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1.1 *Background*

1.1.1 This report presents the findings of the second stage of the Banbury Integrated Transport and Land Use Study (BITLUS) which was commissioned from Llewelyn-Davies and Oscar Faber by Oxfordshire County Council (OCC) and Cherwell District Council (CDC).

1.1.2 The aims of Stage 1 were to:

- explore and clarify the draft 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.

1.1.3 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 2 of this report.

1.1.4 Stage 2 is the creative core of the study where analysis of the current and future situation is considered alongside options for development and transport policy. The aims of Stage 2 were to :

- identify packages of measures;
- test their performance against the study objectives; and
- present the key choices.

1.2 *Stage 2 tasks*

1.2.1 Stage 2 involved a number of tasks as follows:

- preparation of guidance on key issues identified in Stage 1 including design guidance for the development of the Cattlemarket site and railway station area;
- identification of alternative visions for Banbury and producing a "long list" of schemes and measures;
- identification of option packages and measures for short term implementation;
- preparation of the performance testing framework;

- completion of infill surveys of car parking, cyclists, pedestrians and school children, as well as collecting and analysing bus data;
- meetings with bus and rail service providers and the Chamber of Trade;
- development of a multi-mode strategic transport model;
- undertaking public consultation exercises including a public exhibition and analysis of responses;
- assessment of the impact of transport options against objectives including use of the multi-mode model;
- provision of guidance on the options for Cherwell District Council's housing strategy and assessing the transport impact of housing options;
- identification of sources of funding; and
- testing three transport packages against a "do minimum" position.

1.3 *The Stage 2 approach*

1.3.1 Although Stage 2 was complex and involved a wide range of types of work, the overall approach can be summarised as:

- generation of packages of measures to meet agreed objectives; and
- testing the performance of these packages against the objectives.

1.3.2 Stage 2 thus provides an "objectives-led" analysis of a number of packages of measures, each designed to tackle different transport issues. The aim of this has been to clarify the decisions that need to be made to reach a preferred package for development in Stage 3.

1.3.3 The specification of measures within each package is designed to meet the requirements of broad strategy testing. They are to a degree indicative only. Individual schemes will in many cases require further detailed consideration, development and consultation by the local authorities and other bodies involved. Indeed this is already happening, for example with the "Horsefair traffic cap" and certain cycle proposals (see below).

1.4 *Structure of this Report*

1.4.1 This report sets out the findings from the Stage 2 work. Detail on the infill surveys, the additional advice provided on key issues and the construction of the transport model is provided in the Appendices. The report is structured as follows:

- Section 2 sets out the objectives and issues agreed from Stage 1;
- Section 3 draws on the survey and modelling work to describe travel in Banbury and its hinterland today and in the future;
- Section 4 explores the philosophy of BITLUS and the potential for mode shift in Banbury and its hinterland;
- Section 5 reviews options for funding of transport measures and the requirements for successful bids for funds;
- Section 6 describes packages of measures, each designed to tackle different transport issues;
- Section 7 tests these packages against the study objectives and public consultation responses; and
- Section 8 sets out the choices for the preferred strategy.

2 *Objectives and Issues*

2.1 *Introduction*

2.1.1 This Section provides a summary of the study objectives and the key issues requiring urgent attention as identified and agreed in Stage 1.

2.2 *Study objectives*

2.2.1 In Stage 1, we distinguished between two types of aims and objectives:

- 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 specific aims.

2.2.2 The basic objectives are grouped under headline criteria, drawn from the Department of the Environment, Transport and the Region's (DETR) common appraisal framework. The agreed study objectives are set out in Table 2.1

Table 2.1: Study objectives

Headline Criteria	Basic objectives	Draft operational objectives for 2011
ACCESS	• Reduce reliance on the car • Ensure access to facilities for those without cars	• 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[1]) • 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
ECONOMY	• Enhance vitality	• Match transport to expansion of Banbury town

[1] The "5Cs" are: Convenient, Connected, Comfortable, Convivial and Conspicuous

	and viability of town centre • Protect/enhance economy • Efficiency for all modes and parking	centre to fulfil its sub-regional role (serving catchment but not encroaching on neighbouring catchments) • 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

INTEGRATI	• Integrate bus, rail	• Rail station can be accessed by bus from all key areas

ON	and private transport • Integrate pedestrian, cycle and bus transport with land use development and layout • Integrate facilities for those whose mobility is limited	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

2.3 *Issues requiring priority attention*

2.3.1 Stage 1 also identified five key issues for urgent attention which are set out below. We have undertaken additional work on four of the key issues as explained below, although it is important to note that further detailed investigation of these specific points lies outside the scope of the study.

2.3.2 These key issues and actions taken were as follows:

- **cattle market, railway station area regeneration:** this area presents the opportunity to create a highly accessible, high density, mixed use area. The development should include a public transport interchange as well as providing new linkages over the railway line. Preparation of guidance for the development of this area was highlighted as a key concern. The guidance provided on the development of this key area is set out in Appendix A and will be developed and implemented by both Councils;
- **exploiting environmental and public transport benefits of road investment:** Banbury has secured relief from heavy traffic through the M40 and the inner relief road to the east of the town centre. North-south traffic will, however, build up on the Horse Fair route because as yet nothing has been done to prevent such growth. Measures to "cap" the build up of traffic on the former main routes were seen as an urgent priority. The guidance provided on this issue is set out in Appendix B. The matter is being pursued by OCC;
- **Park and Ride opportunities:** the safeguarding of a potentially suitable park and ride site was flagged up as an urgent issue. CDC agreed to keep the consultants informed of any developer interest in or

activity relating to the site. An outline assessment of the feasibility of P&R in Banbury has been undertaken, and is reported in Section 7;

- **people in Banbury perceive congestion as a problem, but not car use:** the issue of how to solve current and future traffic growth in advance of public acceptance of the traffic reduction measures was highlighted. We stated that a campaign to win the "hearts and minds" of Banbury residents and visitors is required. This is an important outstanding issue. The guidance provided and actions taken to date are set out in Appendix C; and
- **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, and the guidance provided is set out in Appendix D. Reviewing value for money from rural bus grants has been identified by the newly formed Commission for Integrated Transport as a priority task.

2.4 *Other key issues*

2.4.1 The study has identified a wide range of other issues which are important for the future of Banbury. These key concerns are:

- Town bus services – the frequency and reliability of services, the lack of evening and weekend services in some areas;
- Traffic congestion on Hennef Way, and congestion generally perceived to be caused by a high proportion of short distant trips such as parents giving children lifts to school;
- The town centre:
  - encouraging people to live in the town centre;
  - providing appropriate conditions for the town centre to prosper including providing good accessibility;
  - the need for pedestrians to be given priority in Market Place and Parson's Street;
  - remodelling Banbury Cross to provide a more attractive environment; and
  - the need for a residents only parking zone around the town centre and hospital.

3 *Travel in Banbury Today and in the Future*

3.1 *Introduction*

3.1.1 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.

3.2 *Travel in Banbury and its hinterland*

3.2.1 The household and schools survey (Appendices E and F) provide a picture of the extent of car use in the Banbury area, and the purpose and distribution of trips. From this it appears 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.

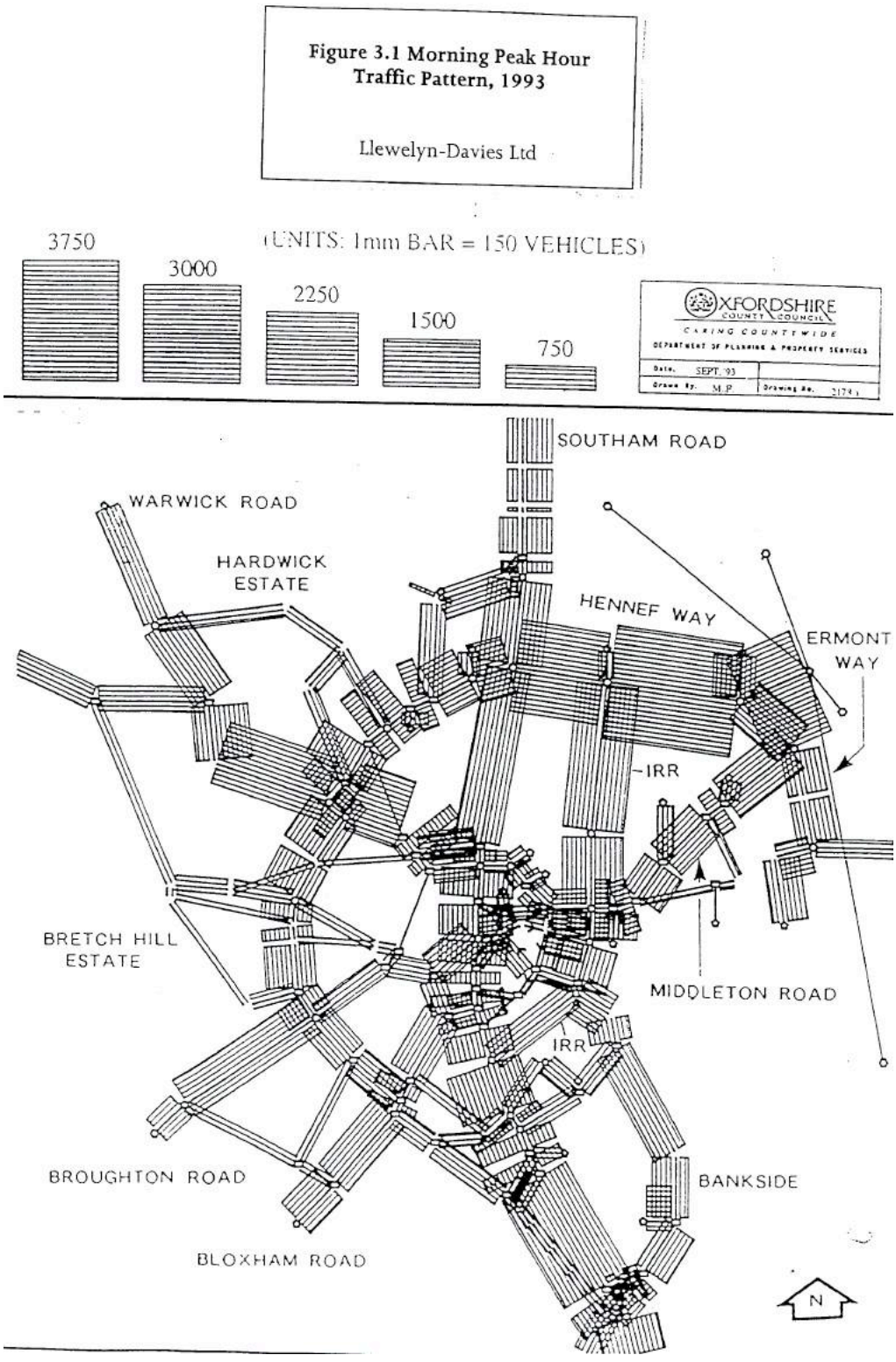
3.2.2 The predominance of the car means that a small percentage switch of trips away from the car will mean a large percentage increase in the non-car modes. If the switch is from car to bus, this can have major significance for the extent of enhancement required in bus services, both to attract users 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.

3.2.3 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. 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 with 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.

3.2.4 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 am peak hour traffic pattern in 1993 is shown in

Figure 3.1. 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.

Figure 3.1 AM peak hour pattern in 1993



3.2.5 Cycling accounts for a small proportion of trips in Banbury, around the average for the South East (2%). Our cycle survey shows that 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. Details of the cycle survey are included in Appendix G.

3.2.6 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.

3.2.7 As with cycling, the distribution of 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%).

3.2.8 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 travelled before 9.00am.

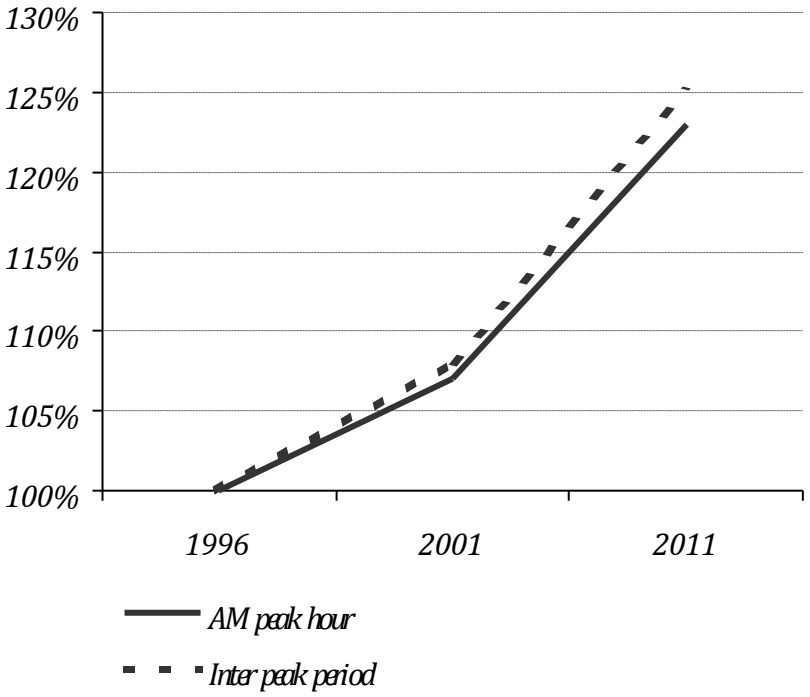
3.2.9 The total passengers using Banbury station in the last financial year was 650,000 of which 75% were travelling from, and 25% were travelling to Banbury.[1]

[1] Data kindly supplied by Chiltern Railways

3.3 *Traffic growth in Banbury to 2011*

3.3.1 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 Figure 3.2.

Figure 3.2: National Road Traffic Forecasts



Source: National Road Traffic Forecasts, 1997

3.3.2 As shown in Figure 3.2, the scale of forecast traffic growth is substantial – around a fifth as much traffic again as is currently using the roads. Although these forecasts would 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. 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.[1]

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

3.3.3 In Banbury itself and its immediate hinterland additional traffic is also likely to be generated by the in-migration of new households. 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.

3.3.4 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.

3.3.5 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.

3.3.6 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.

3.3.7 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.

3.3.8 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.

3.3.9 In short, by 2011 there will be little respite from heavy and congested traffic conditions at any time during the day.

3.3.10 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.

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

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

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

4.1 *Introduction*

4.1.1 This Section sets out the BITLUS solution to the issues raised in Section 3. The Section starts by setting out the philosophy of the study and shows how we intend to tackle the impending growth in car traffic and the associated problems it will bring.

4.2 *The BITLUS Philosophy*

4.2.1 Faced with the problems of traffic growth, we considered four scenarios, as illustrated graphically in Figure 4.1:

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.

4.2.2 Scenarios 1 and 2 do not address the issues. A Scenario 2 type package of measures would not attract funding from the DETR, as set out in Section 5, and would be unlikely to meet the Councils' obligations under the Road Traffic Reduction Act 1997.

4.2.3 The client authorities agreed that Scenario 4 would pose problems of public acceptance and technical difficulties because the stick measures required to bring about such a level of change in behaviour would be severe. This Scenario would also be very difficult to achieve politically, as there is relatively little evidence of a perception that reduction is required.

4.2.4 Scenario 3 has therefore been 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.

Figure 4.1

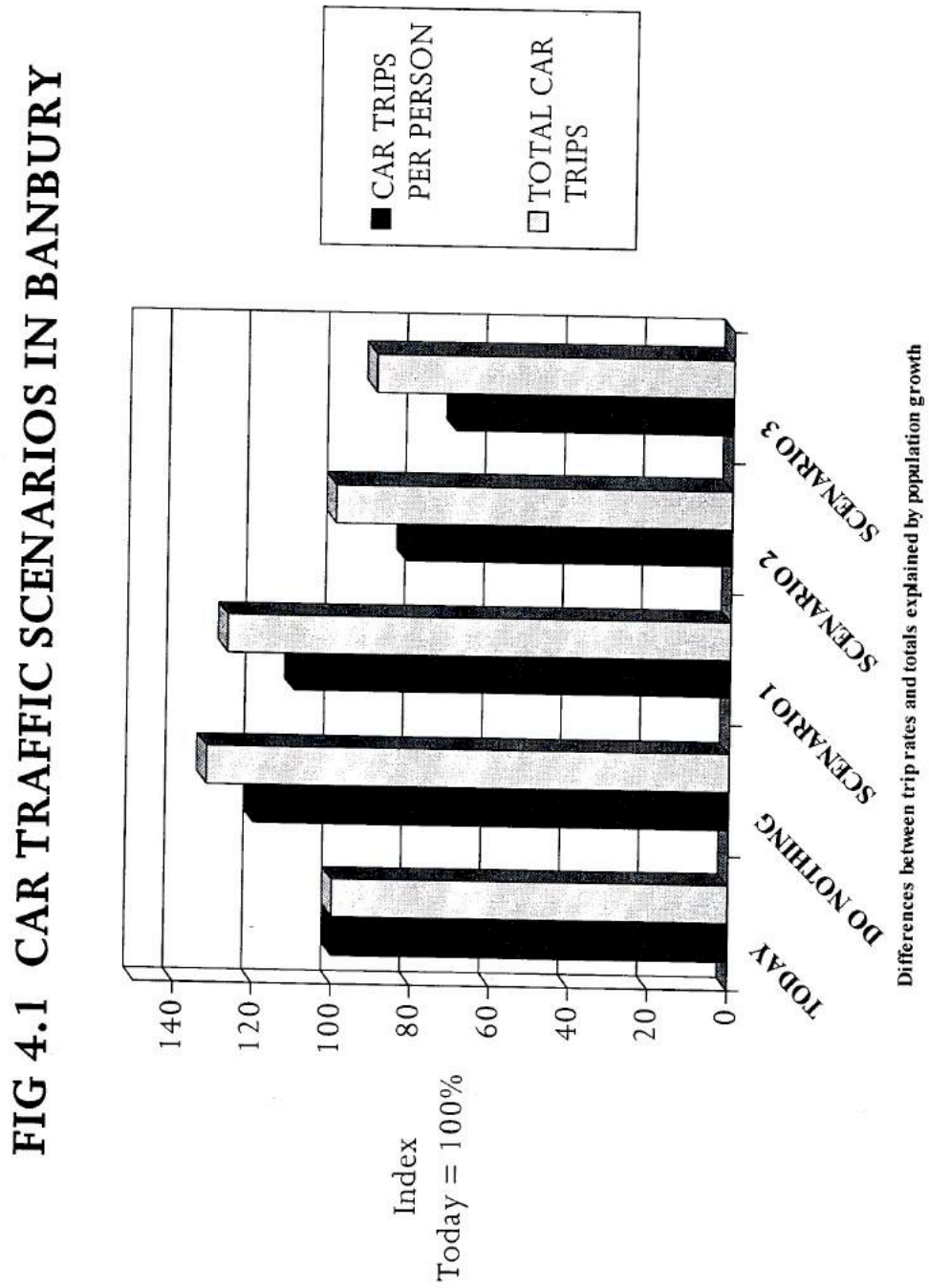


FIG 4.1 CAR TRAFFIC SCENARIOS IN BANBURY
CAR TRIPS PER PERSON
TOTAL CAR TRIPS
Index
Today = 100%
0
20
40
60
80
100
120
140
TODAY
DO NOTHING
SCENARIO 1
SCENARIO 2
SCENARIO 3
Differences between trip rates and totals explained by population growth

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

The basic philosophy of the BITLUS is to achieve this through mode switch of a proportion of the journeys people make from the car to other modes, and by avoiding the generation of new or longer car trips.

Current perceptions

The Stage 1 public consultation exercises 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 or recognition of how conditions could worsen in future if traffic growth trends continue. Congestion on Hennef Way was a concern for some who use this route at peak hours but issues of the environmental impacts of traffic on sensitive routes or air pollution were hardly mentioned as concerns.

Keeping traffic under control

The public consultation exercises showed that many people do not feel there is a significant problem with the current level of traffic on roads in Banbury and its hinterland. The aim of BITLUS is to keep it this way. The aim is to keep traffic at around current levels but to plan for more travel to and within the town. The key to this lies in mode switch. The BITLUS aims to encourage people to make some of their journeys by modes other than the car. This applies to existing as well as new residents of the area. It is important to note that this can be achieved by influencing the changes that people will in any event be making over the next 10 years, most of them for reasons other than transport.

Shifting the balance

The BITLUS is not about draconian anti-car measures. The car will continue to be used for the majority of journeys, and the study packages 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 mode switch can be achieved relatively easily, and it is here that the BITLUS effort is concentrated.

4.2.5 The package of measures being developed in the study is designed to increase the proportion of trips made by bus, walking and cycling, and to reduce the proportion of trips by car.

Avoiding new car trips

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 get married, 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 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.

4.2.6 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".

4.2.7 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".

4.2.8 Thus by influencing people when they come to make travel decisions, we can shape the pattern of travel over time.

4.3 *The Potential for Mode Shift*

4.3.1 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.

4.3.2 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;
- encourage people to change to a non-car mode for some of their trips, say one less per week (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 car than existing residents.

4.3.3 The household survey (Appendix E) 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 indiates strong though not universal support for the aim of the study.

4.3.4 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.

4.3.5 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.

4.3.6 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.

4.3.7 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.

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

5 *Funding Options*

5.1 *Introduction*

5.1.1 Before we consider the packages 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 packages 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 packages which do not have an appropriate balance of carrots and sticks.

5.2 *Existing sources of funds*

5.2.1 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).

5.3 *Local Transport Plans*

5.3.1 A revised form of Local Transport Plan was set out in the Government's White Paper *A new Deal For Transport: Better for Everyone.* Guidance on these Plans published by the DETR outlines the revised approach to funding of Plans.

5.3.2 The conventional source of funding is **Central Government**, where:

- "*The initial allocation of funds will be based on an assessment of need and the extent to which a Plan is likely to deliver value for money in meeting the Government's transport objectives.*"
- *"The continued funding of Plans will be related to the delivery of outputs identified at the start of the Plan."* (paragraph 188).

5.3.3 The guidance makes clear that both changes in road space and management of its use should be evaluated in relation to the whole range of objectives, not just traffic capacity. It also emphasises the need to include "sticks" in the form of parking management "…*we will expect all Plans to set out how parking policies are to be used to encourage motorists to an alternative means of travel*" (paragraph 48).

5.3.4 The specification of outputs and assessment of value for money is grounded in an appraisal process, which has been revised. The new approach to appraisal broadly takes account of five criteria:

- Accessibility: improving access to everyday facilities for those without a car and reducing community severance;
- Economy: supporting sustainable economic activity in appropriate locations and getting good value for money;
- Environmental impact: protecting the built and natural environment;
- Safety: to improve safety for all road users; and
- Integration: ensuring all decisions are taken in the context of UK integrated transport policy.

5.3.5 These are the criteria we used in our assessment of measures as set out in section 7 and Appendix J.

5.3.6 The local authority may choose to proceed through a **Public Private Partnership**. If so:

> "it will be necessary to indicate that an assessment of potential value for money has been made and that PPP is likely to offer better value than conventional procurement." (para 194)

5.3.7 Public private partnerships includes **PFI** although the availability of such resources is likely to be "*severely restrained in the foreseeable future*". (paragraph 210).

5.3.8 The third option mentioned is **local authority initiated PFI**. Projects are eligible that fall within Capital Finance Regulations and have revenue funding from the local authority itself (e.g. perhaps from workplace parking charges) (paragraph 211). The Draft Guidance, however, does not give any indication of who suitable partners may be.

5.4 *Car parking charges*

5.4.1 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 Packages are expected to generate funds of at least a similar order.

5.4.2 There will also at some point in the future when the legislation is in place, 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.

5.5 *European Funds*

5.5.1 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 packages 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 research element. There are no measures within the package that are innovative in the sense required, though novel forms of rural public transport could be developed as suggested in Appendix D.

5.6 *Private finance*

5.6.1 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.

5.7 *Lottery funding*

5.7.1 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.

5.8 *Other sources*

5.8.1 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.

5.8.2 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.

5.8.3 A new 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.

6 *Starter Kit and Packages*

6.1 *Introduction*

6.1.1 The basic aim of the study is to allow the town to grow without any growth in motorised traffic. The basic philosophy of the BITLUS is to achieve this through mode switch of a proportion of the journeys people make from the car to other modes, and by avoiding the generation of new or longer car trips. This Section sets out measures designed to achieve this mode switch of some car trips to other modes.

6.1.2 The Section begins with a discussion of a series of discrete measures which, we believe, should be implemented as a matter of urgency whichever decisions are made about other measures. These are known as the "Starter Kit".

6.1.3 The Section then sets out three packages of further measures which could be applied. It is important to note the following points:

- Many of the measures are not exclusive to the package in which they are presented. It is possible to generate a hybrid preferred package which draws together measures from all three packages;
- Some measures appear in more than one package and deliver a number of benefits;
- The packages are not mutually exclusive. They do not represent either/or type choices. It is not the case that the implementation of one package would mean that another could not be pursued;
- The option packages could however, represent alternatives in terms of phasing and funding, especially since it is unlikely that all packages would be completed within a ten year period.
- Individual measures could be moved from one package to another, if consistency of approach was maintained.

6.1.4 Each of the packages focuses on a different issue as set out below.

- **Package 1 Getting Banbury to Work**: this package is derived from public perception of peak hour road congestion as the main traffic problem in Banbury. Reduced car driver commuting to the town centre, and management of peak hour travel at other locations would reduce journey times at all times but particularly the peak journey to work hours;
- **Package 2 Going to Town**: this package emphasises the need to improve access and environmental conditions in the town centre. The package focuses on ways of giving priority to and increasing the travel by foot, bicycle and bus; and

- **Package 3 To Banbury and Beyond**: This package gives equal consideration to access and environmental conditions throughout the town and beyond, and for all types of travel, not just shopping and commuting.

6.1.5 Implementing the Packages and Starter Kit is an expensive business as we shall see in the costings provided in Section 7. 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 Packages 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.

6.2 *The Starter Kit*

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

1 North/South Bar and Horsefair "Traffic Cap". Details of this are set out in Appendix B. Measures included should be co-ordinated with planned maintenance work on this route, if necessary delaying the maintenance programme to allow time for design work and consultation.

2 High density mixed use development east and west of the railway station, including the cattle market site. Redevelopment or refurbishment of the station to include a multi-mode interchange (bus/taxi/cycle/car) via Bridge Street in the short term, and new link for bus, cycle and pedestrians only as part of longer term redevelopment of sites west of the railway. The scheme should also include new pedestrian and cycle links across the railway. Details of this are set out in Appendix A.

3 Development of "Quality Partnership" with local bus and rail operators. The full content of the agreements will depend on the particular package of measures selected, but the principles need 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 "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"; provide cycle storage areas in all new housing; local facilities to be provided within an easy walk of major new housing schemes.

5 Remove footway cycle routes within the town (i.e. within the 30 mph speed limit) as far as possible and reallocate carriageway space to dedicated cycle lanes or "shared strips"[1] 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.

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

7 Pedestrian phases to be provided at all signalled intersections and pedestrian crossing facilities to be provided at suitable locations on "traffic priority" and "mixed priority" roads (see Fig 6.14). 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. These roads and measures are shown in Figure 6.1.

[1] "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.

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

9 Signal junctions and road widening on Hennef Way to tackle immediate congestion problems, including periodic queues affecting the M40. Changes to the junctions on Hennef Way should be carried out in consultation with Rosy Burke, who is overseeing a public art strategy for the town. The transport measures are shown in more detail in Figure 6.2.

10 Create two inner area CPZs (north and south) with residents' parking available throughout, and a residents-only parking zone for streets surrounding the hospital. This would consist of a 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. The suggested boundaries of the residents-only parking zones are shown in Figure 6.3.

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

12

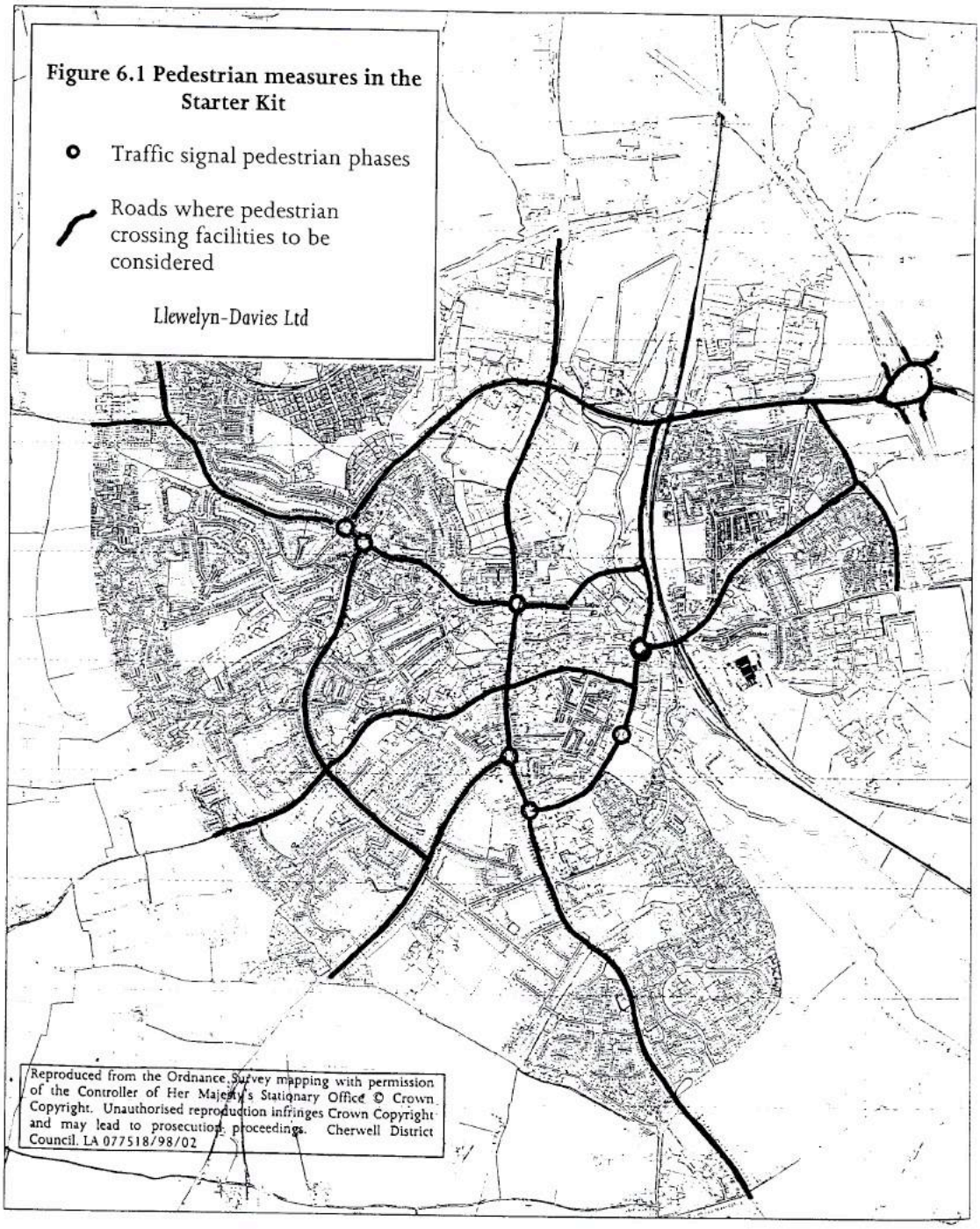


Figure 6.1 Pedestrian measures in the Starter Kit
Traffic signal pedestrian phases
Roads where pedestrian crossing facilities to be considered
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PEAK HOUR TRAFFIC SIGNALS
BUS/CYCLE ONLY (PACKAGE MEASURE)
TRAFFIC SIGNALS REPLACE ROUNDABOUT
PELICAN CROSSING
TOUCAN CROSSING
WIDENING TO ENABLE TWO WESTBOUND LANES
Figure 6.2 Traffic management measures on Hennef Way
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6.3 *Package 1: Getting Banbury to Work*

6.3.1 This Package 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.

6.3.2 The Package contains the following measures:

1 **New housing:** housing is concentrated in the town centre and areas closest to industrial areas and Cherwell valley. The preferred locations for housing are shown in Figure 6.4. 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 and other sites around the town. However, the feasibility is not demonstrated for the short to medium term, and park and ride is therefore not recommended at this stage. Park and Ride also was not included for model testing purposes (see paragraph 7.3.1).

4 **Soft measures:** Green Commuter Plans with local employers. These would be negotiated with new specially appointed council staff.

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. This is shown in Figure 6.5. There are a number of possible alignments through the Cherwell valley towards Cherwell Heights, so the route in this area is indicative only. Actual routes are still being considered will

require further detailed study. Cycle routes and 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 (a reduction from 2,600 to 2,300) 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. Higher charges could, however, be imposed incrementally over time. Workplace parking charges could be introduced as part of this Package, although this requires national primary legislation for which the timetable is not currently available.

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

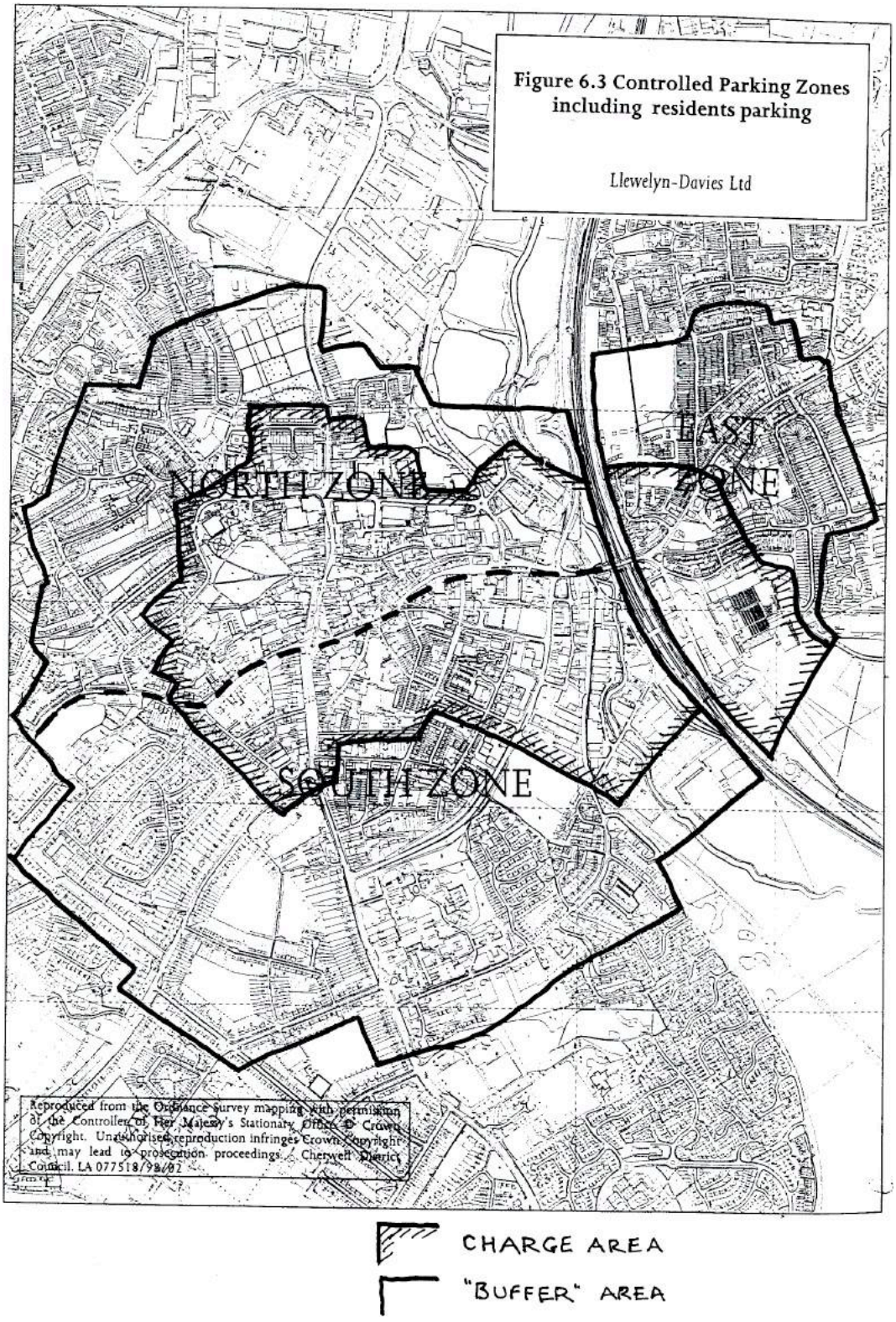
Figure 6.3 Controlled Parking Zones including residents parking
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NORTH ZONE
EAST ZONE
SOUTH ZONE
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CHARGE AREA
"BUFFER" AREA

Figure 6.4 Preferred housing locations, Package 1

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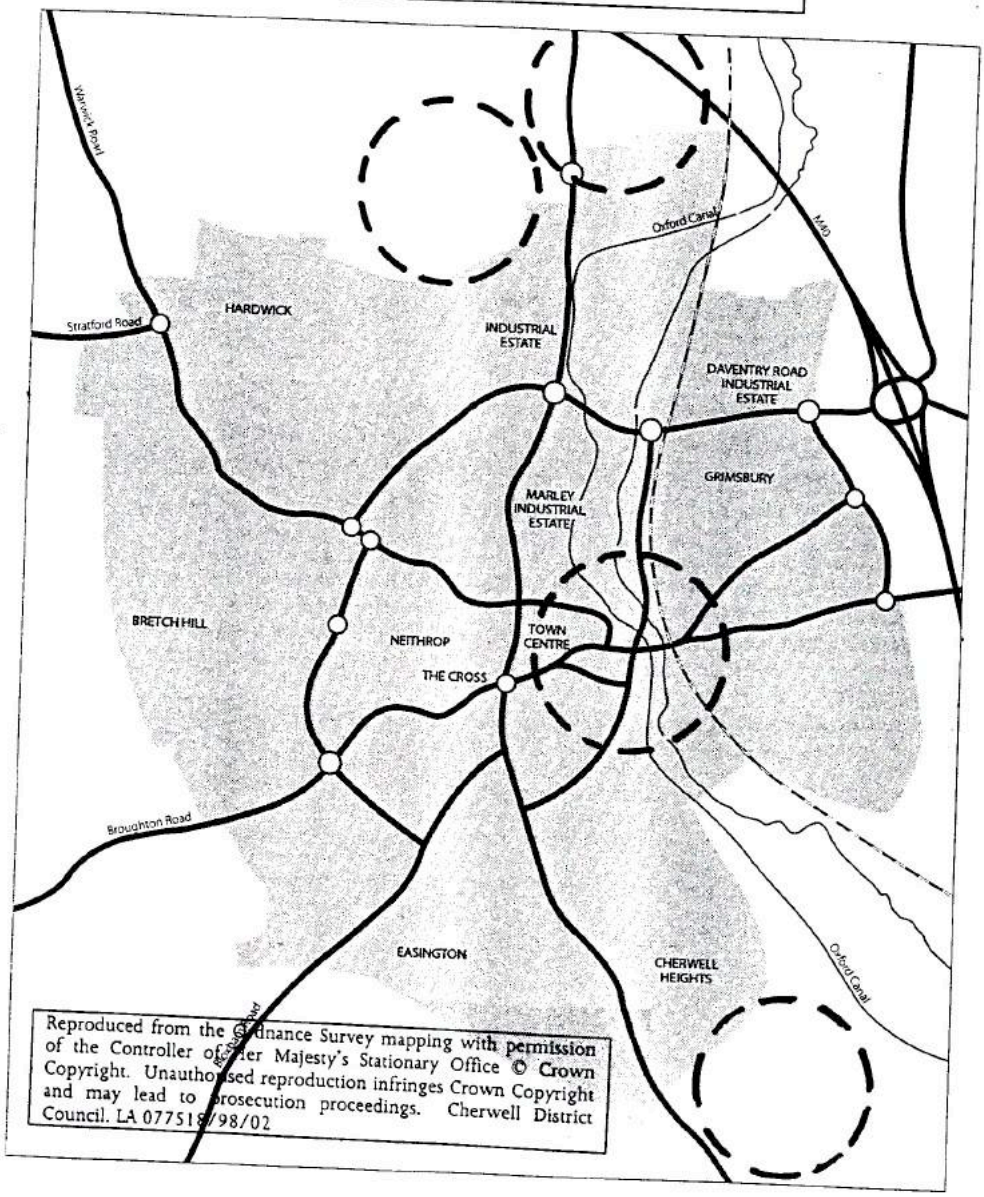

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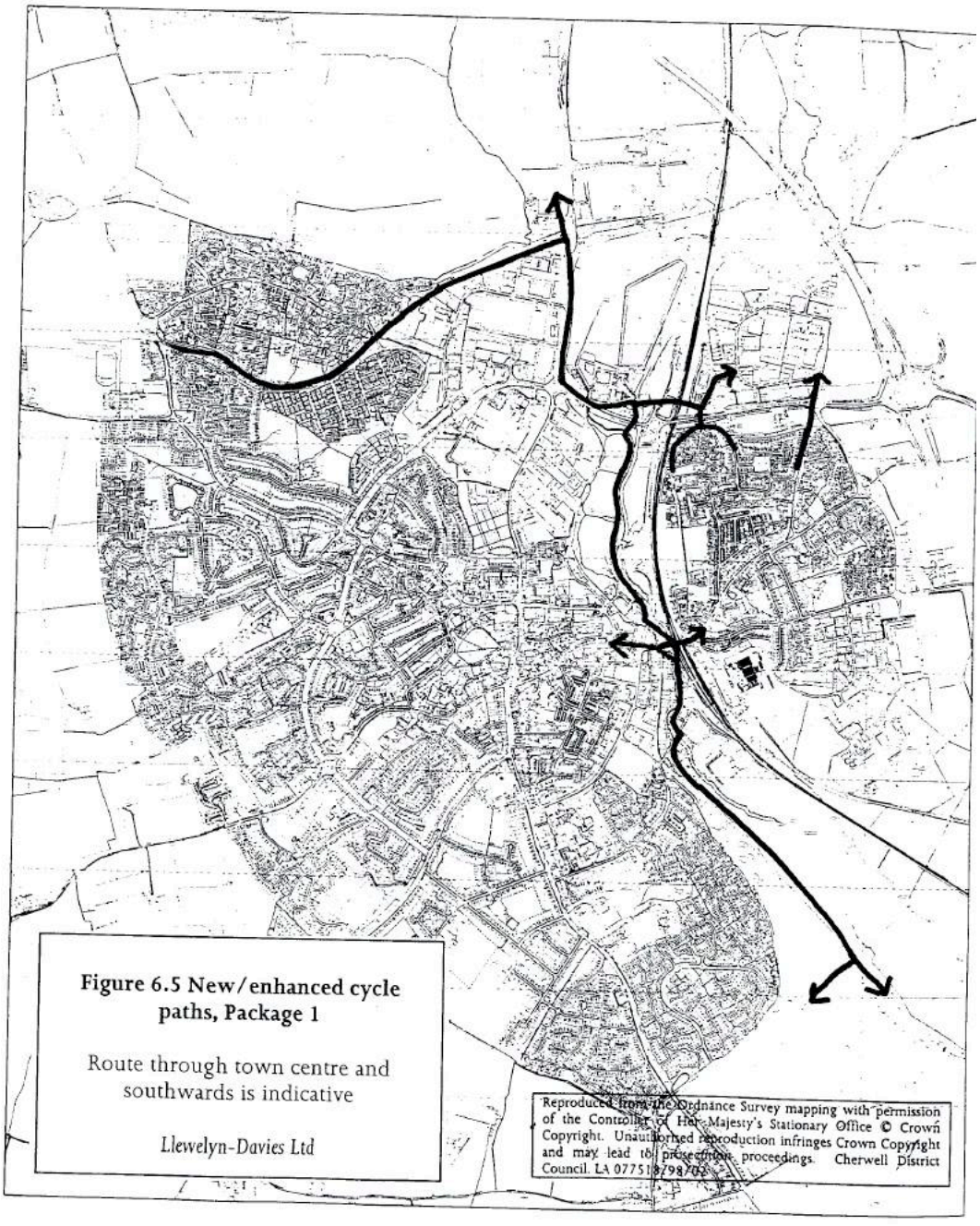
Figure 6.5 New/enhanced cycle paths, Package 1
Route through town centre and southwards is indicative
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6.4 *Package 2: Going to Town*

6.4.1 Package 2 tackles town centre environmental conditions and provides priority access to the town centre on foot, bicycle and bus. It targets car driver visitors, 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/cycle ways). The Package promotes access to town centre on foot and by bus/rail.

6.4.2 Package 2 contains the following measures:

1 **New housing:** Housing is concentrated in 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. The preferred location of housing is shown in Figure 6.6.

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 has been suggested but was not included in the model testing. 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 and the town centre is also included which links the rail station with the bus station and Banbury Cross. (This could be operated by

electric vehicle, free to users, and possibly part funded from S106 funds). It is timed to arrive before and leave after each train. 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. Figures 6.7, 6.8 and 6.9 show suggestions about how these public transport measures might work in the medium term, although the final package 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. These measures are shown in Figure 6.10.

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. The measures here would have little impact on traffic, but would improve the environment. There would be a loss of some parking space. Bridge Street is converted to buses, cycles and pedestrians

only both sides of the Concord Ave junction.[1] 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 initial ideas about how this could work. The measures are shown in Figure 6.11. Further discussion can be found in Appendix A.

7 **Parking:** Reduce short stay parking provision by 250 spaces (from around 1,250 to 1,000). Short stay parking charges to go up to 30p per hour and medium stay parking to £1.50 for 3 hours so that parking charges more closely compare with the return bus fare. Long stay would be £3 a day as in Package 1. This Package could also in the longer term be supported by the introduction of employee parking charges to encourage the redevelopment of private car parking areas.

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 Package includes limiting motor vehicle access during the day and repaving of Parsons Street and Market Square. 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.

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

Figure 6.6 Preferred housing locations, Package 2

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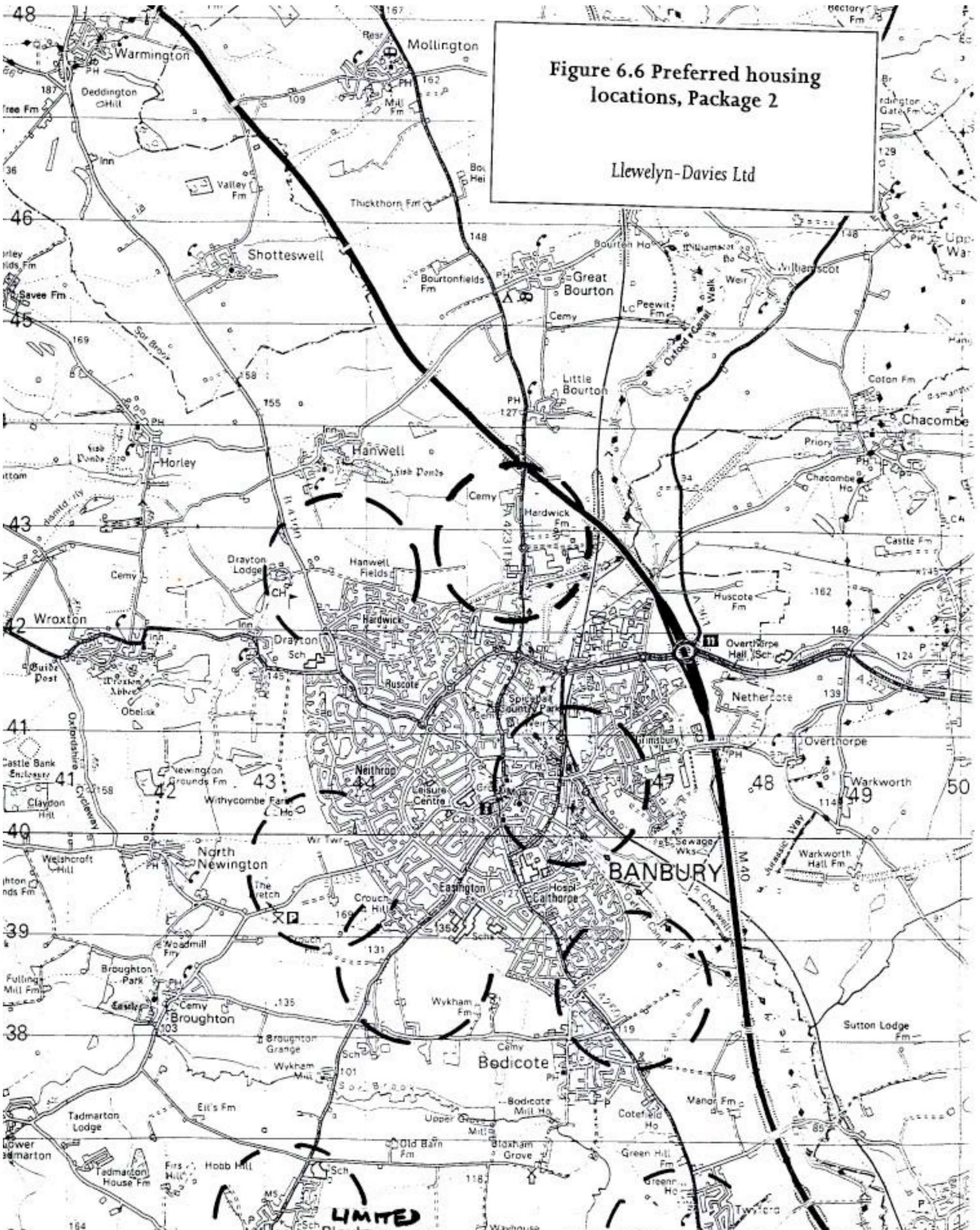

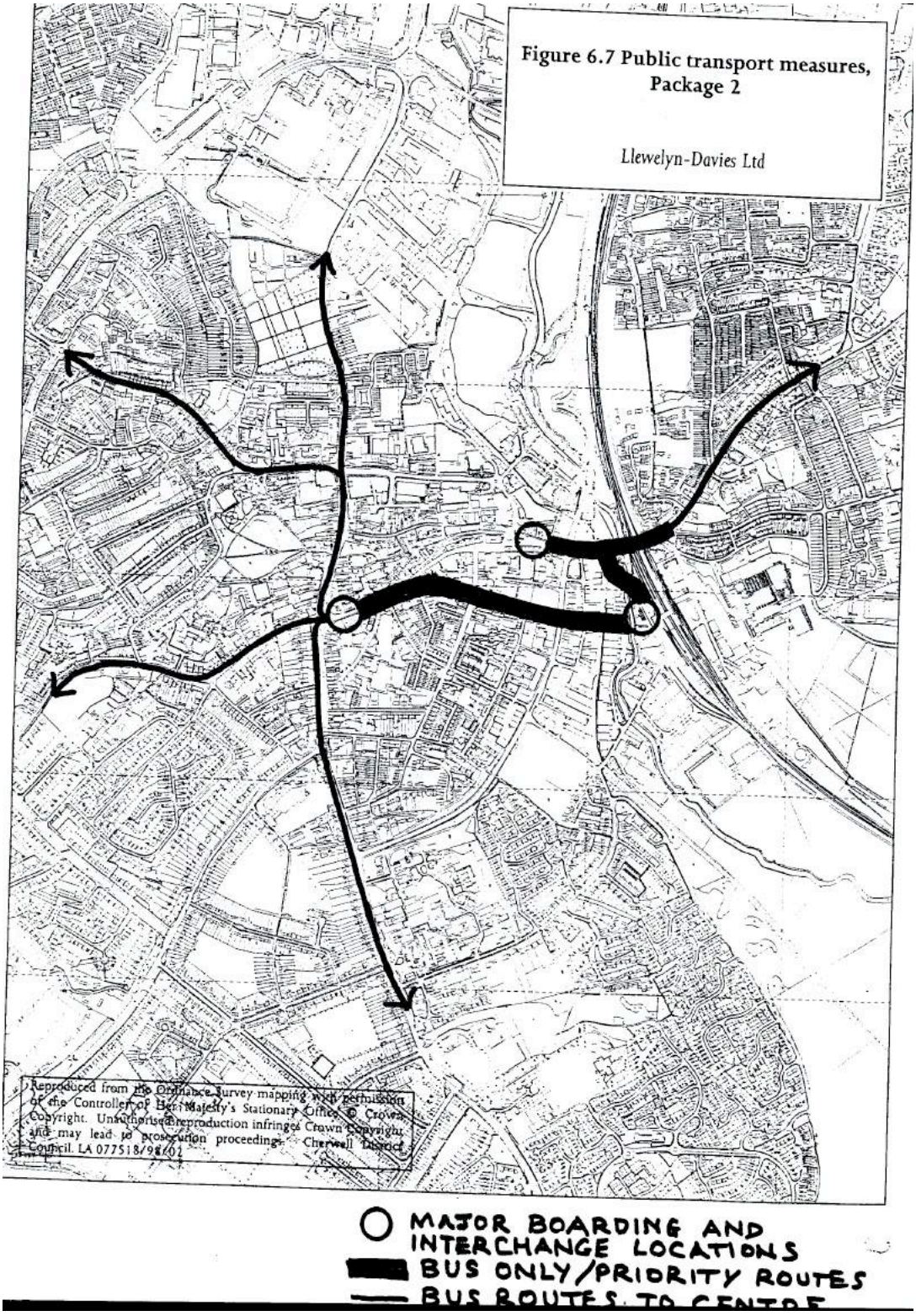
Figure 6.7 Public transport measures, Package 2
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MAJOR BOARDING AND INTERCHANGE LOCATIONS
BUS ONLY/PRIORITY ROUTES
BUS ROUTES TO CENTRE

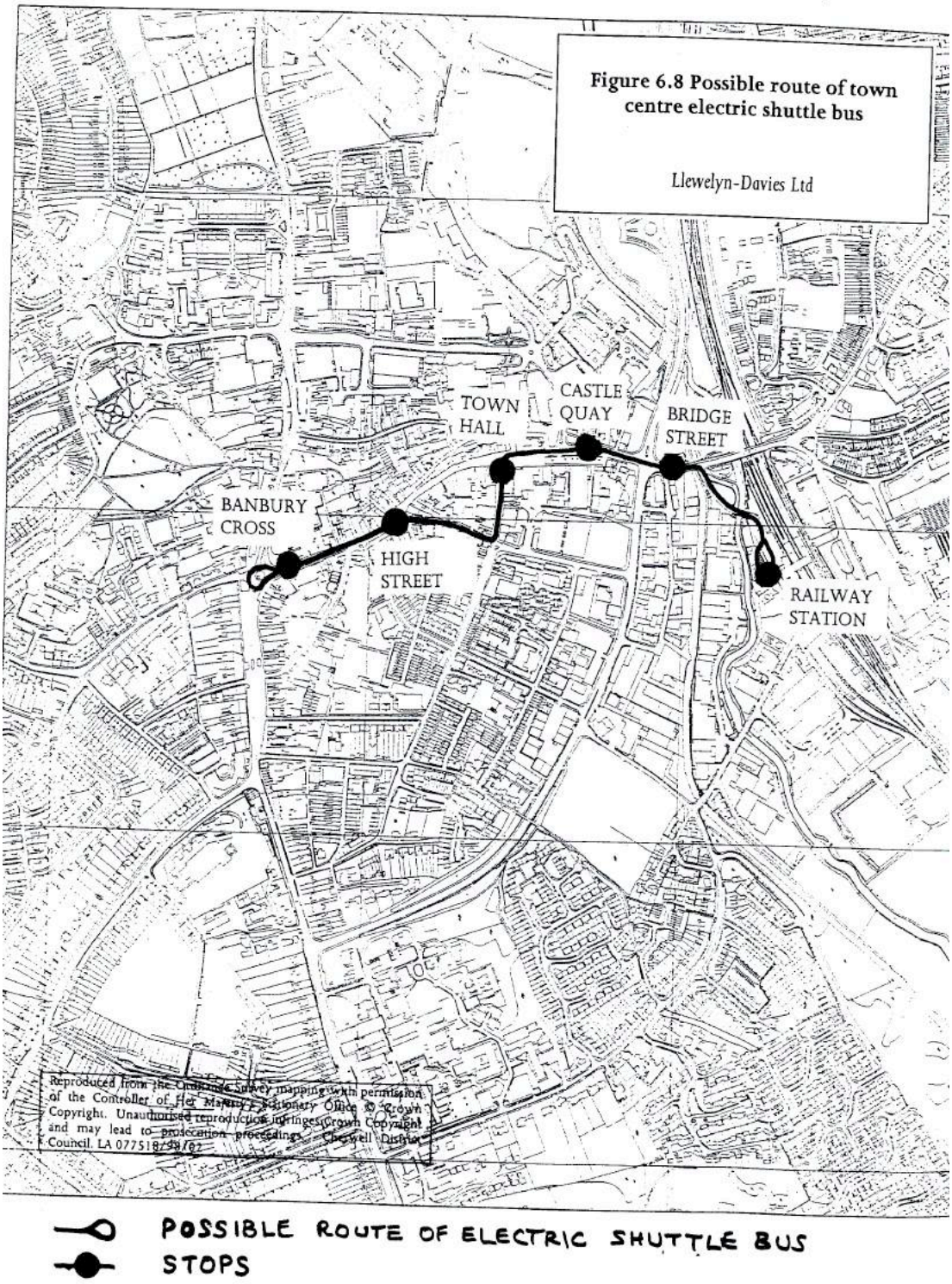
Figure 6.8 Possible route of town centre electric shuttle bus
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TOWN HALL
CASTLE QUAY
BRIDGE STREET
BANBURY CROSS
HIGH STREET
RAILWAY STATION
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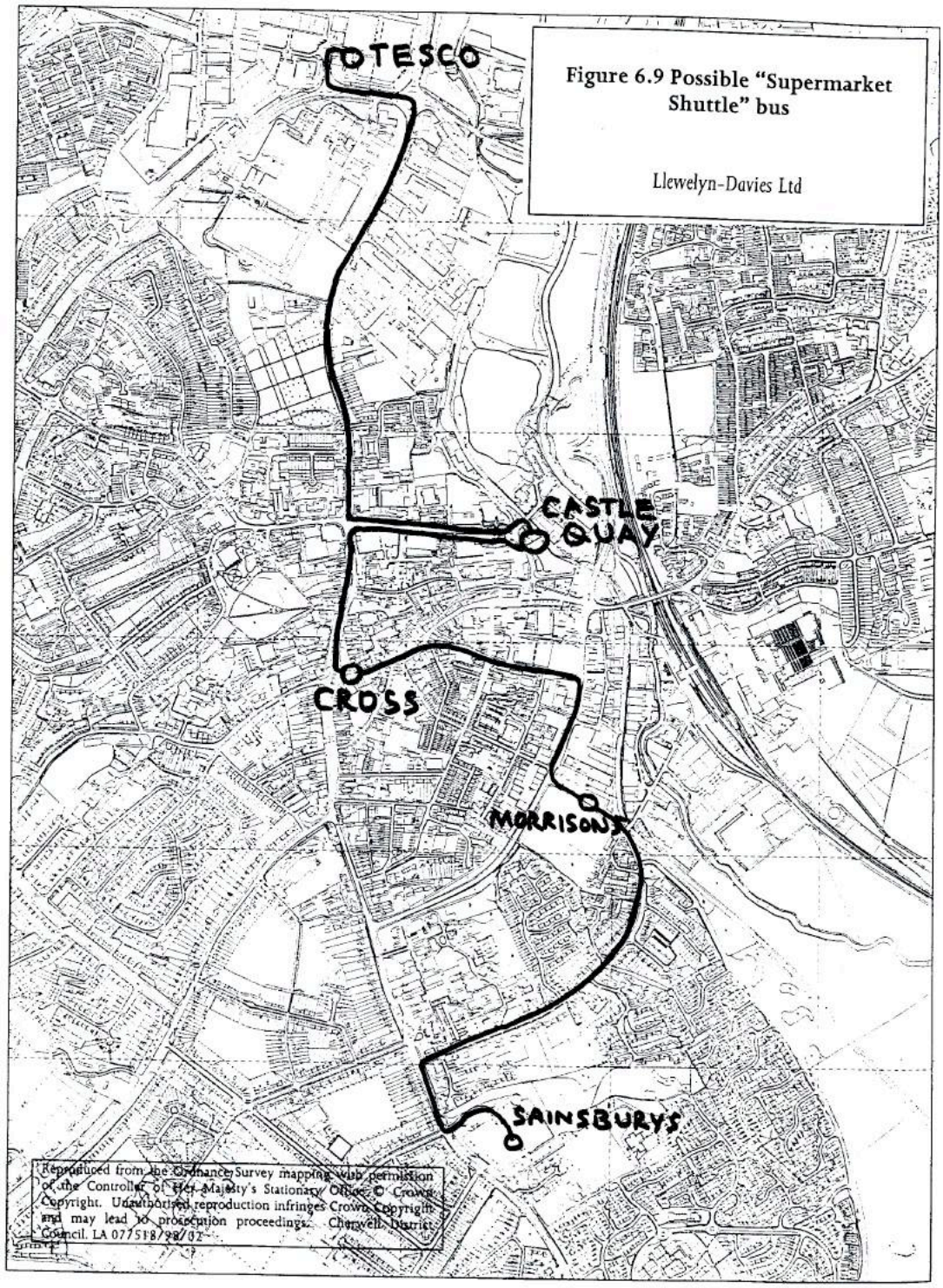
POSSIBLE ROUTE OF ELECTRIC SHUTTLE BUS
STOPS


TESCO
CASTLE QUAY
CROSS
MORRISONS
SAINSBURYS
Figure 6.9 Possible "Supermarket Shuttle" bus
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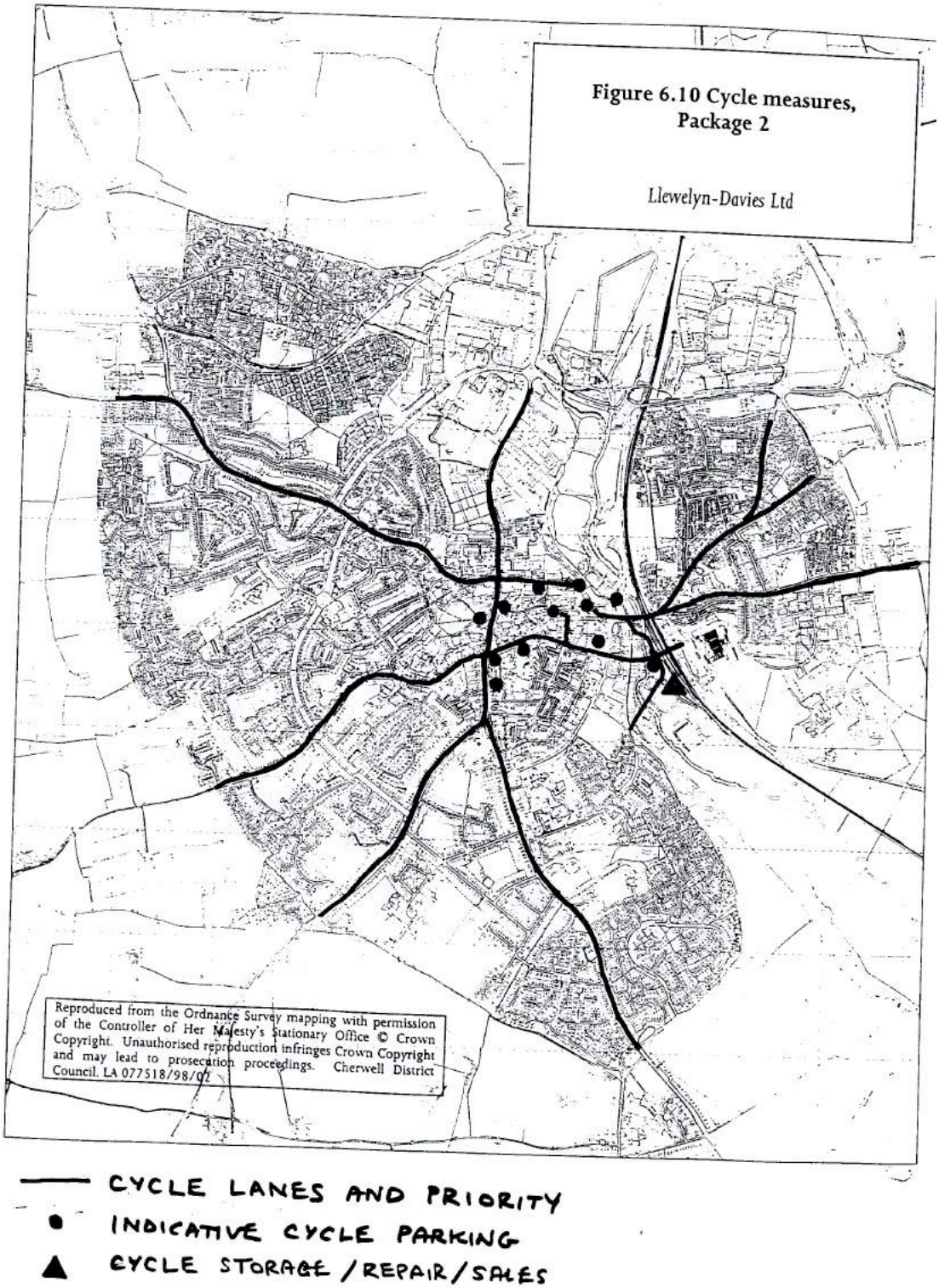
Figure 6.10 Cycle measures, Package 2
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CYCLE LANES AND PRIORITY
INDICATIVE CYCLE PARKING
CYCLE STORAGE / REPAIR / SALES

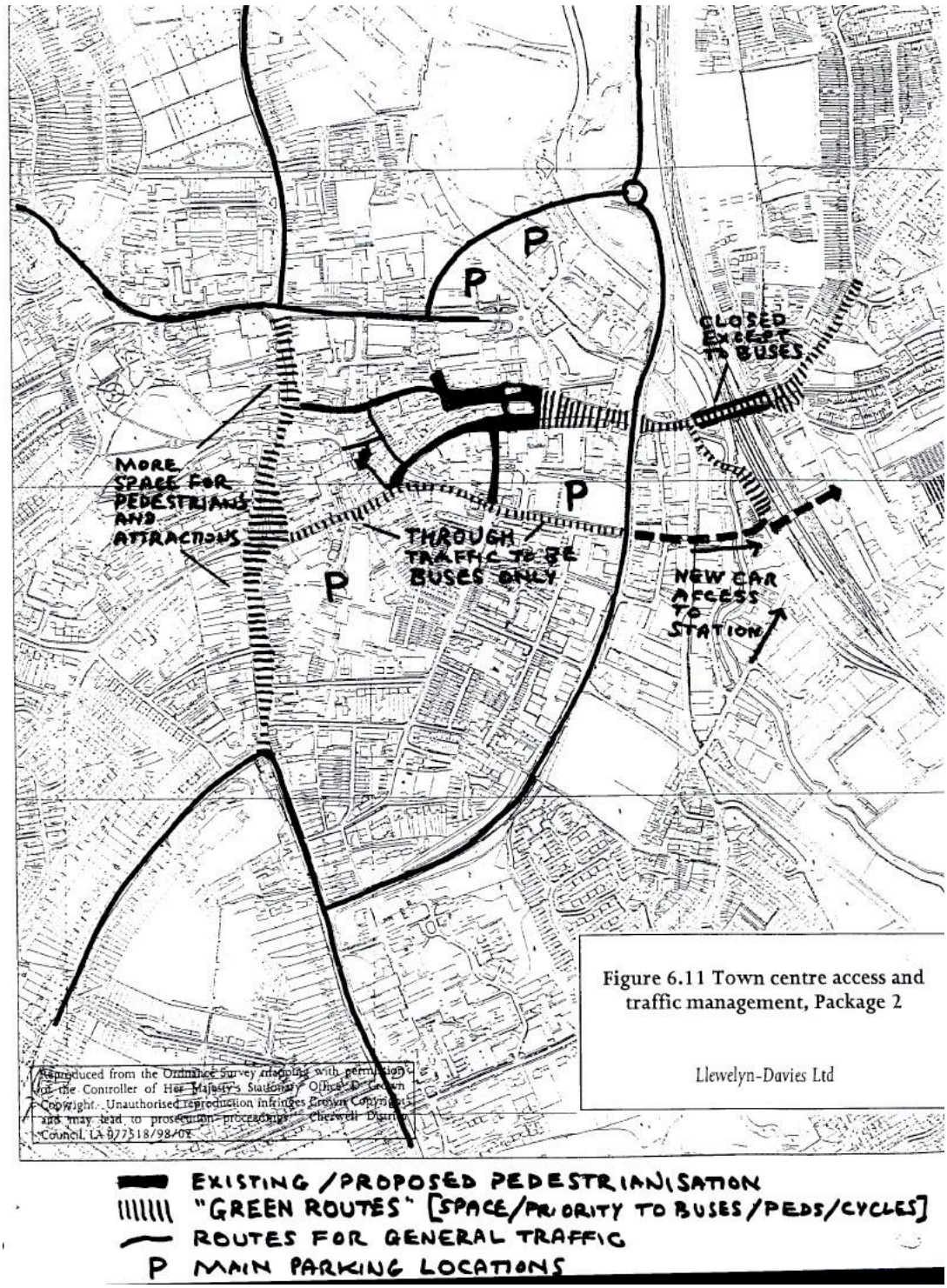

Figure 6.11 Town centre access and traffic management, Package 2

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6.5 *Package 3: To Banbury and Beyond*

6.5.1 Package 3 tackles environmental and safety issues, including issues related to suburban and rural areas as well as the town centre. It tackles motorised traffic generally. The Package targets 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 in residential areas and villages.

6.5.2 Package 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". Figure 6.12 shows the "Cross" route concept in diagrammatic form. 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. Figure 6.13 shows the routing of services through the town centre. 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 which are accessible to all. Bus boarders are provided as required throughout network.[1] Published and real time information are

[1] 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.

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.

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 for town, e.g. evenings. The maxi taxi is explained in more detail in Appendix D. Extra buses 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.

5 **Soft measures:** Better Routes to School, and neighbourhood Travelwise campaigns are included. As with the other Packages 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 would be to use routes that have light motor traffic, for example access traffic only.

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". Package 3 also includes a comprehensive speed management strategy as set out in Table 6.1 and Figure 6.14.

8 **Parking**: Charge structure with hourly rate ideally increasing with length of stay. This assumes that visitors from longer distance need to stay longer and are less price-sensitive. They therefore need heavier deterrence by price than visitors from short distances. However, in the Package, assumptions are made that changes in competing centres will remain stable. Charges in Banbury could be increased further if competing centres act likewise. For the initial Package, therefore, short stay parking is an average of 40p per hour, increasing to 60p an hour for a three hour stay. Long stay parking is £3 for the day.[1] The Package introduces employee parking charges in the longer term, plus other private non-residential parking charges if/ and when they become available. The inner controlled parking zone is supplemented by further on-street parking controls around schools and new development 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 with 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, and management measures as well as promotional "soft measures". (See below).

Table 6.1 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

[1] These represent up to a doubling of current car park charges. Changes could be higher still, but incremental change is likely to be more acceptable. Higher charges will need to be planned in relation to changes at competing locations. Liaison with other towns would be desirable in this context.

"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.

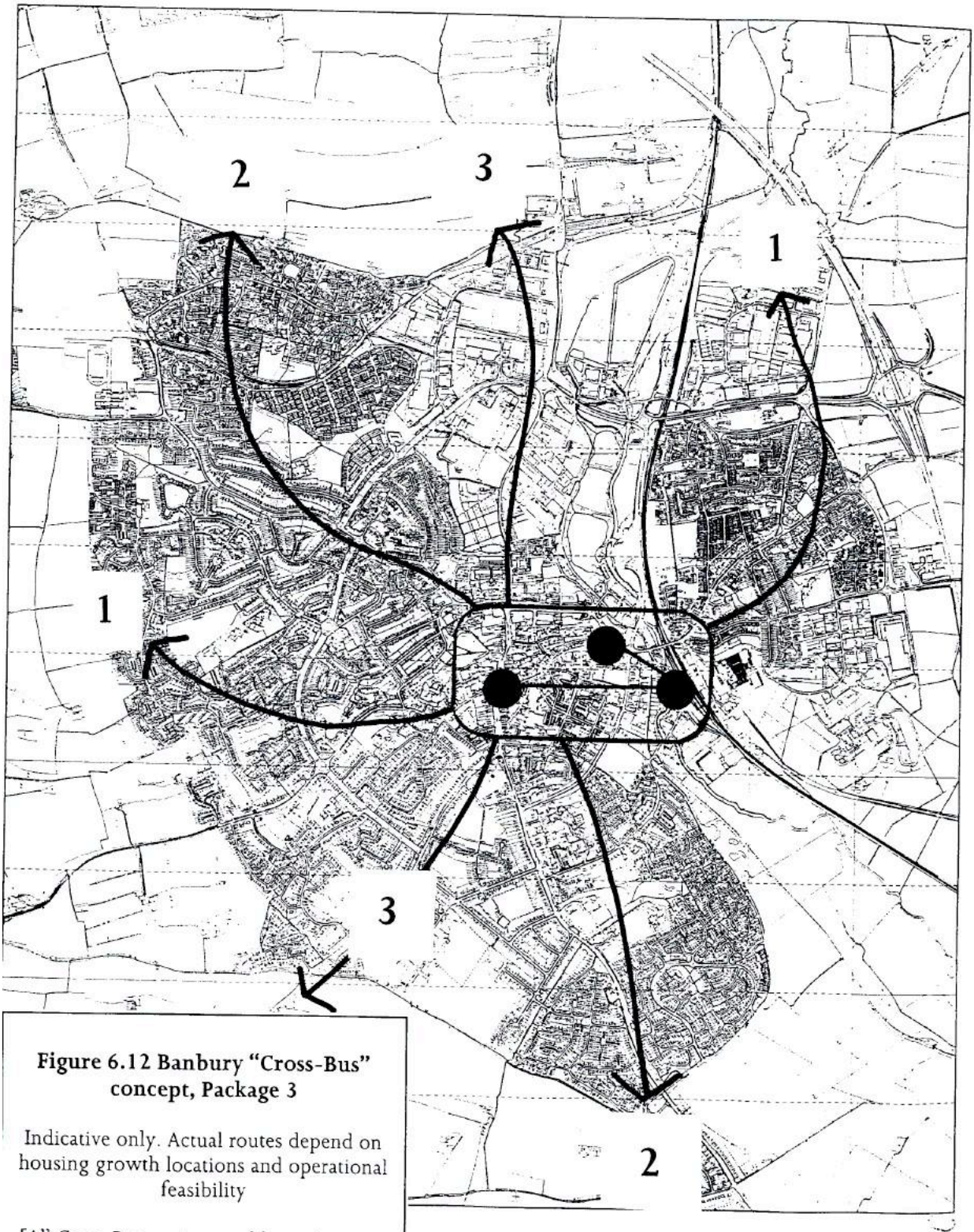

Figure 6.12 Banbury "Cross-Bus" concept, Package 3

Indicative only. Actual routes depend on housing growth locations and operational feasibility

[All Cross-Bus routes would use the town centre route shown in Figure 6.13]

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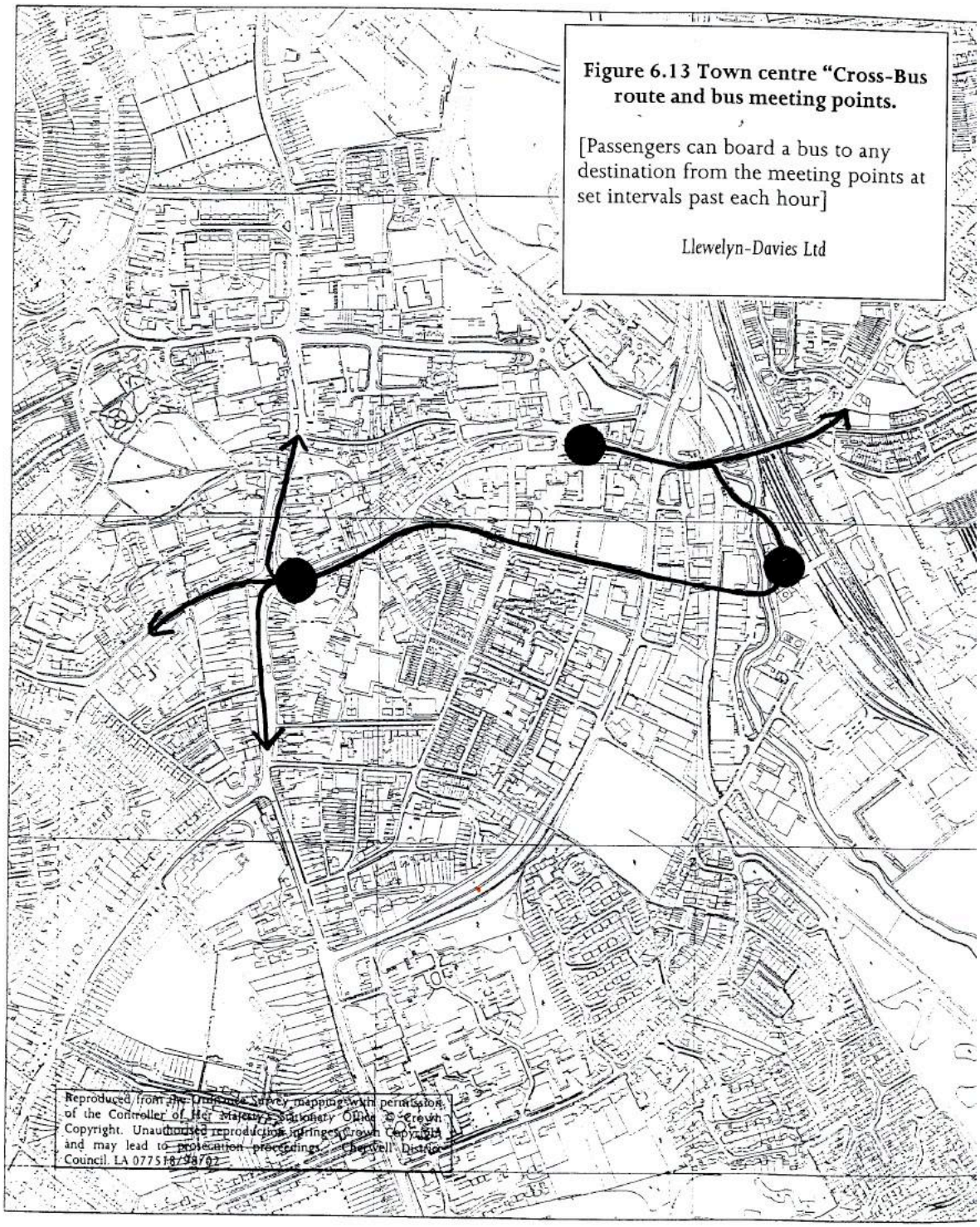
Figure 6.13 Town centre "Cross-Bus route and bus meeting points.
[Passengers can board a bus to any destination from the meeting points at set intervals past each hour]
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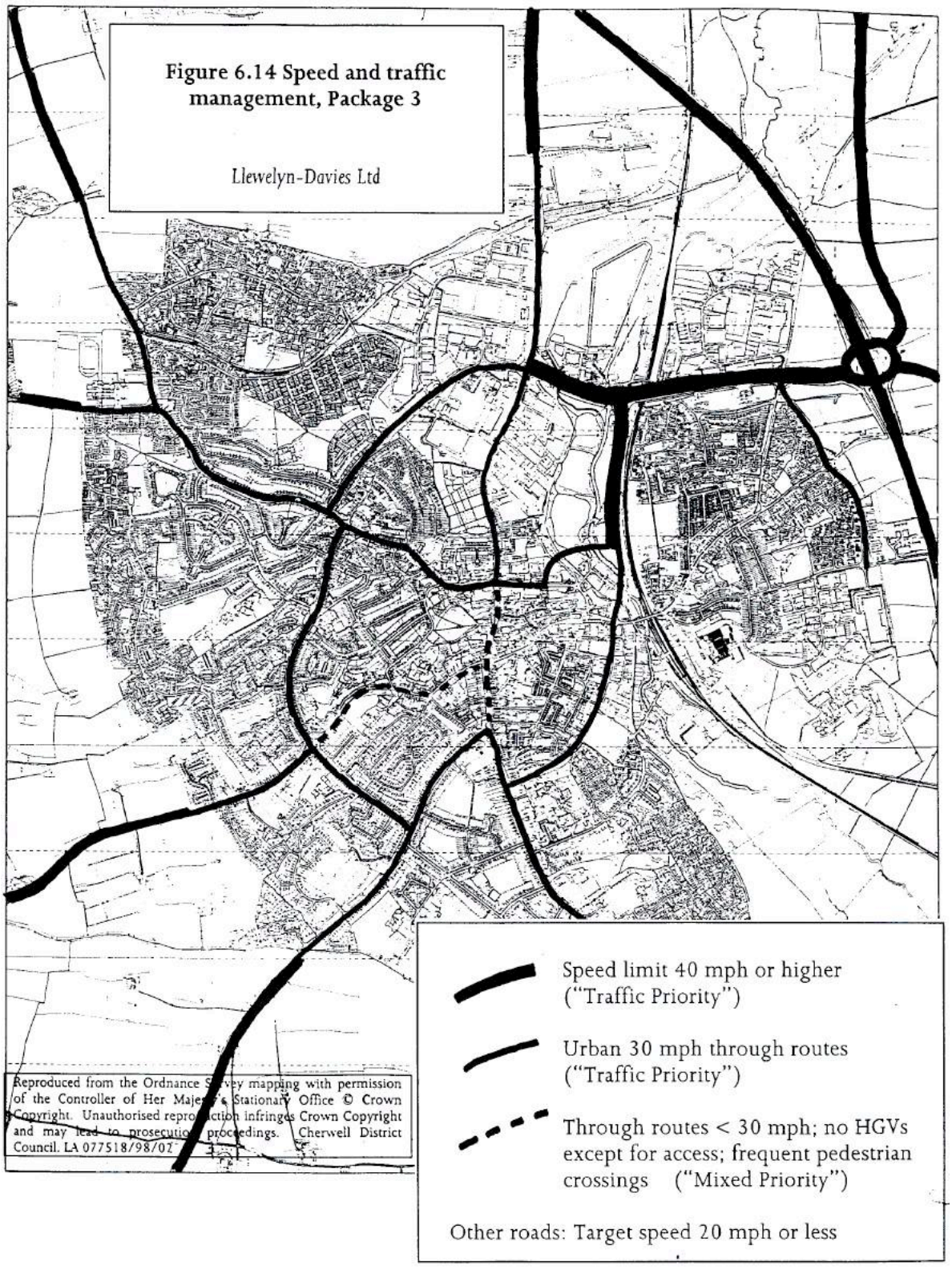
Figure 6.14 Speed and traffic management, Package 3
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Speed limit 40 mph or higher ("Traffic Priority")
Urban 30 mph through routes ("Traffic Priority")
Through routes < 30 mph; no HGVs except for access; frequent pedestrian crossings ("Mixed Priority")
Other roads: Target speed 20 mph or less

7 Testing of the Packages

7.1 Introduction

7.1.1 Having described the content of the Starter Kit and the three additional packages of measures in the previous section, how well would these perform? This section presents a summary of the analysis which has been undertaken to test how well the packages meet the BITLUS objectives. This is the core the Stage 2 work and it includes:

1 ***Performance test*** of measures and packages in meeting the objectives; including use of the multi-mode ***model***;

2 ***Public reactions*** to the packages from the public consultation exercises; and

3 ***Indicative costing*** of the packages.

7.1.2 Each of these three aspects is dealt with in turn.

7.1.3 The details of the performance analysis are provided in Appendix J. Details of the multi-mode model and its construction are included in Appendix I. Details of the public consultation exercises are included in Appendix K.

7.2 The Starter Kit

7.2.1 The Starter Kit measures are also included in the testing of the other three packages.

Performance test

7.2.2 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. However, the measures will reduce the accessibility of the west side of the town centre to car drivers.

7.2.3 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.

7.2.4 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.

7.2.5 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. While people agreed with these measures in principle, some were doubtful about their effectiveness.

7.2.6 Remove footway cycleways: this measure 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. Separation of the provision for these modes would thus encourage walking and cycling.

7.2.7 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 for cyclists who currently fear that their bicycles are unsafe or who are discouraged from cycling because there is nowhere to park a bike. Providing parking at the station maximises the interchange opportunities between cycle, rail and bus.

7.2.8 Pedestrian phases at signalled intersections and light controlled junctions: the two key benefits from these measures are the improved accessibility experienced by pedestrians and their improved safety, this should encourage walking as an alternative.

7.2.9 Parking in new non-residential development in line with likely RPG9 revisions: the reduction in car parking in new development will encourage people to use their cars less. This will influence the choice people make about how they travel, encouraging non-car modes. However, this measure reduces car accessibility, and can have impacts in terms of overspill on-street parking, that will need to be addressed using controlled parking zones.

7.2.10 Signalled junctions and widening of Hennef Way at the railway bridge to provide two westbound lanes: there are a range of benefits from these measures. First, peak time congestion westbound will be eased, thereby removing the hazard of traffic backing up onto the M40. Second, traffic diverted as a result of the Middleton Road closure can better be accommodated. Third, and most important, the signalised junctions will allow the efficient management of of traffic to serve objectives of safety, priority for pedestrians and cyclists and buses, and if desirable priority for particular traffic routes. However, there are potential disadvantages of the scheme. First, journey times will be reduced at peak times, but may be increased at off peak periods. Second, Providing two westbound lanes at the bridge may lead to a shifting of delays to junctions further west. Third, the increased peak time capacity for general traffic may make the scheme difficult to justify for Government funding. Further 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.

7.2.11 Residents-only parking zone: this measure recognises the need to protect town centre residents from the growth in the town and the increased demand for parking spaces. However, it will reduce the availability of free on-street parking for non-resident car drivers. When combined with other measures, the residents-only parking zone will allow the town's parking to be properly managed.

Public reactions

7.2.12 There was widespread public support for the Horsefair "traffic cap" measures, although a few respondents expressed concern about increased traffic on neighbouring routes. In response, it is important to note recent evidence that most capacity reduction schemes do not result in equivalent traffic diversion.[1]

7.2.13 There was a strongly positive public response to the station area proposals for intensive development and a new multi-mode interchange, as well as support in principle from public transport operators.

7.2.14 The improvement of bus services through a Quality Partnership agreement received strong public approval.

[1] MVA and TSU, "Traffic impact of highway capacity reductions, February 1998.

7.2.15 The provision of cycle lanes and paths separate from footways was supported by the public, in some cases very strongly. Some respondents requested police enforcement of the measures stating that cyclists had now got into the mentality of cycling on footways.

7.2.16 Cycle parking measures were widely supported, although less strongly than other measures. Covered cycle parking and secure motorcycle parking were suggested.

7.2.17 Relatively few respondents specifically mentioned pedestrian improvements, although those who did were in favour of their implementation. They pointed out that pedestrian facilities were long overdue and would bring about significant access improvements, particularly for less mobile pedestrians.

7.2.18 Reduced parking in new non-residential development provoked the most negative response of any Starter Kit measure from the consultees, with just over half the respondents who mentioned it being against reducing parking provision. Concern was expressed about the impacts on car accessibility for villagers and people with a disability, and the possible economic consequences of reduced car access to new businesses. There was, however, an apparent misconception that parking in existing development would be reduced.

7.2.19 Respondents tended to be in favour of widening Hennef Way, and most would go further to support a full dualling of the carriageways. While most supported the proposed traffic management measures, around a third of those who mentioned these measures thought the traffic lights would make conditions worse.

7.2.20 The implementation of a residents' parking scheme was widely supported, particularly if parking charges are to be increased for town centre parking. Discussions with a number of town centre residents highlighted their desperation for immediate action and the current inconvenience from which they are suffering.

Indicative cost

7.2.21 The estimated cost of the Starter Kit is between £3 million and £4 million.[1]

7.3 *Package 1*

Performance test

7.3.1 Housing concentrated in the town centre/near employment, in the Cherwell Valley and areas easily served by bus: the location of new housing development is a key issue. The location of new households in areas which offer the residents choices about how they travel is one of the most important measures in Package 1. The indirect benefits from the lower level of car trips generated by the development of housing in areas which offer residents a choice include reducing air quality deterioration, reducing the increase in the number of homes exposed to traffic and fumes and reducing the traffic danger. Developing housing in the town centre will also improve the vitality and viability of the town centre, help to create an evening economy and make the town centre safer through increased surveillance.

7.3.2 Expand industry at current sites: the concentration of new industrial development in the existing employment areas allows the new development to benefit from the measures in Package 1;

7.3.3 Park & Ride off Hennef Way near the M40 junction 11: this measure would offer people commuting to Banbury from outside the town to the east, north and south, an alternative mode of travel to the town centre. It would help reduce peak hour congestion on Hennef Way. A financial appraisal suggests that the Hennef Way scheme would require a subsidy of around £120,000 per year if run with 250 parking spaces, a 15 minute frequency and a charge of £1.50.[2] This would provide a £1.50 saving for all-day users of public car parks in the town centre. The high level of subsidy required must be added to doubts as to whether drivers would use the service, given the relatively small journey time between the M40 and the town centre, even in congested conditions. Persuading drivers to use Park and Ride would require either a time or price advantage. Neither of

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[1] It must be stressed that this estimate is a preliminary costing, which does not include fees and charges, abnormal costs or any contingency. It is included to give a broad brush feeling for the likely level of cost and the figures may change considerably when investigated in detail.

[2] Even this minimum cost scenario is of dubious viability. A 15-minute service is poor in terms of attracting users.

these is likely unless and until town centre parking is reduced and charges are high. Given the expected high cost and poor performance of this Park and Ride site which would be the busiest in the town, the testing of other potential Park & Ride sites was not carried out. ***Because of the poor performance, Park and Ride was excluded from the multi-mode model for the purposes of testing, and is not recommended for inclusion in further development of BITLUS packages.***

7.3.4 Close Middleton Road to private vehicles in the peak: the key benefit of this measure is that it protects buses from peak hour congestion. In addition, persuading drivers to use Park & Ride would require either a time or cost advantage. Neither of these is likely, unless and until parking in the Town centre is reduced and charges are high. A cheap or free Park & Ride would provide an incentive, but the level of subsidy would be greater still. This measure would reduce the difficulties of walking and cycling between Grimsbury and the town centre and provide rapid bus access to the town centre with or without the Park and Ride. The closure of Middleton Road to through traffic would also improve the environment in Grimsbury but reduce direct car access between Grimsbury and the town centre at peak times. It is important to remember that the alternative route in Hennef Way will be improved by the Starter Kit measures, thus reducing the impact of diverted traffic on Hennef Way. Specific junction modelling could be undertaken to provide information on these impacts, but it must be remembered that such models cannot take into account the (intended) mode shift by current car users on Middleton Road.

7.3.5 Improved peak hour bus services to the industrial areas and town centre: these measures will improve accessibility for people to jobs by bus. Given the huge potential for mode shift both in the town and in Banbury's hinterland, these are key measures.

7.3.6 Green Commuter Plans: the key benefit of Green Commuter Plans is to increase awareness of travel issues and encourage people to travel by non-car modes. By encouraging walking, cycling and taking the bus, Green Commuter Plans contribute to reducing environmental deterioration and deterioration in levels of road safety.

7.3.7 Cherwell Valley cycle route: this new, flat route will make cycling to the town centre and employment areas easier from the residential areas to the north and south of the town. It will also improve access from the villages. The cycle way will provide access to the enhanced canal and riverside environments. Improve cycle routes to the town centre and employment

areas: improved cycle facilities will make it easier, safer and more convenient to cycle to work.

7.3.8 Cycle routes and storage built into new development: these facilities will encourage new residents to make some journeys by bicycle.

7.3.9 Reduce the stock and increase the charge of long stay parking in the town centre: the aim of this measure is to discourage employees from driving to work in the town centre and parking their car all day. This will balance supply and demand for all day parking at a slightly lower overall level of use and encourage mode shift. These measures will make parking more expensive and reduce accessibility for car commuters. A judgement is required to select a level of charging which will not overly penalise or discourage car commuters who have no alternative form of transport. For the purposes of the model testing a doubling of all day parking charges was assumed.

7.3.10 Examine the merits of employee parking charges and redevelopment of car parks: although primary legislation is required before this measure can be implemented, the test against objectives shows that it would discourage employees from driving to work in the town centre and parking their car all day. It will also allow for the redevelopment of some town centre car parks, improving the town centre environment and allowing town centre uses to grow. These measures will reduce accessibility for car commuters.

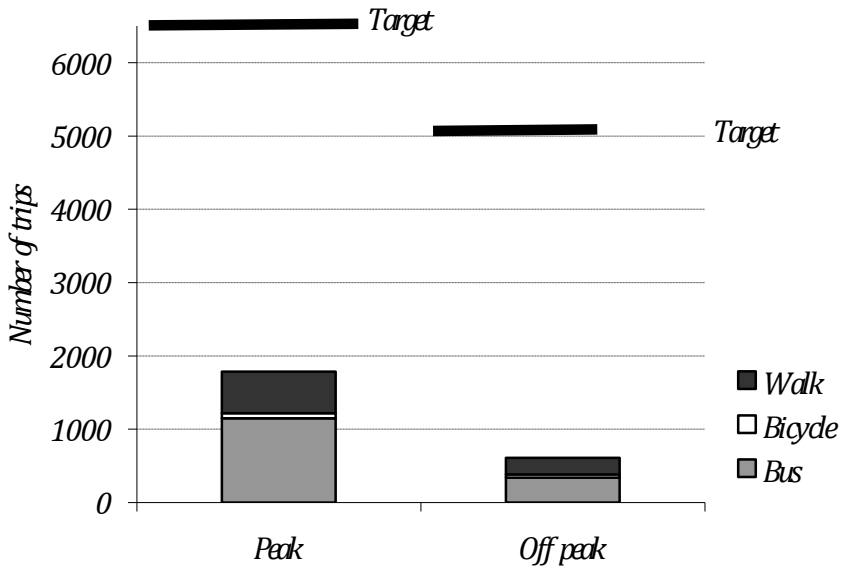
7.3.11 Improved footways and crossings on routes to employment areas: these measures will make walking more convenient, comfortable and pleasant and encourage mode shift. Improvements to footways in the Cherwell Valley are important as both routes to employment areas and to provide access to the canal and riverside. The provision of pedestrian crossings will improve pedestrian safety.

Model testing

7.3.12 The results of our testing of the mode shift produced by Package 1 and the Starter Kit is shown in Figure 7.1. The location of the new housing and soft measures have not been included in the analysis which shows the estimated impact of the other transport measures in 2011. Figure 7.1 shows that the Package 1 measures, when combined with the Starter Kit, result in around a third of predicted extra car trips being made instead by other modes in the peak, and around 15% of additional trips being made by other modes in the off-peak. Changes in the relative time and cost of using different modes to Banbury employment areas are not, as indicated

by the model, sufficient to achieve the desired switch away from the car. This means that Package 1 will not achieve the study aims unless "soft measures" produce greater changes in travel behaviour.

Figure 7.1: Growth in car trips avoided due to Package 1 and the Starter Kit compared to target by 2011



7.3.13 The anticipated household growth will generate an estimated 2,800 households within Banbury and its hinterland. These people will generate an estimated additional 1,400 car trips in the peak and 900 car trips in the off-peak if the travel patterns of the new population mirror those of the existing population in Banbury and its hinterland. Concentration of the new population in the town centre walk-in catchment and in areas well served by bus will help to reduce the number of trips created.

7.3.14 Thus we can see that Package 1 combined with the Starter Kit produces a reduction in traffic growth to a level which compensates for the growth in households, but which falls well short of the study's original aim of holding traffic levels stable to 2011. The core of the growth comes from additional car trips made by the existing population. The secret of success lies in discouraging people from making changes to their travel behaviour which encourage traffic growth. Soft measures have a key role to play here, helping to raise travel awareness and encourage the use of green modes.

Public reactions to Package 1

7.3.15 Consultees were generally in favour of the housing measures, particularly the concentration of housing in the town centre which was seen to bring environmental benefits with it. Some respondents expressed concern about locating residential development near employment areas and the noise and disturbance which could result. *In response, the intention is to achieve proximity to reduce travel, not to place housing next to uses that create nuisance.*

7.3.16 Park and Ride was included in the public consultation as a possibility, and it was widely supported by consultees. Suggestions were made about ways of encouraging people to use the facility when it opens and on its management. However, some respondents felt that the failure of the Christmas Park and Ride suggested that Banbury is not a sufficiently large town to generate the required level of patronage. *This latter point is in keeping with our own appraisal.*

7.3.17 Consultees gave a mixed response to the proposal to the measure. Some stated that the closure of the road to traffic due to road works in recent months had showed how the Grimsbury environment could be improved by reduced traffic, but they also expressed concern about traffic diverting to other routes and the reduced car access.

7.3.18 Peak hour bus improvements were strongly supported by consultees, although some believed the bus service would have to be improved dramatically before it is seen as an alternative to the car. The need for access for people with a disability on buses was noted.

7.3.19 There was general support for Green Commuter Plans although some respondents noted that irregular working hours may make some elements difficult to implement.

7.3.20 The proposed cycle route improvements were generally supported although not seen by many to be particularly significant.

7.3.21 The town centre parking measures provoked a mixed response with nearly half the respondents being against the measures. Village residents felt that they would be penalised, and shoppers with a disability were also concerned about increases in parking costs. There was also concern that the measures would encourage shoppers to go to other centres. However, many respondents recognised the need to increase charges and control the parking supply.

7.3.22 Charges for parking at the workplace and redevelopment of parking areas were unpopular measures, with many respondents suggesting that these

would cause inconvenience, penalise villagers and even encourage businesses to locate elsewhere. *The efficacy of these measures will be affected by action by other towns in the region, and on regional policy. They are in any case only put forward for consideration in the longer term.*

7.3.23 Few respondents commented on the pedestrian improvement measures although those who did were in favour. Attention to ensure that routes were suitable for people with a disability was mentioned.

Indicative cost of Package 1

7.3.24 The estimated cost of the Package 1 is between £0.5 million and £1 million capital costs with an annual revenue cost of between £0.5 million and £1 million. Current car parking revenues raise around £600,000, and we would expect the Package 1 parking charges to deliver revenue of a similar, if not a bit higher order.[1]

7.4 *Performance of Package 2*

7.4.1 Housing concentrated in the town centre/near employment, in the Cherwell Valley and areas easily served by bus: the location of new housing development is a key issue and is addressed by the Cherwell local plan review. The location of new households in areas which offer the residents choices about how they travel is one of the most important measures in Package 2. The indirect benefits from the lower level of car trips generated by the development of housing in areas which offer residents a choice include: reducing air quality deterioration, reducing the increase in the number of homes exposed to traffic and fumes, and reducing the increase in traffic danger. Developing housing in the town centre will also improve the vitality and viability of the town centre, help to create an evening economy and make the town centre safer through increased surveillance.

7.4.2 Mixed use development within the town centre walk-in catchment: this provides the maximum number of people with a choice about how they travel to and from the new facilities provided by the mixed use development. The concentration of new facilities within the town centre catchment will help strengthen the town centre's economy, as well as

[1] It must be stressed that this estimate is a preliminary costing, which does not include fees and charges, abnormal costs or any contingency. It is included to give a broad brush feeling for the likely level of cost and the figures may change considerably when investigated in detail.

improving its environment. Increased activity, particularly in the evenings will help make the town centre more lively and feel safer.

7.4.3 Restructure the town centre buses: the restructuring of the town centre buses will provide better access to the town centre by bus. This will boost the town centre's economy by delivering more shoppers without increasing traffic. The creation of a major boarding point at the Cross will reinforce the identity of the west end of the town centre, raise the profile of the bus services and help ensure the long term viability of Banbury's buses.

7.4.4 Better town centre bus services: the improvements to the town centre bus services will improve access by bus, including for people coming from the villages. This will boost the town centre's economy by delivering more shoppers without increasing traffic and contribute to the long term viability of Banbury's buses. The link between the station and the town centre will improve the integration between bus and rail modes, and through ticketing will further integrate services.

7.4.5 Trader and CDC incentives for town centre visitors to mode switch: these soft measures will raise awareness of transport issues and encourage mode switch contributing to meeting economic, environmental and safety objectives.

7.4.6 Cycle measures on town centre routes and cycle parking: these measures will improve accessibility for cyclists to the town centre encouraging mode shift and contributing to meeting economic, environmental and safety objectives. They will be particularly useful for promoting cycle use by residents of new housing areas in the Cherwell valley. The model indicates a strong cycle movement between Grimsbury and the town centre.

7.4.7 Convert North Bar/South Bar to a "green route" with a square at Banbury Cross: this measure envisages further reductions of traffic on North South Bar and provides safety benefits in this area which currently suffers from the highest rates of accidents of anywhere in the town. In addition, these measures deliver environmental benefits and hence economic benefits to the west side of the town centre.

7.4.8 Close Bridge St to private vehicles both sides of Concord Avenue: this measure will close Middleton Road to private vehicles encouraging mode switch for journeys to Grimsbury and improving the environment and safety of this area. This measure will reduce car accessibility to and from Grimsbury. Diverted traffic would use Hennef Way as the alternative, but

would be accommodated to some degree by the proposed improvements there (see comments in 7.2.2.)

7.4.9 Reduce short stay parking and raise charges to exceed bus fare: this measure will directly encourage mode shift from car to bus by making the bus demonstrably cheaper than driving for people living in Banbury. These measures will reduce car accessibility/increase costs for those coming from outside the town. Parking charges in other towns will need to be considered in order to strike an appropriate balance.

7.4.10 Examine the merits of employee parking charges and redevelopment of car parks: although primary legislation is required before this measure can be implemented, the test against objectives shows that it would discourage employees from driving to work in the town centre and parking their car all day. This will allow the balance of the supply of and demand for parking and encourage mode shift. It will also allow for the redevelopment of town centre car parks, improving the town centre environment and allowing town centre uses to grow. These measures will reduce accessibility for car commuters;

7.4.11 Improved pedestrian access to the town centre: these measures will encourage people to walk to the town centre.

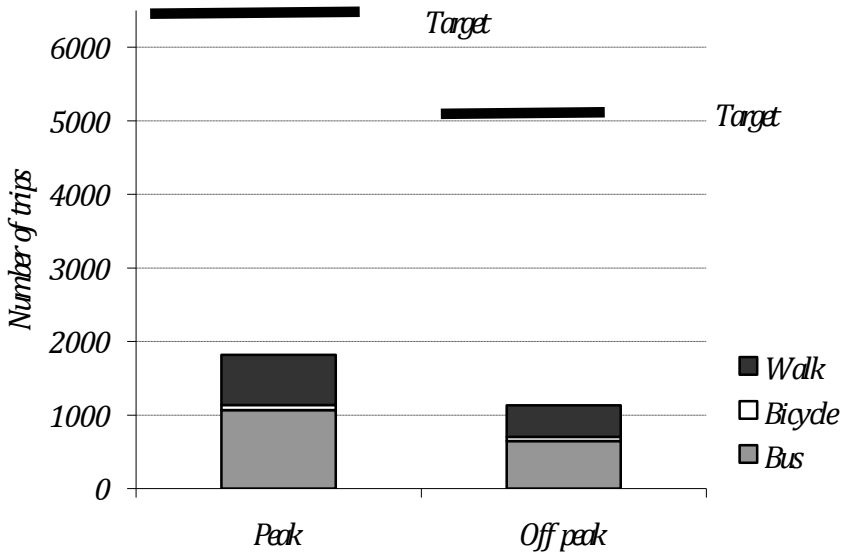
7.4.12 Pedestrianise Parsons St and Market Square and create a new pedestrian square at the Cross: these measures will improve the accessibility to key town centre facilities for pedestrians and cyclists. They will also bring environmental improvements to the town centre. The new pedestrian square at the Cross will reinforce the identity of the west end of the town centre, helping to boost its economy. These measures will also improve the safety of the town centre.

Model testing

7.4.13 The results of our testing of the mode shift produced by Package 2 and the Starter Kit is shown in Figure 7.2. The impact of the new housing and soft measures have not been included in the analysis which shows the impact of the transport measures in 2011. Figure 7.2 shows that the Package 2 measures, when combined with the Starter Kit, result in around a third of predicted extra car trips being made instead by other modes in the peak, and around a fifth of additional trips being made by other modes in the off-

peak. Package 2 performs slightly better than Package 1 in the peak in terms of avoiding traffic growth, and significantly better in the off-peak.

Figure 7.2: Growth in car trips avoided due to Package 2 and the Starter Kit compared to target by 2011



7.4.14 The additional car trips generated by the new population must also be taken into account. Package 2 is effective at switching at least the trips created by the new households if they behave in the same way as current residents. The concentration of new housing within the town centre and in areas accessible by the bus will help to reduce the number of new car trips. As with Package 1, the soft measures included in Package 2 must be effective if we are to stop traffic growth to 2011.

Public reactions to Package 2

7.4.15 The housing and town centre mixed use proposals were generally supported by the public consultation.

7.4.16 Restricting traffic on George Street to provide a high quality bus route in the town centre received support in the public consultation, although some expressed concern about George Street traffic diverting to other routes.

7.4.17 Other bus proposals also received strong support, with particular emphasis placed on the need to improve village services. The bus/rail interchange

was highlighted as a key measure by some. The use of smaller shuttle buses was suggested to combat the problem of partially empty buses, and partnership with supermarkets to encourage shoppers to use buses. *In response, it should be noted that smaller buses do not necessarily aid commercial viability.*

7.4.18 Few respondents mentioned the "soft" measures to provide incentives and awareness for travelling to the town centre by non-car modes. Those who did supported them.

7.4.19 Cycle measures were widely supported. However, problems with increasing cycle use were highlighted – carrying goods, the age of many shoppers and the hilly terrain – suggesting that the potential for increased cycle use is ***perceived*** to be limited.

7.4.20 The "green route" measures were generally supported although concerns were expressed over the reduced vehicular access and traffic diverting on to other routes.

7.4.21 The Bridge Street closure to improve non-car access and environmental conditions in Grimsbury was supported by some although concerns were expressed over the reduced vehicular access and traffic diverting on to other routes.

7.4.22 The proposed increased parking charges, together with the possibility of workplace parking charges received the most negative responses of any in Package 2 with people expressing concern about access for those who have no alternative mode of transport. Fears were expressed about negative impacts on the town centre's economy. *In response, these measures are bound to be disliked in themselves (no one willingly pays more for anything), and public reaction needs to be balanced with the positive benefits which would result from less traffic growth. The "carrot" measures in the packages are mostly welcomed.*

7.4.23 Town centre improvements to the pedestrian environment were strongly supported by consultees. The creation of a pedestrian square at the Cross was particularly well supported by consultees. Some thought that the pedestrianisation of Market Square and Parsons Street should be enforced to ensure that all traffic is excluded. Others expressed concern over delivery and access for people with a disability.

Indicative cost of Package 2

7.4.24 The estimated cost of the Package 2 excluding the new George Street link is between £1 million and £1.5 million capital costs and between £0.5 million and £1 million annual revenue costs. Parking charges could deliver a similar level of annual revenue. The cost of the George Street link will depend on whether this will be for motor traffic, and on more detailed investigation of the site. If it is to be for motor traffic the cost is likely to exceed the total value of other measures in this package.[1]

7.5 *Performance of Package 3*

7.5.1 Housing located within Banbury or peripheral extensions to the town: the location of new housing development is a key issue. The location of new households in areas which offer the residents choices about how they travel is one of the most important measures in Package 3. The indirect benefits from the lower level of car trips generated by the development of housing in areas which offer residents a choice include reducing air quality deterioration, reducing the increase in the number of homes exposed to traffic and fumes. Developing housing in the town centre will also improve the vitality and viability of the town centre, help to create an evening economy and make the town centre safer through increased surveillance.

7.5.2 Local facilities in new housing areas: the provision of local facilities in new housing areas will ensure that new residents are presented with a choice about how they travel for local shopping, schools and services;

7.5.3 Restructure the town buses: the restructuring of the town's buses into the Banbury Cross-bus will provide a step change in the quality and perception of Banbury's buses. The new services will provide improved access to all parts of the town centre, recognising Banbury's role as a growing sub-regional centre and delivering more workers and shoppers to their destinations without causing congestion.

7.5.4 Improved rural buses: these services will provide better non-car access for residents of the villages ensuring that more shoppers and employees can access Banbury from outside without causing increased congestion.

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[1] It must be stressed that this estimate is a preliminary costing, which does not include fees and charges, abnormal costs or any contingency. It is included to give a broad brush feeling for the likely level of cost and the figures may change considerably when investigated in detail.

7.5.5 Soft measures: the "Better Routes to School" and other locally targeted Travelwise campaigns will raise awareness of transport issues and encourage mode shift for a range of types of journey, contributing to meeting economic, environmental and safety objectives. The extent and effectiveness of these measures will need to be monitored over time, but will be heavily dependent on the resources made available. The impact of such measures cannot be modelled. It is assumed that resources (mainly staff resources dedicated to the task) will be allocated to specific local campaigns and partnership projects.

7.5.6 Network of cycle routes: these will improve access for cyclists to a wide range of local and town centre facilities encouraging mode shift, contributing to meeting economic, environmental and safety objectives.

7.5.7 Green lanes to the villages: the creation of green lanes to the nearest villages to Banbury will improve access for cyclists and pedestrians from these villages and encourage mode shift, contributing to meeting economic, environmental and safety objectives.

7.5.8 Speed management strategy: the key benefit of the speed management strategy is that it makes streets with a mixture of functions safer for non-car drivers.

7.5.9 HGV routes: these will bring environmental and safety benefits to the streets from which HGVs are excluded. They may add to distribution costs for some firms.

7.5.10 Conversion of Middleton Road to a "green route": the closure of Middleton Road to vehicular traffic will encourage people to access Grimsbury by bus, on foot or by bicycle. It will improve the environmental quality of Grimsbury. (See above for comments on the impact on Hennef Way as the alternative route)

7.5.11 Parking charges to increase with length of stay: this charging structure is designed to discourage all car drivers who have the option to switch to another mode. The idea is that those who come from further away will tend to stay longer and be less price sensitive than those making shorter trips. They therefore need a heavier deterrent. They will make parking more expensive for those who do not have a choice and may encourage people to shop elsewhere.

7.5.12 Examine the merits of employee parking charges and redevelopment of car parks: although primary legislation is required before this measure can be

implemented, it would discourage employees from driving to work in the town centre and parking their car all day. This will balance supply and demand for parking and encourage mode shift. It will also allow for the redevelopment of town centre car parks, improving the town centre environment and allowing town centre uses to grow. These measures will reduce accessibility for car commuters.

7.5.13 On-street parking controls around schools: these measures will encourage children to walk, cycle or take the bus to school, and improve the convenience and safety of the areas around schools. Their effectiveness will be dependent on enforcement, and "peer" enforcement organised by the schools themselves may be more effective than police enforcement. Physical measures can also aid enforcement.

7.5.14 Reduced parking provision in new development: this measures will encourage mode shift by making it more difficult for households to accommodate more than one car. It will contribute to meeting environmental and safety objectives.

7.5.15 Improved facilities for pedestrians throughout the town: these measures will make walking safer, more convenient and more comfortable, encouraging mode shift and helping to meet environmental, economic and safety objectives.

Public reactions to Package 3

7.5.16 Few respondents made comment on the housing measures, although those who did were generally supportive.

7.5.17 The bus restructuring and improvement measures received strong and almost unanimous support. Improvements to rural buses were strongly supported by respondents.

7.5.18 The use of intensive travel awareness campaigns ("soft measures") was strongly supported.

7.5.19 The comprehensive provision of cycle routes was generally supported.

7.5.20 Traffic calming measures were generally supported.

7.5.21 There was support for excluding all HGVs from the town centre, except those delivering to the town centre.

7.5.22 Conversion of Middleton Road/Bridge Street to a "Green Route" was supported by some although concerns were expressed over the reduced vehicular access and traffic diverting on to other routes.

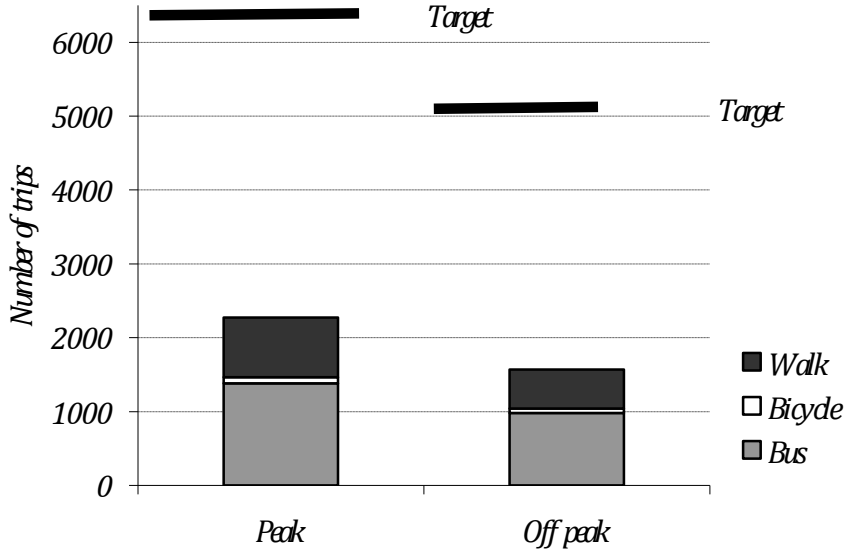
7.5.23 Parking measures, including employee parking charges and reduced provision in new developments, together were the least popular in Package 3. Concerns were expressed about reduced accessibility and shoppers and business diverting elsewhere. However, there was support for parking controls in residential areas near the town centre and outside schools.

7.5.24 General improvements for pedestrians throughtout the town were supported by nearly all respondents who commented on them.

Model testing

7.5.25 The results of our testing of the mode shift produced by Package 3 and the Starter Kit is shown in Figure 7.3. The impact of new housing and soft measures has not been included in the analysis which shows the impact of the transport measures in 2011. Figure 7.3 shows that the Package 3 measures, when combined with the Starter Kit, result in around a third of predicted extra car trips being made instead by other modes in the peak, and around a third of additional trips being made by other modes in the off-peak. Package 3 performs slightly better than the other two Packages in terms of mode shift both in the peak and off-peak. However, it still falls well short of delivering the traffic avoidance targets. This indicates that much tougher measures will be needed than have been included in the packages, or that mode switch objectives will need to be achieved by measures not included in the model, such as soft measures, or major increases (nationally) in motor taxation.

Figure 7.3: Growth in car trips avoided due to Package 3 and the Starter Kit compared to target by 2011



7.5.26 The additional car trips generated by the new population must also be taken into account. Package 3 is effective at switching at least the trips created by the new households if they behave in the same way as current residents. The concentration of new housing within the town or in peripheral extension to it will help to reduce the number of new car trips. As with Packages 1 and 2, the soft measures included in Package 3 must be effective if we are to stop traffic growth to 2011.

Indicative cost of Package 3

7.5.27 The estimated cost of the Package 3 is between £2 and £2.5 million capital costs with annual revenue costs of between £0.75 and £1.25 million. Car parking revenues could be between £0.5 million and £1 million.[1]

7.6 *Summary and outcome of performance testing*

7.6.1 The performance testing of the Packages suggests that while they are effective at helping to meet the study objectives in principle, they are not

[1] It must be stressed that this estimate is a preliminary costing, which does not include fees and charges, abnormal costs or any contingency. It is included to give a broad brush feeling for the likely level of cost and the figures may change considerably when investigated in detail.

sufficiently powerful to counteract the high levels of traffic growth predicted by the NRTF. Package 3 is the most expensive and performs best in terms of moderating growth, followed by Package 2 both in terms of cost and performance, with Package 1 being the cheapest but delivering the least. However, it is worth noting that the difference in performance between the Packages is slight. This is partly explained by the impact of the starter kit measures, which are common to each of the packages. The performance testing suggests that soft measures will be important in ensuring that traffic does not grow by the 20% predicted in the NRTF. However, the performance of such measures can only be assured through monitoring after their introduction.

7.6.2 However, if people deciding to make more use of cars could be avoided, each of the Packages 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 packages 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.

Public responses

7.6.3 There is no clear indication from the public consultation exercises that one Package is favoured over others. What is clear is that increased parking charges and reductions in the numbers of parking spaces are disliked by many people. Road closures are also a sensitive issue. This means that while the performance testing shows 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 redevelopment of the station area, the provision of a pedestrian square at Banbury Cross and improvements to the bus services are strongly supported.

Consequences of "doing nothing"

7.6.4 Although the performance of the packages as indicated by the multi-mode model testing falls short of meeting the overall aim of stabilising traffic levels in Banbury, each of the packages makes a positive contribution. In

addition, giving emphasis and resources to a powerful implementation of soft measures (the effects of which cannot be modelled) offers the prospect of realising the full potential of the physical and management improvements described within the packages. For example, the provision of a cycle track by itself does not guarantee that people will use it, but a locally targeted campaign to change attitudes towards cycling can bring about this change. The use of soft measures alone would be less effective, however, since the physical improvements would be lacking.

7.6.5 Although public opinion currently is only supportive of the "carrots" and not the "sticks" necessary to avoid future traffic growth, this could be changed (again requiring soft measures). The consequences of doing nothing, as described in section 3 of this report, will need to be spelt out clearly. These consequences include worse air quality, greater traffic danger, poorer and/or more expensive bus services, lack of choice of travel, less independence for children, elderly people and people with limited mobility, longer traffic delays, more homes exposed to traffic noise and intrusion. Poorer environmental conditions will also be detrimental to the vitality of the town centre as a centre of business, leisure and tourism. There are many ways in which these messages can be communicated, given strong and well resourced campaigns.

7.6.6 If nothing is done, the deteriorated environmental conditions and the even higher levels of car dependence will be very much more difficult to solve in future, than taking action now to prevent the situation getting worse.

Funding

7.6.7 The packages have varying prospects in terms being able to attract Government funds through the Local Transport Plan process. The ***Starter Kit*** measures in relation to controlled parking zones, and improvements of non-car modes would all be strong contenders. The Hennef Way measures may not be eligible if they provide greater benefit to car users than to other modes. The safety benefits could be important, however. ***Package 1*** measures are in theory all eligible, but the poor economic and practical case for Park and Ride will almost certainly rule this out for funding. The soft measures to develop Green Commuter Plans have not attracted significant funding to date, and success will depend on the strength of case for these as opposed to other measures. This will need to explain that the expenditure will need to be reviewed once the success of the measures has been judged over a reasonable period after implementation. Many of the same considerations apply to ***Package 2*** measures. The key town centre bus priority measures should be strong contenders, especially when placed

alongside parking restraint. The environmental enhancements at Banbury Cross and North/South Bar Streets will not, however, be likely to attract LTP funding. Key parts of ***Package 3*** measures will be strong contenders in a LTP bid, notably better routes to school and other pedestrian and cycle improvements. However, a key part of Package 3 is the restructuring of town and rural bus services. Money will not be available for subsidies to ensure delivery of these services, and the success of the package (under present bus deregulation legislation) will be heavily dependent on the pro-active participation of bus operators. LTP funding could, however, be used to provide the physical bus infrastructure improvements necessary to secure such cooperation and investment from the bus operators. The George Street Link and town centre bus priority measures described in Package 2 would be particularly important. Funding of the soft measures would be subject to the considerations described under Package 1 above, but would be more important in view of the likely greater resources required for Package 3.

Further steps

7.6.8 The study has developed and tested packages of measures as means of contributing to the study objectives. This will enable decisions to be made about the preferred package to be developed in Stage 3 of the study. Some of the more important measures will of course require further work before they can be implemented. They will need to be further developed by the Councils, and be subject to detailed public consultations and involvement of public transport and other bodies. Examples where detailed consultation will be required include the extent of the residents-only parking zone, and the closure of George Street and Middleton Road to through traffic. As already indicated, some specific junction modelling can be undertaken to inform the detailed design and configuration of the Hennef Way proposals. The George Street-Station link and the multi-mode interchange also involve complex matters of engineering feasibility and various options for access by various modes. These tasks all fall within the normal transport and land use planning processes at County and District level, and will need to be carried forward after the completion of BITLUS.

8 *Choices*

8.1 *Introduction*

8.1.1 This Section sets out the key choices which need to be made by the Steering Group at the end of Stage 2. 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. Section 8.3 sets out particular issues about which choices need to be made. Section 8.4 offers advice on the different ways in which the measures and packages can be used to develop Banbury's first Local Transport Plan (which will be the main task of Stage 3 of BITLUS).

8.2 *Why Banbury needs an ITS*

8.2.1 BITLUS offers a vision for Banbury as a thriving, attractive and convenient sub-regional centre, in which transport is efficient and kept in balance with considerations of environmental quality, safety and social equity. Banbury is fortunate in that it can build on favourable past planning decisions that provide major advantages compared to some less fortunate towns. For example:

- The town is compact, which reduces the need to travel;
- Most of the shopping facilities including major new facilities are focussed in the town centre, in line with modern planning guidance;
- Most of the land uses which generate heavy vehicle traffic can be reached from the motorway without the need to pass through the town centre.

8.2.2 General opinion in the town is that traffic problems are not too severe, and that no dramatic action is called for. Current trends, however, mean 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.

8.2.3 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.

8.2.4 This report sets out measures that are necessary to tackle traffic growth. It must be emphasised, however, that implementing these measures will not be easy. The public consultation exercises for both Stages 1 and 2 have demonstrated that:

- Many people do not perceive transport issues to be important or that there are sufficient transport problems in Banbury 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.

8.2.5 Such a balance of sticks as well as carrots is, however, required to achieve the aims of BITLUS and, to obtain Government funding towards transport measures.

8.2.6 It will therefore be necessary to adhere to the vision and purpose of the overall plan if the implementation process is to succeed when the inevitable short-term obstacles and objections arise.

8.2.7 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.

8.3 *Key choices affecting the town*

8.3.1 Assuming that it is seen as appropriate to pursue an integrated approach, a number of key choices need to be made as set out below.

8.3.2 *Banbury as shopping mall or town centre?*

8.3.3 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.

8.3.4 Alternatively, the centre could develop primarily as a one-stop shopping mall, with Castle Quay operating like an out-of-town mall such as Bicester village, except that it happens to be located next to Banbury's historic core. 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 existing traders in the town.

8.3.5 The packages 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, and its justification;
- parking controls, reducing parking spaces, and increased parking charges, as part of a package to shift the balance of travel to non-car modes; and
- 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.

8.3.6 Failure to address these issues will lead to the *de-facto* choice of the scenario painted in 8.4.3, and in addition would worsen the problems of transport and environment in the future.

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

8.3.8 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.

8.3.9 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.

8.3.10 ***Environment versus car access in Grimsbury***

8.3.11 The proposed closure of Bridge Street/Middleton Road at the railway is designed to give top priority to buses, pedestrians and cyclists, and to create an environment in Grimsbury that is untroubled by heavy traffic. In this case, direct car access between Grimsbury and the town centre will be foregone. It is important to remember that the proposed improvements to Hennef Way would reduce delays encountered by car users using this as an alternative route. The intention, of course, is that people would choose to travel by alternative modes more often, using the higher quality services that would result. (See comments in 7.2.2.)

8.3.12 This measure is of major importance and detailed local planning and consultation exercises would need to be undertaken by the Councils once the decision in principle had been made.

8.3.13 ***Car commuters or other car users take priority?***

8.3.14 Reducing peak hour congestion on Hennef Way is addressed by a widening from one to two westbound lanes on the railway bridge, and the proposed traffic signal junctions in place of the present roundabouts. This should reduce journey times at peak hours. However, the signals will tend to increase journey times during off-peak periods.

8.3.15 The packages also require choices between car commuters and other car users in terms of town centre car parking, as reflected in varying degrees of supply, and balancing this with varying charge levels and controls.

8.3.16 *Historic environment versus convenient car parking*

8.3.17 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 choice here between convenience for car users and attractiveness of the place they have come to visit.

8.3.18 *Achieving the aim of town growth but stable traffic levels*

8.3.19 This is perhaps the most difficult choice of all. According to the performance tests of the three packages, measures will not be sufficient to counteract the forces of traffic growth, even excluding the impact of further housing commitments in Cherwell Local Plan.

8.3.20 The Councils will want to consider how to deal with this finding. The possible choices appear to be:

1 Drop the aim of halting traffic growth.

2 Impose charges for private parking if and when enabling legislation is provided.

3 Liase with competing centres to impose higher parking charges and reduce parking supply. (This may be easier to achieve, and may be required, following revised regional guidance.)

4 Act unilaterally to limit car use through parking controls and charges.

5 Commit more resources to soft measures (the proposed "mobility manager") to change travel choices that are not produced by physical measures alone.

8.4 *Choosing between the packages*

8.4.1 The Starter Kit measures, already agreed as important for Banbury will in themselves require significant investment and planning resources to bring them to fruition over the next five years (preliminary estimates suggest between £3 and £4 million). The cost of these measures is likely to mean that additional measures, in the form of an integrated package, may have to wait for funding.

8.4.2 Deciding what the additional package of measures consists of is a key issue. Three packages are described in this report. A decision will be needed on how these are to be handled, with the possibilities being as follows:

1 Choose one package for implementation over a 10 year period

2 Choose one package for (say) 5-10 year programme, and a further package for a 10-15 year programme, i.e. prioritise the packages

3 Create a hybrid package of measures (drawn from all three existing packages), and prioritise those into programmes for 5, 10 years and beyond.

8.4.3 Choice of 1 above would, in our view, need to be based on a perception that one set of issues was clearly more important than other issues. To re-cap, the three packages represent the following three sets of issues:

- Package 1: Peak hour congestion and journey to work
- Package 2: Multi mode access to, and environmental improvement of the town centre;
- Package 3: Multi mode access and environmental improvements throughout Banbury and its hinterland, for all travel purposes.

The consultation exercises have not shown dominance of one set of issues, and this leads to the conclusion that the selection of one of the packages may not be appropriate. Choice 2 would be the simplest to progress, but Choice 3 would also be feasible to develop in Stage 3 of the BITLUS.

8.4.4 The analysis in this report highlights the need for action to be taken that is at least as robust as that set out in the packages. The consequences of not doing so will be a continuing deterioration in the quality of life in the town, and an absence of Government funding towards transport solutions.

8.4.5 Finally, it must be restated that none of the packages will fully meet the study aim of town growth with stable traffic levels. There remains the choice, therefore, of even tougher physical and parking restraint measures to achieve switch of travel away from the car. Alternatively, greater emphasis can be placed on soft measures to promote mode switch, and to use the process of "implement, monitor, review" to adjust transport programmes over the next decade.