotel / conference facility); ▪ Pre-booked arrivals at the pick-up/set-down point and carefully managed arrangements; ▪ Peak demands for market / festivals / events may need additional capacity e.g. coach parking at Odd Down P&R.
f. Recommend new site Coaches/ Lorries Park	That a replacement coach park should be provided at Weston Island (the First bus depot, possibly as temporary facility) or Odd Down Park and Ride site.
g. Review Parking Strategy	That car parking is a central feature of the strategy, enabling other components to take effect. The policy of reducing central area public parking and expanding long stay capacity at Park and Ride sites should continue, enabling greater emphasis to be given to walking, cycling and bus services in the historic core and on key corridors. Specific measures will include: ▪ Reduced city centre on- and off-street parking capacity (but maintaining residents' parking); ▪ Enterprise Area redevelopment means that spaces will be lost; ▪ Complementary expansion of Park and Ride capacity; ▪ More spaces at established P&R sites; ▪ New Park & Ride site to the east (addressing demand from Wiltshire including Chippenham and Trowbridge); ▪ It is estimated that a total of around 1,700 new P&R spaces should be provided; and ▪ Restricting free workplace parking.
h. Review east of Bath P&R and location	That Park and Ride capacity be increased as part of a wider parking strategy and to enable the Enterprise Area to be developed. An additional Park and Ride site to the east of the city should be promoted (sites options having been reviewed by Halcrow), initially as bus-based with the potential to be rail-based in the longer term.

Tasks in Brief	Recommendations
i. Pedestrian priority in the city centre	That further areas of pedestrian priority are introduced in the city centre, particularly to improve east-west connections. Specific measures will include: ▪ The potential public realm scheme identified for Westgate Street and Cheap Street should be progressed and would provide a good route from the High Street to Monmouth Street and Kingsmead Square; ▪ Traffic restrictions should be applied to the above scheme and extended to include Upper Borough Walls, which would also enable Saw Close car park to be closed (only 24 spaces) and the site redeveloped; ▪ A potential public realm scheme for Queen Square, with traffic management measures to remove or reduce traffic levels on two sides of the Square, should be investigated further.
j. Electrification of GWR mainline	That the schemes to grow rail capacity and the range of services available as part of the Great Western Main Line electrification scheme and the development of MetroWest should be fully supported to significantly increase rail journeys. Access to local stations will need to be improved and new stations beyond the city may contribute to further rail use: Specific measures to complement this will include: ▪ Improved walk/cycle/bus access to Bath Spa and Oldfield Park, including from the Enterprise Area; ▪ Better services should be promoted to link Bath with the west Wiltshire towns, such as increasing capacity of existing trains e.g. Trowbridge line; ▪ Potential new stations at Bathampton P&R and beyond the city; and ▪ Station capacity management e.g. event days.