Llewelyn-Davies
with
Oscar Faber

Banbury Integrated Transport and Land Use Study

Final Report

for

Cherwell District Council
and
Oxfordshire County Council

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July 2000

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1 *Decisions by Joint Members' Steering Group*

1.1.1 The BITLUS study involved consideration by a "Joint Members' Steering Group" of Cherwell District Council and Oxfordshire County Council which met at intervals during the course of the study. This section of the final report summarises the decisions taken by the members of this Steering Group at their final meeting on 11th July 2000, regarding the choice of option and setting priorities for action.

1.1.2 The majority of the Group agreed an order of priority for key projects in Option 5, as follows:

1 The dualling of Hennef Way.

2 The design and implementation of a multi-mode interchange at the railway station.

3 Redevelopment of railway station area with the provision of a green link from the railway station to George Street.

4 Develop a town-wide bus network and establish better public transport links to rural areas.

5 The drafting of a policy relating to the management and provision of town centre car parking for the public.

6 Establish active and effective TravelWise programmes with local businesses and schools.

7 Design and implementation of the Horse Fair traffic cap and further environmental improvements in future years. Babtie are presently designing a scheme for public consultation in respect of Horse Fair, North Bar and South Bar.

8 Implementation of town centre bus priority measures. Babtie, the County council's consulting engineers, are preparing a scheme for public consultation in respect of George Street, Cherwell Street and Middleton Road, Bridge Street.

9 Consider improvements to the network for cyclists to increase the opportunities for cyclists to travel safely and conveniently around the town. This could involve focusing on 'home to school' and 'home to work' journeys and removing blockages in the network.

10 Further investigate the feasibility of park and ride at Banbury.

1.1.3 The Steering Group resolved to recommend to the County and District Councils' Service Committees that the final report for the Banbury Integrated Transport and Land Use Study be approved for inclusion in the Oxfordshire Local Transport Plan and Cherwell Local Plan Review as appropriate.

2 *Executive Summary*

2.1.1 This is the final report of the Banbury Integrated Transport and Land Use Study (BITLUS). It covers in summary form the whole of the study, commissioned in 1998, but focuses in particular on the work carried out in the 3rd and final stage of the study. In includes two alternative packages of policies and schemes for tackling the various transport and related land use issues in Banbury and its hinterland, and provides advice on the key choices that are needed. The preceding section highlights decisions taken on this report by the BITLUS Joint Members' Steering Group at their final meeting.

2.1.2 Banbury has had considerable success in recent years in creating a vibrant and growing economy supported by a growing service sector. New employment and shopping and other facilities mean that Banbury is in a much stronger competitive position, and is better placed to draw upon its "natural" catchment, and to attract people who otherwise would travel to other towns for their business and leisure. This success has been built on improved accessibility, both by road and rail, coupled with a cherished town and rural environment.

> *Unless action is taken to develop an efficient transport system that keeps in balance the various and often conflicting objectives, the problems of traffic growth could undermine the very qualities that have enabled Banbury to reach its present level*

2.1.3 An important aim for all is to maintain the vitality of Banbury and its economy, and to provide for further expansion. The prospects for this growth are good, but only if accessibility and environmental quality can be provided. More people, higher incomes and more activities can easily result in more and more road traffic. This in turn creates problems that, if not controlled, can undermine the very basis for the town's success. Worsening congestion, unreliable journey times, road danger and accidents, poor choices for those without cars, and parking difficulties for those with cars, are all likely accompaniments to growth.

The aim of BITLUS is to produce an integrated package of measures that allow the town to grow without any growth in traffic.

The basic approach is to halt the tendency for people to switch to car use, and to encourage them to make more use of alternative modes, and to use land use measures to reduce dependence on cars.

2.1.4 It was to tackle this fundamental issue of enabling further growth without allowing excessive traffic growth that BITLUS was commissioned. The consultants have responded to this by applying best practice principles within the clear framework provided by the Government's evolving policy for integrated transport.[1] This report is the culmination of the wide range of work undertaken.

2.1.5 Many schemes have been identified for improving the pedestrian, bus and cycle networks, as well as the road network for general traffic, and for facilitating better interchange between the different modes of travel. Measures to improve access between Banbury and its rural hinterland are included, as well as schemes within the town itself. These measures have been packaged into integrated options, based on decisions by the client steering group, and two Options are presented in detail in this report.

2.1.6 These Options have been tested in order to assess their performance in meeting the objectives agreed earlier in the study. The basic objective is to avoid traffic levels increasing over the next ten years while the town continues to expand.

2.1.7 According to the computer-based strategic model devised specially for BITLUS, none of the Options tested will achieve this basic aim, and traffic will continue to grow. This is because some important causes of traffic growth are outside the sphere of local policy influence, notably income, car ownership and transport taxation.

2.1.8 Nonetheless, if neither Option is implemented, traffic growth will be considerably greater and the negative effects referred to will be more severe. With the measures described in the Options, many people will be able, if they choose, to escape the worst consequences of traffic growth by using alternative modes whose availability and quality will be much improved. Without these measures, people will increasingly be locked into a cycle of increasing dependence on cars, and increasing frustration at the delays and costs in using them. Perhaps more important even than the personal

[1] Heralded by the Transport White Paper 1998: "A New Deal for Transport: Better for Everyone".

discomforts, the image of the town will be tarnished by problems of poor access and deteriorating environmental conditions and this could turn people and business away.

2.1.9 There are political judgements to be made, especially as to the extent of demand management, and expenditure on road capacity. These are explained fully in the report. But there is considerable scope for action to be taken that is less controversial, especially if measures are implemented step by step. The approach of "plan, monitor and manage" can be used to adjust the programme of measures in the light of changing circumstances. Commitment is needed to the overall approach and to the desired objectives, but the detail can be worked out and refined over time.

2.1.10 In view of the relentless rise in traffic volumes, an early start is recommended. Indeed, the report describes a number of issues and schemes where progress is already being made.

2.1.11 As is so often the case in transport and planning, the choices that seem popular in the short term may not always deliver the best overall result in the longer term. This report is not overly prescriptive, but it aims to provide the comprehensive advice necessary for responsible choices and effective commitments to be made by the District and County Councils.

3 *Overview of BITLUS*

3.1 *Background*

Explains BITLUS commission, including contribution to Cherwell Local Plan Review, Banbury Local Transport Plan

3.1.1 The Banbury Integrated Transport and Land Use Study (BITLUS) was commissioned from Llewelyn-Davies and Oscar Faber by Oxfordshire County Council (OCC) and Cherwell District Council (CDC).

3.1.2 The work was undertaken in three stages between Autumn 1998 and Summer 2000, and was steered by an officer working group, and by a steering group of elected members from the commissioning authorities.

3.2 *The 3 stages in outline*

3.2.1 This report draws together the main issues and choices arising from BITLUS. It presents the findings of the Stage 3 of the study, together with an overview and summary of Stages 1 and 2. A list of all the key tasks in BITLUS is given at Annex B.

3.2.2 The aims of Stage 1 were to:

- explore and clarify the objectives of the study as set out in the brief;
- to generate an understanding of Banbury's transport system and the problems for different modes; and
- to investigate local people's views of travel to and within Banbury and identify key issues.

3.2.3 The key issues and objectives identified by the Stage 1 work were agreed by the Steering Group at a meeting on 17th December 1998. These are set out in Section 3 of this report.

3.2.4 Stage 2 included analysis of the current and future situation and included the more creative work to identify options for land use development and transport improvement. The aims of Stage 2 were to :

- identify Options (packages of measures);
- test their performance against the study objectives; and
- consult the public and interest groups, including business; ***(See Photo 1)***
- present the key choices.

3.2.5 Stage 2 thus provided an "objectives-led" analysis of a number of Options of measures, each designed to tackle different transport issues. This helped to clarify the decisions that needed to be made in forming consolidated Options in Stage 3.

3.2.6 Stage 3 is the final stage of BITLUS, in which two consolidated options were devised and tested against the objective.

3.3 *Structure of this Report*

3.3.1 Following the outline of BITLUS in this section, the report restates the agreed objectives, and outlines the objectives-led approach in section 3. This followed in Section 4 by a review of key issues, including those where progress is already being made. Section 5 provides a resume of travel in Banbury, based on the various survey findings. Section 6 describes the BITLUS philosophy of influencing travel choices and outlines the potential for doing this. Section 7 describes the various options for funding transport measures. Section 8 summarises the initial Options (1-3) devised and tested in Stage 2 of the study.

3.3.2 The remainder of the report focuses on the Stage 3 work. Section 9 describes the two consolidated Options, and their relative performance. Finally Section 10 synthesises the various findings in order to clarify the nature of the choices that will need to be made in taking forward the BITLUS proposals.

Photo 1 Public exhibition of BITLUS options during Stage 2 (1998).

Photo 2 Heavy traffic like this could become more widespread throughout the day, and seven days a week, unless steps are taken to "cap" the growth of traffic in North Bar Street (pictured), Horse fair and South Bar Street. This is one of the most attractive parts of the centre of Banbury, and deserves to be less dominated by traffic.

4 *Objectives for Banbury and Hinterland*

4.1 *Introduction - the "objectives-led" approach*

4.1.1 The approach of BITLUS as set out in the study brief produced by Oxfordshire County Council and Cherwell District Council, was to devise and appraise a range of transport and land use planning measures that would contribute towards a number of clearly defined and agreed objectives. This is what is generally referred to as the "objectives-led approach".

4.2 *Study objectives*

4.2.1 Two types of aims and objectives were established in Stage 1 of the study[2]:

- basic objectives – these are overall aims for transport in Banbury which have been related to the DETR headline appraisal; and
- operational objectives – these explore the basic objectives in more detail, setting out more specific desired outcomes.

4.2.2 The basic objectives are grouped under headline criteria, drawn from the Department of the Environment, Transport and the Region's (DETR) common appraisal framework.[3] The agreed study objectives are set out in Table 4.1.

4.3 *Basic aim of stable traffic levels*

4.3.1 Following the definition of objectives, it was apparent that their achievement would depend to a significant extent on levels of road traffic in the future. Three possibilities were considered. The first was that traffic would be allowed to grow according to current trends. The second was that traffic in future should be reduced in absolute terms below levels experienced today. The third possibility was that traffic levels should be kept at levels no higher than today. This latter possibility was chosen by the client authorities as the basic aim for BITLUS.

4.3.2 The various measures and policies in the BITLUS Options therefore were to aim for stable levels of traffic in the study area over the plan period. The

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[2] Llewelyn-Davies Ltd and Oscar Faber, "Banbury Integrated transport and Land Use Study: Stage 1 Report and Background Papers", December 1998.

[3] Department of thje Environment, Transport and the Regions, July 1998, "Guidance on the New Approach to Appraisal".

aim of stable traffic was to include allowances for growth in population and employment, and this meant that per-capita car trips would have to be somewhat lower than today.

Table 4.1: BITLUS study objectives

Headline Criteria	Basic objectives	Operational objectives for 2011
ACCESS	• Reduce reliance on the car • Ensure access to facilities for those without cars • Provide for those with mobility difficulties	• Local facilities within reach of all residents (draft proximity target to be reviewed) • Buses both comfortable and accessible • Key walking routes meet the "5Cs" to town centre, schools and employment areas (see footnote[4]) • Key cycle routes to meet similar criteria, especially between home – work – town centre • Greater priority to be given to non-car modes at critical junctions in the network, and in all "living" areas • Shared priority between modes to be achieved where functions are mixed and where networks intersect • New development to be located/designed to achieve mode choice • Non-car links to be provided between new housing and employment/other facilities • Safe routes to school to be developed with schools, especially primary schools • Villages to be provided with good non-car access to Banbury • Good pedestrian links to be provided between Banbury and the surrounding countryside • Barriers to pedestrian and cycle movement to be removed, especially between the town centre and Grimsbury and other nearby residential and employment areas. • Protect buses from congestion, especially to and from the town centre • Public transport to villages which competes with the car for some purposes • Raise awareness of transport issues

Table 4.1 continued

ECONOMY	• Enhance vitality and viability of town centre • Protect/enhance	• Match transport to expansion of Banbury town centre to fulfil its sub-regional role (serving catchment but not encroaching on neighbouring catchments)

[4] The "5Cs" are: Convenient, Connected, Comfortable, Convivial and Conspicuous. Source: Department of the Environment, Transport and the Regions, March 2000, "Encouraging Walking: Advice to Local Authorities", Appendix B (originally published in London Planning Advisory Committee, 1996, "Putting London back on its Feet").

	economy • Efficiency for all modes and parking	• Provide good trading environment and access for businesses in west part of town centre • Maintain balance of people, skills and jobs in the town as a whole • Reduce congestion at peak times on Hennef Way and other key routes • Balance supply and demand for town centre parking • Parking priority to medium-stay visitors to town centre • Reduction of private employee parking • Long-term stability and commercial viability of public transport as well as major growth of bus travel within Banbury
ENVIRONMENT	• Reduce air/noise pollution • Protect/enhance historic area	• Reduce noise and pollution in town centre and on main roads into Banbury • Open space to be enhanced in Cherwell valley (linear walk created) • Create canal/river environment in town centre for amenity of residents and visitors • Reduce the number of properties exposed to noise and fumes, especially from HGVs • Pedestrianise Parsons Street and Market Place • Reduce traffic in roads relieved by recent road investment, including Horse Fair and Banbury Cross • Reallocate road and parking space in central and inner areas to reduce dominance of motor vehicles • Enhance the appearance and functionality of all major roads in and around the town centre
SAFETY	• Ensure safety for all modes • Create safer walking and cycling conditions • Enhance community safety	• Reduce the number and severity of personal injury accidents throughout the town • Provide safe and automatic crossing priority at critical junctions and roads in inner Banbury • Provide all traffic signals with pedestrian phases • Design community safety into all new development schemes

Table 4.1 continued

INTEGRATION	• Integrate bus, rail and private transport • Integrate pedestrian, cycle and bus transport with land use development and layout	• Rail station can be accessed by bus from all key areas of Banbury • Bus/rail/taxi interchange accessible directly from areas east and west of the railway • New development to be provided with direct non-car routes to local facilities and to key networks • New development to have communal parking except where security over-rules

	• Integrate facilities for those whose mobility is limited	

5 *Issues requiring priority attention*

5.1 *Priority issues*

5.1.1 Stage 1 identified five key issues for urgent attention which are set out below. Additional work has been undertaken on these issues, either by the BITLUS consultants or by the client authorities and others, as explained below. Specific progress and developments that have occurred during the BITLUS study period are highlighted in this section.

5.1.2 The identified key issues and actions taken were as follows:

1 **Cattle market, railway station area regeneration:** this area presents the opportunity to create a highly accessible, high density, mixed use area. The development provides the opportunity to create a high quality multi-mode interchange as well as providing new walk and cycle linkages over the railway line. Preparation of guidance for the development of this area was highlighted as a key concern. The consultants have provided an urban design framework for the development of this key area and implementation will be taken forward by both Councils[5];

2 **Capitalising on the environmental and public transport benefits of road investment:** Banbury has secured relief from heavy traffic with the opening of the M40 and the inner relief road (Concorde Avenue; Cherwell and Upper Windsor Streets) to the east of the town centre. North-south traffic will, however, continue to build up on the Horse Fair route unless something is done to prevent such growth. This would mean that the environmental benefits of the past road investment would be lost. Measures to "cap" the build up of traffic on the former main north-south routes are therefore seen as an urgent priority. We provided guidance on the measures that could be taken and the County Council's consultants have been briefed to produce detailed designs[6]; ***(See Photos 3 and 4)***

3 **Park and Ride opportunities:** a potentially suitable site for a park and ride car park near the M40 junction was flagged up as needing to be safeguarded from other development. If this site were developed for housing, industry or other purposes, this could

[5] BITLUS Stage 2 Report, Appendix A "Banbury Station Area Guidance", September 1999.

[6] BITLUS Stage 2 Report, Appendix B "Discussion paper on the North Bar/South Bar Traffic Cap"

prejudice the future establishment of park and ride in Banbury. An outline assessment of the feasibility of park and ride was undertaken. Although the prospects for an effective and economically viable service in the short term are not encouraging, future implementation will still benefit from continued safeguarding of the identified site;

4 **People in Banbury perceive congestion as a problem, but not car use:** there is an issue for Banbury of how to halt the deterioration of traffic and environmental conditions. Public consultation revealed little support for the sort of actions necessary to avoid greater use of cars. The consultants have advised that a campaign to win the "hearts and minds" of Banbury residents and visitors is required. The client authorities have since agreed this in principle, though the issue of resources has to be resolved.[7]

5 **Rural buses:** we highlighted the need for a more imaginative and innovative approach to rural public transport and to get better value from rural bus grants.[8] Reviewing value for money from rural bus grants has been identified as a priority task by the Government's Commission for Integrated Transport.[9]

5.2 *Other key issues*

5.2.1 The BITLUS studies and consultation exercises identified other issues for the future of transport and development in the Banbury area. These key concerns were:

- The Castle Quay development was expected to offer a wider range of retail and other facilities, and to be capable of attracting people to Banbury who may otherwise have travelled to other towns;
- Traffic congestion on Hennef Way, especially during the morning peak hour. Congestion elsewhere in the town is also perceived as a problem, and short trips by car are acknowledged to contribute to this;
- Town bus services – the frequency and reliability of services, the lack of evening and weekend services in some areas;
- Parking in the town centre was the issue which attracted the most forceful opinions and comment. There were inconsistencies in the

[7] BITLUS Stage 2 Report, Appendix C "Note on the role of soft measures".

[8] Estimates were made of the cost of providing regular bus services to the villages in Banbury's hinterland. The subsidy required was estimated to be in excess of £0.5 million per annum.

[9] BITLUS Stage 2 Report, Appendix D: "Note on rural bus improvements".

views expressed, however, with complaints about charges alongside complaints about the difficulty of finding spaces at busy periods;

- Many people, but particularly the business community are concerned about lack of access for cars impinging on the economic viability of the town. Many recognise, however, that excessive presence of roads, parking and cars can itself be a deterrent to visitors and can threaten the vitality of the town;
- Poor access to the railway station, by all modes, and the poor quality of the station itself was seen by many as a major issue for Banbury, though improvements to the rail service itself were applauded;
- The town centre:
    - People could be encouraged to live in the town centre;
    - Appropriate conditions should be provided for the town centre to prosper including providing good accessibility;
    - Pedestrians could be given more priority over traffic;
    - The area around Banbury Cross could be re-planned to provide a more attractive environment;
- Residents living in or near the town centre and in streets near the hospital are finding difficulty in parking near their home;
- Access from the villages and rural areas to Banbury was heavily reliant on the car, and people without cars found public transport to be inconvenient or lacking altogether.

5.3 *Issues on which progress has been made*

5.3.1 During the course of the BITLUS study, work has been continuing on a number of aspects identified as importanrt for the town. An attempt is made to summarise the actions taken to date (June 2000) and progress made, though it is recognised that the list may not be comprehensive.

1 Rural Buses: A new "Cherwell Valley Taxi-Bus" service will be implemented following a successful bid for funds through the rural bus challenge scheme. This will help to increase the number of people who have access to Banbury and Oxford by public transport.

2 Middleton Road environmental improvements: From May 2000 a weight restriction order (banning vehicles in excess of 7.5 tonnes gross weight) on Middleton Road just west of Ermont Way has been implemented to reduce the number of heavy goods vehicles passing through Grimsbury.

3 Cycle Ways: The County Council has continued to develop the cycle route network in Banbury. Revisions to the earlier planned network have been made as advised in BITLUS, including the removal of cycling on footways where possible. ***(See Photo 5)***

4 Station refurbishment and interchange: Refurbishment of the station is under way and this includes a new pedestrian access way across the station into the Cattlemarket future development area. Chiltern Railways have expressed a willingness to cooperate in implementing the multi-mode interchange, and have drawn up initial plans for treatment of the area outside the station, and for access ways, including a new link through to Cherwell Street. (The latter is similar to that proposed by Llewelyn-Davies, but on a different alignment.)

5 Horse Fair, North and South Bar "traffic cap": The suggested measures are now being developed into detailed proposals by the County's own consultants. ***(See Photos 3 and 4)***

6 Bus priority: The County's consultants are drawing up plans for bus priority measures in Middleton Road and Cherwell Street. These will make a useful short term contribute to the wider improvements in bus operating conditions advocated in the BITLUS Options.

7 Housing in the town centre: Some schemes are already under discussion or the subject of planning applications, for housing or mixed use development on sites within or close to the town centre, as advocated in the BITLUS Options. Such schemes are to be encouraged wherever possible as they reduce pressure on green field sites. ***(See Photo 6)***

8 Housing growth in Banbury: Considerable progress has been made in deciding the most appropriate directions for housing. Apart from the statutory processes through the Cherwell Local Plan Review, developers have shown great interest in the principles set out in BITLUS, and have instructed their consultants to develop appropriate transport and access proposals.

9 Town bus service improvements: The entry of a new operator to banbury, initially with services to Bretch Hill, opens up competition and hence the prospect of more active negotiation of a Bus Quality Partnership. This can be taken forward by the County and District Councils.

10 Hennef Way: An initial phase of improvements involving the installation of signals to reduce congestion at critical junctions is

being progressed by the County Council. This work is consistent with both the BITLUS Options presented in this report.

11 Soft Measures: The need for soft measures (e.g. locally targeted Travelwise campaigns including safe routes to school and Green Commuter Plans) is accepted by the Councils. Progress has been made on a Green Travel Plan for Cherwell District Council offices, and plans are being drawn up for discussions with key employers in the town.

Here are

Photo 3 Horse Fair: It is not just traffic that can dominate the environment, but railings and signs and other clutter associated with traffic. This area could become much more attractive and a more pleasant place in which to stroll.

Photo 4 Pedestrians deserve a safer and more pleasant environment, especially in an attractive historic area like Horse Fair.

Here are

Photo 5 The Oxford Road, Bloxham Road junction presents a challenge. The BITLUS proposals include the removal of cyclists from the footways and the provision of pedestrian-only signals. North-South traffic should be encouraged to use the alternative route via Cherwell Street and Concorde Avenue.

Photo 6 Banbury is fortunate in having a substantial proportion of the population living within a 10 minute walk of the town centre. High density housing in this area continues to be built, helping to reduce pressure to develop greenfield sites, and enabling residents to reach facilities without being dependent on their cars.

6 *Travel in Banbury Today and in the Future*

6.1 *Introduction*

6.1.1 This Section describes travel in Banbury today in detail, setting out findings from the surveys of people's travel behaviour. The likely level of growth in car use is then considered, and the impacts are discussed.

6.2 *Travel in Banbury and its hinterland*

6.2.1 The household and schools survey[10] revealed that car driver trips account for well over half of all trips made (55% - 60%). This is much higher than the average for all similar areas, which is below 50 %. What can be said with some certainty is:

- Banbury is certainly not less, and is probably more car orientated than other similar areas in Britain;
- the proportion of trips by car drivers is high in Banbury, and much higher still in the rural areas around Banbury; and
- the proportion of trips made by cycling, and by bus is currently small.

6.2.2 The predominance of the car means that a small percentage switch of trips away from the car will mean a large percentage increase in the non-car modes. If the switch is from car to bus, this can have major significance for the extent of enhancement required in bus services, both to attract users away from the car, and to provide adequate capacity for them. For example a 10% reduction in car trips could result in a 100% increase in trips by bus.

6.2.3 Bus travel focuses on town centre trips, especially at off-peak times, and for school. The Bretch Hill services are the most frequent services in the town, and the most heavily used, and have become the suibject of competition between rival operators. Other services attract less passengers and apparently are less commercially viable. Travel to the town centre from Grimsbury faces stronger competition from walking and cycling than from the more distant suburbs, and the bus service receives a subsidy. Village bus sevices account for an insignificant proportion of travel from those areas, but are nonetheless important for those who have no choice. Bus travel to work is relatively low, and the circular route serving the industrial estates was withdrawn early in 1999 due to lack of patronage.

[10] BITLUS Stage 2 Report, Appendix E "Household Survey" and Appendix F "Schools Survey".

6.2.4 The most heavily trafficked road in Banbury is Hennef Way. Other busy roads with peak flows in excess of 1500 vehicles per hour include the main North-South routes (Southam Road, Concord Avenue/Cherwell Street/North and South Bar and Oxford Road) and Ruscote Avenue and Warwick Road. The SATURN model surveys in 1993 provided a comprehensive picture of traffic flows in the town. Although volumes will have increased, the relative picture is similar today.

6.2.5 Cycling accounts for a small proportion of trips in Banbury, around the average for the South East (2%). The main cycle flows between residential areas and the industrial estates are more than double the flows into the town centre at peak hours. Off-peak flows are less than half the peak flows (hourly rates), and are more evely distributed between employment, town centre and residential areas. [11]

6.2.6 Peak hour walk trips are heavily dominated by town centre and school destinations. Walk trips to the industrial areas account for only 10% of trips, compared to over 40% to the town centre, and 40% to residential and school areas. The balance are walk trips outside Banbury itself.

6.2.7 As with cycling, the distribution of walk trips is even more diverse at off-peak times, reflecting different journey purposes, but the town centre is still important with 30% of all trips. The walk trips per hour are less than half the peak hour rate (40%).

6.2.8 Data from the train operating company shows that London is the predominant destination for people using Banbury station, accounting for over 40% of all journeys. This is followed by Oxford (13%) and Birmingham (8%). All other destinations account for less than 3% each of total journeys. London is also the largest single origin of passengers arriving at Banbury (20% of total). Oxford and Bicester supply just over 10% each. 70% of passengers from Banbury station on weekdays travel before 9.00am. The total passengers using Banbury station in the last financial year was 650,000 of which 75% were travelling from, and 25% were travelling to Banbury.[12]

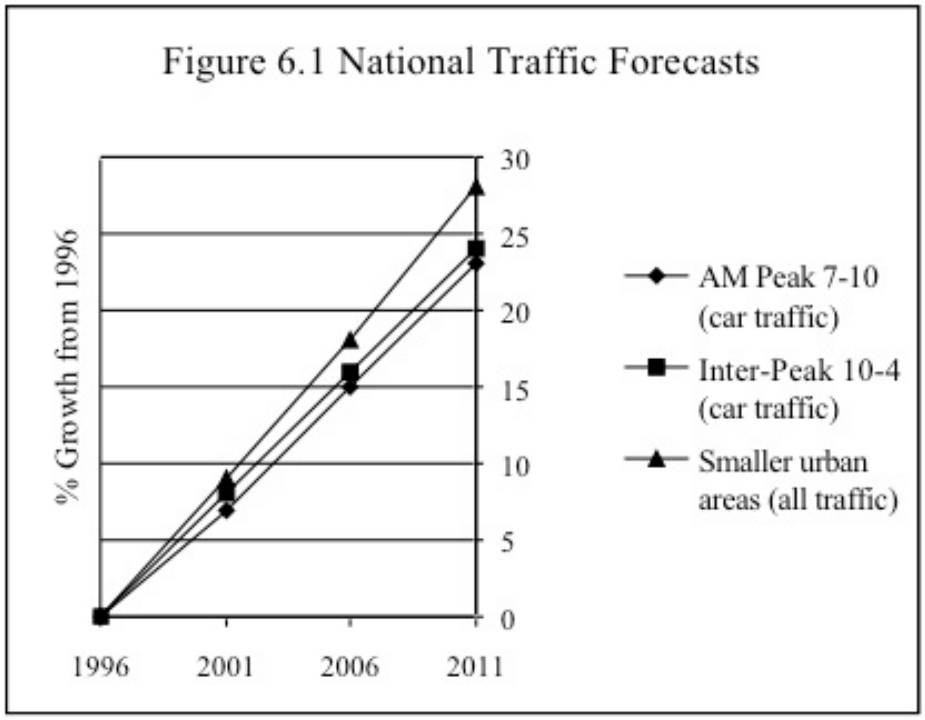
[11] BITLUS Stage 2 Report, Appendix G "Cycle Survey"

[12] Data kindly supplied by Chiltern Railways

6.3 *Traffic growth in Banbury to 2011*

6.3.1 The National Road Traffic Forecasts (1997) suggest that traffic will grow substantially between now and 2011, the target date for the Local Plan. This growth is shown in the Figure below. Source: National Road Traffic Forecasts, 1997

Figure 6.1 National Traffic Forecasts



6.3.2 As shown in Figure 6.1, the scale of forecast traffic growth is substantial – between a fifth and a quarter as much traffic again by 2011 compared to 1996. The rate of growth in market towns and surrounding areas is likely to be higher than average, as indicated in the figure. Although these forecasts could be influenced by policy at the local as well as the national level, the measures that would cause a downward revision have yet to be implemented. Looking even further ahead, recent studies have suggested that on rural roads in Oxfordshire (B, C and minor roads classification), traffic is likely to grow by 50% by 2030, even if measures to limit traffic growth as outlined in the 1998 Transport White Paper are successful. Without such measures, traffic on rural roads is estimated to double.[13]

[13] CPRE, 1999, "Traffic Trauma or Tranquillity?".

6.4 *How will traffic growth affect Banbury and its hinterland?*

6.4.1 Additional traffic is likely to be generated by the in-migration of new households to Cherwell. Furthermore, because journey lengths generally are increasing, the rate of ***traffic*** growth (as opposed to ***trip*** growth) could be higher still. New residents are especially likely to generate disproportionately high car traffic, as shown by studies in other Oxfordshire towns. Overall if policy is unchanged, daily road traffic flows in 2011 can be expected to rise to levels 25% higher than today. This includes traffic all day, not just peak hours.

6.4.2 For modelling purpose, it has been assumed that traffic growth will also result from the opening of the Castle Quay Centre in 2000. In practice there may be few extra trips generated in total in the study area, but there will be a significant change in shopping destinations and a consequent shift in traffic patterns to the central Banbury area from competing centres such as Northampton, Oxford and Leamington Spa. This will mean more traffic in Banbury itself, but less traffic on the roads linking with competing centres. Overall, if shopping journey lengths are reduced, there will be less vehicle miles, but the benefits of that will not be felt in Banbury itself. On the other hand, if Banbury attracts new visitors away from the catchment areas of competing towns, overall traffic will increase in Banbury and the roads feeding it.

6.4.3 The impact of the expected growth in car use will be dramatic in terms of increased congestion, noise, air pollution and danger from traffic, and environmental degradation.

6.4.4 To help visualise the extent of the impact, the 2011 peak and off-peak car matrices developed within the multi-mode model have been compared with the base year matrices (1989). This shows that roads in Banbury will be busier and more congested at ***off-peak*** times than they currently are at ***peak*** periods, in fact around 10% busier than current peak periods. This will apply to the town centre, residential areas, and the rural areas around the town. The difference will not be so marked on roads within the industrial areas.

6.4.5 At peak hours by 2011 the higher traffic volumes will cause:

- Longer traffic queues and delays on the main road network;
- Higher traffic levels on residential roads as drivers seek to avoid queues on the main roads; and
- Higher traffic on rural roads around Banbury as drivers seek to avoid congestion in the town.

6.4.6 Traffic levels on non-market days are likely to be higher than are currently experienced on market days. On market days, traffic levels are likely to be higher than have so far been experienced in Banbury, except perhaps during the pre-Christmas shopping peak.

6.4.7 In short, by 2011 there will be little respite from heavy and congested traffic conditions at any time during the day. The change to Sunday trading and longer opening hours of shops and other facilities will further extend the periods of congestion and heavy traffic.

6.4.8 The most affected roads are those more sensitive to environmental damage caused by traffic. Sensitive routes are the arterial routes into the town which are lined with residential and mixed use development, and which have significant pedestrian activity, and roads in the town centre which are open to through traffic. Routes which are most environmentally sensitive to traffic are judged to be:

- North/South Bar;
- Middleton Road;
- Bridge Street;
- High Street and George Street; and
- West Bar.

6.4.9 Arterial routes with development fronting them which are also sensitive to traffic impact are:

- Bloxham Road;
- Broughton Road;
- Oxford Road; and
- Warwick Road.

7 *The BITLUS Philosophy and the Potential for Mode Shift*

7.1 *Introduction*

7.1.1 This Section sets out the BITLUS approach to meeting the agreed objectives and shows how it is intended to tackle the impending growth in car traffic and the associated problems it will bring.

7.2 *The BITLUS Philosophy*

7.2.1 Faced with the problems of traffic growth, four scenarios were considered:

1. Do nothing and traffic grows in line with NRTF forecasts.
2. Introduce carrot measures only and traffic growth is slightly less than forecast.
3. Introduce both stick and carrot measures designed to stabilise traffic at current levels up to 2011, despite population growth (i.e. requiring a reduction of per capita car trip rates).
4. Introduce both stick and carrot measures designed to reduce traffic in absolute terms by 2011, requiring a greater reduction of per capita car trip rates.

7.2.2 Scenario 3 was established for the study as a realistic framework for improving travel and stabilising environmental impacts over the next decade. This was agreed by the Members' Steering Group and became the study aim.

The aim of BITLUS is to produce an integrated package of measures that allow the town to grow without any growth in traffic.

The basic approach is to halt the tendency for people to switch to car use, and to encourage them to make more use

of alternative modes, and to use land use measures to reduce dependence on cars.

7.2.3 *Current perceptions*

7.2.4 Public consultation suggested that many of the residents of Banbury and its hinterland do not currently perceive themselves to have serious travel problems. There also appeared to be little concern about how conditions could worsen in future if traffic growth trends continue. Congestion on Hennef Way was a concern for some, but issues of the environmental impacts of traffic on sensitive routes or air pollution were hardly mentioned. Clearly there is scope for raising the level of understanding of the issues, and BITLUS itself may have helped with this.

7.2.5 *Shifting the balance*

7.2.6 BITLUS is not about draconian anti-car measures. The car will continue to be used for the majority of journeys, and the study Options include a number of measures which seek to manage its use so as to provide benefit for a wide range of users. However, there are some trips for which the use of alternative modes can be achieved relatively easily, and it is here that the BITLUS effort is concentrated.

7.2.7 *Avoiding new car trips*

7.2.8 This does not necessarily involve people giving up car trips they make at present. But people's travel patterns change from time to time as their life goes on: They grow up, they start a family, or live alone again, they have children who start school, and leave school, they change jobs and their interests, and their social life changes. All these minor and major "life changes" result in changed travel patterns and choices for each individual. The aim is to ensure that when these changes occur, decisions are made which result in slightly less reliance on the car.

7.2.9 When we refer to "mode switch" away from the car, this also means "not switching to the car" when travel changes are made over time. The latter may be referred to as "traffic avoidance". For example, a parent who currently drives their child to school could decide to stop doing this on a regular basis. This would be "mode switch". Equally relevant is the decision by the parents of children who are starting school as to how they will make the journey. If they decide not to use the car to get the child to and from school, this will be "traffic avoidance".

7.2.10 Thus by influencing people when they come to make travel decisions, we can shape the pattern of travel over time. In the main, it is neither desirable nor necessary to stop individuals from travelling as they choose.

7.3 *The Potential for Mode Shift*

7.3.1 Measures to influence travel decisions in the way required will mostly operate "at the margins" of choice. Most changes will not be dramatic, nor need they be.

7.3.2 To meet the aim of stable traffic levels in Banbury, we must

- influence existing residents travel decisions so that they do not start making new trips by car;
- aim to shift some car trips to a non-car mode over time, say one less per week per person (out of an average of 12); and
- ensure that new residents coming in to the area adopt travel patterns that are no more reliant on cars than existing residents.

7.3.3 The household survey found that in Banbury four out of five people who feel completely dependent on the car would like to be less so in future. Even in the villages and rural areas the figure is two out of five. Overall one half of the respondents said they would like to be less dependent on the car than they are at present. This indicates strong though not universal support for the aim of the study.

7.3.4 The survey also shows the potential for switching to non-car modes of travel, provided that the quality of travel by these modes is sufficiently improved. Understanding and perception of such quality is also required, hence the importance of soft measures in keeping people up to date with changes, and in raising awareness.

7.3.5 Improving the level of service offered by all non-car modes is the key challenge. The survey found that almost 9 out of 10 recorded car trips could in some circumstance be made by bus, given adequate quality. Only 1 in 10 could in no circumstance be made by bus.

7.3.6 Switching to walking and cycling may offer less potential in Banbury than the bus. Most of the car journeys recorded could not switch to the non-motorised modes because the distance was too far, or the loads carried were too great. In fact, only 1 in 10 of recorded trips could easily switch to walk or cycle by improvements to facilities.

7.3.7 However, as already discussed, people change their destinations from time to time, and could choose closer destinations to which they could walk or cycle. In these cases a change of trip also results in a change of mode.

7.3.8 The conclusion here is that travel choices can change, and that in and around Banbury the most important opportunity is for upgrading the quality and increasing the use of buses.

8 *Options Developed in Stage 2*

8.1 *Introduction*

8.1.1 This section explains the initial Options developed for Stage 2 of the study. These consisted of a "Starter Kit" of measures that were agreed for short-term implementation, and three "option packages" of further measures. These were agreed by the commissioning authorities for the purpose of public consultation.

8.1.2 Many of the measures included in these initial options have been incorporated into the two Stage 3 consolidated Options. This section provides an overview of the Stage 2 options, including a brief description of the individual measures. The appraisal of these measures is included in the performance testing of the Stage 3 Options (See Section 9).

Main focus of the Stage 2 option packages

- **Starter Kit:** Measures agreed to be taken forward quickly. Progress has been made on some of these starter kit measures even during the study period. The starter kit measures form part of all the following options.
- **Option 1 "Getting Banbury to Work"**: tackling peak hour road congestion as the perceived main traffic problem in Banbury.
- **Option 2 "Going to Town"**: emphasises improved access and environmental conditions in the town centre. Focuses on ways of giving priority to and increasing the travel by foot, bicycle and bus.
- **Option 3 "To Banbury and Beyond"**: gives equal consideration to access and environmental conditions throughout the town and travel in Banbury's rural hinterland. It emphasises all types of travel, not just shopping and commuting.

8.2 *The Starter Kit*

8.2.1 The Starter Kit consists of a series of measures which it has been agreed should be implemented irrespective of the further measures that are eventually selected. The ten Starter Kit measures, which can be implemented in isolation, are set out below.

1 **Horsefair/North/South Bar "Traffic Cap".** The opening of the M40 and also the Concord Avenue/Cherwell Street/Upper Windsor Street route between them have provided the opportunity to downgrade the traffic function of the Horsefair route, which is much less suited to a traffic function in view of its conservation area status and concentration of listed buildings. It also includes Banbury Cross, which is an attraction for visitors. The principle of the "traffic cap" is to implement traffic management measures that will avoid traffic building up on this route.

2 **High density mixed use development east and west of the railway station, including the cattle market site.** Refurbishment of the station to include a multi-mode interchange (bus/taxi/cycle/car) via Bridge Street in the short term, and a new link for bus, cycle and pedestrians as part of longer term redevelopment of sites west of the railway. The scheme also includes a new pedestrian link across the railway.

3 **Development of a public transport "Quality Partnership"** with local bus and rail operators. The full content of the agreements will depend on the particular option Option of measures selected, but the principles are to be established at an early stage. Some progress with this has already been made.

4 **New housing to be developed in accordance with sustainable transport principles** including: cycle and public transport spine routes in all substantial new housing areas; develop housing and other uses on a permeable "modified grid" format rather than "loops and lollipops" format as in recent developments; provide residential parking in communal areas (overlooked and close to the houses served), and reduce rates of provision, especially within the town centre "ped-shed"[14]; provide cycle storage areas in all new housing; local facilities to be provided within an easy walk of major new housing schemes. ***(See Photos 6 and 10)***

5 **Remove footway cycle routes** within the town (i.e. within the 30 mph speed limit area) as far as possible and reallocate carriageway

[14] "Ped-shed" is a term used to denote the area that is within a reasonable walking distance of the main town centre facilities, for example within 1 kilometre of Castle Quay or Banbury Cross.

space to dedicated cycle lanes or "shared strips"[15] available for cyclists. Such "on road" provision should be enhanced with advanced stop-lines at signal junctions, as well as dedicated signals and other facilities. In reviewing the use of shared footway/cycleways in Banbury, these should remain or be considered only where there are no disadvantages for pedestrians, where there is adequate width for separation, and clear benefits to cyclists. ***(See Photos 5 and 7)***

6 **Provide more cycle parking** at busy town centre locations, and at the bus and rail stations. Cycle parking to be required in all new non-residential developments.

7 **Pedestrian phases to be provided at all signalled intersections** within the town and pedestrian crossing facilities to be provided at suitable locations on "traffic priority" and "mixed priority" roads. These are roads where motorised traffic is channelled and where traffic speeds of over 20 mph mean that there is a need to provide special facilities for pedestrians. ***(See Photos 8 and 9)***

8 **Parking in new development** to be in line with guidance in revised Regional Planning Guidance for the South East (RPG9), and in revised PPG13 (draft in 1999, final due in late 2000).

9 **Traffic signals and road widening on Hennef Way** to tackle immediate congestion problems, which include occasional queues affecting the M40. This includes local widening to provide a second westbound lane approaching the junction with Concord Avenue. Widening of the railway bridge can be avoided.

10 **Two inner Banbury Controlled Parking Zones** (north and south) should be created with residents' parking available throughout, and a residents-only parking zone for streets surrounding the hospital. The CPZs would consist of a core "charge zone" which includes residents-only spaces and in which non-residents pay for on-street parking, and a "buffer zone" which includes residents-only spaces and defined spaces for town centre visitors for which no payment is required.

11 Implementation of the Banbury section of the National Cycle Network, as committed for completion by June 2000.

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[15] "Shared strips" are distinctively marked/paved lanes alongside narrowed main driving lanes. The main carriageway accommodates two cars passing, but larger vehicles must straddle the shared strips when passing. Cyclists share these strips with the larger vehicles.

Here is

Photo 7 Cycling is not generally compatible with walking in urban areas. It creates dangers and uncertainty, especially for pedestrians, but for cyclists also. The BITLUS proposals include the removal of cycle facilities on footways within the Banbury, such as this one in South Bar Street.

Photo 8 The key junction at Warwick Road and North Bar Street will benefit from better layout and provision of pedestrian traffic signals. The corner site currently a temporary car park is suitable for high density, high quality mixed use development including residential.

Here is

Photo 9 Pedestrian signals will bring major improvement at Bridge Street and Cherwell Street, the main pedestrian access between the town centre, bus station and railway station. BITLUS proposals will reduce traffic on Bridge Street, creating spare capacity to incorporate a pedestrian-only phase at the signals.

Photo 10 The design of recent housing in the suburban areas of Banbury, by contrast, is unattractive and inconvenient for movement on foot or by bicycle. Cul-de-sac schemes such as that illustrated above are also difficult to serve by bus. Future schemes should have easier access for pedestrians and cyclists, with direct routes to and through the housing areas. Routes for buses also need to be built-in. High quality urban design is now strongly advocated by recent Government guidance.

8.3 *Option 1: "Getting Banbury to Work"*

8.3.1 This Option tackles peak hour road congestion. It aims to reduce car driver commuting to the town centre and other employment areas. It promotes and gives priority to walking and cycle and public transport use for such journeys.

8.3.2 The Option contains the following measures:

1 **New housing:** housing is concentrated in the town centre and areas closest to industrial areas and Cherwell valley. The aim is to reduce journey to work distance and to facilitate walk and cycle trips.

2 **Other development:** further industrial developments are concentrated in or adjacent to current employment areas.

3 **Public transport:** Improved bus services at peak hours serving industrial areas and town centre. These consist of providing additional services in the peak to the town services to provide a bus every 15 minutes and increasing the peak frequency of the Chipping Norton service to every 15 minutes. Park & Ride at Hennef Way junction with M40 and possibly at Oxford Road was seen as consistent with the strategy, but its feasibility was not demonstrated for the short to medium term.

4 **Soft measures:** Green Commuter Plans with local employers. New specially appointed council staff would negotiate these.

5 **Cycle measures**: Construction of a new off-road route via the Cherwell valley serving south and north Banbury housing, industrial employment areas and the town centre. There are a number of possible alignments through the Cherwell valley towards Cherwell Heights, so the route in this area is indicative only. Cycle storage built into new housing around Cherwell valley.

6 **Traffic management and road space reallocation**: Closure of Middleton Road to private vehicular traffic in peak hours. This would probably involve the use of rising bollards together with advance warning signs at Hennef Way and Bridge Street, and within Grimsbury.

7 **Parking**: Reduce the stock of long stay public car parking spaces by around 300 spaces and increase long stay parking charges to £3 per day. This was judged to be high enough to moderate demand without putting Banbury out of step with competing centres.

8 **Pedestrians**: Improved footways and crossings on routes to employment areas, including crossings on major roads such as Ruscote Avenue.

8.4 *Option 2: "Going to Town"*

8.4.1 Option 2 tackles town centre environmental conditions and provides priority access to the town centre on foot, bicycle and bus. It encourages car drivers, especially those for whom an alternative mode is readily available (i.e. living within a ten-minute walk or in areas served by good public transport and /or cycle ways). The Option promotes access to the town centre on foot and by bus/rail. The pedestrian-priority areas of the town centre are extended, making Banbury a pleasanr place in which to stroll and to do business.

8.4.2 Option 2 contains the following measures:

1 **New housing:** Housing is concentrated in the town centre and its ten minute walk-in catchment, and in areas easily served by bus. This maximises the population within a walk or cycle distance of the town centre or within easy reach of good bus routes.

2 **Mixed-use development concentrated in town centre walk-in catchment**: mixed-use development is located within or close to the town centre.

3 **Public Transport:** Restructure bus routes in the town centre so that all buses use George Street and High Street, a route that will be open only to buses and access traffic (i.e. closed as a through route to traffic other than buses). This will enable services to be run more reliably, and will cut bus operating times, so enabling greater frequency with a given number of buses. Banbury Cross becomes a major bus alighting and boarding point to and from all areas. This will be located at the western end of High Street, from which other traffic will be removed. An enhanced Shopper Shuttle between Tesco, the town centre and Sainsbury's is suggested. This would enable linked trips to the town centre by superstore shoppers, and enable town centre visitors to visit the superstores. Provision of links to the railway station achieved by extension of route B5, buses to Grimsbury calling at the station as in the Starter Kit. Through ticketing is provided for bus and rail affecting services calling at the station. A shuttle bus linking the station, town centre and and Banbury Cross is suggested. Middleton road is open to buses, pedestrians and cycles only at the railway bridge. There are improved off-peak and evening services to town centre. The Quality Partnership will include other aspects of public

transport quality such as special fares, through ticketing, marketing and information. The final plan for how bus routes would operate would need to be developed through the quality partnership. In the short term, other bus priority measures could be implemented, for example in Cherwell Street. Bus priority in Cherwell Street (south of Bridge street) will be desirable until and unless the new George Street-Station link is completed and can be pursued in the short term.

4 **Soft measures:** These involve **t**rader and CDC incentives for town centre visitors to switch modes of travel. They would need to be developed and negotiated using the "mobility manager" dedicated staff resources.

5 **Cycle measures:** Cycle lanes and priority measures are provided on all radial routes to town centre. Cycle parking is provided in town centre locations and secure lockers are also provided at the station. Efforts should be made to achieve a cycle sale, hire and repair centre at the station in line with best European practice.

6 **Traffic management and road space reallocation:** Preferential bus/cycle routes are provided between housing areas and the town centre. North-South Bar is converted to a "green route" with bus, cycle and pedestrian priority with space converted from carriageway and parking to other more attractive uses. A new public square at Banbury Cross would be created, linking the Cross with the footway on the south east corner. This builds on the starter kit measures to "cap" traffic capacity of this route. There would be a loss of some parking space. Bridge Street is converted to buses, cycles and pedestrians only both sides of the Concord Avenue junction.[16] ***(See Photo 9)*** This means that there would be no direct access to the town centre from Middleton Road by car and that the station is accessed via Tramway Road and/or the new George Street link. It must be stressed that there are a number of ways in which access to the station could be organised, and that the measures presented are indicative.

7 **Parking:** The parking management strategy is designed to fullfil the requirements of Government guidance on demand management. The measures described here are *indicative only* for use in the modelling exercise. Short stay parking provision is reduced by 250 spaces. Short stay parking charges increase to 30p per hour and medium stay parking to £1.50 for 3 hours. These prices more closely compare with return bus fares to improve the

[16] There should be detailed consultation and study of access requirements for emergency and other service vehicles.

competitiveness of the bus. Long stay charges would be £3 a day as in Option 1.

8 **Pedestrians:** Improved pedestrian access is provided between town centre and adjoining areas though the Starter Kit and other measures described. The aim is to make walking to the town centre safer and more pleasant, abut also somewhat quicker and thus extend the walk-in catchment. The Option includes limiting motor vehicle access during the day and repaving of Parsons Street and Market Place. For example, there could be no vehicular access between 10 a.m. and 5 p.m. for all vehicles except orange badge holders, who would be allowed to use the streets from 3 p.m. or 4 p.m. onwards. Outside these times, vehicular traffic would be for access only. A new pedestrian square would be created at Banbury Cross. ***(See Photos 11 and 12 of Banbury Cross, Photo 13 of market Place and Photo 14 of Parsons Street)***

Here is

Photo 11 The Cross is the heart of historic Banbury. Yet at present it is stranded in the centre of a traffic roundabout. It deserves a better setting. BITLUS proposals to convert High Street and George Street to a bus priority route (open only to buses, cycles, access traffic and of course pedestrians) will allow the creation of a high quality environment where High Street meets Horse Fair, with a lot more space for pedestrians, and less domination by vehicle traffic. In the longer term the junction could be re-configured to link the Cross with the existing footway area on the south east corner.

Photo 12 (as 9)

Here is

Photo 13 Market Place is used for parking on non-market days. BITLUS proposals include the pedestrianisation of Market Place for most of the day to create a safer and more pleasant environment for shoppers, tourists and visitors. This is more important now that the new Castle Quay centre is bringing more people into the town.

Photo 14 The older established shops in Market Place and Parsons Street also need to have a high quality environment to attract customers, so that people will stay longer, and visit more frequently.

8.5 *Option 3: "To Banbury and Beyond"*

8.5.1 Option 3 was designed to tackle environmental, accessibility and safety issues, including issues related to suburban and rural areas as well as the town centre. It aimed to halt the growth of motorised traffic generally by targeting car driver commuting, car driver shoppers to selected areas, and school escort by car. It promotes public transport and cycling throughout the study area, and the provision of local facilities to avoid the need for motorised travel in residential areas and villages.

8.5.2 Option 3 contains the following measures:

1. **New housing:** Housing within the Banbury area to be located entirely within Banbury or peripheral extensions to the town. This approach places a "cap" on car-dependent population in villages and rural areas. Planned village expansions would be limited to those with good cycle and bus opportunities. Applications for housing on windfall sites in other rural locations would be refused.

2. **Other development:** Local facilities to be provided in new housing areas.

3. **Public Transport:** Town bus services are restructured to provide services which run back and forth across the town. The service is given a strong an identity and is heavily marketed, perhaps as the "Banbury Cross-Bus". The number of such services that can be supported and their routing will need to be developed in partnership with the operators, and in the light of decisions as to the location of housing growth. All services are high frequency, and are run to clock-face timings (i.e. at the same times past each hour). The bus fleet consists of low-floor buses that are accessible to all. Bus boarders are provided as required throughout network.[17] Published and real-time information is provided. The restructured services are aiming for a quantum leap in the perception and quality of the bus service. This will require major planning effort and investment, and partnership with the bus and rail operates. ***(See Photo 15)***

4. **Rural bus improvements:** "Demand responsive" services are initiated. Bus shelters are provided in Banbury's hinterland areas. "Maxi Taxi" demand responsive door-to-door services are provided

[17] Bus boarders are created by extending the footway into the carriageway in place of kerbside parking, to enable buses to pull into the kerb, and to enable waiting passengers to see and be seen. They also provide space for bus shelters without obstructing the footway.

for the town, e.g. evenings. Extra buses that are required to operate peak hour services can also be used off-peak to enhance the village services. Fares initiatives including discounted seasons and off-peak family use are introduced. Cycle parking at key bus stops and/or cycle racks on buses are provided.

5 **Soft measures:** Better Routes to School, and neighbourhood Travelwise campaigns are included. As with the other Options dedicated staff resources in the form of a "mobility manager" would be provided.

6 **Cycle measures:** A network of cycle routes to serve secondary schools, town centre, employment areas and nearby villages, and link with National Route is developed, including for new housing areas. Pedestrian and cycle "green lanes" are implemented linking Banbury to near villages (Chacombe 6km, Middleton Cheney 5km, Kings Sutton 6 km, Adderbury 6 km via river, Bloxham 5km, Cropredy 6 km, Great Bourton 6km). The aim is to use routes that have light motor traffic, for example access traffic only. ***(See Photo 16)***

7 **Traffic management and road space reallocation**: Traffic calming measures are introduced in some further areas to achieve a comprehensive speed management strategy. HGV routes are allocated through the town to reduce the impact on sensitive locations. Other routes may be open to HGVs for access purposes. These are the "traffic priority" and "mixed priority" routes referred to in the speed management strategy. Middleton Road is converted to a "green route". A comprehensive speed management strategy is included, as set out in Table 8.1.

8 **Parking**: Charge structure with hourly rate increasing with length of stay. This assumes that visitors from longer distance stay longer and are less price-sensitive than visitors from short distances. The assumption is made that parking charges in competing centres will remain stable. Decisions on charges in Banbury should take account of charges in competing centres. The indicative charges included in this option are: short stay parking an average of 40p per hour, increasing to 60p an hour for a three-hour stay. Long stay parking is £3 for the day. The Option introduces employee parking charges in the longer term, plus other private non-residential parking charges if and when legislation is available. The inner controlled parking zone is supplemented by further on-street parking controls around schools and new development is implemented with reduced parking standards. New residential development has reduced parking provision of up to 1 space per dwelling in the town centre walk-in catchment, and up to 2 spaces

per dwelling elsewhere communally provided. However, each residential scheme would need be to individually assessed within this framework, in line with advice in PPG3.

9 **Pedestrians:** Improved footways and lighting are provided on routes to school, hospital and leisure locations. Crossing facilities are included throughout town at identified locations. Improved pedestrian links are provided to the nearest villages. Routes to school are developed to increase the proportion of school journeys made without a car, and to enhance safety and security for children and parents. This will involve traffic calming measures as well as "soft measures". (See below).

Table 8.1 Speed management classification

"Traffic Priority" roads	30 mph, through routes, protection for pedestrians and cyclists, bus priority as appropriate
"Mixed Priority" roads	20-25 mph, through route except HGV traffic, greater priority to pedestrians, cyclists, buses, frequent and generous crossing facilities
"Living and Pedestrian Priority" roads/streets	10-20 mph including 20 mph zones, possible "home zones" in quiet streets, traffic calming measures to guarantee low speeds and calm driving.

Here is

Photo 15 Bus services attract more passengers if they run frequently with high quality fully accessible vehicles. Banbury bus services can be greatly improved through a Bus Quality Partnership between the local authorities and bus operators. BITLUS proposals include restructuring bus routes to provide greater priority and direct links across town, not just to the town centre. This is the "Banbury Cross Bus" concept.

Photo 16 The villages in the area around Banbury are suffering from a gradual increase in traffic on their narrow roads, and increasing pressure of demand for parking at their shops and local facilities. The BITLUS proposals include the provision of better bus services and "green lanes" for walkers and cyclists to near villages such as Middleton Cheney (pictured) which lies only 5km from Banbury town centre.

8.6 *Summary of performance testing of these Options*

8.6.1 The performance testing of the Options suggests that while they are effective in helping to meet the study objectives in principle, they are not sufficiently powerful to counteract the predicted high levels of traffic growth over the next 10 years[18]. This is mainly because the predicted traffic growth is influenced by factors outside the scope of BITLUS such as rising car ownership, fuel costs and taxation.

8.6.2 The performance results suggested that soft measures will be important in avoiding traffic growth. If people deciding to make more use of cars could be avoided, either of the Options would be sufficient to counteract the traffic growth caused by new residents coming to the area over the next ten years. Soft measures will have a key role to play in securing this traffic avoidance as well as mode switch. Combined with the package of physical measures, they aim to:

- persuade existing residents to make less car trips per week than they do now;
- persuade people not to switch to car for any trips currently made by other modes; and
- persuade new residents of Banbury not to use cars to any greater extent than present residents do.

8.7 *Public responses*

8.7.1 Not surprisingly, increased town centre parking charges are disliked by many people. Road closures are also a sensitive issue. This means that while the performance testing showed that tougher measures to discourage car use are required, such action would be likely to increase public hostility to BITLUS proposals. On the other hand, the measures that produce the compensating benefits, such as the redevelopment of the station area, the provision of a pedestrian square at Banbury Cross and improvements to the bus services, are strongly supported. Some of these benefits will not easily be achieved without the simultaneous introduction of the less palatable demand management measures.

8.7.2 Measures to reduce delays on Hennef Way are widely supported, and this is often expressed in terms of support specifically for the dualling of Hennef Way throughout its length.

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[18] Predicted by the National Road Traffic Forecasts and applied to the Banbury area.

8.7.3 More efforts by the local authorities could be made to explain to the public the purpose of the different key measures and the interaction between them. This would help overcome hostility when difficult choices have to be made.

9 *Options devised in Stage 3*

This section describes the two Options devised in Stage 3 and sets out how they perform against the objectives agreed in Stage 2, and compared to the outcomes that would arise if nothing were done.

9.1 *The two Options*

9.1.1 Two further options were developed in Stage 3 of BITLUS. This followed a decision[19] to develop a "hybrid" option, incorporating features from all the Stage 2 options. The two hybrid options supersede the three options tested in Stage 2. They are referred to in this report as **Options 4 and 5**.

9.1.2 The basic aim of the study (see Section 3) is to allow the town to grow and prosper without any overall growth in motorised traffic. The basic philosophy of BITLUS is to achieve this by encouraging a larger proportion of journeys than at present to be made by modes other than the car (i.e. more walking, cycling and use of public transport). In addition, the land use planning strategy would be aimed at avoiding the generation of new or longer car trips, for example by concentrating as much new housing as possible within walking distance of the town centre.

9.1.3 The measures devised to achieve this, and to meet the other agreed objectives, form the basis of the option packages.

9.1.4 A broad comparison of the two Options is given in Table 9.1, while the full set of measures are shown in Tables (9.2 and 9.3).

9.1.5 A more detailed description of the measures in each of the two packages is given below.

Option 4

9.1.6 The measures included in Option 4 are shown in Table 9.2.

9.1.7 Option 4 is the hybrid package of measures developed by the consultants. It is based largely on the measures developed for the whole of Banbury and its rural hinterland, as presented in Option 3 (Stage 2), and includes demand management measures to encourage mode shift to non-car modes to Banbury town centre. The aim was to simulate (in the strategic computer model) a better contribution to the objective of stabilising traffic volumes than had been demonstrated by Options 1-3. There are small differences between Option 4 measures, and those contained in the earlier Stage 2 Options. First, town centre public parking charges are assumed to

[19] At the BITLUS members; steering group, September 1999.

be slightly higher, in order to test the impact on traffic growth. This change is limited to short-stay and medium-stay spaces, which are mainly used in the interpeak period[20]. Second, the closure of George Street, Parsons Street and Market Place is extended to include the peak as well as interpeak times, but these roads are of minor importance in the network and do not have an appreciable affect on the model output.

Option 5

9.1.8 The measures included in Option 5 are shown in Table 9.3.

9.1.9 Option 5 contains many of the measures included in Option 4, especially measures to improve walking, cycling and public transport. There are important differences, however, which were specified by Oxfordshire County Council and Cherwell District Council. The main differences of this "client" option are the *inclusion* of widening Hennef Way to dual carriageway throughout its length, and the *exclusion* of demand management measures involving increased parking charges at public car parks in the town centre.

9.1.10 Another difference is that for modelling purposes the closure (to general motor traffic) of Middleton Road is envisaged just West of Ermont Way, rather than close to railway bridge as in the other options. This will need further investigation of the effects as well as local consultation to establish the best alternative. There is also the possibility of different forms of bus gate. Some provide bus priority over other traffic rather than closure to other traffic.

9.1.11 These two further options were subjected to a process of testing against the BITLUS objectives, including further runs of the BITLUS strategic multi-mode model. The results of this testing are described below.

[20] The term "interpeak" refers to the period 10am to 4pm on weekdays, as used in the strategic model. The more familiar term "off-peak", which refers to all times other than the peak hours, is also used in this report, but the data all refer to the interpeak.

Table 9.1 Comparison of Options 4 and 5

(This Table gives a summary only – details are given in Tables 9.3 and 9.4)

OPTION 4	OPTION 5	DIFFERENCES
Horsefair/North/South Bar Streets "Traffic Cap"	**Horsefair/North/South Bar Streets** "Traffic Cap"	No difference
High density mixed use **development east and west of the railway station**, including the cattle market site	High density mixed use **development east and west of the railway station**, including the cattle market site	No difference
Refurbishment of the **railway station**. New pedestrian and cycle link across the railway.	Refurbishment of the **railway station**. New pedestrian and cycle link across the railway.	No difference
Short term measures to improve efficiency and safety of multi-mode **interchange at station**. Full **multi-mode interchange** scheme based on new **George Street link**	Short term measures to improve efficiency and safety of multi-mode **interchange at station**. Full **multi-mode interchange** scheme based on new **George Street link**	No difference
Residents' Parking	**Residents' Parking**	No difference
Town centre parking Reduce the stock of ***long stay*** town centre public car parking spaces by around 300 spaces and increase long stay parking charges to £3 per day. Reduce short-stay provision by 250 spaces. Introduce principle of charges in step with return bus fares. Short stay 60p per hour; medium stay parking £2 for 3 hours, long stay £3 a day. (All 1998 prices) (Numbers and charges are indicative for modelling and evaluation purposes only)	**Town centre parking** Monitor on-street parking problems arising from BITLUS measures, and introduce solutions as required. Parking supply and charges unchanged. (*Status quo* assumed for modelling purposes only)	Option 4 includes further parking restraint, especially for long-stay commuters. Option 5 maintains *status quo*
"Quality Partnership" with local bus and rail operators including • Improved buses to industrial areas and town centre. 15 minutes frequency • New buses • George St/High St/Cherwell Street bus priority link and other priority measures • All buses use George Street and High Street • Town bus services restructured to run across the town. • Quality improvements e.g. special fares, through ticketing	**"Quality Partnership"** with local bus and rail operators including • Improved bus services to industrial areas and town centre. • New buses • George St/High St/Cherwell Street bus priority link and other priority measures • All buses use George Street and High Street • Town bus services restructured to run across the town. • Quality improvements e.g. special fares, through ticketing	Main elements no difference but: 1. Bus priority on Middleton Road in Option 5 may be unnecessary in Option 4 2. Bus service frequencies are not specified in Option 5.

• Town centre shuttle bus • Improved village bus services • Town off-peak "Maxi Taxi"	• Town centre shuttle bus • Improved village bus services • Town off-peak "Maxi Taxi".	

(Continued)

OPTION 4	OPTION 5	DIFFERENCES
Rural bus improvements: • Expand Cherwell taxi-bus service • "Demand responsive" services are initiated. • Bus shelters are provided in Banbury's hinterland areas. • Inter-town bus services	**Rural Bus:** • Expand Cherwell taxi-bus service • "Demand responsive" services are initiated. • Bus shelters are provided in Banbury's hinterland areas. • Inter-town bus services	Cherwell Taxi-Bus is a *de facto* measure, but was not included in the model evaluation.
Highway measures: • Signalled junctions and local road widening on **Hennef Way** to tackle immediate congestion problems • Improved footways and crossings on routes to employment areas, including crossings on major roads such as Ruscote Avenue. • Bus gate at junction of Daventry Road/Hennef Way • Middleton Road at Bridge Street conversion to bus/cycle only in conjunction with Hennef Way measures.	**Highway measures:** • Signalise junctions and local widening on Hennef Way in short term to tackle immediate congestion problems • Dualling of Hennef Way from Ermont Way to Concord Avenue and from Concord Avenue to Southam Road • Improved footways and crossings on routes to employment areas, including crossings on major roads such as Ruscote Avenue. • Middleton Road bus, cycle, pedestrian priority in conjunction with Hennef Way measures. • Bus gate at junction of Daventry Road/Hennef Way. • Bus priority measures including bus gate on Middleton Road west of Ermont Way	1. Option 4 includes limited widening of Hennef Way and signal intersections. 2. Option 5 includes dualling of Hennef Way throughout with signalised intersections in the short term 3. Bus gate at town end of Middleton Road in Option 4, but at Ermont Way end in Option 5 (both have advantages and disadvantages)
Cycle measures	**Cycle measures**	No difference
Pedestrian measures	**Pedestrian measures**	No difference
Soft measures	**Soft measures**	No difference
HGV routes	**HGV routes**	No difference
Village links for "slow modes"	**Village links for "slow modes"**	No difference

Notes

1. All measures in the complete 10 year package are combined in each Option. For suggested phasing, see Tables **8.1 and **8.2
2. "Practice measures" (see Tables **8.1 and 8.2) are not included here, but are intended to be the No difference whichever Option was followed

Table 9.2 Option 4 measures

Programme measures:

Years 1-2	Years 3-4	Year 5 and onwards
North/South Bar and Horsefair "Traffic Cap". Includes fitting junctions and vehicles with Selective Bus Detection. (Set of measures is already being taken forward by the County Council with their own consultants)	High density mixed use **development east and west of the railway station**, including the cattle market site (planning and commitments in years 1-2)	**North-South Bar** is converted to a "green route" with bus, cycle and pedestrian priority with space converted from carriageway and parking to other more attractive uses.
Refurbishment of the **railway station**. The scheme to include new pedestrian and cycle link across the railway (in progress)	**HGV routes** are allocated through the town to reduce the impact on sensitive locations.	
• Limited bus-rail **interchange** (bus/taxi/cycle/car) via Bridge Street in the short term (e.g. Bretch Hill services call at station and extended through Grimsbury to Wildmere industrial estate) • Short term measures to improve efficiency and safety of multi-mode **interchange** at station: Signal intersection station approach and Bridge Street.	Full **multi-mode interchange** scheme based on new **George Street link** (for bus, cycle and pedestrians only) as part of redevelopment of sites west of the railway. Full implementation may take several years. Commitment is important, however, to secure maximum contributions from land/property owners, including Railtrack and Chiltern Railways.	Commitment to full **interchange** by year 5
Parking: Create two inner area Controlled Parking Zones (north and south) with residents' parking available throughout, and a residents-only parking zone for streets surrounding the hospital. Core areas to be charged, with a no-charge "buffer area".	**Parking**: Reduce the stock of ***long stay*** public car parking spaces by around 300 spaces and increase long stay parking charges to £3 per day. (These numbers and charges are indicative for modelling purposes only)	**Parking:** Reduce short-stay provision by 250 spaces Principle of charges in step with return bus fares. Short stay 60p per hour; medium stay parking £2.00 for 3 hours Long stay £3 a day. (All 1998 prices) (These numbers and charges are indicative for modelling purposes only)
	Cycle measures: Reallocate carriageway space to dedicated cycle lanes or "shared strips" available for cyclists. Enhanced with advanced stop-lines at signal junctions, as well as dedicated signals, signs and other facilities.	

Programme measures (continued):

"Quality Partnership" with local bus and rail operators (initial phase) including • Improved **bus services** serving industrial areas and town centre. 15 minutes frequency for the town services and Chipping Norton • New buses • George St/High St/Cherwell Street bus priority link and other priority measures (see above) [Bus priority in Cherwell Street (south of Bridge street) will be desirable until and unless the new George Street-Station link is completed.]	**Quality Partnership** (2nd phase) to include • Town bus services are restructured to provide services which run back and forth across the town. "**Banbury Cross-Bus**". • **Quality** improvements such as special fares, through ticketing, marketing and information. Through bus/rail ticketing. • A **shuttle bus** linking the station and the town centre is also included which links the rail station with the bus station and Banbury Cross. • Buses released from peak hour town services used to enhance **village services** at off peak times.	**Quality Partnership** (3rd phase) • Town bus enhancement with "Maxi Taxi" demand responsive door-to-door services, e.g. evenings. • Fares initiatives including discounted seasons and off-peak family use are introduced. Cycle parking at key bus stops and/or cycle racks on buses.
	Rural bus improvements: "Demand responsive" services are initiated. Bus shelters are provided in Banbury's hinterland areas.	Possible **inter-town bus services** (e.g. Northampton-Oxford, Leamington-Milton Keynes) serving Banbury and key villages.
Provide "on road" provision for **cyclists** as replacement for present footway (shared) cycle routes within the town. Cycle parking at busy town centre locations, and at the bus and rail stations. Implementation of the Banbury section of the National Cycle Network.	• **Cycle measures**: New off-road route via the Cherwell valley serving south and north Banbury housing, industrial employment areas and the town centre. • Cycle lanes and priority measures provided on all radial routes. Secure lockers provided at the station.	
Pedestrian phases to be provided at signalled intersections.	**Pedestrian** crossing facilities to be provided at further suitable locations on "traffic priority" and "mixed priority" roads. Improved footways and lighting are provided on routes to school, hospital and leisure locations.	Middleton Road is converted to a full **"green route"** with pedestrian, cycle and bus priority.

Programme measures (continued):

Soft measures, phase 1: Better Routes to School, and neighbourhood Travelwise campaigns are included. "Mobility manager" dedicated staff resources.	**Soft measures, phase 2:** Green Commuter Plans with local employers to be negotiated by Mobility Manager.	**Soft measures, phase 3:** These involve trader and CDC incentives for town centre visitors to switch modes of travel. To be negotiated by Mobility Manager.
• Signal junctions and road widening on **Hennef Way** to tackle immediate congestion problems, including periodic queues affecting the M40. • Improved footways and crossings on routes to employment areas, including crossings on major roads such as Ruscote Avenue. • Install bus gate at junction of Daventry Road/Hennef Way • **Middleton Road** at Bridge Street conversion to bus/cycle only to be implemented simultaneously with opening of Hennef Way measures.		
Pedestrian priority in Parsons Street and Market Square, by limiting motor vehicle access during the day and repaving.	A new **pedestrian** square would be created at Banbury Cross. Bridge Street is converted to buses, cycles and pedestrians only both sides of the Concord Ave junction.	
Restructure **bus routes** in the town centre so that all buses use **George Street and High Street**, a route that will be open only to buses and access traffic	Pedestrian and cycle **"green lanes"** are implemented linking Banbury to near villages (Chacombe 6km, Middleton Cheney 5km, Kings Sutton 6 km, Adderbury 6 km via river, Bloxham 5km, Cropredy 6 km, Great Bourton 6km).	

Table continued on next page (Practice Measures)

Practice Measures

New housing to be developed in accordance with **sustainable transport** principles.
Cycle parking to be required in all non-residential developments.
Car parking in new non-residential development to be in line with emerging guidance in revised Regional Planning Guidance for the South East (RPG9), and in revised PPG13 (consultation draft October 1999). Reduced **residential parking provision** of up to 1 space per dwelling in the town centre walk-in catchment, and no more than 2 spaces per dwelling elsewhere. All communally provided.
New housing: housing is concentrated in the town centre and its ten minute walk in catchment; areas closest to industrial areas and Cherwell valley; and in areas easily served by bus. This maximises the population within a walk or cycle distance of the town centre or within easy reach of good bus routes. Village expansions would be limited to those with good cycle and bus opportunities.
Industrial and other employment developments are concentrated in or adjacent to current employment areas.
Mixed use development concentrated in town centre walk-in catchment.
Local facilities to be provided in new housing areas.
Selective additional **traffic calming** in accordance with comprehensive speed management strategy
Monitor on-street parking problems arising from BITLUS measures, and introduce solutions as required (e.g. informal park and ride at extremities of improved bus routes.).

Table 9.3 Option 5 measures

Programme measures:

Years 1-2	Years 3-4	Year 5 and onwards
Horsefair/North/South Bar Streets "Traffic Cap". Includes fitting junctions and vehicles with Selective Bus Detection. (Set of measures with County Council's consultants for design stage work)	Strengthen pedestrian and cycle facilities in **Horsefair/North/South Bar Streets**	**Horsefair/North/South Bar Streets** converted to a "green route" with bus, cycle and pedestrian priority with space converted from carriageway and parking to other more attractive uses.
Refurbishment of the **railway station**. The scheme to include new pedestrian and cycle link across the railway (District Council to set up project team)	High density mixed use **development east and west of the railway station**, including the cattle market site (planning and commitments in years 1-2)	
• Limited bus-rail **interchange** (bus/taxi/cycle/car) via Bridge Street in the short term (e.g. Bretch Hill services call at station and extended through Grimsbury to Wildmere industrial estate) • Short term measures to improve efficiency and safety of multi-mode interchange at station • Improve access between station approach and Bridge Street	Full **multi-mode interchange** scheme based on new **George Street link** (for bus, cycle and pedestrians only) as part of redevelopment of sites west of the railway. Full implementation may take several years. Commitment is important, however, to secure maximum contributions from land/property owners, including Railtrack and Chiltern Railways.	Continuing commitment to and development of full **interchange**

Programme measures (continued):

Parking: Create two inner area Controlled Parking Zones (north and south) with residents' parking available throughout, and a residents-only parking zone for streets surrounding the hospital. Core areas to be charged, with a no-charge "buffer area". (Resources requirement for OCC/CDC to develop residents parking into implementable scheme and work with Horton Hospital to develop Transport Plan.) Monitor on-street parking problems arising from BITLUS measures, and introduce solutions as required.	**Parking**: Status quo is unchanged (This assumption is for modelling purposes only)	**Parking**: Status quo is unchanged (This assumption is for modelling purposes only)
Cycle measures: • Enhance existing cycle routes, focus on key links and "gaps" in network • Where possible provide "on road" provision for cyclists as replacement for present footway (shared) cycle routes within the town. • Reallocate carriageway space to dedicated cycle lanes/shared strips. • Enhance with advanced stop lines at signal junctions, as well as dedicated signals, signs and other facilities. • Cycle parking at busy town centre	**Cycle measures:**: • New off-road route via the Cherwell valley serving south and north Banbury housing, industrial employment areas and the town centre • Cycle lanes and priority measures provided on all radial routes. • Secure lockers provided at the station.	**Cycle measures:** • Continue progress towards the implementation of a town wide cycle network. • Focus on key provisions at significant locations e.g. links to schools and workplaces.

locations, and at the bus and rail stations. Implementation of the Banbury section of the National Cycle Network.		
"Quality Partnership" with local bus and rail operators (initial phase) including • Improved bus services serving industrial areas and town centre. • Increased frequency for town services • Improve Chipping Norton services • New buses • Bus priority link – George St/High St/Cherwell Street and Bridge St (west) to drop off points and bus station • Bus priority in Middleton Road (resource requirement for County Council to phase into Quality Partnership workload schedules.	**Quality Partnership** (2nd phase) to include • Town bus services are restructured to provide services which run back and forth across the town. "Banbury Cross-Bus". • All buses use George Street and High Street, a route that will be open only to buses, cycles and access traffic. • Quality improvements such as special fares, through ticketing, marketing and information. Through bus/rail ticketing. • A shuttle bus linking the station and the town centre is also included which links the rail station with the bus station and Banbury Cross. • Buses released from peak hour town services used to enhance village services at off peak times.	**Quality Partnership** (3rd phase) • Town bus enhancement with "Maxi Taxi" demand responsive door-to-door services, e.g. evenings. • Fares initiatives including discounted seasons and off-peak family use are introduced. Cycle parking at key bus stops and/or cycle racks on buses.
Rural Bus: Expand Cherwell taxi-bus service (2000 Rural Bus grant put more funds into this intitiative)	**Rural bus improvements:** "Demand responsive" services are initiated. Bus shelters are provided in Banbury's hinterland areas.	**Inter-town bus services** provided (e.g. Northampton-Oxford, Leamington-Milton Keynes) serving Banbury and key villages.

Programme measures (continued):

Pedestrian to include: Focus on town centre pedestrian network improvements, key links and gaps Pelican crossings and pedestrian phases to be provided at signalled intersections. Priority in Parsons Street and Market Square, by limiting motor vehicle access and repaving.	**Pedestrian** measures to include: • Crossing facilities to be provided at further suitable locations on "traffic priority" and "mixed priority" roads. • Improved footways and lighting are provided on routes to school, hospital and leisure locations. • A new pedestrian square would be created at Banbury Cross	**Pedestrian** measures to include: • Middleton Road is converted to a full **"green route"** with pedestrian, cycle and bus priority. • Bridge Street converted to buses, cycles and pedestrians only both sides of Concord Avenue junction.
Highway measures: • Signalise junctions and local widening on Hennef Way to tackle immediate congestion problems, including periodic queues affecting the M40 • Improved footways and crossings on routes to employment areas, including crossings on major roads such as Ruscote Avenue. • Middleton Road at Bridge Street bus/cycle/pedestrian priority implemented in conjunction with Hennef Way measures. • HGV restrictions to protect Middleton Road (implemented).	**Highway measures:** • Dualling of Hennef Way from Ermont Way to Concord Avenue using development funding. • Install bus gate at junction of Daventry Road/Hennef Way. • Additional bus priority measures including bus gate on Middleton Road west of Ermont Way • HGV routes allocated through the town to reduce the impact on sensitive locations.	**Highway measures:** Further improvements to Hennef Way including dualling from Concord Avenue to Southam Road subject to development funding availability

Programme measures (continued):

Soft measures: • Better Routes to School, and neighbourhood Travelwise campaigns . • Commence Better Ways to Work Green Commuter Plans with key employers (initial contact process under way. • "Mobility manager" dedicated staff resources.	**Soft measures:** Continue to develop and implement Green Commuter Plans with local employers to be negotiated by Mobility Manager.	**Soft measures:** These involve trader and CDC incentives for town centre visitors to switch modes of travel. To be negotiated by Mobility Manager.
	Village links for "slow modes" Start implementing pedestrian and cycle "green lanes" linking Banbury to near villages (Chacombe 6km, Middleton Cheney 5km, Kings Sutton 6 km, Adderbury 6 km via river, Bloxham 5km, Cropredy 6 km, Great Bourton 6km).	**Village links for "slow modes"** Continue implementing green lanes

Development control and other measures applicable to all phases

New housing to be developed in accordance with sustainable transport principles.
Cycle parking to be required in all non-residential developments.
Car parking in new non-residential development to be in line with emerging guidance in revised Regional Planning Guidance for the South East (RPG9), and in revised PPG13 (consultation draft October 1999). Reduced residential parking provision of up to 1 space per dwelling in the town centre walk-in catchment, and no more than 1.5-2 spaces per dwelling elsewhere. All communally provided.
New housing: housing is concentrated in the town centre and its ten minute walk in catchment; areas closest to industrial areas and Cherwell valley; and in areas easily served by bus. This maximises the population within a walk or cycle distance of the town centre or within easy reach of good bus routes. Village expansions would be limited to those with good cycle and bus opportunities.
Industrial and other employment developments are concentrated in or adjacent to current employment areas.
Mixed use development concentrated in town centre walk-in catchment.
Local facilities to be provided in new housing areas.
Selective additional traffic calming in accordance with comprehensive speed management strategy

Performance of Options 4 and 5against BITLUS objectives

9.1.12 Many of the BITLUS measures are common to both Options. We therefore describe the performance of these common measures together. If their impact and effectiveness vary between the two Options this is noted. Policies and measures that differ between the two options are dealt with separately.

9.1.13 A summary of the main aspects, using the headline criteria of the Governments New Approach to Transport Appraisal (NATA) is given in Table 9.4.

Schemes and Policies in both Option 4 and Option 5

9.1.14 ***Soft measures*****:** have revenue rather than capital cost implications, and so cannot be funded through the Local Transport Plan under current rules. However, they have the potential to deliver benefits under all of the headings by encouraging people not to make more trips by car. In this respect they are an important accompaniment to the infrastructure measures in either Option. The public generally supports them.

9.1.15 ***North Bar/South Bar traffic cap***: the key benefits of this measure are the improvements it delivers in terms of safety and avoidance of increased noise, fumes and visual intrusion. This area of Banbury is one of the town's current accident black spots. The measures will also ensure that the trading environment of the western end of the town centre does not deteriorate. It will be easier to reach this part of town on foot, by cycle and by bus. The pressure on this area will be greater under Option 5 than Option 4. The measures have a lot of public support, but the parking issue is sensitive. ***(See Photos 3, 4, 5 and 7)***

9.1.16 ***Station area development***: the development of the area around the station is one of the most important measures proposed by this study. It contributes to achieving key accessibility, economic, environmental and integration objectives. The redevelopment of this area will allow for the integration of bus and rail travel in the town. It will also allow for the town centre to expand, reflecting Banbury's increasing sub-regional role. The redevelopment will provide a step change improvement in the quality of the canal and riverside environments and access to them. In both Options the area benefits from reduced traffic in Bridge Street, and better access to the new multi-mode interchange. The measures are popular with the public at large.

9.1.17 ***Multi-mode interchange*** and ***new*** **George Street link**: this will contribute to integration and accessibility objectives by enabling the creation of an effective multi-mode interchange at the railway station. The associated traffic arrangements would also improve the efficiency of traffic using Cherwell Street, the main access route to the town centre car parks. Environmental objectives will be served by the major improvements to the canal and riverside areas. Although expensive, the

scheme unlocks the potential for a wide range of transport and environmental improvements, as well as development potential close to the town centre. The scheme is widely supported.

9.1.18 ***Quality partnership with bus and rail operators***: the quality partnerships will help to meeting accessibility objectives by making buses and rail travel more comfortable and help to ensure the long term success of these modes. They will contribute to meeting environmental objectives through reduced pollution and disturbance from noise and fumes through encouraging the introduction of new vehicles and better driver practice. The bus quality partnership will also be instrumental in facilitating the restructuring of services, and the creation of the bus, cycle and pedestrian priority route through George Street and High Street ***(See Photo 17)***. All of these benefits depend of course on successful negotiation with the public transport providers. The public supports better bus services in the town and villages and will expect good outcomes from the partnership approach.

9.1.19 ***Rural bus improvements:*** "Demand responsive" services may encourage the use of public transport in the rural areas by offering a more effective alternative to the car. This will serve in particular the objective of "accessibility", since most users will be those without independent access to cars. These and other rural bus service improvements will be more effective in Option 4.

9.1.20 ***Village links*** will enable people to walk or cycle in safety rather than use the car for trips between Banbury and nearby villages. This will contribute to accessibility objectives helping people without cars, and to environmental and safety objectives in the rural areas. An additional benefit to all will be better opportunities for recreational walking and cycling. Public support for these measures will need to be gauged once there is some experience of them. ***(See photo 16)***

9.1.21 ***Sustainable housing layouts***: the key benefits of reconsidering the way in which housing is designed is to improve people's access to modes other than the car. These layouts also fulfil an important safety objective by encouraging the development of well-overlooked streets. Such principles would deliver benefits in all new housing in Banbury. Parking provision would be more efficient, taking account of new national guidance, and would result in the more efficient use of scarce housing land.

9.1.22 ***Provide separate cycle paths and lanes.*** (This includes removal of facilities for cyclists on footways, which has proved very unpopular and dangerous in Banbury.) This is important in terms of providing cyclists and pedestrians with a safe environment. The dangers associated with shared paths may also be currently discouraging people from walking and cycling. This measure is important in both Options. This proposal is strongly supported on safety grounds.

9.1.23 ***Provide cycle parking***: the provision of cycle parking in the town centre, bus and rail stations and in new development will improve accessibility to these locations and hence encourage cycling. Providing parking at the station maximises the interchange opportunities between cycle, rail and bus. This measure is important in both Options. ***(See Photo 18)***

9.1.24 ***Pedestrian phases*** at signalled intersections and light controlled junctions: the two key benefits from these measures are improved accessibility of foot and improved safety. This should encourage walking, and help to reduce car use for short journeys in both Options. It will be more effective in Option 4 in which more trips are made on foot.

9.1.25 ***Residents-only parking zones***: this measure recognises the need to protect town centre residents from increasing demand for parking spaces. It will (purposely) reduce the availability of free on-street parking for non-resident car drivers, especially all-day commuters. Many Banbury residents see this proposal as overdue.

9.1.26 ***HGV routes*** allocated through the town will help to reduce the impact on sensitive locations, provided that they can be adequately enforced. They will contribute to safety and environmental objectives without compromising economic objectives. This measure is supported by the public, though they express doubts about enforcement.

Schemes and Policies particular to Option 4

9.1.27 ***Signalled junctions and widening of Hennef Way*** at the railway bridge to provide two westbound lanes: there is a range of benefits from these measures.

1 Peak time congestion westbound will be eased, reducing delays at the busiest times and removing the hazard of traffic backing up onto the M40. However, the signals could slightly increase journey times at off-peak periods.

2 Traffic diverted as a result of the Middleton Road closure can be accommodated.

3 Most important, the signalised junctions will allow the efficient management of traffic to serve objectives of safety, priority for pedestrians and cyclists and buses, and if desirable priority for particular traffic routes.

9.1.28 Specific junction-modelling exercises could be undertaken to establish more precisely the impacts on traffic, and to provide information for the setting of the initial signal timings.

9.1.29 This set of measures would improve the management of traffic in Banbury, but it is not supported by a majority of those consulted. The benefits may

not be fully understood, in which case further efforts would be needed to explain the proposals and their purpose.

9.1.30 ***Town centre public parking***: would be managed to ensure that demand and supply remain in balance, while encouraging a proportion of car trips (especially commuter trips) to be made by alternative modes. This will serve the economic objective of providing priority access to those with less choice of mode, and hence supporting the strength of the town centre economy. Traffic movement in and around the town centre will be more efficient because drivers will not need to search for spaces. The public support maintaining the attraction of the town centre, but most do not see parking demand management as contributing to this aim. Lack of public support is acknowledged, and implementation would need to be tied to implementation of those measures that deliver substantial and visible benefits, such as the provision of pedestrian priority in Parsons Street, Market Place, George Street and High Street.

9.1.31 ***Middleton Road closure just east of the railway:*** this would be effective in delivering safety and environmental improvements in Grimsbury (Middleton Road), and integration benefits at the station. These benefits have to set against the inconvenience to car drivers travelling between Grimsbury and the town centre and areas to the west and south, who would travel via the improved Hennef Way. Bus, cycle and walk trips between Grimsbury and the town centre would be greatly enhanced and encouraged, being both safer and quicker. Public reactions to this proposal have been mixed, with those in favour of the resulting environmental and safety benefits being balanced by those who wish to retain convenient car access to the town centre.

Schemes and Policies particular to Option 5

9.1.32 ***Dualling of Hennef Way*** from Ermont Way to Southam Road using development funding. This proposal dates from the period when the M40 was being planned. The purpose of this major scheme is to reduce delays to traffic and to accommodate future traffic growth without incurring extra delays. It has the major advantage of being popular with local interests, especially the business community. There are, however, a number of features of the proposal which decision takers need to be aware of.

1. The benefits of reduced traffic delays will be experienced only at peak times. For most of the day and week journey times will be similar to today. However, the length of "peak" times will extend as traffic in Banbury continues to increase;

2. The scheme makes a ***negative*** contribution to the basic BITLUS objective of stabilising traffic levels, since it is likely to encourage

more trips to be made by car (the well-known "traffic generation" effect of major new road capacity);

3 Government guidance on the criteria for the funding of Local Transport Plans requires schemes to be justified compared to alternatives considered. This will be difficult for the Hennef Way dualling, since the BITLUS testing shows the Option 4 package to make a stronger contribution to the objectives. This means that the scheme could threaten the prospects of Government funding support for the Local Transport Plan for Banbury.[21]

4 The scheme is expensive, and could account for more than the rest of the BITLUS measures put together. There is an opportunity cost of the scheme in that it will use developer contributions that otherwise could be used to fund other transport improvements. For example, the estimated £6.5 million cost would be sufficient to fund the Option 4 Hennef Way improvements, the Middleton Road bus priority measures, and provide full subsidy for a Park and Ride service for at least 10 years.

9.1.33 ***Middleton Road bus priority*** measures including a bus gate west of Ermont Way will produce benefits in Grimsbury similar to those described for Option 4. The difference arises from the closure being east of Grimsbury, which maintains the ability to dive direct to the town centre, However, trips between Grimsbury and the M40 and areas to the east (Northamptonshire) would be routed via Concorde Avenue and the improved Hennef Way. This particular scheme for the selective closure of Middleton Road has not been put to the public, but reactions are likely to be mixed, as with the alternative scheme in Option 4.

9.1.34 ***Parking*** controls and charges in the town centre would remain unchanged. This would benefit car users and enable them to park at no extra cost, and would place no extra financial burden on those living outside Banbury who rely on cars for access. This could encourage shoppers and others to visit Banbury rather than travel to competing centres with higher charges. The policy avoids known local hostility to increased parking charges. However, there are potential difficulties arising from this policy which decision-makers will need to take into account.

1 The higher demand and resulting traffic levels will increase congestion, and thus reduce safety and environmental quality in and around Banbury;

[21] The fact that Government support would not be sought for the Hennef Way scheme itself would not affect the assessment of the effectiveness overall package upon which Government funding allocations are decided.

2 The quality of alternative modes of travel will be reduced because of both higher traffic levels, and lower us of buses, walking and cycling;

3 The absence of stronger demand management will weaken the case for Government support for transport measures in the Banbury Local Transport Plan;

4 The absence of stronger demand management in the town centre could mean that demand exceeds supply at certain times, for example on Market days and Saturdays. This will result in queuing for car parks and an increase in traffic by drivers seeking parking places. Such difficulties would increase over time as demand builds up and could threaten the economic vitality of the town centre.

Here is

Photo 17 When converted to bus and access traffic only, High Street and George Street can be repaved with more generous footways and landscaping, and most of the traffic signs and clutter can be removed. In this way the area will become an attractive part of the town centre, and the many historic buildings will have a much more appropriate setting. In particular the pedestrian route between the main shopping areas and Banbury Cross will be much improved.

Photo 18 Cycle parking provision at Morrisons superstore. Cycling will be encouraged more by the provision of safer and convenient routes, as included in the BITLUS proposals. A mixture of on-carriageway facilities on main routes and signposted routes through quieter residential streets will encourage a both confident and less confident cyclists for shopping, commuting and other purposes.

9.2 *Overall comparison between Options 4 and 5, and the "Do Minimum" scenario using model results*

9.2.1 In this section we compare the two Stage 3 options (Options 4 and 5) with the "do-minimum" scenario.[22] An analysis of the likely impacts is given, and summarised in Table 9.4.

9.2.2 Results from the BITLUS strategic multi-mode model are described, supplemented by some example trip categories to illustrate more specific outcomes.

9.2.3 Option 4 is the option most strongly geared to meeting the aim of keeping overall traffic volumes stable in Banbury. Option 5 contains many of the same measures as Option 4 especially those promoting walking, cycling and public transport. The essential difference is that Option 5 is less oriented to achieving a switch of town centre trips from car to other modes, and more oriented to alleviating congestion, most notably by the provision of a major increase in road capacity by the dualling of Hennef Way.

9.2.4 These differences are reflected in the model results.

[22] The "do minimum" scenario includes forecast traffic growth in Banbury, unaffected by any infrastructure or other measures to influence this growth. It does not included the "Starter Kit" measures, which are common to all the Options 1-5.

Table 9.4 Summary performance of Option and Do Minimum Scenarios

NATA OBJECTIVES	DO MINIMUM	OPTION 4	OPTION 5
Economy	✕ Economy threatened by heavy congestion. Poor trading conditions in town centre	✓ Shopping areas protected from increasing congestion; parking supply and demand in balance	✓✕ Shopping areas protected from increasing congestion, but parking difficulties. Less delays for car commuters.
Environment	✕ Environment deteriorates in both town and country	✓✕ Environment improved in town centre and some residential areas, but worse on main roads	✓✕ Environment improved in town centre and some residential areas, but worse on main roads. Worse at peak times than Option 4
Accessibility	✕ Poorer accessibility for everyone, including those without cars. Car users suffer congestion of roads and parking	✓ Good alternatives to the car improve access choices for those without cars.	✓✕ Good alternatives planned, but less viable than in Option 4 due to higher car use. Bus subsidies could help.
Safety	✕ Reduction of safety due to rising traffic levels in the town, and rural roads	? Safety gains in residential areas could be offset by greater danger on main roads and in villages	? Safety gains in residential areas could be offset by greater danger on main roads and in villages.
Integration	✕ Greater use of cars and lack of priority or provision for other modes makes walking, cycling, and buses less attractive.	✓ Major improvements to bus, walk and cycle networks, and multi mode interchange make multi-mode travel choices easier.	✓ Major improvements to bus, walk and cycle networks, and multi mode interchange make multi-mode travel choices easier.

✕ negative contribution to objective
✓ positive contribution to objective
✕✓ mixed contribution to objective
? too many variables to predict contribution

9.2.5 *The results*

9.2.6 General results reported here are supplemented by some examples of particular types of trip in the study area (see boxes).

9.2.7 Neither Option 4 nor Option 5 achieves the overall agreed objective of keeping traffic levels stable in Banbury up to 2011. Option 4 gets closest, but is still well short of this objective. As found with Options 1-3 (tested in Stage 2), the measures to persuade people away from their cars are not sufficient to bring traffic growth to an end. In other words, people will continue switching some of their walk, cycle or bus trips to the car over the next 10 years, though not to the extent that would happen if none of the Options was implemented. The overall traffic results from the model are shown in Table 9.5.

9.2.8 The slightly stronger restraint measures in Option 4 compared to the earlier Option 3 produces little effect in the peak period, but a small extra transfer from car to the other modes in the off-peak period. Thus ***Option 4 is the best of the options tested in terms of avoiding traffic growth***.

9.2.9 ***Option 5, as expected, performs less well than the other options***, mainly because of the dualling of Hennef Way and the absence of parking restraint measures in the town centre[23].

9.2.10 ***In the peak period***, Option 5 only achieves a reduction in car traffic growth compared with the Do Minimum scenario. It should be recalled that Option 5 is based on Option 4 and contains many measures that would improve alternatives to the car. The result would therefore be considerably worse if it were decided to implement the dualling of Hennef Way while implementing fewer of the non-car measures.

9.2.11 ***In the interpeak period***, Option 5 performs less well than Options 3 and 4, but better than Options 1 and 2. This is probably a reflection on the amount of suppressed traffic. In the peak period, when delays are high, car trips will be suppressed, and when the capacity on Hennef Way is increased, delays and hence suppression will be less. In the interpeak, however, there are delays are shorter and majority of people who would use the car are already using the car. The increase in car usage with the increase in capacity on Hennef Way, whilst significant, is therefore considerably less than for the peak period.

9.2.12 *Hennef Way*

9.2.13 Two points in relation to Hennef Way raised by the consultants appear to be verified by the results.

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[23] It should be noted that the charges and controls on parking in Banbury town centre will already have some restraining effect. Option 5 simply does not change this effect.

1 During the inter-peak the existing Hennef Way is less congested, (reflected in the fact that in the model, dualling has little effect during the interpeak period). This means that expenditure on the dualling of Hennef Way will benefit mainly peak hour journeys by car, i.e. mainly journeys to work.

2 An option that includes the dualling of Hennef Way, and which does not include any extra parking restraint (as in Option 5) will contribute less to the objective of avoiding traffic growth as Banbury grows.

9.2.14 *Which alternatives to the car?*

9.2.15 As anticipated, and supported by the model results, the main possibility for encouraging people not to make more car journeys, lies in making walking and bus travel easier and more pleasant. Cycling is apparently less attractive in Banbury, and attracting people to take up cycling may involve more than simply providing good quality paths and cycle parking. However, the potential for encouraging cycling by providing safe routes may not be fully reflected in the model, and cycle use should be monitored as the Banbury and rural networks are implemented.

9.2.16 *Traffic growth*

9.2.17 Traffic in Banbury and the surrounding area will continue to grow up to 2011, whichever of the packages is implemented. However, in the absence of any of the measures being implemented (i.e. in the "do minimum" scenario), traffic will grow at an even faster rate.

9.2.18 Morning peak hour traffic in the year 2011 is compared to the situation in 1998 in Table 9.5.

Table 9.5 AM Peak Traffic in 2011 compared to 1998

Option	Traffic growth %
"Do Minimum"	+ 23%
Option 1	+ 16%
Option 2	+ 16%
Option 3	+ 14%
Option 4	+ 14%
Option 5	+ 18%

9.2.19 Growth rates for the interpeak (between 10 am and 4 pm) and off-peak periods (evenings and weekends) will be higher than for the peak periods, because there are less constraints on car use, and more constraints on public transport use. The expectation is that traffic outside the peak hours could grow by around 30% (i.e. a growth rate 50% higher than in the peak, although of course from a lower base). The data available to BITLUS does not, however, allow comparison with 1998 except for the morning peak period.

9.2.20 Overall, therefore, it may be expected that under the "do minimum" scenario traffic overall will grow by 25% by 2011 (compared to 1998).

9.2.21 Table 9.6 gives the overall predictions from the strategic model comparing Options 4 and 5 with the "Do Minimum" scenario. ***Figure 9.1 Indicative total traffic scenarios for 2011 compared to 1998.***

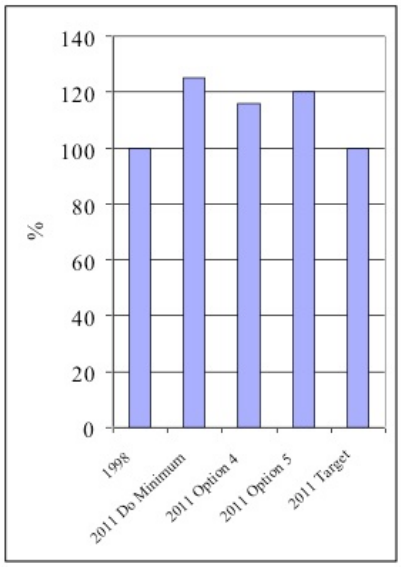


Table 9.6 Banbury Model Test Results for Options 4 and 5

AM Peak (08.00 – 09.00) **Year 2011**

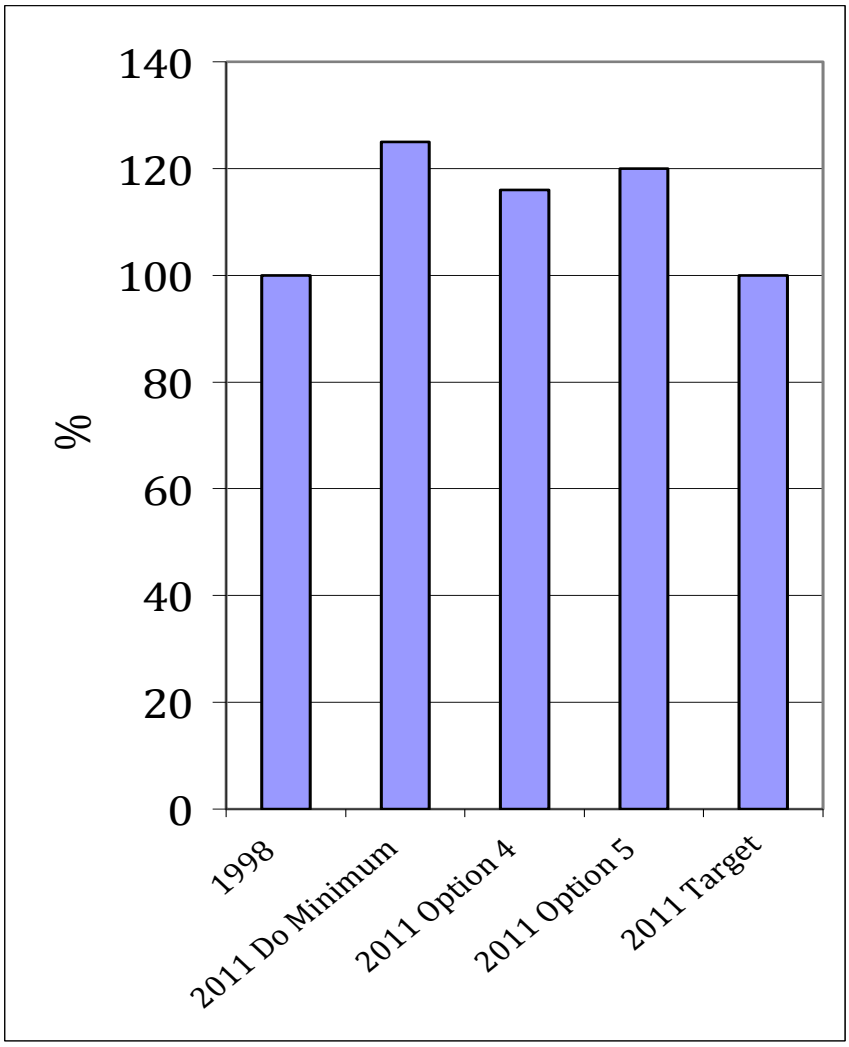
Option	Person Trips					CAR AS % OF DO MINIMUM	CAR AS % OF BASE YEAR 1998
	Car	Bus	Cycle	Walk	Total*		
1998 Base Year	24500						100
Do Minimum	30200	1100	200	5100	36550	100	123
Option 1	28400	2250	250	5700	36550	94	116
Option 2	28400	2150	250	5800	36550	94	116
Option 3	27900	2450	250	5900	36550	92.5	114
Option 4	27900	2450	250	5950	36550	92.5	114
Option 5	28900	1950	250	5450	36550	96	118

Inter-Peak (average hour, 10.00 - 16.00) **Year 2011**

Option	Person Trips					CAR AS % OF DO MINIMUM
	Car	Bus	Cycle	Walk	Total*	
Do Minimum	21000	750	100	2000	23800	100
Option 1	20400	1050	100	2200	23800	97.0
Option 2	19800	1350	150	2450	23800	94.5
Option 3	19400	1700	150	2500	23800	92.5
Option 4	19300	1750	150	2550	23800	92.2
Option 5	19600	1600	150	2450	23800	93.5

* Note that the total does not necessarily equal the sum of the individual modes due to rounding.

Figure 9.1 Indicative traffic scenarios in the Banbury area



9.3 *What are the implications for the Banbury area?*

9.3.1 Option 4 produces the "least worst" outcome in terms of traffic growth over the next 10 years. With Option 5 there would be more traffic than with Option 4, but still less than if nothing is done.

9.3.2 At ***peak times*** there will be more use made of walking and buses, and more people will cycle than do today. With Option 4 non-car trips would account for 24% of all trips, compared to 21% for Option 5 and only 17% if nothing is done. Under all scenarios the car will be the predominant mode for all but the shortest trips, where walking will continue as the prevalent mode. Traffic congestion, noise and pollution will all get worse than they are today, but will be much less worse than they would be if nothing were done.

9.3.3 At ***off-peak times*** if nothing is done, non-car trips will have shrunk to around 12% of the total. With Option 4 this figure could be 19%, and with Option 5 it could be 17%. The non-car share of trips is lower at off-peak times than peak times because there are less restraints on car use.

9.3.4 ***Generally***, under both Options people will be able more easily to escape the effects of congestion by choosing instead to travel on buses that have priority over other traffic, or by using the new cycle or walking facilities that will be provided. There will also be more parts of Banbury town centre that are free from traffic, and where it will be a pleasure to wander and shop in comfort. Under Option 4, more people will choose to use these alternatives to the car than under Option 5.

9.3.5 Option 4 produces demand for bus travel, for example, that is almost two and a half times greater than under the do minimum scenario, and Option 5 also produces more than twice the demand. Thus if predictions are correct, the major bus service improvements envisaged in Options 4 and 5 will be supported by growth in passenger demand, helping to reduce the likely need for long-term subsidy.

9.3.6 The model predicts, on the other hand, that cycling will play a very small role under Options 4 and 5, accounting for well under 1% of all trips in all scenarios. It should be emphasised, however, that if attitudes to cycling became more favourable, cycling could increase much more than shown in the model predictions.

9.3.7 So far we have been looking at travel patterns in the Banbury "in the round". To understand the future impacts more precisely, it is helpful to look at particular types of journey. To do this, seven examples are included in the boxes on the following pages.

9.3.8 In looking at these examples, it is important to note the following:

- When "less car trips" is referred to, this means less than the predicted higher number of car trips.
- Thus in every case the number of car trips in 2011 is predicted to be greater than today. As already explained, none of the Options tested avoids traffic growth altogether.
- The results are predicted in the model on the basis of changed relative qualities of the modes. For example, the differences between Option 4 and Option 5 results are due to the fact that under Option 5 the road network will be less congested at peak times, and parking in the town centre will be cheaper.
- The differences shown in the example cases are mostly consistent with what one would expect given the measures proposed in each Option.
- The exception to this may be where currently (i.e. in the dataset) a particular trip category is not represented. For example, but travel to Wildmere industrial estate is not significant in the base year data, so the model could under-represent growth of that trip category in Option 4 and 5. The provision of a new bus service will create the demand for the trip.
- It will be seen that cycling is insignificant in all scenarios and all trip categories. This will to some extent reflect the workings of the model rather, and cycle use could in reality be much higher. First, where currently there are zero cycle trips, the model cannot show any increase or decrease in cycle trips.[24] Secondly, cycling is known to depend strongly on local attitudes and culture, and changes in this are not represented in the workings of the model. Provision of a high quality cycle network would be likely to produce a step change in the amount of cycling in Banbury and would create demand where none currently exists.

EXAMPLE 1

GRIMSBURY TO TOWN CENTRE – PEAK HOURS

- At peak hours, car trips would be a third less under Option 4 than with Do Minimum. This is due to Middleton Road closure at a point near to the railway bridge, making a detour necessary via Hennef Way
- Option 5 would result in a smaller but still significant reduction in car trips on this route.
- The model estimates that most of the balance of trips would be taken up by the bus.

his
the

EXAMPLE 2

GRIMSBURY TO THE NORTH AND EAST – PEAK HOURS
(i.e. to areas north of Hennef Way, and east of the M40)

- As expected, Option 4 results in very little change in how people make these journeys, because car use will be just as easy as today.
- Option 5 would involve a longer journey via Concorde Avenue because Middleton Road is closed near Ermont Way. This results in a small switch of trips from car to walk and cycle (e.g. to Wildmere industrial estate). However, for longer trips the diversion via Concorde Avenue is not significant, especially as the dualled Hennef Way increases peak traffic speed.

EXAMPLE 3

HANWELL FIELDS TO CALTHORPE/HOSPITAL
Peak hours

- This route is not directly affected by conditions on Hennef Way.
- Options 4 and 5 show higher levels of walking and cycling compared to the Do Minimum.
- Both options produce much higher bus use (5-6 times higher) than the Do Minimum. The new "Cross Bus" services would make such trips easier by bus.

EXAMPLE 4

RURAL AREAS SOUTH OF BANBURY TO BANBURY TOWN CENTRE

- The car dominates all travel between these areas under all scenarios.

Peak hours

- The improved rural bus services in Options 4 and 5 create a significant demand for bus use in peak hours (3 to 5 times greater than under the Do Minimum scenario).
- Bus trips would still be well under 10% of the total, however.

Off-peak hours

- The Options produce no significant impact on mode of travel. The non car share of trips at off peak times is less than 0.5%

EXAMPLE 5

OUTER SOUTH WEST BANBURY HOUSING AREAS TO WILDMERE INDUSTRIAL ESTATE

- Not surprisingly, three quarters of trips in this category are made during the peak hours.
- The car dominates in all scenarios, and practically none uses other modes.
- Encouragement to use the new "Cross Bus" services, however, could be under-represented in the model.

EXAMPLE 6
INNER HOUSING AREAS TO THE TOWN CENTRE

Peak hours (mostly trips to work)

- Option 4 would result in 25% less car trips than the Do Minimum, compared with only 5% less under Option 5.
- In both cases more of these short trips would be by walking rather than bus or cycle.
- The bus carries an insignificant proportion of trips in the peak hours

Off-peak hours

- The bus plays a much bigger role off-peak. The Options will result in 15-20% more bus trips than the Do Minimum, and around 13% of all trips.
- Option 4 again encourages more use of non-car modes than either Do Minimum or Option 5. Even so, a half of all trips are still made by car.
- Cycling is insignificant in all scenarios, both peak and off peak, at less than 1% of trips.

EXAMPLE 7

OUTER HOUSING AREAS (OF BANBURY) TO THE TOWN CENTRE

Peak hours

- Option 4 results in a third less car trips compared to the Do Minimum. Option 5 also results in less, but is less effective at only 12%.
- These non-car trips are split roughly equally in Option 4 between walk and bus. In Option 5 more people would use the bus than would walk.
- The extra bus travel would mean, compared to the Do Minimum, 65% more passengers in Option 4, and just over 30% in Option 5.
- Cycle is insignificant in all scenarios at around 1% of all trips.

Off Peak hours

- The use of non-car modes in the Options is less than the Do Minimum, though the difference is not as great as in the peak. Option 4 results in 14% less car trips. Option 5 produces 8% less.
- In both Options, non-car trips are split roughly equally between walk and bus.
- Cycle is insignificant in both scenarios in at off-peak times at well under 1% of all trips.

9.4 *Summary of performance testing of these Options*

9.4.1 ***Option 4*** is shown by the strategic model to make a bigger contribution than Option 5 to the aim of avoiding traffic growth. It is believed to be consistent with current Government guidance and funding criteria and would therefore present a strong case for financial support. Option 4 is a third cheaper than Option 5, as shown in the table below. However, it includes elements that have yet to gain wide public acceptance, especially the management of demand through parking controls and charges in the town centre.

9.4.2 ***Option 5*** makes a smaller contribution than Option 4 to the objective of avoiding future traffic growth, but still delivers a better result than the "do minimum" scenario. The measures that are common to Option 4 (i.e. land use policy, cycle, bus, pedestrian and town centre improvements) are consistent with Government guidance. Other major elements, however, are not consistent and lead to funding from Government sources being ruled out. It is 50% more expensive than Option 4, as shown in the table below. Option 5 has the big advantage, however, of substantial popular support.

9.4.3 The indicative costs of the options are indicated in Table 9.7. These are based on an aggregate of cost estimates for the individual measures included in each Option. Most of the measures are common to both Options, and the differences in cost are primarily connected with Hennef Way measures. Differences in revenue income and expenditure are related to the different approaches to parking in the town centre. There is no provision for Park and Ride in the cost estimates.

Table 9.7 Indicative[25] costs of BITLUS Options 4 and 5

Item	Option 4	Option 5
Capital costs over a 10 year period (1998 prices)	£ 8.3 million	£ 12.3 million
Annual additional revenue costs[26]	£ 975,000	£ 975,000
Parking revenues (total)	£ 1,200,000	£ 660,000
Annual revenue surplus	+ £ 225,000	- £ 315,000

[25] It must be stressed that these estimates are indicative only and are given to allow broad-brush comparison between the Options. The infrastructure (capital) cost estimates do not include fees and charges, abnormal costs or any contingencies. For major infrastructure, such as the George Street link and Hennef Way widening, costs may vary substantially from those assumed in this table. Costs cannot be given with any accuracy until the engineering and other aspects are investigated in detail. Park and Ride is not included.

[26] Mostly bus subsidies, but also staffing and overheads for soft measures.

10 *Funding Options*

10.1 *Introduction*

10.1.1 Before we consider the Options themselves, we must consider the funding options for transport measures and the conditions under which funding is available. This is essential because there are important sources of funding which are accessible only for Options which contain the right balance of "carrot" measures to encourage the use of non-car modes and "stick" measures to discourage car use. There is therefore little point in developing Options which do not have an appropriate balance of carrots and sticks.

10.2 *Existing sources of funds*

10.2.1 There are a number of existing sources of funding which it may be possible to use in the implementation of parts of the BITLUS. These include:

- funds for improvements to Hennef Way;
- funds for works to improve safety on the North Bar/Horsefair/South Bar route and possible SUSTRANS funding for cycle measures on this route; and
- there may be funds available from planning gain arising from town centre developments (i.e. through Section 106 agreements).

10.2.2 *Car parking charges*

10.2.3 The product of town centre parking charges could be recycled into town centre improvements and other aspects of the strategy. Current parking charges generate an estimated £600,000 per year, and the Option 4 parking strategy would be expected to generate funds of at least a similar order.

10.2.4 At some point in the future when the legislation is in place, there will also be an opportunity to introduce workplace-parking charges. It may be appropriate to consider this funding source towards the end of the 10-year period of the plan, and it would also help to address the issue of the large proportion of town centre parking (estimated at 50-60%) that lies outside local authority control.

10.3 *Other funding sources*

10.3.1 *Local Transport Plans*

10.3.2 Local Transport Plans were announced in the Government's White Paper A new Deal For Transport: Better for Everyone, published in 1998. Guidance on these Plans published by the DETR outlines the revised approach to funding of Plans.

> The guidance makes clear that both changes in road space and management of its use should be evaluated in relation to a range of objectives, not just traffic capacity, and especially safety, congestion and pollution objectives. It also emphasises the need to include "sticks" in the form of parking management "*We will expect all LTPs to set out how parking policies are to be used to encourage motorists to use alternative means of travel…*". [27]

10.3.3 The specification of outputs and assessment of value for money is grounded in an appraisal process, which has been revised. The New Approach to Transport Appraisal (NATA) criteria have been used in the assessment of the BITLUS Options later in this report.

10.3.4 The prospects for funding through the Local Transport Plan process have been considerably enhanced following the Government's July 2000 Comprehensive Spending Review. This included a 20% year-on-year rise in transport expenditure for the next three years. Much of the increased expenditure will be for capital investment, which should raise the proportion of Local Transport Plan bids to receive funding in future years. The rural transport fund was specifically highlighted by the Chancellor for a more than 50% increase, which could help to fund the rural bus initiatives included in the BITLUS options.

10.3.5 The local authority may choose to proceed through alternative funding routes including:

> ***Public Private Partnership***, which requires an assessment of potential value for money and a demonstration that PPP is likely to offer better value than conventional procurement.
>
> Public Private Partnerships includes ***PFI*** although the availability of such resources is likely to be severely restrained in the foreseeable future.
>
> A third option mentioned is **local authority initiated PFI**. Projects are eligible that fall within Capital Finance Regulations

[27] Department of the Enviironment, Transport and the Regions, March 2000, "Guidance on Full Local Transport Plans", paragraph 170.

and have revenue funding from the local authority itself (e.g. such as workplace parking charges as described in the Transport Act 2000).

10.3.6 *European Funds*

10.3.7 The European Regional Development Fund is administered under a series of objective headings, each of which applies to geographical areas of the Community. There are in addition a series of non-geographical Structural Funds targeted at specific measures such as inner city renewal (URBAN), local rural development (LEADER) and transfrontier co-operation (INTERREG). The BITLUS proposals would not receive priority under any of the ERDF Options and funds will not be available. There may, however, be European funding for innovative proposals, though this could involve partnership with other towns and authorities and a major element of match funding and research backing. There are no measures within the Options that are innovative in the sense required, though novel forms of rural public transport could be eligible.

10.3.8 *Private sector financial contributions*

10.3.9 Funding will also be available in the form of planning gain from new development. New housing developments are a possible source of planning gain, as are developments within the town centre. The development of the multiplex cinema site and the area around the railway station could deliver transport funding via a S106 agreement. The Hennef Way dual carriageway scheme put forward by the client authorities is dependent on this source of funding.

10.3.10 The train operating companies and/or Railtrack may contribute to improvements to the proposed multi-mode interchange infrastructure at Banbury railway station if this results in higher fare revenues or parking revenues, or development value. There may, however, be strings attached to such contributions, for example the provision of more station car parking.

10.3.11 *Lottery funding*

10.3.12 The Lottery Funds include a Sport Fund and a Heritage Fund. Elsewhere in the UK the fund administrators have indicated in principle that all cycle and pedestrian routes, not just those linked to the Sustrans National Cycle Network, may qualify for lottery funding. This would provide up to 65% matching funding for projects of more than £5000. The programme 'Awards for All' may be able to help with projects of less than £5000. The Heritage Fund may consider some specific environmental measures in

Banbury involving treatment of the town's historic fabric if it is in an area of heritage merit such as a conservation area. However, an earlier bid for environmental and other measures for Banbury Cross was unsuccessful.

10.3.13 *Other sources*

10.3.14 Funding may be available for specific measures from a wide range of sources. In some cases match funding is provided, in others funding is limited and the assistance offered tends to be more in the form of advice. Examples include:

- SUSTRANS funding for cycle measures;
- the Institute of Sports Sponsorship;
- Foundation for Sport and the Arts; and
- Countryside Agency.

10.3.15 There may also be measures which overlap into other local authority areas or cross local authority boundaries. The potential for funding from other authorities should not be ignored. In addition, Parish Councils may have funds available for minor local works, and this could be important with the recent establishment of Banbury Town Council.

10.3.16 A recent source of funding is the ***Rail Passenger Partnership*** (RPP) fund being administered by the shadow Strategic Rail Authority. Bids can be made to fund or part fund either capital or revenue projects and the money is paid to train operators. In the Banbury context the proposed multi-mode interchange would be the obvious contender, with the need for additional capital to take the project beyond what the train operators themselves could achieve. The George Street bus link is a case in point. We understand that discussions have already been held between officers of the two councils and the rail providers.

11 *Choices*

11.1 *Introduction*

11.1.1 This Section sets out the key choices that flow from the BITLUS outputs and conclusions. The Section begins by explaining why it is appropriate to progress an Integrated Transport Strategy (ITS) in Banbury, and the consequences of delaying the necessary decisions. This is followed by a summary of the particular issues about which choices need to be made. Finally some further points are made that could have a bearing on the decision making process.

11.2 *The importance of an Integrated Transport and Land Use Strategy for Banbury*

11.2.1 In recent years Banbury has achieved major success in developing a strong local economy with low unemployment. This has been reinforced by a growing retail and service sector represented in particular with the Castle Quay centre, which will enable Banbury to extend its catchment area and attract shoppers and visitors who previously travelled to competing towns such as Leamington Spa, Northampton and Milton Keynes. Population is also growing in Cherwell, partly in response to local economic growth, but also to take advantage of its strong regional transport links, both road and rail.

11.2.2 It is a major aim to maintain and build upon this success. There are, however, threats to the competitive position of Banbury and to the quality of life in the town and its hinterland. These threats are primarily related to transport, and the negative impacts of growing motorised mobility, namely:

- Worsening air quality;
- Increasing congestion;
- Longer and less predictable journey times;
- Deteriorating conditions for walking and cycling;
- Worsening road safety; and
- Continuing poor quality public transport in the towns and villages.

These are the obvious down-side of burgeoning personal mobility of a growing population.

11.2.3 **Unless action is taken to develop an efficient transport system that keeps in balance the various and often conflicting objectives, the**

problems of traffic growth could undermine the very qualities that have enabled Banbury to reach its present level of success. This dilemma is not unique to Banbury or Cherwell; it is a common dilemma throughout Britain. It is for this reason that the Government has been developing a national integrated transport framework, and is encouraging appropriate local policies through its system of financial support based on Local Transport Plans.

11.2.4 BITLUS was commissioned as a response to this challenge, and the way forward has been mapped out in broad terms, as described in this study report. There are some important and perhaps difficult choices to be made, and the more important of these are discussed here. But the most important choice of all is a strong commitment to an integrated approach.

11.2.5 To summarise the position Table 11.1 gives a brief analysis of strengths, weaknesses, opportunities and challenges (SWOC analysis).

Table 11.1 "SWOC" analysis of the Banbury area

Strengths	Banbury can build on past planning decisions that provide major advantages compared to some less fortunate towns. In particular: • The town is compact, which reduces the need to travel; • Shopping facilities are focused in the town centre, in line with modern planning guidance; • Land uses generating heavy traffic can be reached from the motorway without passing through the town centre; • The main through traffic is accommodated on the M40; • There are good long distance road and rail connections.
Weaknesses	As with many sub-regional towns, accessibility is an increasing issue, especially for those without cars. The mostly rural hinterland is poorly provided with public transport. Dependence on cars increases the pressure on the town in terms of congestion, parking and environmental quality. Public transport is also poor within the town, with poor interchange between bus and rail. Parts of the town centre are dominated by traffic. Recent housing developments in the Banbury area have exacerbated car dependence and are not consistent with sustainable development principles.
Opportunities	Banbury has the opportunity to take action now to ameliorate those problems that are already apparent, especially through the Local Transport Plan, and the Cherwell Local Plan. The plans for expansion provide an opprtunity to improve the structure of development to achieve a better balance between modes of travel and reduce dependence on the car. There are good prospects for Government funding, provided the right choices are made.
Challenges	The biggest challenges result from continuing traffic growth. Avoiding this growth to maintain Banbury's strengths will require strong measures. Expansion of the town makes this a tough challenge, but it also can provide the driving force in seeking appropriate solutions. Also action is needed to avoid Castle Quay operating like an out-of-town mall rather than an integrated part of the town centre.

11.3 *The need to combat traffic growth*

11.3.1 During public consultation, some people expressed the opinion that traffic problems in Banbury are not too severe, and that no dramatic action is called for. That might be an acceptable position if things could stay just as they are today. Unfortunately that is very far from the case. Factors beyond the control of the local authorities mean that road traffic in Cherwell is expected to increase by about 25% overall by 2011 compared to 1998. ***(See Photo 2)*** This trend means that the future offers a less attractive and worsening prospect:

- Much greater volumes of traffic with longer delays;
- Delays encountered for much longer periods of the day;
- More noise and worse air quality;
- Increasing danger, difficulties and costs associated with travelling on foot, by cycle and by public transport.

Quite apart from the predicted "background" traffic growth, these undesirable trends will be fuelled by the further growth of the town.

11.3.2 In short, if no action is taken, the quality of life in Banbury is set to deteriorate. The longer this deterioration continues, and the more people become dependent on cars for their daily travel, the harder it will be to halt the trend, let alone reverse it.

11.3.3 This report sets out measures that are necessary to tackle traffic growth. Implementing these measures will not be easy, however, unless efforts are made to win public support for them. The public consultation exercises demonstrated that:

- Many people do not perceive the transport issues to be sufficiently important to justify major change; and
- While there is support for "carrots" such as improving buses and cycle and walk facilities, many people are strongly opposed the use of "stick" measures, particularly reducing parking supply and increasing charges.

11.4 *Just Carrots, or Sticks as well?*

11.4.1 To gain support for a balanced programme of measures it will be necessary to "lead from the front", and to show how tough action for a few can produce wider benefits for everyone. This will mean emphasising the positive elements of the BITLUS measures such as the creation of a safe and enjoyable town centre environmental, and the development of a much more effective bus network.

11.4.2 The balance between sticks and carrots is ultimately a matter of political choice, but the following points should be considered

- Traffic growth cannot be slowed by the provision of alternatives to the car alone. There have also to be some extra deterrents to car use to persuade some people to make some trips by other means.
- Such demand management measures are necessary to achieve other transport objectives, such as better travel opportunities for those without cars, and better road safety.
- Demand management measures are also stipulated by the Government in their criteria for funding transport schemes through the new Local Transport Plan system.

11.5 *Can BITLUS deliver the objectives?*

11.5.1 The study has indicated that the measures proposed will not be sufficient to neutralise the trend of continued traffic growth. However, this conclusion is based on the assumption that mode choice in future will be based on attitudes that are similar to those of today. There is a real possibility that the active deployment of resources to win the "hearts and minds" of people in relation to the BITLUS philosophy of halting the switch to more and more car use. The use of local Travelwise campaigns and other "soft measures" can thus offer a way out of the dilemma. The effectiveness of this cannot be modelled or predicted. It will therefore be necessary to adopt an approach of "implement, monitor and review", i.e. to periodically check on progress towards the target, and to alter the programme as necessary during the 10 year period.

11.6 *Which Option?*

11.6.1 Assuming that the need for an integrated approach is accepted, a number of key choices need to be made. Important progress is already being made, as outlined in section 3 of this report. Further action will be needed, and two consolidated Options are presented in this report. Option 4 is a the synthesis of measures developed in the study's earlier stages by the BITLUS consultant team, while Option 5 is the client authorities' amended version. Which of these Options should be chosen, or indeed should things be left as they are?

11.6.2 The differences between Options 4 and 5 relate mainly to town centre parking, and widening Hennef Way. Parking decisions can be taken from time to time, reviewing the position and modifying the policy as appropriate. The parking issue is thus not critical in terms choices for the longer term.

11.6.3 The main choice is therefore about Hennef Way. Both Options include improvements and capacity increase, but the order of magnitude of both investment and impacts are quite different. As explained in the previous section of this report, the dualling of Hennef Way as included in Option 5 has some significant disadvantages, namely:

- It is expensive (over half the estimated total cost of the Option 5 ten-year programme);
- Reduced traffic delays will benefit mainly car commuters;
- The scheme makes a negative contribution to the basic BITLUS objective of stabilising traffic levels;
- It will be difficult to attract Government funding support for the Local Transport Plan if the scheme is included in the package, since it does not contribute to the stated basic objectives, nor is it balanced in Option 5 by demand management measures in the town centre;[28]
- There is an "opportunity cost" of the scheme in that it will use developer contributions that otherwise could be used to fund other transport improvements.

11.6.4 Nevertheless, these considerations must be weighed against the fact that the scheme has a good deal of local popular support.

11.7 *What can be done to achieve zero traffic growth?*

11.7.1 From the model results contained in this report it can be seen that to meet the objective of zero traffic growth compared to 1998, much more stringent measures would be needed to limit the growth in car use. The implications of this are:

1 Avoidance of all traffic growth at peak hours is unlikely to be achieved by better quality alternatives to the car than provided in the Options;

2 Avoidance of traffic growth would therefore require measures that deter car use directly, such as higher parking charges, road user charges or significant reductions in road capacity. This could be easier if planned in cooperation with competing centres, as supported by regional planning guidance;

[28] The fact that Government support would not be sought for the Hennef Way scheme itself would not affect the assessment of the effectiveness overall package upon which Government funding allocations are decided.

3 The implementation of Travel Plans (such as Green Commuter Plans and Safe Routes to School initiatives) could contribute to avoiding traffic growth.

4 Another possibility is that real increases in motoring costs could reduce demand, though this lies outside the influence of local authorities.

11.7.2 Keeping traffic growth to zero at off-peak times will be even more difficult than for journeys at peak times, mainly because trips patterns are more dispersed making them less easy to serve by public transport.

11.8 *Which measures take priority?*

11.8.1 Implementing the Options and Starter Kit will be expensive and it is not possible to implement all the measures at once. Choices need to be made in terms of priorities for action. Which measures should be implemented within the next 5 years? Which should be funded in the next 5-10 years? Which should wait until 10-15 years time? Which should be considered for implementation after 2016? It is hoped that the description of the Starter Kit and Options and the assessment of their performance will assist in the making of these important decisions. The main choices which need to be made are about priorities for action and the timing of the implementation of measures. The Tables setting out the measures in each Option are arranged in terms of a recommended order of implementation, but items can be brought in sooner, or put further back in the programme, depending on the outcome of monitoring exercises. It should also be remembered that the timescale for implementation varies between different measures, some requiring much more planning and "lead time" than others.

11.8.2 *Park and Ride for Banbury?*

11.8.3 Many people support the idea of Park and Ride for Banbury. The technical and financial appraisal of Park and Ride produced unfavourable results, and consequently it was not included in the BITLUS model testing exercises. Nevertheless, in view of the potential benefits and the known popular support, opportunities for introducing Park and Ride services should be kept under review. The financial support for such a service could be provided from Council resources, though this would be likely to be excessive in relation to the benefits, especially with Option 5.

11.9 *Banbury as shopping mall or town centre?*

11.9.1 Banbury could build on its historic strengths as a market town and sub regional focus, able to attract people not just for shopping, but for a range of activities including entertainment, the arts, social and cultural events, sport and leisure, and tourism. The historic centre can be developed and extended to boost the vitality and economic viability of existing as well as new commercial enterprises; a place where people like to visit, to linger and enjoy themselves. The consultation found that many people, including many of the existing business interests in the town, supported this vision of Banbury.

11.9.2 Alternatively, the centre could develop primarily as a one-stop shopping mall, with Castle Quay operating like an out-of-town mall. In this scenario people would tend to drive into the car parks serving Castle Quay, do their shopping in the mall, and return to their cars and drive home again without visiting or making use of other facilities in Banbury. This is already a common pattern for people coming to the Banbury superstores for food shopping. The pattern could be replicated for non-food shopping at Castle Quay. This scenario is the cause of concern amongst established traders in the town.

11.9.3 The Options developed in BITLUS are clearly aimed at choice of the former scenario, but this does involve some fairly tough decisions on the following issues:

- investment in the western part of Banbury town centre;
- parking management to shift the balance of travel to non-car modes;
- investment in step-change improvements to bus services and facilities, and the quality of routes for walk and cycle access to the town centre;
- Investment in the *quality* of town centre streets and public spaces, to increase its attractiveness as a place to visit.

11.10 *Build houses in Banbury or in villages as well?*

11.10.1 People living in the villages and rural areas around Banbury make more use of cars than those living in the town, they also perceive themselves to be car dependent, and see less prospect of reducing their car dependence. The larger the number of new houses built outside Banbury, the greater will be the difficulty of avoiding future traffic growth. Bringing rural housing development to a halt would be the single most effective contribution to meeting the aim of stabilising traffic over the next ten years.

11.10.2 The choice of in-town housing development, and the location of any further requirements on the edge of the town is therefore an important one.

Continued growth in the villages, especially those with little prospect of providing strong local facilities, or of being served by reasonable bus services will stack up transport problems for the future. Development of windfall sites in the rural areas would pose even more serious problems.

11.10.3 *Environment versus car access in Grimsbury*

11.10.4 Both Options include proposals to resolve traffic and environment issues in Grimsbury. These are designed to give top priority to buses, pedestrians and cyclists, and to create an environment in Grimsbury that is untroubled by heavy traffic. In Option 4 a bus gate and selctive closure is near to the railway bridge, in which case car access between Grimsbury and the town centre will be less direct. In Option 5 the closure is just west of Ermont Way (near the weight restriction). In this case direct car access to the town centre is preserved, but car access to the M40 and points east would involve a diversion. The model results suggest that both options would produce beneficial results, but this measure is of key importance and more detailed investigation and consultation would be needed before the final choice was made.

11.11 *Historic environment versus convenient car parking*

The west side of the town centre currently has convenient parking provided in North and South Bar Streets and Horse Fair. If the potential of this historic quarter is to be realised, whether for trading or for attracting tourists and other visitors, the amount of space given over to roads and parking will need to be reduced. There is a straightforward though difficult choice here between convenience for car users and the attractiveness of the place that people come to visit.

Annex A

Key Steps in BITLUS

Summary of key BITLUS steps and decisions

Study commences	October 22nd 1998 inception meeting
Stage 1 public consultation and surveys	Winter 1998-99
Objectives agreed	17th December members' steering group
Stage 2 Options agreed for consultation	19th April 1999 members' steering group
Public consultation exercises and exhibition	April – July 1999
Transport impacts of new housing areas considered	1st June 1999 CDC committee meeting (local plan "directions of growth")
Performance testing of 3 options	Jul – August 1999
Decision to combine measures from all 3 options into "hybrid" option	23rd September members' steering group
Client authorities consider BITLUS measures	November and December 1999 OCC and CDC committee meetings
Consultants prepare hybrid option	January 2000
"Client hybrid" option considered	April 4th members' steering group
Stage 3 "consultants' hybrid" and "Client hybrid" finalised for testing	May 25th officer working group
Draft final report considered	11th July 2000 members' steering group
Consolidated Final Report submitted to OCC, CDC for consideration by service committees	End of July 2000

Annex B

BITLUS - principal tasks undertaken

Stage 1

- Review of data and studies
- Consultation with local groups
- Household questionnaire and travel diary survey
- Gather other data including bus travel
- Physical surveys of the town's travel infrastructure (roads, footways, cycle facilities, public transport).
- Study objectives
- Key issues
- Focus groups and direct consultations

Stage 2

- Complete "infill" surveys of car parking, cyclists, pedestrians and school children, as well as collecting and analysing bus data
- Review study objectives
- Identify issues requiring priority attention
- Prepare guidance on key issues identified in Stage 1 including design guidance for the development of the Cattlemarket site and railway station area
- Calibrate survey data
- Construct computer-based strategic multi-mode model
- Analyse travel in Banbury and its hinterland
- Assess potential for mode shift
- Identify sources of funding
- Identify of alternative visions for Banbury and produce a "long list" of schemes and measures
- Identify Options and measures for short term implementation
- Devise "Starter Kit" and three further packages (Options 1-3)
- Devise a performance-testing framework
- Test the packages using multi-mode model
- Plans for Horsefair/North Bar/South Bar

- The role of "Soft Measures" in BITLUS

Stage 2 continued

- Rural bus improvements
- Schools survey
- Cycle survey and pedestrian survey
- Parking survey
- Undertake public consultation exercises including a public exhibition, meetings and analysis of responses
- Consultation with public transport providers and statutory bodies
- Provide guidance on the options for Cherwell District Council's housing strategy and assess the transport impact of different options for housing growth

Stage 3

- Prepare "hybrid" packages (Options 4 and 5)
- Test performance of Options 4 and 5 using the multi-mode strategic model
- Analyse the results
- Prepare Final Report
- Plus attend officer and member meetings throughout study period
- Plus handover of data and files