# VISION 1

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Dear Minister

The Bristol Local Transport Plan 2001/02 to 2005/06

I am pleased to present the Local Transport Plan which was approved by Bristol City Council on 17th July 2000.

The document has been prepared to conform with the guidance on Full Local Transport Plans issued in March 2000 together with other supplementary information and builds upon last year’s provisional plan. The Council welcomes the valuable policy and financial frameworks for longer term transport investment provided by the Integrated Transport White Paper and more recently the Transport 2010 - the 10 Year Plan published in July 2000.

The vision, policies, programmes and targets within the Bristol Transport Plan are wholly consistent with the Government’s approach to safeguarding the environment and developing an integrated urban transport system to tackle problems of congestion, pollution, social exclusion and promote economic regeneration and prosperity. It was particularly pleasing to note that the city’s provisional plan was commended on several occasions for these aspects in your department’s Good Practice Guide. The Council remains fully committed to deliver at a local level transport policies that meet national needs.

The Council undertook a very extensive public consultation exercise during the preparation of the Provisional Local Transport Plan last year, to gain the endorsement and ownership of the adopted transport strategy by local people, businesses, transport stakeholders and a wide variety of particular interest groups. This work has continued again this year with further public participation in a more targeted form, culminating in the involvement of the Bristol Transport Users Group (the Council’s main consultation forum on transport) and the reconvened Bristol Transport Plan Commission.

There is strong public support for the strategy of investing in alternative modes of transport whilst lessening dependency on private car use and the Council’s most urgent need is to ensure these quality alternatives are in place or under construction well in advance of adopting any of the new forms of restraint currently under consideration. To this end, last year’s Local Transport Settlement was especially welcome since it resulted in a near doubling of historic settlement levels to an eventual total of £6.72 million. Indeed, of this settlement, the amount available for integrated transport investment increased threefold to £4.5 million. This has enabled the Council to adopt a greatly enhanced programme of capital investment this year. As evidence of the Council’s commitment to improving transport it has decided to make available a considerable amount of its own resources this year to top up the programme to the level of the bid for last year-some £12 million in total.
This greatly enhanced programme will see the delivery next year of a number of key elements in the strategy including showcase bus routes, a new park and ride facility, expansion of community transport, further development of the national cycle network, more safer routes to school and home zone schemes and improved road safety. Of particular importance to the Council is the proposal to develop Line One of an eventual light-rail network to serve the city and its hinterland. You will be aware that the Council, in conjunction with South Gloucestershire Council, are discussing with Partnerships UK and the private sector, methods of procurement and securing funding for Line One (estimated to cost in total some £120 million) and the acknowledgement of this proposal in the Government's 10 Year Transport Plan is most welcome. The Council is confident that the information presented in the Local Transport Plans of both authorities, together with the further work in hand, will enable the necessary support to be forthcoming for the scheme to be progressed through the Transport and Works Act procedures.

As you will be aware, the Council has been an active participant in the Charging Development Partnership which the Government set up with 24 local authorities at the beginning of the year. This high level forum is proving invaluable in identifying and resolving the complex issues that will arise for any authority pursuing new sources of funding from the legislation contained in the Transport Bill currently passing through its Parliamentary stages. The Council will continue to research the role that Road User Charging can play as an element of the strategy, but it will only consider introducing such powers once alternative transport investment is secured and following full public involvement in the decision.

The Council also welcomes some of the other provisions contained in the Transport Bill currently before Parliament. In addition to the charging powers described above, it eagerly awaits the provisions that will enable better quality bus and rail services to be put in place including, crucially, better public transport information and more user friendly ticketing. It still believes that it may need to seek approval to introduce Quality Bus Contracts in order to secure the improvements to the bus services that are clearly needed in the city.

The Government has invited Local Authorities to bid for Centre of Excellence status and I believe that this Council has considerable experience in developing a range of integrated transport measures and spreading good practice. Details of these activities are included in the Local Transport Plan and there is an emphasis on the leading role exercised in travel demand management techniques and the involvement in European networks and I trust the bid will be given due consideration.

Finally, mention should be made of the new arrangements which, since May, the Council has been operating as part of the modernising of local government agenda. The Transport Plan will continue to be subjected to this process and I believe this will give much greater clarity, accountability and speed in introducing measures to the benefit of the city.

The Plan has also been drawn up in consultation with neighbouring authorities to ensure co-ordination and consistency of approach where appropriate.

The Council believes that it has presented a strong case for obtaining its fair share of the additional funds available for local transport. Accordingly, I am confident that you will be able to recommend a favourable settlement in terms of resource allocation for 2001/02 and beyond.

Yours sincerely

Councillor Helen Holland
Executive Member for Environment, Transport and Leisure
A Vision for Bristol

"In Bristol we have a city to be proud of with beautiful places to go, masses of things to do and lively communities to live in. Although lots of people in the city have a high standard of living, many do not, and even those who are materially fortunate can be impoverished in other ways. We will never have a perfect world but there is a great deal we can do to start putting things right, and to aim for a better quality of life for everyone.

We need clean air to breathe, good quality fresh food from local suppliers, decent homes to live in, meaningful and rewarding jobs, safe environments to live and work in, safe, clean and exciting places for our children to play in, facilities for our young people as they mature into adulthood, high quality local schools for our children to learn in, straightforward ways to get around the city which don’t congest and pollute, and we need to be part of the process of making it happen.

What the world needs from us as a large city is our commitment to a more careful use of our own and worldwide resources, energy, materials, water and air. We need to safeguard our own environment from the pollution that we as human beings inevitably cause and which only we can reverse."

From Bristol’s Local Agenda 21 Strategy.

How transport is planned and managed will have a profound influence on our ability to attain this vision for the people who live in, work in and visit Bristol.

The City Council is already implementing imaginative schemes which will have a very positive impact on the city. Within the city centre, for example, work is well under way on an exciting programme that will transform areas, until recently dominated by traffic, into attractive and varied public spaces and calmed streets. Here, Bristol people and visitors alike will be able to enjoy the wide range of facilities in both new and historic environments. Bristol’s many unique characteristics, not least the City Docks passing right through the city centre, will be increasingly recognised for the quality of life they bring to the city.

The scale of recent business, housing and leisure-related investment speak for themselves. The Council is confident that the new millennium will mark a great new era for Bristol.

The Council wants to create an increasingly clean, safe and thriving city, where people can live and work close to high quality shopping and leisure facilities. A city where people can not only move about safely without being impeded by unnecessary traffic, but also have better choices as to the mode that they use.

Transport has a key role to play in this vision. The City Council wants to see a transport system that:

- supports the economy of the city;
- is integrated, offering a seamless transition between different modes of transport;
- is fair and accessible to all;
- offers real choices of transport for everyone who travels in or through Bristol;
- is efficient, affordable and simple to use;
- is environmentally sustainable and supports and encourages environmentally sustainable economic development and urban regeneration;
- serves, rather than dominates the built environment and local communities;
- is safe and secure for all who wish to travel;
- will help to reduce social exclusion;

Bristol is fast becoming a premier European city. As it grows in stature, it is the role of the City Council and its partners to ensure that it develops its reputation as both a major location for business and also a place where people wish to live and visit.
Introduction

"We need a carrot and stick approach but the carrot must come first"

Response to consultation on Transport Plan.

1. This document continues the radical approach for transport in the city as set out in last year’s provisional Local Transport Plan (LTP). This approach will make it possible to break out of the problems of congestion, pollution and wasted resources and help unlock the full potential of the city as a social, economic and cultural entity.

2. The transport strategy set out in provisional LTP has been further developed, particularly in relation to the following issues:
   - Further analysis and policy development.
   - Further community participation.
   - Strengthening of joint working with adjacent local authorities.
   - Bringing forward key elements for implementation.

3. The plan looks at the period 2001-2006 and embraces the objectives of the Council’s Local Plan, the Joint Replacement Structure Plan (the Adopted Plan for the former Avon area) which looks forward to 2011 and the emerging regional strategy for the South West, together with objectives set for the city by the Government and the European Union. The Plan also incorporates a great deal of joint working with the three neighbouring Unitary Authorities, which together make up the Bristol city region.

Success to date

4. The provisional Local Transport Plan was positively received by government and resulted in a significant increase in the level of funding for local transport investment. The strengths of the plan were also recognised in the Good Practice Guide published earlier in the year. This represented a major step forward for Bristol and its transport system, and was an endorsement for the Council and its partners’ radical approach to transport issues. This year the significant increase in funding supplemented by the Council’s own resources is delivering the following key transport initiatives for the city:
   - Extension of concessionary fares to allow half-price travel for people of pensionable age.
   - Implementation of 15 traffic management schemes with high first year rates of return in relation to accident savings over 1996-98 period.

   • Substantial completion of the four interim National Cycle Network Routes in Bristol in time for the national opening of the first 5000 miles on midsummer’s day.
   • Adoption of a Special Parking Area, which will help traffic flow and improve the enforcement of parking restrictions at key areas such as on bus and cycle lanes and pedestrian facilities.
   • Substantial completion of the downgrading of a section of the former inner circuit road in the central area of the city with improved pedestrian, cycle and bus movement. The ‘Centre’, Queen Square and College Green have been transformed to create a major and modern civic space.
   • Joint working with a range of partners including local employers, through the Travel Plan Forum.
   • Working with 15 schools in the development of new safer routes. In addition, a promotional ‘toolkit’, which integrates into the school curriculum, has been provided to all schools.
   • Development of future high quality bus corridor improvements on showcase routes: A38 (north and south); A420/A4018. This adds to substantial provision on A4 (east and west) and on the A37.
   • Adoption of the Rail Strategy which will form the basis of future Rail Passenger Partnership programme applications.
   • A new Park & Ride site at Avonmouth, the first phase programmed for completion in 2000/2001, adding to the two existing facilities at Brislington and Long Ashton.

Quote from the DETR’s ‘Good Practice Guide for the Development of LTPs:

"The Council’s strong vision for the city backs up its radical transport strategy that includes a new Rapid Transit scheme based on road user charging. The vision statement describes an attractive future and explains how it is already becoming a reality."

Community Involvement and Participation

5. Everyone who lives in, works in or visits the city has a stake in the way that transport works. To be effective, the LTP must therefore represent the vision not just of the City Council but of all of these people - it must be a shared vision or it will not succeed.

6. The Council conducted its biggest ever community
involvement exercise on transport in order to get the views of as many people as possible. The plan was shaped by those who responded to this opportunity. Full details of this are contained in Appendix 1. The Government’s Good Practice Guide to Local Transport Plans singled out Bristol’s approach to consultation as a good example for other authorities to follow.

7. In January 1999 a consultation document, ‘Towards the Bristol Transport Plan’ was published. A free Summary Document was made available, included in which was a questionnaire.

8. Over a period of four months the Council arranged a series of interactive seminars, starting with 13 area-based public meetings. Following on from these a programme of more specialist meetings was set up which focused on the private and voluntary sectors, interest groups and transport providers. In all, over 60 meetings were held. All were structured to involve all those present in the debate.

9. The Council took care to advertise the opportunity for involvement as widely as possible, including:

- a poster campaign in schools, shops and community centres;
- a four-page central advertising insert in the local free newspaper;
- a similar advert in the local listings magazine “Venue”;
- extensive coverage in the Council’s own newspaper “Bristol News”;
- leafleting of over 30,000 households;
- copies of the summary document were sent to every doctor’s and dentist’s surgery in the City;
- an internet web page; and
- displays in shopping centres.

10. Over 5,000 questionnaires were returned and in total more than 2,000 people met and discussed the plan. Additionally, the Council used its own Citizens Panel (a representative cross-section of the City’s population) to supplement the results gained from the public participation process.

11. The final stage of this process was to draw together the strands of these meetings into a number of hearings before the Transport Plan Commission, made up of a cross-section of city interests. These include representatives of business, road user groups, education, health, police, public transport operators, trade unions, transport users and the voluntary sector. Appendix 1 lists the Commission members. The Commission heard a distillation of the issues raised at the public meetings directly from people attending those meetings. Also the Commission had three hearings when it received personal representatives from groups and individuals. The present plan draws upon the 70 recommendations made to the Council by the Commission.

**Focused Participation with Stakeholders**

12. The first phase of the very wide and open process in early 1999 helped to underpin the transport strategy set out in the provisional LTP. Having established this broad strategy, participation in 1999-2000 has concentrated on a number of topic themes, and key elements of implementation. These include:

- Discussions with local employers, through the Travel Plan Forum and the establishment of the Temple Quay Employers Group.
- Meetings of the Local Agenda 21 (LA21) Transport topic group, with the production of a statement mirroring the LTP, forming part of Bristol’s LA21 strategy.
- Ongoing discussions with First Group regarding improved bus services, information, ticketing, etc. as part of the Bus Quality Partnership.
- Joint working with the Avon Health Authority assessing the interaction of transport policy and health issues.
- Establishment of a ‘Partnership Group’ (including the voluntary, business, and health sectors) to guide the development of a travel awareness campaign.
- Provision of feedback to the wider community on the provisional LTP through:
• Publication of a summary version of the provisional LTP. This was sent to all those who commented on the plan and was made available at libraries, doctors surgeries and on the web.

• Full versions of the provisional LTP were sent to the Transport Commission members, all councillors, interest groups, community groups, and the South West local authorities.

• Numerous presentations to groups and comments received.

• Public involvement on the Air Quality Management Strategy. A simple but direct leaflet to raise awareness has been sent to all household and business addresses in Bristol, to which over 1000 replies have been received so far.

• Discussions with First Great Western regarding improved rail services, the interchange at Temple Meads and the provision and promotion of integrated ticketing. The implementation of the rail strategy will involve working with the Strategic Rail Authority and the train operating companies.

• Joint working with neighbouring authorities concerning a joint rail strategy for the area, the provision of Park & Ride services, cross boundary bus services, etc.

• Working with Bristol International Airport concerning the production of a Surface Access Strategy.

• Working with Bristol Tourism Forum with regard to the provision of comprehensive travel information.

• Holding of Charging Development Partnership meeting with key stakeholders in the city interested in road user charging.

• Liaison with the Highway Agency particularly in relation to Avonmouth / Severnside / M32 / Multi-modal study for M4 / M5.

• Encouraging community initiatives, for example in the setting up of a car club in Knowle.

• Discussions with the Freight Transport Association regarding lorry management policy development.

13. There continues to be extensive involvement on a number of elements of the plan, including:

• The setting up of pilot Home Zones in Henbury, Brislington and Horfield;

• Comprehensive leafleting and 7 public meetings (one of which was specifically for businesses) to discuss the proposed Controlled Parking Zone extension in the Kingsdown area;

• Bus priorities on the A4 Bath Road.

• Detailed consultation on further elements of the plan over the coming year and beyond, which will include:-
  • Rapid Transit Line 1, which is to be the subject of a Transport and Works Act application this year.
  • The introduction of “Showcase” bus route.
  • Provision of a new Park & Ride site at Avonmouth.
  • A variety of traffic management schemes to improve safety and environmental conditions. This will include piloting 20mph zones outside Primary Schools.
  • Wider consultation on developing options for a Road User Charging scheme following completion of detailed studies.

Joint Working with Neighbouring Authorities

14. Bristol has a complex travel relationship with the wider sub-region. The journey to work area for Bristol encompasses much of the adjacent three local authorities, which also generate substantial travel into Bristol for shopping, social and personal business. In addition, there is outbound travel for work purposes (especially to the North Fringe area) and education, as well as substantial countryside access from Bristol to the surrounding Forest of Avon area. Because of these patterns of travel, it is imperative that the local transport system is developed and managed in a co-ordinated way with the three surrounding authorities. The built up area of Bristol itself extends into the administrative
15. Working is well established and developed with the adjacent authorities, reflecting the policy direction set out in the draft Regional Transport Strategy. Important examples of joint working include:

- **Rail Strategy**: adopted by all 4 local authorities (see Chapter 5). The Council is also liaising with North Somerset and Bristol Port Company in the Portishead Rail Freight Study.

- **Rapid Transit**: Line 1 of the Bristol and South Gloucestershire Rapid Transit scheme is being jointly promoted by both Councils (see Chapter 5).

- **Cycling**: Co-ordination of the planning, construction and promotion of the National Cycle Network in partnership with Sustrans. Considerable joint working also on the planning and publication of cycle maps with the four local authorities. Bristol and South Gloucestershire also run a joint Cycle Forum.

- **Bus Priority Measures**: Priority programmes are being co-ordinated particularly with South Gloucestershire, including providing on-street information and ‘branding’ of showcase bus services (see Chapter 5).

- **Voluntary Travel Plans**: Jointly promoted through a joint award system launched in June 2000. Working with certain employers and University of West of England, based in South Gloucestershire. Travel to work data is being shared.

- **Public Transport Information**: Joint support on a public transport database to provide a comprehensive travel planning service. Bristol City Council support for ’PTI2000’, which will result in a regional call centre going live from late July 2000.

- **Airport Surface Access Strategy**: Bristol City and North Somerset Councils are partners in the Air Transport Forum which has overseen the production of the strategy.

- **Highways Maintenance**: Discussions have begun on the role of the hierarchy review, to help co-ordinate planned maintenance across boundaries.

- **Urban Traffic Management and Control**: Traffic signal maintenance is co-ordinated by Bristol City Council for the three adjacent authorities, and reports from the public throughout the area are made to a common Freephone number.

- **Highways Development**: Bristol City Council supports the proposed A38-A370 link, which is part of the North Somerset LTP, and is making provision to contribute towards technical studies necessary to progress the scheme.

- **European Projects**: INTERCEPT is a joint Bristol / South Gloucestershire Council project, part EU funded, examining demand and practical aspects of road user charging in relation to the M32 corridor. It also includes the development of a public transport trip planner facility.

- **Access to the countryside**: The Council is working with the Forest of Avon and adjacent local authorities in developing and promoting improved access to the countryside without the need to use a car (see Chapter 7). This includes support for Rural Bus Grant applicants providing benefits of countryside access, in Bath and North East Somerset and South Gloucestershire.

- **Walkway/Access issues**: There are a number of Joint Working projects, including an access audit and improvements to the Bristol / Bath Railway Routes and improved access to parts of the Avon Valley.

16. A number of organisational arrangements exist to enable joint working.

- **Overall co-ordination** is carried out by the Joint Strategic Planning and Transportation Committee and Transport Officers Working Group.

Project based groups include:
• Rapid Transit: A joint executive and team of officers to steer the project.
• Cycling: Officers of the four authorities meet regularly to plan the network, and an officer is employed jointly by three authorities to progress the National Cycle Network.
• Walking / access: An officer group similar to that for cycling.
• Regular officer meetings relating to the co-ordination of transport policy and projects.

Towards A Radical Strategy

"It is evident that Bristol has a problem and it is getting worse. The business community needs to recognise this and to accept that radical solutions are preferable to burying our heads in the sand"

17. The Local Transport Plan was developed through involvement of the wider local community and there is now a measurable consensus for change in Bristol. It is recognised that a step change in provision of quality alternatives is required, before new methods of restraint are introduced.

18. The Council is anxious to seize on this mood for change to provide the city with workable solutions to the city’s transport problems as quickly as possible. This is acknowledged within this Plan, which proposes a large programme of improvements to the public transport network, including rapid transit, and to walking and cycling facilities.

19. Following last year’s Local Transport Plan settlement, all interested local authorities were invited to join the Charging Development Partnership. Bristol accepted this invitation and is playing its part in this group. This partnership has been formed between the Department of Environment, Transport and the Regions (DETR) and 24 Authorities including Manchester, Nottingham, Edinburgh, Leeds and Birmingham, who expressed an interest in road user charging or workplace parking levy. The partnership is considering with the government the implications and impacts of workplace parking and road user charging schemes and the development of guidance and policy for these measures. Consultation with the business community in Bristol revealed that for the needs of businesses in the area and in order to avoid damaging the economy the road user charging scheme was preferable to the workplace parking levy.

20. The first stage public participation made it absolutely clear that people were only prepared to accept a radical strategy that included significant restraint on car use provided that high quality alternative forms of transport were secured first. Accordingly this Plan is based on the assumption that sufficient funding will be obtained in advance of significant restraint measures to put these alternatives in place. In particular, Government commitment to progress the Rapid Transit scheme for Bristol and South Gloucestershire is a priority.

Working Towards the Solution: Key Elements of the Transport Strategy

21. The strategy set out in this document reflects the following key issues:
• There is a general national presumption against large scale road building unless to facilitate environmental or accessibility and regeneration aims. This is also reflected in the strategy. There are limited opportunities for road improvements in urban areas because of land and property acquisitions.
• Efforts are being made to manage more effectively the existing road network by a variety of technology including transport telematics.
• Re-orientating the use of road space to give priority to pedestrians, cyclists and public transport over the private car.
• The Council is committed to the broad strategy of encouraging high quality alternatives to the car, and greater integration of land use and transport policy, as set out in the Provisional Local Transport Plan.
• The Council will continue to examine the scope for road user charging in Bristol. This would not be introduced until substantial improvements to high quality alternatives have been provided.
• Controlled Parking Zones can have a role to play in managing the parking problems in residential areas and will only be introduced where there is local support for them, and will be tailored to local circumstances.
• The plans and schemes will be designed to facilitate and support the local economy. These measures will be targeted primarily at the issue of car commuting and school journeys.
• The investment programme is also orientated to help reduce those aspects of social exclusion relating to poor access to jobs and facilities, and to achieve real environmental improvements across the city. The Plan will take account of the national strategy for Neighbourhood Renewal.
Centre of Excellence in Transport Planning

22. The Council has been invited to bid in this document for Centre of Excellence (COE) status for work in developing integrated transport. It believes that it meets the criteria of having a transport plan of high quality across the board and containing robust targets and indicators reflecting national priorities and including rigorous monitoring. It also believes that it has a record of innovative achievement from a solid policy base. Accordingly, this document contains a bid for COE status, included as Appendix 11.
### Figure 1.2

**PRINCIPLES OF EFFECTIVE PARTICIPATION**

Methods used by Bristol City Council in preparing the Transport Strategy (Provisional LTP) and Refining Priorities / Programmes (Full LTP)

<table>
<thead>
<tr>
<th>Principles</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early involvement</td>
<td>Publication of 'Towards a Transport Plan' for discussion and questions; public meetings; detailed meetings with interest and community groups; prior to provisional LTP/broad strategy. Citizens panel.</td>
</tr>
<tr>
<td>Interactive</td>
<td>Over 50 individual working sessions held over a series of public meetings and interest group meetings. Interactive IT material being prepared for consultation on the Air Quality strategy and expected to be used for other strategic elements. Sub-strategies (e.g. cycling) developed in part through interest group discussion/meetings.</td>
</tr>
<tr>
<td>Inclusive</td>
<td>All households contacted through 4 page advert; followed up through 'Bristol News' and 'Venue'. Over 30,000 households directly leafleted. Posters in shops, schools, etc. Interest group meetings: Bristol Transport Forum; Women's Forum; Race Forum; Voluntary sector; Disability Forum; Transport providers; Retail &amp; Tourism; Community and Environmental Groups; Emergency services; Trade Unions; Motorcyclists. Specifically formed Bristol/Transport Commission representing businesses; Private motor vehicles users; Education; Health Service; Police; Public Transport Operators; Trade Unions; Transport Users; Voluntary sector.</td>
</tr>
</tbody>
</table>
| Continuous | Continuous consultation has focussed on strategic elements, specifically:  
  - Air Quality management  
  - Presentations to a variety of groups during 1999/2000.  
  - Health Issues.  
  - Employees Travel Plan Forum.  
  - School / local community involvement in Safer Routes to school.  
  - LA21 topic group.  
  - Walking strategy (planned).  
  - Bus strategy (planned).  
  - Traffic Management, Bus Priority and cycling schemes: public meetings.  
  - Extension to controlled parking zone: 7 public meetings.  
  - Ambulance Service.  
  - Future meetings of the Bristol Transport Commission.  
  - Partnership group to steer 'Travel Awareness' strategy work.  
  - Continuing discussions with First Group. |
| Open | Openness is a characteristic of many of the elements of involvement set out above. Particularly good examples include the open public meetings and the opportunity for groups and individuals to talk directly to the Commission. Greater emphasis given to certain programme areas e.g. Safer Routes to School; walking and cycling, in response to public consultation procedures. |
| Feedback | Summary leaflet of provisional LTP widely distributed:  
  - To those involved in the pre-provisional LTP consultation.  
  - Through a wide variety of outlets.  
  - Articles in 'Bristol News' (to all households).  
  - Through participation / partnership on sub-strategy development / implementation.  
  - Summary and plan on internet site. |
Introduction
Objectives

Introduction
1. This Chapter sets out the framework of European, national, regional and local objectives within which the Local Transport Plan has been developed, focusing particularly on objectives related to urban areas.

National Objectives

Guidance on Local Transport Plans
2. The White Paper - A New Deal for Transport: Better for Everyone - set an agenda for Local Action to be delivered through Local Transport Plans. The Guidance for Provisional and now full Local Transport Plans states that the objectives contained within Local Transport Plans must be consistent with integrated transport policy and the Government’s over-arching objectives for transport. These are:
   i. to protect and enhance the built and natural environment;
   ii. to improve safety for all travellers;
   iii. to contribute to an efficient economy and to support sustainable economic growth in appropriate locations;
   iv. to promote accessibility to everyday facilities for all, especially those without a car;
   v. to promote the integration of all forms of transport and land use planning, leading to a better, more efficient transport system.

Local Transport Plans are set to become a statutory requirement when the Transport Bill is enacted.

Bristol’s Local Transport Plan Objectives
3. The City Council’s objectives previously set out in the provisional LTP (see table overleaf) reflect this guidance as well as responding to local priorities. Guidance stresses that, in addition to more visionary objectives, plans should also contain more specific quantifiable objectives. Chapter 9 sets out the targets and monitoring programme which have been set up to ensure that progress is effectively evaluated. The table overleaf demonstrates how the objectives set for the transport plan relate to the government’s overarching objectives and how these relate to headline targets set for the LTP. In addition to the headline targets, there are a range of sub-targets for specific areas.

Local Targets
4. The Council’s local transport targets flow from the objectives listed above and incorporate targets arising from the Road Traffic Reduction Act 1997. A full list of targets is contained in Chapter 9.

European Objectives
5. As a European city Bristol is continuing to develop strong partnerships with other European cities. Bristol is a member of the management committee and treasurer of POLIS, a network of 60 cities and regions promoting innovative transport solutions Europe wide. Bristol also co-ordinates the EURoPrice political network which provides a forum for discussion between eight leading European cities that are considering road user charging.

6. Membership of the networks enables the City Council to have a key role in the development of EU transport policy and is currently actively participating in the new policy strategy on Clean Urban Transport to be published in a Green Paper later this year and learn from the good practice in other European cities. In addition through the networks Bristol has received European Commission support for a number of transport projects in recent years, and in June this year the EC provided over 7 million euro support to the eight city project PRoGRESS, co-ordinated by Bristol. This work builds upon existing European papers including:
   - A White Paper entitled ‘Fair Payment for Infrastructure Use’. This looks at setting up a new harmonised approach to paying for infrastructure across all commercial modes of transport, linking charges levied for the use of transport infrastructure (roads, ports, air traffic services, railways, etc.) to the costs that this use imposes.

Air Quality Management
7. The National Air Quality Strategy, drawn up under the Environment Act 1995, requires Local Authorities to carry out a review and assessment of air quality as a precursor to producing a Local Air Quality Strategy. The City Council has completed the First Stage of this process and has nearly completed the Third Stage Review and Assessment. A Local Air Quality Strategy has been produced and is included in Appendix 3.6.
### Objectives

#### Figure 2.1
Transport Plan Objectives and Targets

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Related to Government’s Overarching Objectives</th>
<th>Relating to Headline and Secondary Targets (see Ch. 9, Figures 9.1, 9.2 and 9.3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ensure that the transport system contributes towards the promotion and development of a successful economy in Bristol by improving access to jobs and creating a more attractive environment for business.</td>
<td>Environment Economy</td>
<td>1, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 17, 19, 21, 23, 24, 25, 26, 28.</td>
</tr>
<tr>
<td>2. Develop the integration of all individual modes to ensure that the transport system serves the function of the City.</td>
<td>Integration</td>
<td>4, 7, 9, 10, 11, 14, 21, 23, 24.</td>
</tr>
<tr>
<td>3. Reduce transport collisions and improve personal safety and security.</td>
<td>Environment Safety</td>
<td>1, 2, 3, 18, 19, 23, 27.</td>
</tr>
<tr>
<td>4. Ensure that transport systems complement the aspirations of people in Bristol to enjoy good health.</td>
<td>Environment Safety Economy</td>
<td>1, 6, 9, 10, 11, 12, 13, 15, 16, 19, 20, 21, 22, 23, 24, 25, 26, 28.</td>
</tr>
<tr>
<td>5. Ensure that Bristol’s transport system addresses the needs of disabled people.</td>
<td>Safety Economy Accessibility Integration</td>
<td>4, 5, 6, 7, 8, 13, 23, 26. Audit Commission-F1</td>
</tr>
<tr>
<td>6. Ensure that the transport system makes an active contribution to the physical, social and environmental regeneration of Bristol and its local communities, especially those most isolated from existing transport networks.</td>
<td>Environment Economy Accessibility</td>
<td>4, 5, 6, 7, 8, 9, 10, 11, 13, 15, 16, 21, 24, 26.</td>
</tr>
<tr>
<td>7. Provide quality alternatives to the car and encourage their use.</td>
<td>Environment Safety Economy Accessibility Integration</td>
<td>4, 5, 6, 7, 9, 10, 11, 12, 14, 15, 16, 17, 19, 20, 21, 22, 24, 25, 26.</td>
</tr>
<tr>
<td>8. Lessen dependency on the car especially at peak periods.</td>
<td>Environment Safety Economy Accessibility Integration</td>
<td>1, 4, 9, 11, 12, 14, 15, 16, 17, 21, 23, 24, 28.</td>
</tr>
<tr>
<td>9. Ensure that development takes place in such a way that it will reduce the need to travel.</td>
<td>Environment Safety Economy Accessibility Integration</td>
<td>5, 14, 21.</td>
</tr>
<tr>
<td>10. Foster a cultural climate that is receptive to alternative methods of transport to the private car.</td>
<td>Environment Safety Economy Accessibility Integration</td>
<td>1, 4, 5, 9, 13, 14, 17, 19, 21, 23, 24, 25, 26, 27, 28.</td>
</tr>
<tr>
<td>11. Reduce emissions of and human exposure to air and noise pollution from transport to levels safe for human health and well being.</td>
<td>Environment Safety Economy</td>
<td>13.</td>
</tr>
</tbody>
</table>
Regional Objectives

8. The Draft Regional Guidance for the South West includes a Regional Transport Strategy, which highlights five priorities for Principal Urban Areas (of which Bristol is one). These are that Development Plans, Local Transport Plan policies, transport operators and other agencies should:

i. ensure all new development facilitates journeys to work, shopping, education and leisure by walking, cycling and public transport;

ii. manage, maintain and, where appropriate improve the highway network so as to gain maximum efficiency from existing infrastructure, including giving priority for road space to public transport and commercial vehicles;

iii. manage demand for highway capacity, including the use of private non residential (PNR) parking charging and road user charging whilst avoiding destructive competition between competing centres;

iv. support the development of public transport services, to enable the proportion of journeys within the urban area made by sustainable modes to be maximised;

v. control the availability and pricing of on-street and off-street parking so as to reduce congestion and traffic levels.

Key policies from the Regional Transport Strategy which relate to Bristol are in Appendix 2.3.

Objectives for the former Avon Area

Deposit Joint Replacement Structure Plan

9. In February 2000 the Councils of Bristol, South Gloucestershire, Bath and North East Somerset and North Somerset resolved to adopt a Joint Replacement Structure Plan. At this time a holding direction (not related to the transport element) by the Secretary of State has halted completion of the adoption process. The transport policies of the Plan in its present form are reproduced as Appendix 2.2. The key principles of the Plan most directly related to transport are:

- Co-ordinating development and transport measures to reduce the need for motorised travel and dependence on the car;
- Locating and designing development to favour cycling and walking to work, school and other facilities;
- Directing development to locations that have good public transport access or where practical opportunities to achieve it are demonstrated;
- Improving the infrastructure and facilitating the operation of public transport and improving pedestrian and cycle networks;
- Encouraging freight movement by rail or water rather than road.

10. These principles are supported by a locational strategy which seeks to:

i. concentrate development for jobs, housing and facilities within and, in accord with Green Belt policies, immediately adjacent to the main urban areas of Bristol, Bath and Weston-super-Mare, in order to maintain and develop their vitality and quality as regional and sub-regional centres;

ii. develop and significantly improve the infrastructure and services of the road and rail based transport systems, particularly the strategic network linking Bristol, Bath, Weston-super-Mare and Yate, and including the provision of effective interchanges;

iii. secure a more balanced pattern of housing and employment across the plan area by:
   - restraining the expansion of employment uses in the North Fringe of the Bristol conurbation by diversifying development on existing land commitments, particularly providing for more housing, and restricting new employment allocations;
   - prioritising the retention and creation of employment in central, inner and south Bristol and Weston-super-Mare, maintaining and enhancing the economic role of Bath, and providing for smaller scale opportunities to meet local employment needs at other towns, in particular in the Norton Radstock area;
   - integrating policies for housing with associated requirements for employment and transport infrastructure;
   - reviewing existing planning commitments in accordance with the locational strategy.

The Bristol Local Plan

11. The Plan was adopted in December 1997 - recently enough to reflect most aspects of Government policy including enhanced provision of pedestrian, cycling and public transport facilities and reduced car dependency. Local Plan Policies are reproduced in Appendix 2.1. The Plan includes:

- targets to reduce journey lengths, the proportion of journeys by car, and reduced traffic congestion (now effectively superseded by the targets listed in Chapter 9 of this document);
proposals for improvement of public transport, including provision of rapid transit, Park & Ride facilities and heavy rail stations and upgrading of existing transport interchanges;

• parking policies to discourage the use of private cars for journeys to work;

• policies for contributions by developments towards multi-modal transport improvements, including business development contributions to Park & Ride;

• improvement of key pedestrian routes in the City Centre and provision for a network of off-road routes for walking and cycling;

• major transport schemes aimed at reducing the impact of City Centre traffic and improving the accessibility of South Bristol.

12. The process of preparing an Alteration to the Bristol Local Plan has begun. The existing strategy of the Plan will be largely retained, with alterations focused on:

i refining the Plan’s locational strategy to exploit the development potential of areas with high levels of public transport accessibility. In particular, by reinforcing the role of the City Centre and other highly accessible areas as locations for a mix of shopping, employment and high density housing. Also by sustaining the high densities already being achieved in inner area housing schemes located close to the City Centre;

ii making use of public transport accessibility data to assist in the setting of parking policies and policies for contributions to transport improvements from new development;

iii adopting the use of Travel Plans as one of a range of instruments for achieving more sustainable transport objectives in new developments;

iv achieving consistency with the Local Transport Plans for Bristol and its hinterland, in terms of objectives and integration and through the safeguarding of land to enable key proposals to be implemented;

v reinforcing the relationship between transport improvements and priorities for regeneration;

vi responding to strategic objectives set out in the Replacement Structure Plan and the emerging Regional Planning Guidance for the South West, as well as recent Government guidance - especially PPGs 3, 12 and the proposed Revision of PPG13: Transport;

vii responding to the Local Air Quality Strategy for Bristol and to Action Plans for Air Quality Management Areas;

viii adopting an approach to determining planning applications and scheme design that generally seeks to reflect transport user priorities, as set out in the box below:

**TRANSPORT USER PRIORITIES**

A. The Pedestrian. Including disabled people and public transport passengers. It is the intention to give the pedestrian freedom in a safe, secure and pleasant environment.

B. The Cyclist. By providing the easiest, shortest, most safe and secure routes, wherever possible, and secure parking facilities.

C. Public Transport. By recognising the needs of the passenger and benefits of a quality transport system, priority measures should be included in every scheme where considered beneficial and practicable.

D. Disabled drivers. It is recognised that some disabled drivers are dependent on the private car to provide for their everyday necessities. Through parking policies and support for initiatives such as Shopmobility every endeavour is made to provide for their needs.

E. Access for commercial vehicles. Recognising the importance of the retail and commercial vitality of the city in the face of growing competition.

F. Short stay visitors by car. Whether as a tourist or as a visitor to the shops or businesses their contribution to the success of the city is provided for, wherever possible.

G. The private car. While this form of transport is the last on the priority list, it is recognised that there must be adequate access, particularly for residents. However, it is this transport mode which must be restrained if the others are to be supported and promoted.
**The Council’s core values**

The corporate core values summarised below underpin all the activities of Bristol City Council and can be related to the local transport plan development and strategy.

<table>
<thead>
<tr>
<th>Core Values</th>
<th>How the Local Transport Plan addresses these core values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democracy representing local people and being</td>
<td>Open, widespread consultation process</td>
</tr>
<tr>
<td>responsive and accountable to them.</td>
<td></td>
</tr>
<tr>
<td>Empowerment giving local people real involvement</td>
<td></td>
</tr>
<tr>
<td>in and influence over decision making.</td>
<td></td>
</tr>
<tr>
<td>Equity being fair, reasonable and just in all</td>
<td></td>
</tr>
<tr>
<td>activities and dealings.</td>
<td></td>
</tr>
<tr>
<td>Equality striving to eliminate disadvantage,</td>
<td></td>
</tr>
<tr>
<td>discrimination and deprivation.</td>
<td></td>
</tr>
<tr>
<td>Quality working for the highest achievable</td>
<td>High standards of provision and design.</td>
</tr>
<tr>
<td>standards in services and facilities.</td>
<td></td>
</tr>
<tr>
<td>Environment promoting conservation and</td>
<td>Central to local transport plan objectives and strategy.</td>
</tr>
<tr>
<td>sustainability and minimising pollution.</td>
<td></td>
</tr>
<tr>
<td>Internationalism being outward-looking and an</td>
<td>Kyoto agreement requires policies on traffic reduction.</td>
</tr>
<tr>
<td>active member of the global community.</td>
<td>The Council is also an enthusiastic participant in</td>
</tr>
<tr>
<td></td>
<td>innovative European transport projects.</td>
</tr>
<tr>
<td>Public service focusing on the greater good of</td>
<td>Emphasis on social exclusion and the needs of non-car</td>
</tr>
<tr>
<td>the community as a whole and of the individuals</td>
<td>journeys as well as car travel.</td>
</tr>
<tr>
<td>within it.</td>
<td></td>
</tr>
<tr>
<td>Economy being rigorously protective of the</td>
<td>Proposed package represents best value for money in</td>
</tr>
<tr>
<td>public purse.</td>
<td>terms of meeting the objectives.</td>
</tr>
<tr>
<td>Community leadership serving as the representative</td>
<td>Pioneering projects and solutions based on the views of</td>
</tr>
<tr>
<td>voice of Bristol and its people.</td>
<td>the wider community.</td>
</tr>
</tbody>
</table>
Problems and opportunities

This section reviews both the current problems associated with transport in Bristol, and goes on to explore the positive factors that can contribute towards the transport strategy.

Problems

"In my opinion my city has been taken away from me by the explosion in the number of cars".

Transport Plan Questionnaire response

1. Like many other UK cities, Bristol’s major transport problem centres around congestion and its related environmental problems. Social exclusion, Neighbourhood renewal and Regeneration areas also raise issues of accessibility. In the Questionnaire on Bristol’s Transport Plan, over 80% of respondents said that congestion in the city centre during peak traffic hours was sometimes or always a problem, and 74% felt that the delays caused to public transport by congestion was also sometimes or always a problem.

Congestion

2. There are 500,000 car movements every day in and out of the city centre alone. Whilst these are an indicator of the economic success of the city, they also bring with them a number of problems that threaten this very success. These include:
   - The average speed of traffic at peak times is now 11 mph, down from 16 mph ten years ago, at an estimated cost to businesses of over £50 million per annum (see Figure 3.1).

3. Nationally it is predicted that road traffic will grow between 36% and 57% over the next twenty years. Car use is already the major cause of traffic congestion in cities, and the problems associated with high levels of car use will worsen considerably if this level of growth occurs.

4. Traffic growth in Bristol has been considerable. In the outer area of the city, traffic has grown by around 40% since 1985. This reflects the substantial growth in population and employment on the outskirts of Bristol and in the North Fringe. Traffic movements across the central cordon and the River Avon crossing have remained relatively stable and considerable congestion occurs. This is an indication that the network is already at capacity.

5. Bristol’s roads do not have the capacity to cope with the existing amount of peak hour traffic and increases in traffic on the national scale would have an extremely detrimental effect on the city.

- Car ownership in Bristol has increased significantly (see Figure 3.2) and is forecast to increase further. Bristol has the highest level of car ownership of any city of comparable or greater size in the United Kingdom.
- Traffic accidents across the whole of the city are rising for the first time since 1993; the reasons for this are complex.

Figure 3.2
Car Ownership in Bristol 1981-1991

Figure 3.1
Average Peak Hour Speed in Bristol (1993-2000)

- Excludes Motorway Traffic

*Preliminary results only
Problems and Opportunities

**Figure 3.3**
Traffic Trends in Bristol 1985-1999

**Figure 3.4**
Approximate Location of Bristol Traffic Cordons
Traffic Pollution and Health

6. Air quality is an issue of great public concern in Bristol, with some 85% of people who responded to the LTP consultation expressing worry about air pollution arising from traffic.

7. Figure 3.5 shows the contribution of road traffic to air pollution in Bristol. These figures represent a citywide average and in central areas the level of air pollution attributable to traffic is likely to be significantly higher.

8. Current levels of air pollution are unacceptable. In recent years the city has experienced around 20 days per year of moderate or high levels of air pollution. Roadside and background nitrogen dioxide levels have remained roughly constant over recent years (Figure 3.6). Ozone and particulate thresholds are regularly exceeded in the central area, and the annual mean for nitrogen dioxide is exceeded across much of the city (Figure 3.7). There is a relationship between major roads and air pollution. The M32 and Inner Circuit roads are identifiable pollution hot-spots along with accumulations in the central area. There are likely to be additional occasional hot-spots in canyon-like street locations.

9. Road traffic accounts for around 25% of carbon dioxide emissions, a major greenhouse gas.

10. A recent World Health Organisation report drew attention to the health impacts of traffic-related air pollution:

“Long-term exposure to air pollutants and levels exceeding air quality guideline values is associated with a number of adverse health impacts, including effects on cardiovascular diseases and on respiratory diseases in adults and children. Such exposure may reduce life expectancy. Some pollutants such as benzene and some types of particle, increase cancer risks”.

WHO 1999

11. The report suggested that children living near roads with heavy vehicle traffic have about a 50% higher risk of suffering from respiratory symptoms than children living in areas with low traffic. The report also estimated that more than seven times more people die as a result of traffic-based pollution than as a result of road collisions. This has been estimated by the British Lung Foundation to cost £11 billion per annum nationally.

12. Whilst it is not clear what the level of risk to public health is from exposure to current levels of air pollution, it would appear that significant numbers of people are being exposed to unacceptable pollution levels.
Figure 3.7
Current levels of Nitrogen Dioxide in Bristol (modelled annual mean)
Traffic Noise

13. “High levels of traffic noise can cause serious annoyance, sleep loss and communication problems, and even learning problems in children. There is emerging evidence of an association between hypertension and ischaemic heart disease and high levels of noise. Ambient noise levels continue to grow due to ever-increasing volumes of traffic”.

WHO 1999

14. The Council acknowledges the problem of traffic noise in Bristol, and is aware that many people suffer environmental noise levels that scientists and health experts consider being unacceptable. A detailed ambient noise assessment will begin this year. However, it is already clear from existing monitoring that the overall noise climate in the city is dominated by traffic noise and that the background noise in each neighbourhood is dependent upon its proximity to busy roads. Figure 3.8 shows typical average background noise levels for eleven wards in Bristol. The daytime noise levels are significantly higher than at night when traffic volumes are considerably lower.

Traffic Incidents

15. National safety measures such as the compulsory wearing of seat belts, stronger drink-and-drive enforcement (and the results of a highly effective long-term advertising campaign against drink driving) and improved technology, such as air bags, ABS, etc. have an important role to play in reducing road casualties. But, as Figure 3.9 shows, the number of casualties, which had been stable over a number of years, is now on the increase and the programme to reduce collisions needs a fresh impetus if it is to succeed in meeting national targets. In particular, child pedestrian casualties have not declined over the past decade and car-occupant casualties have increased.

Social Exclusion

17. Whilst car ownership in Bristol is high overall, the pattern of ownership within the city is not a uniform one. The 1991 Census showed car ownership by ward to vary from a high of over 80% to a low of 35-50%. This creates very different patterns of travel, and of life, for different communities in the city. For example the percentage of mothers who never drive is over 40% in the inner east city; an area with sizeable ethnic minority communities, low car ownership, but high air pollution and high road casualty figures associated with high levels of through-traffic. The comparable figure for inner north-west Bristol is less than 10%.

18 At the same time as car ownership and use has increased, use of alternative transport modes have been on the decline. Figures 3.10, 3.11 and 3.12 show how Bristol compares with other areas. In particular, bus usage is amongst the lowest of any comparable city in the United Kingdom (although the numbers of people using buses in Bristol has increased by over 20% since 1986 against the national trend of decline), whilst walking and cycling levels remain below the highest examples in the country.

19. The pattern of low car ownership in areas of high social exclusion and the pressure that congestion and the continuing popularity of the car is placing on the public transport network means that the transport system as it stands is exacerbating the
problems of social exclusion (see case studies, Chapter 7). Lack of access to public transport is a major barrier for people seeking employment.

**Crime and fear of crime**

20. The following issues have been identified in the ‘Audit of Crime and Disorder in Bristol’. Crime and fear of crime affects the whole population and can have a disproportionate impact on certain sections of the community, particularly disabled and older people. Fear of crime on the streets at night is still a major concern, as is the fact that many people still feel unsafe in their homes.

21. In Bristol the crime ‘hotspots’ in 1997/1998 were Cabot and Southmead wards followed by St George West and East, Filwood, Knowle and Brislington East and West, (Figure 3.13)

22. Thefts of vehicles now accounts for nearly 9% of all crime in Bristol. Between 1994/1995 and 1997/1998 there has been a 43% drop in this crime category in the city. Shown in Figure 3.14 are the wards with the highest level of motor vehicle thefts in the city, based on crime volume per hectare. These include Southville, Bedminster, Windmill Hill, Brislington, Bishopsworth, Hartcliffe, Knowle and Filwood all located in South and East Bristol.

23. Violence against bus drivers has also been reported and is most often perpetrated by younger males.

**Perceptual Difficulties**

24. People make responses to their experience of transport problems in a way that tends to encourage car use. The perception of danger and insecurity deter walking, cycling and public transport use. A recent DETR study showed that this also applies to children. There is also an information gap in knowledge of existing public transport services. Individuals with access to a car now organise their home, work and education trips in a way that tends towards increased journey length and car dependency. People fail to perceive the negative impacts of their own poor road behaviour - such as speeding, parking on footways and cycling on footways - on the safety of others.
Figure 3.13

Number of hotspots for different crime categories

- 0
- 1
- 2
- 3
- 4 - 5

Based on police recorded crime volume and rates for eight priority categories.
25. The increasing dependency on the car in the city has been encouraged by a variety of structural and physical factors:

- The south and east of the city have been affected by decline in the docks, railways, mining and tobacco industries, only partially offset by new employment, while north Bristol has seen employment, retail and housing growth stimulated by the accessibility of the M4 and M5 motorways. The result socially is a north/south split, and longer journey-to-work lengths. Figure 3.15 shows these employment areas, including those immediately beyond the City Council’s boundary, and relates this to areas of greatest social need. The map also shows major development sites in the city which are described in detail in Chapter 7.

- The barrier represented by the River Avon divides the city in two, and lengthens journeys.

Figure 3.14
Thefts of Motor Vehicles as % of total by beat: April 97-March 98
(Source: Tackling Crime and Disorder in Bristol, BCC, April 1999)
Figure 3.15

Employment and Social Exclusion

Key
- Purple: Existing Employment Areas
- Orange: Major Development Sites
- Green: Areas with Social Exclusion Issues (100 worst enumeration districts)
• For the older parts of the city, road widths are limited, as is kerb space; limited space tends to squeeze out pedestrians and cyclists; waiting and loading at retail frontages obstructs bus priority. Historically, traffic management devices such as roundabouts have created poor conditions for pedestrians and cyclists.

• Bristol’s current functional rail network is limited and has a restricted geographical spread.

• The topography of the city can make walking and cycling difficult.

26. Parallel effects worsen the impact of increasing traffic:

• Figure 3.16 shows the city’s retail areas, and illustrates the contrast between recent car-based retailing and traditional patterns. Older local centres on the radial roads into the city suffer from a poor traffic dominated environment. The contrast pushes people towards car usage, and puts the older local centres, although accessible by foot, cycle and local bus, at a competitive disadvantage.

• The low-lying central area is surrounded by hills and it is not uncommon for air pollution to become trapped here and in adjacent low-lying housing areas to the east and south west. There is a great deal of evidence that shows that it is the socially excluded who suffer most in terms of their health from traffic pollution. Further, there are recent studies of poor health resulting from children’s inactive lifestyles.

27. Finally, it has to be recognised there are particular organisational and administrative conditions that place difficulties in the way of sustainable transport planning. Bristol, as elsewhere, operates under legal limitations with respect to parking on footways, cycle signing, low speed zones, and vehicle priority at road crossings. But there are nevertheless a number of problems particular to the area. These include:-

• Greater Bristol is split between Local Authority administrative areas, emphasising the need for close co-operation.

• Public transport is largely provided by monopolies, which can create conditions of lack of competition, and whilst there is a national regulatory body for heavy rail, some might advocate the need for a corresponding body relating to buses.
Physical and Structural Opportunities

30. Some of the physical characteristics of Bristol are favourable to walking, cycling and public transport:
   
   - There are high residential densities in the inner city, and parts of the outer city. Housing with minimum car parking is being built in the city centre for the first time for many decades, and is proving popular.
   
   - Average trip length is low: the 1991 census revealed 40,000 journeys-to-work by car of less than 4 km.
   
   - Access to the countryside is relatively easy. River crossings exclusively for pedestrians and cyclists give them distance advantages from some parts of the central area of the city. The

Figure 3.16
The City's Shopping Areas
city’s “Greenways” network of walk and cycle routes is taking shape.

- Much of the city shows concentrated corridors of movement, making bus priority routes, light rapid transit lines and rail improvements a logical response.

31. The potential for encouraging sustainable modes of transport is enhanced by particular organisational and administrative developments, many of which are new.

- The lack of competition for public transport provision, particularly bus services, mean that there could be opportunities to create a co-ordinated approach to improving and developing the public transport network. Transport operators are beginning to see widening commercial opportunities in a strengthening public transport market, and to become pro-active in seeking development opportunities. This is true for private / public partnerships in commuter rail, bus marketing, and Park & Ride development.

- Recent investment has resulted in a relatively modern fleet of buses to serve the city. However there remains an opportunity for further and continued improvements in the service.

- A Replacement Structure Plan and the Regional Transport Strategy have been produced. Both will support the process of creating an integrated transport system for the region, with an emphasis on the needs of the principal urban areas (Chapter 2).

- The Council has set up a number of groups to ensure that there is a constant dialogue on transport within the city. These include the Bristol Transport Users Group and the Transport Plan Commission. A new forum for local transport consultation is being set up as part of the Single Regeneration Budget exercise in south west Bristol, which may set a precedent for local user involvement in other parts of the city.

- New methods of organisation and new technologies are increasing people’s transport options, e.g. car clubs, home deliveries, low emission technologies and teleworking.
Strategy

Introduction

1. In developing the provisional Local Transport Plan, Bristol reviewed its transport strategy, taking into account national guidance, and conducted widespread consultation (as outlined in Appendix 1 of this document). This has culminated in a 15-20 year strategy that draws together both local and national priorities, incorporating proposals that can realistically achieve the objectives set out for the future of transport in and around Bristol.

2. The long-term strategy is concerned with lessening the dependence on the car by developing and promoting alternatives, particularly through high quality public transport improvements, and complementary restraint measures. This will be achieved in partnership with other stakeholders to ensure that the economic vitality and sustainability of the city is enhanced.

3. The strategy comprises three broad components:
   - Widening choice to the travelling public, including business, and accelerating its implementation.
   - More effective management of the transport network
   - Influencing the demand for travel through a series of land use policies

4. Further refinement and development of sub-elements of the strategy over the last 12 months has been guided by:
   - The first stage of the review of the Road Hierarchy.
   - Development of an approach to piloting local strategies targeted at reducing short car journeys.
   - Development of a framework for the Air Quality Management action plan as required by the Environment Act.
   - Commencement of development of the bus strategy as foreshadowed in the Transport Bill.
   - Developing a joint local authority approach to the sub-regional local rail network.
   - An assessment of the transport and health policy relationships, working with the Avon Health Authority (see page 33).
   - Further linking of transport measures and economic regeneration strategies, including European Objective 2 status for parts of Bristol, and the Single Regeneration Budget programme of the SW Regional Development Agency.

   - The development and adoption of Bristol’s Local Agenda 21 strategy ‘Towards the development of a Community Plan’. Community commitment in relation to transport was developed through a special topic group (led by Transport 2000).

   These are dealt with in Chapters 5-7.

The Link between Strategy and the 5-year Local Transport Plan Programme

5. The development of the five-year programme has been based on a number of factors:
   - The Bristol Integrated Transport and Environmental Study, which looked at the effects of various different transport strategies against a set of environmental, safety and traffic-related objectives
   - A series of sub-strategies including:
     - Cycling Strategy
     - Walking Strategy
     - Safer Routes to School Strategy
     - Road Safety Strategy (including the new National Strategy)
     - Towards a Bus Strategy
     - Rail Strategy
     - Air Quality Strategy
     - Parking Strategy
     - Mobility Management, covering information, promotion and co-ordination

   These strategies have been the subject of public consultation and joint working with other bodies, or are in the course of this.

   - A series of underlying strategic principles:
     - Adoption of a hierarchy of priority user groups (see Chapter 2).
     - A move towards implementing the hierarchy in the priorisation of highway space.
     - The need to ally this process of prioritisation of space and time with progressive road traffic reduction linked to Air Quality Management and the Road Traffic Reduction Act. The Council has set a number of traffic reduction targets. These are set out in more detail in Chapter 9 and under the Road Traffic Reduction report in Appendix 5.
• The continuing emphasis on transport corridors, which bring together the changing focus of the Road Safety Strategy, key elements of infrastructure development, and concepts such as Cycle Review.

• The principle of sustainability and the commitment made to the principles agreed at the United Nations Earth Summit in 1992.

• The fundamental importance of achieving a change in public attitudes towards transport. This theme runs through the Council’s approach to Walking, Cycling, Safer Routes to School, Local Agenda 21 (LA21) and Mobility Management (all dealt with in detail in Chapters 5 and 6). The importance of promoting and facilitating partnership with the wider community, at different levels, is recognised.

• The need for policy and project integration with surrounding local authorities.

• The need to promote opportunities for health improvements and to ensure that any negative impacts are minimised in developing and designing policy and project solutions (see Chapter 6).

• The need to ensure that policy solutions reduce social exclusion by providing greater travel opportunities for those with restricted mobility, by facilitating a greater range of job, retail and leisure opportunities closer to home, and by
reducing the negative impact of the transport system on those most vulnerable, for example, the impact of pollutants on children in inner areas. (Chapter 3 Case Study).

- The need to provide for disabled people across all aspects of travel supply and management (specific strategy elements are set out in Chapter 5).
- The need to ensure continuing community involvement, building upon the consultation to date and linking with the Local Agenda 21 process.

Five Year Plan

6. This has led to a five-year plan to provide the city with a high-quality transport system that will meet the needs of residents, commuters and visitors in and around Bristol.

7. This year the city will begin will to benefit from:
   - two new ‘showcase’ bus routes;
   - a new Park & Ride site for North Bristol;
   - much better information for those who want to use public transport;
   - improved cycle and pedestrian access to the centre from parts of the city;
   - bus priority measures on a number of routes;
   - night buses on up to eight routes to support Bristol’s cultural scene and evening economy, and the needs of night workers.
8. Within five years, the city will have the first section of a new, state-of-the-art tram system. Further extensions to the network have been identified for further evaluation and include:
   • a route to serve South Bristol;
   • the line between Bristol and Portishead;
   • a route to Yate via Emersons Green;
   • the Severn Beach line.

9. Other schemes to be completed within five-year plan include:
   • 20 mph zones on several residential roads;
   • further quality bus routes;
   • widespread, high-quality travel information;
   • a freight partnership to help improve the delivery system;
   • ferries for commuters and visitors;
   • subject to work with other Councils, a further three Park & Ride sites for commuters outside the city.

10. Providing these alternatives will go a long way towards solving the problem. But if we are significantly to improve the environment and enhance Bristol’s economy, the Council must go further.

11. Bristol is now part of the Charging Development Partnership – a group of 24 major cities, including Manchester, Nottingham, Edinburgh, Leeds and Birmingham. These cities have similar problems to Bristol, and they have come to the same conclusion that providing good quality alternatives is not the whole answer.

12. Our consultation showed that residents are just as concerned about the effects of traffic congestion and pollution in their neighbourhoods. Many identified heavy traffic as a major nuisance near their homes.

13. Recent headlines have highlighted poor health in children through lack of exercise. Developing hearts need regular activity, and parents are becoming increasingly concerned at the warnings. But many take their children to school by car not only for the sake of convenience, but because they worry that the roads around some Bristol schools are not safe enough for walking or cycling.

14. Safe Routes to School is an important Council initiative to get children to school safely under their own steam. The Council aims to create safe paths and cycleways to at least 6 schools a year. We are working with all schools, parents and children who are interested, to identify risks and explore safety solutions.

15. Home Zones are being piloted in three residential areas - parts of Horfield, Brislington East and Henbury. The schemes aim to make the car a ‘guest’ in a residential area, making the streets safe for play and social activities and putting the neighbourliness back into neighbourhoods.

16. The policy development work carried out over the last 12 months has served to reinforce the case for this strategy. It has also assisted the development of a stronger relationship between the strategy and the detailed implementation programme.

**Technical Assessment of the Preferred Strategy**

17. The preferred strategy has evolved from the results of original research carried out through the Bristol Integrated Transport and Environmental Study (BRITES). This study looked at the effects of various different transport strategies against a set of environmental, safety and accessibility related objectives. Through assessing forecast changes in accessibility across the study area, it was possible to also evaluate the effects of different strategies on issues of social exclusion.

18. The most effective strategy, as shown by the study, has been the subject of exhaustive research since the original BRITES work, testing various other options, revising and updating the model used, and conducting further sensitivity tests on particular elements of the strategy. The breadth of the analytical work conducted in the development of the preferred strategy is described in the Technical Assessment Case Study set on page 34.

**Presenting the programme in detail**

19. The following chapters set out the topic activities which will together deliver the objectives and targets. The link between overall strategy and the topic activities is shown in Figure 4.1, and topics are grouped here under the three headings set out earlier in this chapter, i.e.
BRISTOL’S TRANSPORT STRATEGY HAS A LOT OF SUPPORT FROM BUSINESS

John Hirst, Broadmead Manager, said: “Of course people will always want to drive into the city to shop. But the most important thing to shoppers is the degree of calm and comfort once they have left their cars. Crossing very busy roads and negotiating pelican crossings make shopping stressful, whereas a clean, calm environment helps to make a day in Bristol a memorable experience which people will want to repeat.”

“I think that reducing commuter traffic and providing attractive public transport alternatives will bring benefits to the city centre, and developers now interested in expanding Broadmead seem to agree. I don’t think you can argue with the kind of investment that these people are putting into the city. It says it all.”

**HEALTH & TRANSPORT POLICY LINKS**

Statement from Avon Health Authority, June 2000

“For some populations in Bristol known to have high health needs, air quality and access to central Bristol (important in terms of access to employment opportunities and secondary health services) are poor. Affordable public transport (within these areas and linking them with central Bristol), higher levels of physical activity, accident prevention, and improvements to air quality are particularly needed in tackling inequalities in health in these populations.

There are also health issues important throughout Bristol. We know that recommended air quality limits are exceeded at times. Physical activity levels are too low, and rising numbers of people are becoming obese with consequent increased risks of heart attacks and diabetes. Car drivers and passengers need to consider their exposure to higher pollutant levels within cars, and the benefits of alternative means of travel offering greater personal physical activity, to themselves and others. Barriers to change include fear of crime, accidents and personal preferences for travel by car. The decisions individuals make about transport have a clear bearing on their health and well-being. Health and transport plans need to be compatible, promoting health in individuals and populations without loss of access to important services, facilities and employment.

Government health policy in the National Service Framework for Coronary Heart Disease reflects the need to develop health transport policies. All local health communities (as employers) are to develop green transport plans and take steps to implement employee-friendly policies by April 2002. Progress is also required on promoting physical activity and reducing overweight and obesity.

The broad transport strategy has the potential to contribute towards health improvement, subject to care being taken to ensure adequate access to health and other services, such as shops.”

The joint statement of Avon Health Authority and the City Council is given in Appendix 4.2.

• How the Council is working with others to improve the transport system, and how it proposes to take this forward over the next five years.
• How the Council is developing a strategic approach to overall demand and network management.
• How the Council see land use and development; and regeneration issues working with the transport objectives.

20. Each topic section reviews, where appropriate, current strategy; progress to date, sets out a five-year view (including a view on the programme) and a proposed detailed programme for 2001-2002. Scheme selection and prioritisation processes are also described where appropriate. The links between these topic activities and the LTP objectives are set out in the chart overleaf.
Strategy

Technical Assessment Case Study.

The Preferred Strategy of the Bristol Local Transport Plan

Evolution of the Local Transport Plan Strategy

The preferred long-term strategy set out in the Bristol Local Transport Plan, has evolved over many years. The strategy grew from the results of the Bristol Integrated Transport and Environmental Study (BRITES), which looked at the effects of various different transport strategies against a set of environmental, safety and accessibility related objectives. Through assessing forecast changes in accessibility across the study area, it was possible to also evaluate the effects of different strategies on issues of social exclusion. The most effective strategy has been the subject of exhaustive research in subsequent years, testing various other options, revising and updating the models used, and conducting further sensitivity tests on particular elements of the strategy. The strategic assessment work conducted is summarised below, and these studies provided a background of comprehensive research, through their ability to assess the forecast effects of both land use and transport changes, and how they impact on all modes of transport within the city.

The hierarchy of tests shown above has been supported by further work conducted on specific issues, including studies into the proposals for Bristol and South Gloucestershire Rapid Transit and Park & Ride provision. The comprehensive range of research work that has been carried out into developing the transport strategy for Bristol over recent years, reinforces the view that the long-term proposals set out in the Plan are fully evaluated and supported. During the process of developing the strategy, the models were revised with updated land use and growth assumptions, and these provide a robust analytical base for the preferred strategy set out in this plan. The technical analysis provides the foundation of the strategy, however it is through the extensive public consultation carried out in developing this Plan, that it is considered that the preferred strategy offers the most effective way forward, with the support and participation of the public, enabling this to happen.

The strategy has been accepted by government over the last five years, and supported through the former Transport Policies and Programme system as the Transport Package Strategy for the Avon Area. This Package Strategy remains at the core of the transport plan strategy, and was further endorsed by government through the provisional Transport Plan submitted last year. As the culmination of the consultation on the preparation of the provisional Plan, the Bristol Transport Plan Commission, consisting of representatives from local transport providers, local business and community groups was set up to consider the results of the public consultation and steer the direction of the plan. The Commission considered that the analytical basis of the strategy was robust, and that it demonstrated the effectiveness of the measures proposed.

The ability of the assessment tools, such as BRITES, to incorporate different land use policy options in evaluating transport strategies, has been crucial in ensuring that the longer term Local Transport Plan strategy is consistent with the longer term strategy set out in the development plans for the area, the deposit Joint Replacement Structure Plan for the Avon Area, and the adopted Bristol Local Plan.

The most effective strategy, as shown by the evaluations conducted, combines the introduction of Rapid Transit to significantly enhance public transport, with road user charging in the central area to manage demand. These two elements are crucial in ensuring that the strategy can meet the objectives of the Plan. Although these two elements are critical in widening choice to the travelling public and managing the transport network more effectively, the strategy contains many elements under these two broad components, and through the integration of these many proposals provides a balanced programme of investment over the five years of the plan.

The measures included in the plan to significantly enhance the bus service, together with enhanced conditions for cycling and walking complement the necessary introduction of a new rapid transit system. In managing the network, these elements are also essential. Traffic restraint in the form of road user charging cannot be introduced before significant improvements to public transport and other alternatives to the car are in place. Together with Rapid Transit, evaluation of the strategy has shown that greatly improved bus services, including Park & Ride, better promotion and information and better facilities for walking and cycling will achieve these essential improvements to the transport infrastructure of the city.
Figure 4.2
Analysis conducted in the development of the overall Local Transport Plan Strategy.

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Description</th>
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<tr>
<td>BRITES Study</td>
<td>1990</td>
<td>To assess the effectiveness of different transport investment strategies.</td>
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<tr>
<td>BRITES GLT</td>
<td>1992</td>
<td>Further research into the relative effectiveness of a bus, guided bus (GLT), or rapid transit based strategy.</td>
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<tr>
<td>BRITES SRTM</td>
<td>1992</td>
<td>Tests conducted by DETR to assess scheme options for the motorway network around the Bristol area (SRTM – sub Regional Traffic Model).</td>
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<tr>
<td>TPP Package 1994-95</td>
<td>1993</td>
<td>Detailed revised tests on preferred strategy to support the TPP Package of measures.</td>
</tr>
<tr>
<td>TPP Package 1995/96</td>
<td>1995</td>
<td>Further revised tests in support of the Package strategy, incorporating revised land use scenarios, providing updated growth forecasts on both high and low economic growth assumptions, and detailed sensitivity tests on individual elements within the strategy.</td>
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<tr>
<td>Traffic Restraint Study (TRAM)</td>
<td>1997</td>
<td>Revised and updated model developed in partnership with the DETR to investigate traffic restraint, and possibilities for traffic reduction. (TRAM B Traffic Restraint Analysis Model).</td>
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Figure 4.3
Economic performance of BRITES balanced strategies

(£m’s up to 2040, discounted to 1990)

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<thead>
<tr>
<th>Economic Efficiency</th>
<th>Rapid Transit/ Parking Restraint</th>
<th>Rapid Transit/ Road Pricing</th>
<th>Rapid Transit/ Cordon restraint</th>
<th>Bus/ Parking Restraint</th>
<th>Bus/ Road Pricing</th>
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<td>Net Present Value (NPV) (£m’s)</td>
<td>+56</td>
<td>+121</td>
<td>-371</td>
<td>+46</td>
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Strategy Development

The original BRITES study looked at differing transport investment strategies, and after sensitivity testing, five balanced strategies based on the one hand, concentrating on bus or Rapid Transit public transport enhancements, coupled with on the other hand, traffic restraint in the form of either road user charging, parking restraint or cordon restraint were evaluated. A summary of results is given in Figures 4.3 and 4.4.

Evaluated against the objectives set, investment in either bus or Rapid Transit coupled with road user charging performed more effectively than the balanced strategies incorporating parking as a restraint measure. The balanced strategy based on Rapid Transit and additional restraint through physical access restrictions (cordon restraint) into the central area, performed most effectively. However such severe restrictions significantly reduced accessibility, were seen as likely to damage the city’s economy, and overall was economically inefficient, returning a net present value of £371 million.

Significant bus service enhancements also performed well against the objectives, but this option was less economic over the long term than the one based on Rapid Transit, and the physical implications of creating highway capacity for the extensive bus priority network would have meant the demolition of large numbers of properties alongside the main highway network. Thus the preferred balanced strategy was one of Rapid Transit investment together with road user charging, which (as shown in Figure 4.3) was the most efficient economically, and performed best against the environmental, safety and traffic objectives.

The preferred strategy developed from BRITES, has been the subject of extensive further research as outlined above, and has been revised to form the basis of the overall long term strategy set out in this Plan. To improve public transport the strategy incorporates various complementary enhancements to rail and bus provision: however the two crucial elements are the introduction of Rapid Transit and traffic restraint in the form of road user charging.
Traffic Restraint

Without a form of restraint, traffic is forecast to grow significantly, even within constrained areas such as central Bristol. As stated in Government’s guidance to the Road Traffic Reduction Act 1997:

“Measures to encourage alternatives to the private car may not in themselves have a significant effect on traffic levels.”

Figure 4.5 shows the forecast growth in the number of car trips into central Bristol up to the year 2015, for the preferred strategy of Rapid Transit and road user charging, compared with a strategy combining bus and Rapid Transit improvements together with other measures to encourage alternative modes, but incorporating minimal restraint measures. To achieve the objectives of the plan (which build on national objectives set out by government) and to work towards the Council’s obligations under the Road Traffic Reduction Act, it is clear that transport supply investments through buses rail or new modes such as Rapid Transit, will not be sufficient on their own. To achieve actual reductions in traffic, it is essential that improvements to encourage alternative modes are coupled with traffic restraint.

Figure 4.5
Number of Car trips into the central area of Bristol (AM Peak)

Rapid Transit

One of the principal responses received through the extensive consultation carried out in preparing the Local Transport Plan, was that a high quality and affordable public transport system is required, and that the current public transport system based predominantly on buses was not achieving this. In order to provide significantly enhanced alternatives to the private car, along with significant improvements and promotion of non-motorised modes, a step change in public transport provision is required. A strategy combining greatly enhanced bus provision through the existing Quality Bus Partnership, the further development of Park & Ride, and enhancement of the rail network, will contribute towards the Plan objectives. However the introduction of a mass transit system, such as Rapid Transit, enables the strategy to fully achieve the objectives, and would provide the leap in public transport quality that is required.

Although the enhancement of the existing public transport modes are an essential component in encouraging modal shift from private car use, the finite capacity of the current public transport system could pose problems. Considering current levels of car and public transport use within the Bristol travel to work area, a 1% reduction in car use, if transferred to public transport, would equate to an increase of some 11% in bus patronage, or a 77% increase in heavy rail if the local rail network was required to carry the transferred trips. Therefore to achieve significant reductions in traffic, public transport capacity as well as quality needs to be greatly enhanced, and the introduction of Rapid Transit, combining segregated public transport with a high capacity frequent service would provide this.

The relative performance of different public transport investment was investigated in detail, following the initial BRITE study, through BRITES-GLT described in Figure 4.2. Three strategies were evaluated up to a horizon year of 2015, one based on solely bus development, one on the introduction of a Guided Bus network (referred to as Guided Light Transit, GLT, in the study), and one on the introduction of Rapid Transit.
Guided Bus Based Strategy
The GLT strategy attracted significant patronage to this new mode (169,000 trips per day). However, large numbers were abstracted from the existing bus services, reducing bus mode share to less than that of rail. Although car use was forecast to decline, traffic delay caused by GLT vehicles reduced car and bus speeds in central Bristol and the built up area.

Bus Based Strategy
The bus strategy also achieved traffic reduction compared to the do-minimum strategy, however the level of this reduction was the lowest of the three strategies. The costs of this strategy were much lower than either GLT or Rapid Transit, but the economic evaluation showed that the benefits of the bus strategy were also low and did not outweigh the costs.

Rapid Transit Based Strategy
Although the GLT strategy attracted the highest patronage to the new mode, the Rapid Transit based strategy, through strong integration with rail, achieved the highest total patronage for public transport overall, and the lowest overall car use across the Bristol travel to work area. Environmental conditions in the city centre were forecast to improve most with the RT strategy, with GLT and Bus strategies showing slight worsening, owing to congestion caused by the extensive bus lanes, and GLT vehicles.

Investment in Rapid Transit has a higher overall capital cost than an investment strategy based on the existing public transport modes, which are predominantly bus based. However, apart from the potential capacity restraints and poorer operational performance of purely bus based improvements, a strategy based on the introduction of Rapid Transit, in parallel with significant enhancements to bus and rail, showed a competitive financial rate of return in the long term. By comparing the overall financial cost of alternative bus, guided bus and Rapid Transit strategies with the level of public transport patronage that is attracted by the enhancements in alternatives to the car, balanced investment in Rapid Transit, together with other public transport enhancements, was shown to provide better value in the longer term than simply investing in bus provision. Figure 5 summarises the financial evaluation of the bus based and Rapid Transit based strategies against their respective forecast mode shift to public transport.

FIGURE 4.6
BRITES GLT Tests, Financial costs of strategies against forecast modal shift (costs in £m’s up to 2040, discounted to 1990)

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<td>Present Value Finance (PVF)</td>
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<td>Forecast Public Transport passenger Vehicle Kilometres (per day Bristol TTWA)</td>
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<td>Increase from do-minimum forecast</td>
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<td>Cost per unit increase in Public Transport</td>
<td>£244</td>
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### Figure 4.7
Links Between Objectives and Programme Elements

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(+ N.B. Congestion charging includes the impacts of revenues raised)

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Widening Choice: Improving the Transport System

1. The Council recognises the needs of all users in its proposed programme for improvements to the transport system, but gives particular emphasis to the need to bring substantial improvements in public transport, cycling and walking networks prior to the possible introduction of the more radical restraint measures, such as road user charging. It also recognises and emphasises the importance of lower cost measures aimed at assisting short journey making, in addition to accommodating the longer distance journeys coming from the wider sub-region. The measures also recognise Bristol’s role as a growing economic, cultural and tourism centre, both within the region and nationally.

Moving People

Public Transport

Buses

2. Appendix 3.5 contains the provisional bus strategy which will be required once the Transport Bill becomes law. This section is a summary of the main focuses of work being undertaken this and next financial year.

Targets

- 15% rise in the number of bus passengers over the five year period.
- 98% of the population live within 400 metres of a bus stop which is served by a route with a frequency of at least 4 buses per hour during the day.
- Ensure that the timetabled journey time is no longer than 25 minutes to the City Centre and 15 minutes to the local neighbourhood centre, by 2010.
- Accessible public transport to major health centres within 10 years.
- Increase the number and proportion of local bus services with journey time reliability within 5% of the scheduled journey time.

3. Buses are, and will remain for the foreseeable future, the main form of public transport in the city. As such they form an essential part of the city’s strategy.

4. Although there has been an overall increase in bus patronage in Bristol over (20% since 1986), this is from an extremely low base and there are worrying signs that this increase in patronage is now going into reverse. Significant improvements to the bus service in Bristol must therefore be delivered as quickly as possible.

Developing a Full Bus Strategy

5. Based on the issues raised throughout the Local Transport Plan consultation the draft bus strategy covers wide-ranging issues which require a fuller investigation during the coming year in preparation of the full bus strategy. These include orbital routes, express and feeder routes, ticketing, information, pricing, interchange, major employment areas and access to rural areas. Detailed discussion of these points is contained within the bus strategy in Appendix 3.5.

6. Further consultation will take place over the coming year in preparation of the full strategy.

Progress in providing a better quality bus service

7. Over the past year, the Council has been working closely with the bus companies on ways of improving the existing service in the city. Initiatives include: –

- The publication of a FirstGroup document ‘Between the Bus and The Tram’ detailing a number of measures that the company would be interested in pursuing to enhance greatly the quality of service provision in the city.
- The decision by FirstGroup to dedicate its new buses to particular routes with the provision of route-specific on-bus information.
- The production of a draft bus strategy for the city (see Appendix 3.5)
- The continuation of the existing Quality Partnership providing further bus priorities on the A4 and A37 coupled with new low floor buses.
- The agreement to introduce a ‘showcase’ bus route (services 76/77).

Quality Partnerships

8. The Council entered into a Quality Bus Partnership agreement with First Bristol Buses in 1998. The aim of the partnership was that, in return for the Council providing better facilities for buses - more high quality bus shelters; bus priorities; raised kerbs at stops to accommodate low-floor buses - the bus company would maintain a modern bus fleet, introduce low-floor buses and improve the reliability of bus services.

9. The partnership has been very successful as have the use of bus priorities in Bristol – a DETR-commissioned report showed bus priorities in
Bristol to be amongst the most effective in the country, producing time savings of up to 11 minutes on some routes.

10. The original routes earmarked for improvement have now either been completed or are nearing completion and the Council is in the process of renegotiating the agreement.

11. Since the agreement was originally drawn up, a number of national developments have taken place that will significantly affect the new agreement. The major developments are:

- The requirement (within the Transport Bill expected to be enacted in the autumn) for transport authorities to produce bus strategies. The Council has produced a draft strategy (Appendix 3.5) a year ahead of the requirement and has entered into negotiations with the main bus provider on the strategy.
- The Transport Bill also proposes putting a responsibility on local authorities to determine what bus information should be used and in what way it should be made available. The bus companies can either provide the information themselves (to the Council’s specification) or else will be required to pay the Council for providing the information. The Council which particularly welcomes this part of the legislation, notes with approval that this requirement is intended to extend to real time information, and recognises that it will be a significant factor in the nature of the partnership with the bus companies.
- The city Council’s overall strategy contained in this plan places an even greater urgency on providing improved bus services. Within the context of the revised partnership this will mean that a significantly enhanced programme will need to be agreed.

Showcase routes

12. ‘Showcase’ routes are comprehensive improvements to the route – bus priorities, parking controls with a high level of enforcement, more high quality bus shelters and lighting, new high quality buses, real time information, improved paper information. The idea is to create the step change in quality (as already exists with the two Park & Ride sites in Bristol) that equates to a new form of transport being provided.

13. This year the Council, working in partnership with the bus company, will be introducing a new ‘showcase’ route on service 76/77, connecting areas experiencing social exclusion and economic deprivation, e.g. Hartcliffe and Southmead, with the City Centre (Figure 5.1).

14. Where Showcase bus routes are introduced, there is a need to look at partnership arrangements with the bus companies that go beyond the bus partnership agreements proposed within the Transport Bill. Accordingly, the Council will be looking to form a “Quality Partnership Plus” with the bus company, in the form of a voluntary agreement, to include commitments on: –

- Reliability;
- Journey times;
- Routes/Frequency;
- Quality, to include agreements on vehicles, shelters and information;
- Ticket pricing and ticket interavailability.

15. The Council believes that such an agreement is essential, and welcomes the steps First City Line have already taken in supporting the need for a wider agreement.

Night buses

16. Bristol is becoming a ‘24 hour city’. Current hours of service are inadequate for many of those using the city late at night or very early in the morning. During 2000/01 the Council proposes to introduce experimental night services on up to 8 routes radiating from the city centre (Figure 5.2). Services would operate hourly from just after midnight on Saturday and Sunday mornings. As there is a fixed budget, the hours of operation and the number of routes served will depend on the tender prices received. Discussions are taking place over the implementation of these routes. Once operational, these services will be monitored. If successful, and subject to the availability of sufficient funding, it is the Council’s desire to introduce further improvements, including increasing the days of operation.

Linkages to other work areas

17. The Bus Strategy links in with other strategies contained in the Local Transport Plan such as walking and cycling. The primary tools for implementing bus priorities is traffic management measures through a combination of signals and physical works. Where improvements to major bus corridors are taking place consideration will be given to improving walking and cycling conditions at the same time to maximise the value obtained from the substantial investment.

Supported Bus Services

18. Last year, the Council had a budget of some £1.3 million for supported bus services, which were secured from bus companies by competitive tender.
Figure 5.1
‘Showcase’ Service 76/77
Figure 5.2
Proposed Experimental Night Bus Routes
The services so secured were largely additions to existing routes (evenings, Sundays and Bank Holidays). With the imperative to improve services in the city, the Council is now in the process of introducing new types of services, such as night-time services. There will be a need over the next few years to provide further new services in order to meet the Council’s targets.

19. The Council will look to reduce the costs of this increase in supported services through the following means: –
   • By arrangement with the bus companies;
   • By using different types of contract to those previously used, combined with greater promotion and information of the services;
   • Through planning agreements;
   • Through the constant monitoring of existing services with regard to increasing their potential for commercial viability;
   • Through increases in the numbers of paying passengers.

20. The criteria that the City Council uses in determining which routes to support are as follows: –
   • Improving the accessibility of locations recording high unemployment to locations where jobs are available;
   • Encouraging the introduction of new or enhanced services at an early stage in the commencement of major residential and commercial developments;
   • Increasing the number of non-radial services and through services across the city so as to achieve a comprehensive network;
   • Supporting the development of Bristol as a 24-hour city;
   • Ensuring that supported services represent Value For Money by specifying a maximum cost per passenger journey (currently £2.70).

Bus-Based Park & Ride

21. The City Council already has two extremely successful and award-winning purpose-built permanent Park & Ride schemes: one on the A4 Bath Road at Brislington and the other at Long Ashton. These are aimed both at encouraging city centre commuters to leave their cars outside the city and use public transport and, shoppers heading into Broadmead to do the same. There may be scope for making better use of these sites in the evening and at weekends providing these initiatives can be funded.

22. The present successful facility at Brislington (providing 1300 spaces) has been so successful that it is already reaching capacity.

23. The Council is anxious to build on the success of these schemes by setting up further Park & Ride sites around the city (Figure 5.3). A suitable location within the City Council’s control has been identified in Avonmouth for the third purpose-built Park & Ride site. The site lies to the west of the city and would serve traffic from the M5, M49 and A4 Portway heading into the city centre.

24. Future possible sites to the South of the city (A38 Bedminster Down) and to the East (A37 Wells Road) will be developed over the next five years. Further investigation to identify appropriate sites to the North of the city will also be required to serve the M32 corridor. However, it is likely that part of this corridor will be catered for by Rapid Transit, with sites at Almondsbury and Stoke Gifford.

25. However, in most cases the co-operation of neighbouring Councils is required to allocate suitable sites on the outskirts of the city. The Council supports South Gloucestershire Councils’ Plans for a necklace of multi-model interchange sites to the north and east of Bristol. These will provide both orbital and radial routes serving Bristol and compliment Park & Ride and bus measures contained within this plan.

26. There is a need in considering new Park & Ride sites to ensure that additional road space is removed from car traffic and used to the benefit of more environmentally friendly forms of transport. Ways of doing this include: –
   • Using the road space created to build more bus lanes, cycle lanes, pedestrian priorities, etc;
   • Removing a corresponding number of city centre parking spaces to those created by Park & Ride schemes;
   • Introducing other measures to discourage cars at the same time as Park & Ride sites are introduced;
   • Enabling cyclists and non-car users (not just car users) to take advantage of the service.

Community Transport

27. The City Council currently supports the following community transport organisations, which provide services to disabled, or mobility impaired people and community groups, through core revenue funding and contributing to capital costs of vehicle replacement. All of these organisations also raise funds or seek other sources of funding for some of their specific needs, but rely upon the City Council for their main funding.
Figure 5.3
Park & Ride Sites
28. Bristol Dial-a-Ride operates a door-to-door minibus service for people who have difficulty using conventional public transport. It provides a daytime service mainly for shopping, social and health-related trips at the cost of ordinary bus fares. However, the scope of the service is limited by resource constraints and does not cover the whole city.

29. In 1999, Dial-a-Ride received additional City Council funding amounting to almost £500,000 to meet capital and revenue costs for three years, to extend the service to an additional 8 wards in the city. It was also awarded a National Lottery Charities Board grant to continue and expand its service in 3 wards. Dial-a-Ride now operates in 26 of the city’s 35 wards. As a result of this expansion, Dial-a-Ride is proposing to move to new premises which include secure parking for its vehicles and the Council is supporting this move.

30. Use of Dial-a-Ride and demand for expanded services continues to grow and it remains an aim to extend Dial-a-Ride to cover the whole city, but ongoing funding must also be found to secure the current level of service beyond 2002. There is also a need to expand the service to include weekends and evenings. Funds therefore need to be realised to extend Dial-a-Ride to cover the whole city, to ensure continuation of the service in the newly covered wards beyond 2002, and to provide a weekend and evening service. This should be an incremental expansion over and beyond the Plan period.

31. Bristol Community Transport (BCT) operates a minibus hire and driver training service for Bristol-based community organisations with a fleet of 18 vehicles and almost 200 member groups. It also provides regular transport for several day care centres.

32. BCT receives annual core revenue funding from the City Council of just over £100,000. Membership and demand for its services is increasing and it has recently moved to larger and better equipped premises where it can operate more efficiently. BCT is also seeking to expand its activities, particularly by assisting community groups in the possible setting up of local community bus schemes, such as at Knowle and Lawrence Weston. Proposals are currently at an early stage. However, future development funding for such schemes is likely to be required, in addition to further capital funding to enable updating of BCT’s current vehicle fleet, much of which is becoming very expensive to maintain, to meet existing service commitments and ongoing needs.

33. Replacement of Dial-a-Ride and Bristol Community Transport vehicles requires annual capital investment of about £100,000 per annum from the City Council, in addition to self-generated finance.

34. EasyRider is a scheduled bus service operated under contract to the City Council that provides accessible transport on a limited number of weekly, flexible routes that serve Broadmead shopping centre. Bristol Dial-a-Ride operates a booking service for its members who wish to use it.

35. Tripscope provides a regional travel advice ‘helpline’ service, based in Bristol, for disabled and mobility impaired people. It receives joint revenue funding from the Council and other Unitary Authority/South West region Local Authorities. A new ‘Getting About’ guide giving travel information and advice for mobility impaired people has been produced (in November 1999) with funding from the Unitary Authorities and distributed to individuals, disability groups, health centres, care homes and other venues across Bristol and the former Avon area. It is intended that the guide will be updated and re-published every three years.

36. Bristol Shopmobility provides a wheelchair and scooter hire service from its current premises in the Galleries Shopping Centre in Broadmead, for anyone who has difficulty getting around the shops. Longer term hire is also available. Dial-a-Ride and EasyRider passengers can be met in Broadmead.

37. Shopmobility is receiving revenue funding from the Council of just over £30,000 for the current financial year, increased from an initial grant of £25,000 in 1999/00, to assist the promotion and development of the core service, which is not reaching its full potential at present. However, use of the service is increasing and the Shopmobility management are currently preparing a business plan in partnership with the Broadmead Board and the Galleries shopping centre management as a means of bidding for long-term funding and support from a variety of sources to further the development and expansion of the service.

38. There is a need to find better equipped and more accessible premises, to give Shopmobility a higher profile and enable easier integration with Dial-a-Ride and Easy Rider buses, etc., within Broadmead shopping centre. There is also a longer term aim of expansion to other shopping centres and leisure locations, for example Harbourside, to increase accessibility of the city centre and other areas for disabled and mobility impaired people. Funds need to be realised for the development of this service.

**Taxis and Private Hire Vehicles**

39. Taxis and Private Hire Vehicles are seen as an integral part of public transport and play an increasingly essential part of an integrated transport strategy, providing support to complement other forms of public transport. Consequently, the Council considers it appropriate
to permit both taxis and private hire vehicles to use most bus priority facilities.

40. Since the review of the Hackney Carriage policy in 1997, and subsequent deregulation of the trade, the number of licensed Hackney Carriages has increased from 273 to in excess of 500, of which approximately 240 are wheelchair accessible. Whilst it is accepted that there are some types of wheelchair and mobility impairment for which these vehicles are not suited, in general they represent a considerable advance. All Hackney Carriages in Bristol will be wheelchair accessible by 2008.

41. Training of both Hackney Carriage and private hire drivers is regarded as a priority. Discussions are currently taking place with a local college with a view to training programmes commencing within the next twelve months. These programmes will include disability awareness. With the increase of wheelchair accessible taxis, new opportunities are presently being explored in the field of 'Community Transport' with a view to making the whole trip chain more accessible.

42. An on-going review of Hackney Carriage rank provision across the city has been carried out in partnership with the police and the Hackney Carriage trade. This has resulted in a rolling programme of works to be carried out over the next 3 - 5 years. This will include shelter provision and raising kerbs at ranks to cater for wheelchair access.

43. Discussions are also progressing with the trade representatives to explore new opportunities for the taxi trade to contribute more fully towards an integrated transport strategy. This would include integrating taxis into local bus services and making use of the provisions contained within the 1985 Transport Act. Taxi drivers are in an influential position to be ambassadors for the city, particularly for visitors.

**Coaches**

44. There are a number of different types of coach operations servicing the city, each requiring different facilities.

45. Scheduled coaches provide an alternative and affordable means of transport between Bristol and most other areas of Great Britain. Generally, most scheduled coach services operate from/to Marlborough Street Bus and Coach Station with some 180 departures and arrivals a day. Interchange with First Badgerline bus services is therefore convenient but the general standard of the bus station falls short of modern standards.

46. Chartered coach services, which provide for the educational, shopping and leisure markets are becoming increasingly important in sustaining businesses such as hotels. They also play a vital role in supporting the regeneration of the city centre and Bristol's efforts to become a major tourist city.

47. Chartered coach services require dedicated off-street coach parks to wait/park. Presently there are three coach parks in Bristol: -

1. Canons Marsh
   This is the main coach park in central Bristol, and provides parking for up to 30 coaches at any one time. However this facility is likely to close during the life of the plan to facilitate the continuing Harbourside development.

2. The Maritime Heritage Centre
   This coach park provides seven spaces and is short stay only.

3. Stratton Street
   This coach park is well located but is very basic and only available during the day. These latter two factors make it currently unattractive to coach operators.

48. The level of adequate facilities and the likely closure of Bristol's main coach park led a consortium of attractions and the City Council to commission a study in 1999 into future coach demand, in order that appropriate facilities could be provided.

49. Following the publication of the demand study, the City Council has adopted a coach management and parking strategy for the short/medium term. The strategy begins with the allocation of £80,000 towards enhancing the Stratton Street coach park facility. Whilst recognising this location may be required for the future expansion of Broadmead shopping centre in some 3-5 years time, it does establish the need for a replacement facility to be incorporated within the expansion plans. The strategy further commits the Council to identify additional locations to serve both the Clifton Down area and the city centre, and to cater for the increased coach demand resulting from regeneration and the increase in tourist attractions. The bid accordingly contains provision to improve coach parking facilities in the city.

50. The coach management and parking strategy adopted by Bristol also includes provision for a number of other elements that need to be addressed, for example pre-journey information, set down and pick up points and suitable routes.
Passenger Rail Services

“Out-commuting from city centre to north fringe is almost as high as in-commuting. Rail is the only answer - much more radical, more stations, more lines.”

Questionnaire response

51. Bristol is the regional capital of the South West, and has good intercity rail connections. Bristol has two major rail stations: Temple Meads on the edge of the City Centre and Bristol Parkway just outside the City Council’s administrative boundaries. There is also a limited local rail network with potential for expanded use.

52. The Council, through the Joint Strategic Planning & Transport Committee, has adopted a Joint Rail Strategy for the radical enhancement of rail services in the Bristol–Bath sub-region, based upon the policies of the Structure Plan and the Regional Transport Strategy (see appendix 3.9).

53. An early priority of the Strategy is a joint study of rail potential within the sub-region, to be pursued in parallel with, and complementary to, the development of the Council’s Light Rail strategy.

54. Although Local Transport Plans are not the principal bidding channel for rail development funds, they are required to make reference to Rail Passenger Partnership (RPP) bids. These appear in the Strategy. The Transport Plan also makes reference to the Council’s other parallel rail capital initiatives and to rail revenue support.

55. In the former Avon area, the 1999 rail census showed total station usage at a 20-year high, having risen 53% in the last 5 years. The strongest performers have included stations where the Councils and rail companies have jointly funded station improvements and increased service frequencies. At some stations growing demand is stifled by lack of capacity or a poor quality service. In total 36,000 people are estimated to board stations in the area each day.

The Strategy

56. The strategy is intended as an overall framework for further progress in improving the local rail system.

57. The vision for a rail network in the area is:

Local services:

- fast, comfortable and reliable local passenger services, at clock-face intervals;
- at least half-hourly services at local stations through the day on weekdays;
- local services to run until at least midnight Mondays to Saturdays;
- urban stations developed as useful local facilities for their areas;
- stations as first-class interchange points with other modes;

Information and Fares:

- information and through-tickets to be readily accessible;
- affordable fares;

Interregional Services:

- half-hourly interregional services;
- new rolling stock during the Structure Plan period;
- connections between local and inter-regional services guaranteed at main interchange points on the system.

58. The emerging cross-city network illustrated in Figures 5.4 and 5.5 should form the framework for development.

Targets

59. The joint Strategy has agreed the following targets:

- a 5% per annum increase in rail use on local passenger services in the area over the Local Transport Plan period to 2006;
- a rail modal share of at least 1.5% for journeys to work by 2006.

60. To achieve these targets, and to prepare for further expansion in the future, a number of administrative changes are desirable, as follows:

- area franchises awarded to separate train operating companies;
- accumulation of a land bank for rail expansion;
- financing of infrastructure and service improvements - principally but not solely through Rail Passenger Partnerships;
- marketing.

A Bristol Rail Management Area

61. The Council supports the proposals of several train operating companies for a Rail Management Area focused on Bristol, and feels that this would improve upon the current situation whereby local train services are reliant either upon long-distance through services, or on management from a distant point. The Council wishes to impress upon the Strategic Rail Authority the advantages of such an arrangement as a basis for the next round of rail franchise decisions.
Figure 5.4
Rail Services 2000

Figure 5.5
Target Rail Services 2006
Land for Rail Uses

62. The likely growth of rail usage, both locally and nationally, from additional trips which the road network cannot accommodate, will require additional land to be set aside for rail-related purposes, through both negotiations and purchases, and safeguarding where possible through inclusion in Local Plans.

63. In the Bristol area this will include:
   - additional depot space to serve the expansion and replacement of rolling stock fleets, the needs of different franchise holders with changing franchise areas, and the needs of freight operators as freight contracts change;
   - reserve a site for a rolling stock maintenance depot as a preferred future use;
   - identify and retain an additional site in the Bristol area for sidings for passenger rolling stock storage;
   - retain a site as a Light Rapid Transit depot.

64. Particular concern centres on the proposed sale by Railtrack of the Bath Rd Depot, and on the railway land at Bedminster West Depot / South Liberty Lane currently proposed for release by Rail Property Ltd. Also at risk is Henbury station, and the Light Rail / Bristol Electric Railbus alignment at the Ashton Gate connection to the Portishead line, both owned by Rail Property Ltd. In the Council’s view all these sites must be secured by an appropriate authority for future rail use, including new low-cost stations. The needs of passenger rail and rail freight overlap here. A bid is included for acquisition of redundant rail land if sufficient funding is forthcoming.

Rail Passenger Partnership (RPP) bids

65. As a result of the agreed Strategy, the joint Authorities are committed to technical work towards an RPP bid on the Gloucester – Yate - Bristol Parkway– Bristol Temple Meads – Weston services, as first priority. Both arms are major commuter corridors into Bristol, currently dominated by the car mode.

66. The Council will in addition explore the potential of an RPP bid for the Severn Beach line, as a potential heavy rail interim phase before possible Light Rail conversion. In parallel, the Strategy commits the Councils to examine the potential for re-opening the Severnside – Henbury – Filton freight line for passengers, to link to Bristol Parkway or directly to Bristol Temple Meads. The Council recognises the potential advantages for access to the Severnside and North Fringe employment areas, and the more local benefits for north Bristol residents.

67. The Council likewise supports the studies underway by North Somerset Council into the re-opening for passengers of the Portishead line, currently planned for re-opening for freight. The Council recognises the potential benefits in enhanced services to Parson Street and Bedminster stations in the less advantaged parts of inner south Bristol, and a reduction in car commuting from the Portishead area.

68. In addition, the Authorities will explore:
   - using influence on Railtrack’s investment programme, franchise specifications and track access charges under the SSRAs Incremental Output Statement where possible, including the proposals for new infrastructure,
   - use of developer funding,
   - use of RPP and other funding to improve bus and cycle access to stations.

Marketing

69. Improved marketing includes the use of information, promotion and travel awareness campaigns, in association with train operators and building on the Community Rail Partnerships already established for Bristol – Severn Beach and Bristol –Weymouth services.

70. Partnerships with the train operating companies and other agencies will be pursued with the aim of promoting the use of local rail services, particularly for leisure purposes. To this end, the Council will also work with train operating companies to extend and improve cycle carriage facilities on trains.

Temple Meads station

71. The Council is working with the station operator and the other transport operators to achieve major interchange facilities at this principal intercity and interchange station in the city. Current refurbishment and planned capacity improvements will enhance its facilities and reinforce this function. It is important that further developments at Temple Meads incorporate improved interchange with all other transport modes.

Severn Beach Line

72. The Severn Beach Line is the only heavy rail branch line operating largely within the city boundaries. Revenue support of £112,000 per annum is provided by the Council for the provision of three return off peak journeys on the line, over and above the franchise requirements. This support enables an hourly service that is provided throughout the day and into the evening.
In 2000/1 a Community Rail Partnership is planned for the Severn Beach line together with an improved daytime and evening service. The partnership will bring together local Councils, rail companies, community and support groups to work to develop and promote the line to increase usage and thereby secure its long-term future.

The Council has funded a number of special charters on the Severn Beach line on Sundays in order to promote the use of the line in the community. The most recent of these, held during Green Transport week in June 2000, attracted some 1,100 passengers. It is intended to continue to develop these services.

**Station and access improvements**

The Council will continue with partnership and Transport Plan funding for capital investment schemes to improve passenger facilities at local stations, including real-time information, security measures, waiting shelters, environmental enhancements, and improvements in access to stations by foot, cycle, bus, taxi and car. The Council will encourage the carriage of cycles by rail, and the development of appropriate rolling stock to achieve this.

**Light Rapid Transit (LRT)**

"I would use Rapid Transit if it served my part of the city."
Car user

"A Rapid Transit scheme is the measure most likely to achieve long term success."
General response to the consultation

"Bring back the trams!"
Pensioner

A Rapid Transit system emerged as the single most popular issue from the extensive consultation the Council carried out on this plan, with 90% of people stating that they wished to see its introduction into the city.

The need for a Rapid Transit system to serve the Greater Bristol area forms a significant element in the integrated strategy required to deliver the objectives set out in the LTP. A Rapid Transit system offering the opportunity for a quantum leap forward in improvements to the quality, speed, convenience and accessibility of public transport has been developed by the Council working in partnership with South Gloucestershire Council and the private sector.

Exhaustive testing of appropriate technologies, routes and the phased introduction of a wider network has resulted in the decision to promote a light rail route between Almondsbury and the City Centre as Line 1 (see Figure 5.6).

The early involvement of the private sector in developing the scheme has resulted in a significant increase in Value for Money through the sharing of costs and risks of the development stage of the project, the identification and allocation of future risks and a business overview which has influenced positively the nature and performance of the project. An outcome of this process was the production of a commercially-validated Outline Business Case which was submitted to Government in August 1998. The Outline Business Case demonstrated that the scheme conformed to the criteria set out in the Government's White Paper on Transport and was likely to achieve a high level of private sector investment – approximately 60% of the capital cost, then estimated to be £102m.

Central Government is supportive of the role of Light Rail in delivering integrated transport, and recent Government guidance has emphasised that light rail schemes are effective in providing high quality public transport in densely used transport corridors and encouraging motorists to switch from their cars. The report of the ETRA select committee on Rapid Transit, published earlier in 2000, continues to build on this support.

At a local level, responses to the consultation on the development on the Local Transport Plan demonstrates it support for the strategy and for the Rapid Transit proposals. Furthermore, the provisional Local Transport settlement letters received by the two authorities in December 1999 were supportive of the scheme and its role within the strategy being promoted and recognised the partnership between the two Councils.

Rapid Transit forms an integral and essential part of the Council's transport policies. The studies from which the project has been developed have shown that without Rapid Transit the Council will not be able to meet its targets for reducing travel demand by car, reducing congestion and traffic-related pollution. Light rail technology has been demonstrated as the cornerstone of the most effective way to meet the objectives of the Council, whilst proving to be the most cost-effective and only practical solution for the corridor served by Line 1. The system will share existing rail infrastructure over a significant length of the route and Railtrack will play a large part in project investment. Line 1 creates an opportunity to provide an integrated public transport network comprising Rapid Transit, rail and bus services working together; sharing interchanges, ticketing and information systems and other improved facilities to the considerable benefit of the community.
Figure 5.6
LRT Network Plan

KEY
- Line 1
- Proposed Future Network - subject to detailed route appraisal
- Built-up Area
Figure 5.8
LRT South Gloucestershire

Key
- LRT Line & Stop
- Employment
- Other trip Attractor
- Bus Link

Widening Choice

Bristol Transport Plan 2001/2 - 2005/6

Chapter 5
The location of Rapid Transit in the Avon Area has been chosen to maximise its role in meeting transport needs and strategic objectives. It links the major employment areas being developed at Filton/Parkway and the large and expanding residential area at Bradley Stoke with Bristol City Centre. It also serves the main northern access corridor into Bristol City Centre, including areas of new employment and residential development where car ownership and use is relatively high. The northern route provides an important strategic link from Bristol Parkway station and the vicinity of the M5/A38 interchange to Bristol City Centre. It would also assist in meeting regeneration objectives for the inner city suburbs of Bristol. The route is shown as Figures 5.7 and 5.8 which illustrates the stops, interchanges and major land-uses served.

Bristol City Centre has a total workforce of over 90,000. A large number of workers will be within easy walking distance of the Rapid Transit route. Major employers in the city centre include banking, financial and legal services, several hospitals, the University of Bristol, local government, and retailers in the Broadmead Shopping Centre. At the eastern end of the city centre section, the Rapid Transit will serve Temple Meads railway station and will greatly improve accessibility for rail travellers into and through the city centre.

The South Gloucestershire section of the route primarily serves a corridor of mixed residential and office development with a total estimated population of 75,000 and employment of about 40,000. Feeder services would widen this coverage. The inner Bristol suburbs through which the northern section of the route passes is an area of particularly high unemployment (16%) and low car ownership (39% of households without a car). Further north, in the area from Filton to the M5/A38 interchange, lies the major area of job creation in the region, chiefly office development, with over 15,000 new jobs. This includes the Aztec West Business Park, Ministry of Defence Procurement Executive, Hewlett Packard, Du Pont, Sun Life and the University of the West of England. North of Bristol Parkway station is the new township of Bradley Stoke, one of the largest new housing areas in the UK which will eventually comprise 8,500 houses and a population of about 25,000, now more than half completed.

Rapid Transit will also serve a large number of potential sites for office and industrial development. In all, it is estimated by the planning authorities that the potential exists for about 400,000 square feet of new office development on sites with planning approval or proposed which would be within easy pedestrian reach of the central area Rapid Transit routes.

Conservative estimates of the performance of Line 1 indicate that it will remove 5 million vehicle kilometres from the road network in the Avon Area, 2.2 million of which would be in the peak hours. Patronage levels are forecast to rise to 11.5 million passenger journeys per annum in 2015.

Ongoing work to develop the project has latterly concentrated on a review, with the DETR, of the Outline Business Case. In particular the capital costs have been updated to a base of £120m. This has been incorporated into a new economic appraisal based on the Outline Business Case which is reported in the Appendix 7.

An appraisal Summary Table (AST) for LRT Line 1 is included in Appendix 7. It is anticipated that the Scheme Appraisal will be developed further over the Autumn, as the results of work currently being undertaken in consultation with DETR are incorporated and the scheme progressed to the Transport and Works Act stage.

The project has been specifically acknowledged in the Governments 10-year plan for transport as one of new Light Rail schemes currently under consideration by Government. The government stated “Transport 2010 includes billions of pounds of public private investment for light rail schemes. This could allow the Bristol and South Gloucestershire Rapid Transit scheme to proceed, subject to the normal requirements for value for money appraisal and planning powers and satisfactory funding arrangements being agreed with the authorities.”

Procurement of the project and funding issues are being developed and the Councils expect to pursue a public-private partnership arrangement to develop and finance the scheme. The Rapid Transit Scheme will generate substantial revenues however, as with any light rail scheme, the income generated will not be sufficient to make the scheme financially free-standing when account is taken of the initial capital cost.

The Councils are examining the availability, extent and timing of additional funding from central government and are actively pursuing other local sources including the potential for hypothesating revenue from Road User Charging in Bristol City Centre. The Councils have had extensive discussions with Partnerships UK and expect to be able to present proposals to government which achieve the most efficient use of both public and private contributions.

**Bristol Electric Railbus (BER)**

BER is a 35-passenger capacity tram powered by a steel flywheel designed to run on special, lightweight railway track using electricity from a
renewable source. The vehicle can genuinely claim to be entirely pollution free. This may offer a number of advantages to the city, either in areas where size and zero pollution at the point of use are more important than speed or distance or for shorter distance park and ride as an alternative to bus services. The City Council has been supporting this scheme in the following ways:-

- Assisting the promoters of the technology in establishing a route running between the south sector of the commercial centre (central Bristol) and the SS Great Britain on a prototype basis for an 18 month period (providing a grant of £25,000). The trial has resulted in over 50,000 paying passengers.
- It commissioned a study as part of a European Union funded project (CENTAUR) examining the technical and commercial possibilities of introducing a BER vehicle into the City Centre.
- It has actively supported BER in bids to Government and to Europe for funding.
- It is seeking to acquire land and track from Rail Property Ltd in order to extend the service to the CREATE Centre where a large number of office staff are now based, as the ‘flagship’ environmental centre for the city, which also attracts large number of visitors.

**Future Progress**

94. A new vehicle is shortly to be commissioned which, it is believed, will be more reliable and efficient, while using the same environmentally-friendly technology.

95. Once the extension of the service to run from South Harbourside to the CREATE Centre is secured, the operator of BER has plans to extend the service at both ends. At the eastern end the intention is to provide a third of a mile link from South Harbourside to the heart of the city adjacent to The (Tramway) Centre. This will involve street running for which Transport and Works Act powers will be required, although the operator is keen to explore with government a lower-cost way of obtaining the necessary powers, in keeping with the scale of the railbus operation, which could then be used as a model approach for introducing on-street running elsewhere. At the western end, the operator proposes to extend the route along existing railway alignments and across private land to serve existing and proposed developments at Ashton Vale, including Bower Ashton University Campus and an urban village development with minimum car dependency. The proposed route is shown in Figure 5.9. If both extensions are secured a total route length of some 3 miles will be established.

96 The Council believes that this would provide an extremely effective test bed for new, clean and efficient tracked vehicle transport technology, linking residential, employment and leisure destinations with the City Centre. The project is very much a private and public sector partnership. The operator has to date invested some £500,000 in developing the railbus. The Council for its part, in addition to £20,000 operating subsidy, has secured funding of up to £20,000 towards the cost of extending the service to the Create Centre from a planning agreement attached to the expansion of office accommodation there (to be paid within 3 years of occupancy). The Council has further given the project £5,000 towards a consultancy study of the possible route extensions.

97 Negotiations are continuing with Rail Property Ltd over the transfer of former rail land to the Council to enable the rail alignment from the Industrial Museum to the CREATE Centre and beyond to be secured. While the land can be acquired at modest cost, it will require the Council to accept maintenance liability of three rail bridges on the route. Two of these are bridges carrying roads over
the former railway land and are in poor condition and will require an estimated £284,500 to strengthen them to meet heavy lorry loading requirements. As Rail Property Ltd bridges, these are outside the normal allocation of bridge strengthening funds through the Transport Plan bid. The third bridge, Ashton Avenue Bridge, is a rail bridge over the River Avon New Cut, although it also accommodates pedestrian and cycle movements as part of the National Cycle Network. It is estimated that this bridge requires expenditure of some £250,000 to arrest its deterioration. The Council is therefore seeking in its bid for 2001/02 an additional £500,000 to strengthen these three bridges to allow the Council to accept the burden of acquiring these liabilities from Rail Property Ltd, and to allow BER to extend its operations.

98. Once Rapid Transit Line 1 is secured, and subject to new sources of funding becoming available, the intention is to develop a wider light rail network for the greater Bristol area, of which the Bristol to Portishead line is a part, as illustrated in figure 5.6. Accordingly, the Council will secure an agreement with BER that the possible freight use and eventual requirements of light rail on this line will take priority. The investment in strengthening the bridges on this line will, of course, be beneficial to both the BER operation and eventual rapid transit.

Ferries

99. The City Council recognises the importance of waterways for transport and recreation.

100. There is a regular ferry service around the City Docks, which is mostly aimed at the tourist market. However, the operator also runs peak-hour commuter services that serve Temple Meads station, where new landing stage facilities and improved access from the station are being provided as part of a major new development. This provides a useful, though currently under-used alternative mode of transport to city centre employment sites. The Council is working with the Harbormaster's office to develop a strategy for possible future investment in the ferry service, e.g. through provision of new landing stages, improved passenger facilities and promotion/support for a commuter water bus service, including the use of a wheelchair-accessible boat. Discussions with the ferry operator are at an early stage, but could result in a partnership agreement.

101. The Council has a longstanding policy, incorporated into the Bristol Local Plan, of securing public access to the waterside areas of the City Docks. A continuous pedestrian walkway around the floating harbour is now almost complete. This is linked with the established Avon Walkway, which runs the entire length of the waterway within the city and upstream to Bath and beyond. The Council allocated £30,000 in 1999/00 for initial survey work and minor improvements at some of the most heavily used landing stages, followed by a further £30,000 in the current financial year to enable major access improvements to be carried out at two sites; Mardyke, where new mooring facilities and access ramp to mobility standards are proposed in conjunction with a local youth organisation, and the SS Great Britain ferry point, where capacity and access improvements are also needed.

102. At some locations, new facilities are being, or can be achieved as a result of development proposals (e.g. Temple Quay). However, further substantial annual expenditure will be required throughout the plan period to make important improvements to more landing stages, together with possible investment in the ferries themselves, in order to achieve the longer term aim of a high quality water transport service, for commuting as well as leisure, through the central area.

Interchange

103. A large number of journeys involve changing mode of travel, for example from car/bus/train to foot or cycle. One of the cross cutting objectives of the Local Transport Plan is to make interchange between modes of transport as seamless as possible. This increases the range of travel choices available and allows greater flexibility for individuals. Fundamental to this objective is that interchange must be kept to a minimum to avoid unnecessary inconvenience for individuals.

104. The future planning and development of interchange facilities will reflect the 'principles of interchange' set out in the Institute of Logistics and Transport guidelines as far as possible. Improvements are also related to development opportunities to make use of developer contributions to address transport implications.

105. All the individual components of the transport plan including walking, cycling, bus and rail strategies, work towards facilitating integration between modes. In addition to the specific mode-based strategies, many other elements will assist and encourage interchange for example:

- Steps towards an Integrated Travel Information Centre such as the 'video wall' at Clifton Down Shopping Centre
- the Legible City initiative improving pedestrian signing
- Travel awareness strategy will raise awareness of what alternatives are already in place.
106. In order to allow an effective analysis of interchange facilities an initial audit of existing interchange locations has taken place. A full list of this audit is included in the 'Interchange Audit' in Appendix 3.11. This covers formal interchange points such as railway and bus stations and number of larger informal interchange points that currently exist across the city.

107. There are also many other smaller informal interchanges taking place, for example parking in the suburbs and cycling to the city centre which are covered in Table 2 within Appendix 3.11.

108. Sites in this list will be subject to assessment against the criteria in the Institute of Transport and Logistics Guidelines. This list will be regularly reviewed and expanded as work on individual elements of the Local Transport Plan is progressed.

109. A number of existing and potential interchange locations are outside the City Council’s boundary, notably at Parkway Station, University of the West of England and several potential Park & Ride sites. The Council will continue to work with surrounding authorities on improving the potential for suburban and rural interchange serving the Bristol urban area.

Benign Modes
Walking

Strategy

113. Bristol’s draft Walking Strategy on which consultation will take place over the coming year (Appendix 3.2) seeks to overcome physical and behavioural barriers to walking and access and to promote walking as an alternative to the private car for short journeys in terms of the benefits to health, community safety, and road safety. Within Bristol 13,000 car journeys to work are less than 2 km in length, and 34% of households do not own a car. Promoting walking can therefore reduce motor traffic, and reduce social exclusion.

The main aims of the draft strategy are:

- To increase walking in Bristol for journeys to work, recreation, education
- To bring walking to the centre of future local transport planning.
- To increase walking through the provision of a safe, accessible, convenient, cohesive and attractive pedestrian environment.

The main targets are to:

- Maintain the number of journeys (i.e. stabilise decline) up to 2002.
- Increase the number of journeys on foot by 10% by 2012.

114. Further targets and indicators for Best Value and Audit Commission will feed into the annual monitoring procedures.

Recent Progress - 1999/2000

Public Rights of Way - Access For All audit

115. Individual Access Audits of the entire Public Rights of Way network of some 600 paths is 70% complete.

116. A Footpath Management Strategy for the Severn Way long distance footpath is being developed this year.

Avon Valley Project

117. The Bristol and Bath Railway Path Access working group has completed an access audit and identified sites have been prioritised for funding. Recent work in Bristol includes the upgrading of three access points to the path to allow better access for disabled people.
City Centre Access Strategy

118. The City Centre Access Strategy 1997-2002 will be revised annually to improve access for people to and within the central area. The 2000/1 review will extend these routes in order to:

- connect surrounding housing areas to the central area, seeking where possible, to establish routes through attractive landscape corridors;
- improve links to bus and rail facilities;
- provide links from areas currently isolated from the central area or public transport routes;
- reduce street clutter and impediments to walking.

Five Year Programme

119. Key areas of work identified in the strategy include:

- Reallocating road space via new transport user priorities.
- Integration of traffic and transport projects such as the revision of the road hierarchy, local safety schemes, traffic management projects, safer routes to school projects, bus corridor improvements together with community safety issues to ensure efficient working.
- Inclusive policies and practices within the pedestrian environment to give equal access for disabled people, non-car-owning households and parents with children.
- Review of design standards for the pedestrian environment.
- Training for officers on access audits, and design issues for pedestrians.
- Enhancing general conditions for walking through improvements to existing networks and the introduction of new walking routes, including:
  - audits of routes to local shopping and community facilities or ‘centres’ to result in a programme of improvements;
  - continuation of the City Centre Access Strategy which will extend routes in order to improve access to the city centre for work, education, shopping and leisure from surrounding areas, and to improve the quality of links between civic spaces;
  - develop a system of accessible routes based on Public Rights of Way and green spaces to allow better access for disabled people to these areas;
  - more effective management and signing of routes;
- improvements to access bus routes and rail stations, in conjunction with bus priority improvements and rail network improvements;
- a programme to remove or design-out barriers to pedestrian movements.

- Continued management of the ‘day-to-day’ pedestrian network, including:
  - minimising delays to pedestrians at signal controlled crossings;
  - installation of tactile rotating cones at all new facilities;
  - continuing programme of maintenance of footways and installation of dropped kerbs;
  - use of enforcement powers to ensure that obstructions to the pedestrian network are reduced.

- Promotion of walking through:
  - practical information, such as the City Centre access map;
  - travel awareness strategies (see Mobility Management);
  - events and activities e.g. the annual ‘Severn Way Fun Day’ attracting over 1100 people to a series of guided walks;
  - travel plans (see Mobility Management);
  - Safer Routes to School (see Safer Routes to School);
  - walk to school campaigns;
  - recreational walking and promotion of links with the countryside, e.g. health walks; in conjunction with the Forest of Avon; Severn Way Long Distance Footpath;
  - pilot healthy walks project;
  - sustainable tourism.

120. The 2000/2002 and 2002/2006 costed programmes, based on these themes, is set out in figure 5.10.
<table>
<thead>
<tr>
<th>Physical Measures</th>
<th>Capital Funding requirement £</th>
<th>2001-02</th>
<th>2002-05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving general conditions for walking these include:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surveys of routes to local shopping and community facilities or 'centres' to result in a programme of improvements (8 centres in the course of the LTP)</td>
<td>Survey and Preliminary Design 8 x £40 000 implementation of survey such as pedestrian crossings, dropped kerbs, footway widening</td>
<td>20,000</td>
<td>320,000</td>
</tr>
<tr>
<td>Consolidate a system of accessible routes within the 578 Public Rights of Way and green spaces such as Greenways to allow disabled access to these areas, including signing, land acquisition and promotion</td>
<td>Community links: 5 per year x £3k Long distance routes: 2 per year for £15 000 per route</td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Centre Access Strategy – completion and extension of safe, accessible and convenient routes to and within the central area, using traffic free green spaces where possible.</td>
<td>Completion of works to 14 routes shown in figure 5.11</td>
<td>50,000</td>
<td>200,000</td>
</tr>
<tr>
<td>Access and safety improvements to Bristol and Bath Railway path</td>
<td>Access works, lighting and signing and interpretation plan</td>
<td>37,000</td>
<td>200,000</td>
</tr>
<tr>
<td>Improvements to access bus routes/stops and rail stations, in conjunction with bus priority improvements and rail network improvements - 20 routes in total</td>
<td>Works to include dropped kerbs, controlled and uncontrolled crossing facilities, ramps and handrails.</td>
<td>50,000</td>
<td>300,000</td>
</tr>
<tr>
<td>Introduce a programme to remove or design out barriers to pedestrian movements</td>
<td>Removal of 20 barriers identified by Bristol residents and Council officers, by 2005</td>
<td>50,000</td>
<td>137,000</td>
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<tr>
<td>Continued improvement and management of the 'day-to-day' pedestrian network in line with Audit Commission findings, including:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimising delays to pedestrians at all signal controlled crossings</td>
<td>Assess all signal controlled crossings to reduce pedestrian delay</td>
<td>5,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Installation of tactile rotating cones at all pedestrian facilities</td>
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<td>5,000</td>
<td>20,000</td>
</tr>
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<td>Continuing rolling programme of improvement of footways and installation of dropped kerbs.</td>
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<td>15,000</td>
<td>90,000</td>
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<td>Use of enforcement powers to ensure that obstructions to the pedestrian network are reduced.</td>
<td>Monitoring and Review of 1997/8 A Board survey and promotion campaign</td>
<td>10,000</td>
<td>40,000</td>
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<tr>
<td>TOTAL</td>
<td></td>
<td>277,000</td>
<td>1,527,000</td>
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</table>
Figure 5.11
City Centre Pedestrian Access Strategy
Cycling

121. ‘A Cycling Strategy for Bristol’ was adopted in Spring 1999, following two full rounds of public consultation. The Strategy included as appendix 3.1. Key principles of the strategy are:

- To substantially increase the level of cycling with a Headline target to quadruple the level of cycling in Bristol by 2012, together with a series of local targets.
- Strong emphasis on the integration of cycling with wider policies recognising the strategic role of cycling within the transport system. This will include the developing road safety strategy; the full range of development proposals and plans, and all traffic and other transport proposals.
- Infrastructure design principles and processes aimed at high quality networks reflecting the hierarchical approach set out in ‘Cycle Friendly Infrastructure’. These principles recognise the need to reallocate space and time in favour of cycling (and walking and public transport) where possible, reflecting the Road User Hierarchy set out elsewhere in the LTP.
- Prioritisation to the primary cycle routes serving the main destinations that have the potential to generate significant levels of cycling, e.g. the Central Area, ‘University’, and other major employment areas.
- Protection and development of a ‘greenway network’ in support of the above, also recognising the need for routes where children and other ‘novice’ cyclists can experience the enjoyment of cycling and develop their confidence.
- Use of the IHT Cycle Review process in identifying need and prioritising investment. This will also enable cycling to be fully integrated into the corridors and bus strategy related work, and ensure that the network is developed in a staged, logical fashion.
- A strong emphasis given to psychological issues as well as physical conditions. Examples include encouraging people to start cycling through leisure cycling, through events and training, and through the provision of information. This is dealt with in more detail in the ‘Mobility Management’ section in this chapter.

The Scope for Increasing Cycling in Bristol

122. A number of factors exist in Bristol which demonstrate that cycling has a crucial role to play in the city’s local transport system as a contributor both to improved health and to traffic reduction targets.

- Bristol’s relatively high residential densities mean that many trips are of short length.
- Cycle routes and facilities in Bristol have attracted a steady growth in cycling; the Bristol and Bath Railway Path has seen a 250% increase in cycle commuting since the late 1980s.
- There is growing community receptiveness to the personal and environmental benefits of cycling cited by:
  - Partnerships with local companies;
  - Increasing participation in cycling events/activities, including recreational cycling;
  - Measures at secondary schools to improve cycle security;
  - Measures at hospital sites to encourage cycling;
  - Strong support for improvements/encouragement to cycling expressed in the Local Transport Plan consultation;
  - Increasing support for the Bike Forum consultation process.
- Route monitoring (see Chapter 9) indicates that cycle traffic into Central Bristol is increasing. However, a certain level of network development is required before substantial levels of suppressed cycle demand will be released. The proposals set out in this plan will represent a step change in the provision of infrastructure from which large increases in demand can be expected. This is supported by computer modelling work carried out in 1997, which suggested that a halving of the accident rate for cyclists is likely to result in an 8-10% share of journeys to work being made by cycle.

The Benefits

123. A 12% level of cycling in Bristol (from the 3% level in 1997) could be expected to reduce car usage by 3-4% in addition to the current daily 1500 trips into the City, that are made by bicycle as opposed to the car. In total the value of reduced congestion cost savings, and health benefits could be of the order of £2-4m per year. There are also significant benefits in terms of social exclusion. A substantial proportion of the population are capable of cycling short journeys, but surveys show that existing conditions are a deterrent. Reduction of these existing problems would enable a cheap and efficient method of transport to become available to children and those without access to a car.
Figure 5.12
National Cycle Network 2000/2001

Key
- Completed prior to 2000/2001
- Under construction 2000/2001
- 'Interim' routes, subject to upgrading 2002-2007
Current Progress

124. Recent years have seen significant progress in the development of safer cycling conditions for cyclists and promotional / information activities, and these were set out in the provisional Local Transport Plan. Infrastructure developments are shown in Figure 5.13.

Other key factors are:

- Development of the Road Safety Strategy, which gives increasing emphasis to collision characteristics along those lengths of main roads where injuries to cyclists typically represent 10-20% of those recorded. This will encourage the future Road Safety programme to greater reflect the needs of cyclists.

- Development of partnerships with the health sector, employers and other groups particularly through the Bristol Bike Forum and the National Bike Week Planning Group (both of which the Council co-ordinates). The Bike Forum continues to grow, and is recognised by members as an effective way of exchanging information and views with the Council, including consultation on specific schemes.

- Partnership schemes with local rail companies to improve cycle storage at both main and local stations. The cycle-parking measures at Temple Meads Station originally introduced in 1997 and increased in 1998 have been particularly successful, with usage increasing by some 200-250%.

- Promotion of a 'code of use' for shared cycle/pedestrian paths and routes. Conversion of footways / paths to shared use are only introduced after local consultation, assessment of alternatives using the ‘Cycle Friendly Infrastructure’ hierarchy and in the context of the new updated DETR Local Transport Note. This approach is explicitly set out in the Cycling Strategy.

Development of Cycle Infrastructure 2001-2006

125. The Primary Cycle Network consists of two broad categories: the main road system; and largely traffic free routes running through open spaces (called ‘Greenways’). Below is set out the approach to each of these categories.

Application of the Cycle Review Process

126. As initially set out in the provisional LTP and consistent with the cycling strategy, a review of the main road network directly serving the city centre and other key destinations has commenced. Ove Arup and David Davies are carrying out the detailed analysis, supervised by a traffic management / transport planning officer group. The Bristol version of the process will expand on the IHT guidelines, to include a method of prioritisation, generation of outline proposals for key junctions, together with broad costings.

127. The general results of the first phrase of the review, covering six routes, are set out in Figure 5.13. A second phase of review is proposed for 2001-2002.

Figure 5.13 Cycle Review
Level of Service Improvements from LTP Proposals

<table>
<thead>
<tr>
<th>Route</th>
<th>Existing</th>
<th>Improved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A38 Gloucester Road</td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>2. B5058 Frenchay Park Road</td>
<td>E</td>
<td>C</td>
</tr>
<tr>
<td>3. A420</td>
<td>E</td>
<td>D</td>
</tr>
<tr>
<td>4. A4 Bath Road</td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>5. A38 South (Bedminster)</td>
<td>E</td>
<td>C</td>
</tr>
<tr>
<td>6. A4018 Park Street/ Whiteladies Rd</td>
<td>E</td>
<td>D</td>
</tr>
</tbody>
</table>

The Relationship between the Cycle Review and the Greenway Network/National Cycle Network

128. The Cycle Review builds upon the City Council’s long standing policy of providing improvements for cyclists on major vehicular routes, particularly where junctions are being remodelled. In parallel with this the Council continues to develop largely traffic free Greenway routes running through open spaces (safeguarded and improved through Local Plan policies). These greenways offer day-to-day routes for commuters and other utility journeys. A number of major greenways have been developed in Bristol linking suburban and district centres to the central area.

129. The current situation is indicated on the ‘Strategic Cycle Network’ map. Outstanding greenway proposals meeting the priority criteria set out in the Cycling Strategy are:

A. NCN Route 3. ‘Stockwood - Brislington - Temple Meads - Bristol City Centre’. An ‘interim’ route has been established for the opening of the NCN in June 2000. Some sections are below the standards that the Council would wish to achieve, and final sections of this route will be progressed during the 2002-2004 period.

B. NCN Route 4. Henbury - Westbury-on-Trym - Redland - Bristol University - Bristol City Centre. As with NCN route 3, further measures will be developed over the 2002-2004 period to upgrade the interim route.

C. NCN Route 4 Braided, much of this route within Bristol is in place, funded largely through developer contributions, SRB and Millennium funding.
Figure 5.14

KEY

- Existing Greenways or other strategic routes (including N.C.N)
- Routes subject to Cycle Review Phase 1
- Priorities for 2001/2002 (reference to programme)
- Priorities for 2002/2006
- Routes to be provided through other types of funding
- Greenways referenced in the main text
- Existing Employment Areas

Existing Greenways or
other strategic routes
(including N.C.N)

Routes subject to Cycle
Review Phase 1

Priorities for 2001/2002
(reference to programme)

Priorities for 2002/2006

Routes to be provided
through other types of
funding

Greenways referenced
in the main text

Existing Employment Areas
D. Bristol/Bath Railway Path. Provision of lighting to the outer 2 km required and further improvements at Midland Road.

E. Malago Greenway. (Bishopsworth/Hartcliffe - Bedminster - City Centre). Additional measures to connect the network into the central area are required (Dean Lane; Prince Street Bridge). Additional linkages to the network to be funded primarily through SRB and developer contributions.

F. North Bristol Cycleway (Bradley Stoke - Lockleaze - Ashley - City Centre) providing a new strategic link also serving the University of the West of England, the North Fringe employment area and City of Bristol College.

G. Avon Valley (City Centre - Hanham).

H. Portway - (Park Road - Avonmouth and Street Andrews Road).

I. Long Ashton – “Chocolate Path” - City Centre.

J. City Centre - Frenchay.

K. Stockwood - Bloomfield Road.

**Prioritisation**

130. The 2001/2002 cycling programme and outline bid programme for the 2002-6 period has been prioritised on the following basis:

- Scope for integration with corridor-based work, including bus priorities.
- Support to the key strategy element of developing routes serving main destinations.
- Scope for targeting existing short car journeys.
- Value added in conjunction with:
  - Safer Routes to School Projects.
  - Highways Maintenance Scheme.
  - Development Opportunities.
- Resolution of problems identified by users (particularly through the Bike Forum) at locations where demand is suppressed, and tackling safety problems.
- Cost effectiveness.
- Recommendation from the Cycle Review First Phase.
- Extent of legal, technical, land and planning constraints (which will influence lead in time).

131. The Council frequently received requests for cycling improvements from members of the public. A system of prioritisation of these requests has been adopted.

**Minor Works**

132. Small measures to tackle problems on the highway network separate from the primary cycle network. These would include:

- Cycle parking facilities.
- Links into and improvements to existing cycle facilities, e.g. drop kerbs, short lengths of cyclepath, etc.
- Building on innovative schemes developed for the cycle network, e.g. contra-flow cycling.
- Minor traffic management measures, e.g. markings for cycle facilities, refuges to allow for turning movements and informal crossings, etc.

**Value-added budget**

133. There are numerous opportunities to develop cycle infrastructure by supporting other funding arrangements to extend their scope. These would include:

- S106 agreements – these can open up opportunities for cycle network development, allowing for works to improve cycle access beyond the scope of the agreement.
- SRB and other similar budgets that allow for more area-wide cycle infrastructure to be developed, based on partnership funding.
- Rail Passenger Partnerships – opportunities for developing Safe Routes to Stations and cycle facilities at stations.
- Other opportunities such as through traffic management schemes, Safe Routes to Schools programmes and Home Zone Projects, to develop cycle infrastructure to link into these.

**Cycling Bid Programme - 2001-2006**

134. The bid below is based on the prioritisation of £100,000 and schemes; the minor works element; the value added budget and the need to extend cycle review into at least 2 additional phases. The bid also allows an element for the signing of the network, as it expands to be reviewed and be brought up to date with the network’s full extent.
### Cycling Programme

**2001-2002**
- NCN Bristol North Braided Route: £20,000
- Stockwood - Brislington: £60,000
- BBRP lighting: £60,000
- Bath Road A4 (part): £170,000
- Malago Greenway North (part): £100,000
- Avon Valley, part (inner part): £75,000
- A420 (part): £207,000
- North Bristol Cycleway (part): £100,000
- Portway: £110,000
- Cycle Review Phase II: £25,000
- Minor Works: £20,000
- ‘Value Added’ budget (the link with SRB; S106 etc. budgets): £40,000
- Signing strategy: £20,000
- Signing strategy implementation: £20,000

**2002-2006**
- Whiteladies Road: £386,000
- Bath Road A4 (part): £100,000
- Gloucester Road: £218,000
- BBRP - link Midland Road: £120,000
- Malago Greenway North (part): £120,000
- A38 (S): £410,000
- Frenchay Park Road: £303,000
- NCN Route 3: £300,000
- Avon Valley (inc) part: £50,000
- Long Ashton - City Centre: £120,000
- NCN Route 4: £300,000
- Avon Valley (outer): £200,000
- Cycle Review Phase II - implementation from 2004-6: £700,000/yr (2 routes/yr)
- Phase III Cycle Review: £25,000
- Minor Works 2002-3 £30K 2003-4 £40K 2004-06 £50K/yr
- Signing strategy: £20,000/yr
- Value Added budget: £60,000/yr (ave)

### Safer Routes to School (SRtS)

**Strategy**

135. The aims and targets of the strategy can be summarised as follows:

**Aims:**
- A reduction in child casualties.
- Fitter and more healthy children.
- More cycling, walking and public transport journeys resulting in a reduction in car journeys for school travel.
- A less car dependent culture amongst young people.
- Involvement of the school, local community and the local authority in promoting safer travel to school.
- Increased parental involvement in teaching road safety skills.
- To promote a Best Value approach.

**Targets:**
- Increase walking to school by at least 10% by the year 2003.
- Reduce car journeys to school by at least 25% by the year 2003.
- 95% participation of all schools in Level 1 involvement within 2 years*.

(Additional targets in the Road Safety Section)
Progress

136. Since initiating the Safer Routes to School programme (SRtS) in 1999 much effort has been focused on involving schools and progressing schemes. Following the launch of the strategy the City Council has identified a budget and is endeavouring to commence at least four new schools every year. This, combined with those schools already in the programme from one-off expenditure, section 106 funds and other initiatives, has resulted in work taking place at about 20 schools during this current year, 2000/2001. These include:

One-Off expenditure
- Henbury Comprehensive School
- Henbury Court Juniors and Infants
- Blaise Primary School
- Brentry Primary School
- Brislington Comprehensive School
- Holymead Junior School
- Broomhill Junior and Infants
- Street Anne's Park Primary School

Section 106
- Bannerman School, Easton
- Dr Bells School, Frome Vale

Safer Routes to School Budget
- Luckwell Primary School required completion from the previous year.
- Sefton Park Junior and Infants
- Street Michaels on the Mount Primary
- Whitehall Primary
- Victoria Park Junior and Infants

In addition to this, work is also proceeding on introducing enforcement of ‘School Keep Clear’ zigzag road markings and introducing pilot 20 mph zones at schools. Furthermore, additional consultation with schools and the Level 1 initiation continues at various schools throughout the city.

Prioritisation in Consultation with Schools

137. Since the publication of Bristol’s Safer Routes to School Strategy (Appendix 3.3), every school in Bristol was given the opportunity to ‘express an interest’ by returning a form in order to be considered for resources in the future.

138. Over 70 (40%) schools responded including infant, junior and secondary from either state schools, or private or voluntary funded.

139. The information received has been analysed and schools have been prioritised as set out in the strategy (Appendix 3.3, Table 1). This includes injury accident data, and observed problems outside the school.

140. A three-level involvement strategy is being undertaken.

Level 1 - All Schools to be encouraged to use Bristol’s specially designed ‘toolkit’ to teach road safety and sustainable issues within the National Curriculum.

141. Bristol recently launched the Safer Routes to School Toolkit, which is distributed to every Primary School in Bristol. This aims to improve road safety awareness and educate children to think about transport alternatives that will make their future cleaner and healthier, via the Literacy hour or the national curriculum. This innovative project has the potential to completely change the way in which road safety is taught in schools.

Progressing selected schools Prioritised for Additional Resources

Level 2

142. Introducing minor traffic management measures – include improvements to the physical environment around the school such as junction narrowings, build-outs, new or upgraded pedestrian crossing facilities, improved lining and signing and street lighting.

Level 3

143. Introducing major traffic management measures – involves an area-wide approach to transport issues which may result in speed management, local safety scheme work, new cycle and pedestrian routes, environmental enhancements, 20-mph zones, incorporating Home Zones.

144. The Road Safety ETP work at Levels 2 and 3 will bring together numerous initiatives such as cycle training, practical child pedestrian training, walk to school campaigns and further assistance in conjunction with national curriculum work linked to the toolkit.

School Involvement at Levels 2 and 3

145. Work will require school involvement from parents, pupils, teachers and governors. A mapping of routes to and from school to identify dangerous parts of their journey, and support for School Travel Plan development will be provided. Each school will be assisted in the development of a School Travel Plan looking at specific transport issues unique to each school.
School Travel Plans

146. The Council supports the new Government guidance on School Travel Plans (STPs) which held a regional launch in Bristol attended by 80 delegates. It is now current practice to request STPs at the Planning Application stage of school expansions, amalgamations, and development, and they will be a main feature of work with schools that are involved in Level 2 and Level 3 of the strategy.

Five Year Programme

147. Funding is sought for at least four new primary schools and two new secondary schools to be funded annually through the Local Transport Plan at level 2 or 3 involvement. This will add to schools being funded through other sources, as was the case in 1999/2000.

148. The consultation already undertaken with schools has resulted in the 70 respondents being prioritized but additional schools will added, evaluated and placed in the priority list as received.

149. In addition to promoting measures at specific schools each year the City Council is seeking financial support to promote other citywide and strategic elements of the SRtS. These include:
   • Introducing a citywide traffic regulation order to enable ‘School Keep Clear’ markings to be enforced.
   • Introducing flashing amber wigwags at all school where considered necessary.
   • Introducing 20 mph signs and physical speed restraint measures on highways around schools.
   • Improving public transport links.
   • Improving cycle links.
   • Improving walking links including the replacement of all unsatisfactory bridge/subway routes with at-grade crossing wherever possible, improving public rights of way links and improving lighting and the environment on approaches.
   • Enhancing the Education, Training and Publicity and expanding the School Travel Plans Initiative.

Monitoring of Targets

150. A method of monitoring progress in each of the SRtS target areas is currently being devised which will include Child Casualties: Annual Monitoring Report and Five-Year Assessment.

151. As part of the Road Safety Strategy, each year a monitoring report will be prepared setting out progress against the Plan.

152. The yearly report will include assessments of annual progress in the following areas:
   • Total casualty numbers for the City of Bristol with children separately identified.
   • Cost effective engineering schemes including nature and cost of scheme, and predicted and actual casualty savings with children separately identified.
   • Updated information concerning priority for schemes over years 2 - 5.
   • ETP measures and dedicated resources.
   • Walking, Cycling and Public Transport levels.
Figure 5.15
Safer Routes to School 2001/2002 and Five Year Programme

The following table identifies the schools targeted and a variety of other traffic measures proposed which form the five year programme. However, it should be noted that as the continued consultation programme evolves other schools will be identified, prioritised and added to the list.

### School Specific

<table>
<thead>
<tr>
<th>Schools</th>
<th>Target Year</th>
<th>Proposed (2000-2001) and completed measures</th>
<th>Specific Traffic Engineering/ Education/Training</th>
<th>Funding source(s)</th>
<th>Capital Expenditure £ 2001-2</th>
<th>2002-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Henbury Secondary Phase 2</td>
<td>2001-2</td>
<td>Henbury Home Zones and NCN</td>
<td>Continue area wide traffic management, incorporating 20 mph zones, cycle lane provision, pedestrian facilities.</td>
<td>Capital</td>
<td>100,000</td>
<td>nil</td>
</tr>
<tr>
<td>Brislington Secondary Phase1</td>
<td>2001-2</td>
<td>None</td>
<td>Continue speed reduction measures, cycle and pedestrian facilities.</td>
<td>Possible S106 and capital</td>
<td>30,000</td>
<td>70,000</td>
</tr>
<tr>
<td>Teyfant Primary</td>
<td>2001-2</td>
<td>Wig wags and signing improved.</td>
<td>Various minor traffic management measures being considered.</td>
<td>SRBS and possible S 106</td>
<td>20,000</td>
<td>Nil</td>
</tr>
<tr>
<td>Dr Bells and Street Matthias Infants and Juniors</td>
<td>2001-2</td>
<td>School amalgamation works provided some minor improvements</td>
<td>SRTs survey completed Oct 98, amalgamation works to be monitored. Additional SRTs works required.</td>
<td>Capital</td>
<td>20,000</td>
<td>Nil</td>
</tr>
<tr>
<td>Street Peter and Paul Phase 2</td>
<td>2001-2</td>
<td>Phase 1 – Aberdeen Rd/ junction Coatham Hill 1 2000/</td>
<td>Area wide pedestrian improvements required (will benefit students and commuters walking to work). Hampton Rd, Coatham Hill, Whiteladies Rd and links to school.</td>
<td>Section 106 for Coatham Hill works and Capital</td>
<td>20,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Knowle Park</td>
<td>2001-2</td>
<td>None</td>
<td>School Crossing Patrol would benefit from improved crossing facility, but speed reduction and road safety improvements required – petition received.</td>
<td>Capital</td>
<td>20,000</td>
<td>30,000</td>
</tr>
<tr>
<td>West Town Lane</td>
<td>2001-2</td>
<td>Pelican build out, anti skid surfacing to pelican and zebra</td>
<td>Speed awareness/management measures combine with works to Brislington Secondary.</td>
<td>Possible S106 and Capital</td>
<td>50,000</td>
<td>Nil</td>
</tr>
<tr>
<td>Christchurch Primary</td>
<td>2001-2</td>
<td>None</td>
<td>Junction improvement/control haphazard parking, to benefit all pedestrians and cyclists in the area and allow introduction of a School Crossing Patrol.</td>
<td>Capital</td>
<td>40,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Clifton College</td>
<td>2002-5</td>
<td>Parking restrictions proposed 2000/1</td>
<td>Education, training and awareness raising due to predominantly car travel to school.</td>
<td>Capital</td>
<td>Nil</td>
<td>5,000</td>
</tr>
<tr>
<td>Barton Hill Infants and Nursery</td>
<td>2002-5</td>
<td>School is proposing linking infants to playing field.</td>
<td>Footway and junction improvement required, and possible extension of 20 m.p.h limit.</td>
<td>Possible New Deal for the community</td>
<td>Nil</td>
<td>10,000</td>
</tr>
<tr>
<td>Avonmouth Primary</td>
<td>2002-5</td>
<td>None</td>
<td>Education and training.</td>
<td>Capital</td>
<td>Nil</td>
<td>10,000</td>
</tr>
</tbody>
</table>
### Widening Choice

#### School Targets Proposed (2000-2001) Specific Traffic Engineering/Funding Capital Expenditure £

<table>
<thead>
<tr>
<th>Year</th>
<th>Proposed/Completed Measures</th>
<th>Specific Traffic Engineering/Education/Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-5</td>
<td>Footway widening 98/99</td>
<td>Popular cycle route, vehicle speed problems identified, some physical improvements and restraint required - education and safety training required.</td>
</tr>
<tr>
<td>2002-5</td>
<td>SRtS level 2 implemented on Hope Chapel Hill 97/8</td>
<td>Major problem identified is long distances travelled to school, central location, parking restraint and control required around school.</td>
</tr>
<tr>
<td>2002-5</td>
<td>Bishop Road calmed 95/6</td>
<td>Review calming scheme in light of SRtS study. Education required to encourage walking.</td>
</tr>
</tbody>
</table>

Other Schools: Schools to be identified as part of the ongoing consultation.

---

### General Citywide Traffic Measures

#### Measures/Target Reason Funding Capital Expenditure £

<table>
<thead>
<tr>
<th>Action</th>
<th>Target Year</th>
<th>Reason</th>
<th>Funding source(s)</th>
<th>Capital Expenditure £ 2001-2</th>
<th>Capital Expenditure £ 2002-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citywide Traffic Regulation Order</td>
<td>2001 - 2005</td>
<td>This would enable the enforcement of ‘School Keep Clear’ markings improving visibility close to the school entrances by preventing parents ‘dropping off’ children. A formal order would enable car parking attendants and the Police to take action.</td>
<td>Revenue</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>Flashing amber wigwags</td>
<td>2001 - 2005</td>
<td>To raise awareness of the existence of a school to drivers in the area at the am and pm peaks at all remaining schools that require this measure.</td>
<td>Capital</td>
<td>10,000</td>
<td>40,000</td>
</tr>
<tr>
<td>20 mph Speed restrictions</td>
<td>2001 - 2005</td>
<td>Advisory/Mandatory speed restrictions possibly involving area wide traffic calming, possibly incorporating cycle and public rights of way routes and Home Zones. Will benefit wider community.</td>
<td>Capital</td>
<td>50,000</td>
<td>600,000</td>
</tr>
<tr>
<td>Cycle Route Improvements</td>
<td>2001 - 2005</td>
<td>To increase/improve routes linking with the existing cycle network and to promote cycling to school requires the identification and provision of specific routes, particularly at secondary schools. Additional features include: Traffic calming, on-carriageway cycle lanes, Cycle bypasses and narrowings New segregated cycle routes and toucan crossings.</td>
<td>Capital</td>
<td>50,000</td>
<td>400,000</td>
</tr>
<tr>
<td>Cycle Training and Proficiency Continuous</td>
<td></td>
<td>To provide cycle training in conjunction with the promotion of cycling.</td>
<td>Capital</td>
<td>25,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Public Transport Improvements</td>
<td>2001-2005</td>
<td>To improve existing facilities such as bus stops and crossings to bus stops on known routes Bus lane improvements - bus priority lanes. Promote options for increasing frequency and number of buses at peak time (am) to encourage school children to use public transport.</td>
<td>Capital</td>
<td>20,000</td>
<td>200,000</td>
</tr>
<tr>
<td>Walking</td>
<td>2001-2005</td>
<td>Provide safe and direct routes to school incorporates: replace bridges and subways with at-grade (puffin) crossings; improve the environment ie landscape, lighting; improve the Local Public Rights of Way network; In line with proposals within Bristol’s draft walking strategy to improve the directness and convenience of routes including personal safety and security issues.</td>
<td>Capital</td>
<td>45,000</td>
<td>300,000</td>
</tr>
</tbody>
</table>

TOTAL 500,000 2,325,000
Luckwell Primary School - Case Study - Example of Level 2 works

History
Pupils and parents at Luckwell Primary School have experienced problems crossing the road close to the school entrances, due to the volume and speed of traffic, the wide nature of the roads, wide bell mouth for turning traffic. A School Crossing Patrol is employed to assist children in crossing these two busy roads by alternating between the two junctions.

School Involvement
• Discussions between the school, the School Crossing Patrol and co-ordinator and the Road Safety officer, and the area Traffic Engineer.
• Site visit by engineers at school time to assess necessary improvement within the vicinity of the school and to ensure that design of scheme will assist the School Crossing Patrol, and take into account areas where people congregate at school start and finish times, and at the same time benefit local residents accessing the corner shop.

Key Issues
• Poor visibility combined with very wide bell mouth at side road, leading onto a wide main road with a high volume of turning traffic.
• Speed and volume of traffic.
• Visibility of School Crossing Patrol – having to take risks in stepping out into the road some distance to be visible to turning traffic.
• Future development that may increase use of road as a 'rat run'.

Implementation
• Kerb build-outs to narrow carriageway width and facilitate school crossing patrol, slow turning movements at the junction.
• Pedestrian island.
• Road markings, including cycle lanes and delineated parking.
• Proposed new school warning signs and advisory speed limit.

Future work/funding
Further funding from new development has been identified for the length of Duckmoor Road, and part of Luckwell Road. This will involve consultation with parents and pupils about their routes to and from school and in particular their crossing movements along these roads.

Before works

Near completion

![Before works image]

![Near completion image]
**Disabled People**

153. One of the most important recommendations made by the Transport Plan Commission was that

"Both disability and social inclusion should be key elements throughout the plan".

154. Consequently, the plan seeks to consider the needs of disabled people by incorporating these into all of the measures in the plan.

155. Thus, the plan starts with a vision for the city that includes the statement that the transport system should be fair and accessible to all, and from this, draws up a series of objectives. One of these is that the plan should

"ensure that Bristol’s transport system addresses the needs of disabled people".

156. Disabled people are not a uniform group of people and have different mobility impairments and will have different transport requirements, which the Council is working hard to meet. As set out in Chapter 4, an underlying theme of the transport strategy is the need to develop and manage the transport system to improve access for disabled people.

157. Below is the Council’s approach to developing this aspect of the strategy together with consultation on project initiatives.

**Policy Context**

158. Current policy is based on a number of framework documents:

- The Council’s own integrated Equality Policy, which provides a clear set of principles, based on the social model of disability.
- The Disability Discrimination Act (1995). From October 1999 all service providers have had to change practices, policies or processes ‘which make it impossible or unreasonably difficult for disabled people to use a service’. Progress is also being made in meeting the service providers obligations for 2004, for example through the provision of low floor buses and associated infrastructure; the support of community transport and Dial a Ride, and work with taxis.
- Pedestrian policy for Avon (1996/7), which sets out policy principle and provides technical advice including access audit techniques. The guidance will be updated to incorporate recent DETR advice on the use of tactile paving surfaces and will stand as a supporting document to the proposed Walking Strategy.

**Policy Development**

159. The strategy will be taken forward through a number of documents:

- The Strategy to encourage walking. Consultation on the development of a corporate Walking Strategy for Bristol will include groups and individuals from the disability forum, and will be based on the principle of ‘Access For All’ in terms of the provision of pedestrian routes and shared use paths.
- Access Policy and Design Guide - update. The Corporate Access Working Group has been updating the guide in line with recommendations from disabled people - this will seek to set standards much higher than national guidelines such as Part M Building Regulations, in view of the inadequacies in such legislation based on feedback from disabled people, and will be working towards adopting a policy and programme for improvements.

**Current Initiatives and Five Year View**

In addition to the measures being provided through the ‘Walking Strategy’ the needs of disabled people are being addressed in other transport schemes, for example:

**Buses**

160. The Council is looking to improve the quality and accessibility of buses throughout Bristol working in partnership with the bus companies. Low floor buses which, while not perfect, do exceed DPTAC guidelines in terms of access, have already been implemented on some routes making it easier for many people to get on and off the vehicles. The Council does, however, recognise that the limited space available on low floor buses make them less suitable for wheelchair users, but are looking at ways of encouraging bus operators to introduce low floor vehicles with more spaces for wheelchair users, such as on the new Park & Ride buses (which have three wheelchair spaces).

161. There are also proposals within the plan for a significant increase in the number and reliability of buses in the city and for a general reduction in fare prices, including further reductions in concessionary fares.

**Travel Information**

162. Improved travel information is a key part of the plan. Elements of this that will be particularly beneficial to disabled people are:

- The legible cities initiative, which looks at providing greatly improved information for all
users, including audible information for pedestrians, better signing, and more clearly marked routes into the city for pedestrians.

- The introduction of an integrated Travel Information Centre, providing a one-stop shop for, among other things, ‘whole journey’ travel information.
- The City Centre Access Map has also proved popular as it sets out accessible routes, toilets, parking for disabled people and Shopmobility facilities in the centre. This is to be updated in consultation with disabled people.

Rapid Transit
163. All rapid transit lines will be fully accessible.

Walking Strategy
164. A series of measures are set out in the ‘walking’ section of this chapter.

Pedestrian Crossing Facilities
165. A database of formal pedestrian crossing facilities has been developed to identify crossings in need of improvement based on criteria required by the Audit Commission Indicators. Zebra, pelican, puffin crossings and traffic lights with a pedestrian phase, are covered by the commission’s definition. This is dealt with in the UTMC section in Chapter 6.

166. Increased use of rotating tactile cones - a relatively new initiative is for a programme to supplement audible bleeps with rotating tactile cone facilities using a push button. This will be provided at new installations initially as a trial to identify potential limitations. This will improve facilities for disabled people with a hearing impairment or who are dual-sensory impaired.

Development Control
167. As part of the development control process Access Audits are required of developers in order to identify improvements needed to the highway network close to the development.

168. Comments are made to developers on technical issues such as entrance to buildings, ramped and step access, surface materials, parking and drop off facilities, shared use and segregation facilities. This is backed up by the Policy Advice Note ‘Creating an Accessible Environment’.

Footway Maintenance and Improvements
169. A series of footway improvement schemes are undertaken throughout the city each year which improve the surface of the footways and upgrade dropped kerbs and tactile paving where necessary. A separate mobility crossing budget is available to improve access for disabled people. All of these schemes conform with DETR guidance.

Dealing with Footway Obstruction
170. There is a need to prevent obstructions on footways. The ‘where there’s a wheel there’s no way’ leaflet is given to Parking Attendants to target streets where there is a problem in accessing the footway by prams and wheelchairs, due to pavement parking. A campaign has also been carried out aimed at reducing obstructions created by ‘A’ boards, and a leaflet for this has been widely distributed to retailers. The issue of footway parking as a problem for pedestrians, visually impaired people and wheelchair users was raised at the public meetings. Generally, the issue of enforcement is the responsibility of the police, who can only enforce if there is an obstruction to the footway. There would need to be a bye-law for the local authority to take control, and this would involve a complicated legal process. However, a bye-law could yield significant benefits for pedestrian safety and convenience. It is the intention to look at this approach at an early stage of the plan period, (note that the local authority can enforce where yellow lines exist)

Taxis
171. The city Council has taken the opportunity to ensure that greater number of taxis have full access for disabled people. The Council requires any new operator to provide custom-built, London-style Hackney cabs with wheelchair access and for all Hackney cabs to be wheelchair accessible by 2008. This has resulted in some 240 such vehicles in Bristol and whilst it is accepted that there are some types of wheelchair and mobility impairments not suited for this type of vehicle, in general they represent a considerable advance. There is, however, at present no ‘perfect’ taxi which addresses all accessibility needs.

172. The Council is also investigating the possibility of introducing a pilot scheme that would raise kerbs at major taxi stops to improve access to taxis.

Training
173. Officers dealing with Access issues and Community transport have recently received Disability Equality Training, and about 50 Traffic Management/Highway Maintenance officers have received training from the Joint Mobility Unit on the use of tactile paving surfaces. Future training will be provided during the course of the LTP, to enable designer and the practitioners to fully address the needs of disabled people in new designs and layouts.
Widening Choice

Disabled Motorists

174. A significant number of disabled people find that a car is the only way they are able to move around the city. Accordingly, provision is required to meet these needs.

Parking for disabled people

175. The Council is also addressing parking for disabled people near their home and at present there are some 2200 advisory parking bays or white line markings in existence. The purpose of the scheme is to provide residents who hold a Blue (formally Orange) Badge and who have difficulty parking at or near their home a marked parking bay or white lines allowing convenient access. With the introduction of decriminalisation of parking enforcement in Bristol, the Council is now looking at ways of affording some form of legal status to parking bays for disabled people.

176. A number of new schemes are assisting access for disabled motorists, including:-

177. The computerisation of the Blue Badge Scheme.
   • The disabled parking scheme detailed above.
   • A programme of improving access to all Bristol City Council controlled multi-storey car parks

Community Transport as an aid to Disabled People

178. The city Council supports community transport organisations that provide services to disabled or mobility-impaired people through core revenue funding and contributing to capital costs of vehicle replacement. The Council supports the following organisations and services whose operations are explained in the Community Transport Section:- Tripscope (travel advice service); Bristol Dial-a-Ride; EasyRider; Bristol Community Transport; Bristol Shopmobility.

Social Exclusion

179. Areas of social exclusion suffer from high levels of crime, poor health, low quality housing and poor educational facilities. People are often on low incomes and cannot access services deemed essential for the wider population. Transport is an important factor that contributes to this declining process and can affect a variety of social groups: women, the elderly, young people, disabled people, ethnic minorities and those in low-income groups. Socially excluded people are less likely to have access to a car and are reliant on public transport. Many have problems accessing leisure and healthcare facilities and can miss out on job opportunities. Specific measures to address social exclusion and transport in south Bristol are described in chapter 7.

180. The Economic Development Strategy, (Bristol City Council) 1999 – 2004 notes: -

"Inequality of access to good education and training, to cheap efficient public transport links to job opportunities and to support mechanisms such as affordable childcare and physically accessible workplaces are key issues for a large number of the most excluded communities in Bristol which result in a deeply divided city”.

181. The Council and Health Authority have carried out an assessment of the interaction of transport and health and the implications for several inequalities. The case studies draw in this information.

182. Improved transport and improved access to transport can play a large part in reducing social exclusion. The transport initiatives that the Council is pursuing contribute to the overall principles set out in the consultation on a National Strategy for Neighbourhood Renewal, namely reviving local economics, reviving communities, delivering decent services and leadership and joint working.

183. A key initiative is providing better access to public transport. The Council has introduced half-price concessionary fares for pensioners and ensured that New Deal job seekers also are entitled to reduced fares. The showcase bus routes will provide quality links between pockets of unemployment and job opportunities, and the introduction of night bus services will also provide better affordable opportunities of accepting employment that starts or finishes at unconventional times. Community transport initiatives will also provide better access within communities.

184. Another major area in which transport investment described in this plan will assist is in improving neighbourhood environs and returning streets to people. Initiatives that the Council is pursing include Safer Routes to School, 20 mph zones and Home Zones and the overall road safety strategy. There is promise of improved access through the pilot car club scheme, and the introduction of CCTV and the presence of parking attendants on the street will do much to improve perception of security. Initiatives to reduce air and noise pollution are also beneficial to communities.
Case Studies - Women, Elderly people, Young people and Ethnic minorities

Women
Over half the city's population is female and has different transport needs compared with men. They tend to earn less than men, have more domestic responsibilities, which involve complex and multi-purpose journeys, make more trips by foot and are less likely to have access to a car. They have to combine domestic duties with work commitments and possibly care for children and elderly relatives. All these activities will dictate the type of travel patterns involved on a day-to-day basis and will influence their choice of transport mode.

Public transport is often the main form of transport used by women, although for many it is not their first choice. Women often feel constrained by the routes and times of operation that the bus services offer, and feel operators focus too much on commuter requirements. Given the option many women would choose to travel by car. Cars can be useful tools when reducing social exclusion especially for women as they feel secure and allow for several linked short journeys.

Strategy
The Council has adopted the DETR document "Women and Public Transport: the Checklist" and will be working with the local bus and train operators to improve the provision of the services. The Gender Audit pack will provide the framework to assess whether the level of services provided in the city take account of the specific needs of all passengers.

Progress
Discussions have been held with the Women's Forum who outlined concerns about public transport, cycling and walkways. The Council has already begun to address these, for example:

- CCTV in the Bus Station and at key locations in the city centre act as a deterrent to crime and reassures passengers waiting for the buses;
- Ramps have been implemented in Temple Meads to improve access for wheelchairs and buggies with more investment planned;
- The city’s first community car club will be operational in 2000 based in the Knowle ward with women prominent amongst its members;
- Lighting is being extended on parts of the cycle network.

Programme
Alternatives to the car and giving socially excluded people the same opportunities others already take for granted will be targeted:

- Investing in low floor buses and raised kerbs at bus stops on certain routes has begun to improve access for people with pushchairs and heavy bags;
- Improving cycle and pedestrian networks with CCTV in key locations;
- Implement Safer Routes to School initiative;
- Rapid Transit will reduce journey times on public transport and will connect socially excluded neighbourhoods to alternative facilities that would otherwise be unattainable to car less families;

The Council is also looking at the location of taxi stands and bus stops to see whether they can be made safer and will continue to consult with women and involve them in local transport planning.

Elderly People
In 1998, around 69,400 elderly people were living in the city of whom about 44,500 of these were women. The needs of elderly people are synonymous with other groups, although they are more reliant on public transport, suffer from poor health and are restricted to local facilities.

Strategy
The Older Person’s Forum representatives have been consulted and have raised issues concerning public transport, in particular, problems with bus stops located too far from homes and the need for transferable tickets between all bus operators within Greater Bristol. The Council will continue to liaise with the group as their needs are seen as a priority and any improvements resulting from the consultation will have a benefit for all passengers.
Widening Choice

Progress
The Council has increased the level of discount for its concessionary fare scheme from 30% to 50%. It will keep the scheme under review and introduce further improvements when able to do so. It also supports bus services, including local shopping links on which elderly people contribute a high proportion of passengers.

Programme
Community transport is being expanded and taxis are being looked at as possible supplements to the bus services operating in the socially excluded neighbourhoods. A bus service has been started by residents in Knowle West that offers a cheap, regular service for residents of the estate. The project is supported by the Mede Community Centre, which is providing administration, and Bristol Community Transport, which is leasing the minibus. The service will link up key facilities such as the William Budd Health Centre and will reach the needs of local people who can not get to a bus stop. Similar projects are planned elsewhere e.g. in Lawrence Weston.

Young People
Approximately 58,800 people aged between 15 and 24 and around 50,700 children aged between 5 and 14 lived in Bristol in 1998. These groups often rely on parents or older siblings to take them to facilities otherwise unattainable to them. Children do not feel confident using public transport alone, especially in the evening, and can feel intimidated by gangs of youths who travel on buses. The cost of travelling to other communities and the absence of appropriate public transport can also exclude young people from sports and leisure facilities. Older young people may not be able to purchase and run a car and small motorcycles may be a more affordable option.

Strategy
Consultation is continuing between the Council and the Youth Forum and Inner city groups to find out the issues that inhibit them from enjoying benefits provided for all children. FirstGroup, the main local bus company have produced some discounted ticket schemes to encourage patronage of young people. For example, the Bristol City Studentcard is a discounted season ticket available for children to travel to school and the Student Faresaver is aimed at full-time students aged 16 and over and allows them to travel at child fares.

Progress
Initiatives the Council is taking action on include:

- Evening buses will be beneficial for older young people who cannot afford to pay for taxis and may not be able to enjoy entertainment facilities located a few miles away.
- Cycling and walking to school will help children socialise and offers a healthy start to life. The Safer Route to School initiative is promoting this and as long as children receive the proper safety gear and training cycling could become a realistic form of transport for them.
- Home Zones will address some of the safety, parking and movement problems in residential areas. They will reintroduce communal activity onto the streets allowing children to play safely and traffic will no longer have priority.

Programme
As part of the Environment Festival 1-19 July 2000, the Council organised several events including one called "Sort It" where local youths discussed their transport experiences with French and German youths. Another initiative developed by the Department of Education is a National Youth Card which would allow children to have discounts when using facilities for school or colleges such as public transport.

One distinct group within the city’s youth are students, of which there are approximately 12,000 at Bristol University and 23,000 at the University of West of the England excluding several colleges. The Council is entering discussions with these institutions, and is aware of student-focused transport initiatives in other cities. This is an area for transport policy expansion, reflecting both the growing number of student cars on the streets and the number travelling to the same destination often located on the city boundary.’

Ethnic Minorities
From the 1991 census, 5.1% of the Bristol population are from ethnic minorities with the highest concentrations in the wards of Ashley, Lawrence Hill and Easton. These wards suffer from high levels of air pollution and have been identified as part of the Objective II area.
Small local businesses catering for the specific needs of the local population often suffer from through traffic using the local roads as rat runs and from commuters parking near their establishments for the entire day. Customers have difficulty finding a parking space and people have to rely on the current provision of commercial bus services which do not always serve local needs well or connect to facilities in neighbouring areas.

Personal security, crime and safety issues can inhibit members of ethnic minority households to walk in deprived neighbourhoods and often feel unsafe using public transport after dark. The language barrier can be a problem especially for women and elderly people who may be restricted to certain facilities because they do not understand or speak English.

**Strategy/Progress**

These communities have their own communication networks and the Council will use these to ascertain their transport needs. The Council has already consulted the Race Forum and will continue to communicate to improve transport provision for the future.

**Programme**

Future priorities the Council have identified through consultation include:

- Street lighting could be improved to make the areas feel more secure, in particular outside of centres and in open spaces.
- Parking policies need to take into account the local needs of the communities especially around small local businesses.
- Traffic calming schemes in residential streets will address rat runs and road safety problems in local communities.

Local bus routes need to service local shopping centres and other facilities that cater for the specific needs of ethnic populations and connect to other neighbouring areas.

**Travel for ‘New Deal’**

**Strategy**

In Bristol approximately 4,500 people are on the New Deal Employment Scheme. It offers employment opportunities to people who are unemployed and provides the chance for them to gain valuable work experience and develop new skills. While this scheme is successful for some, other clients find themselves disqualified from these jobs through the lack of public transportation to the employment areas. Job placements are often in relatively distant locations and many vacancies offering shiftwork can create obstacles when relying on public transport, these positions tend to be available only to candidates with access to a car.

**Progress**

The Council are liaising with the New Deal Team at the Employment Services to collect and analyse information about movement patterns of the people on the scheme. The preliminary results show that most job centres reported a small number of clients who had difficulties gaining employment, except the south Bristol job centres. Clients reported bigger difficulties from areas such as Bedminster, Knowle, Southville and Withywood in travelling to employment areas of Cribbs Causeway, Avonmouth and Filton.

**Programme**

Due to efforts by the City Council people on the New Deal scheme already receive discounted fares on the local bus services but unsociable hours and other factors can impact on a person’s ability to travel to their work place. The Council will build up a picture of travel patterns over a period of time to identify problem areas. Current bus routes, times of operation and frequency will be analysed to help advise people how to get to the employment areas. Possible solutions include:

- Operating a minibus/taxi service to transfer people to employment areas;
- Encourage car sharing and car clubs.

Furthermore the A38 (s) and A38 (n) showcase bus routes shown in Figure 5.1 will substantially improve public transport access from parts of south Bristol, to the major employment sites in north Bristol.
Airport Surface Access

185. Although Bristol International Airport is four miles outside the city boundary, it is included in this local transport plan because it has strong links with the city both as its single biggest source of demand for air travel and also because of its employment and economic importance to the city.

186. The majority shareholder in the airport is First Group, and Bristol City Council has a minority shareholding. Since First Group operates the majority of local bus services in the area, and also First Great Western trains operating inter-city services between London and the West of England, it is well placed to develop integrated public transport services to the airport.

187. Usage of the airport has grown rapidly to its current level of just over 2 million passengers a year. Investment in new facilities is underway and a new passenger terminal opened in March 2000. This increases passenger capacity to around 3.5 million a year. Complementary investment has seen the introduction of an instrument landing system and improved access off the A38 national primary road.

188. An Air Transport Forum has been established by the airport, in line with the requirements of the Transport White Paper, on which both the Council and North Somerset Council are represented. The Forum has overseen the preparation of an Airport Surface Access Strategy which was published in June 2000. The strategy is included in this plan as Appendix 3.8.

189. The strategy has highlighted the fact that private car use accounts for 85% of all journeys to the airport, which is not surprising in view of the relative remoteness of the site and location in a predominantly rural area. Nevertheless efforts have been made to improve public transport usage, principally by the introduction of a subsidised high quality coach service the Bristol Flyer linking the airport with Temple Meads railway station and Marlborough Street bus and coach station. Use of this service has recently been extended by encouraging staff usage and introducing new stops along the route in South Bristol.

190. The strategy addresses the issues of travel both by airport passengers and by staff. For passengers, the most promising alternatives are the encouragement of usage of the coach service and of shared taxis. Use of the coach service by rail passengers can be increased by the promotion of it as a Rail Air link. The role of car-parking policy is discussed, but usage is sensitive to restraint by forcing increased use of dropping off and picking up by friends and relatives, and would thus be unlikely to result in a net decrease in car travel. For work journeys, the airport has introduced a travel plan and efforts are devoted to increasing usage of public transport, car sharing, cycling and walking.

191. The strategy identifies the importance of the A38-A370 link road as a way of by-passing congestion in Bristol for public transport and private cars alike, and indeed the airport is promoting a public/private partnership approach to funding with the South West Regional Development Agency and other interested parties as part of a wider strategy to regenerate South Bristol. As described elsewhere, this road link is outside Bristol’s administrative area, but the Council will lend its support to its development provided that complementary public transport priorities can be introduced on the A38 and Winterstoke Road in Bristol. In the longer term the airport has an aspiration to develop a new railway station in Ashton Vale at the intersection of the proposed link road and the Bristol to Exeter railway line.

192. The strategy includes targets to reduce car usage as a proportion of total journeys to the airport during the plan period, although it recognises that the scope for change is limited. Total air passenger numbers are forecast to increase to nearly 3 million per annum by 2005/6.

Community Car Clubs

193. Car Clubs (called car pooling/sharing across Europe) are already popular in Europe and involve people using community-based cars, which can be hired for as little as one hour. Car Clubs are a logical extension of the car hire concept to a community level. Successful car clubs provide a whole range of services for members to reduce the need to use a car such as discounted public transport tickets or home shopping deals with local retailers.

194. People can use a car without the bother of owning one. In Bristol this could have considerable potential:-

- Reducing the number of car trips made and making public transport more viable (and potentially reduces car ownership).
- Increases walking cycling, home shopping and combined trips.
- Helps alleviate parking problems and assists energy efficiency.
- Promotes social inclusion.
- Can remove the need to buy a car.
- Can provide cars for local business travel.
Community Car Share Network (CCSN)

195. During 1999 the Community Car Share Network (CCSN) was set up through the DETR’s Environmental Action Fund with support from Shell Better Britain Campaign. The CCSN approach is based on facilitating car clubs through community involvement to launch ‘grass roots’ schemes. The key to a successful scheme is recruiting, retaining and expanding the number of members over time. However, there is also the need for development to operate within a framework that allows costs to be minimised for expansion.

196. The CCSN has provided the national voice to get discounts, cars, arrange insurance the cars and a Toolkit for groups interested in car clubs. Bristol City Council is actively involved in CCSN taking car clubs forward. CCSN is setting up four pilotschemes nationally during 2000.

Current Progress - Launch of BEST (Bristol Environmentally Sustainable Transport)

197. The City Council supported the locally based Bristol Community Car Clubs Association (BCCCA) in its successful bid to set up one of four pilot schemes. The City Council provided nearly £5,000 and staff support to get a feasibility study. The scheme was formally launched during July 2000. BCCCA has been awarded an additional £5,000 from the Sustainable Neighbourhood Fund. The scheme will trade as BEST and BCCCA have set up a separate company to run the car club. BCCCA will continue with the wider remit of promoting and developing BEST citywide.

198. The initial scheme has 25 members and two cars, one of which runs on Liquid Petroleum Gas. The Council is assisting in developing other initiatives such as getting better home shopping deals and getting the major bus operator to offer discounted public transport travel and support to the scheme.

Expansion to other areas

199. The Council has set an initial target to expand the scheme locally and develop in five other areas by 2006. The aim is to ensure that all local schemes in the city are part of the same wider network with the vision for the future of a citywide scheme. This avoids duplication of resources and structures and allows cars to be interchangeable across the city.

200. Development work to expand the scheme will involve substantial resources. In the longer term BCCCA will be able to finance development from BEST, but during the short to medium term financial assistance will be required. At this stage much of the effort has been concentrated on establishing the first pilot scheme. However, it is anticipated that an amount in the region of £15 - 20K per annum will be required to support further development. The Council will monitor progress carefully and provide staff and financial support accordingly.

201. In the wider transport context there is potential for combining a community car club with the development of low car housing and in relation to providing pool cars as part of company Travel Plans. The Council will explore this potential further throughout the life of the transport plan.

Motorised Private Passenger Transport

Cars

202. For the foreseeable future, cars will remain an important form of transport in and around Bristol. The reason for this is obvious: at present, for many journeys cars can provide the quickest, most convenient method of getting around the city. What is more, they make a contribution to those journeys not easily accessible by alternative modes.

Road building

204. Although it has been clearly demonstrated on a number of occasions that, unless tightly controlled, building new roads generates extra traffic – especially in urban areas where demand for road space exceeds supply – there are nevertheless some cases where a limited road building programme will contribute towards the longer term objectives. To this end, the Council is proposing the building of the Callington Road link in South Bristol within the 5-year period of the plan and is also supportive of the introduction of a road link to the south west of the city connecting the A370 with the A38.

Road maintenance

205. The Council continues to spend more on a regular basis on road maintenance than on any other transport related area, £6.8 million this year reflecting its importance for traffic. The Council envisages continuing with similar levels of funding for the foreseeable future.

Signing and information

206. The Legible Cities initiative includes proposals for a radical overhaul of road signs to remove clutter and provide much clearer information for car users. This will make it much easier to get to destinations as quickly and conveniently as possible, thus significantly reducing wasted time and traffic pollution on roads.
Security

207. The Council is looking to improve security for on and off street parking. In particular, the Council has won a number of awards for the security measures within Council owned car parks and is spending some £250,000 on improving security in these car parks this year.

Collision reductions

208. The Council are introducing an ambitious and far-reaching road safety strategy as a core part of the Transport Plan, with the safety of car users very much in mind. The aim of the strategy is to reduce collisions resulting in death or serious injury by 40% by 2010 and collisions involving minor injuries by 10%.

Reduced congestion/journey times

209. One of the major concerns arising from the consultation was the congestion suffered in the city, which is estimated to cost businesses some £50 million a year, and is having an increasingly detrimental effect on the economy. Congestion is hugely frustrating to car drivers and it is therefore a fundamental tenet of the plan to tackle congestion. In some cases, this means the introduction of measures to discourage unnecessary car use (which the RAC estimates amounts to some 20% of total car use), but in others, it can include measures such as road widening to improve traffic flows.

Powered Two-Wheelers

Strategy

210. Motorcycle use is on the increase nationally and its role therefore needs to be considered in any strategy. Motorcycles have become the subject of national debate regarding their contribution to reducing congestion and pollution, and motorcycles could play a role in improving access for certain groups (see social exclusion case study).

211. The Council has inherited some forward thinking policies to assist motorcyclists and has continued with these policies.

• The Council is one of only seven Local Authorities in the country to allow motorcycles to share in the benefit of using bus lanes,

• Motorcycle parking in much of the City Centre is free and unrestricted.

• Secure motorcycle parking already exists in parts of the City Centre and the Council will be expanding this further this year.

212. Allowing motorcycles to use bus lanes is effective for motorcycle users but can be intimidating for cycle users, who are also allowed to use bus lanes. A policy of encouraging motorcycle use therefore needs to be monitored closely to see if it continues to meet the Council’s objectives.

213. The White Paper on transport says the following about motorcycles:-

"Whether there are benefits for the environment and for congestion from motorcycling depends on the purpose of the journey, the size of motorcycle used and the type of transport that the rider has switched from."

Progress

214. At present, the number of motorcycle users is on the increase. There is therefore a need to establish which mode those who are switching to motorcycles previously used. The Council has produced a survey distributed through local retailers and the local British Motorcycling Federation representative to identify the needs of motorcycle users and to help develop future policies. The survey identifies the purpose of journeys, the number of times people commute to work or college, where they park and the type of transportation they used before switching to a motorcycle. Bus lane usage, safety training schemes and the size of motorcycle are also being analysed.

Priorities/Programme

215. The Transport Plan Commission recommended that the Council should differentiate between smaller and larger powered two wheelers and look into ways of promoting smaller powered two wheelers. The Council will use the results of the survey to review future policies, enhance conditions for powered two wheelers and continue to monitor their use and safety in the city.
Moving Goods: Sustainable Distribution

Target:

216. Bristol will look to set up a Quality Freight Partnership - including both rail and road freight - by the end of 2001.

Rail Freight

217. The Council supports proposed development of a rail connection and use of rail for onward transport of freight by the Bristol Port Company from Portbury, and with North Somerset Council is supporting the re-opening of the Portishead line for freight. The Council likewise is supportive of the Bristol Port Company's wish to enhance the rail connections to and rail facilities at Avonmouth and Severnside. The Council continues to press for the development by the private sector of a regional rail freight facility at Meresbank near Avonmouth and is supported in this by the draft Regional Planning Guidance.

218. Figure 5.17 shows the relationship between the city's railway network and the distribution of industrial, port and warehousing areas. Heavy industry occurs only at Avonmouth, but railways occur elsewhere conveniently located, notably in the Street, Philips Marsh, Ashton Vale and South Liberty Lane areas, as well as the North Fringe area across the city boundary. These are predominantly light industrial and warehousing areas.

219. The Council is anxious to increase the amount of freight carried by rail and welcomed the targets set by EWS (the major rail freight operator) to double the amount of freight carried by 2003 and triple it by 2008, and supports the draft Regional Planning Guidance policy to enhance the freight gauge of the Swindon-Bristol-Exeter tracks. The ability of the Local Authority to assist this is dependent upon action at the national level. The Government, the Rail Regulator, the Strategic Rail Authority and Railtrack have a crucial role to play with respect to infrastructure investment and maintenance, track access charges and the planning of train paths, and Rail Property Ltd with respect to safeguarding the railway land bank.

220. Over the last year the Council has been one of those authorities and interests applying pressure on Railtrack and Rail Property Ltd to assist in the safeguarding of rail assets, including closed stations, disused sidings and associated goods yards and distributive/industrial premises. In particular, the Council has been anxious to protect the railway land at Bath Road Depot, South Liberty Lane / West Depot, and at Henbury station. Unless this land bank is vested in an appropriate body with appropriate safeguards, the future options for a re-expansion of rail freight in the Bristol area (as well as the anticipated expansion of the passenger rail and light rail sectors) will be very seriously constrained.

221. Regional discussions with the railway companies with a view to setting up a Quality Freight Partnership are underway. Additionally, the Council will seek to encourage rail freight through the Development Control process to ensure, where practical, that new developments incorporate rail access. The Council recognises that innovative rail distribution processes have to be encouraged.

Road Freight

222. For the foreseeable future, road freight will remain essential to the economic wellbeing of the city, and the Council is anxious to assist in the provision of an efficient distribution network. The extensive bridge strengthening programme carried out in recent years has been largely driven by the need to cater for heavy lorries.

Quality Freight Partnership

223. The DETR guidance on "Sustainable Distribution" advises local authorities to embark on Quality Freight Partnerships with the freight industry, business community, residents and environmental groups. This process has been initiated in Bristol by contact at officer level with the Freight Transport Association (FTA). The FTA's response to the Provisional Plan was positive. The FTA has expressed the wish to work with the Council specifically on strategic route networks, lorry priority traffic management, and access for delivery vehicles, but also on lorry parking, best practice and road safety. The FTA takes the view that weight restrictions on bridges should be seen as a matter of last resort and only used where suitable alternative routes are available, that sufficient maintenance funds have to be made available if the M32 is de-trunked, and that the M32 might desirably include some form of priority for commercial vehicles. These issues will form part of the Partnership dialogue. The Partnership will include the surrounding Unitary Authorities, so as to ensure a consistency of approach throughout the area.

Lorry Routes

224. Progress on the review of the road hierarchy is reported in Appendix 4.1 and affords a consultative advisory lorry route network. The following aspects are relevant to road freight management:

- The proposed revision of the National Primary Routes and City Primary Routes is a draft through-route network for lorries.
• However, within the City Primary Route category, the Principal Public Transport Corridors are envisaged as lorry access routes to the suburban centres, not lorry through-routes. The City Centre Loop is more suited to lorry movements along some parts (e.g. Bond Street), than others (e.g. Park Row). These aspects can be reflected in signing.

• Identification of suitable Local Distributor and local access routes to trading estates will be undertaken as part of future road hierarchy work, in consultation with all interested bodies.

• Access loop routes will be identified for city centre premises from the City Centre Loop, and for the Street Philip’s Marsh industrial area from Street Philip’s Causeway. Both will be signed and publicised as part of the Legible City initiative.
Management Tools

225. Thus for both economic efficiency and environmental protection, the management of lorries’ use of the road network is essential. The Council’s measures to control lorry use include:

- Development Control measures to keep major generators of lorry movements away from sensitive areas and ensure good access for lorries where new developments are permitted;
- continuation of the policy of making representations to the Western Area Traffic Commissioner Authority where it is considered that applications for lorry operating depots would have significant environmental implications;
- loading and unloading restrictions where unrestricted use would cause significant levels of congestion (for example, at major junctions, radial routes and other sensitive areas).

Problem Areas

226. At the same time, although lorries represent only 3% of total traffic in the Bristol urban area, they have a disproportionate impact on the road and bridge maintenance, the environment, congestion and road safety.

- Lorries account for 90% of the damage to roads and also cause significant damage to footways, imposing a cost in terms of highway maintenance that is out of proportion to their numbers.
- The cost of strengthening bridges to meet the new 40-tonne lorry standard is considerable.
- In delivering to sites without adequate unloading facilities lorries can cause significant intrusion and traffic disruption.
- Although lorries are involved in only a small proportion of collisions, these tend to be of a more serious nature than those involving other vehicles. In particular, lorries turning left or at roundabouts are one of the most lethal hazards to cyclists (Delivering Safer Roads, CTC / RHA, 2000).
- Individual lorries are considerably noisier than cars, and cause vibrations, being thereby a nuisance to those living along roads where large numbers of lorries pass by, especially if “rat running” on inappropriate roads.
- Lorries can be visually intrusive.
- The record of safe vehicles as revealed in roadside random lorry safety checks by the Vehicle Inspectorate is not good.
- Light goods vehicles (“white vans”) do not have a good record for speed limit compliance, considerate driving, and can tend to “rat run”.
- Some work on identifying problem locations was undertaken by the former Avon County, which cited thirty problem areas within Bristol, largely associated with lorries taking inappropriate routes. Traffic management in some of these areas has made progress in the interim period. In some areas, new road links including the Spine Road and Avon Ring Road have eased local problems. A full re-examination of all locations will emerge as part of the consultation on the local aspects of the road hierarchy review during the latter’s anticipated 5-10 year review process. A new “living with the lorry” budget has been established in order to examine some of these issues in consultation with local communities and the road haulage industry.

Urban delivery Centre

228. Many Local Authorities are interested in the idea of an Urban Delivery Centre (UDC) to control lorries coming into cities. The idea behind a UDC is that the largest and heaviest vehicles would be confined to motorways and other trunk roads with similar capacity to motorways. These lorries would park at a site on the outskirts of the city and their loads transferred to smaller, more environmentally friendly lorries for distribution. In general, the Council supports this idea, but appreciates that more work needs to be done before firm proposals could be made.

Home Deliveries

229. Home deliveries are being expanded by the retail sector in Bristol, and should receive a further boost with any expansion of internet shopping. Their potential role in increasing the effective mobility of non-car owning households will be examined. The potential for local retail outlets to act as collecting centres will likewise be explored, recognising that one of the barriers to the expansion of home delivery hitherto has been the need to be at home when deliveries are made. If successful, an arrangement with local corner shops or garages as collecting points could enhance the latter’s economic viability and help meet the objective of reducing residents’ need to travel further for other retail purchases.

230. Further, a survey has been carried out to assess in which areas of the city there is a likely to be a demand to hire ‘bike hods’ at large retail stores. The results could be used to support a trial scheme in Bristol, in conjunction with one of the major retailers.
Ports

231. The port of Bristol (Avonmouth and Portbury) is the largest port in the South West Region and the principal regional entry point for international traffic. It is part of the Trans-European Network.

232. With respect to Avonmouth / Severnside, policy 14 of the Joint Structure Plan (see Appendix 2.2) is “the continued development of port operations and associated activities at Avonmouth provided there are no unacceptable environmental impacts”. This is within the context of:

- the need to enhance prospects for regeneration;
- priority given to intensifying the re-use of land already developed;
- provision for the expansion of a broad range of employment uses over a long-term period;
- the need to maximise the use of rail through industrial location;
- the need to link development with improvements on the highway network and particular to avoid the overloading of the adjacent trunk road network and local roads.

233. On Royal Portbury Dock, policy 15 is “the continued expansion of port operations and associated activities” again where there are “no unacceptable implications for the environment, traffic congestion, Green Belt objectives and purposes, and meeting other development requirements”. This is in the context of:

- the effective and efficient use of the land already identified for development, in particular under-used sites;
- linking the port with the rail network, including safeguarding the option of re-opening the Bristol-Portishead railway line for freight and passengers;
- rail freight facilities and consideration of additional capacity for moving goods between Royal Portbury Dock and Avonmouth.

Waterways

234. The City Council recognises the importance of waterways for transport and recreation. The Council is also the navigation authority for the tidal River Avon waterway between the Severn estuary and Hanham Lock, including the Floating Harbour. Historically, this was all regarded as the Port of Bristol. It is technically not an ‘inland waterway’, but it is connected to the inland waterway network via the River Avon navigation (upstream of Hanham) and the Kennet & Avon Canal at Bath. The old City Docks have been developed for leisure boating and water-based recreation; they no longer have a major commercial function.

235. Bristol’s commercial docks at Avonmouth and Portbury are of a scale of operation mostly unsuitable for onward transport via the waterways; in particular, new, large-scale commercial traffic could cause serious disruption to the leisure uses that have become established in the City Docks. The potential exists for small-scale commercial traffic on the Avon navigation upstream of Bristol and the Council could consider promoting this jointly with other authorities. While, however, the main transport use of the waterway will continue to be tourism the recent guidance related to the development of opportunities for moving freight on inland waterways is noted. These opportunities will be considered as part of development proposals, and as part of the development of the Quality Freight Partnership.
Major Highway Improvements

236. The Council has reviewed highway improvement schemes. Many of these were of long standing and were no longer seen as appropriate or affordable and were abandoned in adopting the Bristol Local Plan in 1997. Of those that remained in the Local Plan many related to the concept of a Ring Road through South Bristol. The Council reviewed these schemes in 1998 following a consultant’s study and decided to retain as part of its strategy only two links related to the Ring Road which had a direct bearing on improving accessibility to South Bristol. These were the Callington Road link between the A4 Bath Road and Callington Road, and a new link between the A38 and A370 just outside the city boundary. These are described in turn below.

Callington Road Link

(Further details including AST, notes on worksheets and checklist provided in Appendix 9)

Introduction

237. The Callington Road Link follows the alignment of the former Bristol to Radstock railway and has long been safeguarded as part of the strategic infrastructure in South Bristol. Following a consultation report in December 1998, the Council resolved that the route should “continue to be safeguarded both for a highway and for a potential rapid transit corridor; and that the cycleway identified as part of the preferred NCN route be progressed with appropriate safeguards to ensure it does not prejudice subsequent transport uses”.

238. Since that time the scheme has been confirmed as forming part of the preferred route for the National Cycle Network Route 301, and has been identified as crucial to unlocking the development potential of land adjacent to it (the Callington sites). The consultant’s study of 1997 continues to form the basis of the Council’s aspirations for the scheme.

The Scheme

239. The proposal is for a 7.3 metre wide single carriageway road and parallel cycleway. The link would have a total length of 1,000 metres of which some 600 metres would be new road. A new four-arm signalised junction links the road to the A4 Bath Road at the existing Tramway Road signals.

240. In conjunction with the new road and cycleway it is proposed to reduce highway capacity and improve the environment along the A4 through Brislington village between West Town Lane and Tramway Road, providing improved bus movements along an especially congested section of the A4. In the longer term it is proposed that a rapid transit route would follow an alignment either side of the new link road.

Scheme Impacts

241. The study undertaken in 1997 developed a Common Appraisal Framework methodology that predated, but largely accords with, DETR’s New Approach to Appraisal. The AST sheets draw heavily on the analysis undertaken in the Common Appraisal Framework.

Problem Analysis

Congestion

242. Average inbound journey speeds in the morning peak on the A4 (over the section which would be relieved by this scheme) are less than 10 mph. Average outbound journey speeds on the same section in the afternoon peak are less than 9 mph. Average speeds, less than 5 mph now for much of the section of Wells Road between Callington Road and Bath Road. Peak hour traffic flow is approximately 2,000 vehicles on these two routes. Air pollution, noise and severance are cause for serious concern, particularly given the residential nature of adjoining land uses. Congestion is particularly acute for the right turn from Bath Road into Callington Road, which would be relieved by the scheme.

Impact on Public Transport

243. The A4 Bath Road carries some 23 buses an hour each way, including the Park & Ride service, and the Wells Road up to 20 buses an hour each way. Although bus lanes have been introduced and the Park & Ride service has a selective vehicle detection system to trigger traffic signals, overall limitations in highway capacity inevitably restrict bus movements and contribute to the unreliability of bus services.

Economic Development

244. Congestion on the A4 now extends to cover most of the 12 hour weekday period and much of Saturdays. It has now reached a point where it is perceived to reduce the attractiveness of South Bristol for employment purposes. Prospective employers require better links between South Bristol and the motorway network and between South Bristol and the rest of the city.

Supporting Analysis

Distribution and Equity

245. The main beneficiaries would be the residents and commercial interests in Brislington village and...
along the A4 between Callington Road and Tramway Road, as well as passengers on public transport services. (There are more than 450 buses per day on this route.) There would be similar, though less marked benefits for public transport on the A37 Wells Road corridor. Other significant beneficiaries would include cyclists and pedestrians who would have a more direct and user friendly route from Street Philips Causeway and Sandy Park Road south to Callington Road. As part of this wider picture, better access to existing and potential employment sites in South Bristol would be of benefit to the residents of a relatively underprivileged part of the city.

246. Traffic levels will increase on Callington Road west of the junction with the Bath Road. This is a major concern for residents on this part of the ring road. At present there are long queues of stationary vehicles on Callington Road. However, although numbers of vehicles are expected to increase, this will not necessarily lead to longer queues (and associated air pollution) if the Bath Road/West Town Lane signal junction operates more effectively. This level of detailed design and modelling work has not yet been undertaken. Traffic on the proposed new link road is in a deep cutting and environmental impacts for the relatively small number of adjacent properties will be mitigated. The part time private car park owned by the Bristol Meeting Room Trust is within the old railway cutting and would be displaced by the scheme.

247. The Callington Road Link would have to be funded predominantly through the Local Transport Plan process. However, some funding is likely to be available from the development of the Callington sites, and from the redevelopment of Brislington Trading Estate and other developments in the local area. The owner of the site at the northern end of the link has expressed readiness to help promote the scheme.

Practicality and Public Acceptability

248. Consultation conducted in summer 1998 was publicised with widespread distribution of leaflets to households that would be affected by the scheme, posters in prominent locations, a public exhibition in Wick Road library and a public meeting. This consultation demonstrated opposition to the scheme from a vocal minority, most of whom objected to the potential increase in traffic outside their homes. The majority who would benefit from the scheme, especially public transport users and those outside the immediate vicinity of the scheme, did not generally register their support, although one local group of residents did write expressing strong support. There is therefore a need to conduct more detailed investigations to quantify more precisely the nature of costs and benefits. Given these further detailed investigations and other design work (described below), the five-year programme indicated for the scheme is considered practicable and achievable.

249. As with any scheme of this nature there are likely to be some adverse environmental impacts. A full environmental impact study will be required to identify and quantify these. Work carried out thus far has indicated no overall impact on air quality, slight to moderate adverse impacts on a local Bristol Wildlife Network Site and the Callington Road allotments SNC1, and significant adverse impact on badger activity and slow worms.

Alternatives Considered

250. Apart from the Do Minimum scenario, four alternative options were considered for this scheme. In addition, a sensitivity test was carried out to assess the impact of providing a northwards extension of the preferred scheme to link with Street Philips Causeway.

- Option 1 examined only a single carriageway road and cycleway. This resulted in no to slight adverse impact in terms of accessibility objectives. Transport generated emissions were forecast to increase because of increased congestion.
- Option 2 and Option 3 included the road and
cycleway, and added proposals to traffic calm the A4 between West Town Lane and the Callington Road link and implement associated environmental enhancements. Option 3 also added provision for a rapid transit line to run alongside the new road. Both options would achieve accessibility and social improvements, and improve the local environment in Brislington and on the A37 Wells Road. Option 3, the preferred option, would further increase the choice and quality of transport modes.

- Option 4 comprised new bus priority measures and traffic management along the A37 and A4. This gave slight benefits for the redevelopment of sites in South Bristol but did not improve the environment in Brislington or on the A37 because of the very limited redistribution of traffic.

Further Work

251. At this stage there are insufficient details to enable a thorough assessment of the Callington Road Link. In order to qualify for inclusion within the five-year programme this description of the scheme has included a summary of relevant information currently available. A great deal of supporting material can be provided on request. Notwithstanding this, it is acknowledged that key pieces of work are required to progress the scheme. These have been included in the programme and are detailed in Appendix 9.

A38 to A370 Link

Background

252. The A38 to A370 link was a continuation of the western section of the long-standing Ring Road in south Bristol. The former Avon County Council examined options for the Ring Road’s alignment in this part of Bristol in the early nineties, together with modelling studies and preliminary economic analysis. The alignment identified in this work and supported in subsequent studies is wholly within North Somerset, though very close to the Bristol boundary and impacting directly on infrastructure and potential land uses within Bristol.

253. Further relevant work carried out by Avon County Council in 1995/96 included the Transport Plan for the Avon Area 1994-2013 and the South Bristol Regeneration Study. These referred to the perceived lack of accessibility of South Bristol and the issue of surface access to Bristol International Airport, especially from the motorway network.

254. In 1997, as part of the new Council’s responsibilities as Highway Authority, it decided to review four highway schemes in South Bristol including this link, to assess their relevance in the light of current concerns over the environmental impact of transport infrastructure and restrictions on public sector finances.

The Scheme

255. The proposed road alignment is for a 7.3 metre single carriageway from the Long Ashton Interchange (adjacent to the Park & Ride site) to a new roundabout on the A38 south of the King’s Head roundabout, with a cycleway on the eastern side of the proposed road. The road has a total length of 2.2 km and rises from an elevation of about 12 metres at the Park & Ride site to 50 metres at the A38. The route is mainly across agricultural land, and is proposed to pass under the main Bristol – Exeter railway, which is on an embankment in this locality.

256. Traffic predictions were based on the Revised Avon Traffic Model which was updated as part of the consultant’s brief. Traffic modelling work for a 1997 base year indicates two way AM peak hour flows on the new road of 1,800 pcu, and a reduction in flows on the congested Winterstoke Road of some 400 pcu (15%). Predicted Park & Ride trips increase by around 130 trips in the AM peak. The scheme was costed at £3.5 million at 1997 prices, excluding land acquisition, traffic management, rail protection and service diversions.

Scheme Impacts

257. Consultants reviewed not only the feasibility, cost, funding and impact of the scheme, but also reported on alternatives to new road building, including improvements to non-car modes, bus priority measures and local traffic management measures. The review was performed using a common appraisal framework technique that accords with that described in DETR’s New Approach to Appraisal, with a number of scheme options assessed against a set of agreed objectives.

258. A two-tier set of objectives was identified under the headings: accessibility and movement, economic development, environment, safety and security. (Although predating it, these are in line with the main criteria for transport as described in A New Deal for Transport.) The first set were general objectives such as supporting the regeneration of South Bristol; the second tier of ten specific objectives included:

- improving access to Bristol International Airport;
- widening choice and quality of transport modes for residents of South Bristol;
- minimising the impact upon flora, fauna and the landscape.
259. The consultants concluded that the A38 to A370 link would provide moderate overall benefits in terms of improved accessibility and economic objectives, significantly improving the accessibility of the airport and improving access to existing industrial estates, which is constrained by congestion on Winterstoke Road. Other identified advantages included an enlarged catchment for the Long Ashton Park & Ride (possibly obviating the need for a new site on the A38 corridor), improved access to South Bristol development sites and relief of congestion within both Bristol (e.g. Bedminster, Parson Street gyratory) and North Somerset (e.g. B3130 through Barrow Gurney). It was recommended that the road should be progressed in conjunction with traffic management and bus priority measures for the A38 corridor and Winterstoke Road.

Consultation

260. Public consultation for this scheme was undertaken during 1998. This included a public exhibition in Hartcliffe and a public meeting at Ashton Vale, as well as correspondence inviting comments from particular interest groups such as community and business groups, the airport, transport operators, and Parish Councils.

261. Following consultation, Bristol City Council resolved to ask North Somerset Council to continue to safeguard the road alignment.

Policy Background

262. Policy T/8 of the North Somerset Local Plan, as proposed to be adopted, safeguards the alignment.

263. The revised Structure Plan Policy 11 acknowledges that regeneration of the South Bristol local economy will require provision for new highways including the A38 to A370 link, subject to the resolution of any adverse environmental and traffic generation impacts. This builds on the Regional Transport strategy of the draft Regional Planning Guidance, which also acknowledges the significance of the Airport in the sub-regional economy, and which requires surface access issues to be addressed, including looking at improving links by sustainable means.

264. As such, the South West Regional Development Agency considers the Scheme to be a sub-regional priority, and will actively support the progression of further work.

Next Steps

265. Further studies need to be undertaken in order to progress this scheme. These will cover:

- detailed traffic modelling work, including variable trip matrix assessment to establish levels of induced traffic,
- economic and financial detail,
- full environmental impact assessment,
- detailed surveys and engineering design work.
Strategic Network Management

Overview

1. This section sets out the Council’s approach to management of the demand for travel, and how it proposes to manage the road network in order to continue the plan’s objectives.

2. A review of the road hierarchy has commenced, in order to develop a philosophy and applied approach to the future management of the network. The review is a systematic and consistent assessment of the road network to determine the appropriate function of its component parts in the future.

3. This strategic approach to prioritising how the network should be managed in the future provides a context for the application of key tools such as Urban Traffic Management and Control (UTMC) and Parking Management. It also provides a context for Safety Management, the Legible Cities Initiative and Environmental Management. Other key aspects of network and demand management such as Road User Charging and Mobility Management, are also explained in this section. Figure 6.1 describes the linkages.

Review of the Road Hierarchy

The purpose of the review

4. The Institution of Highways and Transportation, and the government in its good practice guidance on Local Transport Plans recommends to Highway Authorities that local road networks be managed through the identification of a road hierarchy. A review of Bristol’s road hierarchy was committed in the Provisional Local Transport Plan, and is consistent with the “corridors of strategic importance” identified in the Key Diagram of the Joint Replacement Structure Plan of the former County of Avon authorities (at the time of writing, awaiting adoption).

5. The place of any one road in the hierarchy defines its role. Thus some roads are part of the National Primary Route network, others have a more local traffic distribution function, while many are residential roads where through-traffic would be unwelcome.

6. The identification of a road hierarchy is important to many aspects of a Highway Authority’s work. These clearly include the bridge strengthening and road maintenance programmes. It is important also for economic strategy, since a clearly marked network of lorry routes can form part of a Council’s Quality Freight Partnership negotiated with local businesses and the haulage industry.

7. Very significantly, a road hierarchy can have a major impact on the Road Safety Strategy. Some cities (notably Gloucester, York and Hull) have used a rationalisation of their urban road hierarchies to direct their speed management policy and the implementation of appropriate traffic calming works. In the process they have achieved up to 20 to 40% reductions in road casualty figures. There is every reason to suppose Bristol would benefit from an equivalent approach.

Existing road conditions

8. An official road hierarchy does exist, in the Council’s Highway Act 1980 (section 36,6) Highway Record. However, this has evolved over many years, and does not always reflect current usage and today’s rapidly changing traffic conditions.

9. An appraisal of the existing road system is a necessary first step. Appendix 4.1 examines the current road system, and the observed traffic flows through this system. Lorry and bus flows are considered, both separately, and as part of total traffic movements. Total traffic flows are heavily influenced by peak flows, which in turn are dominated by commuter car traffic. Only on a few roads is pure “through traffic” (traffic with no origin or destination within the city) likely to be a significant factor. Two case studies illustrate the range of issues involved. The first illustrates the process whereby conscious road planning in the city centre can be observed impacting on traffic flows - to the benefit of public transport, vulnerable road users and the environment. The second describes a typical suburban area threaded by Local Distributors and rat-runs, in which the Council is initiating environmental cell treatment under the Home Zones and Safer routes to School programmes.

The review - consultation and development

10. It is a role of the Council as Highway Authority, in liaison with DETR, the police and neighbouring Highway Authorities, to clarify the upper levels of the road hierarchy. An initial review is contained in Appendix 4.1. This proposes some formal changes to the designated National Primary Route network, that is, those routes specifically intended for strategic traffic and heavy goods movements. These routes comprise motorways and those major ‘A’ roads which have green-backed direction signs. The review also identifies particular radial routes which it is suggested should be principal public transport corridors.
Figure 6.1
Strategic Demand and Network Management

Revised Road Hierarchy

Strategic/Network Management Tools
- Road User Charging
- Parking Strategy
- UTMC
- Traffic Management

Mobility Management Tools
- Public Transport Information
- Travel Awareness
- Cycling Information & Promotion
- Travel Plans

Modal shift / reduced travel demand (more efficient network use)

Route Management
- Optimisation for:
  - Buses
  - Freight
  - Cycling
  - Pedestrians
  - Cars

Safety Management

Environmental Management
- Environmental Cells
  - Low Emission Zones
  - Speed Management
  - Economic Attractiveness

Maintenance of Highway Fabric
- Economic Efficiency
  - Safety

Economic Efficiency
- Highway Improvements
- Legible Cities

Widening personal utility & access choices

Value Added from Investment Programme
11. The implications of this revision for the Quality Freight Partnership and the Bus Quality Partnership will be discussed with the bodies cited above, and with the Freight Transport Association, and other freight interests and with bus operating companies. It is anticipated that these upper levels of the hierarchy will be agreed, and where appropriate publicised, during 2000/1.

12. The identification of lower levels of the road hierarchy requires a more extended process of consultation with local residents and business interests. It is to be hoped that this process will sift out from today’s effective Local Distributor roads those roads that are unsuited to through-traffic. Only then can appropriate traffic calming measures and speed limits be determined for each road. For this process to occur across the whole city, a consultation and works programme lasting many years is anticipated. This is to be orchestrated and funded largely under the Safe Routes to School, Home Zones, Shorter Journeys and general road safety and traffic management programmes undertaken during the Transport Plan period to 2006. The impact on traffic movements and road safety statistics will be monitored throughout.

13. Crossing some environmental cells, or paralleling major routes are to be Transport Greenways: segregated routes for walkers and cyclists.

14. The review of the Road Hierarchy thus suggests a rationalisation to five categories of road:
   - National Primary Route (including motorway and trunk roads);
   - City Primary Route (including: the main links to the National Primary Routes, and Principal Public Transport Corridors);
   - Local Distributor Roads;
   - Roads within ‘Environmental Cells’ (for access traffic);
   - Transport Greenways;

15. Each category is proposed to cater for a different mix of traffic type. Each has different appropriate means of traffic calming measures and speed limits, and of applying the transport user priorities (see Chapter 2). The characteristics are depicted in the Summary Table (Figure 6.2).

Relation to other Transport Plan strategies

Bus Strategy

16. The Road Hierarchy review identifies as Principal Public Transport corridors those major radial routes with bus flows of upwards of 700 buses per day.

17. Where important flows of scheduled bus services, including existing and future Park & Ride services, occur on that which are part of the proposed National Primary Route network, then bus priority measures will be improved or introduced where appropriate. The review emphasises the bus interchange potential at the suburban centres on the Principal Public Transport Corridors. Within "environmental cells" consideration will be given to the type of bus gates pioneered in Holland, and in this country at Cambridge.

Lorry management

18. Heavy goods vehicle flows of over 500 per day broadly coincide with the proposed National Primary Routes, except for significant access routes to trading estates and shopping and commercial centres. The possibility of priority measures for freight vehicles on this de facto lorry route network will be considered as part of a Quality Freight Partnership.

Servicing access loops.

19. Signed, routes facilitating access but discouraging unnecessary through-traffic, are required within two major environmental cells:
   - the city centre (off the City Centre Loop);
   - the St Philip’s Marsh industrial area (off the City Centre Loop and the Spine Road), where low bridges complicate the road network.

Coach strategy

20. Long-distance scheduled coach services and tourist coaches could share priority on congested parts of the National Primary Route network.

Walking Strategy

21. The Road Hierarchy Review will assist the planning of the pedestrian network:
   - in the city centre;
   - within suburban centres;
   - in roads within environmental cells, (where pedestrians share priority with cyclists);
   - through the network of Transport Greenways.

Cycling Strategy

22. The review will inform the Cycle Review process on main road, and help divert general traffic away from the Transport Greenways. Advisory cycle-routes can be developed as part of "environment cell" exercises, where consideration can be given to the creation of cycle-priority sections, in part through the closure of existing "rat-runs" (which sometimes offer attractive and fairly
direct routes). This may sometimes be possible in coordination with the installation of bus gates, which will improve permeability to the primary cycle routes.

Issues arise around the long term maintenance of Transport Greenways. The introduction of the National Cycle Network will realise the construction of several kilometres of new ‘ways’. To satisfy the concerns of contributors as to their long-term maintenance the Council proposes to adopt them as ‘highway’. However, this solution involves the risk that public utilities will identify the route for the laying of plant or apparatus. The nature of the routes will almost inevitably mean that the route will have to be closed for the duration necessitating the diversion of vulnerable users on to an unsuitable network.

To avoid this situation the Council proposes to seek approval from the Secretary of State to declare these routes as “special roads” for the use of pedestrians and cyclists alone. Whilst not removing entirely the spectre of a public utility company from laying their plant and/or apparatus, it does remove the statutory right to do so.

Road Safety Strategy

23. Surveys (see appendix 3.4, annex A) show concentrations of collisions along main roads (particularly those with numerous vehicular turning movements, and high pedestrian flows, especially in local centres), and along Local Distributor roads and “rat-runs” (with relatively high vehicular flows for the standard of road, and sometimes poor driver behaviour). Consultation on a road hierarchy will enable agreement on the appropriate speed limits and menus of traffic management techniques for each type of road. The revised Road Hierarchy will be a fundamental part of the new Road Safety Strategy.

Road Traffic Reduction Strategy

24. The Road Hierarchy Review will enable traffic reduction targets to be pinpointed onto individual corridors, routes and environmental cells.

Air Quality Strategy

25. The review will provide the traffic strategy context for Air Quality Management Areas.

City Centre Strategy

26. The city centre is the focus of the networks of most of the city’s transport modes, and as a result experience some of the worst congestion and requires the most careful management.

27. The whole area within the City Centre Loop might be regarded as a single “environmental cell”, comprised of the set of neighbourhoods already identified in the City Centre Strategy. Implications flowing from this might include:

- further action to discourage extraneous through-traffic within the City Centre Loop, linked to the central area road traffic reduction target,
- a reduction in excess vehicular circulation space on some former main traffic routes in the centre, with a further transfer towards pedestrianisation and bus, taxi and cycle priority, together with provision for tourist coaches,
- a 20mph zone covering the whole city centre.

Full consultation with all interested parties and forums will be pursued.

28. Investment in an agreed City Centre Loop, as the city primary route around the city centre, will enable further work on improving pedestrian and cycle crossings into the city centre.

Servicing access routes off the City Centre Loop will facilitate:

- the discouragement of through-traffic,
- the efficient servicing of individual properties (as part of the Quality Freight Partnership), each property being identified as lying within one of the city centre neighbourhoods. Each neighbourhood (or part of) will have its own access loop,
- efficient access to retail, business and tourist car parks, using these same servicing access loops.

29. The signing of the City Centre Loop, servicing access loops, and walk and cycle routes into the city centre, will be co-ordinated as part of the Legible City Initiative.
### Figure 6.2

**A Proposed Road Hierarchy - Summary Table**

<table>
<thead>
<tr>
<th>Proposed level of the road hierarchy accommodated</th>
<th>Suggested principal types of traffic to be</th>
<th>Suggested speed limit (mph)*</th>
<th>Other possible traffic management measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Primary Route (including motorways and trunk roads)</td>
<td>General through-traffic • Goods vehicles • Long-distance coaches • Main scheduled bus services (some city radial routes)</td>
<td>70 (rural motorway) • 60 (other rural route) • 40 or 30 (urban route)</td>
<td>DETR designation • National destination signing • Highway improvements • Possible priority measures for buses, coaches, goods vehicles, multi-occupied vehicles • Urban traffic control and management</td>
</tr>
<tr>
<td>City Primary Route: a) links to National Primary Routes, b) principal public transport corridors, c) City Centre Loop.</td>
<td>General traffic access to National Primary Routes (a) • Main scheduled bus services (city radial routes) (b) • Suburban centre access traffic and pedestrians (b) • Utility cycling (b) • Utility walking (b) • City centre circulation (City Centre Loop) (c)</td>
<td>30 • 20 (within suburban centres, by schools, etc)</td>
<td>bus priority • district destination signing • cycle priority (b) • loading facilities (in suburban centres) (b) • Urban traffic control and management • widened footways (b)</td>
</tr>
<tr>
<td>Local Distributor road</td>
<td>General distributor traffic • Goods access routes • Local bus services</td>
<td>30 • 20 (by sites of pedestrian activity)</td>
<td>local destination signing • traffic calming</td>
</tr>
<tr>
<td>roads within environmental cells</td>
<td>Access traffic • Cycling • Local bus services • Pedestrian priority in some areas • Pedestrian links to public transport</td>
<td>20 • less than 10, within Home Zones.</td>
<td>traffic calming • signed cycle routes (where part of longer routes) • bus gates • Home Zones • Signed access loop routes (e.g., in city centre and St Philip's Marsh industrial area)</td>
</tr>
<tr>
<td>Transport Greenways**</td>
<td>Strategic signed, surfaced segregated off-road routes for pedestrians &amp; cyclists.</td>
<td></td>
<td>DETR, ‘special highway’ status • calmed crossings of roadways • segregated re-allocated roadspace in on-road sections</td>
</tr>
</tbody>
</table>

* later stage proposals are in italics.

** this table does not include footpaths, bridleways, byways or permissive paths
**CASE STUDY**

**Improvements in The Centre**

The Scope Route development combined with The Centre works, together give a positive example of Road Hierarchy Review and reclassification to achieve widespread benefits.

The improvements to the "Scope Route" (now the City Centre Loop) diverting traffic around the city centre, were reported in the Provisional Transport Plan. These works to redesign road junctions and redirect traffic along suitable routes are now largely complete on the north and east sides of the centre – sufficiently so to allow the planned pedestrianisation of part of The Centre to proceed as planned.

On Millennium Year’s Eve, Bristol’s newly remodelled Centre was formally opened with fireworks and a street festival. Cars were banned from the surrounding streets, and free night buses provided to get people home. For some weeks before, new traffic arrangements pedestrianising the southern end of The Centre and making the Broad Quay part of its eastern side “buses and cycles only”, meant that there was no longer a roundabout at the heart of Bristol. Sceptics were uncertain whether the net result would be permanent gridlock, but most people agreed that the new arrangements were better for pedestrians, bus users and cyclists.

In the event, traffic fairly quickly settled down over the early part of 2000. A survey nearly six months later of the streets that feed into The Centre (Anchor Rd, Park St, Colston St, Rupert St, Baldwin St) showed collectively a 15% fall in the traffic passing through. Further work will be required to ascertain whether traffic has really "evaporated", or whether all or most of it has diverted onto the City Centre Loop and elsewhere. In order to ensure that any capacity is not simply refilled by traffic, examination needs to be made of the opportunity to introduce further transfers of roadspace at The Centre and its approaching streets, for pedestrians, buses, cycles and additional enhanced street facilities for those now enjoying Bristol’s noticeably more peaceful heart.

Additional measures to support the "Scope Route" are identified in Figure 6.4 and set out in the bid.

**Figure 6.3**

*Changes to the City Centre*
30. The M32 motorway is the main radial route into Bristol and is used by some 80,000 vehicles per day. It forms part of the National Primary Route Network and is currently managed and maintained by the Highways Agency, although in the longer term there are proposals for the de-trunking of the road south of Junction One. If this were to happen, the management and maintenance of the road in Bristol would become the responsibility of the City Council.

31. To this end; the Highways Agency, in conjunction with both Bristol and South Gloucestershire Council is currently undertaking a study into the feasibility of introducing designated high occupancy vehicle, bus and/or freight priority lanes on the M32 following de-trunking of the motorway.

32. The study investigates options covering all sections of the M32, including its slip roads, as well as Newfoundland Way and Newfoundland Street. Traffic flows on the motorway and parallel diversionary routes are modelled and a number of modal split scenarios incorporated, including LRT, Road User Charging and Park & Ride in North Bristol. The impact of proposals on air quality will also be assessed.

33. It is anticipated that the study will report during the latter part of 2000 and its conclusions will be incorporated in future year Transport Plan updates.
Strategic Network Management

Strategic Tools:

Urban Traffic Management and Control (UTMC)

Strategy

34. Introduced in Bristol in 1992, Urban Traffic Control (UTC) has played a significant role in managing the city’s traffic, bringing benefit to all modes of transport but, in particular for public transport, pedestrians, disabled people and cyclists.

35. Changes to the highway network, transport policies and strategies require not just the continued extension of UTC but a move from UTC to UTMC. It is therefore proposed to employ UTMC to provide the dynamic management of traffic systems rather than reactive control.

Progress

36. Initial UTC and CCTV systems have continued to be extended, extensively upgraded and enhanced incorporating a car park variable message sign system, and bus priority facilities within SCOOT in conjunction with the successful ELGAR project.

Progress during the last twelve months includes:

City Centre

The traffic signal control element of these projects has been successfully introduced. Validation of SCOOT through the city centre complements the City Council’s aspirations to manage the available highway space for all users.

Measures have been initiated to introduce ‘green wave’ facilities to assist emergency vehicles through the remodelled city centre region.

Alternative SCOOT control strategies have been developed to reduce vehicle speeds through the co-ordination of adjacent signal installations. A speed constraint model is introduced during off peak periods, between 10:00 – 15:00, and 19:00 – 07:00.

In addition the Bedminster Bridge region, critical sections of the A37 Wells Road and a new region at Temple Circus are complete, and operating under SCOOT control, and several ‘Pelican’ pedestrian crossings have been added to the system.

Audit commission Indicators for pedestrian facilities. During first year of the current three-year programme, the indicator for pedestrian crossings incorporating facilities for disabled people has been increased from 40% to 52%.

The target is that 60% of pedestrian facilities will incorporate facilities for disabled people by 2002.

Variable Message Signing System

Since its implementation 1998, this dynamic information system has provided drivers with at-a-glance information on available parking spaces in the city centre, providing enhanced network management potential.

An additional VMS has been introduced at Temple Gate, and it is proposed to continue extending the system to other parts of the city centre, including strategic radial routes. Further VMS and detection systems are envisaged to support other traffic management techniques including route guidance, incident notification, travel information, local events and details of alternative modes of travel. See Integrated Travel Information Centre.

Integration with other authorities

Traffic signal maintenance is co-ordinated by Bristol City Council for three adjacent unitary authorities. A new maintenance contract was issued in April 2000. It is considered to be the precursor to developing a Partnership with private industry. Further investigation will be undertaken.

Urgent faults are attended within two hours of being reported to the 24 hour freephone number.

Five Year Programme

37. It is proposed within the lifetime of this plan to extend SCOOT to some of the main radial routes and corridors, and to introduce UTMC. This would enhance public transport priorities, improved conditions for vulnerable road users, reducing impact on air quality, improving safety, restraining traffic in sensitive areas and provide for enhanced management of congestion.

38. To provide an improved priority for pedestrians, cyclists and public transport several general improvements are proposed, these include:

- SCOOT software upgrade (to Version 4.2) facilitating the use of existing ‘D’ loop detection and revalidation.
- Enhanced software support
- Air pollution monitoring systems.
- Data storage and processing ASTRID
- A Dynamic Emissions Information System linking SCOOT with the Council’s traffic and air pollution models and
- Incident detection (INGRID); both of these are integral to the network management, air quality management and traffic flow data collection
### Figure 6.5
Local Transport Plan Urban Traffic Management and Control (UTMC) 2001/2002 and Five Year Programme

<table>
<thead>
<tr>
<th>No</th>
<th>Site (where applicable)/Project</th>
<th>Description of Proposals</th>
<th>Capital Funding requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A420 Church Road</td>
<td>Complete</td>
<td>20,000  Nil</td>
</tr>
<tr>
<td>2</td>
<td>A38/B4469 Muller Road</td>
<td>route and junction investigation</td>
<td>15,000  20,000</td>
</tr>
<tr>
<td>3</td>
<td>A4018 Whiteladies Road &amp; Falcondale Road</td>
<td>to introduce or extend SCOOT and UTMC</td>
<td>15,000  135,000</td>
</tr>
<tr>
<td>4</td>
<td>A37 Wells Road /Airport Road</td>
<td>improving conditions for pedestrians, cyclists and public transport</td>
<td>15,000  30,000</td>
</tr>
<tr>
<td>5</td>
<td>A38 Gloucester Road</td>
<td>by improving network management</td>
<td>50,000  60,000</td>
</tr>
<tr>
<td>6</td>
<td>A38 Parson Street, Bedminster</td>
<td></td>
<td>50,000  185,000</td>
</tr>
</tbody>
</table>
| 7  | UTMC incorporating             | Air pollution monitoring systems.  
- Data storage and processing (ASTRID) and  
- Incident detection (INGRID); both of these are integral to the network management, air quality management and traffic flow data collection  
- Enhanced Network Management facilitating diversion identification and control and driver information.  
- Queue Management and Gating  
- Public Transport Priority systems and expanding  
- bus tracking (ELGAR)  
- A detailed evaluation and feasibility study resulting in the implementation of citywide Selective Vehicle Detection | 35,000  215,000          |
| 8  | Citywide                       | SCOOT software upgrade (to Version 4.2) facilitating the use of existing ‘D’ loop detection and revalidation | 5,000  Nil                 |
| 9  | Citywide                       | Enhanced software support   | 5,000  Nil                 |
| 10 | Various                        | Continued implementation of Light Emitting Display signal aspects | 30,000  85,000            |
| 11 | Various                        | Remote Monitoring improvements | 10,000  70,000            |
|    | Total                          |                           | 25,000  800,000           |
• Enhanced Network Management facilitating diversion identification and control and driver information.
• Queue Management and Gating
• Public Transport Priority systems and expanding bus tracking (ELGAR)
• A detailed evaluation and feasibility study resulting in the implementation of citywide Selective Vehicle Detection
• Continued implementation of Light Emitting Display signal aspects. This has been successfully piloted in Bristol and their use avoids premature lamp failure thereby enhancing site safety and reduces power use.
• Enhancement of Remote Monitoring System

The detailed bid for 2000/2002 and the 5 year period, are set out in Figure 6.5.

Road User Charging

“it is unlikely that the policy objectives will be met without road user charging.”

“Having listened to the consultation, road user charging is a publicly acceptable way of generating the necessary finances.”

“The current levels of funding are inadequate. However, the ‘carrots’ must come before the ‘sticks’”

“Road user charging is a much more preferable way of raising the necessary funding than a workplace parking levy.”

“The Commission therefore recommends that the Council should indicate within the provisional transport plan that it wishes to be considered for the DETR’s ‘fast track’ programme of assistance for one of the pilot schemes for road user charging.”

Recommendations of the Transport Plan Commission

39. Road user charging is one approach that the Council is actively promoting as part of an integrated package of measures to reduce demand for travel by and use of the car. It is now widely recognised that introducing “carrots” alone will not be sufficient to reduce car use in line with the objectives set by national government in the Air Quality and Traffic Reduction legislation and to meet the Council’s objectives.

40. The Local Transport Plan consultation has indicated strong local support for road user charging, provided that the resulting revenue is invested in the transport system and that alternative high quality public transport provision is in place. The Bristol Chamber of Commerce & Initiative has expressed favour for road user charging rather than workplace parking levies; and there is a growing awareness throughout the community that road user charging represents an acceptable means of tackling urban congestion and traffic pollution.

41. Bristol has been at the forefront of research into road user charging over recent years, based upon research studies, European demonstration projects and networking with like minded authorities, both within the UK and Europe. This experience has given Bristol an insight into the key issues associated with cities promoting road user charging as a demand management tool in an integrated transport strategy.

42. Early notable work included development of the BRITES multi-modal models (1991), which evaluated the effectiveness of a variety of strategies in meeting transport objectives, including reducing citywide traffic levels. This concluded that the optimum strategy for Bristol was the combination of rapid transit with road user charging; and subsequent Traffic Restraint Studies (Stage 1: JMP (1993) & Stage 2: Ove Arup, (1995)) which developed models to quantify the impact of different road user charging regimes.

43. More recently, as part of a European funded project, the Council, in conjunction with the local bus company First CityLine, ran a road user charging trial along the A4 Bath Road during 1998. This trial examined both the technicalities of operating such a system as well as how charging might change people’s patterns of travel. Results showed that, with good public transport alternatives in place, a cordon charge of around £5.00 per day would reduce car use by up to 15%.

44. Further European initiatives by the Council include EURoPrice, a network of eight European cities (Belfast, Copenhagen, Edinburgh, Genoa, Leicester, Rome & Trondheim), co-ordinated by Bristol. The project, which commenced in December 1998, is focusing on the key issues of implementation, operation, social and political acceptance of road user charging initiatives in Europe. The project has produced three technical papers discussing city background, the impacts and barriers to road user charging and the role of key stakeholders. Following the success of the project a second phase is being proposed for Commission funding. Also INTERCEPT (Intermodal Concepts in European Passenger Transport), which commenced in November 1998, will focus on behavioural responses to a road user charging trial (incorporating the M32 corridor) linked to the promotion of alternative modes through trip planning and investigate further issues such as trip diversion, journey suppression and modal change.
45. Road user charging has already been introduced in Trondheim in Norway, with the main aim of raising revenue for transport infrastructure rather than discouraging car use at peak periods. The results there showed that the scheme has become widely accepted by the public after initial opposition. Furthermore, changes in driver travel patterns have resulted in a reduction of about 10% in car journeys and increase in bus patronage of 7%.

46. Building on the EURoPrice project, in June 1999 Bristol, together with Rome and Trondheim submitted a bid for funding to the European Commission, under the Fifth Framework Programme of research, technological development and demonstration (RTD). This proposal was merged with two others to form the PRoGR€SS project, combining eight cities who wish to undertake a large-scale demonstration within their cities. Bristol is co-ordinating this project, which has been awarded a budget of 7.238 million euros (just over £4 million). The project began in June 2000 with a timespan of 4 years. The Bristol element of the project is based upon the consultant’s inner city cordon with electronic tag/transponder technology and further detailed studies being undertaken.
47. In 1999 the Council commissioned consultants (Transport and Travel Research Limited in association with Hyder Consulting, Ian Catling Consultancy and Wilbur Smith Associates) to provide the outline design for a viable road user charging scheme for Bristol. After considering alternative technologies and different possible geographical boundaries for a scheme, the consultants recommended an inner city cordon with electronic tag/transponder technology. This was the basis of the submission in the provisional Local Transport Plan for DETR pilot status.

48. The recommended scheme has 14 entry points and includes the city’s main Broadmead shopping area, the Centre, West End and Harbourside but excludes the main inner city residential areas (see Figure 6.6). For the purposes of the study it was estimated that 300,000 vehicles, would have fitted electronic tags detectable by roadside beacons located at entry points.

49. The consultant developed a spreadsheet model to make revenue forecasts. The ‘base case’ charging scenario gave a projected Net Present Value over 15 years of some £100-£155 million, assuming charges for inbound traffic in the weekday peak period (7 to 11am) of £1 to £2 in the first year, rising to £3 to £5 in the fourth year onwards with no charges outside this period. Exemptions were assumed at 5% and an elasticity of 3% per £1.00 was used in this base case.

50. In December 1999 the Government published the Transport Bill, which incorporates legislation to enable Local Authorities to introduce road user charging and workplace paring levies schemes. This Bill is currently progressing through Parliament, and is likely to be enacted in the autumn. Following last year’s transport settlement Bristol City Council were invited to join the Charging Development Partnership. This is a national partnership between the DETR and 24 local authorities (including Manchester, Nottingham, Edinburgh, Leeds and Birmingham) interested in road user charging and/or workplace parking levies, to further investigate the impacts and implications of implementing such schemes.

51. The Charging Development Partnership was launched in February this year. Subsequent meetings have been held approximately every month. The June meeting in Bristol focused on the key stakeholders in the city and representatives from the Bristol Chamber of Commerce and Initiative, Broadmead Board, RAC and FirstGroup were joined by the British Retail Consortium. This meeting illustrated the partnership development being undertaken to understand the views of key stakeholders and incorporate them in the development of transport policy.

52. Working with the Charging Development Partnership, Bristol is continuing to develop scheme options and further understand the likely impacts for the city. The package of alternative measures to be implemented prior to the introduction of a scheme is being developed with additional funding associated with the Charging Development Partnership. This includes the rapid transit system which offers the important step change in improvements to the quality, speed and convenience of public transport in order to attract current car users and Government commitment to the scheme is essential before a road user charging pilot scheme would be introduced in Bristol.

53. Procurement partnerships for the development of the transport measures are being investigated by Bristol through the Charging Development Partnership. Also Partnerships UK, launched in June 2000, is actively discussing with the two authorities of Bristol and South Gloucestershire the further development consultation, procurement and funding of the rapid transit and road user charging schemes (see Chapter 5). The possible sources of funding include the DETR and the private sector. Accordingly a bid for the development and implementation of the road user charging scheme is included in the document.

**Parking Strategy**

54. Bristol’s parking strategy is a central component of its integrated transport strategy and seeks to support a range of local transport initiatives, particularly those aimed at traffic restraint and encouraging non-car modes.

55. At present the City Council controls all on-street and most off-street public parking in the city centre. It also controls the two Park & Ride sites at Brislington and Long Ashton. The Council has little direct control of public parking outside the centre, although it has established many local area shoppers’ car parks and will consider the introduction of controlled parking zones (CPZ) where there is public support.
56. Existing public parking provision is summarised below:

<table>
<thead>
<tr>
<th>Location</th>
<th>Short Stay</th>
<th>All purpose (inc. permits)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadmead</td>
<td>2659</td>
<td>2229</td>
<td>4888</td>
</tr>
<tr>
<td>Central Area</td>
<td>1343</td>
<td>2141</td>
<td>3484</td>
</tr>
<tr>
<td>Bedminster</td>
<td>960</td>
<td>170</td>
<td>1130</td>
</tr>
<tr>
<td>West End</td>
<td>0</td>
<td>750</td>
<td>750</td>
</tr>
<tr>
<td>Docks Estate</td>
<td>190</td>
<td>1693</td>
<td>1883</td>
</tr>
<tr>
<td>Brislington</td>
<td>40</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Districts</td>
<td>951</td>
<td>339</td>
<td>1290</td>
</tr>
<tr>
<td>Park &amp; Ride</td>
<td>0</td>
<td>2800</td>
<td>2800</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6143</strong></td>
<td><strong>9136</strong></td>
<td><strong>16265</strong></td>
</tr>
</tbody>
</table>

of which

| City Council   | 2172      | 7983                       | 9355   |
| Other Operators| 3971      | 2339                       | 6910   |

57. The Council’s parking strategy is based upon the following objectives, which are themselves consistent with the policy objectives of this transport plan:

- To reduce unnecessary use of private cars, especially in the city centre.
- To enhance the vitality of the city.
- To encourage alternative transport modes.
- To guide appropriate scale, location and standards for all private and public parking, including branding of all city parking.
- To accord with relevant national and regional guidance.

58. In order to achieve these objectives a number of mechanisms have been identified and are set out in subsequential paragraphs. These will be revisited should a road user charging scheme is introduced.

### Long-stay Parking

59. The net supply of cheap long-stay parking for private cars in and near the city centre will continue to be reduced. This reduction will be accompanied with increased provision of long-stay spaces in appropriate alternative locations, as in Park & Ride. Long-stay parking charges will be structured to discourage car driving commuters and encourage use of alternative modes. Proposals from third parties for additional long-stay city centre public parking will not be permitted.

60. In order to help implement the policy of discouraging long-stay city centre parking the Council will seek the co-operation of other car park operators.

61. In seeking to restrict the supply of long-stay parking, the Council will revise its parking standards as part of the local development plan review process and in consultation with neighbouring authorities. New standards will have regard for the latest regional and national guidance and, for large developments, will introduce parking standards that recognise particular local circumstances.

### Short-stay Parking

62. Where possible, short-stay parking charges will continue to be rationalised so as to counter the overuse of the most popular car parks and to encourage public transport use both during and outside peak periods. This will be undertaken sensitively to encourage visitors to continue trips into Bristol, and to avoid, for example, shoppers driving to alternative (less sustainable) destinations.

63. The Council will promote the development of new good quality parking in appropriate locations, such as at the end of the M32 corridor and near Temple Meads railway station. This will generally be undertaken as part of new land use development. Corresponding initiatives will seek to refurbish or remove poor quality and relatively inaccessible inner city parking.

64. The Council has invested in major improvements to Tollgate, West End and Temple Gate multi-storey car parks, including new lighting, CCTV, decorating and general improvements for public safety. Awards have been granted to the Council in recognition of the high quality of security and management measures. Refurbishment and CCTV for Trenchard Street MSCP utilising a Home Office grant and Council resources will commence shortly.

65. Outside the city centre the Council will seek to provide additional short-stay off-street parking in the vicinity of local shopping centres. This will enable the removal of on-street parking from key transport corridors and facilitate the introduction of further bus lanes and better pedestrian facilities.

66. The Council recognises the particular need to retain, or replace, and develop parking facilities for motorists with restricted personal mobility.

### Enforcement

67. The City Council created a Special Parking Area for the entire city in April 2000 and with powers made available under the 1991 Road Traffic Act. Enforcement has been towards support of the Council’s transport policies. For example, high
priority has been given to ensuring cars are not parked in bus lanes. This is leading towards a reduction in congestion and improved safety at key locations. As part of its new responsibilities, the Council will review all on-street parking restrictions by 2002.

Controlled Parking Zones (CPZ)

68. Parking for residents in large parts of the inner suburbs of Bristol has become increasingly difficult as commuters occupy free road space for long-stay parking in these areas. The city centre is presently covered by a CPZ that allows only short-stay parking, except for vehicles displaying a valid resident’s parking permit.

69. The Council has undertaken consultation on the introduction of a CPZ to the north of the existing zone. As a result of this consultation, implementation of a CPZ is being considered for the Kingsdown area where support for a scheme exists. Other areas where the residents views did not support the introduction of a CPZ have not been included. The Council has received requests for the introduction of further CPZs in areas such as The Dings, around football and cricket grounds, Southville and Windmill Hill. Schemes will be tailored to local circumstances and will only be introduced where there is a clear local majority in favour.

Coach Parking

70. In response to the identified needs of Bristol’s growing and successful tourism industry the Council is currently finalising a management and parking strategy for coaches as described in the public transport section of this document.

Mobility Management (including public transport and information strategies)

71. The Government requirements for the contents of local transport plans includes a section on public transport information. Whilst this is very important, the Council feels that this approach would be better integrated by considering information as part of a wider package of mobility management (Figure 6.7).

72. Mobility management encourages the use of sustainable modes of transport through a set of tools based on:
   - Information and advice.
   - Green Travel Plans and other company-based initiatives.
   - Travel awareness and education.
   - Transport organisation and co-ordination.
   - Direct services to transport users (including ticketing arrangements, purchase of ticketing, reservations, etc.), also the development of new services such as car clubs and cycle pools.

73. The concept of mobility management has been developed through European Commission supported projects such as MOSAIC, MOMENTUM and MOST. Below are a number of specific areas of mobility management measures that complement other information promotion measures set out in the topic sections.

Integrated Travel Information Centre

74. Bristol is already at the forefront of the implementation of measures and strategies to manage travel demand. The city has developed integrated systems to enable new strategies in urban traffic management and information provision through EC and DETR-supported initiatives such as the ELGAR, CENTAUR and INTERCEPT European projects.

75. The extensive consultation on the Transport Plan carried out by the Council made it clear that there was a need to integrate all of these activities under one roof and to provide a high profile, one-stop-shop for local information and advice to business and individuals on transport related issues.

76. The vision of the Integrated Travel Information Centre (ITIC) (Figure 6.8) involves the bringing together of demand management functions to provide more integration of traffic management systems and services and increased public access to mobility information. In order to achieve this vision a number of tasks need to be undertaken involving
Building upon this review of European best practice, the City Council, in association with a developer, is participating in the MobiService Centres European project. This will involve the investigation of best practice in Mobility Management and Service Centres in Europe, including an assessment of systems, services, technologies and implementation path, all of which will assist with the development of the Bristol ITIC. As a component of the project a trial will be undertaken of MATTISSE technology, which has been introduced in the West Midlands. The MATTISSE system provides a database of real time and historic traffic and travel data from a variety of sources, which is output to network operators and the public through a variety of media.

Building upon this review of European best practice, detailed specification and surveys of established Travel Information Points, the establishment of the ITIC will require capital expenditure on equipment, premises and communications. This will include an upgrading of central control and management of systems, obtaining premises, high quality communications between sites and to output media, developing the range of dissemination mechanisms including public interface, and the provision of a broad range of transport information.

**Public Transport Information (PTI) Strategy**

"Make the bus system easier to use and understand. Particularly encourage ‘real time information’ for all buses, so you know how long you have to wait for the next one. …the trains are often cancelled or late and no information is provided at the stations."

**Consultation response**

81. Bristol City Council is committed to providing high quality public transport information, at both a local and a regional level. As a member of the SW Travel Information Partnership (TRIP) the regional consortium set up to deliver the DETR’s PTI2000 initiative, in the south west, the Council is actively involved in providing major improvements to the provision, accessibility and quality of public transport information, within the region.

82. The 15 local authorities and 11 major public transport operators comprising the SW TRIPS partnership plan to go ‘live’ with a regional call centre service and associated regional database/journey planner from late July 2000. This follows a major undertaking involving a process of research and study to identify the key requirements for the construction of a SW region public transport database and the establishment of a new call centre. Having incorporated these key requirements together with key qualitative outputs into contractual arrangements with IT suppliers and the call centre operator, the partnership is fully committed to the delivery of all elements of the DETR’s minimum requirement for the PTI2000 initiative by 31st July 2000.

83. The single golden number (0870 6082608) of the call centre, will provide information to the public throughout the region, which is currently served by 43 individual public transport telephone enquiry providers. Over a transitional period of up to a year the regional service is expected to fully replace the existing services.

84. The partnerships project plan is being rolled out with internet access to the regional database following through in early 2001. A pilot fares initiative is also planned around the same time and pending the results of this, it is feasible that capability to offer fares information could be extended across the region before 2002 (the progression to PTI2002).
Figure 6.7
Mobility Management

Information
- Voluntary
- City Council
- Development Process

Travel Plans
- Communciation and Marketing Campaign (3 years)
- Proactive support - community fund
- Events and Participation (expanding upon June Events)
- Partnership working
- Home deliveries

Travel Awareness
- Promotion as part of curriculum work ('tool kit') - level 2 & 3 school involvement (see Safer Routes to school Section)

Schools/Education
- Short Journeys Strategy

Strategic Network Management

Figure 6.7
Mobility Management

1. On Street (signing)
   - Legible City

2. Paper Based
   - Bus maps
   - Access maps
   - Cycle maps
   - Visitor information

3. Human
   - Navigators
   - TIC

4. Telephone
   - Travel line
   - Cycle Information
   - PTI 2000

5. Internet
   - Intercept
   - PTR 2000

Modal Change
Traffic Reduction

Chapter 6 | Bristol Transport Plan 2001/2 - 2005/6
85. To date Bristol City Council has been awarded a total of £111,226 in SCA (Supplementary Credit Approval) by the DETR towards the delivery of the regional database and call centre. Figure 6.9 summarises the capital expenditure profile to date.

**Figure 6.9**
Summary of SCA funding allocations made by DETR, to date

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>March 1999</td>
<td>£38,500</td>
<td>£73,026</td>
<td>£111,226</td>
</tr>
<tr>
<td>Bristol City Council</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SW TRIPS Partnership (combined LA allocations)</td>
<td>£712,000</td>
<td>£804,000</td>
<td>£1,516,000</td>
</tr>
</tbody>
</table>

86. These capital expenditure funds have been utilised mainly for hardware procurement (database and call centre set up costs, etc) database population and software development. Ongoing revenue expenditure for the maintenance of the regional database is expected to be modest (involving mainly software licensing and data update costs and some re-allocation of existing local authority staff resources); the call centre operating costs will be met entirely by the private sector (the public transport operators). The Memorandum of Understanding signed by all members, clarifies these funding arrangements, in specific detail. Although this is not a legally binding document it has enabled the partnership to move forward as regard to financial risks, leading up to Royal Assent for the Transport Bill and its associated new powers of re-charging for local authorities.

87. To maximise the strategic co-ordinated fulfilment of the national PTI requirements, a regional partnership approach to bidding for funds has been adopted by all 15 SW TRIP local authority partners.

88. Plymouth City Council is submitting a single regional bid for the delivery of national PTI requirements in the SW, which has been endorsed by this authority. Please refer therefore, to Plymouth City Council Local Transport Plan for details of the support and commitment for the delivery of national PTI enhancements in the South West Region.

89. The partnerships’ strategy leading up to the launch and through to the end of the year (2000) will focus upon service reliability, and the impartiality and quality of outputs, relating to both the call centre and the regional database. It is vitally important to gain the confidence of the public (the customer) from the outset, by ensuring that the public transport information is easily accessible and is reliable.
90. A comprehensive monitoring programme will form a major part of the delivery strategy. This will ensure that any problem that arises will be identified at an early stage so that remedial measures can be employed without delay.

91. Whilst in the short term the partnership is focusing efforts for the launch of the call centre, the project plan aims to provide a number of developments to system functionality and accessibility by early 2001. Public accessibility will be enhanced greatly, with the addition of internet access to the regional database. With 24-hour accessibility, low enquiry cost and the ability to print out enquiry results by the enquirer, the potential volume for internet enquiries could, in time be huge.

Telephone Information

92. The Council currently contributes along with other ex-Avon unitary authorities to the cost of providing the TRAVELINE service, a local telephone enquiry service provided under contract by First Bristol, which supplements their commercial enquiry service. It is intended that the regional service will replace TRAVELINE within six months of the service starting.

93. The Council also supports TRIPSCOPE, a national travel advice service for disabled people that provides a service for the SW from its office in Bristol.

Bus Journey Planner

94. A door-to-door bus journey planner is being developed as part of the INTERCEPT European project, which will allow users to plan bus trips using the Internet and stand-alone kiosks. The Council plans to build upon the small network of public access terminals at key interchange sites provided through INTERCEPT. The development of the regional database as the information resource for this purpose offers a larger dataset with wider geographical coverage. A further £50,000 in LTP funding is bid for this purpose in 2001/02.

Timetable information

95. The Council has a major role in the provision of information at bus stops, being responsible for some 350 stops including all stops in central area. As set out in the Bus Strategy the Council intends to work with First Bristol Buses to increase the provision of bus stop information to all stops at which it is required within the plan period. The new powers contained in the Transport Bill will assist the Council in achieving this target. See Chapter 9 for targets.

Legible City Initiative

"You have to think fast when you're driving around Bristol, but sometimes the signs are more confusing than helpful"

Response to consultation on Legible Cities

96. Bristol Legible City seeks to improve people’s understanding and experience of the city through a range of projects to integrate the provision information across all modes of movement within the City.

97. The initiative’s primary objectives are to:
   • create a consistent identity for the provision of travel information;
   • fully integrate all modes of transport;
   • provide dynamic traffic management;
   • assist modal shift away from private vehicles;
   • discourage unnecessary car trips;
   • reduce street furniture and sign clutter.

98. Focusing on safer and more direct movement, supplemented by area improvement projects (to reinforce the identity of City Centre Neighbourhood Areas) the initiative promotes the city as an integrated venue, and seeks to improve access to principal services, facilities and primary destinations for all users.

99. The initiative forms an essential part of the Public Transport Information (PTI) Strategy and complements the role of the proposed Integrated Travel Information Centre. In particular, the initiative seeks to provide pre-journey and on-route information at points of arrival or locations where users can be encouraged to adopt more sustainable forms of travel including: Bristol International Airport, car parks, the bus and coach station and railway terminals.

100. As a priority, the initiative is aimed at improving the links between movement systems within the city centre, focusing initially on pedestrian and vehicular movement. In due course the scope will expand to include public transport initiatives including...
creating a seamless identity for information provision and associated infrastructure relating to pedestrian, bus, ferry, light rapid transit and Park & Ride services.

101. The City Council is committed to delivering the first phase of the initiative: the pedestrian signing system by the end of 2000. Comprising a range of specially designed components, including maps and integrated travel information, this will result in the most comprehensive signing system ever installed in the UK. The product design and graphic elements of the system have been designed to enable their use in a range of related projects including:

- the production of a city centre walking map and promotional material;
- information design projects to encourage modal shift away from private vehicles on selected bus routes;
- cycle signing and cycle parking provision;
- ferry signing and information provision;
- Park-&-Ride information provision.

102. Allied to the aspiration to integrate all modes of transport is the aim of providing dynamic traffic management to assist modal shift away from private vehicles. A comprehensive Vehicular Signing Plan is proposed that aims to take a holistic approach to vehicular route management resulting in a completely revised vehicular direction signing system for the City. Specifically, the project will:

- define a clear and consistent route hierarchy for vehicular movements;
- manage the existing road capacity in a more effective and sustainable way;
- reduce the amount of wasted mileage;
- establish where vehicular direction signs will be located;
- identify what form each sign will take;
- determine the information to be presented on each sign;
- reduce sign clutter.

103. The initiative is backed by the major partners in Bristol's regeneration strategy: South West Regional Development Agency, Bristol Chamber of Commerce and Initiative, Broadmead Board Ltd, Harbourside Sponsors Group and Bristol City Council.

**Bristol Navigators**

"For cities to appear on the map of the 21st Century, they will need to focus on how they communicate, and in particular, how they can trade on their differences. Successful cities will be those that efficiently connect people, movement and places; those that are engaging and empowering and those that are welcoming, accessible and easily understood...".

Andrew Kelly, Head of Bristol Cultural Development Partnership

104. The 'Navigators' project has a vital role to play in mobility management. This pilot scheme involves training and developing a team of unemployed people to provide an information service for visitors coming to central Bristol. A key aim of the service will be to offer transport information, particularly raising travel awareness of more sustainable forms of transport within the central area of Bristol.

105. The project has enormous potential, cutting across many aspects of service delivery, not least transport, visitor management and employment services. The South West Regional Development Agency are providing seed funding for the initial stage of the project, but there is a need to find further funding in order to pilot the scheme.

106. Tourism is an extremely important if not critical component of Bristol's economic framework dealt with in more detail in Chapter 7.

**Cycling Promotion**

107. The cycling strategy identifies 'cultural change' as a key component in meeting the cycling targets. The Council will build upon its existing activities in this area, including:

- Encouragement and support to external employers to provide for cyclists as part of Travel Plans directly and through support to 'Cycle West' (which provides site support for employers and employees).
- Development of cycle facilities and other facilities at Council buildings as part of the Local Authorities' Travel Plan work: two schemes received cycle friendly employers awards (in 1998 and 1999).
- Major events such as Bristol's Biggest Bike Ride, which attracts over 5,000 participants of all ages and abilities.
- Support to local cycling groups to provide activities such as maintenance workshops and adult skills training.
- Development of partnerships with the health sector, employers and other groups, particularly through the Bike Forum and the National Bike Week Planning Committee (both of which the Council co-ordinates).
• Production and wider distribution of a range of route maps and information leaflets.

108. It is proposed to consolidate and expand a number of activities through the provision of a cycle resource centre in the Centre of Bristol in partnership with the private sector. This would combine retailing, parking, information services and adult training under one roof. If successful, the support will be provided for additional centres in other parts of the city.

**Travel Awareness**

**Strategy Development**

109. Chapter 3 identifies certain psychological issues as both constraints and opportunities for bringing about changes in travel behaviour. Experience from well-developed and effectively implemented travel awareness campaigns in other parts of Europe, suggest that this can be a cost-effective way of complementing infrastructure improvements. For example Karlstad in Sweden in 1995 adopted ambitious targets to reduce traffic levels by 30% by 1999. The plan aimed to achieve this reduction through a combination of physical measures and a promotional and education programme with the cities residents. By the end of 1997 traffic had decreased by 15% and evidence showed that this was due to a combination of both physical and promotional measures. Elsewhere under the German Cycle Friendly Cities initiative, one city was able to increase cycling from 5% to 14% of all journeys through an effective promotional campaign (in advance of infrastructure improvements being introduced).

110. The Council is at an early stage (with the neighbouring Unitary Authorities) of a ‘predict air pollution tomorrow’ project. This will be an effective tool in seeking media exposure of health issues. However there is need for a wider campaign to Link with the DETR ‘Are you doing your bit?’ campaign and build upon the significant existing activity in Bristol including Walk to School/Safer Routes to School campaigns; National Bike Week events and the promotion of travel planning; and LA 21 consultation.

111. At an early stage the ‘Health Impact’ work jointly being undertaken by the City Council and identified the potential for joint working on this area. The Council has sought wider endorsement and involvement for the travel awareness area of work and set up a group initially involving the Bristol Chamber of Commerce and Initiative, First Bus, Health Authority, VOSECUR (representing the voluntary/community sector) and Western Partnership for Sustainable Development.

112. The City Council has also set up an internal group to pull together all the various of strands of the Council that are already working in the travel awareness field. This internal group will enable relevant sections across the Council to feed into the wider strategy and co-ordinate work wherever possible to ensure that maximum impact is achieved.

113. Based on the work undertaken to date the Council has developed a 3-year Travel Awareness Strategy, which has the following roles:

- To promote policies.
- Link with individual projects.
- Develop themes that individuals can relate to.
- Develop practicable aspects that communities can get involved in.

114. The following target audiences have been identified:

- Individuals.
- Communities.
- Businesses.
- Schools.

115. The later two groups are already being targeted through Travel Plan and Safer Routes to School work (see separate sections within the Mobility Management Section). As part of the Strategy a travel awareness campaign is being developed focusing on the first two groups: individuals and communities.

116. There are two main types of tools that will be used to target individuals and communities:

**A - Encouraging change Through Communications**

117. Awareness raising through a wider range of measures - using media, posters, adverts etc. This will be a general awareness campaign in a similar vein to the national ‘Are you doing your bit?’ campaign. The campaign will be a phased campaign over three years seeking initially raised awareness of the problems and in later years start to demonstrate some of the solutions that have been delivered by the Local Transport Plan.

118. In order to be effective in this wider marketing role the Council is commissioning marketing expertise to develop and implement this element of the campaign. Tendering will take place during summer 2000 and the campaign will be ready for launching in early spring 2001.

119. This area of work will be closely co-ordinated with the work that needs to be undertaken as part of the ‘Charging Development Partnership’ which has to raise awareness of issues surrounding the Council’s intention to explore the introduction of road user charging in Bristol.
B - Encouraging change through Practical Measures

Community Transport Initiative Budget

120. In addition to the national events such as Green Transport Week and National Bike Week, this area of work will operate through a ‘Community Transport Initiative Budget’. The aim of the initiative is to provide support to local groups wishing to develop their own solutions to transport problems in their areas. A seminar will be held jointly with VOSCUR (the umbrella organisation for voluntary organisations) in Autumn 2000 to launch this budget. Local groups will be invited to come up with proposals and apply for support. This seminar will have local speakers talking about how they have made progress and will detail what support and assistance the Council can offer to local communities wishing to apply for support.

Travel Plans

121. Considerable further progress on the promotion and implementation of Travel Plans has occurred since the Provisional LTP was submitted, with the Council playing a major role in leading and co-ordinating this process.

Voluntary Travel Plan Development

122. The Council has adopted the target of six major employers each year agreeing to develop and adopt travel plans. Figure 6.10 indicates the current level of activity in the City. Large employers who have embarked on Travel Plan development in the last year include the United Bristol Hospital Trust (UBHT) the City of Bristol College, Bristol & West Building Society and DAS.

123. The Council is supporting and facilitating the Travel Plan movement in the City in a number of ways:

- Quarterly meetings of the ‘Travel Plan Club’ with detailed sessions relating to the LTP; public transport issues and ‘awareness and making it happen’. Around 25 employers and the major local bus operator are involved, allowing a good exchange of experience and consultation on local transport issues. The forum also provides a direct means of monitoring of progress and of publicising new information (for example ‘The Travel Plan Resource Pack’)
- First Bristol Buses has been active in developing season ticket discount arrangements, which enable employees and the Bus Company to share costs for different levels of discount.
- Co-ordination of a Employer Group focusing on the growing Temple Quay area (close to Temple Meads railway station). A number of aspects are being developed including the pooling of travel survey data in order to present a wider transport planning picture for the area. A key issue for employees in this area is good bus access to the main bus interchange in the Centre of the City. A bid for funding to support a partnership dedicated bus link - with financial support from the employers; the RDA and the Council, is included in the LTP.

- Provision of practical support. For example, assistance to United Bristol Health Trust (UBHT) in survey design and analysis has been provided. The Council wishes to target major sites such as hospitals, major employment areas (the city centre, Severnside) and major leisure complexes where the scope for impact is greatest, working in conjunction with other policy areas, including Air Quality Management. Below is an overview of the current situation in relation to major sites.

- The Resource Pack launched by the Council last year has proved useful to a variety of local employers who the Council have provided with face-to-face advice on how to go about preparing a travel plan. This has been supplemented with a newsletter ‘The Clubbing Commuter’ giving up to date information and promoting the DETR/ETSU Resource Pack.
- An Avon Area Travel Plan Conference was held with adjacent local authorities, with the aim of bringing together best practice from a variety of workplace situations (including low density employment). An awards scheme (for progress and achievement) was launched at this conference with the support of the CBI. The conference took place during Green Transport Week 2000 in Bristol and was attended by over 50 local employers.
- A number of employers (including Bristol City Council) are developing modal share targets, based on the results of staff surveys and LTP

Local Travel Plans: Examples of Good Practice

1. DAS Legal Expenses Insurance Company Ltd with provision of cycle parking and showers cyclists increased from around 6 per day to 15 per day in the Summer months.
2. Nat West Life have provided staff with the option of lump sum payments as an alternative to company cars, resulting in fewer company cars being used.
MAJOR SITES WHERE TRAVEL PLANS COULD HAVE A SIGNIFICANT IMPACT IN BRISTOL

<table>
<thead>
<tr>
<th>Site</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Temple Quay</td>
<td>Joint working of employers through newly formed Council/RDA/Employers Group. 5000 staff due to move in to newly developed office quarter.</td>
</tr>
<tr>
<td>2. United Bristol Hospital Trust</td>
<td>Joint working on development of Travel Plan, including Mode Share targets for 7000 staff.</td>
</tr>
<tr>
<td>4. City of Bristol College</td>
<td>Plan under preparation, including Mode Share targets.</td>
</tr>
<tr>
<td>5. Bristol City Council</td>
<td>Plan close to adoption including Mode Share targets. 16,000 staff.</td>
</tr>
<tr>
<td>6. Central Area</td>
<td>See 1-5 above. Probable move towards establishing employer groupings.</td>
</tr>
<tr>
<td>7. Cabot Park, Avonmouth sized</td>
<td>This is a large scale development with a variety of small and medium employers. Co-operation/co-ordination to be provided (covered by the S106 agreement).</td>
</tr>
<tr>
<td>9. Avonmouth, Brislington</td>
<td>Further work on developing joint working &amp; St. Anne’s Trading Estates between smaller/medium sized employers will be required. Possibly building on work in 6 above.</td>
</tr>
</tbody>
</table>

TEMPLE QUAY EMPLOYERS TRAVEL PLAN

Background

- Over 4000 new jobs over the late 2000 to 2003 period, supplementing 2000 + jobs in the immediate area.
- Employers are pooling staff travel survey information to identify common issues (see main text).
- Local authority is helping to co-ordinate appropriate action.
- Only approximately 10-15% of staff will have access to on-site car parking.

Issues

- Site is linked to cycle network and Temple Meads Station.
- Site is some 20-30 minutes walk from main hub of the bus network. Existing 8 and 9 services running close to site are often running at capacity.
- Travel surveys indicate that 30-40% of staff wish ultimately to travel by bus.
- First Bus has no plans to amend the bus network to meet this demand.
- The need for a strong bus connection linking the bus station and other bus services to Temple Quay has been identified as the highest priority for employers. This is also supported by the Broadmead Manager since staff will wish to access the City’s main retail area at lunchtime.
- It is also supported by the RDA which is moving onto the site.

The Proposal

Through roundtable discussions with the employers, the following has been proposed: a 10 minute frequency service using two new buses. This would be strongly promoted by the employers, who would act as outlets for ticket sales.

Assessment

Based on the Staff Travel Surveys and projected development timescale for the site, the following percentage figures are expected:

Early 2001: 100,000 per year rising to 400,000 per year in 2003

The service is likely to become commercially viable in 2002 or 2003.

Bid

1. Purchase of two buses to be used on the service up to commercial viability being achieved in 2002/2003 cost £180,000.
3. Real time information at four stops and on bus equipment - £8000.

Pump Priming

The buses would be owned by the City Council, which would be able to reallocate their use to pump-prime pilot bus access projects serving other employment areas (e.g. Severnside; Feeder Road; A38 Pavilions) after 2002.
Table 6.10 - Database of Employers involved in Voluntary Travel Plans

<table>
<thead>
<tr>
<th>EMPLOYER</th>
<th>No. of Employees</th>
<th>Member</th>
<th>Staff Survey</th>
<th>Co-ordinator Appointed</th>
<th>Adoption of Transport Plan</th>
<th>Targets</th>
<th>Public Transport Incentives</th>
<th>Cycling Incentives</th>
<th>Walking Incentives</th>
<th>Car Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>AXA Sunlife</td>
<td></td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td>Y</td>
<td>Y</td>
<td></td>
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<tr>
<td>Bae Systems</td>
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<td>Y</td>
<td>N</td>
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<td>N</td>
<td>N</td>
<td>N</td>
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<td>Imminent</td>
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<td>Benefits Agency</td>
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<td>N</td>
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<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
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<tr>
<td>Bristol and West</td>
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<td>Under Prep</td>
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<td>Bristol Chamber of Commerce</td>
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<td>Y</td>
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<tr>
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<td>Planned</td>
<td>Y</td>
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<td>DAS Legal Expenses</td>
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<tr>
<td>GOSW</td>
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<td>Hemmings Waste Management</td>
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<td>N</td>
<td>N</td>
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<td>Under Prep</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>United Bristol Health Trust</td>
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<td>Y</td>
<td>Under Prep</td>
<td>Planned</td>
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<td></td>
</tr>
<tr>
<td>University of West of England</td>
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<td>N</td>
<td>Under Prep</td>
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<td>Vehicle Inspectorate</td>
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</tr>
</tbody>
</table>
traffic reduction targets. This will be promoted through future forums, conferences, seminars and in particular through the Awards System.

• Voluntary adoption of travel plans forms a cornerstone of the developing travel awareness strategy (see above) covering schools, communities, individuals and employers. The Bristol Chamber of Commerce and Initiative is supporting this aspect of the awareness work.

• Working with external bodies with good links to the business sector, including Filton Econet, Western Partnership for Sustainable Development and the Broadmead Management Board.

• Travel Survey work and other forms of consultation by employers will also assist in identifying and prioritising some of the improvements to the pedestrian, cycle and public transport network. The reference to Temple Quay above is relevant to this. Other examples include the provision of a contra-flow cycle lane into the Bristol University site, the provision of a cycle/pedestrian bridge linking the Bristol & Bath Railway Path into Temple Quay and the development and promotion of cycle route maps through employers.

A Travel Plan for Bristol City Council

124. It is vital that the City Council continues to set a good example in the City. As a single largest employer (some 16,000 employees) it can directly affect travel patterns, and Travel Plan measures will reinforce the Council’s transport investment programme.

125. A major management and directorate restructuring of the Authority is now well advanced, and this is recognised as an opportunity for reaffirmed senior management support and leadership required to fully support the Plan.

126. Further, the internal Environmental Management Appraisal System (EMAS) is being piloted. This involves a number of Actions and Targets relating to staff travel to work and travel in the course of work.

The Draft Council Action Plan contains the following elements:

• Agree the Travel Plan (TP) for central offices in 2000. This includes mode share targets aimed at reducing the proportion of car driver only journeys to work from 45% to 39% by 2002.

• Agree TPs and targets for Area Offices and other large non-central offices in 2001.

• Provide financial and practical support for grass roots initiatives across the whole Authority from 2000.

• Complete review of relevant personnel/financial arrangements across the authority in 2001.

• Continue to work with the Flexible work ‘Time of our Lives’ initiative.

• Development/promotion of visitor information and facilities.

• Continue to consult staff and provide information in conjunction with the above. A special newsletter was distributed to staff in all Directorates in early 2000.

127. Additionally, a number of fleet management initiatives have been developed including:

• all of the in-house fleet now uses ultra low sulphur diesel fuel;

• a number of liquid petroleum gas fuelled vehicles have been ordered;

• trials are continuing with natural gas vehicles;

• a new fuel management scheme has been introduced that will give computerised management reports advising on fuel usage;

• vehicle utilisation has been enhanced through successful tendering for provision of non-commercial services;

• providing the Lord Mayor with the first LPG converted car;

• having 60 vehicles in the fleet operating bi-fuel on both petroleum and LPG within the next three years;

• providing a bunkered LPG fuel station on site at Brislington (already in place);

• providing an electric bus passenger service between Tollgate and Broadmead (formerly run by First bus).

Commitment through the Planning Process

128. The Council has welcomed the publication of draft PPG13 in relation to the support given to the role of Travel Plans in the context of new development. Prior to its publication a number of commitments had already been secured. The Council has also developed its own mechanisms to ensure consistency and reasonableness in the process, and to ensure that targets and monitoring form an integral part. Where possible, Travel Plans are secured through S106 agreements. Around 20 further Travel Plans have been committed since the provisional LTP some examples of which are listed in figure 6.11.
Targeting Shorter Journeys

129. The provisional LTP identified the influence of short car journeys on local and environmental conditions in Bristol. For example, 40,000 car trips to work every day are less than 3 miles in length. This is significant in relation to the Air Quality Strategy, particularly in view of excessive pollution arising from vehicles when starting from cold. The efficiency of many junctions and other parts of the transport network are sensitive to relatively small changes in demand. Therefore, targeting of shorter car journeys is likely to have a significant effect across a range of policy areas; including air quality, movement and personal health.

130. A number of strategy elements of this LTP have a strong emphasis towards shorter journeys. Some of these strategies focus on particular modes and at ‘destination’ trip ends. However, the effectiveness of focusing on short journeys at the home trip end of the trip relationship has, to date, not been tested. It is therefore proposed to establish a number of projects working at a ward and sub-ward level, where a co-ordinated range of measures and community involvement would be encouraged. These would be monitored to establish what level of additional impact can be achieved and, if successful, could then be applied in other areas.

TRAVEL PLAN INITIATIVES CURRENTLY BEING PROMOTED BY BRISTOL CITY COUNCIL

<table>
<thead>
<tr>
<th>IDEA</th>
<th>PROGRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IDEA</strong></td>
<td></td>
</tr>
<tr>
<td>Bus/Rail</td>
<td>Interest free loans already exist, deducted salary in 12 monthly instalments in arrears.</td>
</tr>
<tr>
<td></td>
<td>Technology being developed</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Car Share</strong></td>
<td></td>
</tr>
<tr>
<td>Set up and maintain car sharing register</td>
<td>Recent survey of 2,000 staff suggests that scope for car sharing very limited</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pool Cars</strong></td>
<td></td>
</tr>
<tr>
<td>Expand provision of pool cars with support of individual Directorates.</td>
<td>As an example, over 30,000 miles a year covered by three pool cars in the Planning Directorate, saving over a thousand journeys to work by car each year</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pool Bikes</strong></td>
<td></td>
</tr>
<tr>
<td>Expand provision with central maintenance arrangements.</td>
<td>A number of Directorates have purchased pool bikes and have maintenance arrangements with local cycle shops</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cycle facilities</strong></td>
<td></td>
</tr>
<tr>
<td>Expand secure cycle parking and showers</td>
<td>A number of new schemes at Brunel House, CREATE and Wilder House have attracted more cycling users over the last two years</td>
</tr>
</tbody>
</table>

Selection Process

131. Six areas of the city were shortlisted, based on the following criteria:

1. High proportion of journeys to work < 5km.
2. Targetable absolute number of car trips < 5km.
3. Good existing public transport services.
4. Good local services (e.g. retail, health, etc.).
5. Existing local initiatives.
6. Other planned relevant local authority initiatives, including level 2 or 3 Safer Routes to School proposals; accident reduction measures: bus priority proposals; and cycle network development.
7. Major employment areas within 4-5km distance.

It is proposed to work initially with three areas.

Proposed Measures

132. Essentially the proposal is to bring together focused aspects of information; promotion, co-ordination and support into three geographical areas. The exact blend of measures will follow local discussion but will draw upon the following:

<table>
<thead>
<tr>
<th>IDEA</th>
<th>PROGRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IDEA</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Bus/Rail</strong></td>
<td></td>
</tr>
<tr>
<td>Improve the financial incentives through discounted season tickets.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide on line trip planning information.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Car Share</strong></td>
<td></td>
</tr>
<tr>
<td>Set up and maintain car sharing register</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pool Cars</strong></td>
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</tr>
<tr>
<td>Expand provision of pool cars with support of individual Directorates.</td>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td><strong>Pool Bikes</strong></td>
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<tr>
<td>Expand provision with central maintenance arrangements.</td>
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</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cycle facilities</strong></td>
<td></td>
</tr>
<tr>
<td>Expand secure cycle parking and showers</td>
<td></td>
</tr>
</tbody>
</table>
• Tailored bus time and map information, supplied to households (links with Bus Strategy).
• Real time information (links with Bus Strategy).
• Adult cycle training (links to Cycle Strategy).
• Cycle Resource Centre.
• Cycle interchange (links to Cycle Strategy).
• Access audits to public transport routes and local services, and programme of investment (links into Walking Strategy).
• Support to Walk To School campaigns and activities (links into Safer Routes to School Strategy).
• Travel Blending (links into Travel Awareness work).
• Practical support to community travel initiatives like Car Clubs (links into Travel Awareness work).
• Promotion and support for home deliveries e.g. from local video shops, and supermarkets.

**Environmental Management:**

133. The environmental degradation caused by road traffic adversely affects the quality of many people’s lives. Road transport is the major source of local air and noise pollution, and is a major contributor to global warming. Tackling these issues will lead to improved human health and contribute towards the attractiveness of the city as a place to live, work and play.

134. Over recent years increasing public awareness of environmental issues coupled with increasing professional concern over the effects of air pollution on health and the impacts of global climate change has raised the issue of air pollution high on the political agenda.

135. This period has seen a progressive strengthening of UK and EU environmental policies. The prominence given to environmental management and the need to reduce the environmental impacts of road transport is reflected in the strengthening of the Council’s Air Quality, Noise and Climate Change strategies.

136. This section deals with three key elements of Environmental Management in relation to transport:
- Air Quality Strategy.
- Climate Change.
- Noise Management Strategy.

137. Other issues, such as the quality of the built environment and civic spaces, are dealt with in part 3 of this chapter.

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**Figure 6.11**

Examples of Sites with Travel Plan Attached to Planning Consent (in 1999/2000).

<table>
<thead>
<tr>
<th>Name of Site</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabot Park, Avonmouth</td>
<td>Large business park in northwest Bristol in existing industrial/warehouse area. Poorly served by public transport.</td>
</tr>
<tr>
<td>ALSPAC</td>
<td>Conversion of Homeopathic Hospital near existing University precinct for expansion of University teaching/medical purposes.</td>
</tr>
<tr>
<td>Hampton House/Cotham House, Clifton</td>
<td></td>
</tr>
<tr>
<td>Bath Street, Bristol</td>
<td>Mixed use development in central Bristol including a 5 storey office development .</td>
</tr>
<tr>
<td>Caxton House, Redcliffe Way, Bristol</td>
<td>Extension to and refurbishment of existing office building in central Bristol near Temple Meads.</td>
</tr>
<tr>
<td>Blackberry Hill Hospital Fishponds, Bristol</td>
<td>Conversion of vacant two storey wing to teaching and office accommodation.</td>
</tr>
<tr>
<td>Symes Avenue, Hartcliffe, Bristol</td>
<td>Redevelopment of site to significant retail, residential and community buildings.</td>
</tr>
<tr>
<td>Stapleton Road Mosque, Bristol</td>
<td>Conversion of residential properties – visitor travel plan to be implemented as part of planning consent.</td>
</tr>
<tr>
<td>Bristol Rovers Football Club</td>
<td>Initial Travel Plan measures as part of stage 1 of redevelopment of existing site – aspiration to make 20,000 all seater stadium.</td>
</tr>
</tbody>
</table>
### Figure 6.12 - Short Journeys Strategy Area Profiles

<table>
<thead>
<tr>
<th>Ward</th>
<th>No. of car driver trips &lt;5 km to work (1991)</th>
<th>Proximity of employment areas</th>
<th>Access to Local Services</th>
<th>Public Transport Services</th>
<th>Other Initiatives/Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedminster</td>
<td>1400 37% of all</td>
<td>1. City Centre 2. Ashton Vale/ South Liberty Lane 3. St Philips/ Feeder Road 4. Pavilions</td>
<td>High</td>
<td>1. City Centre 2. East Street 3. Ashton Park and Bedminster Down Secondary Schools 4. South Street/Luckwell/ Ashton Gate/Southville/ Ashton Drive Primary Schools</td>
<td>20, 21, 22 and West Street Services Orbital – None</td>
</tr>
<tr>
<td>Stoke Bishop</td>
<td>N/A</td>
<td>None</td>
<td>1. Shirehampton Road 2. Stoke Hill/White ladies Road 3. Ashton Vale etc 4. Feeder 5. St Philips Street</td>
<td>Parrys Lane 42,23,41 Moderate</td>
<td>Parrys Lane 42,23,41 Moderate</td>
</tr>
<tr>
<td>Windmill Hill</td>
<td>N/A</td>
<td>1. City Centre 2. Ashton Vale etc 3. Feeder 4. St Philips Street</td>
<td>1. East Street 2. City Centre</td>
<td>Not directly linked 50 St Johns Lane Bedminster Parade/ Malago Road Bedminster Station</td>
<td>Through route problem Cycle Network links Objective 2</td>
</tr>
<tr>
<td>Easton</td>
<td>1220 37% of all</td>
<td>1. City Centre 2. Feeder Road</td>
<td>1. City Centre 2. Stapleton Road/ St Marks Road 3. Easton Leisure Centre 4. Easton Community Centre</td>
<td>Radial : Frequent via Stapleton Road 24/25</td>
<td>Objective 2 Urban Renewal Strategy?</td>
</tr>
</tbody>
</table>
**Air Quality Management**

“We are still choking on your fumes”

**City Centre Graffiti**

**Introduction**

138. Air quality is an issue of great public concern in Bristol, with some 85% of people who responded to the Local Transport Plan consultation expressing worry about air pollution arising from traffic.

139. The Council has nearly completed its Third Stage Air Quality Review (results available August 2000). This work indicates that levels of air pollution in Bristol are unacceptable and that the declaration of an Air Quality Management Area (AQMA) will be required to address excess levels of particulates (PM$_{10}$s) and nitrogen dioxide (NO$_2$) in relation to the objectives contained in the National Air Quality Strategy (NAQS).

**Strategy**

140. A corporate Air Quality and Noise Management group has been established (Figure 6.13) to oversee the development of air quality management in the city. This group has prepared a Local Air Quality Strategy (LAQS) (Appendix 3.6) that contains a number of strategy principles and implementation mechanisms that form the basis of the Air Quality Action Plan (AQAP) that is currently being developed. The AQM process is outlined in Figure 6.14.

141. The strategy highlights the importance of general measures such as road user charging in meeting the objectives together with additional measures to tackle pollution hot-spots. The importance of the road traffic reduction targets in meeting the air quality objectives is stressed, as is the contribution of short car trips to pollution levels in view of the ‘cold start’ problem.

142. It is proposed that the city is divided into three categories of air pollution: areas where NAQS objectives will be exceeded in 2005, areas experiencing moderate pollution and areas where levels of air pollution are low.

143. The strategy also includes an objective for CO$_2$ emissions, linked with the road traffic reduction targets.

**Timetable**

- September – October 2000 – consultation on 3rd Stage Review & Assessment and proposed Air Quality Management Areas (AQMA).
- Autumn 2000 – designation of AQMA.
- Autumn 2000 - summer 2001: further air quality reviews within AQMA, identification of hotspot locations.
- Spring 2001: consultation on AQAP.

**Progress**

144. The scope for reducing the number of short car trips is being explored through the Shorter Journeys Strategy. Work is also being undertaken to improve public awareness of air quality issues through further integration in the Council’s Travel Awareness initiatives, and more specifically through consultation on the Air Quality Management process.

**Consultation**

145. A publicity leaflet "Air Quality & Traffic in Bristol – the way forward" was recently distributed to around 215,000 households and businesses in Bristol. This served to heighten awareness prior to a more focussed consultation on the 3rd Stage Air Quality Review and the declaration of AQMAs. The leaflet led to over 1000 people and businesses requesting to be involved in the consultation process.

146. A recent series of internal briefings will be followed by an extensive three month consultation period utilising conventional techniques such as public and business meetings, questionnaires, exhibitions, forums, local media coverage etc. as well as more innovative methods such displaying visual information at the Council’s ITIC kiosks and interactive web pages on the internet. This process will provide a database of interested bodies, which will form the foundations of further consultation on the Draft Action Plan in 2001.

**AQMA Designation.**

147. The definitive map of exceedances on which the AQMA designation will be based will not be finalised until August 2000. The approximate area of likely nitrogen dioxide exceedances in 2005 is shown in figure 6.15, covering the central area of the city along with parts of the major radial routes and the M32 corridor. It is likely that there will be further pollution hot-spots in canyon street locations.

**Abatement Measures**

**National**

148. The Council recognises the importance of National and EU fiscal and regulatory measures in underpinning local action to tackle air pollution. Measures that promote less-polluting and more efficient vehicles, such as graduated vehicle excise...
duty, fuel taxation and agreements with motor manufacturers have the potential to deliver significant reductions in vehicle emissions at a local level.

**General LTP Measures**

149. The general strategy measures outlined in this LTP, through the promotion of alternative modes of transport and a reduction in levels of dependence on the private car, combined with national measures, will bring significant improvements in local air quality in the longer term. However, in the short to medium term, and in heavily trafficked areas additional measures will be required in order to achieve the NAQS objectives.

150. Figure 6.16 identifies the LTP strategy components that have the potential to reduce air pollution, together with likely additional measures targeted specifically at improving air quality.

**Targeted Measures**

**Enhanced Monitoring.**

151. A Dynamic Emissions Information System (DEIS) will be set up to link live traffic data from the SCOOT UTC system to the Council’s air quality and traffic models. The SCOOT system will also be enhanced to collect roadside pollution data. This will enable a more detailed analysis of traffic movements and air pollution in the central area. By linking into the city traffic models the DEIS will enable detailed scenario testing of potential Action Plan packages, identifying the most effective measures and enabling efficient resource prioritisation. The DEIS will also allow live congestion data to be displayed on the Council’s internet site.

152. The Council’s mobile pollution monitoring laboratory has been used in a number of projects including monitoring the incidence of children with asthma at schools adjacent to busy roads. However, owing to the demands placed on the equipment, detailed monitoring of the impacts of traffic management schemes has not been possible. The purchase of a second mobile laboratory will improve the monitoring of traffic management schemes and enable the commencement of a pollution hot-spot identification programme.

**Action Plan Measures**

153. The primary focus of the Air Quality Action Plan will be on the areas in and around the AQMA. In the moderate and low pollution areas targeted action may be required if monitoring detects a deterioration in air quality. It is likely that the AQAP
Figure 6.14
Air Quality Management Process

Figure 6.16
Air Quality Action Plan: Transport Measures
Figure 6.15
Provisional Model Output for NO$_2$ Annual Mean 2005: All Sources

KEY
Annual Mean NO$_2$ (2005) ug/m$^3$
- 38 - 43 (Probable Exceedance)
- Built-up Area

*40 microgrammes per cubic metre = 21 ppb

*N.B This map is a result of preliminary air quality forecasting for 2005. The areas of exceedance are indicative only and may not necessarily correspond with any future declaration of an Air Quality Management Area.
### Strategic Network Management

#### Shorter Journeys Strategy
- 8 zones over 5 years. Monitor with a view to extending city-wide.
- Reduce the number of high-polluting short trips by car.
- Implement schemes within & near to AQMA.

#### Public Transport - Bus
- Improving public transport provision- see bus strategy.
- Incorporate minimum vehicle emission standards into Bus Quality Partnership. Market buses as a less environmentally damaging mode.
- Reduce the number of trips by car. Reduce emissions from buses. Reduce the negative perceptions of buses.
- Retrofitting / alternative fuels via EST- Powershift programme.
- Other funding source

#### Cycling
- Cycle Strategy.
- Improved cycling facilities in & around AQMA- Links may be required in addition to those set out in the cycling programme.
- Zero emission transport mode. Potential to significantly reduce the number of short car trips.
- Implement schemes within & near to AQMA.

#### Low Emission Zone/ Clear Zones
- In discussion with NSCA with a view to being involved in the LEZ research project. Involved in Clear Zones working group.
- Develop LEZ & Clear Zones concepts. Explore links with road-user charging with a view to electronic enforcement / differential charging according to emissions. Retrofitting of vehicles.
- Reduce emissions within AQMA, encourage use of less polluting modes / technology.
- Strategy development & LEZ initiatives.

#### UTMC
- Improving network flow via UTC signals.
- Link SCOOT to air quality models and traffic models in order to improve information and network management in relation to air quality. Collect roadside pollution data via the UTMC system.
- Improved monitoring, information dissemination, action plan scenario testing, improved decision support system. Enable signals to respond to high pollution episodes.
- Link UTC system to air quality & Traffic models. Install network of UTC roadside pollution monitors within AQMA.

#### Traffic Management
- Traffic calming, improved flows, roadspace re-allocation.
- Develop route/area wide approach. Regulations linked to AQMA. Monitor AQ impacts of TM schemes.
- Reduce emissions, reduce traffic around sensitive locations. Encourage appropriate speeds and driving techniques.

### Figure 6.17 - Draft Framework for Developing an Action Plan

<table>
<thead>
<tr>
<th>Measure</th>
<th>Current progress</th>
<th>Future Requirements</th>
<th>Impact on Air Quality</th>
<th>Funding (£ 000's)</th>
<th>Yr 1</th>
<th>Yrs 2-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shorter Journeys Strategy</td>
<td>Strategy in development. 3 Pilot zones in 2000/2001. Emphasis on use of mobility management measures.</td>
<td>8 zones over 5 years. Monitor with a view to extending city-wide.</td>
<td>Reduce the number of high-polluting short trips by car.</td>
<td>Implement schemes within &amp; near to AQMA.</td>
<td>20</td>
<td>800</td>
</tr>
<tr>
<td>Public Transport - Bus</td>
<td>Improving public transport provision- see bus strategy.</td>
<td>Incorporate minimum vehicle emission standards into Bus Quality Partnership. Market buses as a less environmentally damaging mode.</td>
<td>Reduce the number of trips by car. Reduce emissions from buses. Reduce the negative perceptions of buses.</td>
<td>Retrofitting / alternative fuels via EST- Powershift programme.</td>
<td>Other funding source</td>
<td>Other funding source</td>
</tr>
<tr>
<td>Cycling</td>
<td>Cycle Strategy.</td>
<td>Improved cycling facilities in &amp; around AQMA- Links may be required in addition to those set out in the cycling programme.</td>
<td>Zero emission transport mode. Potential to significantly reduce the number of short car trips.</td>
<td>Implement schemes within &amp; near to AQMA.</td>
<td>20</td>
<td>200</td>
</tr>
<tr>
<td>Low Emission Zone/ Clear Zones</td>
<td>In discussion with NSCA with a view to being involved in the LEZ research project. Involved in Clear Zones working group.</td>
<td>Develop LEZ &amp; Clear Zones concepts. Explore links with road-user charging with a view to electronic enforcement / differential charging according to emissions. Retrofitting of vehicles.</td>
<td>Reduce emissions within AQMA, encourage use of less polluting modes / technology.</td>
<td>Strategy development &amp; LEZ initiatives.</td>
<td>40</td>
<td>1000</td>
</tr>
<tr>
<td>UTMC</td>
<td>Improving network flow via UTC signals.</td>
<td>Link SCOOT to air quality models and traffic models in order to improve information and network management in relation to air quality. Collect roadside pollution data via the UTMC system.</td>
<td>Improved monitoring, information dissemination, action plan scenario testing, improved decision support system. Enable signals to respond to high pollution episodes.</td>
<td>Link UTC system to air quality &amp; Traffic models. Install network of UTC roadside pollution monitors within AQMA.</td>
<td>60</td>
<td>80</td>
</tr>
<tr>
<td>Traffic Management</td>
<td>Traffic calming, improved flows, roadspace re-allocation.</td>
<td>Develop route/area wide approach. Regulations linked to AQMA. Monitor AQ impacts of TM schemes.</td>
<td>Reduce emissions, reduce traffic around sensitive locations. Encourage appropriate speeds and driving techniques.</td>
<td>50K for new AQM trailer. Remedial measures for pollution hot-spots.</td>
<td>50</td>
<td>500</td>
</tr>
</tbody>
</table>
## Draft Framework for Developing an Action Plan

<table>
<thead>
<tr>
<th>Measure</th>
<th>Current progress</th>
<th>Future Requirements</th>
<th>Impact on Air Quality</th>
<th>Funding (£ 000's)</th>
<th>Yr 1</th>
<th>Yrs 2-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel Plans</td>
<td>Travel Plan Strategy.</td>
<td>Develop BCC’s travel plan. Promote voluntary TPs in external organisations.</td>
<td>Reductions in car trips to work and business mileage. Better managed vehicle fleets.</td>
<td>Pump-prime voluntary TPs within AQMA.</td>
<td>50</td>
<td>200</td>
</tr>
<tr>
<td>Freight</td>
<td>Strategy in development.</td>
<td>Freight routes. Local delivery systems. Work with operators to encourage retrofitting / alternative fuels.</td>
<td>Less congestion. Lower vehicle emissions. Reduce number of shopping trips by car.</td>
<td>Pilot measures in partnership with private sector.</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Awareness</td>
<td>Travel awareness strategy. Air quality consultation.</td>
<td>Highlight impacts of travel behaviour on air quality. Sustained information / awareness / education campaign.</td>
<td>Reduce number of car trips, reduce the number of high polluting vehicles.</td>
<td>Publicity initiatives in addition to travel awareness programme.</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>PTWs</td>
<td>Strategy in development.</td>
<td>Examine environmental benefits. Monitoring use / mode switch.</td>
<td>Potential to reduce congestion and emissions.</td>
<td>Other funding source</td>
<td>Other funding source</td>
<td>0</td>
</tr>
<tr>
<td>Planning</td>
<td>Developing formal protocol to consider air quality issues in planning decisions.</td>
<td>Continued development of links between AQM &amp; Planning. Development of Local Plan and Structure Plan polices. Stronger use of Travel Plans in relation to new developments within AQMA.</td>
<td>Reduce need to travel. Encourage alternatives (Travel Plans). Reduce environmental impacts of new developments.</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**N.B** This is a provisional framework and costing of potential Action Plan Measures.

The actual bid for the implementation of the Air Quality Strategy is detailed in Chapter 8.
will focus on a Combined Emission Reduction strategy, i.e., a combination of demand management measures and emissions control measures such as Low Emission Zones (LEZ).

154. It is not yet possible to provide a precise package of AQAP measures, however, a draft framework for the development of a programme is outlined in Figure 6.17. Key elements of the Action Plan are likely to include area-based measures to deal with pollution hot-spots where the objectives are not met by general traffic restraint measures and technological improvements, including:

**Low Emission Zones / Clear Zones.**

155. The Council is keen to examine the potential of Low Emission Zones (zones from which high-polluting vehicles are excluded). It is also examining the application of ‘Clear Zones’ technology to air quality management. Of particular interest is the potential to harmonise enforcement technology with congestion charging systems and, by using electronic tags to store vehicle emission data, employ selective access restrictions at congestion charging points.

156. The Council wishes to be considered for involvement in potential LEZ and Clear Zones pilot schemes.

**Shorter Journeys strategy**

The role of which is explained elsewhere.

**UTMC**

157. Building on the revision of the road hierarchy and the creation of the environmental cells, the extension of the UTMC system has the potential to reduce pollution by improving the efficiency of the network. Adaptive network management could also be used during periods of high air pollution to relocate queuing traffic away from the worst affected areas.

**Travel Plans**

158. The growing network of employers developing Travel Plans could significantly reduce the number of commuter and work-related car trips. Whilst Travel Plans may become mandatory for new developments, the Council is keen to promote the concept among existing employers. A sum of £50,000 pa is identified to assist employers located within the AQMA in setting up company Travel Plans.

**Route specific measures - M32 de-trunking.**

159. The M32 carries over 80,000 vehicles per day and is the most heavily trafficked road in Bristol. The M32 is currently operating in excess of its design capacity and during the peak periods average speeds on the southern sections are less than 15 mph. In the off-peak periods average speeds between junctions 1 and 2 are around 70 mph - in both cases conditions that produce high levels of exhaust emissions. It is likely that sections of the M32 will be included in the AQMA and therefore options to improve the environmental management of this corridor will be considered. The Highways Agency is currently studying management options for the M32 and the Council is keen to work more closely with the Agency on this project.

**Partnerships with bus and freight operators.**

160. Heavy goods vehicles and buses account for a significant proportion of pollutants in Bristol. The Council is keen to accelerate the introduction of ‘cleaner vehicles’. The Council proposes to introduce emission standards into the Bus Quality Partnership and will seek to include similar standards in future freight partnerships.

**Traffic Management**

161. It is likely that conventional Traffic Management measures will also be required to manage air quality on some routes or areas. Traffic Management measures have the potential to lessen pollution at the worst affected sites. A sum of £125,000 per annum is identified for abatement schemes at hot-spot locations.

**‘Switch Off’ Campaigns.**

The Council’s ‘Switch Off’ Campaign will be reviewed with a view to extending the scheme.

**Resources**

162. The full implementation of the LAQS and the CO$_2$ target will have significant cost and staff implications both in terms of general traffic reduction measures (e.g., public transport network improvements, cycling network improvements, etc.) and specific area-based measures. Successful implementation is likely to be dependent on the ability to deliver a broader programme of measures for which additional sources of local funding are likely to be required.

163. The draft Action Plan framework totals £3.2 million of abatement measures over 5 years. In recognition of the resource limitations of the LTP bid this figure has been scaled down and a provisional sum of £1.25 million is identified for the implementation of the AQAP at this stage. This figure will be reviewed in the light of the developing Action Plan, and subsequent amendments to the Air Quality Management programme will be detailed in the LTP progress reports.
**Case Study:**

How Mr Earley of Eastville saved money by converting to LPG.

Mr Earley’s concern for the environment led to him purchasing a car that can run on liquid petroleum gas (LPG).

LPG vehicles emit significantly less harmful pollutants than petrol or diesel vehicles and are cheaper to run.

Under the Government’s Powershift programme up to 75% of the £1660 vehicle modification cost can be refunded, so Mr Earley’s dual-fuel LPG Vauxhall Astra 1600 hatchback will only cost him £415 more than a conventional model. LPG costs less than half the price of petrol and, with a running cost of 3.9 pence per km compared to 7.8 pence per km for a petrol car, a motorist driving 10,000 miles per year would save around £650 per year on fuel costs.

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**Noise Management**

**Introduction**

164. Transport is the most pervasive source of noise in the environment and exposure to road traffic is the main cause of human exposure to ambient noise. In its Green Paper on future noise policy the EU estimated that 20% of the Union’s population, some 80 million people, suffer from noise levels that scientists and health experts consider to be unacceptable. Noise from transportation sources is recognised as being the main contributor.

165. Noise levels vary considerably throughout Bristol, with those living in proximity to heavily trafficked roads suffering from the highest levels of exposure. In a recent survey over 50% of respondents expressed concerns about levels of noise in the city.

166. The EU is currently working on a Draft Directive for the assessment and reduction of environmental noise. During the period of this Plan the Council will develop a Noise Management Strategy to control deterioration of the noise climate in the city, to protect existing quiet areas and in particular to reduce exposure to noise from transport sources (figure 6.18). This strategy will be developed in anticipation of forthcoming EU noise policy.

**Progress**

167. A comprehensive ambient noise assessment, using sophisticated computer techniques, will be undertaken in order to quantify the scale and nature of the problem and to provide the foundations from which to inform the emerging noise policy. The Council has recently purchased digital noise mapping software to facilitate this and work will commence on mapping the city this year.

168. This work will enable the Council to develop the use and application of these techniques for the assessment and control of noise from transportation sources, especially traffic. Noise mapping will be used to consult and inform the public, to consider the effectiveness and benefits of different noise abatement approaches, to guide the development of a Noise Action Plan and aid the prioritisation of abatement measures. The knowledge and skills gained from the noise mapping project will ensure that Bristol is well placed to respond to the requirements of the EU Framework Directive and is at the forefront in dealing with transport noise.

**Strategy**

169. There will be a high level of integration between the Noise Strategy and the LTP. Many LTP policy areas such as road-traffic reduction, the road hierarchy review, freight routes, speed management, environmental cells, home-zones and maintenance policies have the potential to deliver significant reductions in traffic noise. It is likely that these will need to be accompanied by a more specific programme of noise reduction measures. As vehicle engines have become progressively quieter, attention is likely to focus on noise produced by the interaction of tyres and road surfaces - although it may be necessary to consider reducing particular types of vehicles in sensitive locations. Since 1998 the Council has been laying a new road surface - Stone Mastic Asphalt (SMA) that can reduce traffic noise considerably. 17 km of SMA has been laid since 1996 (Figure 6.19) and efforts are being made to bring forward the resurfacing of concrete roads.

170. There are strong synergies with the air quality management process (figure 6.20) in terms of both modelling the impacts and abatement measures. The highest exposures of both air and noise pollution generally occur close to heavily trafficked roads and in canyon-like street locations. Many of
the proposed air quality action plan measures, which aim to reduce traffic and moderate driving style and vehicle speeds, will lead to reductions in traffic noise. The noise strategy will be developed in tandem with local air quality management to ensure that actions to deal with one pollutant do not result in deterioration with respect to the other. The multi-disciplinary Air Quality / Noise Management Group already considers noise issues and the integration of the strategies will be strengthened as they are developed.

171. It is recognised that digitally mapping the city and developing an action plan may be a lengthy process and that more immediate action is required. Noise is already a significant factor in the selection of traffic management measures, particularly in residential areas. Strategy developments and resource implications will be included in future LTP progress reports.

Climate Change

Introduction

172. It is now widely accepted that unprecedented changes in the global climate are occurring as a result of fossil fuel consumption and the release of ozone depleting substances. Human–induced changes in the global climate system and stratospheric ozone depletion pose a range of health risks. Direct effects such as increased levels of skin cancer and extreme weather / heat-related deaths are already evident. Globally, indirect effects arising from disturbances to physical and ecological processes such as volatile weather conditions, rising sea levels, destruction of natural habitats, threats to plant and animal species and crop damage are predicted to impact heavily on people’s health, on economies and on society.

173. The UK has signed the legally binding Kyoto agreement that includes a target of cutting greenhouse gas emissions to 12.5% below 1990 levels by 2008-2012. The UK also has a domestic goal of a 20% cut in carbon dioxide (CO₂) emissions below 1990 levels by 2010. The RCEP recommends a 60% reduction by 2050.

Strategy

174. In order to address the issue of climate change the Council will:

• Acknowledge the potential seriousness of the issue, health impacts and its policy relevance.
• Enhance understanding and disseminate information.
• Adopt a plan of action.
• Implement a plan of action.
175. The contribution of transport to stratospheric ozone depletion and, in particular, CO₂ emissions to the enhanced greenhouse effect is recognised. Progress has been made in many sectors and UK CO₂ emissions in 2000 are expected to be 15% below 1990 levels. However road transport remains a significant and growing source of CO₂ emissions, accounting for around 25% of Bristol's total emissions (figure 6.21). If traffic levels are allowed to increase, road transport's contribution to total CO₂ emissions will increase further. The Council's road traffic reduction targets are therefore related, in part, to the need to ensure that Bristol makes its contribution to CO₂ reduction.

176. Within the wider policy context transport is a key element within the Council's LA21 framework and the importance of the transport sector in CO₂ reduction is a major consideration in the forthcoming Bristol Climate Change Strategy.

177. Despite increased awareness of environmental issues many people do not consider the links between their daily actions and global pollution issues. The DETR 'Are You Doing Your Bit?' campaign will be supported by a wider, more sustained programme of awareness raising and education. This is being integrated with the Travel Awareness and Air Quality Strategies.

Local Action

178. There are strong synergies with Air Quality Management and consequently measures to reduce CO₂ emissions will be incorporated within the Air Quality Strategy. However, in some cases it will be necessary to balance CO₂ reductions against local air quality objectives. For example diesel engines produce significantly less CO₂ than petrol engines but produce higher levels of harmful particulates. A further factor is that local transport policy has only limited potential to influence the level and mode of travel of long distance journeys. This will in part depend on national transport policy.

National Action

179. The Council welcomes the graduated VED based on CO₂ emissions and the voluntary agreement with motor manufacturers to reduce CO₂ emissions from new cars by 25% by 2008-9. However there are a number of trends that may offset these gains:

- The increasing number of larger vehicles.
- Increasing vehicle weights as more accessories and safety features are fitted to vehicles.
- An increasing number of vehicles being fitted with air conditioning (which increases fuel consumption and is a significant source of HCFC's) may more than offset any CO₂ reductions from fuel efficiency.
- An influx of cheaper cars as new car prices are reduced to levels comparable with Europe is likely to filter down and increase car ownership and therefore car use.
- Cars fitted with catalytic converters produce more CO₂. They also produce more N₂O, a much stronger greenhouse gas.

180. These factors are beyond the control of local authorities and therefore local action will need to be complemented by strong government polices to influence the composition of the vehicle fleet and promote alternative fuels if significant reductions in CO₂ are to be achieved.
Strategic Network Management

181. In the light of the external factors outlined above, the Council will not be setting a specific CO₂ reduction target for transport. It will however, in the short-term seek to reduce the rate of growth of CO₂ emissions, and then in the medium to long-term stabilise, and ultimately cut, CO₂ emissions from traffic.

Impact of transport strategies

182. At this stage it is difficult to quantify accurately the impact of transport strategies on CO₂ emissions. In general the traffic reduction measures included in this LTP and the air quality strategy (Appendix 3.6) should deliver a significant reduction in the rate of growth of local CO₂ emissions.

183. The BRITE study estimated that, for the Bristol travel to work area, the current transport strategy will result in a 2% decrease in the rate of growth in CO₂ emissions by 2015. Initial runs of the Council’s Transport Policy Model (TPM) predict that for the Bristol urban area the current transport strategy will result in an 11% decrease in CO₂ on the do-nothing scenario by 2015 (Figure 6.23). The potential benefits from modal shift are partially offset by a predicted increase in trip numbers.

184. These predictions do not include improvements to fuel or vehicle technology nor the impact of future AQM measures that are also likely to reduce CO₂ emissions. Nevertheless the predicted 15% increase in CO₂ emissions from road transport over this period is a cause for concern.

185. The SCOOT UTC system will be linked to the Council’s air quality and traffic models next year. This will enable micro-scale modelling of the effects of specific projects on CO₂ emissions. The system will also enable more effective environmental management of the central area traffic network in order to reduce pollution.

Future Action

186. Appropriate action programmes will be developed over the next two years, including further integration with Travel Awareness and Local Agenda 21 work, and continued work to develop improved assessment methodologies. Progress will be monitored and further polices will be developed as necessary and updated in the LTP progress reports.

Monitoring progress

181. In the light of the external factors outlined above, the Council will not be setting a specific CO₂ reduction target for transport. It will however, in the short-term seek to reduce the rate of growth of CO₂ emissions, and then in the medium to long-term stabilise, and ultimately cut, CO₂ emissions from traffic.

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**Safety Management**

**Road Safety Management:**

**Strategy**

187. The role of traffic management in the urban area continues to evolve reflecting the shift in emphasis of the Government, the community and environmental requirements. The City Council continues to respond to these challenges by developing safety and restraint measures that favour protecting the environment and encourage, sustainable transport modes.

188. The City Council has completed its consultation draft Road Safety Strategy (Appendix 3.4). The primary objective of this Strategy is to provide a transport system that “is safe and secure for all who wish to travel”, whether as a pedestrian, passenger or driver, visitor or resident, young or old, worker or tourist.

189. The strategy proposes the development of Urban Safety Management (USM) - a structured approach to collision prevention and casualty reduction that links safety initiatives to wider policies, balancing local safety, traffic, environmental and land use objectives. Road safety management may be considered in terms of a hierarchy of solutions as shown in Figure 6.24. At the highest level, modification of the transport system through general polices that encourage modal shift, traffic reduction and reduced reliance on the car are fundamental in reducing levels of conflict within the system. At the next level, more specific measures to manage traffic distribution, speeds and highway capacity (including a review of the road hierarchy, environmental cells etc.) will improve the inherent safety of the system. Following this, the issue of moderating driver behaviour will be addressed and finally engineering remedial measures, training and other more traditional approaches form the foundations of the hierarchy. The USM approach provides the framework for implementing the hierarchy of solutions. Figure 6.24 illustrates how the hierarchy of USM measures integrates with the safety management structure, with a continued emphasis on cluster sites but incorporating an integrated route and area approach.

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**Figure 6.24**

Road Safety Management Hierarchy

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**ROAD SAFETY MANAGEMENT HIERARCHY**

- **WHOLE SYSTEM MODIFICATION**
- **NETWORK MANAGEMENT SPEED MANAGEMENT**
- **MODERATING BEHAVIOUR**
- **TRADITIONAL APPROACHES**

**IMPLEMENTATION FRAMEWORK**

- **WIDER LTP POLICIES**
- **URBAN SAFETY MANAGEMENT**
  - **CITYWIDE ACTION**
  - **ROUTE ACTION**
  - **AREA ACTION**
  - **MASS ACTION**
  - **CLUSTER ACTION**
  - **USER GROUPS**
    - Pedestrians
    - Cyclists
    - Vehicle occupants
    - Motorcyclists
  - **EDUCATION, TRAINING, PUBLICITY (ETP)**
 Targets

190. The emerging Road Safety Strategy embraces the new targets set by Government and includes additional local targets set by the City Council. These include:

**Government Targets**

191. The publication of the Government’s road safety strategy and casualty reduction targets for 2010, together with the Best Value and Audit Commission Performance Indicators provide a valuable yardstick for the Council to judge the effectiveness of its investment in road casualty prevention. It is believed that these targets can be shown to be realistic and also enable the Council to refocus its attention on the road safety effort.

By 2010, the Government requires the City Council to achieve (based on 1994-98):

- a 40% reduction in the number of people killed or seriously injured (KSI) in road crashes;
- a 50% reduction in the number of children killed or seriously injured;
- a 10% reduction in the slight casualty rate, expressed as the number of people slightly injured per 100 million vehicle kilometres.

192. In addition, the Best Value and Audit Commission have introduced an indicator (BVPI99) for the number of road accident casualties per 100,000 population broken down by the casualty severity and road user type.

**Bristol City Council Targets**

- The new government target equates to a reduction in the total number of fatally or seriously injured of at least 7 per year from year 2000, 1.4 of these being child casualties. Bristol intends to exceed this by at least 1 KSI casualty per year and, hence, is setting a local casualty target of a 25% reduction in KSIs by 2005.
- In co-operation with the Police (as the enforcement agency) a programme of measures will be used to raise awareness of the speeding problem. This will include publicity and observable speed monitoring activity to achieve a target of a reduction in background speed levels (mean and 85%ile) within the City by 5 mph in the next 5 years.
- Linked to the above speed reduction target is a target of achieving a 10% reduction in speed-related collisions over the next five years. The corresponding reduction in the severity of casualties will also be monitored.

 Road Traffic Injuries

194. Tragically, on average, some 15 people are killed and more than 1600 people are injured on Bristol’s roads every year as a direct result of some 1300 reported incidents. In 1999, more than 5 people were injured every day on Bristol’s roads. Children were involved in more than 1 in 5 personal injury crashes or collisions: 8 people died.

195. Using Government published figures it is estimated that the cost of these road casualties to the community of Bristol is in excess of £96 million (based on DETR Highways Economic Note No.1 (November 1999). The Council is committed to addressing both the number and severity of casualties arising from crashes or collisions on its roads and the resultant cost to the community.

196. The public has an increasingly, but sometimes unrealistically, high expectation of what can be achieved in terms of the road safety problem. It is important to remember that only data describing road crashes resulting in personal injury is recorded and damage only incidents are not included. In order to address this bias the Council will be considering the adoption of alternative safety assessment methodologies to complement existing statistical analysis.

197. There are pressures to move towards reducing perceived danger on the roads. This is an important issue as it suppresses levels of cycling and walking. However, while recognising the demand for danger reduction it is imperative that casualty reduction is sustained. A continuation of a budget head for resources to be targeted purely for casualty reduction work has been maintained at just under £500,000. The bid for 2000/01 – 2004/5 seeks to increase this allocation.

198. Clearly, the City Council cannot resolve this problem alone and it is currently working with communities and partners to improve its performance. This has involved residents taking a greater degree of ownership of some schemes.

**Progress**

199. Annually the road casualty database is interrogated for clusters of crashes resulting in personal injury. The Council has historically used a yardstick of 5 or more injuries in a 3 year period. For the period 1996-98 160 sites were detected accounting for almost 30% of all such crashes (see figure 6.25). These results confirm the trend of injury crashes concentrating at such sites. The list of sites with an injury crash concentration is intensively researched to arrive at a list of ‘local safety schemes’ that are treatable and achieve a First Year Rate Return (FYRR) of approximately 200%.
Figure 6.25
Citywide Plot of Reported Road Traffic Casualties in 1999

KEY
- Reported Road Traffic Casualty

Figure shows a citywide plot of reported road traffic casualties in 1999 with various locations marked, including Avonmouth, Shirehampton, Southmead, Bishopston, Henleaze, Westbury-on-Trym, Clifton, Cotham, Bedminster,Filwood Park, Ashton Vale, Hengrove, Hartcliffe Withywood, Headley Park, Withywood, Broomhill, Hanham, Fishponds, Speedwell, St George, Broomhill, Cothay, Bristol City Centre, Horfield, Lockleaze, Ashley Down, Fishponds, and St George.
200. This approach has been successful in the past but ultimately it will begin to give diminishing returns as treatable sites with the highest injury concentrations are dealt with. In consideration of this, the Council believes that it may still be economic to carry out safety schemes with a First Year Rate of Return (FYRR) as low as 50%. The problem of diminishing returns will be tackled through the Urban Safety Management approach so that, whilst the cluster site approach continues as the core activity, other techniques and initiatives are introduced.

201. Other identified problem sites are sometimes treatable using development contributions through Section 106 agreements and other budget headings such as safer routes to school, traffic calming, traffic signals modernisation and highway maintenance. Unfortunately, in common with most other urban authorities, inspections of the condition of our roads and footways have revealed further deterioration and there is a likelihood that this contributes to the overall casualty picture.

Data Analysis

202 Analysis of the data reveals the following:

- All road casualties’ (refer to figure 3.9, Chapter 3) shows clearly that casualties had dropped from an average of 1901 per year in 1985 to 1450 in 1992. This exceeded the target of a 33% reduction in road casualties by 2000 compared with the 1981-85 average. However in 1993 the casualty toll increased and then remained fairly stable from 1996 to 1998. An increase after 1998 identifies the need for urgent action.

- ‘Killed and seriously injured’ (KSI) (figure 6.26) shows that whilst there is some concern over the outcome for 1999, continuing the upward trend first seen in 1997, the overall trend is in line with the target.

- Child Casualties (up to 16 years old) (figure 6.27) casualties shows that whilst there was an increase in 1997 the trend is still downward and exceeds the target.

- Slight casualties. Since the mid 1990s there has been increasing concern over the significant increase in the number of slight casualties, particularly to car occupants. Whilst the consequences of such incidents are not as devastating as KSI incidents, they may be regarded as a good indicator of the level of safety within the transport system. The Council aims to address this problem through a more holistic approach to safety including USM and a move towards more effective speed management measures.

203. A more detailed analysis of local casualty trends including distribution diagrams is included in the draft Safety Strategy in Appendix 3.4.

Local Safety Schemes

204. Expenditure on Local Safety Schemes during 1999/2000 was £522,500 some of which was continuing expenditure on schemes started in 1998/99. At these sites an average of 24.5 incidents per year were recorded and a saving of nearly 50% is predicted. This is an equivalent to a saving of 15 casualties.

205. The guidance notes on completion of the Finance Forms request data for sites/areas treated in previous years. Figure 6.29 summarises schemes undertaken in 1996/97 and 1997/98. These 17 sites (which account for £418,500) reveal an annual saving in accidents of 13 per year. This has shown on average an FYRR of 192%. Details of schemes programmed for 2000/2001 are shown in Table 1 of Annexe B of Appendix 3.4.
206. The original safety target set by the Government required an average reduction in road injury accidents of 43 per year, year-on-year. This indicated that the Council needed to triple the level of resources in order to meet the target. Regrettably this was not achievable. The bid of £965,000 in 1999 was part of an investment to significantly increase expenditure on ‘local safety schemes’.

207. Until 1993 the traditional approach to road casualty reduction was yielding diminishing returns as the more easily treatable sites were addressed. At this time only 20% of all injury accidents were at cluster sites. This figure has increased every year reaching 30% in 1999 (figure 6.28), highlighting the continued need for cluster site action. However most child casualties occur in the residential areas of Bristol necessitating a shift in the policies of the Council to meet the target of a 50% reduction in children killed or seriously injured. The development of the formal urban safety management strategy outline detailed in this chapter will provide the framework for prioritising work throughout the city.

Road Safety Audits
208. Highway schemes promoted by developers are required to produce road safety audits and to address satisfactorily road safety issues raised as part of the Section 106 agreement. In-house schemes are subjected to safety audits either using in-house resources or jointly with consultants. The Traffic Management Team assesses all highway schemes before implementation.

Data User Group
209. Road casualty data is collected by Avon and Somerset Police. A consortium of all the highway authorities (or their agents) together with the Police are reviewing the methods of capturing the data, and validating and processing for distribution to the consortia and to the DETR. Work also continues to improve the quality and time taken to process data describing a personal injury road crash.

Education, Training and Publicity (ETP)
210. ETP work within the City is based upon both long-term educational needs for road user groups and to address specific short-term problems that may occur. The latter includes reviewing collision statistics to highlight emerging trends that may have an educational or training element.

Safer Routes to School
211. The ETP programme is closely linked to the Safer Routes to School initiative, providing practical elements such as cycle and pedestrian training to complement physical Traffic Management measures. The Safer Routes to School Strategy is detailed in Chapter 5 and appendix 3.3).

Partnership Working
212. The Council is a member of the multi-agency ‘Avon safe’ group whose members include several sections of the Health Authority, the emergency services, neighbouring local authorities and voluntary organisations. The group currently addresses issues under ‘Our Healthier Nation’ within a Strategy renewed every three years and reviewed annually.

213. Partnership working is also evident with the Traffic Police for issues relating to traffic education and enforcement, and at regional and sub-regional levels with Road Safety Officers from neighbouring local authorities. Greater impacts and efficiency can often be achieved though joint working, for example, a recent series of radio advertisements aimed at speed reduction was jointly funded where the cost to an individual authority would have been prohibitive.

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Figure 6.28
Bristol Road Casualties

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Injury Accidents</td>
<td>3845</td>
<td>3969</td>
<td>3951</td>
<td>3952</td>
<td>4267</td>
<td></td>
</tr>
<tr>
<td>2. No. of sites with a 3-year injury accident total of 5 or more</td>
<td>97</td>
<td>84</td>
<td>113</td>
<td>126</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>3. No. of injury accidents in (2)</td>
<td>766</td>
<td>758</td>
<td>1007</td>
<td>1155</td>
<td>1268</td>
<td></td>
</tr>
<tr>
<td>4. Percentage of all injury accidents occurring at sites in (2)</td>
<td>19.92</td>
<td>19.10</td>
<td>25.49</td>
<td>29.23</td>
<td>29.72</td>
<td></td>
</tr>
<tr>
<td>5. No. of sites with a 3-year injury accident total of 8 or more</td>
<td>39</td>
<td>43</td>
<td>45</td>
<td>50</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>6. No. of injury accidents in (5)</td>
<td>423</td>
<td>513</td>
<td>609</td>
<td>711</td>
<td>745</td>
<td></td>
</tr>
<tr>
<td>7. Percentage of all injury accidents occurring at sites in (5)</td>
<td>11.00</td>
<td>12.93</td>
<td>15.41</td>
<td>17.99</td>
<td>17.46</td>
<td></td>
</tr>
</tbody>
</table>
### Figure 6.29 Traffic Management Schemes with a positive safety impact 1996 - 1998

<table>
<thead>
<tr>
<th>Location</th>
<th>Details</th>
<th>Start Date</th>
<th>Finish Date</th>
<th>Cost of Scheme</th>
<th>Before (B) data</th>
<th>Predicted reduction in accidents per annum</th>
<th>After (A) data</th>
<th>Actual 1st year rate of return %</th>
<th>Actual 1st year rate of saving %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Way</td>
<td>introduction of waiting restrictions</td>
<td>01-Jan-96</td>
<td>31-Jan-96</td>
<td>£4,052</td>
<td>B: 1-Jan-93 - 31-Dec-95</td>
<td>1.67</td>
<td>1.00</td>
<td>0.67</td>
<td>965%</td>
</tr>
<tr>
<td>Talbot Rd/ Hampstead Rd junction</td>
<td>traffic calming scheme</td>
<td>01-Apr-96</td>
<td>31-Aug-96</td>
<td>£46,305</td>
<td>B: 1-Apr-93 - 31-Mar-96</td>
<td>0.33</td>
<td>0.20</td>
<td>0.33</td>
<td>42%</td>
</tr>
<tr>
<td>Ashley Down Rd (near Kathdene Gdns)</td>
<td>pelican crossing</td>
<td>01-May-96</td>
<td>31-Jul-96</td>
<td>£28,941</td>
<td>B: 1-May-93 - 30-Apr-96</td>
<td>2.00</td>
<td>1.20</td>
<td>0.67</td>
<td>135%</td>
</tr>
<tr>
<td>Sylvia Ave/ Ravenhill Ave/ Bayham Rd junction</td>
<td>experimental road closures /one way (scheme made permanent 1/3/98-31/3/98)</td>
<td>01-Oct-96</td>
<td>01-Dec-96</td>
<td>£52,093</td>
<td>B: 1-Oct-94 - 30-Sep-96</td>
<td>0.67</td>
<td>0.40</td>
<td>0.67</td>
<td>75%</td>
</tr>
<tr>
<td>Frenchay Park Rd</td>
<td>improved mini roundabout &amp; new traffic island</td>
<td>01-Feb-97</td>
<td>30-Apr-97</td>
<td>£60,638</td>
<td>B: 1-Feb-94 - 31-Jan-97</td>
<td>5.00</td>
<td>3.00</td>
<td>1.67</td>
<td>161%</td>
</tr>
<tr>
<td>Fulford Rd</td>
<td>traffic calming/chicanes &amp; priority narrowings</td>
<td>01-Mar-97</td>
<td>30-Apr-98</td>
<td>£18,900</td>
<td>B: 1-Mar-94 - 28-Feb-97</td>
<td>1.33</td>
<td>0.80</td>
<td>1.33</td>
<td>411%</td>
</tr>
<tr>
<td>Woodland Way/ Hillfields Ave</td>
<td>traffic calming/kerb buildsouts/refuges</td>
<td>01-Mar-97</td>
<td>30-Jun-97</td>
<td>£35,280</td>
<td>B: 1-Mar-94 - 28-Feb-97</td>
<td>1.00</td>
<td>0.60</td>
<td>1.00</td>
<td>165%</td>
</tr>
<tr>
<td>Four Acres</td>
<td>school keep clear lines/pavement bollards</td>
<td>01-Apr-97</td>
<td>31-Mar-97</td>
<td>£2,205</td>
<td>B: 1-Apr-94 - 31-Mar-97</td>
<td>2.00</td>
<td>1.20</td>
<td>1.57</td>
<td>4157%</td>
</tr>
<tr>
<td>Avonmouth Rd/ Gloucester Rd junction</td>
<td>junction remodelling/kerb buildsouts/environmental enhancements/priority change</td>
<td>01-Aug-97</td>
<td>01-Nov-97</td>
<td>£49,613</td>
<td>B: 1-Jul-94 - 30-Jun-97</td>
<td>0.67</td>
<td>0.40</td>
<td>0.67</td>
<td>79%</td>
</tr>
</tbody>
</table>
## Strategic Network Management

<table>
<thead>
<tr>
<th>Location</th>
<th>Details</th>
<th>Start Date</th>
<th>Finish Date</th>
<th>Cost of Scheme</th>
<th>Before (B) data &amp; After (A) data</th>
<th>No. of accidents per annum (before)</th>
<th>Predicted reduction in accidents per annum (after)</th>
<th>No. of accidents saved per annum (after)</th>
<th>Actual 1st year rate of return %</th>
<th>Actual 1st year rate of saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hengrove Way</td>
<td>traffic signs/50 mph limit</td>
<td>01-Nov-97</td>
<td>01-Oct-98</td>
<td>£16,538</td>
<td>B: 1-Nov-94 - 31-Oct-97</td>
<td>36</td>
<td>0.33</td>
<td>0.20</td>
<td>36</td>
<td>0.33</td>
</tr>
<tr>
<td>Business Park</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A: 1-Feb-99 - 31-Dec-99</td>
<td></td>
<td></td>
<td></td>
<td>116%</td>
<td>£19,252</td>
</tr>
<tr>
<td>Bus Depot</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bishopsworth Rd</td>
<td>narrowed carriageway at existing crossing</td>
<td>01-Mar-98</td>
<td>31-Dec-98</td>
<td>£13,500</td>
<td>B: 1-Jan-95 - 31-Dec-97</td>
<td>36</td>
<td>0.67</td>
<td>0.40</td>
<td>0.67</td>
<td>286%</td>
</tr>
<tr>
<td>Thicket Ave</td>
<td>chicanes/kerb buildouts</td>
<td>01-Mar-98</td>
<td>30-Sep-98</td>
<td>£84,000</td>
<td>B: 1-Mar-95 - 31-Mar-99</td>
<td>36</td>
<td>4.00</td>
<td>2.40</td>
<td>0.99</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A: 1-Jan-99 - 31-Dec-99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>£57,757</td>
</tr>
<tr>
<td>Barton Hill</td>
<td>20 mph zone/new chicanes</td>
<td>01-Apr-98</td>
<td>19-Sep-98</td>
<td>£23,100</td>
<td>B: 1-Apr-95 - 31-Mar-99</td>
<td>36</td>
<td>2.33</td>
<td>1.40</td>
<td>1.33</td>
<td>336%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A: 1-Jan-99 - 31-Dec-99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>£77,592</td>
</tr>
<tr>
<td>York Rd/Whitehouse St</td>
<td>kerb build outs/uncontrolled crossing/dischalised access</td>
<td>01-Jun-98</td>
<td>01-Jul-98</td>
<td>£2,625</td>
<td>B: 1-May-95 - 30-Apr-98</td>
<td>36</td>
<td>0.67</td>
<td>0.40</td>
<td>0.67</td>
<td>1489%</td>
</tr>
<tr>
<td>junction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A: 1-Jan-98 - 31-Dec-99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>£39,088</td>
</tr>
<tr>
<td>Cassell Rd, near Downend Rd</td>
<td>zebra crossing</td>
<td>01-Jul-98</td>
<td>31-Oct-98</td>
<td>£18,500</td>
<td>B: 1-Jul-95 - 30-Jun-98</td>
<td>36</td>
<td>0.67</td>
<td>0.40</td>
<td>0.67</td>
<td>210%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A: 1-Feb-99 - 31-Dec-99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>£38,898</td>
</tr>
</tbody>
</table>

**Notes**

1. Scheme costs have been updated using an index reflecting economic growth & inflation to enable comparison with 1998 accident costs.

2. A 40% reduction rate has been used in order to predict the annual reduction in dominant accidents.

3. Actual first year accident savings are based on the average cost per injury accident in urban areas of £58,340 (DETR HEN No.1, 1998)
Safety Awareness Campaigns

214. The Council is committed to supporting national safety initiatives. The recently launched ‘Think` campaign has the potential to raise the profile of Road Safety ETP and encourage road users to consider the consequences of their actions. The Council was involved in the national launch and is working to incorporate the campaign into local publicity material.

215. This complements the Council’s major Speed Campaign that was launched in April and will continue for the life of this Plan. Fronted by the image of a 17 year old girl who was killed in a speed related incident in Bristol, the campaign features radio and bus-back advertising together with the distribution of thousands of leaflets explaining the need to address traffic speeds and the consequences of speeding. It is the intention of the Council, in partnership with the Police, the other local authorities within the Avon and Somerset Constabulary area and the Health Authorities, to make speed as socially unacceptable as drink-driving has now become. These awareness initiatives are coupled with increased levels of enforcement by the police as well as advice checks by Road Safety Officers. In a recent local survey over 50% of respondents said that the only actions that would stop them speeding would be higher penalties and more chance of being caught. Therefore it is essential to increase the perceived risk of being caught in order achieve a level of deterrent high enough to enable speed limits to become self-enforcing in the long term.

Seat belts

216. Injuries to car occupants have increased over recent years. Local surveys have shown that around 85% of front seat occupants and less than 50% of rear seat passengers wear seat belts. Consequently a strategy will be developed in partnership with both the Health Authority and the Police to redress this problem.

217. It is estimated that around 70% of child car seats in Bristol are incorrectly fitted. The Council’s ‘Fit Right –Sit Tight’ scheme seeks to redress this by ensuring that retailers provide good advice and correct fitting at the time of purchase. People who already own child seats can have their seat checked free of charge.

Adult Cycle Training

218. A pilot scheme for adult cycle training to improve the skills and confidence of potential cyclists commenced in May 2000 and will run for six months in conjunction with Cycle West, a local cycle charity. Initially it will involve Local Authority employees, employees from local business and adults in areas of social exclusion. If the scheme is successful it will be extended it to the general public.

Cycle Helmets

219. The Council is working in partnership with our local Health Authority under CAPT’S Safe Kids Project to promote cycle helmet wearing. The scheme involves local cycle dealers encouraging the purchase of a helmet with each cycle sale and education through publicity and exhibitions.

Motorcycling

220. Motorcycle sales have increased dramatically during recent years. In order to prevent a resultant rise in motorcycle casualty rates the Council, in partnership with neighbouring authorities and the Avon and Somerset Constabulary, have organised motorcycle awareness courses to equip riders with the skills necessary to deal with current road conditions.

Five Year View and Programme

Road Safety Strategy

221. The draft Road Safety Strategy outlines the Council’s policies to improve road safety in Bristol (see Appendix 3.4). It advocates a hierarchical approach to road safety management using Urban Safety Management as an implementation framework. The strategy aims to widen the scope for the integration of safety initiatives with wider policies, and emphasises the importance of route and area-wide action coupled with more traditional approaches such as cluster site action and education, training and publicity.

222. The strategy commits the Council to publishing an annual road casualty review that will report upon progress towards the targets and indicators.

Speed Management

223. The Road Safety Strategy recognises the dangers posed by speeding motorists, both perceived and actual. Speed poses a threat that is considered at least as great a danger as that posed by drink-driving. After non seat-belt compliance, dangerous driving and drink driving, speed (whether excessive or inappropriate) is now recognised as one of the major contributory factors of all road collisions resulting in a road casualty. In view of the direct link between speed and the occurrence and severity of collisions the City Council proposes to:-

- Undertake a comprehensive survey of vehicle speeds on other roads as well as the strategic network.
• As part of the road hierarchy review, designate appropriate speed limits for all roads in Bristol.

• Continue implementing a strategic network of automatic traffic counting equipment to determine the scale of the problem and to monitor progress towards its target.

• Introduce more unattended remote speed-activated signs.

• Improve links with partners in speed reduction; increase investment; contribute towards police enforcement equipment and administrative systems.

• Increase efficiency of existing speed enforcement cameras; continue with investment to install 'dummy' equipment in all housings; investment in more housings.

• Introduce advertising and editorials, with regular information of speed activity in the City.

Occupational Road Risk

224. The use of road vehicles is essential for the Council to carry out some of its functions. The City Council has a significant fleet of vehicles and identified essential users and casual users who use personal vehicles whilst carrying out their business. The Council will firstly adopt a more proactive role in managing risk to its drivers and those affected by them. As an employer the Council has a legal and moral duty to adopt a proactive role to protect its staff. It will then work to encourage other organisations to adopt similar practices.

Crime and Disorder

225. The Community Safety Partnership formed under the Crime and Disorder Act 1998 has recognised that road crime needs to be tackled on a wider basis than just theft of / from motor vehicles. It will now look at other road crime issues including speeding and dangerous driving. A new group is being formed to co-ordinate activity amongst the partners.

Self-Determination

226. The new Road Safety Strategy attempts to inform its audience of the limitations as to what the Council can and will do. The Road Safety Education officers will commence a programme of advertisements to educate pedestrians and cyclists in particular the requirement that both must accept some responsibility for their own safety.

Road Maintenance

227. The City Council contended previously that the adoption of the Pavement Management System (UKPMS) was uneconomic for the City, but recent changes have required that a Coarse Visual Inspection (CVI) be undertaken. Adopting a citywide review of the principal road network and undertake SCRRM and CVI surveys is now considered paramount.

Crash Prevention

228. The Council’s efforts will continue to focus on preventing crashes from occurring. Currently an average of 1.25 casualties result from each personal injury incident. The scope for reducing this figure is to some extent limited. However, it is recognised that excessive and inappropriate speed is a significant factor in both the frequency and severity of casualties and consequently speed management will be given greater priority in the road safety strategy.

Integration of Engineering and ETP

229. With regard to the importance of speed management in limiting the occurrence and severity of collisions, greater efforts will be needed to educate all road users, especially motorists and motorcyclists of the consequences of inappropriate speed. Engineering, encouragement and ultimately enforcement policies will complement that of education.

2001/2002 Programme

230. Following the settlement for the year 2000/2001 a list of priority schemes was identified and included in the annual Traffic Management work programme. These and the sites proposed for the bid year are listed in Table (figure 6.30). The 2001/2002 programme focuses predominantly on route-based measures on the A38, reflecting the shift towards a more structured and focused Urban Safety Management approach. It should be noted that road safety work is being introduced at various other sites throughout the city, funded as identified in the Progress section above. In addition other elements of work being proposed for the bid year include:-

231. The Centre: Following the receipt of the Road Safety Audit results and any consequent needs for implementation it is proposed that the traffic signal model be validated to implement a ‘speed management’ plan for the Centre. This will be designed to meter traffic entering based upon traffic leaving, and controlling its progression whilst recognising the high demand put on the network by pedestrians.

232. Urban Safety Management & Road Safety Strategy: As mentioned in the Road Safety Strategy, mass action, route and area action are to be increasingly used to complement cluster site investigation in an integrated approach to area road safety.
## Strategic Network Management

### Oldbury Court Road
- **Approach:** Single site
- **Type of Action:** One way system introduction
- **Accident History 1997-1999 average:** 5 p.a.
- **Casualties:**
  - 1997: 0
  - 1999: 0
- **Child Casualty Information:**
  - 1997: Unknown
  - 1999: Unknown
- **Type of Action:** Various
- **Cost:** £60,000
- **Accident Saving:** 2 p.a.
- **FIRR:** 194%

### Accident led minor schemes
- **Type of Action:** One way system introduction
- **Cost:** £100,000
- **Accident Saving:** >3 p.a.
- **FIRR:** >175%

### A38 Filton Rd / Monk’s Park Ave
- **Approach:** Route action
- **Type of Action:** Signal improvements
- **Accident History 1997-1999 average:** 3.5 p.a.
- **Casualties:**
  - 1997: 0
  - 1999: 0
- **Child Casualty Information:**
  - 1997: Unknown
  - 1999: Unknown
- **Type of Action:** Various
- **Cost:** £40,000
- **Accident Saving:** 1.5 p.a.
- **FIRR:** 219%

### A38 Glos Rd / Wexsex Ave
- **Approach:** Ped crossing improvements
- **Type of Action:** 2 p.a.
- **Casualties:**
  - 1997: 1
  - 1999: 2
- **Child Casualty Information:**
  - 1997: Car occup / 11 / Slight
  - 1999: Ped / 12 / Serious
- **Type of Action:** Various
- **Cost:** £15,000
- **Accident Saving:** 0.5 p.a.
- **FIRR:** 194%

### A38 Glos Rd / Kellaway Ave
- **Approach:** Junction realign
- **Type of Action:** 2.5 p.a.
- **Casualties:**
  - 1997: 1
  - 1999: 1
- **Child Casualty Information:**
  - 1997: Car occup / 11 / Slight
  - 1999: Car occup / 11 / Slight
- **Type of Action:** Various
- **Cost:** £25,000
- **Accident Saving:** 1 p.a.
- **FIRR:** 233%

### A38 Glos Rd / Nevil Rd
- **Approach:** Junction improvements
- **Type of Action:** 5 p.a.
- **Casualties:**
  - 1997: 4
  - 1999: 3
- **Child Casualty Information:**
  - 1997: None
  - 1999: None
- **Type of Action:** Various
- **Cost:** £75,000
- **Accident Saving:** 0.5 p.a.
- **FIRR:** 156%

### A38 Glos Rd / Bishop Rd
- **Approach:** Junction improvements
- **Type of Action:** 1.5 p.a.
- **Casualties:**
  - 1997: 0
  - 1999: 1
- **Child Casualty Information:**
  - 1997: None
  - 1999: None
- **Type of Action:** Various
- **Cost:** £10,000
- **Accident Saving:** 0.5 p.a.
- **FIRR:** 292%

### A38 Glos Rd / Berkeley Rd / Somerville Rd
- **Approach:** Signalisation
- **Type of Action:** 4.5 p.a.
- **Casualties:**
  - 1997: 1
  - 1999: 2
- **Child Casualty Information:**
  - 1997: None
  - 1999: None
- **Type of Action:** Various
- **Cost:** £80,000
- **Accident Saving:** 2.5 p.a.
- **FIRR:** 182%

### A38 Chelt Rd / Arches
- **Approach:** Junction improvements
- **Type of Action:** 3.5 p.a.
- **Casualties:**
  - 1997: 1
  - 1999: 1
- **Child Casualty Information:**
  - 1997: Bus occup / 4 / Slight
  - 1999: Bus occup / 4 / Slight
- **Type of Action:** Various
- **Cost:** £40,000
- **Accident Saving:** 1.5 p.a.
- **FIRR:** 219%

### A38 Chelt Rd / Arley Hill
- **Approach:** Signal improvements
- **Type of Action:** 4 p.a.
- **Casualties:**
  - 1997: 2
  - 1999: 3
- **Child Casualty Information:**
  - 1997: Car occup / 15 / Slight
  - 1999: Car occup / 15 / Slight
- **Type of Action:** Various
- **Cost:** £30,000
- **Accident Saving:** 2 p.a.
- **FIRR:** 389%

### A38 Chelt Rd / Jamaica St
- **Approach:** Ped crossing improvements
- **Type of Action:** 4 p.a.
- **Casualties:**
  - 1997: 1
  - 1999: 2
- **Child Casualty Information:**
  - 1997: Ped / 3 / Slight
  - 1999: Ped / 11 / Slight
- **Type of Action:** Various
- **Cost:** £30,000
- **Accident Saving:** 2 p.a.
- **FIRR:** 389%

### Stokes Croft (City Road to King Square Ave)
- **Approach:** Route/junction improvements
- **Type of Action:** 5 p.a.
- **Casualties:**
  - 1997: 2
  - 1999: 4
- **Child Casualty Information:**
  - 1997: None
  - 1999: None
- **Type of Action:** Various
- **Cost:** £50,000
- **Accident Saving:** 2 p.a.
- **FIRR:** 233%

### Pedestrian Crossing Improvements
- **Approach:** Mass Action (10 sites)
- **Type of Action:** Signing, lining & antiskid
- **Casualties:**
  - 1997: Unknown
  - 1999: Unknown
- **Child Casualty Information:**
  - 1997: Unknown
  - 1999: Unknown
- **Type of Action:** Various
- **Cost:** £100,000
- **Accident Saving:** 5 p.a.
- **FIRR:** 292%

### Speed Reduction Measures
- **Approach:** City wide Urban safety
- **Type of Action:** Speed gun monitoring/variable message signs etc to raise speed awareness at sites
- **Casualties:**
  - 1997: Unknown
  - 1999: Unknown
- **Child Casualty Information:**
  - 1997: Unknown
  - 1999: Unknown
- **Type of Action:** Various
- **Cost:** £50,000
- **Accident Saving:** >2 p.a.
- **FIRR:** 233%

### Total (Year 1)
- **Casualties:**
  - 1997: 21
  - 1999: 6
- **Child Casualty Information:**
  - 1997: Ped / 15 / Slight
  - 1999: None
- **Type of Action:** Various
- **Cost:** £705,000
- **Accident Saving:** 27.5 p.a.
- **FIRR:** 228%
233. Community Safety: The Bristol Community Safety Partnership brought about by the recent Crime and Disorder Act undertook an Audit of crime and fear of crime within the City. A new steering group has been formed to co-ordinate work by the partners and to achieve added value by joint working. Subsequent work undertaken under the Crime and Disorder Strategy has identified that road safety issues including fear of death or injury as well as excessive speed and to tackle road crime such as speeding and dangerous driving.

234. ETP: The Council will continue to develop the ETP programme, focussing on the Safer Routes to School and the Speed Management strategies. The ETP work needs to be flexible to meet the demands placed upon it and the programme will be adapted in the light of experiences gained to ensure Best Value is obtained in an effort to achieve the safety targets, and in particular the child casualty target. In-car safety work, cycle training, cycle helmet campaigns and the speed campaign will all have a significant part to play in this.

Resources

235. Figure 6.30 details the bid programme for safety schemes for year 1 including the FYRR performance. The programme for years 2-5 is outlined in Annexe B of Appendix 3.4.

Other initiatives:

ETP

236. The current annual ETP revenue budget is £20,000. In order to fulfil existing commitments, including supporting the safer routes to school project and the speed awareness initiatives, this will need to be increased to £40,000 per annum early on in the plan period.

Home Zones

Strategy

237. Building on the many years of relative success of the Dutch ‘Woonerf’ and German ‘Verkehrsberuhigung’ the Government is piloting a similar type of approach for residential streets in Britain – these are to be called Home Zones. While not being involved in the original pilot schemes, the City Council recognises the benefits to the environment, the residents and, in particular, safety to child pedestrians and it has therefore, commenced studies and the introduction of schemes in Bristol.

238. The possibility of introducing Home Zones in residential areas of the city has been met with considerable enthusiasm and many requests for areas to be considered continue to be received. To this end a strategy is being developed to identify those areas that are most needy and that could be considered suitable.

239. The proposed approach to road hierarchy identified in elsewhere discusses the opportunity to create environmental cells within certain areas of the city. It is possible that within each cell the nucleus could be considered a suitable area for this type of treatment. Such measures would improve identity, restrain rat-running and are likely to improve road safety. The merits of each individual cell would require assessing and those most at need and supportive of this ideal could then be prioritized and targeted. They could also be promoted where other initiatives such as Safer Routes to School, Cycle Networks and Area Traffic Calming are being considered. The principle could also be applied to local shopping and community centres.

240. Home Zones support and promote the use of sustainable transport methods for short journeys, They can offer children with no suitable local play areas a safe alternative and they encourage residential activity in the street, developing a sense of ownership amongst residents and assisting with the self-policing of neighbourhoods. The City Council is keen to promote such values in many areas.

Progress

241. Home Zones are currently progressing in two areas of the city. Funding has been provided over a three-year period to design, consult on and introduce measures in Henbury and Brislington. Consultation and residential approval is considered paramount to the success of these schemes and considerable effort is being placed on educating and encouraging residents.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Approx. Cost</th>
<th>Effect</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Closure</td>
<td>£6k</td>
<td>Prevents rat-running. May improves safety and residential security.</td>
<td>Requires a Traffic Regulation Order (TRO) which is both a statutory and lengthy procedure requiring public consultation. Can cause turning and reversing problems. Redistributions traffic to other roads. Reduces access opportunities for residents requiring longer journeys. Need to provide exemptions for cyclists and possibly public transport.</td>
</tr>
<tr>
<td>Environmental Closure</td>
<td>&lt;£150k</td>
<td>Prevents rat-running. may improve safety and security. Can add trees, furniture and safe play-areas to street.</td>
<td></td>
</tr>
<tr>
<td>One-Way street</td>
<td>&lt;£10k</td>
<td>Can increase parking space and improve pedestrian crossing facilities. Aids street management.</td>
<td>Requires TRO. Longer journey distances. May promote higher speeds leading to more serious accidents and requests for traffic calming. Transfers traffic to other roads. Need to provide exemptions for cyclists and possibly public transport.</td>
</tr>
<tr>
<td>Prohibition of Entry</td>
<td>&lt;£6k</td>
<td>May reduce rat-running in one direction. Retains two-way traffic in street beyond prohibition point. Should include cycle slip-lanes.</td>
<td>Requires TRO. Longer journey distances. May promote higher speeds leading to more serious accidents and requests for traffic calming. Transfers traffic to other roads and leads to longer journeys. Should exempt cyclists.</td>
</tr>
<tr>
<td>Banned Turns (signs only)</td>
<td>£3k</td>
<td>Can reduce rat-running and may improve safety.</td>
<td>Requires TRO. Unenforcable. Displaces manoeuvres to other streets. Longer journeys. Should exempt cyclists.</td>
</tr>
<tr>
<td>Banned Turns (physical)</td>
<td>&lt;£7k</td>
<td>Reduces rat-running and may improve safety.</td>
<td>Requires TRO. Displaces manoeuvres to other streets. Longer journeys. Should exempt cyclists.</td>
</tr>
<tr>
<td>Weight/Width and Height</td>
<td>£5k</td>
<td>Reduces problems with HGV and bus rat-running. Environmental Improvements</td>
<td>Requires TRO. Difficult to enforce. Requires exemptions (emergency vehicles etc.)</td>
</tr>
<tr>
<td>Restriction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change of Junction Priority</td>
<td>£1-10k</td>
<td>Speed reducing feature</td>
<td>Initial compliance difficulties. Initial safety problems clear advance warning signs required.</td>
</tr>
<tr>
<td>Parking/Loading</td>
<td>£2k+</td>
<td>Can control parking/loading. Improves traffic flow and can assist safety.</td>
<td>Requires TRO. Requires rigorous enforcement. Not cost effective when introduced in isolated areas. Area wide schemes are more effective.</td>
</tr>
<tr>
<td>Bus Lanes</td>
<td>£5k+</td>
<td>Significantly assists and promotes public transport, motor-cycles, taxis and cycles. Can improve safety.</td>
<td>Requires TRO. Can be effective despite wide scale abuse, creates enforcement problems. Narrows traffic lanes and may highway reduce capacity. Requires rigorous enforcement.</td>
</tr>
<tr>
<td>High Occupancy</td>
<td>£5k+</td>
<td>Encourages higher vehicular occupancy and more effective use of road space.</td>
<td></td>
</tr>
<tr>
<td>Vehicle Lanes Speed Limits</td>
<td>£5k+</td>
<td>Can improve traffic flow, exhaust emissions and safety.</td>
<td>Requires TRO. Requires suitable enforcement or physical measures to be effective.</td>
</tr>
<tr>
<td>Cycle Lanes</td>
<td>£3k+</td>
<td>Effective safety measure. Promotes cycling. Contributes to slowing traffic.</td>
<td>Can be mandatory (requires a TRO) or advisory. Narrows traffic lanes and may reduce capacity.</td>
</tr>
<tr>
<td>School Keep Clear markings</td>
<td>&lt;£0.3k</td>
<td>Intended to promote safety and reduce obstruction at school entrances.</td>
<td>Widely abused. Requires a TRO (No stopping) and rigorous enforcement to be effective.</td>
</tr>
<tr>
<td>Traffic Sign (unlit)</td>
<td>£0.5k+</td>
<td>Information and minor regulatory signing only. Warning, regulatory and direction signs.</td>
<td>Only DETR approved signs may be used on the highway. Lighting may be mandatory.</td>
</tr>
<tr>
<td>Traffic Sign (lit)</td>
<td>£1k+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Strategic Network Management

#### Considerations
- Usually requires some physical realignment of road and signing. May lead to more accidents of a less serious nature. Likely to require consultation.
- Likely to be opposed by frontager. May require shelter. Consider spacing with other stops along bus route. May require parking restriction (TRO bus stop clearway to prevent obstruction.
- Advisory only. Use should be selective major/minor junctions only
- Visual impact.
- Enforceable but frequently abused. Requires support of Chief Constable.
- Requires public consultation, signing and possibly lighting. Not favoured by emergency, public transport or delivery services. Individual humps cannot be used in isolation.
- Requires TRO and consultation, signing and possibly lighting. Cannot be used in isolation. Can be spanned by larger vehicles therefore, no speed reduction effect.
- Limited effect on driver behaviour when used in isolation. Expensive in isolated areas (£10-£15 per metre).
- More suitable for some emergency, public transport or delivery services. Suitable for cycle routes.
- Can assist in reducing accidents, particularly approaching conflict points such as pedestrian crossings and roundabouts.
- Can assist other calming measures or bus/cycle lane compliance.
- Gives greater priority and safety to crossing pedestrians
- Used to demarcate the entrance or beginning of a traffic calmed area. Can comprise narrowing road hump and surface alterations alone or in combination.
- More acceptable traffic calming measure. Can control speed, access and regulate parking.

#### Traffic Calming Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Approx. Cost</th>
<th>Effect</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini Roundabout</td>
<td>£10k +</td>
<td>Useful traffic calming tool. Used at ‘T’ or ‘Y’ junctions to reduce the dominance of one particular flow.</td>
<td>Usually requires some physical realignment of road and signing. May lead to more accidents of a less serious nature. Likely to require consultation.</td>
</tr>
<tr>
<td>Bus stops</td>
<td>£0.5k +</td>
<td></td>
<td>Likely to be opposed by frontager. May require shelter. Consider spacing with other stops along bus route. May require parking restriction (TRO bus stop clearway to prevent obstruction.</td>
</tr>
<tr>
<td>‘Keep Clear’ Markings</td>
<td>£0.1k</td>
<td>May reduce queuing through junctions causing obstruction.</td>
<td>Advisory only. Use should be selective major/minor junctions only</td>
</tr>
<tr>
<td>Chevron Hatching Road Markings</td>
<td>£0.3k +</td>
<td>Improves driver awareness of hazards.</td>
<td>Visual impact.</td>
</tr>
<tr>
<td>Box Junction Road Markings</td>
<td>£0.5k</td>
<td>May reduce queuing through junctions causing obstruction</td>
<td>Enforceable but frequently abused. Requires support of Chief Constable.</td>
</tr>
<tr>
<td>Road Hump</td>
<td>£1.5k +</td>
<td>Effective speed control element. Useful where conflicting movements occur i.e. junctions, footpath crossings cycleways etc.</td>
<td>Requires public consultation, signing and possibly lighting. Not favoured by emergency, public transport or delivery services. Individual humps cannot be used in isolation.</td>
</tr>
<tr>
<td>Speed Cushion</td>
<td>£1k +</td>
<td>More suitable for some emergency, public transport or delivery services. Suitable for cycle routes.</td>
<td>Requires TRO and consultation, signing and possibly lighting. Cannot be used in isolation. Can be spanned by larger vehicles therefore, no speed reduction effect.</td>
</tr>
<tr>
<td>Surface colour or texture</td>
<td>£0.3k +</td>
<td>Can assist other calming measures or bus/cycle lane compliance.</td>
<td>Limited effect on driver behaviour when used in isolation. Expensive in isolated areas (£10-£15 per metre).</td>
</tr>
<tr>
<td>change Anti-skid Treatment</td>
<td>£0.5k +</td>
<td>Can assist in reducing accidents, particularly approaching conflict points such as pedestrian crossings and roundabouts.</td>
<td>Expensive in isolated areas (£20-£25 per metre).</td>
</tr>
<tr>
<td>Bollards/Posts Guard Railing</td>
<td>£0.1k +</td>
<td>Effective control of access and parking. Enhances traffic calming.</td>
<td>May just displace problems and reduce effective footpath width.</td>
</tr>
<tr>
<td>Narrowing and Chicane</td>
<td>£4k</td>
<td>Reduces vehicle speeds. More acceptable traffic calming measure. Can be used as part of environmental enhancement and parking control.</td>
<td>Often combined with priority signing and will restrict parking and frontage access.</td>
</tr>
<tr>
<td>Speed control islands, pedestrian refuges</td>
<td>£5k +</td>
<td>Assists in reducing vehicle speeds. Acceptable traffic calming measure. Can be used as part of environmental pedestrian safety improvements.</td>
<td>May require signing and lighting, and may reduce parking. Often require regular maintenance.</td>
</tr>
<tr>
<td>Pedestrian Crossing (zebra)</td>
<td>£8k +</td>
<td>Gives greater priority and safety to crossing pedestrians</td>
<td>Requires TRO. Specified criteria for application must be met, based primarily on pedestrian flow, traffic flow and traffic accidents. Less effective than traffic signal controlled crossings at some locations</td>
</tr>
<tr>
<td>Entry Treatment/ ‘Gateway’</td>
<td>£5k +</td>
<td>Used to demarcate the entrance or beginning of a traffic calmed area. Can comprise narrowing road hump and surface alterations alone or in combination.</td>
<td>May require signing and lighting.</td>
</tr>
<tr>
<td>Staggered parking Layout</td>
<td>£2k +</td>
<td></td>
<td>Requires enforcement and therefore a TRO to succeed. May reduce overall number of parking spaces available.</td>
</tr>
</tbody>
</table>

#### Approx. Cost

- £0.1k
- £0.3k +
- £0.5k
- £0.5k +
- £0.1k +
- £1.5k +
- £1k +
- £0.3k +
- £0.5k +
- £0.1k +
- £4k
- £5k +
- £8k +
- £5k +
- £2k +
### Strategic Network Management

<table>
<thead>
<tr>
<th>Measure</th>
<th>Approx. Cost</th>
<th>Effect</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Layby</td>
<td>£40k+</td>
<td>Often requested by residents in narrow roads to address parking capacity.</td>
<td>Requires significant highway reconstruction. Encourages greater car ownership. Rarely remedies parking or access problems.</td>
</tr>
<tr>
<td>20 mph zone Area Wide</td>
<td>£250k+</td>
<td>Consists of a number of the traffic calming measures identified above over several streets.</td>
<td>Requires significant public consultation, a TRO, surveys and detailed design work and may require DETR approval.</td>
</tr>
<tr>
<td>Home Zones</td>
<td>£250k+</td>
<td>Requires an environmental assessment and measures identified above.</td>
<td>Home Zone includes environmental improvement, traffic restraint using parking and speed control measures and public acceptance.</td>
</tr>
<tr>
<td>Parking bays Disabled, Doctors etc.</td>
<td>£50</td>
<td>Provides some priority for special needs parking places</td>
<td>Require a TRO for enforcement increasing actual cost to £1000. Consider as part of area wide control.</td>
</tr>
</tbody>
</table>

#### Telematic/Electronic traffic management

<table>
<thead>
<tr>
<th>Measure</th>
<th>Approx. Cost</th>
<th>Effect</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashing Wig-Wag Lights</td>
<td>£2k</td>
<td>Raises awareness of the presence of children at school arrival and departure times.</td>
<td>School use only, limited effect. May be used in conjunction with 20mph speed limit.</td>
</tr>
<tr>
<td>Variable Speed Limits</td>
<td>£20k+</td>
<td>Imposes amended speed limit on areas at certain times.</td>
<td>Requires TRO. Limited affect on driver behaviour, requiring enforcement. Requires DETR approval.</td>
</tr>
<tr>
<td>Pedestrian Crossing (pelican, toucan, puffin)</td>
<td>£30k+</td>
<td>Provides a controlled crossing facility for pedestrians and cyclists improving safety. Assists with highway management if linked to UTC.</td>
<td>Requires TRO. Specified criteria for application must be met, based primarily on pedestrian/cyclist flow, traffic flow and traffic accidents.</td>
</tr>
<tr>
<td>Traffic Signals</td>
<td>£60k+</td>
<td>Reduces vehicle conflict at junctions. Can incorporate pedestrian/cyclist facilities and banned turns.</td>
<td>Significant design work required. Long term maintenance and energy considerations.</td>
</tr>
<tr>
<td>Urban Traffic Control</td>
<td>£200k+</td>
<td>Controls and links road network and corridors permitting traffic flow management.</td>
<td>Significant design work required. Long term maintenance and energy considerations.</td>
</tr>
<tr>
<td>Bus Priority pre-signals</td>
<td>£50k+</td>
<td>Provides priority for buses.</td>
<td>Tend to be used at junctions or signalized pedestrian crossings.</td>
</tr>
<tr>
<td>Variable Message Signing</td>
<td>£5k+ each</td>
<td>Offers dynamic signing to drivers i.e. car space, restricted areas etc.</td>
<td>Only DETR approved signs may be used on the highway.</td>
</tr>
<tr>
<td>Speed and red light cameras</td>
<td>£10k</td>
<td>Limited application only but can be very effective deterrent.</td>
<td>Requires Police support including significant administrative support to process prosecution. Funding and prosecution procedure limits success. Sites chosen usually with history of speed-related accidents.</td>
</tr>
</tbody>
</table>

#### Parking Zones

<table>
<thead>
<tr>
<th>Measure</th>
<th>Approx. Cost</th>
<th>Effect</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Parking Zones (CPZ) (Residents Parking)</td>
<td>£50k-£200k</td>
<td>Controls/restrict every metre of kerbside space in each street possibly giving preference to residents and the local community.</td>
<td>Requires a TRO and detailed parking and street study, and comprehensive consultation. Requires significant enforcement.</td>
</tr>
</tbody>
</table>
Henbury

242. Combining Safer Routes to School, part of the National Cycle Network (NCN) and Traffic Calming, Home Zones are being promoted in two small areas located on either side of the NCN route through Station Road and to the north and east of Henbury School. Consultation is well advanced, two separate working groups have been established and residents are working with officers to agree the final designs.

Brislington

243. Streets have been identified in two areas of Brislington for possible Home Zones. Again proposals build on Safer Routes to School with possible traffic-calmed 20-mph zones around some of the schools. Working groups have been formed to identify problems and solutions and to participate in the design.

244. The City Council is also pursuing a further area in Horfield. This brownfield site redevelopment has arisen due to the need to renew housing stock presenting an opportunity for the introduction of a ‘new-build’ Home Zone area. Currently the Housing Association, the Architects and City Planners and Engineers are working together to redesign a large area of housing to incorporate the principles.

245. In addition, funding is secured or being bid for through the Single Regeneration Bids (SRB) and New Deal for the Community, providing the opportunities to consider Home Zones in two more areas of the city. Furthermore, the principle is now being applied to all new housing developments.

Five Year Programme

246. Widescale acceptance of the Home Zone principles and developing a road hierarchy, which creates environmental cells, will enable a continuing programme of introduction throughout the city. The key elements of such a strategy and of the continuing programme are:

• Completion of the two areas currently underway in Henbury and Brislington.
• Finalising the details and completing the Horfield redevelopment.
• Securing and commencing feasibility, consultation and implementation in the areas identified for SRB and New Deal for the Community funding.
• Identifying areas that become the nucleus of environmental cells, particularly in inner city streets where children have little or no access to parks and play areas,
• Identifying the focus of other supportive traffic measures or walking and cycling promotion schemes, particularly those areas that support the use of sustainable transport modes for shorter journeys
• Identifying local centres that would benefit from this type of improvement.

247. The introduction of Home Zones should not be considered as a short-term, quick-fix alternative; securing the support of the majority of residents and other affected agencies is paramount. However, as schemes are introduced and the benefits become public knowledge it is anticipated that the ‘lead-in’ times and preliminary works will become more streamlined.

2001/2002 Programme

• This represents the final year of the City Council funded three year programme to introduce Home Zones in Henbury and Brislington and it is anticipated that both areas will be completed during this period.
• The Horfield Home Zone area will have commenced and will continue for a further two years.
• The location of studies and consultation will have been completed for the SRB and New Deal for the Communities.
• Further funding is sought to support the development and implementation of a prioritized strategy for Home Zone introduction within identified residential environmental cells and at other areas considered suitable and needy, and to commence feasibility and consultation in some of these areas.

Community Safety

248. Bristol Community Safety Strategy (1998) has been developed in partnership with Bristol City Council, Avon and Somerset Constabulary, Avon Health Authority and Avon Probation Service and aims to:

• Conduct and publish an audit of local crime and disorder problems, taking into account the views of those who live and work in the areas.
• Determine priorities for action.
• Devise and publish a strategy which tackles these problems, including objectives and targets.

249. People want to be safe and secure when travelling, for example using late night public transport or as a child walking to and from school through streets heavy with traffic. Through the partnership the Council will try to ensure that policies and objectives developed will contribute to regeneration, community development, equality and opportunity for Bristol’s citizens and its communities. Below are some initiatives which address community safety, for example:
### Figure 6.32
Five Year Programme

<table>
<thead>
<tr>
<th>Home Zone Project</th>
<th>Funding</th>
<th>Capital Bid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion of the two areas currently underway in Henbury and Brislington.</td>
<td>City Council One-Off expenditure £400,000</td>
<td>Nil</td>
</tr>
<tr>
<td>Finalising the details and completing the Horfield redevelopment.</td>
<td>Section 106 Funding £3,000,000</td>
<td>£100,000</td>
</tr>
<tr>
<td>Securing and commencing feasibility, consultation and implementation in the areas identified for SRB and New Deal for the Community funding.</td>
<td>Preliminary and Initial Design work required to secure SRB and New Deal funding</td>
<td>£30,000</td>
</tr>
<tr>
<td>Identifying areas that become the nucleus of environmental cells, particularly in inner city streets where children have little or no access to parks and play areas,</td>
<td>Commencement of a programme of implementing two schemes per year.</td>
<td>£2,220,000</td>
</tr>
<tr>
<td>Identifying the focus of other supportive traffic measures or walking and cycling promotion schemes, particularly those areas that support the use of sustainable transport modes for shorter journeys</td>
<td>Support and integration with other projects</td>
<td>£150,000</td>
</tr>
<tr>
<td>Identifying local centres that would benefit from this type of improvement.</td>
<td>Support and integration with other projects</td>
<td>As above</td>
</tr>
</tbody>
</table>

**Total Five Year Bid** £2,500,000

### 2001/2002 Programme

<table>
<thead>
<tr>
<th>Home Zone Project</th>
<th>Funding</th>
<th>Capital Bid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion of the two areas currently underway in Henbury and Brislington.</td>
<td>City Council One-Off expenditure £400,000</td>
<td>Nil</td>
</tr>
<tr>
<td>Initiating the Horfield redevelopment Home Zone.</td>
<td>Section 106 Funding £3,000,000</td>
<td>Nil</td>
</tr>
<tr>
<td>Securing and commencing feasibility, consultation and implementation in the areas identified for SRB and New Deal for the Community funding.</td>
<td>Preliminary and Initial Design work required to secure SRB and New Deal funding</td>
<td>£30,000</td>
</tr>
<tr>
<td>Identifying areas that become the nucleus of environmental cells, particularly in inner city streets where children have little or no access to parks and play areas,</td>
<td>Commencement of a programme of implementing schemes first 2 schemes</td>
<td>£440,000</td>
</tr>
<tr>
<td>Identifying the focus of other supportive traffic measures or walking and cycling promotion schemes, particularly those areas that support the use of sustainable transport modes for shorter journeys</td>
<td>Support and integration with other projects</td>
<td>£30,000</td>
</tr>
<tr>
<td>Identifying local centres that would benefit from this type of improvement.</td>
<td>Support and integration with other projects</td>
<td>As above</td>
</tr>
</tbody>
</table>

**Total Five Year Bid** £500,000
Strategic Network Management

• Street lighting. This has an important role to play in an integrated transport strategy because of its potential to reduce collisions, reduce crime and the fear of crime and improve the environment. Street lighting is discussed further below.

• Closed-Circuit Television (CCTV). Much has already been done in terms of existing developments to promote security, especially in the city centre area. Bus stops at the Horsefair are under surveillance via CCTV, for example, and all City Council multi-storey car parks as well as the Park & Ride sites also have this facility, with more CCTV planned, for surface car parks. The Community Safety Partnership will formulate a strategy for the role of CCTV in the city and has submitted a bid to the Home Office/DTR under the crime reduction programme.

• Home Zones. These aim to improve the residential quality of the area and reintroduce residential activity onto the streets (see section earlier in this Chapter).

• Safer Routes to School (see section in Chapter 5).

• Road Safety (refer to road safety strategy).

250. Examples of projects set up in local communities to address community safety issues include such areas as Ashley ward. The south part of the ward has characteristics similar to those of central Bristol with large car parks and offices. The area is a crime hot spot for robbery and theft from motor vehicles. The SRB Inner City Lifeline area covers Ashley and as part of the diverse range of social issues identified by local people community safety is at the forefront. The Community Safety Environmental Project managed by Avon Probation Service responds to local environmental concerns that relate to community safety, e.g. cutting back overgrown bushes and trees that may be obscuring street lighting and generating a feeling of fear or creating opportunities for street crime.

251. Elsewhere in the city there are similar problems. The Bristol Regeneration Partnership (BRP) set up in 1995 aims to strengthen local communities. SRBS includes safety initiatives addressing situational problems by providing a CCTV scheme in Symes Avenue Shopping area; parking and traffic calming; pedestrian schemes; home safety measures to deter burglaries and work with young people.

Street Lighting

Strategy

252. A high proportion of existing Street Lighting is more than 25 years old and the City Council has introduced a programme to replace these with more energy-efficient lamps of an improved design to reduce light pollution. This strategy follows a best value approach to investment in lighting improvements, whilst fulfilling an important role in delivering the overall objectives of the Transport Plan. The new high pressure sodium (SON) lighting being installed as part of the programme provides superior colour rendition and light output, assisting in the reduction in collisions, improving the environment, and reducing crime and the fear of crime.

Progress

253. Through utilising resources from various areas, including the Local Transport Plan, it has been possible to make good progress with the 5 year programme of schemes outlined in the provisional plan. Some 25 schemes are being progressed this year (involving over 600 units). Improved lighting has also been installed in the central area of Bristol as part of the environmental improvements to Broadmead Shopping Centre.

Future programme

254. It is proposed to sustain this progress in the street lighting programme in 2001/2002, with 16 more schemes programmed. Again alternative resources are available to the Council to fund half of these schemes, with 8 schemes to be funded through the Local Transport Plan. However, resources are unlikely to be sufficient for the replacement programme of energy-efficient lamps to be completed within the five-year period of the plan. Details of the programme of lighting improvements can be found in Appendix 8.

This programme works towards the following Transport Plan Objectives:

• 1 - ensure transport system contributes to the promotion and development of a successful economy (more attractive environment for Bristol)

• 3 - reduce transport collisions and improve personal safety and security.
Strategic Network Management

Fabric of the Network:
Maintaining and Improving The Fabric Of The Network

Highways Maintenance Strategy

255. The maintenance of highways in the city is vitally important in maximising the benefit of the existing highway network, whilst also being of critical importance in road safety terms. The maintenance programme is an on-going balance between reconciling essential maintenance programmes with the myriad activities that are continually carried out by many other parties within the highway network. In addition to the main utilities, there are telecommunication companies, roadworks, major re-development construction sites together with the overall programme of transport improvements, set out in this transport plan which need to be considered in the co-ordination of scheduling of the programme.

256. This programme works towards the following Local Transport Plan Objectives:-
1 - ensure transport system contributes to the promotion and development of a successful economy
3 - reduce transport collisions and improve personal safety and security.
5 - ensure that Bristol's transport system addresses the needs of disabled people

257. The carriageway maintenance programme is evaluated not only on structural criteria but also under preventative care parameters. Bristol City Council's maintenance strategy remains based on sound basic and proven engineering principles; other initiatives such as the evolution of procedures addressing safety issues, local community interests, co-ordination and close monitoring of utility roadworks and sustainable waste management are all complementary to and support the maintenance objectives.

Network Maintenance Management

258. The maintenance strategy is based upon the following hierarchy:

a. Avoidance of maintenance weaknesses in new schemes
   The importance of maintenance issues is promoted with new scheme designers. Scheme promoters are made aware of maintenance issues such as whole life maintenance and servicing costs and designers are encouraged to take these into consideration. The objective of this exercise is to avoid new designs which meet the primary aims of the project but inadvertently leave a legacy of maintenance problems.

b. Preventative programmes on existing network
   The built network, which represents a major asset, has to be in a basic sound condition to render it fit for use by everyone in the city. Therefore, the main thrust of the strategy is concentrated towards providing the most economical and efficient preventative measures to maintain the whole network in a serviceable condition within budgetary provisions. The levels of revenue funding available have historically been low and realistic targets have been set at preventative measures in order to defer or avoid more costly structural programmes as a last resort. Basic engineering criteria are employed for visual route surveys and more detailed and costly investigations are limited to selected areas where defects cannot be initially understood or explained. The main objective is to target at least 5% of the entire network for preventative treatment. The longer term objective is to achieve a cyclic maintenance period of once every fifteen years in network treatment, including structural works. This is a major challenge as the mainstay of preventative treatment of the carriageway is surface dressing. This technique is unpopular with the public because of its characteristic of loose chippings and the potential for tacky exposed binder. For Bristol there is the further challenge of managing traffic and parking in urban and residential neighbourhoods.
c. Safety programmes
Following avoidance and preventative techniques which address the general network maintenance needs, safety inspection regimes have been developed with supporting reactive works programmes to address specific individual problems that inevitably occur throughout the network. By targeting the most dangerous aspects on the highway, particularly on the busiest walking areas, encouraging results have been achieved in the reduction of liability claims. This is counter to national trends which show a marked increase in the opposite direction.

Objectives and Criteria
259. The objectives and criteria on which the maintenance strategy is based are set out in Figure 6.34 (showing criteria for prioritising carriageway works) and Figure 6.35 (showing criteria for prioritising footway works). The maintenance strategy also draws support from associated initiatives which are then consolidated into various operational programmes and procedures as these are developed. These supporting programmes will provide for a more integrated approach to establish highway maintenance as an essential and significant part of the local transport plan. Examples of these programmes are given in Figure 6.36.

Carriageways
260. The identification of routes requiring works will also be assessed in co-ordination with the emerging HGV Route network, which is shown by the proposed revisions to the Primary Route Network in the proposed new Road Hierarchy. This is detailed earlier in this chapter.

Footways
261. Each footway scheme is considered and scored according to the criteria set out in Figure 6.35
262. The structural data held by the authority comprises actual construction records obtained from trench openings over the whole network. This portfolio has been built up since the early 1990’s. The structural condition of the network is also maintained on plans and computer databases held for rolling programmes. These have the inherent flexibility to accommodate fluctuations year on year on budgetary fluctuations as well as having the ability to meet any sudden changes to third party programmes. The situation in practice on these maintenance operations is fluid and dynamic; this, coupled with rising environmental considerations (such as the growing demand for quieter road surfaces and working outside normal working hours to minimise disruption) present a more serious challenge in drawing up viable and efficient works programmes than selecting sites on structural condition criteria, which provides only one dimension in maintenance planning and operations.

Current Situation and Progress
Carriageways
263. The careful and deliberate integration of the various initiatives that support the maintenance strategy (as described above) has succeeded in containing the on-going rolling programme of structural reconstruction of the principal route network, (totalling some 96km), in spite of Bristol being the most dense and heavily trafficked unitary in the south west region.

264. The selection criteria used in the survey of the condition of the highway network for the Local Transport Plan are now derived under CVI (coarse visual inspection) criteria within the United Kingdom Pavement Management System (UKPMS). Bristol City Council has adopted the option of CVIs as the basis of the structural maintenance submission, with the results of this analysis shown in Figure 6.35, and set out in the supporting data required as part of the Local transport plan finance forms in Appendix 11.

265. The operational programmes for the entire network remain based on the City Council’s current system, the parameters of which are a development of the recommendations in the Local Authorities’ Association Code of Good Practice on Highway Maintenance, with improvements derived from empirical findings. This survey is extended to cover unclassified roads for preventative maintenance programmes. This system is not dissimilar to the CVI regime, and is considered to provide a practical balance to the more theoretical UKPMS system

266. Although using CVIs to assess the condition of highways, it is proposed to widen this assessment by measuring the skid resistance of the network, and use this data to inform the programme of safety schemes.

267. The current condition of the highway network in Bristol is shown diagrammatically in Figure 6.37.
Footways

268. Significant progress has been made in the structural re-construction of the worst stretches of footways, totalling fifty-six separate sites. This has been a combined result of procurement techniques, more efficient use of construction methods and a major injection of additional funding from the sale of some of the Council’s assets.

269. The Council has also constructed 149 dropped crossings on commonly used routes to facilitate access for wheelchair users. This is in addition to the work done to provide formal pedestrian crossings with facilities for disabled people.

270. The current programme of maintenance works for the current year is shown in Figure 6.38, covering all aspects of maintenance, funded by both capital and revenue expenditure.

Future Programme and Targets

271. A summary of the five-year programme for structural maintenance on principal roads is shown below. The details of the individual schemes included in the future programme of structural maintenance works are listed in Appendix 8.

272. The current strategy continues to yield a steady and sustained improvement in the built network, in spite of the continued reduced level of revenue support which has been approximately one third below the standard spending assessment calculation since 1996. This has been off-set to some extent by the injection of funding from the Council’s capital receipts and the increased settlement for carriageway structural maintenance in the last two years, particularly on the PRN. Therefore there will be a decreasing trend in the number of schemes proposed for future bids in the structural programme for the PRN and other classified routes. It is now possible to consider routes on the unclassified network (which make up over 80% of the total network) which have hitherto been limited to minor structural works only.

273. To monitor the effectiveness of the maintenance strategy, certain operational targets have been set. In the five year life of this plan, it is proposed to target at least 5% of the entire network for preventative treatment. In the longer term, the objective is to achieve a cyclic maintenance period of once every fifteen years in network treatment, including structural works. Together with these operational targets, the Council is also monitoring its performance against the indicators, shown below, with challenging yet achievable targets set against each.

Bridges and Structures

Bridge Strengthening Strategy

274. This section should be read in conjunction with Appendix 8 of the Bristol LTP which details the bridge assessment and strengthening programme.

275. The rolling programme of bridge assessment and strengthening works to accommodate the 40 tonne lorry in the UK from 1999 continued to make progress. Since the last submission, resources have been dedicated to trying to complete the assessment programme and refining failed assessments to minimise the need for strengthening works and to ensure that they are the most cost-effective option and that any environmental disruption is minimised. Many earlier assessments, which indicated bridges to be substandard, continue to be reviewed and further assessment work has been carried out to refine the analysis and where appropriate use more recently published technical codes and Highways Agency Memoranda. This has involved significant extra assessment costs but has resulted in large savings in strengthening and other costs. Strengthening works have continued and two further major schemes are being carried out in year 2000.

276. Following the publication of the Government’s White Paper “Lorries, People and the Environment” in 1992 a desktop study identified bridges for detailed inspections and assessments based upon the route hierarchy and the type and strategic position of the bridge or structure. The local (MSI) authority map showing the strategic routes is given in Figure 6.41 on which is superimposed a summary of the bridge assessment and strengthening programme to date.

277. All bridges within the City Council area identified for assessment having an initial assessment completed during 1999. A number of bridges have already been strengthened and further strengthening or other measures are being progressed.

278. Bridges or structures assessed to be under strength and incapable of carrying the required levels of traffic loading are carefully appraised against the objectives of the Transport Plan. The Plan requires heavy traffic to be directed away from unsuitable roads and sensitive locations, and where a weight restriction would not be appropriate, a strengthening scheme is prepared with the emphasis on minimising environmental disruption for local people. The total replacement of a bridge is regarded as a last resort solution.
### Figure 6.34

**Carriageway Structural & Preventative Maintenance Objectives & Criteria**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Criteria</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain vast majority of network in serviceable condition by preventative treatment as first priority.</td>
<td>Must be the most economic technique because of major quantities involved. Must be to a standard acceptable to public.</td>
<td>Only option available is properly managed surface dressing. Certain sensitive roads may have to be either treated with slurry, macro-asphalt or thin overlay.</td>
</tr>
<tr>
<td>Identify routes for wearing course surfacing as second priority.</td>
<td>Must be unsuitable for preventative treatment.</td>
<td>Rolling programme (currently 3 years detailed)</td>
</tr>
<tr>
<td>Identify routes where structural reconstruction is required as final priority.</td>
<td>Detailed site investigation &amp; analysis to confirm &amp; assess extent of failure.</td>
<td>Possibility of temporary repairs to defer major expenditure. Explore likelihood of clashes/joint working with third party programmes.</td>
</tr>
</tbody>
</table>

### Figure 6.35 - Footway Maintenance Objectives & Criteria

Each scheme is considered and scored according to the criteria below with a final total points accumulation.

#### Section 1

<table>
<thead>
<tr>
<th>Classification</th>
<th>Condition of Walking Surface</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Satisfactory</td>
<td>25% crazed/cracked/uneven - no trips&gt;20mm</td>
<td>20</td>
</tr>
<tr>
<td>Fairly Poor</td>
<td>50% crazed/cracked/uneven - 5 trips&gt;20mm per 100m</td>
<td>40</td>
</tr>
<tr>
<td>Poor</td>
<td>75% crazed/cracked/uneven - 5-10 trips&gt;20mm per 100m</td>
<td>60</td>
</tr>
<tr>
<td>Very Poor</td>
<td>100% crazed/cracked/uneven - 10+ trips&gt;20mm per 100m</td>
<td>80</td>
</tr>
</tbody>
</table>

#### Section 2

<table>
<thead>
<tr>
<th>Environmental Considerations</th>
<th>Impact</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical/tourist Areas</td>
<td>Jobs/Amenity</td>
<td>10</td>
</tr>
<tr>
<td>Industrial Premises/Estates</td>
<td>Jobs</td>
<td>10</td>
</tr>
<tr>
<td>Offices/Commercial Premises</td>
<td>Jobs</td>
<td>10</td>
</tr>
<tr>
<td>Public Buildings/Hotels</td>
<td>Image</td>
<td>20</td>
</tr>
<tr>
<td>Schools/Hospitals/Health Centres</td>
<td>Image</td>
<td>30</td>
</tr>
<tr>
<td>Shopping/Heart of Community</td>
<td>Jobs/Amenity</td>
<td>30</td>
</tr>
</tbody>
</table>

#### Section 3

<table>
<thead>
<tr>
<th>Pedestrian Usage</th>
<th>Examples</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>Minor/Residential/Local Access Roads</td>
<td>10</td>
</tr>
<tr>
<td>Medium</td>
<td>Busy Estate/Secondary Distributor Roads</td>
<td>30</td>
</tr>
<tr>
<td>Heavy</td>
<td>Minor Shopping/Main Distributor Roads</td>
<td>60</td>
</tr>
<tr>
<td>Very Heavy</td>
<td>Main Shopping Areas</td>
<td>90</td>
</tr>
</tbody>
</table>

#### Section 4

<table>
<thead>
<tr>
<th>Public Inter-action</th>
<th>Accident</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Request 1-5</td>
<td>Accident Claims 1 @ 2 year period</td>
<td>10</td>
</tr>
<tr>
<td>Public Request 6-10</td>
<td>Accident Claims 2 @ 2 year period</td>
<td>20</td>
</tr>
<tr>
<td>Public Request 11-20</td>
<td>Accident Claims 3 @ 2 year period</td>
<td>30</td>
</tr>
<tr>
<td>Public Request &gt;20</td>
<td>Accident Claims 4+ @ 2 year period</td>
<td>40</td>
</tr>
</tbody>
</table>
Strategic Network Management

Figure 6.36
Additional Complementary Highways Maintenance Objectives

<table>
<thead>
<tr>
<th>Objective</th>
<th>Criteria</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid clashes in multiplicity of utility &amp; other Council led roadworks</td>
<td>Likelihood of various roadworks programmes in vicinity clashing</td>
<td>Co-ordination of other roadworks &amp; activities. Timing of overlapping programmes to minimise disruption &amp; promote joint working.</td>
</tr>
<tr>
<td>including bridge strengthening</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensure proper reinstatement by utilities</td>
<td>Identify key utility roadworks where additional monitoring &amp; investigation which are missed in prescribed sample monitoring under NRSWA.</td>
<td>NRSWA requirements fall short in ensuring proper reinstatement on basis of limited random sampling.</td>
</tr>
<tr>
<td>Build up substantive record of road construction of network.</td>
<td>Any road within network which has a major excavation planned.</td>
<td>Take advantage of excavation in logging as built construction as sample cores are of limited value in roads with variable construction.</td>
</tr>
<tr>
<td>Promote awareness of maintenance issues of new schemes affecting highway</td>
<td>Audit designs for availability of materials &amp; fitness for use. Check infra-structure issues adequately addressed.</td>
<td>Design teams to be kept up to date on maintenance innovations &amp; techniques. Account for true maintenance costs.</td>
</tr>
<tr>
<td>including whole life costs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Addressing local needs, including mobility access ramps.</td>
<td>Consult householders on works programmes affecting appearance of street scene.</td>
<td>Transparency of decision making on priorities of various programmes. Keeping public and Members informed</td>
</tr>
<tr>
<td>Maintain robust safety regimes to minimise risk of dangerous defects.</td>
<td>Identify areas where safety issues are paramount.</td>
<td>Various initiatives being promoted contain this liability.</td>
</tr>
<tr>
<td>Develop/consolidate environmental initiatives.</td>
<td>Examine possibilities for waste reduction, re-use or recycle. Secondary effects of lower noise negative textured sma.</td>
<td>Many initiatives now consolidated into routine operational procedures.</td>
</tr>
<tr>
<td>Modernise data gathering, processing, usage &amp; retrieval.</td>
<td>Examine traditional manual methods which are unwieldy to operate/administer.</td>
<td>Greater use of IT to facilitate growing demand in use of information.</td>
</tr>
</tbody>
</table>

279. Prioritisation of strengthening works depends to a large extent on the importance of the road and its classification and the works on bridges on the Primary Road Network is nearly complete as can be seen from the tables. Many other factors affect the acceptability and feasibility of temporary measures such as traffic diversions, weight restrictions, road narrowing and monitoring, the relative risks involved, reserves of strength, traffic delay costs caused by interim measures, feasibility and acceptability of alternative routes and the social, environmental and economic consequences of interim measures and permanent strengthening works.

280. Planning of the strengthening works also takes into consideration other road improvement or traffic management schemes and vice versa. Highway maintenance schemes and maintenance works are planned to fit in with the bridge strengthening works, where appropriate. The extent and timing of strengthening of Prince Street subway is currently dependent on final details and programme of the proposed Rapid Transit Line 1 construction.

281. To date strengthening works have been on structures on primary routes or routes of more than local importance, therefore all have been strengthened to 38/40 tonnes. Once the new road hierarchy has been finalised, the criteria for the load to which bridges should be strengthened can be addressed for minor roads. However it will need to recognise that very often the cost of strengthening to 40 tonnes is little more than strengthening to a lower limit; also that in practice, in spite of weight limit signs, lorries in excess of the limit will use the bridge.
Figure 6.37
Current conditions of the Principal Highway Network (A Class Roads)
### Figure 6.38
Highways Maintenance Budget 2000/01
Showing Capital & Revenue Expenditure

<table>
<thead>
<tr>
<th>Structures</th>
<th>Capitalised expenditure (£)</th>
<th>Revenue Expenditure (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footways</td>
<td>457,000</td>
<td>873,410</td>
</tr>
<tr>
<td>Footpaths (Public Rights of Way)</td>
<td>11,000</td>
<td></td>
</tr>
<tr>
<td>Cycleways</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carriageways</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘A’ roads</td>
<td>446,000</td>
<td></td>
</tr>
<tr>
<td>Other Capitalised</td>
<td>173,000</td>
<td></td>
</tr>
<tr>
<td>Minor repairs/patching</td>
<td>500,590</td>
<td></td>
</tr>
<tr>
<td>Surface Dressing</td>
<td>306,910</td>
<td></td>
</tr>
<tr>
<td>Swing Bridges</td>
<td>301,120</td>
<td></td>
</tr>
<tr>
<td>Bridges, culverts, subways</td>
<td>379,990</td>
<td></td>
</tr>
<tr>
<td>Provision for Mobility Impairment Provision</td>
<td>38,120</td>
<td></td>
</tr>
<tr>
<td>Drainage</td>
<td>53,000</td>
<td>68,730</td>
</tr>
</tbody>
</table>

#### Aids to Movement and Safety

- **Lighting B Energy Costs**: 763,630
- **Routine Maintenance**: 786,070
- **Traffic Management Maintenance**: 452,060
- **Traffic Signs & Signals – Energy Costs**: 168,100
- **Electricity at Work**: 126,080
- **Lighting**: 74,000
- **Street Nameplates**: 42,690

#### Cyclic Maintenance

- **Gully emptying**: 127,060
- **Verge & Amenity maintenance**: 410,350
- **Bus Shelters (provided under contract with advertiser)**: 0

#### Winter Maintenance

- **Salt, vehicles, operations**: 221,540

#### Support Functions

- **Technical Services**: 17,170

**Total**: 1,203,000 5,594,620

### Fig 6.39
Structural maintenance on principal roads, five year programme

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/2</th>
<th>2002/3</th>
<th>2003/4</th>
<th>2004/5</th>
<th>2005/6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure (£000s)</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>475</td>
<td>450</td>
</tr>
</tbody>
</table>
282. Of the City Council owned bridges, there are currently 179 bridges in the assessment programme. This is slightly more than last year. The extensive Frome culvert has now been split into more individual structures to correspond to the individual assessments carried out. Also, following the government decision, in May 2000, to lower the national limit to 1.5m span for structures to be included in the assessment programme, a further 7 structures were added to the total. Except for these added structures, assessments have now been completed on all the other City Council bridges.

283. Of the total assessed bridges, 132 have now passed the assessment for 40 tonne vehicles, although many of them have parapets that are not up to current standards, based on the minimum 50mph standard, a speed well in excess of the 30mph limit on most of the City's roads. The remaining 40 bridges were assessed as substandard. Of these substandard bridges, 9 have already been strengthened and major strengthening work on 2 is taking place during the year 2000; 10 can take full carriageway loading but have substandard verge/edge features; 10 will have weight limits imposed by autumn 2000; the remaining 9 cannot take full carriageway loading. Locations of assessed bridges are shown on map Figure 6.41, and a summary of the current state of bridges assessed as sub-standard is included in Appendix 8.

284. Further investigation into strengthening or other measures, including weight limitation, traffic management measures and structural monitoring, are being considered for the unstrengthened substandard bridges. Assessments have continued to be reviewed in the light of the type of analysis used and the new assessment design rules published in recent Highways Agency technical memoranda and alternative methods used in some cases. These re-assessments and reviews have resulted in several further structures being removed from the sub-standard list. Re-assessments have been very cost effective and have led to the saving of several million pounds from the strengthening programme, especially in relation to the Cumberland Basin bridges.

285. Of the bridges in the assessment programme, there are 7 City owned post-tensioned concrete bridges. These bridges were subjected to extensive special inspections with intrusive investigations and testing as part of the assessment programme. This work has now been completed.

286. Railtrack is responsible for 23 road bridges over operational rail lines within the City. Two tunnels have been deleted from the programme. In 1995 Avon County Council and subsequently Bristol City Council entered into Agreements with Railtrack for the carrying out of assessment work on their bridges within Bristol. The assessments were carried out in 3 phases commencing in 1995, 1997 and 1998. Progress by Railtrack continues to be particularly slow and to date assessment certification has only been received for 2 bridges, although initial results have now been received for all except 1 bridge. Measures to deal with the substandard bridges are under consideration. A special inspection and testing on the one post-tensioned bridge was carried out in 99/00, but results have not yet been made available. At current slow rate of progress, all assessment and re-assessment work may not be completed until 2001/02, so a small sum has been included in the bid.

287. Strengthening by Railtrack on one bridge is due to be carried out this financial year and one next year. Alleviating measures on at least one bridge will take place during 2000; other measures are in preparation for implementation in year 2001/02.
Figure 6.41
Map of Bridge Assessment Programme
Chapter 6Bristol Transport Plan 2001/2 - 2005/6

Strategic Network Management

City Council Bridges
- assessed and passed
- assessed and substandard - already strengthened
- assessed and substandard - being strengthened 00/01
- assessed and substandard - in 01/02 strengthening bid
- assessed and substandard - to be strengthened, including those with temporary measures such as weight restrictions
- weight restricted
- assessment results awaited

Rail Property Ltd - Bridges
- assessed and passed
- assessed and substandard - in 01/02 strengthening bid
- assessed and substandard - to be strengthened, including those with temporary measures such as weight restrictions

Prefix
- R Railtrack bridges
- B Rail Property Ltd. bridges
288. Under the agreement signed with Rail Property Ltd for the Property Board bridges the company carried out the assessment of its 11 structures in the assessment programme. These have now been completed and the results are summarised in Appendix 8.

289. A permanent weight limit is being imposed on 2 bridges. Temporary measures including a 17t weight limit and road narrowing are being implemented on 2 other bridges.

290. Of the two privately owned bridges, one has adequate strength under the carriageway and localised weakness in the footway. The remaining bridge, Clifton Suspension Bridge, is a private toll bridge with a 4-tonne weight limit.

291. There are many other private structures including cellars under the highway. The DETR carried out a brief survey of cellars and vaults under the highway and in 1999 concluded that these are low risk and do not need assessing.

292. Not included in the assessment programme are the recently-constructed bridges and viaducts on the former Bristol Development Corporation’s Spine Road (St Philips Causeway). Responsibility for these structures has now transferred to the City Council from the Government Office for the South West.

293. Apart from a few concrete bridge abutment wingwalls, almost all the retaining walls are old masonry ones. The exact length of retaining walls is not known, but there are over 500 walls logged, some of which are above the highway rather than supporting it. The most extensive length of walling is along the sides of the river Avon, but there are many City streets supported on one side by retaining walls, often not owned by the Highway Authority. No assessments of retaining walls have taken place as indicated in the highways structures proforma (see Appendix 8); the lengths given for walls supporting the highway are only an estimate.

**Strengthening Progress and Programme**

294. Strengthening works to Park Street Bridge and Netham Bridge are due for completion before the end of year 2000. It is also hoped to carry out several smaller schemes before the end of the current financial year, including 2 structures on the Cumberland Basin elevated section of road and Cattle Market Road bridge.

295. Strengthening of St. Augustine’s Parade Bridge is no longer necessary, because the scheme for remodelling the City Centre has resulted in vehicular traffic being removed from the bridge.

296. The historic Bristol Bridge, over what used to be the River Avon but is now the Floating Harbour, needs strengthening due to very weak sides to the bridge, which continue to weaken. Temporary propping to the sides and temporary barriers to the carriageway have been in place for some time. The bridge is an Ancient Monument and a Listed Structure and therefore requires consent for work to the bridge. Proposals for replacement structures to both sides of the bridge are still being finalised. Consultation with English Heritage, Urban Designers and others is continuing in order to make the scheme acceptable and to enable the relevant consents to be obtained. The costs of the basic strengthening scheme is to be funded through the LTP allocation, but possible enhancements would be funded from other sources and included either in the main strengthening works or carried out later if funds become available.

297. The large number, congestion and complexity of the services over the bridge create a major difficulty in achieving the strengthening and finalising the solution, also adding to the costs, which have increased as the scheme options and details have been developed. Currently the programmed start of the bridge strengthening is in 2001, starting with the service diversion work, subject to obtaining the required consents and to adequate funding being available.

298. Two sections of the Frome Culvert under the centre of Bristol, currently on a Principal Road, are substandard. Options for strengthening or other works are still being considered.

299. It is programmed for strengthening schemes for the two weak Rail Property bridges in Smeaton and Cumberland Road to be designed during 2000/01 with a view to commencing in 2001. Most of the funding for these 2 schemes is from Rail Property Ltd under its obligation to provide for a 24 tonne capacity, although negotiations are taking place whereby ownership of these bridges together with the railway is likely to be transferred to the City Council (see earlier text about Bristol Electric Railbus).

300. The City Council’s 5-year rolling programme of strengthening works is shown within the overall programme as set in Chapter 8 and described in detail in Figure 6.5, including the structures included in the coming year 2000/01. The full extent and cost estimates of works arising from some of the bridges assessed as substandard have yet to be finalised.

301. Bridges are currently programmed to be included in the Best Value review in the year 2001/02.
Land Use and Economic Development

1. The Council recognises the strong relationship between changing land use and patterns of travel demand. This emphasises the need to manage future development in a way which supports the use of public transport, cycling and walking, in support of PPG13. The linkages between transport, environmental quality and the attractiveness of the City for investment are also strong, and are recognised as a theme throughout this plan.

2. This section reviews a number of issues and future opportunities, which will form a basis for further strengthening the links between transport, land use and economic policies.

Economic Development Strategy

3. In the interests of overall sustainability there is a need to progressively reduce car use, with the aim of making environmental and social gains whilst ensuring economic prosperity is maintained and enhanced. These aims are not necessarily in conflict: an environmentally attractive city that has no congestion problems and is easy to access would be very attractive to businesses.

4. The LTP promotes sustainable development and focuses on the relationship between transport, economic development, regeneration needs and land use planning. Both the Local Plan and the Economic Development Strategy have sections on transport which complement the LTP objectives (see Chapter 2).

Progress and Strategy

5. Congestion is a major transport problem for the city. To attract businesses to locate in Bristol, transport and the environment are key locational factors. Alternatives to the car such as public transport, cycling and walking, and better management of the ways private vehicles are available and used will make the city a more environmentally attractive place to live and work. The Council has and is continuing to implement measures to address this.

6. Environmental Improvement:
   - The remodelling of the ‘Centre’ has improved priority access and the environment for cyclists, pedestrians and public transport users and enhancing links to Broadmead and Harbourside.

   - The city’s Broadmead shopping core has been further pedestrianised creating a more amenable area for shoppers and enhancing its competitiveness.

7. Access to Employment:
   - Bus Priority schemes have been developed throughout the city to help improve the movement of public transport. A programme of improvements will provide better access between areas of linked unemployment in south Bristol, and areas of employment growth in the north of the city. ‘Towards a Bus Strategy’ in Appendix 3.5 sets out the longer term context for public transport network development.
   - LRT line 1 will improve access into and out of the city and to the employment zone of the city’s northern fringe. It has the potential to attract commercial development and create economic regeneration opportunities in socially excluded inner city neighbourhoods.
   - The developing cycle network is prioritised to serve major centres of employment and other activities.
   - The Council supports the DETR assisted community car clubs initiative which will help disconnect vehicle availability from the need for private vehicle ownership.

8. Supporting new investment and job creation:
   - The Council is working with the private sector and the Regional Development Agency to bring forward substantial opportunities for new growth, within the framework of transport policies and in a way that maximises the potential for public transport, walking and cycling use. These are set out in the ‘Local Plan – major development sites’ below.
   - The LTP attracts a high level of importance to improving traffic movement that relates directly to commercial activity, particularly visitors and servicing (including commercial traffic). This has been described in the Widening Choice, Passenger and Freight sections of this Plan.

9. Value Added
   - The Council is seeking to integrate transport policies with the regeneration initiatives, such as Single Regeneration Budget, and this is set out in the next section.
Priorities

10. Economic development and transport objectives aim to benefit the local community and surrounding neighbourhoods. The LTP supports initiatives that spread regeneration and development to socially excluded communities who are distanced from job opportunities because of poor transport links.

Regeneration Initiatives

11. Through the Local Transport Plan the Council is trying to integrate efforts to encompass social exclusion as a wider issue that affects all areas of the Council. The Plan aims to set a framework to integrate transport priorities with economic regeneration needs and to reduce social exclusion through community-led regeneration schemes. Figure 7.1 shows wards of Bristol that have received assistance through Government and European funding initiatives such as the Single Regeneration Budget, Objective II, New Deal for Communities and Renewal Areas.

- The RDA-funded Single Regeneration Budget 5 programme of £12 million over 7 years (1999-2005) aims to combat social exclusion in South Bristol and has targeted 2 wards, Hartcliffe and Withywood. It allows for the development of schemes to improve accessibility into and out of the bid area and to other parts of the city. It will help develop the potential of major sites from both an economic development and community facilities perspective.

- Objective II, part of the EU Structural Fund programme, aims to assist areas experiencing significant problems of economic development and social exclusion including unemployment, benefits dependency and low educational achievement. Bristol has successfully put forward 5 wards; Ashley, Filwood, Lawrence Hill, Windmill Hill and Easton.

- New Deal for Communities programme, funded by the Home Office has committed £49.9 million over 10 years for the Barton Hill area of Lawrence Hill ward to target job creation, neighbourhood management and building a safe, healthy environment.

Bristol Regeneration Partnership (BRP)

12. BRP is producing a ‘Community Regeneration Framework’, which will start the process of bringing together the aspirations and needs of the people living and working in Bristol. The document will seek to develop a framework that will also interpret and incorporate current Government thinking and policy in this area. The framework will need to be regularly reviewed and updated, if it is to have any long-term value.

13. The Government has published its National Strategy for Neighbourhood Renewal – a framework for consultation (NSNR). In Summer 2000, the Urban White Paper is expected and by Autumn 2000, detailed implementation planning for the National Strategy will begin. The timetable is very tight and the delivery of the Framework needs to fit around these Government plans. For this reason it is intended that a final publication and launch will take place during November 2000.

14. The overall purpose of the framework is to:
   - Set the context for community regeneration in Bristol.
   - Provide a vision for the future that influences and informs regeneration activity city-wide at a neighbourhood level and across communities of interest.
   - Suggest actions and make recommendations on how such a vision will be realised.

15. The Framework will be used locally, regionally and nationally to inform and influence regeneration and other plans, programmes and policies. It will try to capture the main themes and concerns being expressed by communities and sectoral interests and will take account of cross-cutting themes such as equalities, sustainability and exclusion.
Figure 7.1
External Funding Initiatives in Bristol

KEY
- SRB 2/3 - RDA Government Funding
- SRB 5 - RDA Government Funding
- OBJECTIVE 2 AREA - European Funding
- NEW DEAL (Barton Hill) - Government Funding
- RENEWAL AREAS
Case Studies. Targeted Areas:

South-West and Inner East Bristol were identified as target areas in the Provisional Transport Plan. They have special transport problems, which the Council is determined to resolve.

**South-West Bristol**

This comprises wards reaching from the inner city at Windmill Hill to post-war housing estates at Filwood and Hartcliffe. Some of these wards have the greatest social exclusion levels in the city; up to 50% of the households are claiming Council Tax benefit. Low car ownership and decaying retail centres means people are reliant upon local bus services. With an imbalance of jobs, economically active people have to travel lengthy distances for work and car usage is often associated with older polluting vehicles.

To combat this, the Council has targeted resources in this area. As shown on Figure 7.1, the SRB2/3 programmes were adopted in Filwood and parts of Knowle, SRB5 covers Hartcliffe and Withywood, whilst Objective II focuses on Filwood and Windmill Hill.

The SRB5 programme 'Working Together for Change' sets out a 7 year programme of community regeneration. A series of public meetings and working groups were convened to discuss the issues of most concern to the community: Lifelong learning, Self-determination, Inclusion, Health, Sustainability, Employment and Safety. Seven theme groups have been set up and are controlled by the local residents who make up 51% of all decision making forums.

Both before, and in parallel to, the introduction of SRB5 and Objective II, the Council has taken the opportunity to combine resources to address social exclusion and transport in South Bristol. For example:

- Much of the city's bus priority investment has occurred on the Bedminster, Bath Road and Wells Road corridors, significantly improving bus services into the city centre;
- An investment of £140,000 in raised kerbs and improved bus shelters has improved accessibility on the first two low-floor bus routes 50/51 services operating through residential parts of Hengrove and Filwood to the local shopping centres at Knowle and Bedminster and into the city centre;
- Area safety management measures on residential roads within Knowle, Filwood and Hartcliffe are addressing the unusually widespread scatter of road casualties within these residential areas;
- Two-thirds of the city's cycle-route investment over the last three years has been in South Bristol, including the Malago Greenway and Whitchurch Railway spine routes;
- The successful introduction of secure cycle parking at Hengrove Secondary School has encouraged cycling to school;
- People on the New Deal Employment Scheme receive travel discounts on public transport to assist them in attaining employment in other areas of the city.

In addition, as part of the planning strategy for South Bristol a significant group of brownland development sites in the Hartcliffe and Hengrove area is being promoted. The Council are also proposing to investigate the possibility of:

- An LRT route linking South-West Bristol with the city centre as Line 2;
- Building the Callington Road link highway scheme to address the bottleneck in Brislington where traffic converges from the A4 Bath Road, Avon Ring Road, Outer Ring Road and Spine Road;
- Enhancing Parson St and Bedminster stations on the city's rail network;
- Enhancing orbital bus services to employment areas in Ashton Vale, Brislington, St. Phillip's Marsh, and possibly at Bristol International Airport;
- Re-evaluate the local bus service as part of the Bus Strategy through Objective II and the SRB5 programmes with the possibility of setting up pilot bus routes to serve local needs.

Through the SRB5 mechanism a local transport forum is being set up. The SRB5 Working theme group is to co-ordinate a cross-sectional forum representing all community interests. This forum will examine local transport needs and explore ways to solve them.
Inner East Bristol

These inner city communities have low car ownership and many suffer from high air pollution. They are demarcated by the geographical location of the railway and the close proximity of the motorway. High road casualty figures associated with high through levels of traffic sever local neighbourhoods and exacerbate social exclusion. Local residents have good proximity to local facilities but the danger from traffic and concerns about the safety of children discourage social interaction and healthy forms of travel.

The Objective II programme encompasses the wards of Easton, Lawrence Hill and Ashley and the New Deal for Communities focuses on Barton Hill, which is one of the 17 poorest areas in England. Through the Plan the Council intends to explore further measures to strengthen economic development and community involvement throughout the area. For example:

- A 20mph zone at Barton Hill was implemented to calm local traffic;
- As part of the Renewal Areas project outlined on Figure 7.1 traffic management measures in St. Werburghs and St. Agnes reduce traffic speed and inhibit rat running;
- Through the Air Quality Strategy certain places will be designated as Air Quality Management Areas enabling area wide traffic management measures to be implemented to deal with pollution hot spots;
- Home Zones could address some of the safety, parking and movement problems and reintroduce civic activity onto the streets;
- Rapid Transit line 1 will create bus/rail interchanges at Lawrence Hill and Stapleton Road. The route will begin at the city centre and connect inner city wards with the employment areas such as Filton and Aztec West in the North Fringe. Station facilities could be updated to encourage the use of the Rapid Transit, and could attract businesses into the surrounding areas;
- Night buses are being considered which will help alleviate social exclusion especially for shift workers and people who use late night facilities;
- The Safer Routes to School initiative which helps educate parents and children to walk and cycle safely to school could target more schools with the benefit of community-led schemes;
- Car and Bike Clubs could encourage collective vehicle ownership.

Discussions have been initiated with the Health Authority and the community and their involvement will be sought on area safety management, safer routes to school and local bus routings.

Structure Plan Allocations in the Journey to Work Area

16. The Structure Plan outlines the housing provision for the four Unitary Authorities in the former Avon area. In total 43,600 new dwellings have been allocated between 1996 and 2011. The distribution of these will be as follows:

- Bath & North East Somerset 6,100
- Bristol 8,500
- North Somerset 13,800
- South Gloucestershire 15,200

17. The Structure Plan identifies the following broad locations for this growth – precise locations will be determined in forthcoming Local Plans:

- the main urban areas of Bristol, Bath and Weston-super-Mare;
- the North Fringe of Bristol;
- other settlements which have good public transport access to employment or practical opportunities to provide it.

18. The Plan’s transport strategy sets out a corridor based approach to transport improvements which reflects existing strategic travel patterns and potential growth, as well as the need to maximise travel by non-car modes. Priorities are for improvements in the following locations:

- within the urban areas of Bristol, Bath, Weston-super-Mare and Yate/Chipping Sodbury;
- along the corridors connecting Bristol to Bath, Bristol to Weston-super-Mare and Bristol to Yate;
- between the main housing areas and the employment centres of the North Fringe, Avonmouth/Severnside and Emersons Green.

The City Council’s transport strategy embraces and supports these priorities, particularly through its proposals for widening choice through bus, rail and interchange improvements.
City Centre Strategy

19. Bristol City Centre Strategy was published in 1998 following a period of extensive consultation. The strategy is monitored and reviewed with updates every 18 months to address new issues and opportunities, that occur in a dynamic environment such as the city centre.

20. Recent years have seen a scale of investment and development comparable with any other UK city outside London. In the last ‘boom’ during the 1980s the main pressure was for commercial office space but there is now a much broader range of investment interest ranging from tourism to community-based initiatives.

21. The prosperity of the city is the key objective of the Local Transport Plan. This key aim is supported by the City Centre Strategy, which has been prepared to give confidence and clarity about the future direction of change in the central area.

22. An essential means of achieving this has been through the creation of public-private sector partnerships. In parallel to this process through a collaborative approach the strategy will ensure that new development makes its contribution to making Bristol more sustainable.

23. The purpose of the strategy is to:
   - Define what the city centre is, and where it is going.
   - Describe current initiatives and priorities for action.
   - Provide a promotional agenda for involving everyone interested in influencing the future direction of change in the city centre.
   - To provide a clear framework to inform partners and investors, giving confidence in the overall direction of change.
   - To demonstrate the leadership role of the City Council in co-ordinating action across the private, public and community sectors.

24. The strategy defines 13 main functions and themes of the city centre:

<table>
<thead>
<tr>
<th>Functions</th>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Employment</td>
<td>- Greening the City Centre</td>
</tr>
<tr>
<td>- The Regional Capital</td>
<td>- The Built Environment</td>
</tr>
<tr>
<td>- Tourism and Marketing</td>
<td>- Transport and Movement</td>
</tr>
<tr>
<td>- Shopping (Broadmead and West End)</td>
<td>- Safety (Crime Reduction)</td>
</tr>
<tr>
<td>- Arts, Culture and Entertainment</td>
<td>- The Centre Project</td>
</tr>
<tr>
<td>- Housing in the City Centre</td>
<td>- The Legible City Initiative</td>
</tr>
<tr>
<td>- City Docks/Bristol Harbour</td>
<td></td>
</tr>
</tbody>
</table>

25. These 13 functions and themes are addressed in 9 neighbourhood statements.

26. Transport Issues play an important part in serving the functions of the city and in addressing the themes. The overarching objective of the Transport and Movement theme is "to create a city centre to which access is effectively managed through an integrated transport system and is safe and effective to move around in".

27. There are six strategies relating to transport: -
   - to manage more effectively road space in and around the city centre;
• minimise the impact of traffic on the public environment;
• make pedestrian movement safer, simpler and more attractive;
• provide better quality car/coach parking services for city centre shops, leisure and cultural activities, residents and visitors;
• make public transport facilities more convenient, attractive and accessible;
• provide improved cycle facilities.

28. A major aim of the strategy has been to reduce the impact of through traffic on the city centre. This has been done through co-ordinating a number of individual measures, including the downgrading of Redcliffe Way, eliminating through traffic in Queen Square and re-designing the city centre itself by reducing the amount of through traffic and improving the environment for pedestrians and cyclists.

29. Through the bus quality partnership and the emerging bus strategy continuing improvements are being made to improve the quality of the bus service. Additional funding was provided through the Local Transport Plan 1999 settlement which enables the City Council to accelerate a number of initiatives including further bus priority measures, extending real-time information and, using City Council resources, the introduction of experimental night bus services on Friday and Saturday nights.

30. With regard to pedestrian and cycle access improvements a wide range of measures complementing the removal of through-traffic are continuing to be taken within the city centre including improvements in the Centre, Queen Square and Broadmead, improved pedestrian facilities on busy roads (for example Temple Quay, Perry Road and Upper Maudlin Street), and continuing extended pedestrian access to the quayside as and when development takes place.

31. With particular reference to Broadmead a study has been undertaken to identify how traffic volumes can be reduced within the shopping area, to improve movement and the environment for pedestrians and retailers without adverse effect on public transport, disabled drivers and essential servicing. A possible phased scheme has been identified that would will take most general traffic out of The Horsefair, Penn Street and, ultimately, Wine Street and Union Street during main shopping times. Further research and consultation is planned to establish how any scheme should be taken forward.

32. Phase 1 of the Legible City Initiative is being implemented that will provide a fully integrated pedestrian signage system throughout the central area. Also, a car park signing scheme for New World Square car park and the first of the specially designed Bristol ‘Blue Plaques’ have been installed.

33. Future years will see the first Light Rapid Transit (LRT) line running from Bradley Stoke to the city centre. As described earlier the route will run via Temple Meads, The Grove, Prince Street, through the city centre and on to Broadmead. The current target is to have the system up and running by 2003. This is the first line of a whole network planned for the city.

Local Plan – Major Bristol Development Sites

34. There are a number of sites in Bristol that are subject to major development proposals and which, on completion, could have a significant impact on both travel patterns and the city’s transportation infrastructure. These sites are briefly described below along with a summary of mitigating measures and details of how the development of the site links in with the Council’s LTP objectives.

Central Bristol

Broadmead

35. Broadmead is Bristol's main shopping area, and is of regional as well as citywide significance. During the 1990's the City Council commissioned a series of studies that made recommendations for improvements to Broadmead both to counter the competition presented by the out-of-town shopping centre at Cribbs Causeway and also to enhance the retail offer in line with modern requirements. A number of these improvements, including better public transport and pedestrian facilities, have been implemented but key to the future of the area is a major retail expansion. The Council is committed to promoting the development of an additional 350,000 square feet net retail floorspace in the period to 2006.

36. At present two competing developers are drawing up proposals to provide this new floorspace. Such major development offers many opportunities for bringing forward the city’s transport agenda and developers are fully aware of the policies that need to be incorporated in their proposals. Particular improvements that will be included are:- public facilities with increased bus stop and taxi rank space, and better waiting space for passengers; continuous bus/cycle lanes adjacent to new development; signal controlled at grade pedestrian/cycle crossings to replace or complement relatively unfriendly bridges; high quality and well located car parking; improved pedestrian and cycle routes to and through the site.
37. Broadmead will also be served by the LRT system, line 1 of which will terminate with a loop at the western end of the area.

38. In conjunction with the Council’s plans for Broadmead expansion, work is progressing to identify options to improve access to and within Broadmead. This has focussed on measures that will further the Council’s LTP objectives. It is considered there is scope to reduce volumes of traffic in Broadmead for the overall benefit of the area and without undue inconvenience for shoppers and retailers.

St. James Barton

39. With private sector funds made available through redevelopment adjacent to Broadmead, the Council is shortly to commission a multi-disciplinary study which will focus on St James Barton. St James Barton incorporates a large signalised roundabout with pedestrian underpasses, telephone booths and public toilets. It is run-down and presents an unattractive and, at times, threatening gateway to the Broadmead shopping area. The study will examine options for the redevelopment of this pivotal transport thoroughfare and intersection, firstly identifying the nature of possible redevelopment and secondly drawing up proposals as to how it might be brought forward, including details of any commercial uses and funding. A key element of proposals will be transport and access arrangements to ensure convenient, safe and appealing routes to link Broadmead with areas to the north. This plan seeks a contribution of £0.5 million towards transport elements of a new St James Barton intersection. This bid will be re-examined in the light of the study and once a clearer picture is developed of total costs and potential private and public sector resources.

Harbourside

40. The remaining undeveloped area of Harbourside comprises 7.9 hectares of largely derelict contaminated land on the edge of the city centre bounded by the floating harbour to the south and A4 Anchor Road to the north. The new @t Bristol development is located directly to the east of the site.

41. Current proposals for Harbourside are based around mixed-use development incorporating residential, office, retail and leisure uses. A proportion of the residential units will be ‘car free’ and the overall proposed level of parking provision is significantly below Local Plan maximum standards.

42. The site is well served by bus based public transport, including the Long Ashton Park & Ride which stops by the site. Once operational, the Avonmouth Park & Ride will also serve the site. The developer will provide a financial contribution to enable the roundabout at the A4 / Jacobs Wells Road junction to be signalised, which will improve safety, provide bus priority measures and significantly enhance pedestrian crossing facilities at the roundabout.

43. Development of Harbourside as a mixed-use development will link in with transport plan objectives 1, 3, 6, 8 and 9 (see Chapter 2) as it will regenerate a derelict area on the edge of the city centre, enhance pedestrian accessibility, provide office development which is well served by public transport, provide city centre residential accommodation, thus reducing the need to travel, promote the economy of the city centre and reduce transport collisions.

Temple Meads

44. A number of major development opportunities have been identified in the vicinity of Temple Meads railway station. Apart from the major new office development at Temple Quay, now nearing completion, there are development pressures from Railtrack, which wishes to redevelop parts of the station and adjacent parking areas (west of the station) and from other developers who recognise opportunities on the vacant Post Office sorting office site (east of the station) and the ‘north shore’ site (north of the station and Floating Harbour). Both Bristol City Council and the Regional Development Agency wish to facilitate these aspirations. In the case of the Council, redevelopment is seen as an opportunity to bring forward a truly integrated transport interchange, which will maximise the potential benefits of a combined rail, rapid transit, bus, car, taxi and motorcycle hub with first class facilities, routes and information for pedestrians and cyclists, in conjunction with through-ticketing, advanced information systems and better co-ordination of services, aided, for example, by key operators such as FirstGroup. Such a facility would serve as a real boost to promote the use of public transport.
45. In order to take forward this concept, the Council is liaising with the RDA and private sector interests to commission consultants to draw up an appropriate plan for the area. A central component will be the interchange and its funding with an effective Public-Private Partnership.

46. To support this initiative the Council is seeking £1.55 million through this plan, with other funding being made available through development of commercial opportunities and possible grants and loans from other sources.

**Non-Central Area Sites**

**Avonmouth / Severnside**

47. Avonmouth / Severnside describes an area of the Severn and Avon flood plains between the M5 motorway and the Severn estuary. The northern part is within South Gloucestershire. The area provides major opportunities for further development, building on the existing industrial base, which has traditionally been based on the docks, heavy and special industry and more recent distribution uses.

48. In spite of proximity to the motorway network, infrastructure constraints limit the potential development area. The Highways Agency in particular has sought assurances that there will be adequate investment to ensure no adverse effects on the trunk road network.

49. Within Bristol, permission was granted in December 1998 for the development of Cabot Park. This covers an area of some 180 hectares and includes warehousing, light industrial uses and a rail-freight depot (10.5 hectares). To date development has involved one large warehouse, a number of light industrial ‘starter’ units and a Honda car distribution car park. The area is currently poorly served with public transport. In recognition of transport policy, the planning agreement has incorporated requirements for land for public transport infrastructure, support for bus services to serve the site, an extensive network of pedestrian and cycle routes and funding to enable the development of ‘green’ transport plans for future occupiers of the site (together with significant investment in new roads in order to allow the area to be properly accessed by commercial traffic). The rail-freight terminal, to be built following receipt of grant-aid, will provide an important road/rail hub for the South West. It will comprise four tracks, linking to the existing Hallen rail line, and associated warehousing units.

**Wills Factory Site**

50. The Wills factory site is located close to Hengrove Park in the heart of South Bristol. It comprises nearly 23 hectares of derelict land, which was formerly a factory employing some 5,000 people, operated by Imperial Tobacco. The site is bounded to the south and east by Hengrove Way and A4174 Hartcliffe Way and can be accessed from both roads.

51. There is an outline planning consent for a primarily non-food retail park. However the developer is currently undertaking a master planning exercise encompassing the site and some surrounding land currently in the ownership of the Council. It is anticipated that this will result in a more sustainable form of mixed use development, though the main focus is still likely to be centred on retail development.

52. The site is currently fairly poorly served by public transport. However, it is intended that development will result in it becoming a popular destination and act as a catalyst for improved public transport provision. In order to facilitate ease of access by public transport the developer has undertaken to provide a public transport ‘interchange’ serving both bus based public transport and the proposed future LRT route through South Bristol. Following negotiations between the Council and the developer, a reserved route has been identified that ensures that LRT can pass through the site and stop at the interchange. In addition, it has been agreed that Travel Plans will be produced for all elements of the development.

53. The development will contribute towards regeneration in an area of Bristol poorly served by public transport. It will also provide interchange facilities, reduce the need to travel by providing local jobs and improved retail choice, lessen the dependency on the car due to public transport improvements increasing the areas served by the site, and through the use of Travel Plans the development will foster a culture whereby the car is not automatically viewed as the main means of access to the site for those who work and shop there. Consequently the development of the Wills factory site is in accordance with the transport plan, especially objectives 1,2,6,7,8,9 and 10 (see Chapter 2).

**Callington Road Sites**

54. The Callington Road link, described elsewhere in this plan, is essential infrastructure both for the economic well-being and regeneration of South Bristol and for the unlocking of some 20 hectares of development land adjacent to its route. The most significant of the Callington Road sites is the ‘allotments’ site which is identified in the adopted
Local Plan for industry, warehousing and offices. The area is currently the subject of a planning brief being prepared by the Council. The brief will seek to identify opportunities presented by the site, including those which could contribute to transport infrastructure and enhanced access for public transport, pedestrians and cyclists.

Hengrove Park

55. Hengrove Park comprises an area of approximately 81 hectares of under-used open space in the heart of South Bristol, located on what was formerly an airfield. On the northern edge of the site there is a commercial leisure park, incorporating a multiplex cinema.

56. The Council’s vision for the site is that it will include improved leisure and recreational facilities, in addition to housing and employment uses.

57. The Council has commissioned consultants to produce an Urban Framework Plan and Implementation Strategy for a number of sites in South Bristol, of which Hengrove Park is the largest. As well as examining possible land uses, the consultants will investigate the transportation implications of development options and address issues such as improved accessibility, public transport provision and links to the surrounding communities.

58. The consultants’ study will enable the Council to ensure that future development on Hengrove Park not only forms a vital urban regeneration function, but also that it is in accordance with the transport plan objectives, especially objectives 1,4,6 and 7 (see Chapter 2).

Other Planning Initiatives

Urban Village

59. The Bristol Urban Village Initiative (BUVI) aims to create sustainable communities with different types of urban village development incorporating other activities, such as car free zones and specialist house designs. The project has been set up by a group of interested people who have come together to promote and pursue urban village initiatives in Bristol. The group includes representatives of the Civic Society, the Western Partnership for Sustainable Development, Bristol Electric Railbus and architects within the city who have been looking for sites on which to promote a model urban village.

Case Study - South West Bristol

60. The group have identified a cluster of possible development sites in the south west of the city. The three sites could potentially be linked to the Park & Ride at Long Ashton where there would be a new transport interchange.

61. BUVI’s consultants have suggested a predominantly residential scheme. Some of the land would be accessed by the building of the A370/A38 road link and some by the proposed Bristol Electric Railbus link between the city centre and Ashton Vale area, and by cycle and footpath links between the city and the countryside, as well as at Avon Gorge and Ashton Park.

62. A number of issues require further work, including floodplain flooding, green belt and nature conservation designations.

Public Transport Accessibility Levels

63. Figure 7.2 illustrates the measurement of local accessibility to public transport services. The city has been sub-divided by a geometric grid of ‘origin points’ at 150 metre intervals.

64. For each origin, the Public Transport Accessibility Level (PTAL) is calculated. PTALs are calculated taking into account the proximity of each of these origin points to public transport services (incorporating buses, trains and ferries), the frequency of those services and the number of routes available.

65. PTALs are currently being developed to inform land use policies of the Bristol Local Plan. By providing an overall picture of different levels of access across an area, PTALs indicate broadly those areas that are suitable or unsuitable for locating major trip generating development, in particular office uses. Also, when assessing a specific development an initial indication of the level of public transport accessibility is given.

66. As work progresses, the potential of public transport accessibility mapping will also be explored to determine its usefulness in informing the following:

- Setting of parking standards for new developments
- Assessment of the impact of changes to the public transport network;
- Monitoring Local Transport Plan targets and other indicators;
- Preparing Travel Plans;
- Development Control decisions.
Figure 7.2
Local Accessibility to Public Transport Network
Case Studies: Tourism and Local Transport Policy: Developing the Linkages

Introduction

The development and management of the local transport system poses certain issues and provides new opportunities for the local tourism industry.

The purpose here is to identify the linkages between transport policy and the tourist industry, together with potential further areas of joint work between the two sectors.

Key facts

- Tourism generates 8 million trips to Bristol each year, including 1.3 million staying visitors.
- Over 90% of all trips are for leisure – journeys motivated by choice rather than business requirements.
- Tourists spend around £350m (£70m of which is on transport) and tourism employs 13,000 people.
- Around 78% of all UK visitors use their car to get to Bristol (with over 50% of all visits involving children).

Tourism Strategy

The third tourism strategy for Bristol identifies a number of key issues and aims for tourism. Of particular relevance to transport policy are the following:

Key Issues:

- How can the Council’s transport and traffic management policies be carried forward without a detrimental impact on tourism?
- How can Bristol’s tourism industry be developed in a sustainable way?
- How can improvements in the quality of the visitor experience be secured?

Aims:

- **Policy 4** Develop eco tourism in Bristol.
- **Policy 6** Promote the use of public transport and environmentally benign modes of travel.
- **Policy 10** Improve awareness of facilities which cater for people with disabilities.
- **Policy 18** Facilitate and encourage the involvement of the city’s tourism industry in the development and delivery of initiatives such as Legible City and the City Centre Strategy.
- **Policy 22** Ensure that the needs of the tourism industry and visitors are recognised in the development of the city’s transport and traffic management policies.

The table ‘Transport Policy and Tourism: Potential Impacts and Opportunities’ provides a draft framework for future work aimed at addressing these policy issues.
### Chapter 7

#### Bristol Transport Plan 2001/2 - 2005/6

#### Land Use and Economic Development

<table>
<thead>
<tr>
<th>IMPACT/OPPORTUNITY</th>
<th>COMMENT</th>
<th>FURTHER WORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of visiting Bristol</td>
<td>Number of options for road user charging identified including selective (7-11 am) charging</td>
<td>Needs of visitors to be a consideration in the assessment of options.</td>
</tr>
<tr>
<td>Environmental Quality of the city</td>
<td>Progressive improvement in the key civic spaces (through traffic reduction and improved public transport) will increase the attractiveness of Bristol to visitors. (ie the quality of the visitor ‘experience’).</td>
<td>Legible City signing will assist visitors in finding suitable car parking; and links from car parks to visitor destinations and open spaces and beyond.</td>
</tr>
<tr>
<td>Access to and from Bristol</td>
<td>Removal of some inessential commuter traffic will assist car borne visitors during the working week. The weekend situation is unlikely to change significantly.</td>
<td>Consultation with a sample of attractions on visitor time profile.</td>
</tr>
<tr>
<td></td>
<td>Currently lack of coach parking opportunities.</td>
<td>For the course of the LTP, increased public transport to link to Bristol will be met by buses and coaches. In the longer term it may be possible to extend the South Bristol rapid transit route to serve the airport (see Airport Surface Access Chapter 5).</td>
</tr>
<tr>
<td></td>
<td>If road user charging is adopted, the enhanced public transport network funded from this will benefit visitors (e.g. through additional park and ride facilities, and local rail improvements. Promotion opportunities).</td>
<td>Consultation with a sample of attractions on visitor time profile.</td>
</tr>
<tr>
<td>Bristol Airport</td>
<td>Future role to be determined through the regional transport strategy and national government policy.</td>
<td>For the course of the LTP, increased public transport to link to Bristol will be met by buses and coaches. In the longer term it may be possible to extend the South Bristol rapid transit route to serve the airport (see Airport Surface Access Chapter 5).</td>
</tr>
<tr>
<td></td>
<td>Surface access to the airport currently not ideal.</td>
<td>Further examination with First Group on possible ticketing/marketing initiatives.</td>
</tr>
<tr>
<td>Connectivty between attractions</td>
<td>Possible bus linkage development/links with BER (e.g. development of route 8), and Ferry Services.</td>
<td>Explore expansion, of joint bus/admission ticket details (such as to Bristol Zoo) to other major attractions.</td>
</tr>
<tr>
<td></td>
<td>The Centre project will help to link Broadmead to the Harbourside area (together with Legible City information).</td>
<td></td>
</tr>
<tr>
<td>Development of ‘Green Tourism’</td>
<td>Development of National Cycle Networks (4 routes into Bristol) and greenway network will supplement the extensive network of cycle routes and long distance footpaths.</td>
<td>New ‘access to countryside’ guide to stress tourism.</td>
</tr>
<tr>
<td></td>
<td>A number of ‘access to countryside’ initiatives are proposed in paras. 306-309 linking with the Forest of Avon Plan.</td>
<td>Assess the ability of local accommodation to provide secure cycle parking.</td>
</tr>
<tr>
<td></td>
<td>Great Western operators offer good cycle carriage facilities.</td>
<td>Marketing of ‘green tourism opportunities’ using Bristol as a base.</td>
</tr>
<tr>
<td>Tourist Information</td>
<td>A large amount of tourist information is produced much of which contains travel information which could benefit local people as well as tourists.</td>
<td>Continue to work with tourist sector to ensure maximum benefit is achieved from publicity information</td>
</tr>
<tr>
<td></td>
<td>The Navigators pilot scheme involves training and developing a team of unemployed people to provide an information service for visitors coming to central Bristol, particularly raising travel awareness of more sustainable forms of transport.</td>
<td>Monitor pilot project and support continuation/expansion if successful.</td>
</tr>
</tbody>
</table>
Recognising the Needs and Character of the Countryside

67. Bristol is surrounded by attractive and varied countryside, much of which is of an unspoilt quality and protected by Green Belt policies. A number of transport issues stemming from the social and economic interaction of Bristol and its surrounding areas can be identified:

- Access from Bristol to the surrounding countryside for leisure purposes, and use of the area’s public rights of way network and quiet country lanes for walking and cycling.
- The ‘country bus’ route network focusing on Bristol, which not only provides access to facilities in the City, but also provides an opportunity for promoting car free access to the countryside (including new networks being promoted under the Rural Bus Grant).
- The possible impact of transport infrastructure projects on the countryside.

68. The approach to each of these issues is set out below.

Access to the Countryside for Informal Leisure

69. The Council recognises the need to develop and promote good opportunities for access to the countryside without the use of the car, for both non-car owning (in support of the social inclusion policies) and car owning households and is working with the Countryside Agency, the Forest of Avon Team and surrounding local authorities in addressing this. A number of measures are currently being developed.

- Involvement in the review of the Community Forest Plan. A key element of this will be the identification and development of ‘gateway’ sites in the Forest from Bristol. These will combine characteristics of public transport access and information, linking with walking and cycle route opportunities, as well as other visitor services and facilities.
- Development of publication of ‘How to Enjoy the Countryside without a Car’. This will comprise some forty ‘day out’ trips (30 walks and 10 cycle routes) from Bristol, using local public transport. This is a project being financially supported by the Countryside Agency and Bristol First Bus, and will be published in 2000. It will promote use of those parts of the rural bus and rail network focussing on Bristol.
- Development and promotion of 7 signed cycle routes from the centre of Bristol to surrounding countryside and to the 90-mile long Avon Cycleway. Two of those are new routes being developed as part of the National Cycle Network.
- Extension of long distance Severn Way footpath into the centre of Bristol, and its promotion including the annual Severn Way Fun Day, which involves leisure use of the Severn Beach railway line, and guided walks.
- Continuation of the piloting of Sunday bus services to Bristol’s Heritage Estates.

Country Bus Network Development Serving Bristol

70. The network proposals will be developed based on the following factors:

- ‘Missing links’ identified through the ‘Access to Countryside Walk’ discussed above: the access to the Cotswolds AONB is particularly poorly provided for.
- Supporting the development of ‘Gateways’ to the Forest of Avon.
- Working with adjacent local authorities, particularly in relation to network development stemming from Rural Bus Grant.
- Encouraging public transport cycle carriage to the Countryside for leisure purposes. This includes the promotion of the planned new services linking Bristol to Cheddar and the Mendips, being funded through the successful Bath and North East Somerset Council Rural Bus Grant Challenge bid.

71. A number of these elements will be further developed and are likely to form the basis of a future Rural Bus Grant Challenge bid should the opportunity arise. This will be drawn up in conjunction with surrounding local authorities, taking into account policies that they are developing in relation to visitor management and promotion.

Impact of Transport Proposals on the Countryside

72. Transport infrastructure projects such as new roads, LRT or Park & Ride facilities can adversely affect the countryside in a number of ways:

- Direct impact of the construction including visual impact; impact on flora and fauna; and impact on landscape.
- Indirect effects of traffic generation to and from the new infrastructure (and traffic management measures to alleviate this).

73. These impacts will be carefully considered as part of site identification and appraisal and in detailed scheme design, in consultation with the relevant conservation officers.

74. All major investment projects of £1m in value will be subject of an Environmental Impact Assessment.
Five Year Programme

Co-ordination of Major Proposals within the Plan

"We need a carrot and stick approach, but the carrot must come first or Bristol will be deserted by people and business"

Transport Plan Questionnaire response

Introduction

1. This Chapter sets out the five-year programme of works proposed in this Plan. The Bid year incorporates both capital and revenue expenditure on transport for the plan period, although the bid is purely for capital funds. Capital expenditure for the bid 2001/02 is set out in detail, while the longer term programme is described in detail where available, though in later years certain areas of expenditure are necessarily set out as blocks, as specific schemes within the areas of expenditure are in the process of being identified and evaluated.

Capital Programme

2. The Government has advised that the level of the bid for capital funds should be based on realistic expectations of the resources likely to be available. Last year, in the provisional plan the Council bid for a total of £11.753 million forming its core programme. The credit approval allocated to the Council by government totalled £6.720 million, which was approximately double that in awarded in previous years on the basis of a similar level of bid. The Council strongly believes that this year’s bid level of expenditure is needed in order to begin to deliver the alternative forms of transport that are required. As evidence of the seriousness of its concerns, the Council decided to top up the borrowing approval this year with funds from its own resources to form an adopted transport capital programme of over £12 million for the 2000/01 year. This was partly enabled by a one-off opportunity occasioned by the sale of some of its assets. Future levels of additional Council resources cannot be assumed given other spending priorities and overall level of resources.

3. The advice from government was that local authorities should plan on the basis that the overall government funding for local transport will increase for 2001/02 by about one third. In addition, should yet more funding become available as a result of the government’s comprehensive spending review, have been, local authorities are advised to indicate how they would apply levels of allocation 10% and 20% higher than the expected overall increase, and additional measures are included at the end of the programme set out in Figures 8.2 and 8.3. The publication of the government’s 10 year plan on 20 July 2000, following the Chancellor’s comprehensive spending review announcement, sees an increase in the availability of funds for local transport increasing from £755 million in 2000/01 by 77% to £1,300 million in 2001/02.

4. In this context, the Council has reviewed its bid level with a view to what it considers the minimum expenditure necessary to deliver the improved transport infrastructure while being realistic in its expectations of support. Accordingly, the bid for 2001/02 is set at £11.944 million. This is reduced from £13.734 million originally indicated for 2001/02 in last year’s provisional plan.

5. In addition to this core bid, the Council has indicated an enhanced programme that could be adopted were it to pursue powers to introduce a road user charging scheme. A significant expansion of investment could be afforded by hypothecation of revenues of such a scheme. This would enable the proposed programme to more rapidly address the large number of transport issues facing the city as a whole, particularly greater impact in providing a high quality alternative to the car, rather than having to prioritise investment from a lower level of resources. The following diagram illustrates this point.

6. This approach was endorsed by the public response on consultation on the provisional plan where 68% of people were in favour of charging for travel by car in the city if fast and reliable public transport service was available; this was further supported by business surveys.

7. This enhanced programme is based on the indications already received that should the Council pursue a road user charging scheme it could obtain funding on the guarantee of receiving revenues from a charging scheme over the 10 years after its initiation. This would provide significant contribution to transport expenditure from year 2 of the programme (2002/03) as indicated in the table.
8. Figure 8.1 outlines the timescale for implementation of the larger strategic elements proposed in this Plan. In addition to major elements shown below, annual investment in pedestrian and cycling measures, traffic calming and road safety schemes, including Home Zones and safer routes to school will continue and be enhanced. Although many of the elements shown below are not major schemes under the definition used for the Local Transport Plan (i.e. over £5 million total cost) their inclusion demonstrates the co-ordination and inter-relationship of the programme proposed over the next five years.

9. Figure 8.2 summarises the overall programme, setting out gross expenditure, which includes the additional contributions available from the private sector. Certain allocations from these contributions are directed towards revenue expenditure, which is essential to provide a balance to the significant investment in capital outlined over the five years. Figure 8.3 lists the programme in more detail, excluding revenue as required for the purposes of the bid. Bristol and South Gloucestershire Rapid Transit Line 1, and Road User Charging proposals are both included in the plan programme. The actual procurement method and contributions to funding are currently being finalised for these two schemes and therefore the bid in figures 8.2 and 8.3 includes development costs only. The full cost of these two projects is listed in the figures, though not included in the totals.

Revenue Programme

10. The ambitious programme of capital expenditure set out in the beginning of this chapter needs to be balanced with supporting revenue expenditure over the plan period, both to maintain existing and new infrastructure, and to support existing and enhanced transport services.

11. Revenue expenditure for the current year, and forecasts for the following four years of the plan are outlined below. As shown in Figure 8.2 it is proposed to enhance both capital and revenue expenditure during the plan period, using contributions from the proposed road user charging scheme. It is imperative that Bristol’s transport system is significantly enhanced before any charging scheme is introduced, and the accelerated programme set out to achieve this, (including road user charging contributions) needs to reflect the increased revenue expenditure necessary to complement the enhanced capital programme. To this end the revenue expenditure set out in this section includes these contributions from the road user charging scheme.

12. The revenue expenditure set out in the following tables excludes the considerable annual staff costs associated with service delivery. The current year figures show the 2000/01 Council revenue budgets for transport. The forecast core expenditure (excluding road user charging contributions) for the five years of the plan are estimates based on the current levels of resources, though these will be revised as the plan progresses. The revenue programme to support public transport and other transport services is considered separately from that for maintenance.

Revenue Programme to Support Public Transport and Other Transport, Parking Services

13. The Council supports many areas of transport with revenue contributions, including socially necessary bus services, concessionary bus fares, community transport operators, a local rail service, and these are summarised below. As set out in the capital programme in Figures 8.2 and 8.3, it is proposed to significantly expand Park and Ride provision around the city. Consequently, as shown, the current levels of revenue funding supporting these Park & Ride services will need to increase over the period of the plan. Traffic monitoring revenue expenditure currently amounts to some £50,000 per annum and will need to increase to allow the effective monitoring over the plan period required under the new LTP system. Road safety education, training and publicity (ETP) currently totals £20,000 (excluding staff costs), and it will also be necessary to increase the level of ETP funding to some £40,000 early in the plan period to meet anticipated needs for reducing child casualties in particular.

Revenue Programme to Support the Maintenance of Existing and New Infrastructure

14. A more detailed breakdown of the maintenance expenditure for the current year (2000/01) can be found in the highways maintenance section in Chapter 6 of this document.
Figure 8.1
Core Programme of Individual Major Schemes and Significant Initiatives

HIGHLIGHTED PROPOSALS INDICATE WHERE FUNDS ARE BEING BID FOR IN THE FIRST YEAR OF LTP (2001/02)

### WIDENING CHOICE

1) BUS SERVICE ENHANCEMENTS (SHOWCASE CORRIDORS)
   (Building on bus priorities with branded services, real time information, and enhanced promotion)
   - A4 Bath Road (continuing works)
   - A38 North and South
   - A401 8 (Whiteladies Road)
   - A420 Church Road, St George Corridor
   - Further Showcase Corridors to be identified through the Bus Strategy

   **Gross Costs £M's**
   - CURRENT YEAR 2000/01
   - 2001/02
   - 2002/03
   - 2003/04
   - 2004/05
   - 2005/06
   - £12.2m
   - £11.9m
   - £15.5m
   - £13.7m
   - £12.9m
   - £13.4m

   **Rolling programme commencing one route per year**

2) BASED PARK & RIDE
   - A4 Avonmouth
   - A4 Brislington Expansion
   - A37 Corridor
   - A38 South Corridor

   **1.5 (2.0ph2)**
   - Phase 1
   - Phase 2
   - Phase 1
   - Phase 2

3) RAIL ENHANCEMENTS
   - Small improvements to local network in conjunction with bids under the Rail Passenger Partnership (RPP)

   **c 0.05 p.a (+RPP)**

4) LIGHT RAPID TRANSIT (first year bid for development costs only)
   - Line 1, Bradley Stoke to Centre
   - Further Lines expanding network

   **120**
   - Design and Build (incl. park & ride)

5) WALKING & CYCLING IMPROVEMENTS
   - Schemes in support of Cycling and Walking strategies

   **c 1.1 p.a**

6) SAFER ROUTES TO SCHOOL STRATEGY
   - Ongoing programme treating primary and secondary schools

   **c 0.5 p.a**

7) MAJOR HIGHWAY IMPROVEMENTS
   - A4 Bath Rd to Callington Rd Link
   - A38/A370 Link

   **8.3**
   - Preliminary investigations
   - Construction
   - (Timescale to be determined in consultation with N. Somerset Council)

### STRATEGIC NETWORK MANAGEMENT

1) TRAFFIC MANAGEMENT & SAFETY
   - SCOPE (completion of north & south routes)
   - Home Zones - Brislington & Henbury
   - Further Home Zones throughout city

   **3.2**
   - 0.5 p.a

2) TRAFFIC RESTRAINT (bid for development costs only)
   - Road User Charging

   **11**
   - Consultation & legal powers
   - Design and Build Pilot

3) PARKING
   - Enhanced parking facilities

   **1.75**
   - Consultation

4) INTEGRATED TRANSPORT INFORMATION CENTRE

   **3.5**
   - £12.2m
   - £11.9m
   - £15.5m
   - £13.7m
   - £12.9m
   - £13.4m

CURRENT YEAR CAPITAL PROGRAMME
ESTIMATED NET COSTS PER YEAR (LTP BID)
(including all other minor expenditure and structural maintenance not shown individually above)
### FIGURE 8.2  TRANSPORT PLAN - 5 YEAR PROGRAMME - SUMMARY

Incluencing Additional Capital and Revenue Expenditure Funded from Contributions Through the Road User Charging Scheme

Core Programme shown in Bold
Enhanced Programme with Road User Charging Contributions in Italics

\[ ^{\text{"-C"}} \] = capital,  \[ ^{\text{"R"}} \] = revenue

**WIDENING CHOICE (chapter 5 of LTP document)**

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. BUS SERVICE ENHANCEMENTS Incorporating Bus Showcase Corridors</td>
<td>1,800</td>
<td>1,800</td>
<td>1,800</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>[^{\text{-C}}] Additional funding to accelerate Programme</td>
<td>- 1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>-</td>
</tr>
<tr>
<td>[^{\text{-C}}] Investment in new buses</td>
<td>- 2,000</td>
<td>2,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[^{\text{-C}}] New Bus and Coach Station, Central Bristol</td>
<td>-</td>
<td>- 2,000</td>
<td>2,500</td>
<td>2,000</td>
<td>-</td>
</tr>
<tr>
<td>[^{\text{-C}}] Development of new interchange Bus facilities in Centre</td>
<td>- 1,500</td>
<td>1,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[^{\text{-R}}] Bus fare reductions/concessionary fares</td>
<td>- 5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>-</td>
</tr>
<tr>
<td>[^{\text{-R}}] New Bus routes, to provide further orbital and night bus services</td>
<td>- 3,000</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
<td>-</td>
</tr>
<tr>
<td>2. BUS-BASED PARK &amp; RIDE Expansion to existing, and provision of new sites</td>
<td>1,500</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>1,500</td>
</tr>
<tr>
<td>3. COMMUNITY TRANSPORT Including vehicle replacement</td>
<td>70</td>
<td>70</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>[^{\text{-C}}] Additional funding to accelerate investment programme</td>
<td>- 1,000</td>
<td>1,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[^{\text{-R}}] Revenue support for significantly enhanced services</td>
<td>- 500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>4. TAXIS AND PRIVATE HIRE VEHICLES Driver training including disability awareness, taxi rank enhancements</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>5. COACHES Programme included elsewhere, refer to (24) Parking</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6. RAIL ENHANCEMENTS Improvements to local stations, shelter provision and signing</td>
<td>50</td>
<td>50</td>
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<td>50</td>
</tr>
<tr>
<td>[^{\text{-C}}] Capital investment in conjunction with Train Operating Companies</td>
<td>- 1,500</td>
<td>1,500</td>
<td>1,500</td>
<td>1,500</td>
<td>-</td>
</tr>
<tr>
<td>[^{\text{-R}}] Revenue support for services on local network</td>
<td>- 500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>7. LIGHT RAPID TRANSIT (LRT) Actual procurement method and contributions to funding are currently being finalised; this bid is for a contribution to development costs only</td>
<td>250</td>
<td>120,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[^{\text{-C}}] contribution to construction of Line 2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8,000</td>
</tr>
<tr>
<td>8. BRISTOL ELECTRIC RAILBUS (BER) Refer to (35) Bristol Electric Railbus for this bid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[^{\text{-C}}] Provision of extended Railbus service linking attractions around the Centre and the City Docks</td>
<td>- 500</td>
<td>500</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[^{\text{-R}}] Revenue support for significantly enhanced service</td>
<td>- 200</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>-</td>
</tr>
<tr>
<td>9. WATER TRANSPORT Enhanced service and increased promotion for ferry services</td>
<td>40</td>
<td>40</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>[^{\text{-C}}] Capital investment in conjunction with Operator</td>
<td>- 250</td>
<td>250</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[^{\text{-R}}] Revenue support for significantly enhanced service</td>
<td>- 100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>10. INTERCHANGE FACILITIES Enhancements at Temple Meads Station specifically, and many measures included in other elements of programme to make interchange between modes of transport as seamless as possible.</td>
<td>250</td>
<td>500</td>
<td>800</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11. WALKING</td>
<td>277</td>
<td>390</td>
<td>390</td>
<td>390</td>
<td>357</td>
</tr>
<tr>
<td>[^{\text{-C}}] Additional funding to accelerate investment programme</td>
<td>- 1,000</td>
<td>1,000</td>
<td>1,500</td>
<td>1,000</td>
<td>-</td>
</tr>
<tr>
<td>12. CYCLING</td>
<td>800</td>
<td>1,067</td>
<td>1,034</td>
<td>1,300</td>
<td>1,230</td>
</tr>
<tr>
<td>[^{\text{-C}}] Additional funding to accelerate investment programme</td>
<td>- 2,000</td>
<td>2,000</td>
<td>3,000</td>
<td>3,000</td>
<td>-</td>
</tr>
<tr>
<td>13. SAFER ROUTES TO SCHOOL</td>
<td>500</td>
<td>580</td>
<td>580</td>
<td>580</td>
<td>585</td>
</tr>
<tr>
<td>[^{\text{-C}}] Additional funding to accelerate investment programme</td>
<td>- 1,000</td>
<td>1,000</td>
<td>1,500</td>
<td>1,000</td>
<td>-</td>
</tr>
<tr>
<td>14. DISABLED PEOPLE Cross cutting measures aimed at improving facilities for disabled people, included in many areas of programme; (1) Bus; (2) P &amp; R; (3) Community Transport; (4) Taxis; (6) Rail; (7) LRT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>15. MEASURES TO ADDRESS SOCIAL EXCLUSION Cross cutting measures covered in a range of areas of the plan, more specifically (3) community transport and (1) bus</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>16. EXPERIMENTAL TRANSPORT INITIATIVES Including Car Clubs and future European Transport Initiatives</td>
<td>100</td>
<td>100</td>
<td>130</td>
<td>130</td>
<td>130</td>
</tr>
<tr>
<td>17. PRIVATE CARS AND HIGHWAY INFRASTRUCTURE Measures Included within many elements of the programme, such as: (22) UTMC; (24) Parking; (29) Road Safety; (32) Street Lighting and; (33) Highway Maintenance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>18. POWERED TWO WHEELERS Proposal included elsewhere in the Programme, refer to (24) Parking</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>19. FREIGHT (sustainable distribution) Proposals included elsewhere, refer to (24) Parking and (34) Bridges</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>[^{\text{-C}}] Additional measures to assist freight movements around the city</td>
<td>- 100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>20. MAJOR HIGHWAY IMPROVEMENTS Callington Road Link; A38/A370 Link (contribution to studies only)</td>
<td>-</td>
<td>90</td>
<td>250</td>
<td>2,500</td>
<td>4,000</td>
</tr>
</tbody>
</table>

**Notes:**
- Procurement methods and contributions to funding are currently being finalised; this bid is for a contribution to development costs only.

**Enhanced service and increased promotion for ferry services**

- **Cross cutting measures covered in a range of areas of the plan, more specifically (3) community transport and (1) bus**

**Cross cutting measures aimed at improving facilities for disabled people, included in many areas of programme; (1) Bus; (2) P & R; (3) Community Transport; (4) Taxis; (6) Rail; (7) LRT**

**Enhancements at Temple Meads Station specifically, and many measures included in other elements of programme to make interchange between modes of transport as seamless as possible.**

**Cross cutting measures covered in a range of areas of the plan, more specifically (3) community transport and (1) bus**
FIGURE 8.2 TRANSPORT PLAN - 5 YEAR PROGRAMME - SUMMARY

INCLUDING ADDITIONAL CAPITAL AND REVENUE EXPENDITURE FUNDED FROM CONTRIBUTIONS THROUGH THE ROAD USER CHARGING SCHEME

Core Programme shown in Bold
Enhanced Programme with Road User Charging Contributions in Italics
"-C-" = capital, "R" = revenue

<table>
<thead>
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<tbody>
<tr>
<td>21. SCOPE ROUTE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Various Traffic Management measures along the diversionary route around the newly completed Centre</td>
<td>330</td>
<td>1,065</td>
<td>1,400</td>
<td>225</td>
<td>200</td>
</tr>
<tr>
<td>-C- Environmental Improvements in the city centre</td>
<td>-</td>
<td>1,500</td>
<td>1,000</td>
<td>500</td>
<td>-</td>
</tr>
<tr>
<td>22. URBAN TRAFFIC MANAGEMENT AND CONTROL (UTMC)</td>
<td>250</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>23. ROAD USER CHARGING</td>
<td>400</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Including, coach, lorry and motorcycle parking</td>
<td>820</td>
<td>870</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>-R- Loss of income as part of road user charging scheme, (reduced parking charges outside peak hours)</td>
<td>-</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>-C- Provision of new Multi-storey car parking facilities in central Bristol (2 new car parks within plan period)</td>
<td>-</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>-</td>
</tr>
<tr>
<td>-C- further enhancements to car parking facilities particularly safety and security such as CCTV provision</td>
<td>-</td>
<td>250</td>
<td>250</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>25. MOBILITY MANAGEMENT</td>
<td>1,290</td>
<td>1,725</td>
<td>2,525</td>
<td>775</td>
<td>575</td>
</tr>
<tr>
<td>Including Integrated Travel Information Centre and Legible City Initiative</td>
<td>-</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>-C- Additional funding to accelerate Legible City investment programme</td>
<td>-</td>
<td>500</td>
<td>500</td>
<td>1,000</td>
<td>500</td>
</tr>
<tr>
<td>26. TRAVEL PLANS</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Travel Plan for Bristol City Council, then other organisations in the City</td>
<td>80</td>
<td>80</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Specific measures targeting shorter trips, and in addition many proposals targeted at shorter journeys cut across other elements of the programme and are incorporated in; (11) Walking; (12) Cycling; (13) Safer Routes To School; (25) Mobility Management and; (26) Travel Plans</td>
<td>160</td>
<td>145</td>
<td>145</td>
<td>395</td>
<td>405</td>
</tr>
<tr>
<td>27. SHORTER JOURNEYS</td>
<td>705</td>
<td>565</td>
<td>565</td>
<td>565</td>
<td>565</td>
</tr>
<tr>
<td>ROAD SAFETY STRATEGY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-C- Additional funding to accelerate investment programme</td>
<td>-</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>30. HOME ZONES</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Negative funding to accelerate investment programme</td>
<td>-</td>
<td>1,000</td>
<td>1,000</td>
<td>1,500</td>
<td>1,000</td>
</tr>
<tr>
<td>31. COMMUNITY SAFETY</td>
<td>198</td>
<td>200</td>
<td>205</td>
<td>210</td>
<td>-</td>
</tr>
<tr>
<td>Cross-cutting element, embraced by a number of measures, particularly (11) Walking, (12) Cycling, (13) Safer Routes To School and (30) Home Zones</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>32. STREET LIGHTING</td>
<td>500</td>
<td>500</td>
<td>475</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>Additional funding for general highway maintenance budget, specifically targeted at footways, cycleways and maintenance of key public transport routes</td>
<td>-</td>
<td>3,000</td>
<td>3,000</td>
<td>4,000</td>
<td>4,000</td>
</tr>
<tr>
<td>33. HIGHWAY MAINTENANCE ON PRINCIPAL ROADS</td>
<td>1,004</td>
<td>2,370</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Including, coach, lorry and motorcycle parking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. PARKING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual procurement method and contributions to funding are currently being finalised; this bid is for development costs only</td>
<td>10,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ENHANCED CORE PROGRAMME IF ADDITIONAL FUNDS ARE FORTHCOMING (Not included in above totals)

| 35. BRISTOL ELECTRIC RAILBUS (BER), BRIDGE WORKS TO ALLOW EXPANSION OF OPERATION | 500     | 200    | 0      | 0      | 0      |
| 36. ENHANCED SAFER ROUTES TO SCHOOL PROGRAMME            | 300     | 300    | 300    | 300    | 300    |
| 37. ADDITIONAL COACH PARKING FACILITY                    | 0       | 0      | 800    | 0      | 0      |
| 38. ACQUISITION OF REDUNDANT RAIL LAND FOR FUTURE TRANSPORT MEASURES | 200     | 300    | 0      | 0      | 0      |
| TOTAL                                                   | 1,000   | 800    | 1100   | 300    | 300    |

NOTE: ACTUAL PROCUREMENT METHOD AND CONTRIBUTIONS FOR THE FUNDING OF LRT AND ROAD USER CHARGING PROPOSALS ARE CURRENTLY BEING FINALISED, FIGURES SHOWN ABOVE ARE FOR DEVELOPMENT COSTS ONLY (SEE NUMBERS 7 AND 23). TOTALS EXCLUDE IMPLEMENTATION COSTS.
FIGURE 8.3  TRANSPORT PLAN - 5 YEAR CAPITAL PROGRAMME (EXCLUDING REVENUE EXPENDITURE)

INCLUDES ADDITIONAL CAPITAL EXPENDITURE, SHOWN IN ITALICS, WHICH IS FUNDED BY CONTRIBUTIONS AFFORDED THROUGH THE ROAD USER CHARGING SCHEME

NET TOTALS SHOW CORE PROGRAMME, NOT INCLUDING ANY ROAD USER CHARGING CONTRIBUTIONS

<table>
<thead>
<tr>
<th>COSTS £000's</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
</table>

WIDENING CHOICE  
Programme set out as per Chapter 5 of the Local Transport Plan Document

1. BUS SERVICE ENHANCEMENTS
Enhanced bus provision throughout the city, though concentrating on the corridors described below.

**SHOWCASE CORRIDORS**  
(Building on bus priorities and branded services, real time information and enhanced promotion)

<table>
<thead>
<tr>
<th></th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>A4 Bath Road (continuing works)</td>
<td>1,800</td>
<td>1,800</td>
<td>1,800</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>A38 North and South</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A4018 Whiteladies Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A420 Church Road, St George corridor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Further Showcase Corridors to be identified through the Bus Strategy

<table>
<thead>
<tr>
<th></th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional funding to accelerate Programme</td>
<td>-</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Investment in new buses</td>
<td>-</td>
<td>2,000</td>
<td>2,000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>New Bus and Coach Station, Central Bristol</td>
<td>-</td>
<td>2,000</td>
<td>2,500</td>
<td>2,000</td>
<td>-</td>
</tr>
<tr>
<td>Development of new interchange Bus facilities in Centre</td>
<td>-</td>
<td>1,500</td>
<td>1,000</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Net Total Bus Service Enhancements  
1,800 1,800 1,800 2,000 2,000

2. BUS-BASED PARK & RIDE

<table>
<thead>
<tr>
<th></th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>A4 Brislington Expansion</td>
<td>1,500</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A37 Phase 1</td>
<td>-</td>
<td>2,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Avonmouth Phase 2</td>
<td>-</td>
<td>-</td>
<td>2,000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A38 South</td>
<td>-</td>
<td>-</td>
<td>2,000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A37 Phase 2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,500</td>
<td>-</td>
</tr>
</tbody>
</table>

Net Total Park & Ride  
1,500 2,000 2,000 2,000 1,500
FIGURE 8.3 TRANSPORT PLAN - 5 YEAR CAPITAL PROGRAMME (EXCLUDING REVENUE EXPENDITURE) 9/100 13:59

INCLUDES ADDITIONAL CAPITAL EXPENDITURE, SHOWN IN ITALICS, WHICH IS FUNDED BY CONTRIBUTIONS AFFORDED THROUGH THE ROAD USER CHARGING SCHEME

<table>
<thead>
<tr>
<th>NET TOTALS SHOW CORE PROGRAMME, NOT INCLUDING ANY ROAD USER CHARGING CONTRIBUTIONS</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIDENING CHOICE</td>
<td>Programme set out as per Chapter 5 of the Local Transport Plan Document</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. COMMUNITY TRANSPORT</td>
<td>Rolling programme of vehicle renewal and replacement for the community transport operators in Bristol, including funds to enhance their operating premises</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional funding to accelerate investment programme to provide comprehensive community transport provision in all areas of the city</td>
<td>70</td>
<td>70</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>4. TAXIS AND PRIVATE HIRE VEHICLES</td>
<td>Training of drivers including disability awareness, shelter provision and raising curbs at ranks to cater for wheelchair access.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>1,000</td>
<td>1,000</td>
<td>-</td>
</tr>
<tr>
<td>5. COACHES</td>
<td>Programme included elsewhere, refer to (24) Parking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6. RAIL ENHANCEMENTS</td>
<td>Funding to complement bid made under Rail Passenger Partnership (RPP), these elements are targeted at improving local stations, shelter provision, signing and access enhancements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significant Capital investment in conjunction with Railtrack and Train Operating Companies, enhancing the RPP funds.</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>1,500</td>
<td>1,500</td>
<td>1,500</td>
</tr>
<tr>
<td>7. LIGHT RAPID TRANSIT (LRT)</td>
<td>Actual procurement method and contributions to funding are currently being finalised; this bid is for a contribution to development costs only</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LRT Line 1</td>
<td>250</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Council Contribution to commence construction of Line 2</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>-</td>
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</tr>
<tr>
<td></td>
<td>8,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>120,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>250</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
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<td></td>
<td>0</td>
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<tr>
<td></td>
<td>0</td>
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</tr>
<tr>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net total Light Rapid Transit</td>
<td>250</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. BRISTOL ELECTRIC RAILBUS</td>
<td>Please refer to (35) Bristol Electric Railbus (BER), part of the enhanced programme, for this bid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of extended Railbus service linking attractions around the Centre and the City Docks</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>500</td>
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<td></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. WATER TRANSPORT</td>
<td>Enhanced Service and increased promotion for ferry services around central Bristol, including improved and new ferry landing stages, and improved signing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital investment in conjunction with Operator, new and enhanced ferry craft.</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>250</td>
<td></td>
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<tr>
<td></td>
<td>250</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>10. INTERCHANGE FACILITIES</td>
<td>Cross cutting objective to make interchange between modes of transport as seamless as possible, to increase the range of travel choices available. With the specific element below, many elements included in this programme are aimed at improving interchange facilities, such as: (11) Bus Service Enhancements; (2) Park &amp; Ride; (7) LRT; (11) Walking; (24) Parking and; (25) Mobility Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temple Meads Interchange</td>
<td>Contribution to significant improvements in interchange facilities to provide easy and accessible transition between rail, bus and rapid transit, incorporating necessary relocation of parking to allow this to happen.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>250</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>800</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-</td>
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<td></td>
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<tr>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Total Interchange Facilities</td>
<td>250</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>800</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td></td>
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</tr>
</tbody>
</table>
### Widening Choice

#### Programme set out as per Chapter 5 of the Local Transport Plan Document

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Costs £000's</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Net Totals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Walking</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancements of routes to local shopping and community facilities, initial survey, then 8 areas to be treated over plan period</td>
<td>20</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Enhancements to rights of way and greenways network, particularly targeted at disabled access.</td>
<td>35</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>City Centre Access strategy, completion and extension of safe, accessible routes to and within the central area.</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Bristol and Bath Railway Path - access improvements, and interpretation</td>
<td>37</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Contribution to corridor studies including additional works complementary to Bus Showcase Corridors project, and around local rail stations</td>
<td>50</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>A review of barriers to walking, and implementation programme to remove or design these out.</td>
<td>50</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>17</td>
</tr>
<tr>
<td>Continued improvement of day to day network incl. minimising delays to pedestrians at signal controlled crossings, tactile paving, footway improvements and dropped kerbs and increased enforcement of obstructions</td>
<td>35</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>35</td>
</tr>
</tbody>
</table>

Additional funding to accelerate investment programme, as walking above this will develop strategic routes such as greenways and will also provide cycle resource centres in local areas.

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Costs £000's</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Net Totals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cycling</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCN North Braided Route</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stockwood - Brislington</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bristol to Bath Railway Path - Lighting</td>
<td>3</td>
<td>60</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bath Road A4 (part)</td>
<td>4</td>
<td>160</td>
<td>57</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Malago Greenway North (part)</td>
<td>5</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Avon Valley part</td>
<td>6 (inner section)</td>
<td>75</td>
<td>-</td>
<td>60</td>
<td>-</td>
</tr>
<tr>
<td>A420 (part)</td>
<td>7</td>
<td>160</td>
<td>47</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>North Bristol part</td>
<td>8</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Portway</td>
<td>9</td>
<td>-</td>
<td>110</td>
<td>-</td>
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</tr>
<tr>
<td>Cycle Review Phase II</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Minor Works</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Value Added' budget (the link with SRB;s 106 etc. budgets)</td>
<td>40</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Signing Strategy</td>
<td>20</td>
<td>-</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Signing Strategy Implementation</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Whiteladies Road</td>
<td>-</td>
<td>200</td>
<td>186</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gloucester Road</td>
<td>-</td>
<td>213</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bristol to Bath Railway Path - Link Midland Road</td>
<td>-</td>
<td>120</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Malago Greenway North (part)</td>
<td>-</td>
<td>-</td>
<td>120</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A38 South</td>
<td>-</td>
<td>150</td>
<td>270</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Frenchay Park Road</td>
<td>-</td>
<td>-</td>
<td>150</td>
<td>150</td>
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<tr>
<td>NCN Route 3</td>
<td>-</td>
<td>-</td>
<td>125</td>
<td>275</td>
<td>-</td>
</tr>
<tr>
<td>Long Ashton - City Centre</td>
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<td>-</td>
<td>-</td>
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<td>-</td>
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<tr>
<td>NCN Route 4</td>
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<td>-</td>
<td>-</td>
<td>100</td>
<td>300</td>
</tr>
<tr>
<td>Avon Valley (outer)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>200</td>
<td>-</td>
</tr>
<tr>
<td>Cycle Review Phase II Implementation from 2004-6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>500</td>
<td>600</td>
</tr>
<tr>
<td>Phase III Cycle Review</td>
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<td>25</td>
<td>-</td>
</tr>
<tr>
<td>Minor Works</td>
<td>-</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Signing Strategy</td>
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<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Value Added Budget</td>
<td>-</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
</tbody>
</table>

Additional funding to accelerate investment programme. As walking above this will develop strategic routes such as greenways and will also provide cycle resource centres in local areas.
### 13. SAFER ROUTES TO SCHOOL

Continuation of current schemes and new schemes for the schools (shown right) in the first year of the plan.

- Henbury Secondary, Brislington Secondary, Teyfant Primary, Dr Bells and St. Matthias infants and juniors, St Peter & Paul Primary, Knowle Park, West Town Lane and Christchurch Primary

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>300</td>
<td>170</td>
<td>170</td>
<td>170</td>
<td>175</td>
</tr>
</tbody>
</table>

General traffic measures aimed at safer routes to school, including wigwags 20 mph speed restrictions, walking and cycle route improvements, cycle training and public transport improvements, and continued works on first year projects and new schools in later years as consultation programme evolves.

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>200</td>
<td>410</td>
<td>410</td>
<td>410</td>
<td>410</td>
</tr>
</tbody>
</table>

Contribution to enhance safer routes to school strategy to enable more schools to be treated each year to accelerate the programme where feasible for all 35 secondary and 123 primary schools within the city.

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td></td>
<td>1,000</td>
<td>1,500</td>
<td>1,000</td>
<td></td>
</tr>
</tbody>
</table>

Net Total Safer Routes to School

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>500</td>
<td>580</td>
<td>580</td>
<td>580</td>
<td>585</td>
</tr>
</tbody>
</table>

### 14. DISABLED PEOPLE

Many elements in this programme are aimed at improving facilities for disabled people, such as:

- (1) Bus Service Enhancements;
- (2) Park & Ride;
- (3) Community Transport;
- (4) Taxis and Private Hire Vehicles;
- (6) Rail Enhancements and;
- (7) Light Rail Transit

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### 15. MEASURES TO ADDRESS SOCIAL EXCLUSION

Cross cutting measures covered in a range of areas of the plan, more specifically (3) community transport and (1) bus enhancements

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### 16. EXPERIMENTAL TRANSPORT INITIATIVES

Pump-priming of future bids for European transport funds and match funding for anticipated projects under EU 5th Framework Programme

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>70</td>
<td>70</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Net Total Experimental Transport Initiatives

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>100</td>
<td>100</td>
<td>130</td>
<td>130</td>
<td>130</td>
</tr>
</tbody>
</table>

### 17. PRIVATE CARS AND HIGHWAY INFRASTRUCTURE

Numerous proposals included within many elements of the programme, such as:

- (22) UTMC;
- (24) Parking;
- (29) Road Safety;
- (32) Street Lighting and;
- (33) Highway Maintenance on Principal Roads

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### 18. POWERED TWO WHEELERS

Proposal included elsewhere in the Programme, refer to (26) Parking

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### 19. FREIGHT

Proposals included elsewhere in the Programme, refer to (26) Parking and (34) Bridge Strengthening

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Additional measures to assist freight movements around the city, reviews of loading/unloading restrictions, possible environmentally friendly vehicles for deliveries in Air Quality Management Areas, and review of freight access within proposed road user charging zone.

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>-</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

### 20. MAJOR HIGHWAY IMPROVEMENTS

**Callington Road Link**

(Total cost £8.3 million, residual expenditure forecast to continue after Plan period)

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>-</td>
<td>50</td>
<td>250</td>
<td>2,500</td>
<td>4,000</td>
</tr>
</tbody>
</table>

**A38/A370 Link**

Contribution to studies

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>-</td>
<td>40</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Net Total Major Highway Improvements

<table>
<thead>
<tr>
<th>Year</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost £000's</td>
<td>0</td>
<td>90</td>
<td>250</td>
<td>2,500</td>
<td>4,000</td>
</tr>
</tbody>
</table>
### Table 8.3
CONTINUES BELOW WITH THE PROGRAMME FOR STRATEGIC NETWORK MANAGEMENT

<table>
<thead>
<tr>
<th>Scope Route</th>
<th>Programme set out as per Chapter 6 of the Local Transport Plan Document</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>21. SCOPE ROUTE</strong></td>
<td></td>
</tr>
<tr>
<td>Clifton Triangle/Queens Road</td>
<td>Traffic management and environmental improvements, finalise design and complete implementation</td>
</tr>
<tr>
<td>Vehicular Signing</td>
<td>Carry out detailed design and initiate resigning of the Centre and SCOPE routes, in association with the Legible City Initiative (see Mobility Management, section 23)</td>
</tr>
<tr>
<td>Cumberland Road</td>
<td>Detailed survey and TM study of this section of Southern SCOPE route, design, consultation and implementation</td>
</tr>
<tr>
<td>Southern SCOPE Routes</td>
<td>Major traffic management scheme to manage increased traffic flows while enhancing the environment, particularly for pedestrians and cyclists</td>
</tr>
<tr>
<td>Queen Square</td>
<td>Queen Square traffic management measures and remodelling the Prince St/The Grove Junction and Prince St Bridge</td>
</tr>
<tr>
<td>Queens Road</td>
<td>Traffic management and environmental improvements, finalise design and complete implementation</td>
</tr>
<tr>
<td>Jacob’s Wells/Hotwell Road</td>
<td>Redesign an existing junction, incorporating traffic management, environmental and pedestrian/cycling improvements (to be funded from anticipated developer contributions)</td>
</tr>
<tr>
<td>Jacobs Wells Road</td>
<td>-</td>
</tr>
<tr>
<td>Park Street</td>
<td>Traffic management and environmental improvements, finalise design and complete implementation</td>
</tr>
<tr>
<td>The Haymarket</td>
<td>Downgrade existing route to give priority to public transport, pedestrians and cyclists</td>
</tr>
<tr>
<td>Baldwin Street/Bristol Bridge/High Street</td>
<td>Junction remodelling to reflect NCN route and improve safety</td>
</tr>
<tr>
<td>St James Barton</td>
<td>Redesigned junction to improve pedestrian environment</td>
</tr>
<tr>
<td>Redcliffe Way/Millennium Mile</td>
<td>Design, consult and implement major environmental improvements to create a high quality pedestrian and cycle route between Temple Meads and Harbourside</td>
</tr>
<tr>
<td>Old Market Street/West Street</td>
<td>Design, consult and implement major traffic management scheme to reflect this important gateway to the centre of Bristol, enhancing the environment, pedestrian and cycle safety and promoting public transport</td>
</tr>
<tr>
<td>Environmental Improvements in the city centre</td>
<td>Development of the Centre project and SCOPE route with physical measures to re-enforce neighbourhoods creating environmental cells within the central area.</td>
</tr>
</tbody>
</table>

### Table 8.3
NET TOTALS SHOW CORE PROGRAMME, NOT INCLUDING ANY ROAD USER CHARGING CONTRIBUTIONS

<table>
<thead>
<tr>
<th>Programme</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIDENING CHOICE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Scope</td>
<td>330</td>
<td>1,065</td>
<td>1,400</td>
<td>225</td>
<td>200</td>
</tr>
</tbody>
</table>

Enhancement of UTMC system through extension of SCOOT to radial routes and corridors outside the central area. This will enhance Public Transport priorities, improve conditions for vulnerable road users, improve safety for all road users and provide for enhanced management of congestion. The system is also to be upgraded which will incorporate air pollution monitoring systems.

### Table 8.3
22. URBAN TRAFFIC MANAGEMENT AND CONTROL

<table>
<thead>
<tr>
<th>Programme</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN TRAFFIC MANAGEMENT AND CONTROL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total UTM</td>
<td>250</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>200</td>
</tr>
</tbody>
</table>

### Table 8.3
23. ROAD USER CHARGING

<table>
<thead>
<tr>
<th>Programme</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROAD USER CHARGING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total UR</td>
<td>400</td>
<td>500</td>
<td>10,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Actual procurement method and contributions to funding are currently being finalised; this bid is for a contribution to development costs only.

### Table 8.3
24. PARKING

<table>
<thead>
<tr>
<th>Programme</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARKING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Park</td>
<td>820</td>
<td>870</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>
### FIGURE 8.3  TRANSPORT PLAN - 5 YEAR CAPITAL PROGRAMME  (EXCLUDING REVENUE EXPENDITURE)

**INCLUDES ADDITIONAL CAPITAL EXPENDITURE, SHOWN IN ITALICS, WHICH IS FUNDED BY CONTRIBUTIONS AFFORDED THROUGH THE ROAD USER CHARGING SCHEME**

**COSTS £000's**

<table>
<thead>
<tr>
<th>NET TOTALS SHOW CORE PROGRAMME, NOT INCLUDING ANY ROAD USER CHARGING CONTRIBUTIONS</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WIDENING CHOICE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programme set out as per Chapter 3 of the Local Transport Plan Document</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>25. MOBILITY MANAGEMENT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Information Centre to co-ordinate and integrate information on trip planning, multi-modal information and services for all stages of a journey. Provision will be made for the co-ordination of demand responsive public transport, and will also co-ordinate UTMC system including Variable Message Signing</td>
<td>450</td>
<td>1,250</td>
<td>1,750</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INTEGRATED TRAVEL INFORMATION CENTRE (ITIC)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase 2 of pedestrian signing system</td>
<td>400</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promotion and Awareness</td>
<td>40</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Remove all superfluous sign clutter</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Central Area access and design strategy</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bristol Navigators Project</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicular signing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase 1 for central area within SCOPE Route, then extend to treat whole of the city</td>
<td>-</td>
<td>300</td>
<td>600</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Welcome Points</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150k to be included in ITIC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable Message Signs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop and implement Temporary Event and Attraction Management Signs (TEAMS) on key radials and Central Area gateway sites to assist dynamic traffic management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional funding to accelerate Legible City investment programme</td>
<td></td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td><strong>OTHER SCHEMES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Transport Information Strategy</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel Awareness</td>
<td>100</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Public Awareness/Community based Projects</td>
<td></td>
<td>500</td>
<td>500</td>
<td>1,000</td>
<td>500</td>
</tr>
<tr>
<td><strong>Net Total Mobility Management</strong></td>
<td>1,290</td>
<td>1,725</td>
<td>2,325</td>
<td>775</td>
<td>575</td>
</tr>
</tbody>
</table>

**26 TRAVEL PLANS**

| Funding to 'pump-prime' introduction of Travel Plan for Bristol City Council     | 25      |         |         |         |         |
| Funding to aid promotion of TPs by other organisations within the city          | 25      | 50      | 50      | 50      | 50      |
| **Net Total Travel Plans**                                                      | 50      | 50      | 50      | 50      | 50      |
### Figure 8.3  Transport Plan - 5 Year Capital Programme (Excluding Revenue Expenditure)

Involves additional capital expenditure, shown in italics, which is funded by contributions afforded through the Road User Charging Scheme.

#### Widening Choice
Programme set out as per Chapter 5 of the Local Transport Plan Document

<table>
<thead>
<tr>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>27. SHORTER JOURNEYS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establishment of projects focusing on the ‘Home’ end of the trip. Six areas of the city with a high percentage of short journeys to work have been identified for introduction of measures, such as:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tailored public transport promotion supplied to homes, access audits to public transport routes and local services, and other promotional measures such as support for home deliveries. In addition to these specific measures, proposals targeted at shorter journeys cut across many elements of the programme and are incorporated in:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(11) Walking; (12) Cycling; (13) Safer Routes To School; (25) Mobility Management and; (26) Travel Plans</td>
<td>80</td>
<td>80</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

#### 28. ENVIRONMENTAL MANAGEMENT
Specific works required for AQMA’s. In addition other measures addressing noise and climate change can be found in many areas of the programme as detailed below.

**Air Quality Management**
Development of implementation measure for the Local Air Quality Strategy (LAQS) including an objective for CO2 emissions, forming the basis of an Air Quality Management Area (AQMA), linked with road traffic reduction targets. Essential transport capital works will be required within AQMAs to address the forecast air quality concerns.

<table>
<thead>
<tr>
<th>Costs £000’s</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Quality Management</td>
<td>160</td>
<td>145</td>
<td>145</td>
<td>395</td>
<td>405</td>
</tr>
<tr>
<td>Noise Management</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Climate Change</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### 29. ROAD SAFETY SCHEMES

<table>
<thead>
<tr>
<th>Costs £000’s</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oldbury Court Road</td>
<td>60</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Various road safety led minor schemes throughout the city</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>A38 Route-based measures</td>
<td>40</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Filton Road/ Monks Park Ave, signal improvements</td>
<td>15</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gloucester Rd/ Wessex Ave, pedestrian crossings improvements</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gloucester Rd/ Kelway Ave, junction re-alignment</td>
<td>75</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gloucester Rd/ Nevil Road, junction, pedestrian and cycle improvements</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gloucester Rd/ Bishop Rd, junction improvements</td>
<td>80</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gloucester Rd/ Berkeley Rd/ Somerville Rd, signalisation</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cheltenham Rd/ the Arches, junction improvements</td>
<td>40</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cheltenham Rd/ Arley Hill, signal improvements</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cheltenham Rd/ Jamaica St, Pedestrian crossing improvements</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stokes Croft (City Road to King Square Ave)</td>
<td>50</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pedestrian crossing improvements</td>
<td>100</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Speed reduction measures</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Further safety schemes focusing on:-</td>
<td>490</td>
<td>490</td>
<td>490</td>
<td>490</td>
<td>490</td>
</tr>
<tr>
<td>(please refer to Annex B of Road safety appendix)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A420 route action at various sites</td>
<td>-</td>
<td>490</td>
<td>490</td>
<td>490</td>
<td>490</td>
</tr>
<tr>
<td>A4018 route action at various sites</td>
<td>A37 route action at various sites</td>
<td>-</td>
<td>600</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Additional funding to accelerate investment programme</td>
<td>-</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Net Total Road Safety</td>
<td>705</td>
<td>565</td>
<td>565</td>
<td>565</td>
<td>565</td>
</tr>
</tbody>
</table>
**FIGURE 8.3 TRANSPORT PLAN - 5 YEAR CAPITAL PROGRAMME (EXCLUDING REVENUE EXPENDITURE)**

INCLUDES ADDITIONAL CAPITAL EXPENDITURE, SHOWN IN ITALICS, WHICH IS FUNDED BY CONTRIBUTIONS AFFORDED THROUGH THE ROAD USER CHARGING SCHEME

**WIDENING CHOICE**

Programme set out as per Chapter 5 of the Local Transport Plan Document

<table>
<thead>
<tr>
<th>Programme</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>30. HOME ZONES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuation of Home Zone Projects, building on the Henbury, Brislington and Horfield areas currently underway, or programmed as part of development</td>
<td>500</td>
<td>400</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Identification of areas to become environmental cells, particularly in inner city areas lacking direct access to parks and children's play areas. Commencement of studies for areas identified for SRTs, and other supportive measures particularly aimed at sustainable transport modes for short journeys</td>
<td>-</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Completion of Horfield area project (developer funded), funding required for off site works</td>
<td>- 1,000</td>
<td>1,000</td>
<td>1,500</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>Additional funding to accelerate investment programme</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Net Total Home Zones</strong></td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
</tbody>
</table>

| **31. COMMUNITY SAFETY** |         |         |         |         |         |
| Cross-cutting element, embraced by a number of measures, particularly (11) Walking, (12) Cycling, (13) Safer Routes to School and (30) Home Zones | -       | -       | -       | -       | -       |

| **32. STREET LIGHTING** |         |         |         |         |         |
| Continuation programme to replace street lighting that is more than 25 years old with more energy-efficient lamps to reduce light pollution. | 198     | 200     | 205     | 210     | -       |

| **33. HIGHWAY MAINTENANCE ON PRINCIPAL ROADS** |         |         |         |         |         |
| Detailed five-year programme listed in Appendix 8 | 500     | 500     | 500     | 475     | 450     |

| **34. BRIDGE ASSESSMENT AND STRENGTHENING** |         |         |         |         |         |
| Detailed five-year programme listed in Appendix 8 | 1,004   | 2,370   | 300     | 300     | 300     |

**NET TOTALS BY YEAR - CAPITAL EXPENDITURE (EXCLUDING ROAD USER CHARGING CONTRIBUTIONS)**

<table>
<thead>
<tr>
<th></th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11,944</td>
<td>15,477</td>
<td>13,714</td>
<td>12,935</td>
<td>13,387</td>
</tr>
</tbody>
</table>

**GROSS TOTALS BY YEAR - CAPITAL (INCLUDING ROAD USER CHARGING CONTRIBUTIONS)**

<table>
<thead>
<tr>
<th></th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11,944</td>
<td>37,177</td>
<td>36,414</td>
<td>33,635</td>
<td>34,087</td>
</tr>
</tbody>
</table>

**NOT INCLUDED IN ABOVE TOTALS**

Additional Revenue expenditure (as shown in figure 8.2) funded through charging contributions

**GRAND TOTALS BY YEAR - CAPITAL AND REVENUE (INCLUDING ROAD USER CHARGING CONTRIBUTIONS)**

<table>
<thead>
<tr>
<th></th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#REF!</td>
<td>#REF!</td>
<td>#REF!</td>
<td>#REF!</td>
<td>#REF!</td>
</tr>
</tbody>
</table>

**ENHANCED PROGRAMME IF ADDITIONAL CAPITAL FUNDS ARE FORTHCOMING IN LTP SETTLEMENT**

(Not included in Core Programme above)

<table>
<thead>
<tr>
<th></th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>500</td>
<td>200</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

|          | 300     | 300     | 300     | 300     | 300     |

|          | 0       | 0       | 800     | 0       | 0       |

|          | 200     | 300     |         |         |         |

**TOTAL**

|          | 1,000   | 800     | 1,100   | 300     | 300     |
### Figure 8.4
Five Year Public Transport, Parking and Other Transport Services Revenue Programme
(including parking and other services)

Additional revenue support funded from road user charging revenues shown in italics

<table>
<thead>
<tr>
<th>Expenditure area</th>
<th>Current &amp; forecast expenditure (£m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000/01</td>
</tr>
<tr>
<td><strong>Public Transport</strong></td>
<td></td>
</tr>
<tr>
<td>Supported Bus Services</td>
<td>1.5</td>
</tr>
<tr>
<td>Support for new Night Bus Services on Fridays &amp; Saturdays</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Support for new routes (further orbital routes and night buses)</strong></td>
<td>-</td>
</tr>
<tr>
<td>Park &amp; Ride, support for services and running costs of Council controlled sites</td>
<td>0.3</td>
</tr>
<tr>
<td>Concessionary fares scheme</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Significantly enhanced concessionary fares</strong></td>
<td>-</td>
</tr>
<tr>
<td>Other revenue support (Community Transport, blind persons passes etc.)</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Support for extended Community Transport services</strong></td>
<td>-</td>
</tr>
<tr>
<td>Supported rail services</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Support for enhanced local services</strong></td>
<td>-</td>
</tr>
<tr>
<td>Support for extended Bristol Electric Railbus (BER) service</td>
<td>-</td>
</tr>
<tr>
<td>Public transport administration</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Parking</strong></td>
<td></td>
</tr>
<tr>
<td>Expenditure Net of income</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Support to cover loss of income as part of charging scheme</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Other services (incl. Traffic monitoring, Road safety ETP)</strong></td>
<td></td>
</tr>
<tr>
<td>Expenditure</td>
<td>0.1</td>
</tr>
</tbody>
</table>

**Notes:**

1. The table above (excluding Public transport admin) does not include staff costs associated with the delivery of transport services, which are considerable.

2. The totals above are net of income, which currently amounts to some £8m (from parking revenue, bus shelter advertising and other contributions).
**Figure 8.5**

Five Year Highways Maintenance Programme

*Additional revenue support funded from road user charging revenues shown in italics*

<table>
<thead>
<tr>
<th>Expenditure area</th>
<th>2000/01</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2005/06</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footways and footpaths (including public rights of way and cycleways)</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Carriageways</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Other (bridges, subways, drainage)</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td><em>Additional funding principally targeted at footways and cycleways and key public transport routes</em></td>
<td>-</td>
<td>-</td>
<td>3.0</td>
<td>3.0</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Movement &amp; safety</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lighting, routine maintenance, traffic management maintenance, street nameplates etc.</td>
<td>2.7</td>
<td>2.7</td>
<td>2.8</td>
<td>2.8</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td><strong>Cyclic Maintenance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gully emptying, verge and amenity maintenance</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Winter Maintenance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salt vehicles and operations</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
</tbody>
</table>
Five Year Programme
Introduction

1. In order to assess whether the transport plan is delivering its stated objectives, it is essential to incorporate targets and monitoring procedures into the document. This chapter sets out a framework of headline targets by which the plan will be evaluated and also methods and techniques by which the targets will be monitored.

2. The four overriding principles in setting the targets for the transport plan are that they must be:
   - Relevant to the main objectives of the plan and the agenda set in the government's White Paper - A New Deal for Transport.
   - Challenging, though realistic, and reflecting national targets where appropriate.
   - Easily understood and related to the needs of local people.
   - Possible to monitor in a robust manner at a cost that does not outweigh the significance of the targets.

In addition, the targets need to take into account the Structure Plan and the objectives set out in the South West Draft Regional Planning Guidance and the national Quality of life and Best Value indicator requirements.

3. Based on the above principles and the content of the plan, a number of targets have been set. Appropriate monitoring methods have been put in place during the past year to supplement the mechanisms already used to evaluate the Council’s progress in implementing its programme of transportation measures. These include:
   - The installation of 30 new Automatic Traffic Count (ATC) sites.
   - Doubling the size of the Automatic Cycle Counter (ACC) network with the addition of 5 new ACC sites.
   - The collection of cycling data at a number of key workplaces three times per year.
   - Significant enhancements to the public transport monitoring programme in partnership with First Group – the major local bus operator. An annual programme of route and on-bus surveys commenced this year.
   - Repeating the city-wide programme of journey time surveys undertaken in 1993 and 1996/97. This programme will become biennial.
   - A programme of household interview surveys will commence this year. Three study areas will be surveyed in a rolling programme covering one area per year.

4. During this financial year an additional package of measures, including enhanced pedestrian and cycle monitoring programmes, will be introduced to further refine and focus the monitoring procedure. The Council’s existing monitoring programme is currently being assessed to ensure that all monitoring relates to the initiatives and targets set out in the LTP and meets the requirements for monitoring national indicators. Monitoring areas that do not fulfill this function will be reduced or revised accordingly, therefore enabling the Council to effectively evaluate its progress in attaining the targets set.

5. The costs of scheme specific before and after monitoring of the effects of individual projects are incorporated into overall revenue costs. However, wider strategic monitoring to measure the impact of each strategy as a whole, and progress towards the LTP objectives, requires significant funding allocated specifically for this task. Annual monitoring of traffic movements, essential for monitoring the Road Traffic Reduction Act targets in particular, is funded through revenue allocation. In addition to this; the programme of household interview surveys, journey time surveys and other wider monitoring of changes in travel behaviour also requires significant funds. A bid to support this is included in the 5-year LTP programme, which when added to the revenue funded monitoring programme, amounts to total forecast expenditure of some £100,000 per annum.

Targets and Monitoring Procedures

6. Monitoring of the targets will be undertaken using the Causal Chain approach. This ensures consistency of monitoring and continuity with previous years’ submissions. In addition, it will enable the Council to assess its targets against the Government’s overarching objectives and will ensure the LTP demonstrates clear linkages between the proposed measures, indicators and objectives. The Council’s Causal Chain diagrams are illustrated at the end of this chapter and clearly show the links between schemes and their ultimate effects, as well as the monitoring techniques used to assess the schemes impacts.

7. The monitoring programme also includes the Council’s statutory commitments to monitoring the Government’s Best Value indicators and the Road Traffic Reduction Act. The Best Value and Audit Commission Indicators are listed in Figure 9.3. These will be assessed through the monitoring of the LTP targets, existing data sources and additional data from local bus operators.
8. The Road Traffic Reduction Act 1997 (RTRA) requires Councils to produce an assessment and forecast of levels of local traffic and to produce targets relating to those levels. The targets set under the RTRA are integral to the LTP and underpin many of the key strategy areas. The importance of traffic reduction in achieving the LTP objectives is reflected by the fact that 5 of the 29 LTP targets directly relate to reducing private car traffic, and a further 10 relate to increasing the use of alternative modes of transport. The full Road Traffic Reduction Report is included in Appendix 5.

9. The following are headline targets by which the LTP will be monitored (summarised in Figure 9.1).

<table>
<thead>
<tr>
<th>Target</th>
<th>Monitoring Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Reduce growth in private car traffic by 20% by 2005, and thereafter to seek a 20% reduction in private car traffic by 2015.</td>
<td>Traffic monitoring data.</td>
</tr>
<tr>
<td>2 Achieve a local casualty target of a 25% reduction the number of people killed and seriously injured (KSI) in road collisions by 2005.</td>
<td>Casualty data supplied by Police.</td>
</tr>
<tr>
<td>3 Ensure, by 2010, a 40% reduction in the total number of KSIs, a 50% reduction in the number of child KSIs and a 10% reduction in the rate of slight casualties- in line with national targets</td>
<td>Casualty data supplied by Police.</td>
</tr>
<tr>
<td>4 Ensure that 98% of the population live within 400 metres of a bus stop that is served by a route with a frequency of at least 4 buses per hour during the day, and to ensure that the timetabled journey time is no longer than 25 minutes to the City Centre and 15 minutes to the local neighbourhood centre, by 2010.</td>
<td>PTAL indicators.</td>
</tr>
<tr>
<td>5 Ensure that all major NHS hospitals, health facilities and community centres are served by accessible public transport by 2010.</td>
<td>PTAL indicators.</td>
</tr>
<tr>
<td>6 Increase the proportion of Local Bus services whose journey time reliability is within 5% of the scheduled journey time.</td>
<td>Data from FirstGroup.</td>
</tr>
<tr>
<td>7 To increase the number of trips made on local bus services by 15% by 2006 and to increase the proportion of bus users satisfied with the quality of public transport.</td>
<td>Data from FirstGroup / user surveys / Citizens Panel.</td>
</tr>
<tr>
<td>8 To ensure that 90% of bus stops in the city display a current timetable by 2006.</td>
<td>Data from FirstGroup.</td>
</tr>
<tr>
<td>9 Increase the number of trips made on local rail services by 5% by 2006.</td>
<td>Passenger surveys.</td>
</tr>
<tr>
<td>10 Double the level of cycle use by 2002 and double it again by 2012.</td>
<td>Traffic monitoring / cycle surveys / employer &amp; household interview surveys.</td>
</tr>
<tr>
<td>11 Halt the downward trend in walking by 2002, and increase by 10% the number and proportion of journeys made on foot by 2012.</td>
<td>Pedestrian surveys / employer &amp; household interview surveys.</td>
</tr>
<tr>
<td>12 Reduce car journeys to schools by 25% by the year 2003.</td>
<td>Annual modal split surveys at schools.</td>
</tr>
<tr>
<td>13 Achieve the national standards for the pollutants covered by the National Air Quality Strategy.</td>
<td>Council air pollution monitoring/ modelling.</td>
</tr>
<tr>
<td>14 Increase to 100% the proportion of new business developments of over 2500 m² floor space where a travel plan is implemented, by 2004.</td>
<td>Monitoring of Travel Plans and the implementation of Section 106 Agreements.</td>
</tr>
</tbody>
</table>

Within these targets there are specific subject and local area-based objectives, which are detailed in Figure 9.2.

To reduce growth in private car traffic by 20% by 2005, and thereafter to seek a 20% reduction in private car traffic by 2015.

10. The Council undertakes an extensive programme of manual classified traffic counts throughout the city on a regular basis including a cordon encircling the city centre and a screenline monitoring north / south traffic, both of which are long established and counted yearly. The manual counts will complement the Automatic Traffic Count (ATC) programme, which has been expanded over the
past year to meet the monitoring requirements of
the above target. The new network comprises 60
ATC sites (over 20 of which collect classified data)
throughout the city counting traffic on a wide range
of road types. This enables the Council to calculate
growth or reduction percentages in overall vehicle
use and will combine with the manual counts in
order to provide percentage change relating to
individual vehicle types.

11. By undertaking both the manual and automatic
counts on a consistent and regular basis, the
Council is able to monitor effectively its progress in
attaining the reduction in the growth and
subsequently in the volume of private car traffic in
the Bristol area.

To achieve a local casualty target of a 25% reduction
the number of people killed and seriously injured (KSI)
in road collisions by 2005.
To ensure, by 2010, a 40% reduction in the total
number of KSIs, a 50% reduction in the number of
child KSIs and a 10% reduction in the rate of slight
casualties- in line with national targets.

12. The Council is supplied with data relating to injury
accidents by the Avon and Somerset Constabulary.
The target will be monitored on an annual basis
using this data.

To ensure that 98% of the population live within 400
metres of a bus stop that is served by a route with a
frequency of at least 4 buses per hour during the day,
and to ensure that the timetabled journey time is no
longer than 25 minutes to the City Centre and 15
minutes to the local neighbourhood centre, by 2010.

To ensure that all major NHS hospitals, health
facilities and community centres are served by
accessible public transport by 2010.

13. As part of the Council’s review of the local plan;
Public Transport Accessibility Level (PTAL) isochrone

<table>
<thead>
<tr>
<th>Target</th>
<th>Monitoring Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Double the level of cycling to secondary schools by the year 2002 and double it again by 2012.</td>
<td>Annual modal split surveys of secondary schools.</td>
</tr>
<tr>
<td>16 Double the level of cycling to work by the year 2002 and double it again by 2012.</td>
<td>Workplace Travel Plan monitoring / census data.</td>
</tr>
<tr>
<td>17 Achieve a 10% modal share of journeys to work by bike by 2012</td>
<td>Household Interview Surveys and Workplace Travel Plan monitoring.</td>
</tr>
<tr>
<td>18 Reduce the number of cyclists KSI in road traffic accidents by 2012.</td>
<td>Casualty data supplied by Police.</td>
</tr>
<tr>
<td>19 Reduce average traffic speeds in the city by 5 mph by 2005</td>
<td>Traffic speed surveys (mean and 85%ile).</td>
</tr>
<tr>
<td>20 Increase by 300% the number of people taking part in cycling events by 2002 (base year 1996).</td>
<td>Monitoring of City Council-supported cycling events.</td>
</tr>
<tr>
<td>21 Increase by 300% the number of bike-friendly employers in the city by 2002 (base year 1997).</td>
<td>Monitoring of Travel Plans and the implementation of Section 106 Agreements.</td>
</tr>
<tr>
<td>22 Reduce cycle theft by 33% by 2012.</td>
<td>Reported bicycle theft data supplied by Police.</td>
</tr>
<tr>
<td>23 Reduce total car traffic in the central area by 10% by 2005 and 30% by 2015 (base year 1996).</td>
<td>Traffic monitoring data.</td>
</tr>
<tr>
<td>24 Increase public transport trips to the central area by 10% by 2005 and 30% by 2015 (base year 2000).</td>
<td>Public transport patronage data supplied by FirstGroup.</td>
</tr>
<tr>
<td>25 Double the level of cycling to the central area by the year 2002 and double it again by 2012.</td>
<td>Traffic monitoring / cycle counts / National Census data.</td>
</tr>
<tr>
<td>26 Increase by 10% the number of walking trips to the central area by 2005.</td>
<td>Pedestrian counts and household interview surveys.</td>
</tr>
<tr>
<td>27 To reduce the growth in car traffic in the outer area by 15% by 2005.</td>
<td>Traffic survey data.</td>
</tr>
<tr>
<td>28 Reduce the number of trips of less than 5 kilometres made by car by 10% by 2005.</td>
<td>Household interview surveys / National Census data.</td>
</tr>
</tbody>
</table>
maps have been produced. These indicate areas poorly and infrequently served by public transport and are updated on a regular basis in order to monitor the level of the population adequately provided for by the public transport system as it is enhanced during the next decade.

14. Definitions of appropriate health and community sites to be served will be arrived at through liaison with the Health Authority, and where possible, clusters of sites will be identified to ensure services provided are appropriate to the nature of the sites and the localities within which they lie.

To increase the proportion of local bus services whose journey time reliability is within 5% of the scheduled journey time.

15. FirstGroup, which runs the vast majority of buses in the Bristol area has entered into a Bus Quality Partnership with the Council, and as part of that partnership has agreed to supply data relating to the journey time reliability of its services. This information will be used by the Council to establish baseline data for the above target.

To increase the number of trips made on local bus services by 15% by 2006 and to increase the proportion of bus users satisfied with the quality of public transport.

16. Data of commercial bus patronage including passenger journeys per year and vehicle kilometres per year will be provided by FirstGroup as part of the Bus Quality Partnership. Patronage of supported services is already systematically monitored by the City Council.

17. As part of the best value monitoring the Council will be undertaking surveys of its citizens panel to assess satisfaction with local bus services and local public transport information. The first surveys will

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**Figure 9.3**

**Statutory Performance Indicators**

<table>
<thead>
<tr>
<th>Best Value Performance Indicators (BVPIs)</th>
<th>1998/99</th>
<th>1999/2000</th>
<th>Target Monitored under LTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>BVPI 93 Cost of highway maintenance per 100 kilometres travelled by a vehicle on principal roads.</td>
<td>0.40</td>
<td>0.32</td>
<td>0.32</td>
</tr>
<tr>
<td>BVPI 94 Cost per passenger journey of subsidised bus services.</td>
<td>Data not yet available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BVPI 95 Average cost of maintaining street lights.</td>
<td>Data not yet available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BVPI 96 Condition of principal roads.</td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BVPI 97 Condition of non-principal roads</td>
<td>Data not yet available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BVPI 98 Percentage of street lamps not working as planned.</td>
<td>1.25</td>
<td>1.34</td>
<td>1.20</td>
</tr>
<tr>
<td>BVPI 99 Road Safety</td>
<td>New Indicator</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BVPI 100 Number of days of temporary traffic controls or road closure on traffic sensitive roads caused by local authority works per kilometre of traffic sensitive road</td>
<td>-1.99</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>BVPI 101 Local bus services (vehicle kilometres per year)</td>
<td>New Indicator</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>BVPI 102 Local bus services (passenger journeys per year).</td>
<td>New Indicator</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>BVPI 103 Percentage of users satisfied with local provision of public transport information.</td>
<td>New Indicator</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>BVPI 104 Percentage of users satisfied with local bus services.</td>
<td>New Indicator</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>BVPI 105 Damage to roads and pavements.</td>
<td>91.20</td>
<td>91.20</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AC-F1 The percentage of crossings with facilities for disabled people.</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>AC-F2a The percentage of links of footpaths and other rights of way which are signposted where they leave a road.</td>
<td>15</td>
<td>42</td>
</tr>
<tr>
<td>AC-F2b The percentage of the total length of footpaths and other rights of way that are easy to use by members of the public.</td>
<td>47</td>
<td>64</td>
</tr>
</tbody>
</table>
be carried out between August and November this year, after which a target will be set. The surveys will be repeated every three years to enable the Council to monitor the target effectively.

To ensure that 90% of bus stops in the city display a current timetable by 2006.

18. There are currently approximately 1700 bus stops in Bristol, 500 of which Bristol City Council is responsible for. (250 possess current timetables). FirstGroup supply another 400 stops with current timetables. This means that approximately 60% of the city’s bus stops display no timetable information. The Council is currently liaising with FirstGroup with the intention of entering into an agreement to ensure that the targeted increase is achieved. For some bus stops no timetable is necessary (e.g. the last few stops approaching a terminus).

To increase the number of trips made on local rail services by 5% by 2006.

19. Patronage of local rail services is monitored annually by the City Council and surrounding local authorities. The rail strategy has been prepared on a sub-regional level with the three surrounding unitary authorities and it proposed that the headline target will be to increase the number of passengers using services across the region.

To double the level of cycle use by 2002 and double it again by 2012.

20. In support of the above target, a number of local targets have been established as part of the Council’s Cycling Strategy (see Figure 9.2). These targets will be reviewed during the coming year and, if necessary, revised in the light of recent trends.

21. Manual cycle counts are undertaken as part of the annual cordon and screenline monitoring undertaken by the Council. Specific manual cycle counts have also been undertaken since 1986 at a number of locations throughout the city. In addition, the Council operates a number of Automatic Cycle Counters (ACC) on dedicated cycleways. The ACC network has been expanded to ensure that the above headline target is adequately monitored, and additional sites will be installed as the cycle network is extended. Cycle use surveys are regularly undertaken at schools and businesses involved in the Council’s Travel Plan programme.

22. Furthermore, detailed surveys of educational establishments taking part in the Council’s Safer Routes to School Strategy will be undertaken to monitor changes in the proportion of people cycling to school following the implementation of the Strategy.

To halt the downward trend in walking by 2002, and increase by 10% the number and proportion of journeys made on foot by 2012.

23. Pedestrian flow counts will be undertaken regularly on a number of strategically important locations in the city in order to effectively monitor the target. In addition a rolling programme of Household Interview Surveys will commence this year from which the overall proportion of walking trips can be derived. For these targets the base year will be 2000.

To reduce car journeys to schools by 25% by the year 2003.

24. To be monitored by undertaking modal split surveys in all schools on an annual basis.

To achieve the national standards for the pollutants covered by the National Air Quality Strategy.

25. The Council operates an extensive network of pollution monitoring sites throughout the city that will enable progress towards the National Air Quality Standards to be measured. In addition, the Council’s sophisticated air quality modelling systems have identified areas where achievement of the air quality standards is unlikely without specific measures to control pollution. Further enhancements to the air quality models and monitoring network will be implemented to ensure more comprehensive monitoring within these areas which will be designated Air Quality Management Areas later this year.

To increase to 100% the proportion of new business developments of over 2500 m² floor space where a travel plan is implemented, by 2004.

26. Guidelines have been produced by the Council into the production of Travel Plans and developers will be encouraged to submit such a document with business applications. Monitoring will be undertaken annually through the planning process.

27. In addition to the monitoring procedures mentioned above, and to supplement the data obtained from the programme of Household Interview Surveys which is commencing this year, the Council is also proposing (subject to sufficient funding being made available) to undertake regular Roadside Interview Surveys in order to gain more detailed information into changes in people’s travel patterns over time. This data would be used to provide additional detailed monitoring of virtually all the targets set above.

28. The Council is also planning to introduce new targets and objectives to monitor other policy areas. These include freight, road hierarchy, LRT patronage, parking, mobility management and road user charging, which will be added as the policy areas develop.
Bristol Transport Plan Core Strategy

Causal Chain

Traffic demand management and restraint

Re-emphasis of resources to alternative modes

Finite budget

Planning controls on location and content of new developments

Concentration of transport facilities at existing centres

Increase cost of car travel

Reduce costs of alternative modes

Enhance viability of public transport

Promote redevelopment in existing centres

Increase public transport patronage

(MODE SHIFT)

Household interviews

Reduce car travel

Improve air quality

Reduce accidents

Reduce congestion

Better health

Journey time surveys

Business/retail monitoring

Air quality monitoring

Traffic counts

Environment

Safety

Economy

Accessibility

Integration

Effects/impacts

Established/Documented Link

In monitoring programme
29. The diagram covers the main elements in the core overall strategy in a highly aggregated way, the aim being to illustrate the role of the proposed measures in the wider context of the five key Government objectives relating to the environment, safety, economy, accessibility and integration.

Casual Chain

30. The strength of the links from individual measures to changes in behaviour is dealt with in other diagrams. However the main links in the chain, leading from alternative modes to the private car and demand management, to modal shift, and from there to the key objectives, are established ones whose behavioural parameters are robust enough to form the basis of predictive models in the Bristol area.

31. The existence of fixed or finite money and time budgets is established from research as true in the short term, but its validity over longer periods will depend on the link between economic growth and travel being, at least, weakened.

Points of Interest:

32. As monitoring and research continues, the Council’s understanding of relationships between transport and land use grows. The influence of transport measures in reducing journey lengths is little understood, and their influence on economic objectives even less so, but monitoring measures now in place will shed light on these.

33. Both the public consultations and the transport modelling carried out by the Council emphasise the need for restraint and promotion of alternative modes to go hand in hand. Any imbalance between the two may result in lost accessibility, becoming evident through economic effects on shopping and office centres which will be detected through monitoring. Since the Structure Plan objective of regenerating the older centres in the area is strongly linked to the transport objectives of the strategy, the City Council’s interest in accessibility is implicit. The scope for reducing journey lengths at the same time is difficult to judge.

Impact Zone and Timescale

34. The wide range of effects and areas of impact indicates that the impact zone must be considered very wide and the timescale very long. In particular, it must be clear that achievements in a particular part of the package are not being gained at the cost of increased car use, worsening congestion or economic decline in another part of it. Aggregate measures for the whole package will be of value, but only in combination with in-depth surveys, either for individual schemes or at the household level, to establish causality. The full range of data needs to be renewed at least every few years for the foreseeable future, and this has resource implications.

Monitoring

35. All the indicators shown, and all types of monitoring, need to be harnessed to monitor the success of the package as a whole. Household panel surveys are potentially of great value. In depth scheme monitoring of the kind employed for the ELGAR project and Long Ashton Park & Ride is also extremely useful.
Rapid Transit
Causal Chain

Broadmead Accessibility Strategy

- Quantum leap in public transport quality
- Near-total segregation for general traffic
- Reliability
- Journey times

MODE SHIFT

- Reduced car travel
- Improved air quality
- Reduce accidents
- Reduce congestion

Environment

Safety

Economy

Accessibility

Integration

Established/Documented Links

Effects/impacts

In monitoring programme

Traffic Counts

Air quality monitoring

Journey time surveys

Business/retail monitoring

Increase public transport patronage

Increase attractiveness of key city centre development sites

Increase public transport capacity on key corridors

Re-allocate highway space

Environmental enhancement of city centre spaces

Business/retail monitoring

Traffic Counts

Journey time surveys

Traffic Counts

Traffic Counts

Traffic Counts
Rapid Transit
Causal Chain Analysis

36. Line One of Bristol's Rapid Transit network plays a crucial role in the LTP. By offering a quantum leap in the quality of public transport provision in the city, the emphasis on movement behaviour should be fundamentally changed as part of the overall strategy of traffic restraint on the one hand and improving alternative modes on the other. In particular, all five key Government objectives are robustly met by the project, in particular sustaining and enhancing the economic performance of Bristol city centre.

Causal Chain

37. The project offers a key opportunity to increase the attractiveness of key development sites in the city, particularly Temple Quay, The Centre and Broadmead, through reinforcing existing transport interchanges and enhancing the environmental attractiveness of the city centre. The reduction in car trips arising from a significant increase in Bristol's Park & Ride capability, will help to reduce accidents and journey times for essential users, again strengthening the project's contribution to the economic vitality of the city centre.

Monitoring

38. Monitoring will focus on mode shift trends as a result of the project's implementation, using the following methods:

- Household interviews to ascertain travel patterns for both Bristol residents on the corridor served by the project and, in partnership with South Gloucestershire Council, residents from key areas including the North Fringe, Wales and the Thornbury/Cheltenham/Gloucester corridor.
- Public transport passenger surveys. A key benefit of the project will be to significantly increase public transport capacity for a number of movements in this area where current congestion on the public transport network can reach acute levels; the project should release crucial capacity on the local rail and bus networks significantly increasing the overall number of public transport users in the area.
- Monitoring of business trends, such as take-up rates for vacant offices and expansion rates for retail and commercial elements, will be undertaken to ascertain the project's direct and indirect contributions in this key area.
- Air quality, journey times and vehicle flow through the central area will be monitored as part of the overall strategy.
Traffic Restraint
Causal Chain
Traffic Restraint Causal Chain Analysis

39. The introduction of an effective traffic restraint mechanism is seen as a crucial key component of the Bristol Transport Plan strategy in order to adequately achieve the Government’s objectives, including the Council’s obligations under the Road Traffic Reduction Act 1997. When combined with the implementation of high quality alternatives, in which Line One of Bristol’s rapid transit network clearly plays a central role, the overall package objectives of reducing non-essential car trips and promoting alternative modes becomes realistically achievable.

Causal Chain

40. All five of the Government’s prime objectives are achieved within the traffic restraint framework through the release of significant funds to implement substantial improvements to alternative modes. In particular, the positive effect of the economy of the central area of the city, through the maintenance of overall accessibility to the city centre with reduced journey times and delays for essential car users, stands out as a crucial factor in the scheme.

Monitoring

• The key area for monitoring will be modal shift. Previous studies undertaken in the area, in particular strategic modal split studies, have already endorsed the principle of an effective traffic restraint mechanism as part of a coordinated strategy, and given indications as to the extent of mode shift for specific charging regimes. In addition, the ELGAR trial gave a practical demonstration of driver behaviour, including the level of charge required to achieve a significant shift in mode with the presence of an alternative already in place. The level of modal shift achieved within a flexible, cumulative charging regime will enable predicted results to be endorsed and future levels set as appropriate given the rate of implementation of alternatives to private car usage.

• Business, commercial and retail monitoring will be crucial to ensure that the economy of the central area of the city is maintained and enhanced by the project, and in particular to ensure that a movement of commercial interests to peripheral locations outside any cordon does not occur. The take up of new commercial space in the city centre will also be a key factor.

• Vehicle counts, bus and car journey time surveys and air quality monitoring all form part of the monitoring programme for the Bristol Local Transport Plan.
Bus-Based Priority Measures
Causal Chain Analysis
**Bus-Based Priority Measures Causal Chain Analysis**

41. Promotion of bus-based public transport providing an alternative to the private car for trips is an essential element of the LTP. The Council has opened two successful Park & Ride sites and a third site is planned for 2000/01. The City Council is also improving the conventional bus service in partnership working with the main bus operator through a rolling programme of bus priority measures, real-time information and upgrading of the bus fleet with modern accessible buses.

**Park & Ride**

Figure 9.4 Current Sites

<table>
<thead>
<tr>
<th>Location</th>
<th>Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>A4 Bath Road (permanent)</td>
<td>1300</td>
</tr>
<tr>
<td>A370 Long Ashton (permanent)</td>
<td>1500</td>
</tr>
<tr>
<td>A4 Avonmouth (phase 1 planned 2000/01)</td>
<td>650</td>
</tr>
</tbody>
</table>

42. Future plans include the expansion of the Bath Road site and two further sites to serve the southern A38/A37 approaches to the city centre have been identified, together with the sites served by Line 1 of Bristol’s Rapid Transit network. The aspiration is for a complete ring of Park & Ride sites.

**Bus Priority Measures**

43. In addition to improving conditions for conventional bus services bus priority measures complement the Park & Ride schemes by improving journey times along these routes.

**Monitoring of Park & Ride**

44. Monitoring of both schemes to date included extensive “before” and “after” monitoring covering vehicle counts close to the site, surveys and passenger counts on bus services and “after” surveys on the Park & Ride services. These surveys are in addition to surveys to assess the impact of bus lanes on journey times where bus priority measures have been implemented.

45. Similar monitoring will be undertaken for new sites. Additionally further surveys are to be undertaken at the two existing sites during 2000/01.

46. Figure 9.5 shows that around 71% of users travelled to the city centre by car prior to the introduction of the scheme. Whilst 22% appear to have transferred from bus services, patronage on these services rose more than enough over the period to offset transfers to the Park & Ride. In particular rail patronage has increased at all the stations between Weston-super-Mare and Long Ashton since the opening of the Park & Ride site.

**Complementary Measures**

47. Successful Park & Ride schemes producing modal shift, can release road capacity that fills with generated traffic. To prevent this, complementary bus lanes are introduced making the park and ride service more attractive and reducing road space for cars. On the A4 Bath Road corridor, variable message signs showing current air quality have also been used to promote park and ride usage under the ELGAR project.

**Monitoring of Bus Priority Schemes**

48. ‘Before’ and ‘After’ monitoring of bus priority schemes is undertaken to allow the effects on bus and car passenger journey times to be assessed.

50. Surveys undertaken on A4 Anchor Road/Hotwell Road/A370 corridor show that the outbound bus priority measures have led to a 13% reduction in afternoon peak bus journey times for bus passengers.

**Public transport passenger surveys**

50. As part of the ‘Best Value’ work satisfaction surveys will be distributed randomly using postal questionnaires to obtain the percentage of users satisfied with local provision of public transport information and with local bus services.

51. Similar surveys undertaken prior to implementation of a bus/Park & Ride users lane on the approach to Bath Road Park & Ride site showed bus passenger/Park & Ride users journey times reduced by 80% in peak hours.
Cycling
Causal Chain Analysis

52. Cycling is a key element of the Council’s transport strategy, providing an inexpensive, flexible and sustainable alternative to the private car for many people for many shorter journeys.

Causal Chain

53. The diagram covers a range of measures to make cycling safer and more attractive and illustrates how they contribute to the governments overarching transport objectives. The effects in this field, although simpler than for many traffic management initiatives, are still likely to be fairly complex because of cumulative and network effects. There is a feedback loop from reductions in accidents to reduced intimidation and less fear of accidents for cyclists. This is considered to be one of the principal factors in altering behaviour.

54. As provision builds towards whole corridors and networks, surveys have indicated both increasing cycle use and a shift from other modes. Isolated or limited measures, whilst considered unlikely in themselves to have significant effects on the number of trips or modal shares, may result in an identifiable reduction in road collisions.

Monitoring

55. The effects of measures can be grouped into: a) benefits for existing users, b) benefits to cyclists attracted from other routes, and c) modal shift effects. Consequently effective scheme monitoring needs to extend to adjacent routes and be repeated regularly.

56. The Council monitors cycling using the following indicators:
   - Cycle flows – Before and after monitoring, including flows on alternative routes.
   - Reported collisions involving cyclists.
   - Household cycle use – trends.

57. The cycle monitoring programme will be reviewed next year.

Cycle flows

58. The Council has counted 12-hour cycle flows annually since the early 1980s. This is supplemented with an annual programme of specific cycle counts at a number of key locations.

59. Since the early 1990s then a significant growth in levels of cycling has been observed. Figure 9.6 reveals an 80% growth in afternoon peak levels since 1987. Further monitoring shows sustained growth in cycling in the central areas with a 27% increase since 1996.

60. Further analysis of the extensive historic traffic data will improve knowledge of past cycle trends.

61. In order to overcome the issues of daily variations the Council has installed 9 automatic cycle counters (ACCs) on a variety of routes throughout the city. This will allow improved trend monitoring and will enable seasonal and weather-related factors to be determined from which to validate other counts. Additional ACC sites will be installed as the cycling network is extended.

62. Surveys show that routes with a greater length of cycle provision show higher modal shares than other routes, and also that cycle flows on these routes are more robust to fluctuations over time. This is exemplified by the Bristol - Bath Railway Path – a 13-mile segregated cycle / footpath along a disused railway line, heavily used by commuters. This trend is supported by data from the ACC site which shows both weekday and weekend flows increasing annually over the last 3 years. This recent sustained growth may reflect improved links with the city centre.

63. A correlation between improved cycle facilities and increasing cycle flows has been widely observed. However, whilst behavioural changes follow the incremental pattern of measures, interference from external trends and other schemes makes causation difficult to establish. In order to gain more behavioural trend data the Council is proposing to undertake a rolling programme of household interview surveys (HHI). The HHI data will also inform the Council as to whether the proportion of cyclists is changing (important for the targets) rather than just the number of trips.

64. These surveys will be complemented with survey data from business travel plans and the safer routes to school projects. These will include travel diaries, travel surveys and regular school / workplace parking surveys.
Targets and Monitoring

Walking
Causal Chain Analysis

- Promotional Measures
  - Promoting Health Walks
  - Guided Walks/Green Transport Week

- Related Initiatives
  - Safer Routes to School Strategy

- Physical Infrastructure
  - Improved/Increased number of pedestrian facilities
  - Enhanced Routes

- Accident monitoring

- Household Interviews

- Develop a less car dependent culture
- Increase awareness of pedestrian facilities and benefits of walking
- Contribution to network of routes (distance/time saving re road routes)
- Reducing accidents involving pedestrians
- Reduce obstacles/incentives for pedestrians

- Improve access to local centres
- Shorter journeys
- Regeneration of older centres
- Reduce fear of crime

- INCREASE WALKING

- Modal shift from car
- Reduce travel

- Health benefits
- Improve air quality
- Reduce accidents
- Reduce congestion

- INTEGRATION
- ACCESSIBILITY
- ENVIRONMENT
- ECONOMY
- SAFETY

- Effects/impacts
- Established/Documented Links
- In monitoring programme
Walking Causal Chain Analysis

65. This Causal Chain focuses on three of the main tools used to effect an increase in levels of walking, these being promotional measures, initiatives and physical infrastructure improvements. The aim of these measures is to increase levels of walking, both numerically and proportionately, which contributes to the Council’s main target of reducing the volume of car traffic in the city. One of the most important impacts highlighted in the Causal Chain is that of a reduction in peoples fear of crime, whereby increases in the number of people walking results in more pedestrian activity, which helps to reduce the number of areas where people feel threatened.

Monitoring – General

66. Examples of the tools used to encourage walking and the appropriate monitoring methods are shown below. In addition to the specific measures examined, further monitoring of walking levels is undertaken as follows:

- A cordon around the central area has been created, and commencing this year, 12-hour (0700 – 1900) pedestrian counts will be undertaken on an annual basis at all points at which pedestrians cross the cordon. This will monitor changes in pedestrian levels entering the central area.
- A Screenline has been created along the River Avon whereby pedestrians crossing the river at all points from Brunel Way in the west to Crews Hole Road footbridge in the east, are counted for a 12-hour period (0700 – 1900) on an annual basis. The first set of counts have been undertaken during the past year and the pedestrian flows are shown below.

<table>
<thead>
<tr>
<th>Crossing Point</th>
<th>Northbound</th>
<th>Southbound</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A3029 Brunel Way</td>
<td>47</td>
<td>36</td>
<td>83</td>
</tr>
<tr>
<td>Ashton Avenue Footbridge</td>
<td>186</td>
<td>214</td>
<td>400</td>
</tr>
<tr>
<td>Vauxhall Footbridge</td>
<td>345</td>
<td>354</td>
<td>699</td>
</tr>
<tr>
<td>Gaol Ferry Footbridge</td>
<td>1,648</td>
<td>1,310</td>
<td>2,958</td>
</tr>
<tr>
<td>A38 Bedminster Bridge</td>
<td>2,132</td>
<td>2,109</td>
<td>4,241</td>
</tr>
<tr>
<td>York Rd Footbridge</td>
<td>890</td>
<td>616</td>
<td>1,506</td>
</tr>
<tr>
<td>A4 Bath Road</td>
<td>755</td>
<td>528</td>
<td>1,283</td>
</tr>
<tr>
<td>Totterdown Bridge</td>
<td>88</td>
<td>69</td>
<td>157</td>
</tr>
<tr>
<td>Sparke Evans Park Footbridge</td>
<td>31</td>
<td>45</td>
<td>76</td>
</tr>
<tr>
<td>A4320 St. Philip’s Causeway</td>
<td>282</td>
<td>221</td>
<td>503</td>
</tr>
<tr>
<td>New Brislington Bridge</td>
<td>153</td>
<td>133</td>
<td>286</td>
</tr>
<tr>
<td>Crews Hole Road Footbridge</td>
<td>175</td>
<td>154</td>
<td>329</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,732</strong></td>
<td><strong>5,789</strong></td>
<td><strong>12,521</strong></td>
</tr>
</tbody>
</table>

- The Council’s rolling programme of Household Interview Surveys (HHI) will provide data relating to numbers of walking trips and also changes in mode of travel over a period of time.
- Travel Plans produced as part of the planning process will be monitored on an annual basis and will provide data relating to mode shift. In common with the HHI, the Travel Plan monitoring will provide data relating to both proportion and number of walking trips.

Monitoring – Promotional Measures

67. The Severn Way Long Distance Path (LDP) is accessed from the city via the Bristol Link which follows the course of the River Avon. Each year the Council organises a day of events, The Severn Way Fun Day, which incorporates a number of guided walks and promotional events designed to promote the Bristol Link and the LDP. Surveys of the Fun Day show that the number of people taking part has increased from 1,000 in 1999 to 1,100 this year.

Monitoring – Initiatives

68. The Council’s Safer Routes to School Strategy has recently been produced to promote the use of using alternative modes to the car to get children to and from school. Currently, works have taken place at about 20 schools in the city. Mode Split surveys have been undertaken to ascertain how children arrive at the schools and as the strategy progresses the surveys will be repeated to assess the impact of the measures undertaken.

Monitoring – Physical Infrastructure

69. A number of routes into the central area have been identified as routes that would benefit from enhanced pedestrian infrastructure. Works on the first of these routes, B4053 Victoria Street, commenced in 1997 and are now nearing completion. Surveys carried out on Bristol Bridge in 1995 and 1999 show an increase of 21% in pedestrians, from 9,800 to 11,900. Further surveys will be undertaken following completion to ascertain the final impact of the scheme.

Impact and Timescale

70. The Council’s target is to achieve a 10% increase in both the number and proportion of walking trips by 2012. The pedestrian network will become more extensive as the plan progresses and the impact should be greater than during the early years. Additionally, the impact of road user charging and the production of travel plans will encourage modes such as walking and should result in increases in both the number and proportion of trips on foot.
Mobility Management Causal Chain Analysis

TARGETS AND MONITORING

Travel Awareness
- Increased awareness of impact of travel

Travel Plans
- Encourage employers to reduce reliance on car travel and commuting
- Implementation of practical measures to encourage sustainable travel
- Positive cultural change regarding non-car based travel modes

ITIC
- Increase public access to mobility information

MODE SHIFT
- Increased attractiveness of areas well covered by public transport

Effects/impacts
- Established/Documented Links
- In monitoring programme

Environment
- Reduced car travel
- Air quality improvements

Safety
- Traffic counts
- Reduced levels of congestion

Economy
- Increased levels of walking and cycling
- Cycle/pedestrian survey

Accessibility
- Increased public transport patronage
- Patronage monitoring

Integration
- Enhanced level of public transport patronage
- Retail occupancy data

Mobility Management
- Staff travel survey
- Household interview survey

Causal Chain Analysis
**Mobility Management Causal Chain Analysis**

**Introduction**

71. This new Causal Chain has been introduced to highlight the Council’s multi-faceted approach to achieving modal shift and a more sustainable travel culture. In addition to ‘hard’ measures such as bus priority and cycle lanes, the Council is focusing on ‘soft’ measures designed to increase awareness, provide information, encourage employers to adopt more sustainable practices and generally foster a psychological and cultural change in attitudes to travel and consequently their travel habits.

**Causal Chain**

72. The Causal Chain illustrates how three of the main elements of Mobility Management utilised by the Council can combine to effect mode shift and meet all five key Government objectives for transport. In common with other Causal Chains in the Plan, the Mobility Management Chain stresses how measures, when implemented, result in mode shift away from the car and therefore contribute towards the long-term target of reducing the volume of car traffic in Bristol. Especially important in this Chain are the links showing how the elements all have the effect of promoting a positive cultural change in respect of non-car-based modes of travel.

**Monitoring – ITIC and Travel Awareness**

73. It is very difficult to directly monitor the impact of travel awareness campaigns and to a lesser extent the impact of the Integrated Travel Information Centre (ITIC) as both are designed to facilitate attitudinal change, which is then translated to mode shift away from the car. However there are a number of monitoring methods that can be utilised to give an idea as to their impact as follows:

- Household Interview Surveys, which will be carried out on a three-year rolling programme, will provide information into mode shift and travel patterns. Although any changes cannot be directly attributable to either ITIC or travel awareness campaigns, the Council’s Transport Plan Consultation meetings and responses highlighted the need to improve the quality and availability of information if people are to be encouraged out of their car and onto alternative modes. Therefore, the implementation of both ITIC and travel awareness is highly likely to be a major factor in effecting mode shift.

- As the ITIC system is computer based it will be possible to monitor its use. Each visit to the site results in the provision of information, which will enable users to plan trips in such a way that usage of public transport and other alternative modes of travel is maximised.

**Monitoring – Travel Plans**

74. The impact of travel plans, both those produced voluntarily and those secured through a commitment as part of the development control process, is monitored through regular staff travel surveys which are provided to the Council. This provides information into mode shift and also enables the Council to assess the progress employers are making towards achieving targets set (where applicable). Examples of initiatives used by two local employers are detailed below.

75. Bristol University, which is sited about one mile from the City Centre, is managing its parking spaces on the basis of need and is increasing parking charges substantially. The revenue raised from the increased parking charges will then be hypothecated and used to fund further measures to encourage sustainable commuting. Initially, a free bus service has been set up, in conjunction with the United Bristol Healthcare Trust, linking the University with the City Centre and major public transport interchanges and therefore making commuting by public transport a significantly more attractive option.

76. Orange, which though sited in South Gloucestershire, has many of its employees living in Bristol, undertakes a quarterly email based travel survey. The survey is based around car and car park ratio targets, which relates to the number of cars arriving on site, the number of parking spaces and the number of employees. A travel plan has been produced detailing initiatives Orange are implementing in order to reach their targets.

**Impact and Timescale**

77. The measures detailed in the Causal Chain will have a significant impact in contributing to mode shift in the long term. As they relate to cultural change they will not have an immediate quantifiable impact in the way that the provision of a bus lane on public transport journey times would, for example. However, it is expected that the mobility management work will increase demand on new facilities over and above the level achievable in the absence of travel plans, ITIC and travel awareness. This is because the implementation of travel awareness campaigns and the continued provision of information will allow people to become more informed as to the impact of their travel choices and more aware as to the alternatives. Travel plans have a slightly more defined timescale, as those committed through the development process would be monitored for up to five years. The impact is also more clearly defined in that the desired end result would be a proportionate reduction in car-borne trips to and from the business concerned.
Central Bristol
Causal Chain Analysis

MODE SHIFT

Integration
Accessibility
Economy
Safety
Environment

Effects/impacts
Established/Documented Links
In monitoring programme

Pedestrian Priority Scheme
Reduction in traffic
Enhance viability of public transport
Shift from car for journeys to school, shops

Buses bypass congestion
Traffic counts
Journey times

Traffic counts
Traffic counts
Traffic counts

Air quality monitoring

Journey time surveys
Business/retail monitoring

Encourage walking/cycling
Better Health

Reduce congestion
Reduce accidents
Enhancement of city centre spaces

Environment

Reduced car travel

Introduce public transport patronage

Reinforce existing transport interchanges

Reinforce city centre as a focus for investment in re-development

Increased public transport patronage

Increase awareness of public transport

Household interviews

TARGETS AND MONITORING

Established/Documented Links

Central Bristol

Chapter 9: Bristol Transport Plan 2001/2 - 2005/6
78. For the purpose of analysis Central Bristol is defined as the area within the city centre loop shown in Figure 9.10. The study area includes the surrounding environs and primary routes feeding into the central area, and covers the commercial and leisure core of the city and the largest retail centre in the South West. The area includes the transport hub of the city and is the focus of several major development projects and a number of key transport schemes including the remodelling of the Centre, rapid transit and the pilot congestion-charging scheme.

79. The Central Bristol Project is a co-ordinated package of transport measures to improve the environment of the central area of the city. The primary objective of the project is to reduce non-essential traffic from the central area whilst sustaining and enhancing accessibility by non-car modes. Assessment of the effectiveness of the package of measures in achieving the LTP objectives requires a comprehensive monitoring package.

**Monitoring:**

**Vehicle Counts**

- Analysis of traffic flows crossing the Bristol Inner Cordon (16 sites monitoring traffic entering the city centre loop) reveals some decrease over the past four years (Figure 9.11). This is largely owing to a series of major highway works and bridge strengthening on key access routes that resulted in significant temporary capacity decreases. The next two years may see a return to ‘true’ traffic levels and a more accurate assessment of long-term trends will be possible.

- The Inner Cordon is complemented by an extensive network of additional automatic and manual traffic monitoring sites throughout the central area. These will form the basis of monitoring trends and the Central Bristol road traffic reduction target.
Targets and Monitoring

City Centre project

- Following the completion of the Centre Project, initial analysis of the morning and afternoon peaks shows a reduction of about 15% in flows into the Centre, which equates to roughly 600 vehicles per peak period. Flows on the city centre loop have increased by 15% (550 vehicles) in the morning peak and 11% (380 vehicles) in the afternoon peak. The increased flow on the city centre loop does not account for the total decreases experienced in the Centre. This suggests that a proportion of people have altered their travel behaviour. Further analysis of the impacts of the project, including queuing and journey time analysis, will be undertaken once traffic movements in the areas have ‘settled down’.

Traffic Congestion

- A biennial programme of journey time surveys across the city commenced this year. This will provide an assessment of congestion trends and delays in the central area. The results will be included in the LTP progress reports.

Public Transport

- The Council is enhancing its public transport monitoring programme and in partnership with local bus operators will be monitoring bus patronage, journey times, delays and facilities.

This will provide an improved picture of public transport trends in the central area.

- The recent Broadmead Accessibility involved an extensive study relating to transport provision and use, including parking, taxi provision, retailer surveys and, mode of access (Figure 9.12) and purpose of visit. This data provides a comprehensive range of base data from which to assess future surveys.

Cycle Counts

- All of the Councils manual traffic surveys count bicycles. Cycle flows in the central area have increased significantly over the past five years along with the increased provision of cycle facilities (see cycling causal chain).

Pedestrian Counts

- An extensive programme of pedestrian surveys was undertaken at over 40 locations during 1995-1997. Intermediate surveys have been undertaken and after surveys will be carried out next year. The pedestrian monitoring programme is currently under review and an enhanced programme will commence next year, including an annual cordon mounting 12-hour flows into the central area.

Collision Records

- The central area is characterised by heavy vehicle and pedestrian flows, which tends to lead to a large number of conflict points and concentrations of collisions. The Councils record of injury collisions reveals recent increases in the number of reported incidents (Figure 9.13). This is partly a result of improved reporting procedures, but may also be partly attributable to the disruption caused by works in the central area.
area. As with traffic flows the following years may see movements ‘settling down’ and enable a more accurate assessment of trends.

**Air quality**

- Monitoring and modelling has revealed relatively high levels of air pollution in the central area. As part of the Air Quality Management Strategy a more detailed assessment of air quality in the city centre will be undertaken next year. Linked to this will be the development of a Dynamic Emissions Information System that will link the Council’s air quality and traffic models with the SCOOT UTC system. This will provide a greatly enhanced picture of traffic flows and air pollution in the central area.

**Additional Data**

80. Monitoring associated with other strategies and studies linked to development proposals in the city are likely to provide substantial additional data sources that will complement the core central monitoring programme. These include:

- Studies associated with the development of congestion charging, including monitoring of the proposed charging points
- The rolling programme of household interview surveys
- Travel Plans and employer surveys

**Figure 9.13**

Reported Road Collisions in Central Bristol

![Graph showing reported road collisions and casualties from 1994 to 1999](image)
| A | ABS | Anti-locking Braking System |
|   | AQAP | Air Quality Action Plan |
|   | AQMA | Air Quality Management Area |
|   | AST | Appraisal Summary Table |
|   | ATC | Automatic Traffic Count |
|   | BCCCA | Bristol Community Car Club Association |
|   | BER | Bristol Electric Railbus |
|   | BRITES | Bristol Integrated Transport and Environmental Study |
|   | C | CCSN | Community Car Share Network |
|   |   | CCTV | Closed Circuit Television |
|   |   | CENTAUR | Clean and Efficient New Approach for Urban Rationalisation |
|   |   | CO2 | Carbon Dioxide |
|   |   | CPR | County Primary Route |
|   |   | CPZ | Controlled Parking Zone |
|   | D | DETR | Department of Environment, Transport and the Regions |
|   |   | DPTAC | Disabled Persons Transport Advisory Committee |
|   | E | EIP | Examination in Public |
|   |   | ELGAR | Environment-Led Guidance and Restraint |
|   |   | ETP | Education, Training and Publicity |
|   |   | EU | European Union |
|   |   | EURoPrice | European Road Pricing Initiative |
|   | F | None |
|   | G | GLT | Guided Light Transit |
|   | H | HGV | Heavy Goods Vehicle |
|   |   | INTERCEPT | Intermodal Concepts in European Passenger Transport |
|   |   | ITIC | Integrated Travel Information Centre |
|   | J | None |
|   | K | KSI | Killed or Seriously Injured statistics |
|   | L | LA | Local Authority |
|   |   | LA21 | Local Agenda 21 |
|   |   | LAQS | Local Air Quality Strategy |
|   |   | LTP | Local Transport Plan |
|   | M | MOMENTUM | Mobility Management for the Urban Environment |
|   |   | MOSAIC | Mobility Strategy Applications in the Community |
|   |   | MCI | Motorcycle Industry |
|   |   | MOST | Mobility Management Strategies for the Next Decade |
|   | N | NAQS | National Air Quality Strategy |
|   |   | NCN | National Cycle Network |
|   |   | NHS | National Health Service |
|   |   | NO2 | Nitrogen Dioxide |
|   |   | NRSWA | New Roads and Street Works Act |
|   |   | NWS | National Walking Strategy |
**Glossary and Acronym**

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<tbody>
<tr>
<td>P</td>
<td>PFI Private Finance Initiative</td>
</tr>
<tr>
<td></td>
<td>PM10 Particulate Matter of 10 microns diameter</td>
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<tr>
<td></td>
<td>PPG Planning Policy Guidance</td>
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<tr>
<td></td>
<td>ppm Parts per million</td>
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<td></td>
<td>PRN Primary Road Network</td>
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<td></td>
<td>PTAL Public Transport Accessibility Level</td>
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<td></td>
<td>PTI Public Transport Information</td>
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<tr>
<td>R</td>
<td>RAC Royal Automobile Club</td>
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<td></td>
<td>RDA Regional Development Agency</td>
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<tr>
<td></td>
<td>RTD Research, Technology, Development and Demonstration</td>
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<tr>
<td></td>
<td>RTTRA Road Traffic Reduction Act</td>
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<tr>
<td>S</td>
<td>SCOOT Split Cycle Offset Optimisation Technique</td>
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<td></td>
<td>SMA Strong Mastic Asphalt</td>
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<td>SON High Pressure Sodium</td>
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<td></td>
<td>SRB Single Regeneration Budget</td>
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<tr>
<td></td>
<td>SRTM Sub-Regional Traffic Model</td>
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<tr>
<td>T</td>
<td>TPP Transport Policies and Programme</td>
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<td></td>
<td>TRAM Traffic Restraint and Analysis Model</td>
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<tr>
<td>U</td>
<td>UBHT United Bristol Healthcare Trust</td>
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<tr>
<td></td>
<td>UKPMS United Kingdom Pavement Management System</td>
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<tr>
<td></td>
<td>UTC Urban Traffic Control</td>
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<td></td>
<td>UTMC Urban Traffic Management and Control</td>
</tr>
<tr>
<td>V</td>
<td>VMS Variable Message Sign</td>
</tr>
<tr>
<td>W</td>
<td>WHO World Health Organisation</td>
</tr>
<tr>
<td>X, Y, Z</td>
<td>None</td>
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<tr>
<td>Other</td>
<td>ug/m3 Micrograms per cubic metre</td>
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