

BISHOP'S STORTFORD TRANSPORT STUDY

Final Report

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Prepared for:

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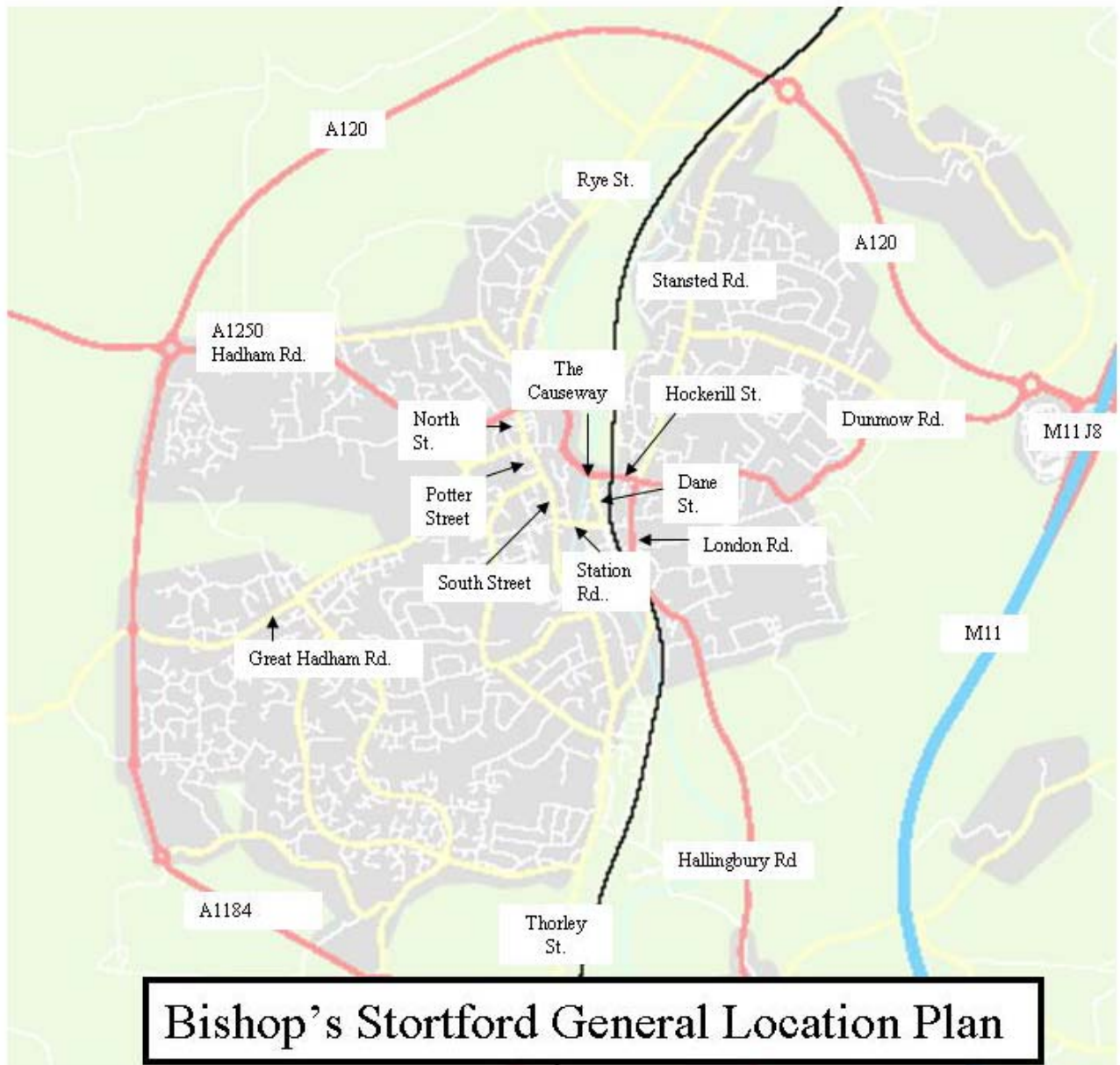
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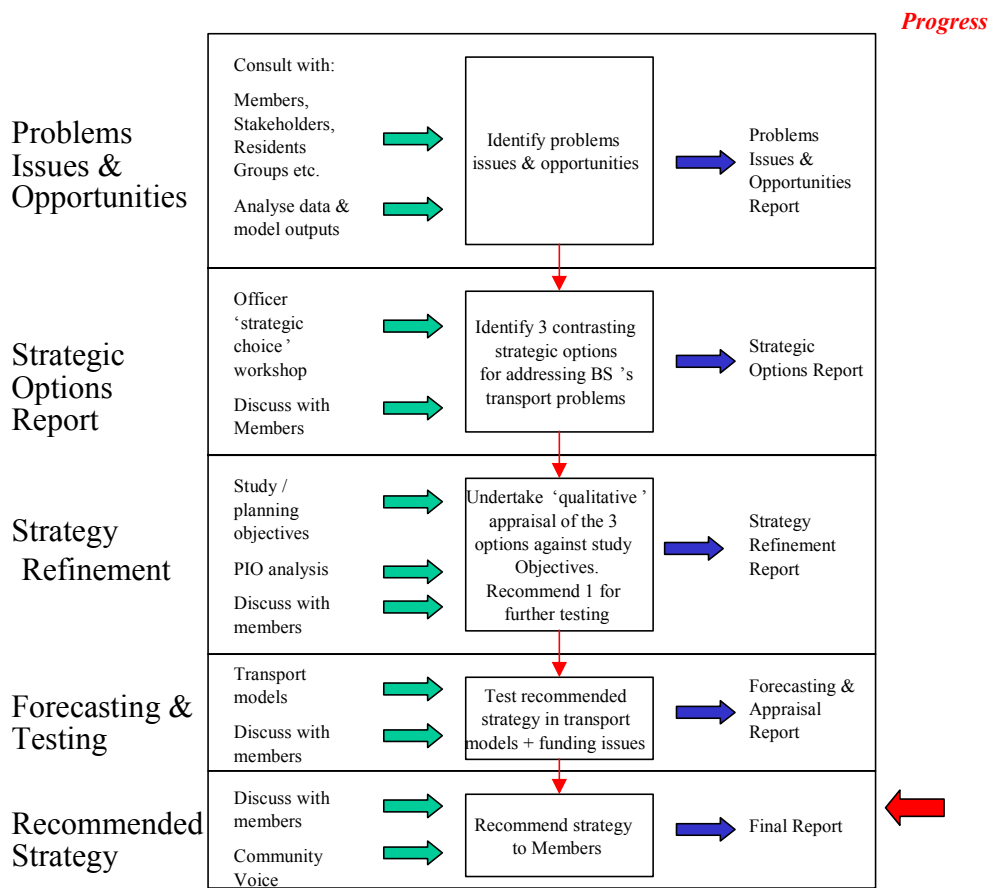


1. INTRODUCTION

Background to the study

- 1.1 Bishop's Stortford is a mediaeval market town located in one of the country's national growth areas and is set to experience significant expansion in both housing and employment levels over the next ten to fifteen years.
- 1.2 The current transport systems serving the town have developed in accordance with its historic past and as a result of its position as one of the most accessible places to live in the county, with excellent links to the M11 and a direct train line into London. These links have influenced the travel patterns of the population as the town has expanded. However, future growth in the town will alter the dynamic of transport demand at local, regional and national levels and will require a very different transport mix to the current offering.
- 1.3 East Herts Council recently commissioned a Sustainability Appraisal of the District and a Masterplanning Study for the Areas of Special Restraint to the North of the town. It was the Masterplanning study which specifically recommended a town-wide transport study which would lead to the production of:
- “...a town-wide transport, movement and parking strategy that is integrated with a strategy for the improvement of the public realm to the benefit of pedestrians and cyclists.”*
- 1.4 This report summarises the work that has been undertaken and sets out the recommendations of the Bishop's Stortford Transport Study. The study was commissioned by a partnership of East Herts Council, Hertfordshire County Council and GO-East in April 2005.
- 1.5 In undertaking the study we have analysed the current transport situation and investigated the impacts of proposed developments on the town's transport systems. Working closely with elected members and officers from the authorities, we have developed a draft transport strategy for the town designed to tackle the problems that have been identified, and which will minimise the negative effects of additional demand generated by future growth and associated new development in the town. In the course of undertaking the study we have consulted widely with stakeholders, residents and developers. This consultation included attending Community Voice on the 1st September 2005.

FIGURE 1.1 STUDY REPORTING PROCESS



Report structure

1.6 This is the final report of a series of reports that have been prepared as part of the study. The overall study approach and reporting process is summarised in Figure 1.

1.7 This report consists of seven chapters of which this introduction forms the first. The remainder of the report is structured as follows:

- **Chapter two** summarises the transport problems, issues and opportunities in the town;
- **Chapter three** explains the development of the 3 contrasting options for tackling the issues facing Bishop's Stortford;
- **Chapter four** reports on how the options were refined and appraised, and a recommended strategy approach identified;
- **Chapter five** provides a summary of the feasibility and testing of strategy elements to provide an indication of the effectiveness of some of the proposals;
- **Chapter six** describes the recommended strategy for consultation;
- **Chapter seven** provides information on phasing and implementation and identifies the additional work that will be required to further develop the strategy towards delivery; and
- **Chapter eight** sets out the conclusions.

2. PROBLEMS, ISSUES AND OPPORTUNITIES

- 2.1 The first stage of the study involved analysing the main transport problems and issues in Bishop's Stortford by looking at the current situation, demand for movement and accessibility levels in the town.
- 2.2 The future pressures have been identified as either resulting from development pressures within the town or growth in the wider region. Both types of future pressure have been examined for the potential opportunities they might present to enable sustainable development to occur in the town.
- 2.3 This chapter summarises the main findings of the problems, issues and opportunities report under the following headings:
- The current transport situation,
 - The demand for movement,
 - Accessibility,
 - Policy context,
 - Future pressures,
 - Consultation,
 - Problems and issues,
 - Opportunities.

The current transport situation

- 2.4 We have examined available information and data pertaining to the current transport situation in Bishop's Stortford. The main issues we have identified are set out below.
- i. Car ownership is very high; 78% of households own at least one car and 11% own three or more cars. The highest levels of car ownership are found in the new residential areas such as Thorley, St. Michael's Mead and Bishop's Park and in the rural areas surrounding the town. However there are also pockets of lower car ownership mainly in the vicinity of the town centre.
 - ii. The historical and physical development of the town has led to a constrained road network which channels traffic and creates congestion in the peak hours at a number of key locations, including:
 - Hockerill Junction
 - London Road/Stansted Road
 - South Street/Station Road
 - New Adderley Road/The Causeway
 - High Street/North Street/Bridge Street
 - Hockerill Street/Dane Street
 - iii. Traffic flows in the town generally have a pronounced peak indicating that congestion is currently generally restricted to the peak hours.

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- iv. In 2004 there were 148 reported accidents resulting in personal injury in Bishop's Stortford. Two of these resulted in fatalities, and a further 10 resulted in serious injury. In general accidents tend to be clustered along the main feeder and secondary distributor roads. There is a trend for increases in slight accidents, possibly associated with increasing traffic flow and congestion. The majority of accidents involving children have occurred on the main through route into the town, the B1383 South Street / South Road. Most of the accidents involving cyclists and pedestrians are clustered around the town centre and along the main feeder routes into the town such as the junction of South Street with South Road. This is a reflection of the narrower pavements and more constrained environment in this area.
- v. Recent traffic calming and HGV strategies have to some extent been successful in addressing the impact of traffic on the town and provide examples of the levels of reduction in traffic that can be achieved. However consistent enforcement of the lorry ban is required to maintain the benefits of the scheme.
- vi. Bishop's Stortford suffers the associated problems of a town with a high car dependency, in that parking is often considered to be in short supply. The car parking situation in Bishop's Stortford is at present a particularly 'hot' topic due to the impacts of a number of development proposals and the implementation of a number of new car parking policies, including increased charges. Parking charges remain low for both short and long stay parking in the town. On street parking by rail users and town centre employees in residential areas is a problem, as is airport parking. This is being addressed through the implementation of residents' parking schemes.
- vii. Bishop's Stortford also has a 465-space park and ride facility at Woodside, which has been operating since the closure of the Jackson Square multi-storey car park in February 2005. It initially ran on a permit basis and was specifically aimed at attracting town centre workers, with local businesses supporting the permit-based scheme. Initially the scheme was not well used but planning permission was granted in July 2005 to change the operation of the site to allow members of the public without a permit to use the facility and the current operator agreed to do this on a trial free basis. Since the change in operation there are now up to 1,000 cars using the facility a week. From the beginning of 2006 a charge of £1 per day has been in operation.
- viii. The main bus issues are:
- there is no dominant bus operator;
 - bus frequencies are reasonable but are affected by congestion and suffer poor reliability;
 - bus infrastructure is not of a high quality with few shelters and information facilities;
 - public perception of buses is poor;
 - bus interchange with the railway station is to be improved as part of the proposed Goodsyard redevelopment;
 - buses are not well used in the town because of the congestion, high car ownership, and poor public perception;
 - there are few low floor buses in operation to cater for the disabled.

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- ix. There are good rail services to central London and Stansted.
 - x. Despite the compact nature of the town, cycling and walking are underused modes. This is due to poor facilities and the narrow pavements, high traffic flows resulting in perceived safety issues and the geography and relief of the town.
 - xi. Environmental constraints exist particularly to the south of the town where there are marshes and floodplain. These will influence potential opportunities to increase highway capacity in this location such as the completion of the ring-road.

The demand for movement

2.5 The main issues in respect of the demand for movement in Bishop's Stortford are set out below.

- i. Shopping (inter-peak) and work/education (peak) are the predominant journey purposes in the town. The overall strategy and in particular the parking strategy will need to recognise the often conflicting needs of these different market segments;
- ii. Bus use is significantly lower than the Hertfordshire and national averages. The strategy needs to consider ways of addressing the low utilisation of this mode;
- iii. Use of the train for journeys to work made by Bishop's Stortford residents is higher than Hertfordshire and national averages. The strategy needs to build on this success by developing bus/car/rail interchange and the necessity to ensure that the expansion of Stansted does not result in a reduction in stopping services at Bishop's Stortford. Use of the train for journeys to Bishop's Stortford is, however, lower than average. This is a product of the relatively local catchment area for journey to work trips and the very high level of car ownership in these areas, combined by the relatively cheap car parking availability in the town;
- iv. A higher than average number of people walk to work in Bishop's Stortford, especially residents closer to the town centre. Facilities for pedestrians need to be an important part of the strategy, particularly given the high car mode shares at local schools, the fact that a relatively high proportion (52%) of people working in Bishop's Stortford also live in the town, and the overall size and layout of the town, which is conducive to walking;
- v. Most journeys to work in Bishop's Stortford are less than 7kms in length, from very dispersed origins and hence tend to be made by private car;
- vi. 24% of traffic entering the town terminates in the town centre. From the point of view of opportunities for park and ride, the London Road, A120 East of Bishop's Stortford and Rye Street corridors would have the greatest potential as they have the greatest amount of terminating traffic;
- vii. 41% of traffic entering Bishop's Stortford is through traffic. The largest volume of through traffic comes in via the Stansted Road corridor;
- viii. All through traffic from Hallingbury Road passes through the town as it is difficult for it to access the bypass. Traffic from the M11 (J8) to Harlow also passes through the town. Completion of the bypass to J8 would remove this traffic from the town but would be high cost and there are also environmental constraints; and

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- ix. Analysis of Hertfordshire County Council's SATURN traffic model has indicated that, congestion on the bypass, particularly in the future, increases traffic in the town as traffic avoids the congestion by finding alternative routes.

Accessibility

- 2.6 On the whole accessibility to schools, hospitals and GP surgeries in the town is good:
- the majority of the town's residents are within a 10-minute walk of their nearest primary school;
 - the entire town's population is within 10-minute cycle of a secondary school;
 - the majority of the town falls within a 15-minute total travel time by bus to a GP.
- 2.7 The main issues relating to accessibility in the town are less to do with distance and more to do with the relief and poor quality infrastructure for non-car modes, which has been noted as a discouraging factor. The problem is not that the facilities and services are inaccessible by more sustainable modes, but that people prefer to use their private cars and to have high levels of parking provision available, causing congestion. Accessibility levels to secondary schools are likely to change when relocation proposals for two of the secondary schools are brought forward and this will have important transport implications for the town, especially in the morning peak.

The policy context

- 2.8 The main problems, issues and opportunities in relation to the policy context are that:
- i. Bishop's Stortford is placed within national, regional and sub-regional growth spheres.
 - ii. A higher level of growth places pressure upon the town's transport resources. Where development is permitted it must contribute to the necessary transport infrastructure to make the town more sustainable.
 - iii. These issues are reflected in the transport, parking and development policies adopted for the town; and
 - iv. The District and County Councils have recognised the need for a more holistic approach to town-wide transport planning. It is in this context that the present study was commissioned.

Future pressures

- 2.9 The main problems, issues and opportunities in relation to the future pressures likely to be faced by the town are as follows:
- i. Bishop's Stortford is influenced by a wide policy remit which includes the Draft East of England Plan, which places the town within both the London-Stansted-Peterborough-Cambridge and the M11/Stansed growth areas and sets targets for up to 8,900 jobs in the corridor and around 11,000 new houses in the District (excluding any proposals for development at Harlow). In particular, Bishop's Stortford is highlighted as a potential growth node.

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- ii. These policy documents are though, to a greater extent focusing on growth at Harlow, which might have some important transport implications for the town due to through-traffic.
 - iii. The growth of Stansted as set out in the Air Transport White Paper (2003) is an important consideration as it has direct impacts on traffic levels, parking and rail/bus issues in the town.
 - iv. The proposed development on the ASRs to the north of the town has generated significant concerns about the impact of traffic in the town. Such growth would require very careful planning and implementation if the town is to maintain its unique identity and not become increasingly congested.
 - v. By tying both 'inner' and wider growth policies together through carefully planned developments and developer contributions, the town has a significant opportunity to capitalise on the growth set to occur to achieve sustainable levels of development and implement the necessary elements of its transport strategy to support the growth.

Consultation

2.10 For this study, initial contact has been made with a number of different stakeholders, as follows:

- developers;
- commercial interests;
- schools;
- residents' associations;
- Stansted Airport; and
- environmental interest groups.

2.11 In addition, the Transport Strategy was the sole agenda item at a meeting of the Community Voice, convened on 1st September 2005. More than 80 people were able to attend.

2.12 The primary problems that have been identified through our consultations are:

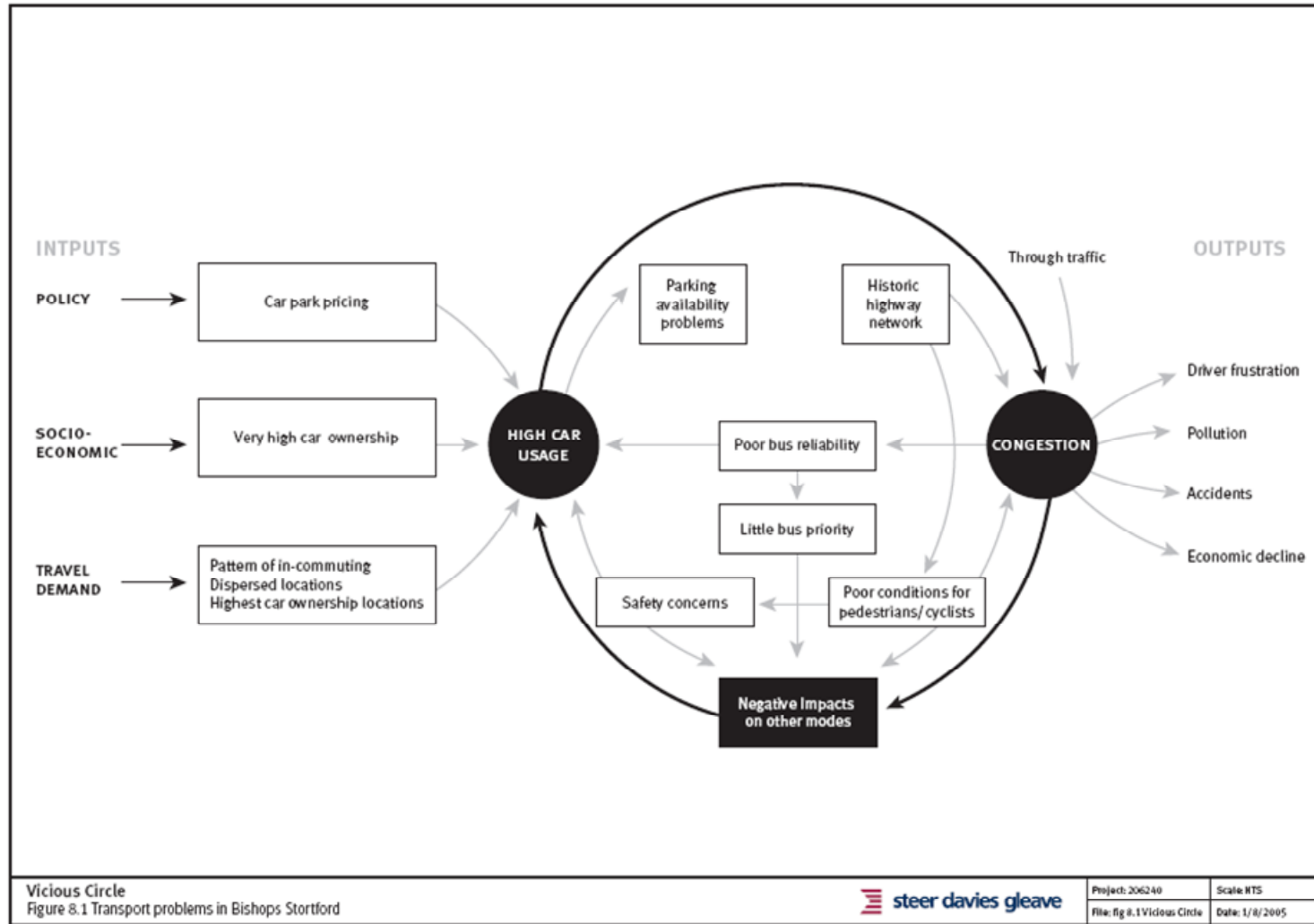
- traffic levels/congestion in the town centre;
- parking limitations, again in the town centre;
- the likely impact of more housing development on congestion;
- the perceived excessive development of housing schemes around the town;
- possible pressure from expansion at Stansted, on congestion, parking and the capacity of the rail service to Liverpool Street;
- poor infrastructure for pedestrians and for cyclists;
- poor interchange between buses and trains at the station; and
- many people do not want to reduce the use of their cars and / or have no attractive alternative.

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- 2.13 Issues emanating from the discussions include:
- The need to ensure integration across the whole of the ASRs;
 - Stansted airport could sustain its growth targets without significant investment in infrastructure until a second runway is introduced, post 2012; and
 - only one employer, Waitrose, currently has a Travel Plan although it is acknowledged that behaviour change is more likely to change through employer initiatives rather than individuals' measures.
- 2.14 The main opportunities offered for improving if not resolving the problems were:
- ensuring that any developments in the ASRs include comprehensive provision of local facilities;
 - significant improvements in public transport between the outlying residential areas and the station, particularly as a precondition for any development on the ASRs;
 - improved interchange between modes and service provision at the railway station;
 - more park and ride sites around the town centre;
 - measures to improve walking and cycling;
 - more frequent buses, on more routes, at lower fares; and
 - an improved or new by-pass, which would impact upon current signalled junctions.

Problems and issues

- 2.15 The problems and issues identified focus mainly on the relationship between high car usage, the resulting congestion in the town and the impact this has on travel demand and development. Figure 2.1 sets out our understanding of the complex and interrelated transport problems facing the town.
- 2.16 The most obvious transport problem in Bishop's Stortford is that of congestion. However, the underlying reason for this congestion is the over-dependence on private car use in the town and the paucity of alternatives for travel to / from the rural hinterland, and this travel behaviour has developed as a result of policy measures, socio-economic characteristics in the town and the patterns of travel demand.
- 2.17 Car park pricing and availability are set not to discourage car use. In socio-economic terms, the town is affluent with many of the population owning more than one car and preferring to drive themselves rather than use alternative modes. In many cases the pattern of commuting of Bishop's Stortford residents is very dispersed, which makes the use of private car even more attractive and convenient.
- 2.18 The high car usage means that there is an increasing problem of car park availability in the centre which results in queuing and creates congestion. The historic highway network in the town centre is also a contributing factor to congestion which, in turn, has negative impacts on other modes available for travel in the town and discourages their use. Narrow pavements are made more dangerous for pedestrians and competition for road space in the historic core discourages cyclists. The constrained road network in the centre also reduces capacity to absorb traffic growth and impedes the easy implementation of bus priority measures.

FIGURE 2.1 THE 'VICIOUS' CIRCLE OF TRANSPORT PROBLEMS IN BISHOP'S STORTFORD



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- 2.19 All of these factors contribute to the car dependence in the town, which creates a ‘vicious circle’ of even more congestion and less use of alternative modes. The outputs of this circle are frustration for drivers, increased levels of pollution for static traffic in the centre, higher numbers of accidents and potentially the risk of economic decline of the town centre as people choose to shop in other locations.
- 2.20 All of these factors are potentially exacerbated by the planned levels of future development in the town and failure to solve these issues may result in further exacerbation of traffic problems.

Opportunities

- 2.21 Opportunities exist to break the vicious circle and instead create a virtuous circle of investment, transport improvement (particularly for alternatives to the private car) reduced congestion, increased accessibility and sustainable development.
- 2.22 From our analysis, the key opportunities are identified below.

Accessibility

- 2.23 The compact nature of the Bishop’s Stortford, the relatively high proportion of short distance trips made within the town, and the proximity of Stansted create an opportunity to increase the mode share for walking and cycling. To realise this opportunity, significantly improved facilities for pedestrians and cyclists would need to be provided. These may include:

- town centre pedestrianisation schemes,
- improved pedestrian facilities such as pedestrian crossings widened footways, improved priority for pedestrians,
- an enhanced and where possible segregated cycle network,
- quality cycle parking facilities at key locations; and
- policy measures such as company and school travel plans and travel plans for new developments.

Public transport

- 2.24 Many journeys are made to the station by private car that could be made by bus (or indeed walk and cycle). Better integration of bus and rail services and improvements to bus services and passenger information represent an opportunity to reduce car journeys to the station. Partnership working with Network Rail to develop an integrated access strategy to the station would also be beneficial.
- 2.25 The town’s bus / rail interchange is planned to be improved with the proposed relocation of the bus station closer to the station as part of the planned Goods Yard development.

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- 2.26 Some 70 % of Bishop's Stortford residents work in 4 locations: inner London, Harlow, Stansted Airport and Bishop's Stortford. This concentration of destinations represents an opportunity to cater for this demand to some extent by strategic public transport improvements.

Traffic and congestion

- 2.27 Much of the traffic congestion is generated by relatively short distance cross-town trips. Opportunities therefore exist to reduce congestion by improving the alternatives and by discouraging car use through parking policies, travel plans and safe routes to school schemes.
- 2.28 The high proportion of traffic that terminates in the town centre from particular corridors indicates that park and ride may be an option and its viability will depend upon the parking policies as well as the volume of potential users and attractiveness of any system implemented.
- 2.29 Congestion is building up on the bypass and is likely to reduce the attractiveness of this route at the expense of additional traffic growth on the town centre roads. Improvements to the bypass to reduce the future impact of through traffic may be required to mitigate the effects of this.
- 2.30 The town centre is already largely under traffic signal control and the implementation of an Urban Traffic Control (UTC) system could improve the efficiency of the network.

Parking

- 2.31 Given that 24 % of peak hour traffic entering Bishop's Stortford terminates in the town centre and the fact that the town is attractive as a retail centre, parking restraint policies could be effective in encouraging modal transfer away from the car. However any such proposals would need to balance or mitigate the potential impact on the local economy and be combined with the provision of effective alternatives to the private car.
- 2.32 Improved information such as live roadside parking information would reduce the amount of traffic circulating while looking for a parking space and could be linked to a UTC system.

Development

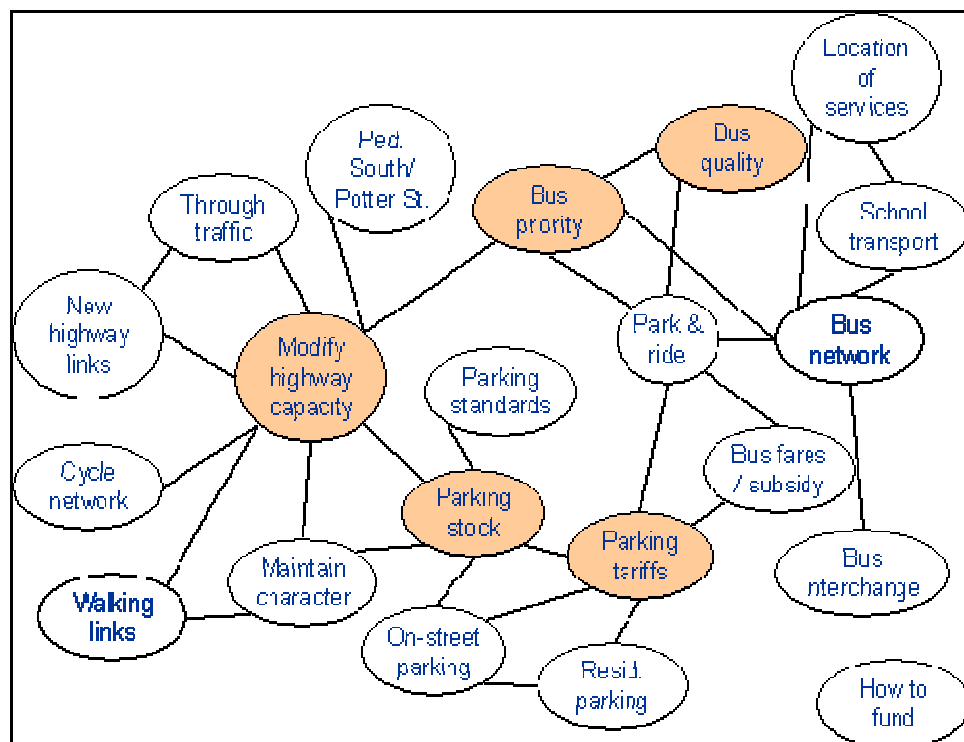
- 2.33 The significant levels of growth both in the town and on the periphery can provide the catalyst for significant improvements to the town's transport infrastructure and services. For this to generate the maximum opportunity, development sites need to be considered as contributing to a town-wide solution rather than dealing with their individual impacts. An overall integrated transport strategy funded to a significant degree from development contributions provides the best opportunity to provide a step change in transport provision in the town and address the town's transport problems in the long term.

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- 2.34 The transport strategy outlined in this report will aim to create the development of a ‘virtuous circle’ of growth and investment, to enable Bishop’s Stortford to capitalise on the opportunities presented to it to solve its transport problems and achieve sustainable development.

3. STRATEGY DEVELOPMENT

- 3.1 A seminar was held with a range of officers responsible for the delivery of different services across both the District and County authorities. The purpose of the seminar, which used a technique known as 'strategic choice', was to assist in the development of three contrasting scenario options. These scenario options would represent three internally consistent alternative ways of tackling transport problems in Bishop's Stortford, elements of which could be combined to create a recommended composite strategy.
- 3.2 The seminar focused on identifying areas where decisions relating to transport in Bishop's Stortford need to be made, but limited to areas where local authorities have control over the decision-making process.
- 3.3 The main decision areas that were identified through this process were then analysed for their linkages and interactions to show how the different elements of a potential strategy might interact both in terms of synergies between different strategy elements as well as any inherent conflicts. An example from this process is illustrated in Figure 3.1 below and helps to identify some of the key 'decision areas', which may become 'drivers' of the final strategy.

FIGURE 3.1 EXAMPLE OF DECISION AREA LINKAGES



3.4 The key decision areas' that were identified in this process were:

- modifying highway capacity;
- improving the bus network & the quality of buses;
- addressing parking stock & prices; and
- improving walking links.

3.5 These key decision areas were then considered in greater detail in terms of the measures that may be employed as a result of the decision being made. From this, possible strategy elements were developed which have been packaged together into three contrasting yet internally consistent scenarios. Key elements of these scenarios are set out below.

Highway supply scenario

3.6 This scenario involves maximising the supply of highway capacity in the town to facilitate car use. It would involve improving highway links in and around the town and would include:

- upgrading the A120 bypass;
- completing the bypass to the south-east;
- improving the capacity of town centre junctions (particularly Hockerill);
- implementing an urban traffic control system; and
- implementing a 2-way system along Dane Street.

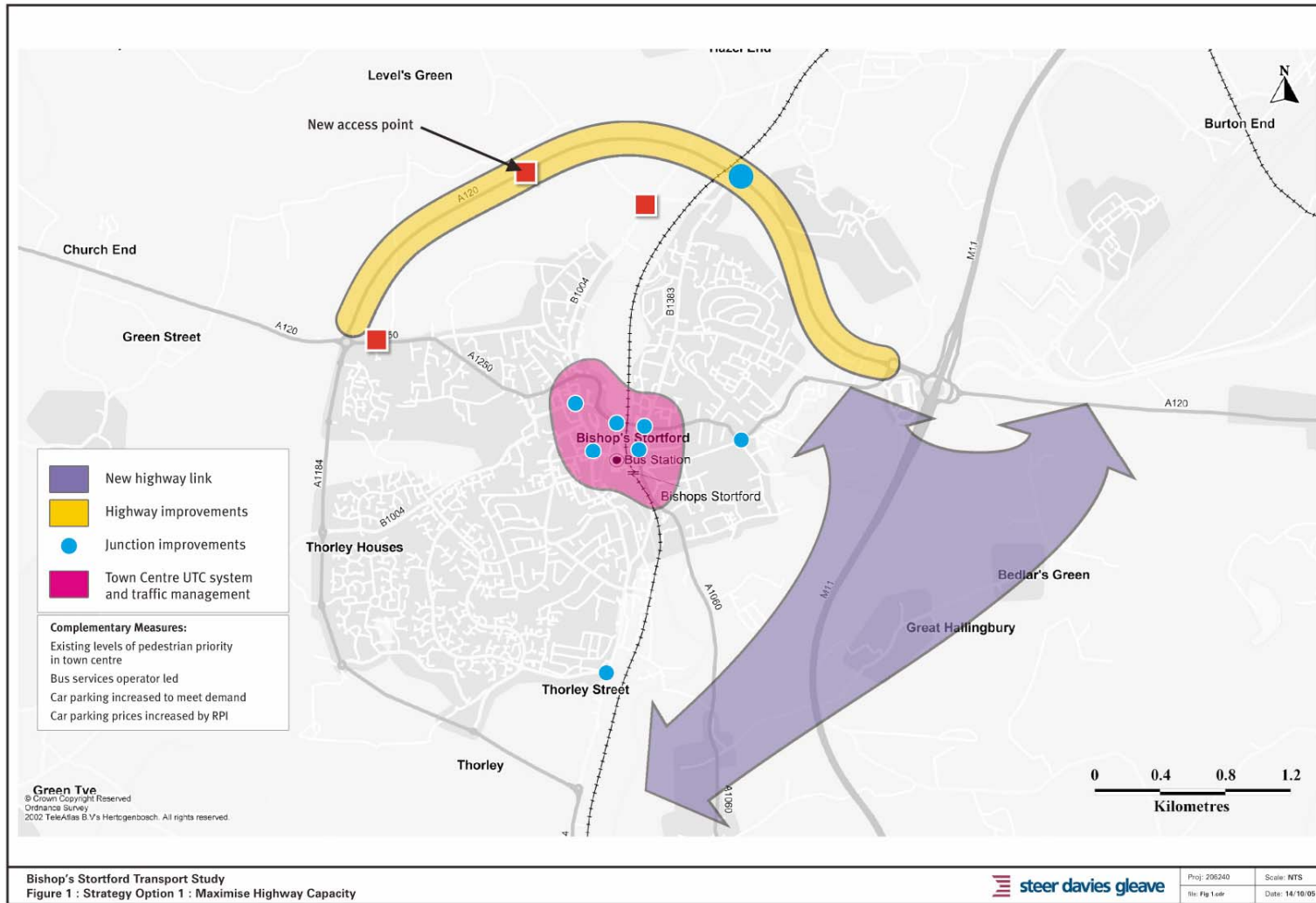
3.7 The scenario option is illustrated in Figure 3.2 and details of the measures included in this strategy are set out in more detail in Table 3.1 along with a reference back to the relevant paragraph or table in the Problems, Issues and Opportunities Report where the issue addressed is identified.

3.8 Complementary measures would include maximising the supply of car parking in the town centre, leaving bus supply to market forces and not increasing pedestrian priority.

TABLE 3.1 MAXIMISE HIGHWAY SUPPLY - KEY SCENARIO ELEMENTS

No.	Scenario Element	Purpose	PIO Ref.
i	Complete bypass to south-east of town	To remove through traffic from A1060 & town centre roads	Table 3.7 Para. 3.50
ii	Upgrade existing A120 bypass and its junctions	To provide sufficient quality of service on this through route to ensure that through traffic does not divert away from the bypass into the town to avoid traffic congestion.	Figure 3.18 Para. 3.55
iii	Improve capacity of town centre junctions through junction improvement schemes	To relieve the peak hour traffic congestion in the town centre at key junctions.	Figure 2.6 Paras. 2.49, 2.50
iv	Town Centre traffic management schemes e.g. Dane Street 2-way	To relieve the peak hour traffic congestion in the town centre	Figure 2.6 Paras. 2.49, 2.50
v	Implement Urban Traffic Control System extending no. of junctions under signal control	To relieve the peak hour traffic congestion in the town centre	Figure 2.6 Paras. 2.49, 2.50
vi	ASR Highway Access to A120, Hadham Road and Rye Street.	To maximise available routes to and from the development by private car.	N/A
Vii	Complementary measures: Increase parking supply in town centre No on-street controls Existing levels of pedestrian priority in town centre Bus services operator led	Measures to provide car parking for the car trips and to not increase expenditure on encouraging other model of transport.	N/A

FIGURE 3.2 ILLUSTRATION OF SCENARIO TO MAXIMISE HIGHWAY CAPACITY



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Bus supply scenario

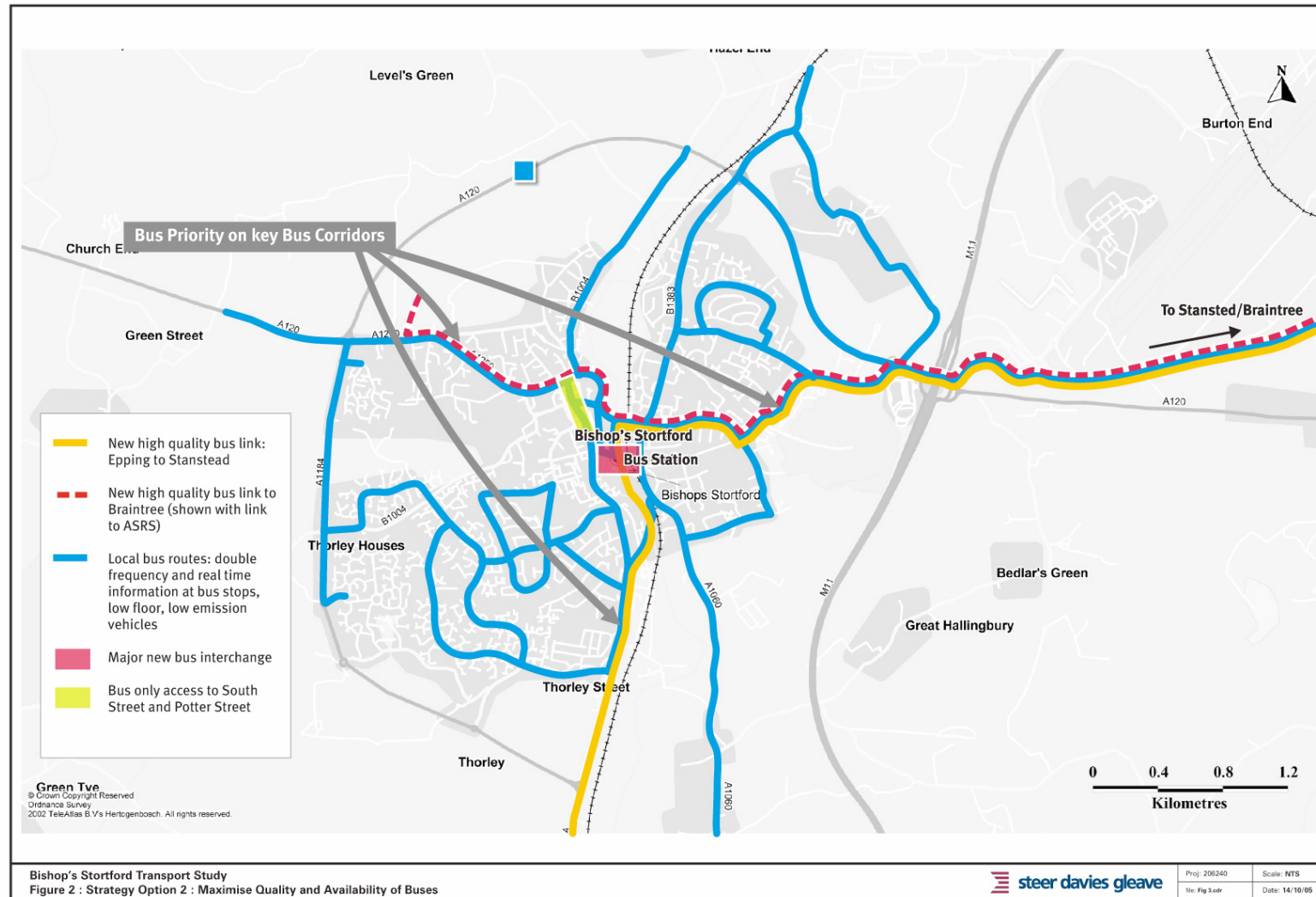
- 3.9 This scenario maximises the quality and availability of buses in the town to affect a mode shift away from private cars. This could include:
- intelligent bus priority at all town centre signal junctions;
 - physical bus priority measures on approaches to junctions;
 - bus quality partnerships with low floor, low emission vehicles;
 - improved service frequencies to town centre and station;
 - real-time information at bus stops;
 - improved information, bus stops with bus boarders;
 - strategic bus service enhancements, including to Stansted; and
 - significantly improved bus interchange.
- 3.10 The scenario option is illustrated in Figure 3.3 and details of the measures assumed for this scenario are set out in more detail in Table 3.2.
- 3.11 Complementary measures would include ensuring all new houses would be supplied with a 1-year ‘free’ bus pass by the developers and parking availability and charges would be set to make travelling by public transport attractive.

TABLE 3.2 MAXIMISE QUALITY AND AVAILABILITY OF BUSES - KEY SCENARIO ELEMENTS

No.	Scenario Element	Purpose	PIO Ref.
	Improved bus priority:		
i	<ul style="list-style-type: none"> • ‘Intelligent’ bus priority at town centre signals • Bus only access to South Street / Potter Street 	To enhance the attractiveness of buses over other modes by increasing reliability and reducing journey times	Para. 2.79
	Improved service frequencies:		
ii	<ul style="list-style-type: none"> • Double frequencies to town centre & railway station 	To create a ‘turn up and go’ feel to bus service provision and to encourage journeys to the railway station and town centre to be made by bus rather than private car.	Para. 2.79 Para. 3.26
	New bus services:		
iii	<ul style="list-style-type: none"> • Strategic services from Harlow to Stansted or Braintree via Bishop’s Stortford 	A total of 18% of residents travel to work at either Stansted or Harlow. A strategic service is identified in the draft East of England Plan.	Para. 3.16 Para. 6.32
	Improved information:		
iv	<ul style="list-style-type: none"> • Real-time bus information at bus stops & bus interchange • Real-time information on web and direct to 	Real-time information is important to market bus services as a ‘quality product’ in an affluent town such as Bishop’s Stortford.	Para. 2.76

	mobile phones		
	<ul style="list-style-type: none"> Improved roadside information 		
	Infrastructure:		
v	<ul style="list-style-type: none"> Significantly improved bus interchange Improved road-side bus stop infrastructure 	Existing bus stop infrastructure is not of a high quality. A significantly improved bus-rail interchange is required.	Para. 2.76 Para. 2.80
	Improved vehicles:		
vi	<ul style="list-style-type: none"> Low floor / low emission buses provided via Quality Partnership 	To improve provision for disable people.	Para. 2.81
	ASR:	ASRs provide an opportunity to provide capitalised revenue support for new or improved bus services.	
vii	<ul style="list-style-type: none"> Capitalised revenue support for frequency enhancements, Highway access to A120, bus access to Hadham Road and Rye Street 	Bus access to the town to be quicker than the equivalent car journey by providing access for buses onto Rye Street and Hadham Road.	N/A
	Complementary measures:		
Viii	<ul style="list-style-type: none"> No change to parking supply and pricing policy Highway capacity left unchanged except for bus priority measures 	Such measures are consistent with this strategy.	N/A

FIGURE 3.3 ILLUSTRATION OF SCENARIO TO MAXIMISE BUS USE



DEMAND MANAGEMENT SCENARIO

3.12 This scenario aims to manage demand in the town by facilitating use of appropriate modes of travel for particular journeys. This could include:

- Providing park and ride sites and services on the main approaches to the town to ‘intercept’ some of the traffic terminating in the town centre
- Improving walking routes within parts of the town which are accessible by this mode, including pedestrianisation of South Street / Potter Street,
- Removing or discouraging long-stay parking in the town centre,
- Providing improved cycle infrastructure where relief makes this mode attractive,
- Focusing on soft measures such as green and school travel plans,
- Providing a travel information centre in the town centre with shopping deliveries to home or to park and ride sites,
- Flexible bus services rather than fixed routes around the town.

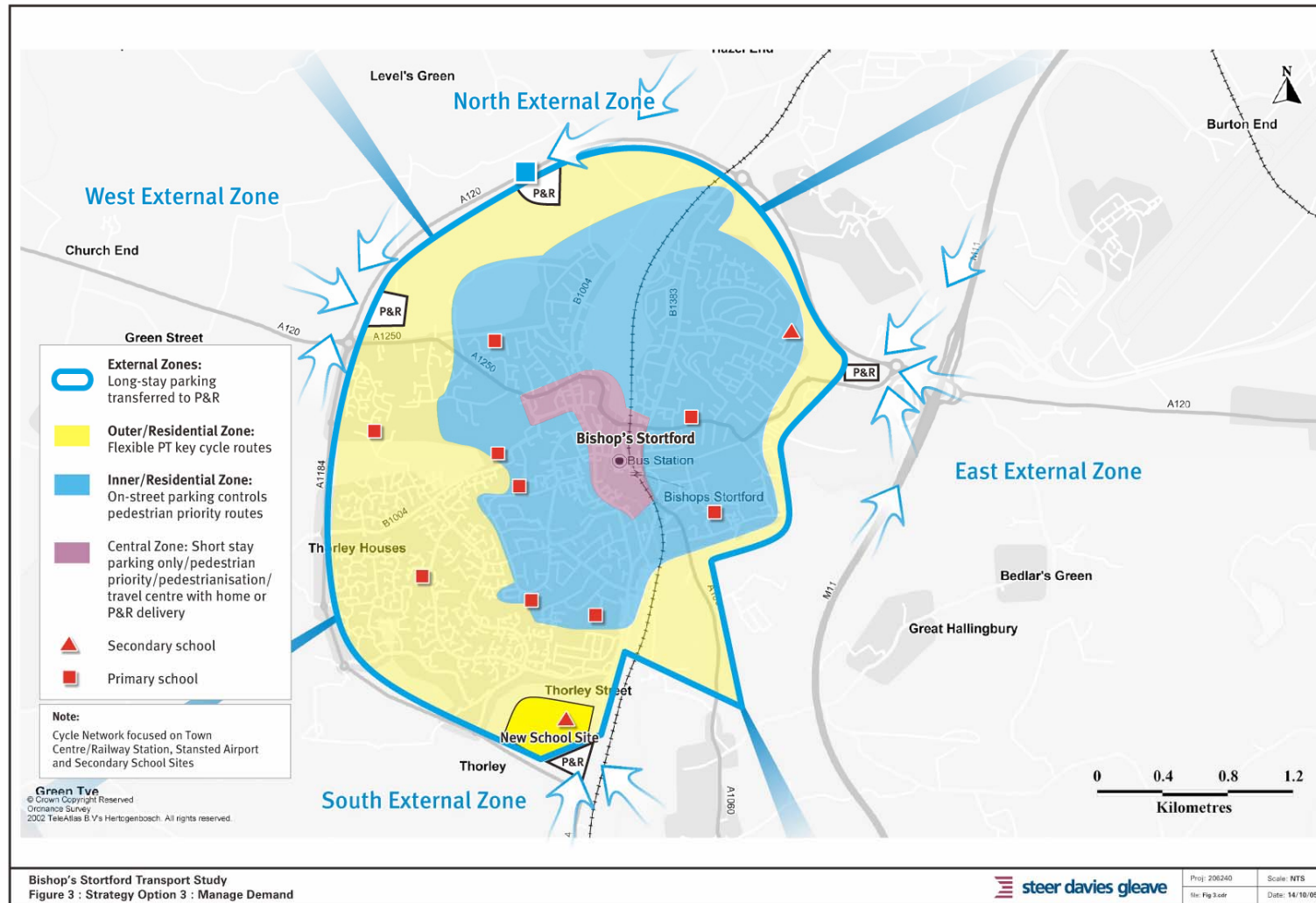
3.13 The scenario option is illustrated in Figure 3.4 and details of the measures assumed for this strategy are set out in more detail in Table 3.3.

TABLE 3.3 MANAGE THE DEMAND FOR TRAVEL - KEY SCENARIO ELEMENTS

No.	Scenario Element	Purpose	PIO Ref.
i	<p>Consider individual elements of demand based on a zoning system. to reflect the nature, purpose and character of different types of travel. Zones could include:</p> <ul style="list-style-type: none"> • Central • Residential inner • Residential outer 	<p>To reflect the nature, purpose and character of different types of travel so that strategies for dealing with these demand elements can be identified</p>	N/A
ii	<p>Central Zone:</p> <ul style="list-style-type: none"> • No long stay parking (moved to park and ride sites) • Short-stay parking maintained at existing levels. Possible shopping park and ride to be considered subject to success of long-stay park and ride. • Pedestrian friendly environment with new pedestrian infrastructure and pedestrianisation of South Street / Potters Street. • New cycle parking facilities • Travel centre including home delivery service 	<p>Long stay parking contributes to the largely peak hour traffic congestion experienced in the town. It also results in inefficient use of parking stock which is occupied for a full working day by a single car and therefore is less significant in terms of the local economy.</p> <p>Short-stay parking is important for the local economy.</p> <p>The existing pedestrian environment is poor encouraging less use of walk, cycle and PT modes.</p> <p>Home delivery of shopping to overcome pedestrians who wish to walk to town but not carry their shopping home.</p>	<p>Paras. 2.32-2.50</p> <p>Para. 2.94</p> <p>Para. 2.97</p>

No.	Scenario Element	Purpose	PIO Ref.
iii	Residential Inner: On-street parking controls Improved pedestrian routes to town centre	On-street controls to prevent long-stay parking moving to on-street rather than to park and ride. The town is very 'walkable.'	Para. 2.70
iv	Residential Outer: <ul style="list-style-type: none"> Provide cycle routes where relief is appropriate Provide 'flexible' bus services 	The distances to be travelled to the town and railway station are relatively short in cycle terms. Cycle routes should be concentrated on the locations where the relief is conducive to this mode. Flexible services may offer advantages over fixed route options for some parts of the town	Paras. 2.90-2.93
v	External Areas: <ul style="list-style-type: none"> Park and ride services on every approach to attract external traffic terminating in the town 		Para. 3.46, 3.47
vi	School Travel: <ul style="list-style-type: none"> Improve pedestrian routes to primary schools Improve cycle and pedestrian routes to secondary schools Parking and access restrictions around schools 	Primary schools have a high car mode share, even for trips within 1 mile of the school. These trips should be target walk trips given the distances involved. Secondary school aged children tend to travel longer distances to school and cycle is a prime mode.	Paras 3.32 – 3.38. Figures 3.15, 3.16
vii	Stansted: <ul style="list-style-type: none"> Parking restraint and new bus services 	Stansted is a key workplace destination for Bishop's Stortford residents.	Paras 3.27-3.21
viii	ASRs: <ul style="list-style-type: none"> Free 1 year bus passes for all new residents Capitalised revenue support for cross-town park and ride & Stansted services Highway access to bypass, PT, walk and cycle access to Hadham Road and Rye Street Consideration of residential travel plans 	To establish target travel patterns from day one of occupation before less sustainable travel patterns become established. Maximise advantages of other modes of travel over the private car to minimise traffic generation.	N/A
ix	Complementary measures: <ul style="list-style-type: none"> Provide bus priority and information 		N/A

FIGURE 3.4 ILLUSTRATION OF MANAGING DEMAND SCENARIO



4. STRATEGY REFINEMENT

4.1 In this chapter we set out the objectives against which the three scenarios have been measured. The approach has involved a qualitative appraisal of the three broad scenario options described in the previous chapter. We then summarise the results of the qualitative appraisal of the options to recommend a strategy for further development and assessment.

Setting appraisal objectives

4.2 We first needed to identify the objectives against which the scenarios will be measured. These objectives have been formulated from a combination of those set out in the Study Brief and from the collation and distillation of a comprehensive range of policy themes from local and regional policy documents, including:

- The Sustainable Communities Plan (2003)
- Draft East of England Plan
- HCC Structure Plan Review 1991 – 2011, Adopted 1998
- HCC Structure plan Alterations 2001 – 2016, February 2003 Deposit Version
- East Herts Local Plan – Second Review Re-Deposit Version – November 2004
- Bishop’s Stortford Community Plan, 2003-2008, March 2004 (Draft 3)
- HCC’s Provisional Local Transport Plan, The Five Year Delivery Plan 2006 / 07 – 2010/11, July 2005
- Bishop’s Stortford Transportation Plan, 1996

4.3 In addition the project brief states that the Bishop’s Stortford Transport Study should produce:

"A town-wide transport, movement and parking strategy that is integrated with a strategy for the improvement of the public realm to the benefit of pedestrians and cyclists"

4.4 These local policy aims and objectives have been formulated into a series of appraisal objectives that also bear reference to the specified objectives which summarise the Government’s and the Local Government Association’s Shared Objectives for Transport, namely:

- reducing congestion;
- improving air quality;
- improving access to schools, jobs and health care;
- improving safety.

4.5 However, in developing the strategy objectives we have chosen not to include safety as a separate objective (although it is considered as part of environment). This is because it has not significantly featured in the consultation undertaken to date and because it would be difficult differentiate between the safety implications of the

strategy options at this qualitative stage in the process.

- 4.6 Therefore, the qualitative appraisal objectives and local sub-objectives that will be used to identify the most effective elements of each of the broad scenario options, are set out in Table 4.1 below.

TABLE 4.1 OBJECTIVES AND SUB-OBJECTIVES FOR QUALITATIVE APPRAISAL OF SCENARIO OPTIONS

Tackling Congestion	Reduce car use – encourage mode shift
	Reduce town centre congestion – imp. circulation for shoppers
	Protect town's economy
	Minimise impact of new developments
	Reduce impacts of through traffic
Improving Accessibility	Reduce cars driven to work
	Improve accessibility by non-car modes
	Encourage use of public transport
Protecting and Enhancing the Environment	Encourage walking and cycling
	Minimise environmental impact
	Protect historical heritage of town
	Protect natural environment
	Improve air quality
	Improve safety
	Reduce negative impacts of parking – long stay and airport

Appraisal against objectives

- 4.7 In traditional transport appraisals, schemes are assessed against a series of specified objectives and sub-objectives that summarise the Government's objectives for transport. The results of this process are usually presented in an Appraisal Summary Table (ASTs).
- 4.8 A similar approach is followed below. However, an important difference from traditional appraisals is that the assessment is against local objectives distilled from the policy documents set out above rather than the Government's objectives. The local objectives, however, nest within the government's objectives and the shared priorities. Also, as the assessment is designed to identify which elements of each strategy option might be taken forward for further consideration as a final strategy element, the method used is qualitative rather than quantitative.

4.9 To be able to compare the results of the appraisals of each option, weighted scores have been used for each of the Objectives Fit and the Deliverability measures. The Objectives Fit has been carried out according to a weighted six point scale which shows the degree to which a particular measure contributes to meeting an objective. Measures that were felt to work against achieving the objective were allocated a negative score. The scale used is shown below:

- -1 Negative impact
- 0 Neutral impact
- 1 Slight positive impact
- 2 Modest positive impact
- 3 Medium positive impact
- 4 Strong positive impact

4.10 The Deliverability measure has been carried out according to a three point score for each of the deliverability issues of cost, funding likelihood and difficulty of implementation:

- Cost (High 0, Medium 1, Low 2);
- Funding Likelihood (Low 0, Medium 1, High 2);
- Difficulty (Complex 0, Standard 1, Simple 2).

Option 1: Qualitative appraisal - maximise highway capacity

4.11 The elements which score best in Objectives terms are:

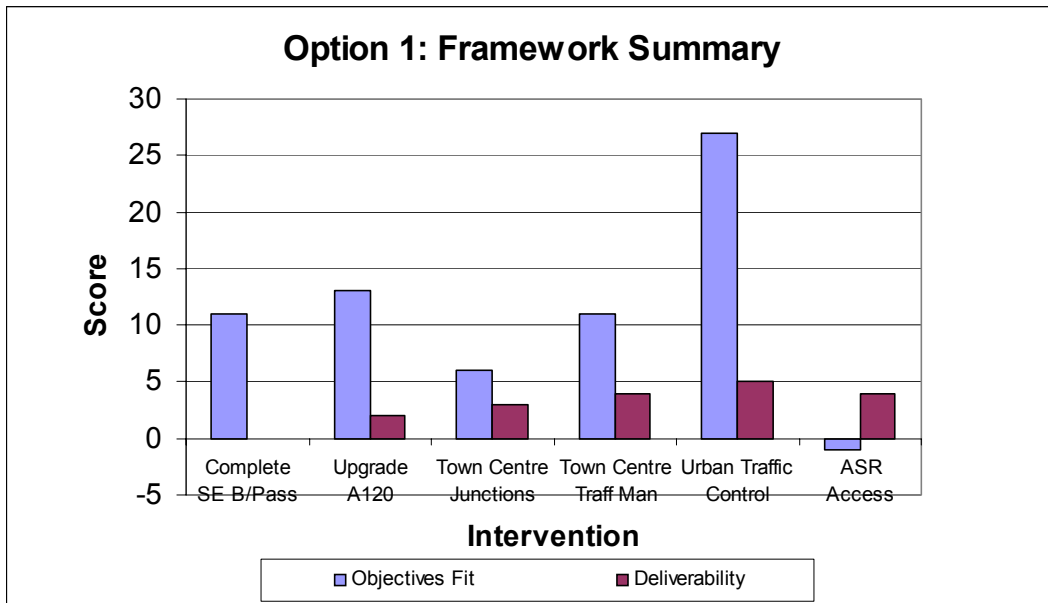
- Implement UTC;
- Upgrade A120 Bypass and Junctions;
- Town centre traffic management schemes; and
- Complete bypass to South East of town.

4.12 However, in Deliverability terms both the Completion of the Bypass to South East of the town and the Upgrade A120 Bypass and Junctions score poorly. Elements that receive higher scores in deliverability terms are:

- Improve town centre junction capacity;
- Town centre traffic management schemes;
- Implement UTC; and
- ASR Access to A120, Hadham Road & Rye Street.

4.13 This appraisal is set out in the Strategy Refinement Report and summarised in graphical format in Figure 4.1 below.

FIGURE 4.1 OPTION 1: FRAMEWORK SUMMARY (OBJECTIVES/DELIVERABILITY)



- 4.14 Table 4.2 shows an Appraisal Summary table for Option 1 against Local Sub-Objectives. Implementing this strategy option would have positive impacts on tackling congestion although it would not reduce the number of cars driven to work or help to resolve some of the parking issues in the town. For this reason Option 1 has been evaluated as having a negative impact on most of the environmental Sub-Objectives.
- 4.15 In terms of improving accessibility, Option 1 would have a slight positive impact on improving accessibility for non-car modes and encouraging walking and cycling – although this is achieved as an indirect impact of the highway measures.

TABLE 4.2 OPTION 1: APPRAISAL SUMMARY TABLE - MAXIMISE HIGHWAY CAPACITY

Objective	Local Sub-Objective	Option 1	Qualitative Appraisal
Tackle Congestion	Reduce car use by encouraging modal shift away from the private car	<i>Neutral</i>	No impact
	Reduce town centre congestion, improving traffic circulation in the town for shoppers	<i>Positive Impact</i>	Junction improvements, traffic management & UTC tackle town centre congestion. Limited lifespan of benefits as traffic growth continues.
	Protect the vitality and viability of the town's economy	<i>Positive Impact</i>	Continued pressure for parking in town centre as significant proportion of spaces occupied by long-term parking. Limited lifespan.
	Minimise traffic impact of new developments within the town centre and on peripheral sites	<i>Positive Impact</i>	Attempts to address development impacts through capacity increases. Unlikely to 'consume own smoke'. Limited lifespan.
	Reduce the impacts of through traffic on the town	<i>Positive Impact</i>	Maintains through movements on existing and new bypass link to South West. SW bypass likely to offer limited value for money given scale of traffic benefits expected and very high capital cost. Also significant delivery issues- engineering complexity, building on flood plain, land issues.
Improve Accessibility	Reduce the number of cars driven to work	<i>Negative impact</i>	Encourages car use.
	Improve accessibility by non-car modes to all key areas of the town	<i>Slight Positive Impact</i>	Junction improvements benefit buses in short-term through increased reliability. Encouraging through traffic to stay on bypass relieves adverse effects on town centre roads making condition better for cyclists and pedestrians.
	Encourage use of public transport	<i>Neutral</i>	No impact.
Protect the Environment	Encourage walking and cycling	<i>Slight Positive Impact</i>	Encouraging through traffic to stay on bypass relieves adverse effects on town centre roads making condition better for cyclists and pedestrians.
	Minimise the environmental impact of transport provision & travel	<i>Negative Impact</i>	Encourages car use. SW Bypass link environmentally damaging.
	Protect the historical heritage and character of the town	<i>Negative impact</i>	Encourages car use. Junction improvements in town centre constrained by built environment - deliverability issues.
	Protect the natural environment	<i>Negative impact</i>	Encourages car use. SW Bypass link environmentally damaging.
	Improve air quality	<i>Negative impact</i>	Encourages car use.
Improve safety	Improve safety	<i>Positive impact</i>	Junction improvements may improve safety at specific locations. Encouraging traffic away from town centre onto bypass may have some safety benefits. Benefits reduced through encouraging additional car trips.
	Reduce the negative impacts of parking (long stay and airport)	<i>Negative impact</i>	Encourages car traffic. Exacerbates existing problems.

Option 2: Qualitative appraisal - maximise quality & availability of public transport

4.16 Overall, these strategy elements scored well in terms of meeting Local Sub-Objectives. The elements which scored highest are:

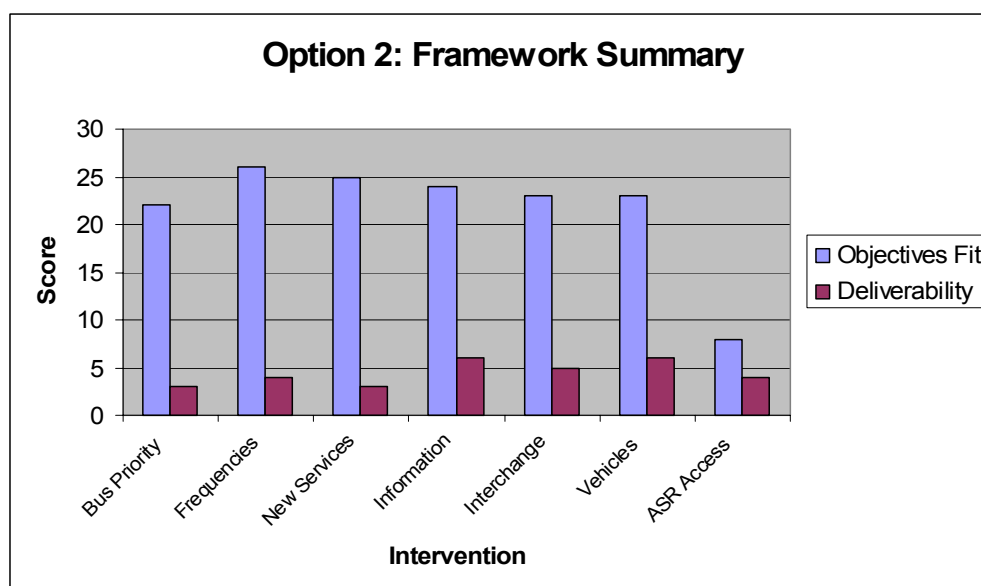
- improved service frequencies;
- new bus services;
- improved information;
- bus interchange;
- improved vehicles; and
- improved bus priority.

4.17 In Deliverability terms, most of the strategy elements for Option 2 score well. However, the elements that receive higher scores and therefore present fewer difficulties in implementation are:

- bus interchange;
- improved vehicles; and
- improved bus priority.

4.18 For easier understanding and for comparative purposes, this appraisal is summarised graphically in Figure 4.2 below.

FIGURE 4.2 OPTION 2: FRAMEWORK SUMMARY (OBJECTIVES/DELIVERABILITY)



4.19 Table 4.3 shows an Appraisal Summary table for Option 2 against Local Sub-Objectives. Implementing this strategy option would have positive impacts on tackling congestion in the town by encouraging walking and cycling and reducing the number of cars driven to work in the town. Option 2 would also have positive impacts on the environment by reducing car use and protecting the historical heritage and character of the town.

TABLE 4.3 OPTION 2: APPRAISAL SUMMARY TABLE

Objective	Local Sub-Objective	Option 2	Qualitative Appraisal
Tackle Congestion	Reduce car use by encouraging modal shift away from the private car	<i>Positive impact</i>	Measures to encourage bus use. Not fully effective because of lack of complementary parking measures.
	Reduce town centre congestion, improving traffic circulation in the town for shoppers	<i>Positive impact</i>	Attracts traffic to buses although not fully effective. No restraint so limited life span for benefits.
	Protect the vitality and viability of the town's economy	<i>Positive impact</i>	Provides alternative mode for journeys to town centre. However some deliverability issues given revenue support issues and sustainability of services without supporting parking policies.
	Minimise traffic impact of new developments within the town centre and on peripheral sites	<i>Positive impact</i>	New services serving development areas. However all modes 'encouraged' so long term sustainability of services is questionable.
	Reduce the impacts of through traffic on the town	<i>Slight positive impact</i>	Strategic bus services will attract some through traffic.
Improve Accessibility	Reduce the number of cars driven to work	<i>Positive impact</i>	Benefits limited by availability of long-term parking in town centre.
	Improve accessibility by non-car modes to all key areas of the town	<i>Strong positive impact</i>	Provides significantly enhanced accessibility to key areas of the town by bus.
	Encourage use of public transport	<i>Positive impact</i>	Significantly enhanced bus services. Full potential usage not achieved because of lack of complementary parking policy.
	Encourage walking and cycling	<i>Slight positive impact</i>	Use of buses requires additional walking to access services.
	Protect the Environment	Minimise the environmental impact of transport provision & travel	<i>Positive impact</i>
	Protect the historical heritage and character of the town	<i>Slight positive impact</i>	Bus priority measures may adversely affect townscape.
	Protect the natural environment	<i>Positive impact</i>	Some reduction in car use.
	Improve air quality	<i>Positive impact</i>	Some reduction in car use.
	Improve safety	<i>Positive impact</i>	Some reduction in car use. Security benefits for public transport users.
	Reduce the negative impacts of parking (long stay and airport)	<i>Slight positive impact</i>	Some reduction in car use.

Option 3: Qualitative appraisal - manage demand

4.20 Overall, these strategy elements scored well in terms of meeting Local Sub-Objectives, with the exception of Maintain / increase short-stay parking in town centre. The elements which scored highest are:

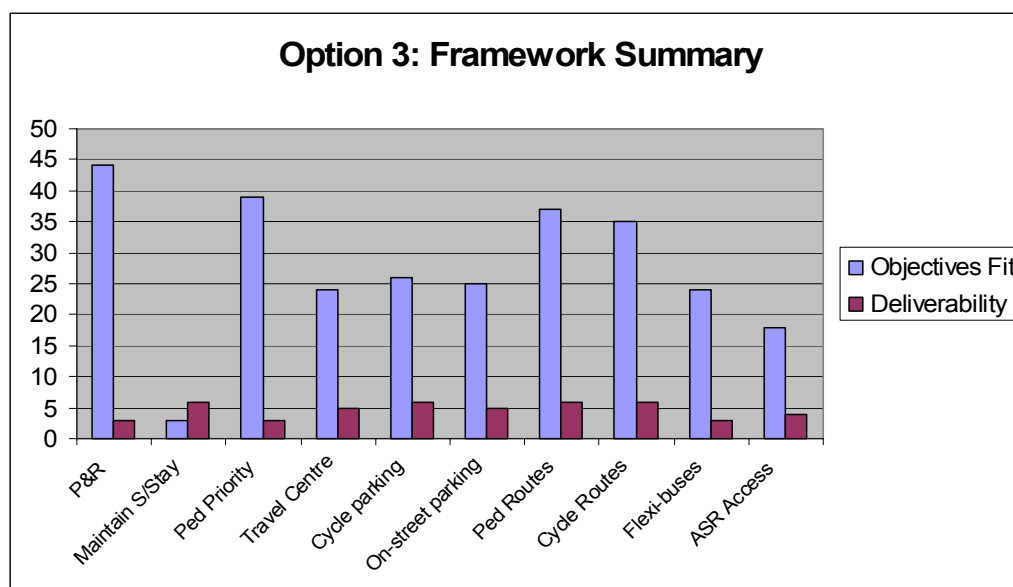
- move long stay parking to park & ride;
- pedestrian priority in central zone;
- improved pedestrian routes to town centre & primary schools; and
- targeted cycle routes to town centre / secondary schools.

4.21 In Deliverability terms, most of the strategy elements for Option 3 also score well. However, the elements that receive higher scores and therefore present fewer difficulties in implementation are:

- maintain / increase short-stay parking in town centre;
- travel centre with home delivery in central zone;
- increase cycle parking in town centre;
- on-street parking controls in inner residential area;
- targeted cycle routes to town centre / secondary schools

4.22 For easier understanding and for comparative purposes, this appraisal is summarised graphically in Figure 4.3 below.

FIGURE 4.3 OPTION 3: FRAMEWORK SUMMARY (OBJECTIVES/DELIVERABILITY)



-
- 4.23 Table 4.4 shows an Appraisal Summary table for Option 3 against Local Sub-Objectives. This shows that the option would have strong positive impacts on tackling congestion in the town by encouraging mode shift, reducing congestion through the Park and Ride and maintaining the viability of the town by maintaining higher levels of short stay parking. Targeted improvements will help to encourage walking and cycling in the town, reducing the number of cars driven to work and also contributing strong positive impacts to tackling congestion.
- 4.24 In general, Option 3 would also have positive impacts on the environment by reducing car use and protecting the historical heritage and character of the town and strong positive impacts on improving accessibility in the town by encouraging use of park and ride.

TABLE 4.4 OPTION 3: APPRAISAL SUMMARY TABLE

Objective	Local Sub-Objective	Option 3	Qualitative Appraisal
Tackle Congestion	Reduce car use by encouraging modal shift away from the private car	<i>Strong Positive Impact</i>	Focus on demand management, park and ride and encouragement of other modes with complementary parking policies likely to have strong impact. Deliverability issue of park and ride viability to be considered.
	Reduce town centre congestion, improving traffic circulation in the town for shoppers	<i>Strong Positive Impact</i>	Employees park and ride reduces peak congestion. UTC system enables variable message signs to direct shoppers to car parks with spaces to reduce traffic circulation. Possible longer term park and ride for shoppers to be considered.
	Protect the vitality and viability of the town's economy	<i>Strong Positive Impact</i>	Maintains short stay parking at higher levels. UTC manages traffic congestion in town centre and makes parking easier. Pedestrianisation of South Street Potters Street. Deliverability issue over impact of pedestrianisation on adjacent residential landuse.
	Minimise traffic impact of new developments within the town centre and on peripheral sites	<i>Positive Impact</i>	High quality bus service from ASRs to town centre, railway station and Stansted. Need to consider opportunities for bus priority along corridor but with reduced traffic flow? Walk & cycle improvements.
	Reduce the impacts of through traffic on the town	<i>Neutral</i>	No impact. Possible negative impact if traffic congestion builds on bypass but traffic flow improves in town as traffic could be attracted to town centre to avoid congestion in peaks.
Improve Accessibility	Reduce the number of cars driven to work	<i>Strong Positive Impact</i>	Park and ride + walk, cycle improvements.
	Improve accessibility by non-car modes to all key areas of the town	<i>Strong Positive Impact</i>	Walk and cycle improvements, park and ride cross town services
	Encourage use of public transport	<i>Strong Positive Impact</i>	Park and ride
	Encourage walking and cycling	<i>Strong Positive Impact</i>	Targeted improvements for these modes + cycle parking & pedestrianisation
Protect the Environment	Minimise the environmental impact of transport provision & travel	<i>Strong Positive Impact</i>	Reduced car use.
	Protect the historical heritage and character of the town	<i>Positive Impact</i>	Impact depends on extent of bus priority measures required.
	Protect the natural environment	<i>Positive Impact</i>	Reduced car use.
	Improve air quality	<i>Positive Impact</i>	Reduced car use.
	Improve safety	<i>Positive Impact</i>	Reduced car use.
	Reduce the negative impacts of parking (long stay and airport)	<i>Positive Impact</i>	Addresses environmental impacts of long-stay on-street parking. UTC VMS reduces traffic circulating looking for a parking place.

Appraisal summary scores

4.25 Table 4.5 below provides a summary of the appraisal scores of the three strategy options against the local sub-objectives. The scores have been normalised to enable a fair comparison of the different strategies because different strategies contained different numbers of elements. This illustrates that the strongest scoring of the three options is Option 3: Manage Demand, followed by Option 2: Improve the Quality and Availability of Public Transport. Option 1: Maximise Highway Capacity generally scores significantly less well.

TABLE 4.5 ALL OPTIONS: SUMMARY SCORES AGAINST OBJECTIVES

Objective	Local Sub-Objective	Option 1	Option 2	Option 3
Tackling Congestion	Reduce car use by encouraging modal shift away from the private car	0	12	24
	Reduce town centre congestion by improving circulation in the town centre for shoppers	11	10	19
	Protect the vitality and viability of the town's economy	11	11	25
	Minimise traffic impact of new developments within the town centre and on peripheral sites	11	12	25
	Reduce the impacts of through traffic on the town	5	2	1
	Reduce the number of cars driven to work	-6	11	25
Improving Accessibility	Improve accessibility by non-car modes to all key areas of the town	2	17	22
	Encourage use of public transport	5	14	13
	Encourage walking and cycling	3	7	22
Protecting and Enhancing the Environment	Minimise the environmental impact of transport provision & travel	1	14	30
	Protect the historical heritage and character of the town	5	7	22
	Protect the natural environment	-1	11	7
	Improve air quality	7	10	17
	Improve safety	10	12	15
	Reduce the negative impacts of parking (long stay and airport)	3	1	8

Normalised objectives scores

Tackling Congestion	22	35	50
Improving Accessibility	14	45	48
Protecting and Enhancing the Environment	17	33	41

4.26 Table 4.6 shows the summary scores for the three options in terms of delivery. 41This demonstrates that in terms of cost, Option 3: Manage Demand is the most cost-effective and has the greatest likelihood of gaining funding, followed by Option 2: Maximise Quality and Availability of Public Transport and then by Option 1: Maximise Highway Capacity.

4.27 Option 3 is also the simplest to implement in terms of engineering feasibility, followed by Options 2 and 1.

TABLE 4.6 ALL OPTIONS: SUMMARY SCORES AGAINST DELIVERABILITY

Deliverability Issue			Option 1	Option 2	Option 3
Funding opportunity	Cost	High 0; Medium 1; Low 2	4	9	16
	Funding Likelihood	Low 0; Medium 1; High 2	9	12	18
Engineering feasibility (complexity / constraints)	Difficulty	Complex 0; Standard 1; Simple 2	5	10	13

4.28 On the basis of this qualitative appraisal it is therefore recommended that the transport strategy for Bishop’s Stortford should be based on the demand management package set out in Option 3. However, careful analysis of the scores indicates that the demand management package can be enhanced with elements from the other packages. For example reducing the impacts of through traffic on the town is most successfully addressed through the measures to improve the bypass as set out in Option 1. Improving the existing bypass was identified as being deliverable. The UTC system also scored well in the context of Option 1 and has been added to the demand management strategy to enhance the management of traffic in the town centre.

4.29 Similarly a number of the elements of the ‘maximise the quality and availability of public transport’ strategy (Option 2) also scored very well in the appraisal. Consequently elements such as improving bus and rail information, improving bus interchange at the station and improving bus services have been included in the strategy that has been recommended for further assessment. Key strategy linkages are illustrated in Figure 4.4. The recommended strategy is illustrated in Figure 4.5.

FIGURE 4.4 STRATEGY FOR FURTHER ANALYSIS - STRATEGY ELEMENT LINKAGES

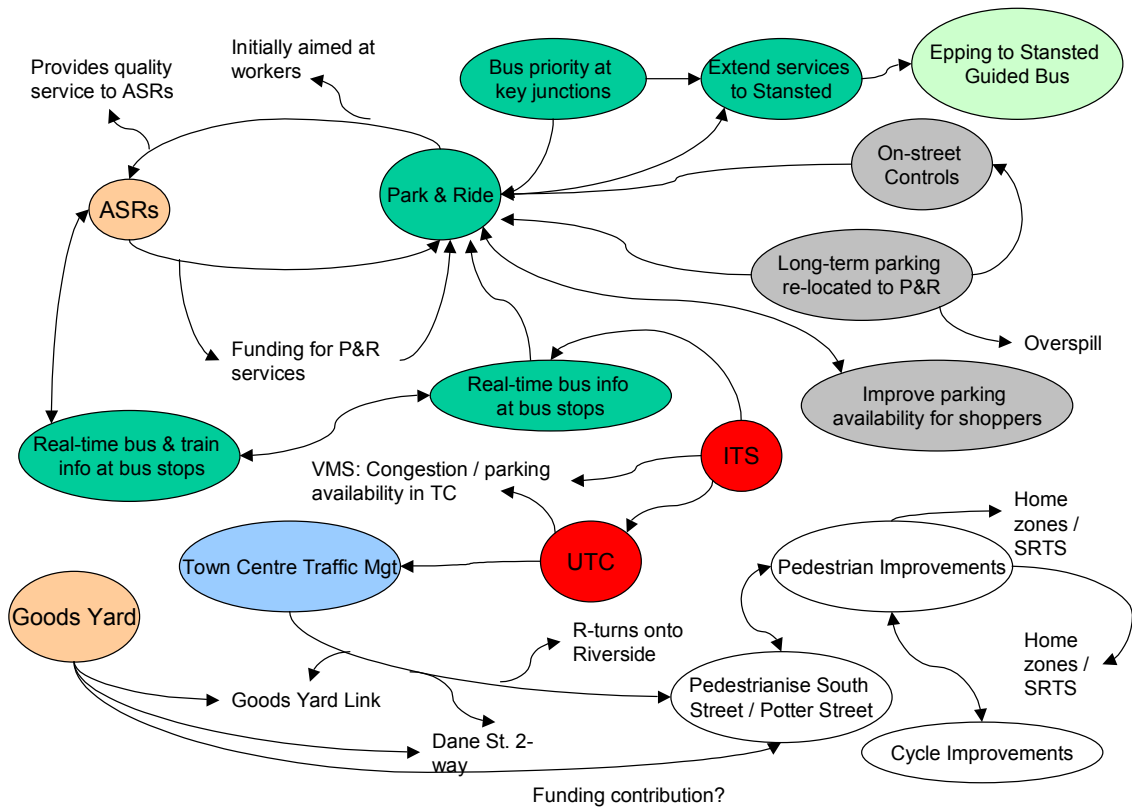
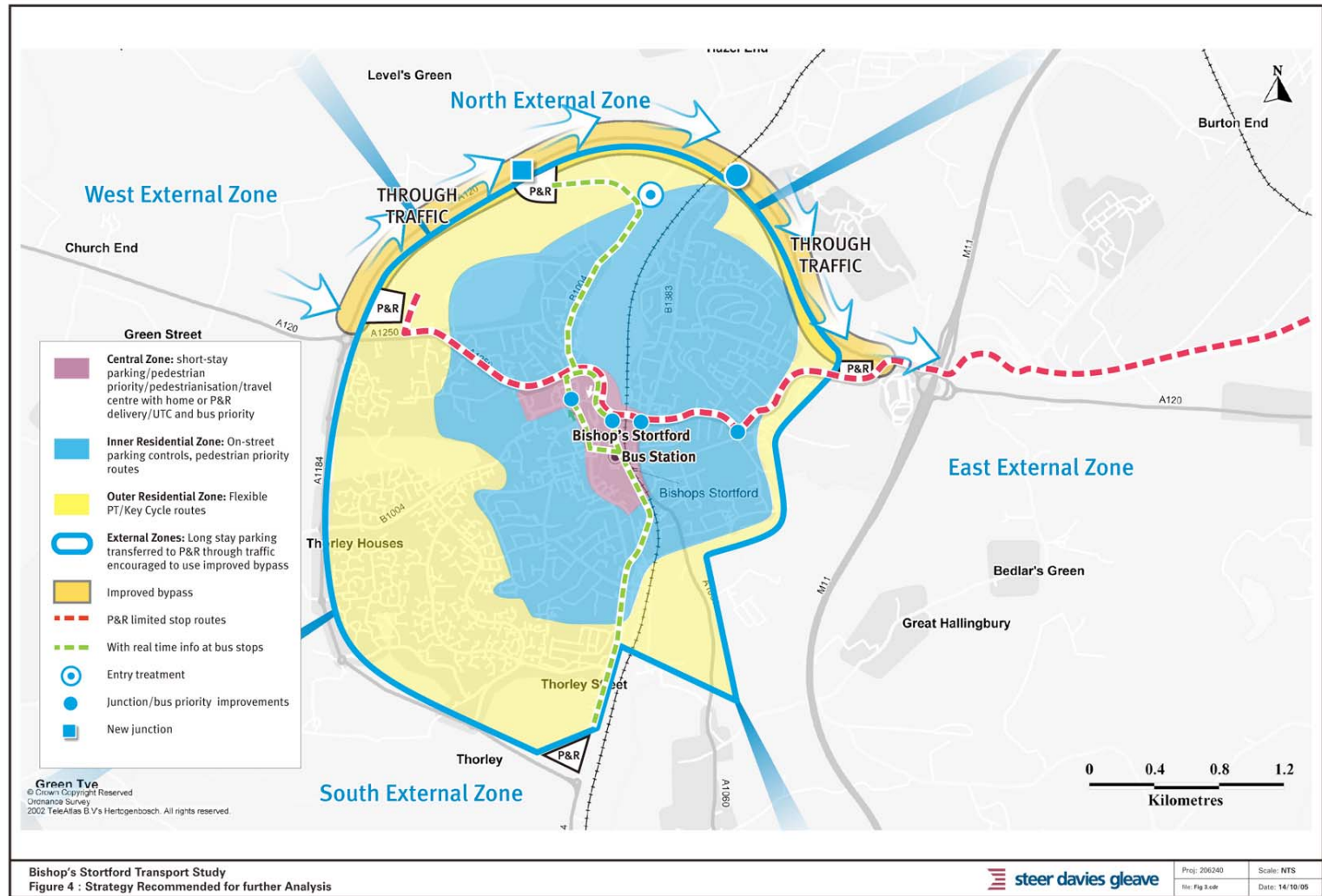


FIGURE 4.5 RECOMMENDED STRATEGY FOR FURTHER ANALYSIS



5. FEASIBILITY AND TESTING

5.1 A number of issues were identified for further analysis before being recommended for inclusion in the strategy. These were:

- urban Traffic Control and intelligent transport systems;
- town centre traffic management;
- park and ride;
- town centre pedestrianisation;
- pedestrian and cycle network;
- areas of Special Restraint access strategy; and
- overall strategy impact.

Each of these is examined below.

Urban traffic control and intelligent transport systems

5.2 Urban Traffic Control (UTC) is a term used to describe the technique of co-ordinating traffic signals, normally through a centrally located computer. Areas where signals are relatively close together and traffic flows are high lend themselves to co-ordination as benefits are achieved by progressing ‘platoons’ of traffic in an organised fashion. This technique also allows for priority to be given to particular vehicle routes (such as bus routes) to allow for management of traffic through an area and can be used to improve the environment and safety and can be integrated with information systems. It can also be used to integrate pedestrian and cycle movements.

5.3 A number of existing and other junctions have been identified for the proposed UTC cells. Further studies involving TRANSYT and micro-simulation models such as VISSIM/PARAMICS will be essential in determining the optimum network as well as the potential UTC cells. The junctions and potential UTC cells in the town centre could include the following junctions. Other junctions in the area (potential and existing) have also been listed.

- London Road/Hockerill Street (Existing junction);
- The Causeway/Adderley Road (Riverside) (New junction currently being built);
- Northgate End/Hadham Road/Link Road (potential signalled junction);
- Bridge Street/Link Road/The Causeway (potential signalled junction);
- Proposed junction of Goods Yard Link Road / London Road.

5.4 It should be noted that all individual signalled pedestrian crossings have been excluded at this stage as they are triggered on a demand basis only.

5.5 Traffic signal control via UTC cells would be particularly appropriate given the traffic signals in the area, the congested nature of the town centre and carriageway restrictions. The signal parameters are set to the most appropriate values to accommodate the prevailing traffic conditions and hence a number of plans will be available to be automatically loaded by computer at different times of the day.

-
- 5.6 The main aim of bus priority in Bishop's Stortford is to ensure good bus priority facilities are provided and maintained in the area to reduce delay to buses and improve bus reliability. One particular tool to achieve this is called SCOOT¹. SCOOT is a demand responsive system of UTC allowing signals to respond to traffic flows. Using this system can improve journey times and reliability not only for buses but also for other vehicles. The expense and logistics of regularly updating fixed time plans are avoided.
- 5.7 Previous studies suggest that good fixed-time UTC/CLF (Cableless Linkage Facility) can give an average 10 to 15% improvement in network capacity, but this can be lost in 5 years with 'ageing' of the system as traffic patterns change. A distinct advantage of SCOOT UTC over and above its real time responsiveness is its ability to keep linked plans up to date.
- 5.8 It should be noted that we have not inspected the signal control specifications for the signal installations in the area and that this should be done to ascertain whether the signals would require any upgrades. SCOOT is particularly appropriate in view of:
- the variability of the network and its propensity to unpredictable behaviour;
 - weather conditions can effect significantly traffic flows and performance;
 - although peak traffic conditions may result in the network settling into a 'fixed set of timings', SCOOT is efficient in managing the build up to, and fall away from, any key events;
 - a correctly validated SCOOT system keeps itself up to date and reduces the impact of 'plan ageing';
 - SCOOT offers a typical 10% improvement in network capacity over and above an up to date UTC fixed time plan; and bus priority can be built into SCOOT.
- 5.9 It should be noted that pedestrian and cyclists should also be provided for at all junctions. These would involve the provision of cycling advanced stop lines and dedicated pedestrian facilities including provision for disabled pedestrians.
- 5.10 Intelligent Transport Systems (ITS) is a collective name for technology based approaches that are designed to improve the quality, safety and efficiency of transport networks. The use of intelligent transport systems in conjunction with bus priority, UTC control, parking and park & ride facilities would aid in reducing congestion on the network and provide for driver information. The following are a number of facilities that could potentially be installed:
- Variable Message Systems (VMS) on the main entry routes into Bishop's Stortford and other ITS facilities on the road network throughout the town. These could be used to alert drivers to any congestion in the town centre and show journey times through the road network. They could also be used to direct drivers to park & ride facilities if the town centre is congested;
 - Message signs could also be used on the outskirts & closer into town to show drivers the amount of car parking available in the town centre. This could also be

¹ Split Cycle Offset Optimisation Technique

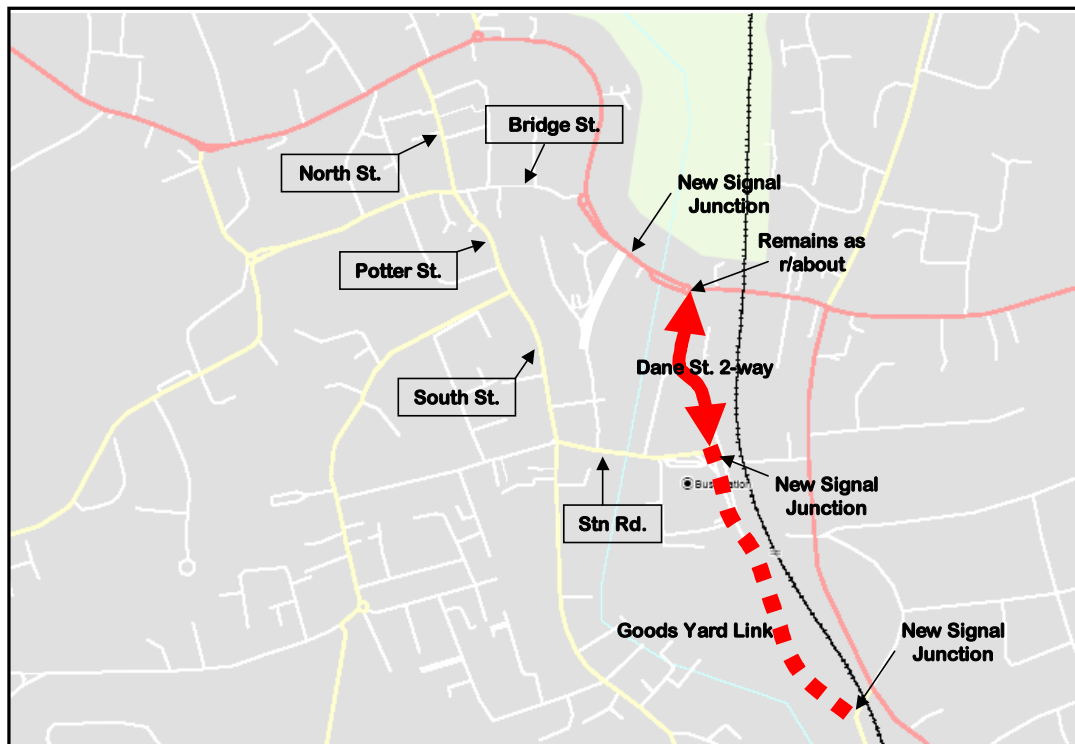
used to encourage drivers into the proposed park & ride facilities;

- The provision of bus priority could allow for the use of real time information to passengers in the area via the use of ITS systems;
- Traffic signalled junctions could also be provided with either Global Positioning Systems (GPS) or Selective Vehicle Detection (SCD) for buses to provide priority for them.
- Real-time information such as bus location, traffic congestion, and parking space availability in different car parks can also be made available on the internet to assist travellers in making an informed choice of mode or car park before they travel.

Town centre traffic management and Hockerill Junction

- 5.11 Before assessing any additional transport schemes that could benefit traffic flow in the town centre, it is first necessary to establish the do-minimum. This is the set of transport schemes and levels of demand that would be expected to be in place in the future irrespective of the transport strategy.
- 5.12 For the purposes of this study we have identified the following schemes and land use changes as being in place in our forecast year of 2018.
- The Jackson Square development has led to a widening of The Causeway and a new signal junction with Adderley Rd. This has led to improvements in capacity in the town centre. These improvements are currently being built;
 - The proposed Goods Yard development will introduce a new link road parallel to London Rd. This together with Dane St being converted to two-way will introduce a new north/south, south/ north route for traffic in the town centre that will provide benefits to road users in Bishop's Stortford; and
 - The Areas of Special Restraint are included in the do-minimum scenario to show a worst case in traffic terms. The ASR's are connected to Hadham Rd. and Farnham Rd. as proposed in the Master Planning Study. The Do Minimum traffic forecasts show a significant increase in delay in this area due to the ASRs.
- 5.13 The do-minimum transport schemes in the town centre are illustrated in Figure 5.1 below.

FIGURE 5.1 DO-MINIMUM TOWN CENTRE TRANSPORT SCHEMES



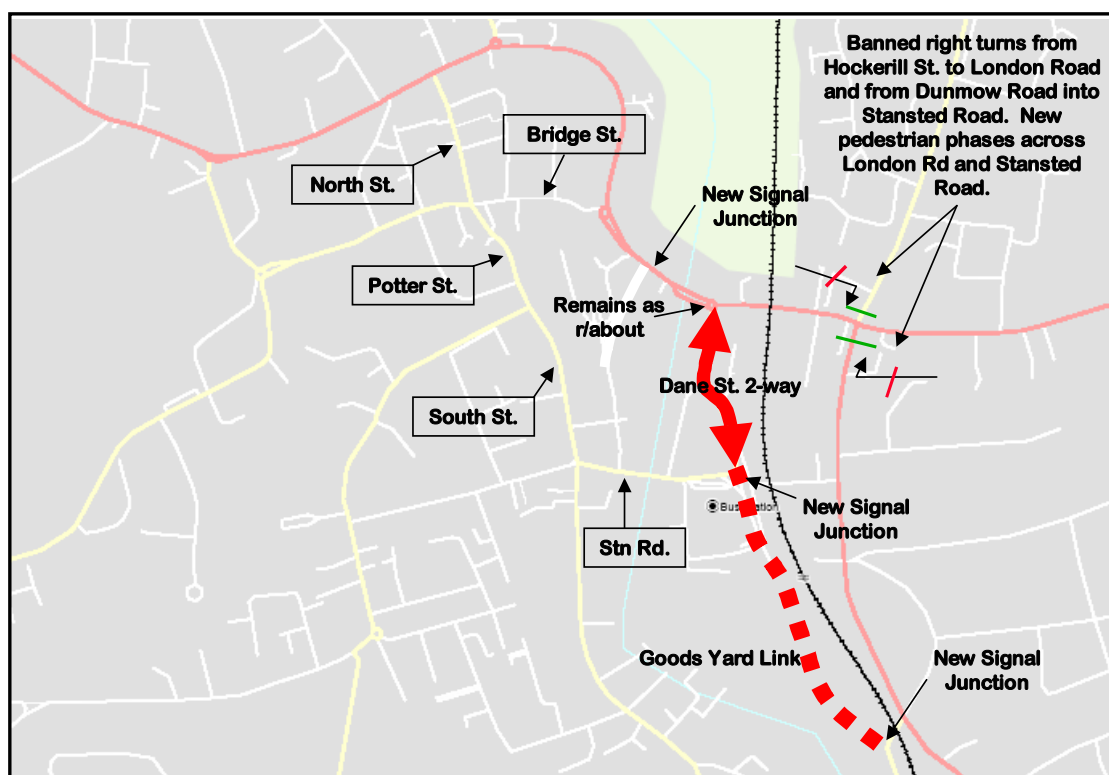
- 5.14 The Hockerill junction currently suffers from congestion in the peak hours. With the increase in traffic predicted in the coming years, these problems are likely to become more severe. A further problem at this junction is that there are no pedestrian facilities, which leads to dangers for people trying to cross the road.
- 5.15 Road widening is not a possibility in the vicinity of the junction because of the proximity of listed buildings. Consultants acting for the County Council were commissioned to examine ways of improving this junction in 2003. They concluded that there was not much that could be done to the design of the junction to improve the level of delay whilst maintaining the current turning movements. It was also concluded that introducing a pedestrian phase would introduce considerable levels of delay.
- 5.16 Our initial testing of the model concurred with their conclusions so we considered the possibility of banning turns from some of the arms to improve the operation of the junction (see Figure 5.2). This becomes possible because of the additional accessibility afforded by the provision of the Goods Yard Link and the Dane Street 2-way scheme. Analysis of the Do Minimum model showed that the right turns from Hockerill St and Dunmow Rd are lightly used. The junction was redesigned with these turns banned and adding pedestrian crossings on London Rd and Stansted Rd. The signal settings were redesigned so that Hockerill St and Dunmow Rd run separately, allowing pedestrians to cross with the traffic.
- 5.17 In the AM peak the operation of the arm improves with the introduction of the new signal settings. Average delay decreases on three of the arms coming into the junction. For the PM peak the junction operates worse than in the Do Minimum.

However with the introduction of pedestrian facilities this could be considered a benefit overall.

5.18 A further test was run on the model with the right turns banned as above, but without the pedestrian phase. The advantage of this is that it is possible to run Hockerill St and Dunmow Rd in the same phase without conflicting with other movements. Redesigning the junction this way will bring significant benefits to the operation of this junction. The model indicates that there will be less delay at this junction in 2018 than the base year 2002 model.

5.19 As an alternative, a further option would be to only ban the right turn from Dunmow Rd. This would again bring benefits to the operation of the junction. However the reduction in delay would be smaller and it would not allow for a pedestrian phase.

FIGURE 5.2 TRAFFIC MANAGEMENT SCHEME AT HOCKERILL JUNCTION



Park and ride

5.20 Park and ride has been proposed as a potential mechanism for reducing the impact of future traffic growth on the centre of Bishop's Stortford. Its attraction is that it would provide a mechanism to reduce traffic in the town centre whilst maintaining accessibility. In addition, given the limitations to increasing the capacity of the network that arise from the historic nature of many of the roads and streets, park and ride has the potential to play an important role in managing the demand for travel in the area.

-
- 5.21 We have assessed the potential ridership and costs of introducing 3 park and ride sites in Bishop's Stortford. Three Park and Ride sites were tested, all situated close to the A120 bypass. The locations are illustrated on Figure 4.5 and were:
- Hadham Road (West of town centre)
 - Dunmow Road (East)
 - Farnham Road (North)
- 5.22 Because of the size of the town, park and ride in Bishop's Stortford would need to be more flexible than most conventional park and ride systems in operation to ensure that it remains viable. We have therefore assumed that the park and ride sites to the West of the town would be located on the ASR sites and would be served by bus services set up to serve the new development area. This would enhance the ridership on the service as it would in effect have a dual role serving the ASRs and the Park and Ride sites. We have also assumed that the park and ride site to the East of the town would be served by a bus service that could also operate from the new bus interchange proposed for the town centre / railway station to Stansted Airport via the park and ride site. Funding for this service could be linked to the expansion of Stansted airport although suitable measures would need to be in place to ensure that the park and ride is not used by air passengers.
- 5.23 Such a system would need to be accompanied by complementary parking policies including the reduction of long-stay parking availability and / or significant increases in the cost of long-term parking in the town centre to encourage use of the park and ride. This strategy of relocating long-term parking from the centre in combination with park and ride has the dual benefits of removing traffic from the town centre roads when congestion is at its peak (long-stay parkers generally travel in the peak hours) and in freeing up precious short-term car parking spaces for shoppers in the town centre.
- 5.24 We have modelled the potential ridership on the park and ride under these circumstances and our preliminary conclusions are that such an operation should be viable. We would envisage that the park and ride would be introduced in parallel with the ASR developments which would be built out over approximately a 10 year period and that complementary parking policies would also be introduced in a phased way also over a 10 year period.
- 5.25 Park and ride should therefore form part of the longer-term strategy in combination with future developments and complementary parking policies.

Options for pedestrianisation

- 5.26 The heart of the town is located along North Street/Potter Street/South Street/South Road. This area contains a substantial number of retail/commercial facilities and contains a number of historic buildings. The establishment of a pedestrianised area will provide a focus for the town as well as improve the general town centre environment for residents and businesses. The Potter Street/South Street corridor is congested at most times of the day, both from through traffic and also due to parking and loading.

5.27 The pedestrianisation of the town centre has been discussed and a number of potential schemes identified. Three options have been developed, all of which involve different degrees of pedestrianisation along North Street/Potter Street/South Street as set out in Table 5.1.

TABLE 5.1 TRANSPORT STRATEGY OPTIONS FOR THE PEDESTRIANISATION OF POTTER ST, SOUTH ST AND NORTH ST

Option	Description
1	North Street, Potter St and South Street are pedestrianised. The direction of Bridge St between North St and Old River Lane is reversed from one way eastbound to westbound. Bells Hill is converted to one way Northbound.
2	Potter St and South Street are pedestrianised (North St remains open). The direction of Bridge St between North St and Old River Lane is reversed from one way eastbound to westbound. Bells Hill is converted to one way Northbound.
3	North Street, Potter St and South Street are pedestrianised. Bells Hill is converted to one way Southbound.

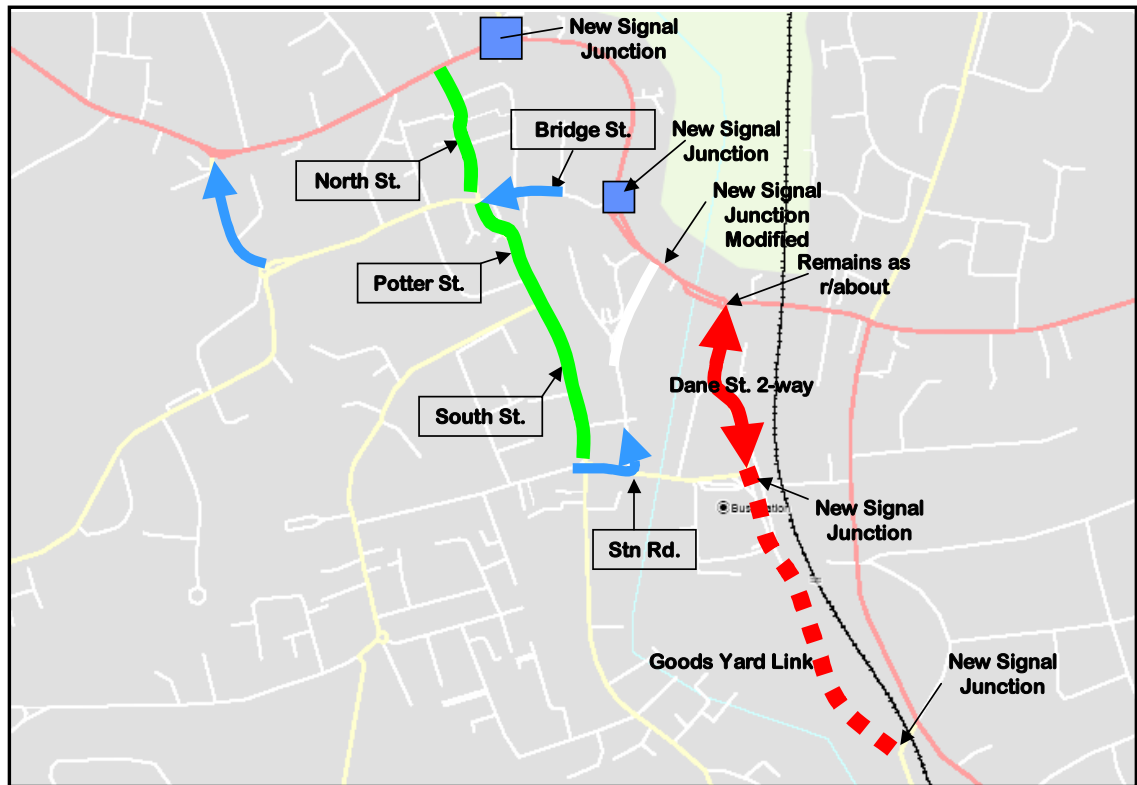
5.28 These options have a number of shared benefits, which are presented below.

- removal of the majority of private vehicles to improve the environment and provide a defined town centre area;
- provision of bus services, cycling and local access only. Bus services through the area would provide direct interchange with the town centre. Bus Stops would also be improved to the latest accessibility standards;
- improved access and substantially increased space for pedestrians;
- regeneration and redevelopment of the area, particularly focusing on further improving retail/commercial facilities;
- provision of a focus on the rich history of the area and the historic nature of the town centre;
- improved streetscape and walking opportunities;
- high quality urban design of the pedestrianised area to suit the historic nature of the town;
- public art opportunities as part of the redevelopment; and
- purpose built space could also be made for the town market, which is held every Thursday and Saturday in North Street, South Street and Potter Street.

Option 1 – South Street, Potter Street and North Street

5.29 This option would involve pedestrianising the entire area from the junction of South Street/Station Road/Newtown Road through to the junction of North Street/Hadham Road. This is illustrated in Figure 5.3 below.

FIGURE 5.3 OPTION 1: TOWN CENTRE PEDESTRIANISATION



5.30 The highway network would be subject to the following alterations and amendments if the option were pursued.

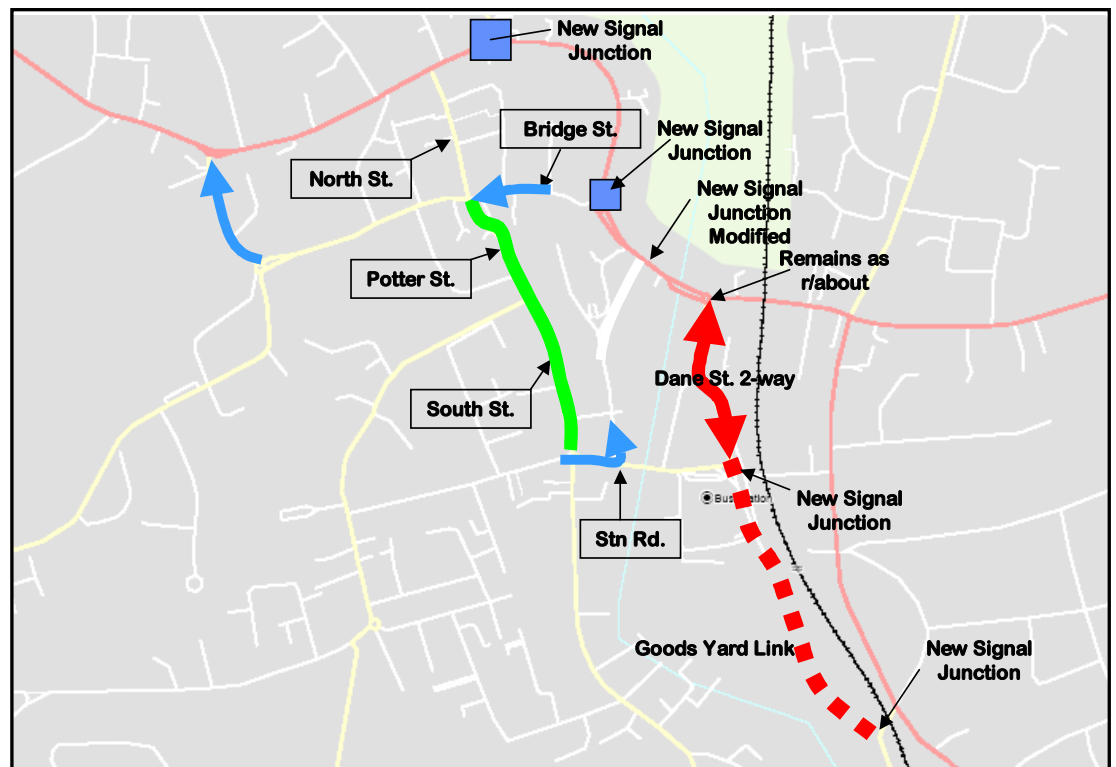
- The junction of Newtown Road/South Street/Station Road would be altered to allow the eastern movement from Newtown Road to Riverside. This would provide for vehicular movements that currently use Apton Road to access the immediate town without diverting to the south given the potential closure of Apton Road at Potter Street (see below);
- There would be no access allowed from Apton Road to Potter Street except for emergency services. Apton Road would be retained as access only from Newtown Road;
- There are also a handful of private accesses along South Street & Potter Street with private parking to the rear, which would require access at all times;
- North Street would need to remain open to buses, cycles and vehicles for local access only (including loading and unloading). There are a number of courtyards (such as Sworders Yard) that directly access North Street which would require access to remain;
- Water Lane and Barrett Lane would be closed and made two-way with local access only;
- To allow traffic to be able to access the area in a proper manner, the traffic flow of Bridge Street would need to be reversed to flow westwards and Bells Hill Road would become one way northwards.

- 5.31 Existing on-street parking through the pedestrianised area would be displaced to other areas. Disabled parking may need to be provided which will require further assessment.

Option 2 – South Street & Potter Street (Newtown Road to High Street)

- 5.32 The second option is the same as Option 1 but excludes the pedestrianisation of North Street. South Street and Potter Street would remain open to buses, cycles, local traffic (access only) and restricted loading and unloading for businesses (as in option 1). This option is illustrated in Figure 5.4.

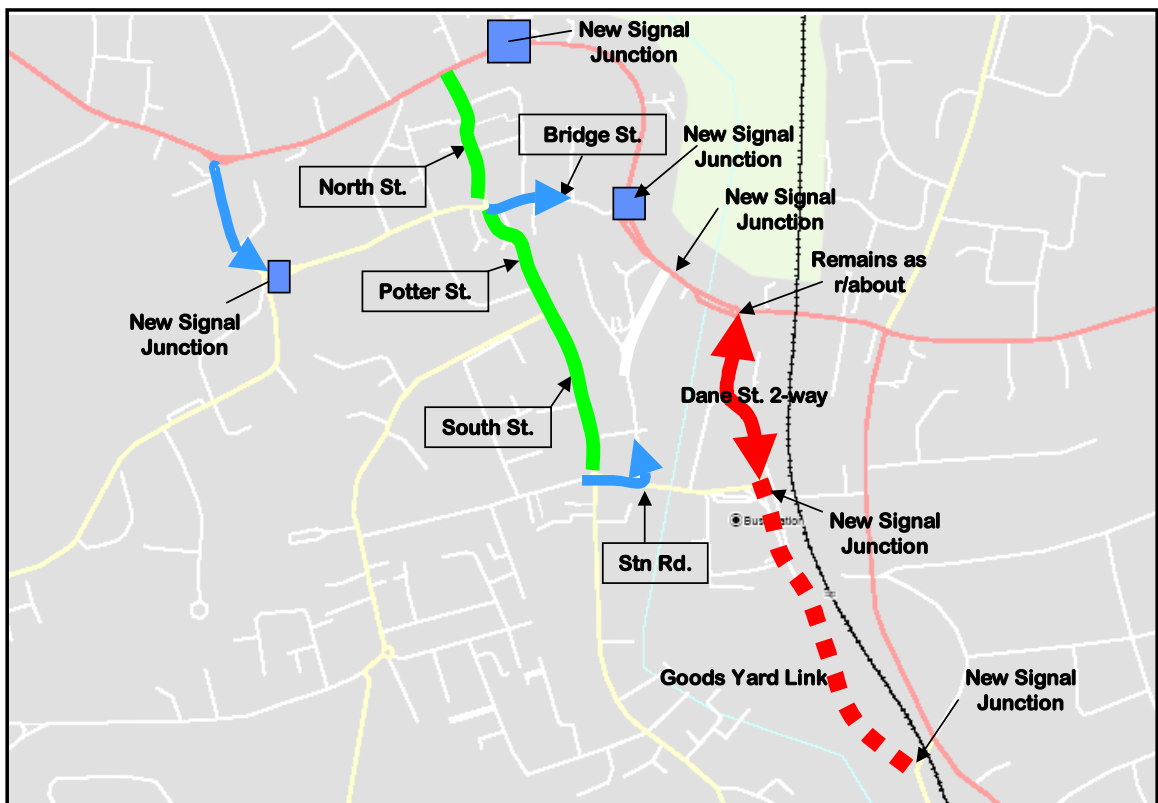
FIGURE 5.4 OPTION 2: TOWN CENTRE PEDESTRIANISATION



Option 3 – South Street, Potter Street and North Street

- 5.33 The third option is the same as Option 1 but has a different traffic management arrangement. Bridge Street is maintained in its existing direction and Bells Hill is made one way southbound. This is illustrated in Figure 5.5.

FIGURE 5.5 OPTION 3: TOWN CENTRE PEDESTRIANISATION



General issues

5.34 As well as the substantial opportunities created, there are also a number of issues to be discussed and deliberated upon. These include;

- in addition to the physical options described above there are also options that could include only implementing the pedestrianisation outside of the peak periods and on Saturdays. Such time of day pedestrianisation systems are in operation in other parts of the country and maintain the maximum highway capacity availability during the peak traffic times. There are also options around the type of traffic that would be allowed access to the pedestrianised area;
- deliveries to the local retail/commercial facilities should be restricted to defined time periods either in the early morning or late afternoon/evening. Deliveries to Jackson Square and the majority of Potter Street/South Street on the eastern side could be made via the access to Jackson Square from Riverside. This should be provided for within any development proposals for Jackson Square;
- bus, local vehicular and cycling access to the pedestrianised areas would need to be carefully considered in terms of safety to pedestrians. The area could be altered to cater for pedestrians by reducing the speed limit to 10mph and remodelling it as a “European” type streetscape. Pedestrians should be the overarching priority in this type of area;
- the enforcement of vehicles using the street for local access only would also need to be considered. Enforcement could be undertaken by the use of CCTV cameras

either through the use of existing or providing new cameras or through rising bollards; and

- existing on-street parking would be displaced to other areas. Additional parking spaces being provided as part of developments in the town centre would be welcome as well as the use of park and ride facilities outside the town centre. Disabled parking may need to be provided which will require further review and assessment.

5.35 With the future development of the Bishop's Stortford Goods Yard, the provision of enhanced highway facilities (London Road to Dane Street) to the southeast and east of the immediate town centre should improve traffic flow and could reduce through traffic on South Street/South Road. This proposal in conjunction with the highway improvements planned for Jackson Square, including the provision of enhanced arrangements on Riverside, should reduce the need for South Street/South Road as a through route.

5.36 For all the scenarios analysis shows that it would be necessary to signalise the roundabouts at Link Rd / Northgate End and Link Rd Adderley Rd, and for option 3 Bells Hill/ Windhill. This will allow the new traffic flows to operate satisfactorily and also fits in with the desire to introduce UTC into the town centre, which will have further benefits for the flow of traffic in the town centre.

5.37 Further study work should be undertaken to establish the best option for pedestrianisation. This work should focus on the options in consultation with the local community and also the surrounding area in traffic/transport terms. This latter work would best be undertaken using microsimulation tools such as VISSIM or PARAMICS. This would allow non-technical people to see and understand the effects that such schemes would have.

Pedestrian and cycle network

5.38 In a town the size of Bishop's Stortford there is considerable scope for increasing the numbers of people walking and cycling. For example the furthest extremity of the town is only approximately ½ an hour walk (10 minutes by cycle) to the town centre for able-bodied residents. However levels of walking and cycling are generally low in the town. This is largely because of the narrow footways, poor signage, and general imbalance of facilities between pedestrians and cyclists on the one hand and motorists on the other. The relief of the town and high car ownership also play a part. The strategy therefore aims to reduce traffic in the town centre through pedestrianisation and park and ride schemes and improve facilities for pedestrians and cyclists.

5.39 We have identified a number of improvements for pedestrians and cyclists in Bishop's Stortford. These are described in more detail in the Strategy Feasibility and Testing Report. The main improvements identified are summarised below.

- improved signage and quality of route for pedestrians from the station to town centre;
- improved route through the Goods Yard development to the town centre;
- widening of Station Rd Bridge to make it safer for pedestrians and cyclists, including measures to manage speed in this location and elsewhere;

- providing a new landmark pedestrian / cycle bridge across the River Stort – this is to be provided by a combination of the Goods Yard Development and a Community Infrastructure Bid;
- ensuring that pedestrians and cyclists are properly catered for in the proposals to relocate two of the town’s secondary schools to a new site. Schemes should include physical measures to slow traffic in vicinity of the site, the provision of good quality cycle lockers, a set of cycle routes focused on the new location, and ‘soft measures’ such as school travel plans to maximise the potential usage of walking and cycling to the new location;
- providing flagship pedestrian and cycle routes from edge of town ASR developments to the town centre and consideration of residential travel plans;
- providing a pedestrian phase at Hockerill traffic lights;
- improved priority for pedestrians through town centre pedestrianisation schemes;
- providing cycle parking facilities in a number of key town centre locations and new residential developments;
- providing leisure and commuting routes to Stansted Airport; and
- a number of smaller scale improvements to improve safety and amenity at key locations.

Areas of special restraint access strategy

- 5.40 Future growth in Bishop’s Stortford has historically been linked to the possible future expansion of Stansted Airport since the 1980s. The area of land which has historically been set aside for this purpose, the five Areas of Special Restraint (ASRs) to the north of the town, was the focus of the recent Masterplanning Study.
- 5.41 These areas were first identified in the adopted East Hertfordshire Local Plan 1986-2001 (Policy BS3) to accommodate increased housing needs relating to the future expansion of the airport. However, while Stansted has grown to accommodate an increasing number of passengers over recent years and has recently been granted planning permission to increase to 25mppa, the nature of this growth has been restricted to the increase of low-cost operators and the scales of efficiency involved has meant that associated employment and housing needs have not increased as expected.
- 5.42 However, the policy has remained in modified form and has been carried forward in later versions of the plan (Policy BIS3 in the Second Review Deposit Version; BIS3a in the modified version). The boundaries of the ASRs were re-appraised as a part of the 2004 Plan review process and the policy relating to development proposals amended. At the present time, the ASRs have been highlighted in the draft regional spatial strategy as a key growth location. It has been acknowledged in the Master Planning study that no development could take place on this site before a comprehensive strategy was implemented to resolve some of the current transport problems in the town centre.
- 5.43 The work that we have undertaken on access issues for the ASRs has identified the following issues, and a number of mitigation measures that the developer would be required to bring forward potentially as part of a residential travel plan to help mitigate the adverse impact of the developments.

-
- i. In terms of highway access the Master Planning Study considered access onto Hadham Road and Farnham Road. We have compared the impact of this with an alternative strategy of providing an additional connection (a new roundabout) onto the A120. The modelling work indicated that the alternative strategy would provide considerable relief to the network. The highway access should be provided as a development cost by the developers. However the developers should also bring forward proposals for ameliorating the impact of the additional traffic generated on the junctions along the A120 bypass especially given its primary route network status.
 - ii. We have also considered the proposal to ban the right-turn from Farnham Road onto Rye Street to protect Rye Street to some extent to enable it to be used as a corridor for public transport, walking and cycling. This is supported by the modelling work. This should be provided as a development cost by the developers.
 - iii. The park and ride strategy is implicitly linked to the ASR developments. We propose that the strategy should incorporate provision for 2 park and ride sites on the ASRs to provide an alternative for journeys terminating in Bishop's Stortford from the North, East and South. The bus service that will need to be provided to serve the new developments should be used to serve the park and ride sites and this will provide additional patronage to assist viability. The bus service would need to be sufficiently frequent to make it an attractive alternative to the private car. The underpinning of the bus service running costs until they become viable and the capital costs of the park and ride sites (including signage, lighting, landscaping and CCTV) would be borne by the developers as planning gain. The bus service should be operating from the occupation of the first 50 households.
 - iv. The development should be laid out in accordance with the latest guidance on sustainable residential developments.
 - v. Safe walking and cycle routes should be provided throughout the development and from the development to the main destinations within the town, notably the town centre, railway station and local food stores. A contribution should be provided by the developers towards the other walk and cycle infrastructure proposed in this strategy.
 - vi. All houses should be located within 400 metres of a bus stop. Bus stops on the development and along the main routes to the town centre and the railway station should be provided with real-time information compliant with Hertfordshire County Council's real-time bus information system protocols. In addition real-time information should be made available through mobile telephony. The bus routes should be equipped with improved infrastructure including shelters, bus stops, and bus boarders as appropriate. Bus information boards, and travel information kiosks should be provided at neighbourhood centres on the new developments and at the railway station and town centre. Buses operating on these routes should be low floor, low emission buses. The developers should fund these improvements along the whole corridor and at both ends of the routes and provide for the maintenance costs of all infrastructure for at least a 10 year period.
 - vii. To maximise public transport usage, the developers should provide all new residents with a 'free' bus pass for their first year of occupation to encourage the establishment of more sustainable patterns of travel. This is in the developers'

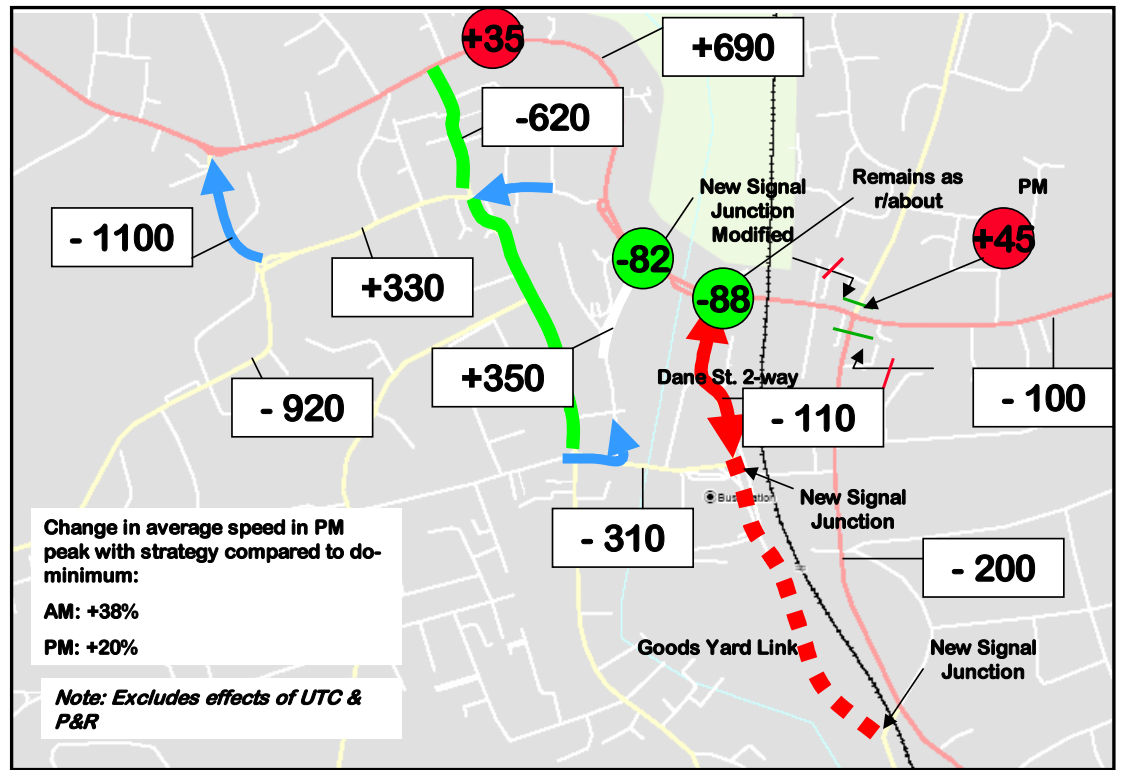
interest as well; as such travel patterns should reduce the subsidy paid to support the bus services.

- viii. The developers should contribute to the wider package of measures proposed for the town including the UTC / ITS system and pedestrianisation in the town centre.
- ix. Other more general requirements include the need for local facilities to be provided on the development site as specified in the Masterplanning Study to reduce the need to travel beyond the development and to minimise the peak hour traffic generation from the site.

Overall strategy impact

- 5.44 We have used the available SATURN traffic model to assess the overall impact of the strategy. This was done by using a forecast year of 2018 by which time we have assumed that the ASR and Mill Site developments have been completed (to represent a worst case in traffic terms). Our analysis is carried out by assessing the differences between the future modelled traffic conditions without the package and the conditions with the package.
- 5.45 We have not explicitly modelled the benefits that would arise in traffic terms from the implementation of UTC / SCOOT nor the park and ride schemes. More detailed modelling tools such as micro-simulation would be required to be able to fully represent the UTC / SCOOT system. We felt it was beneficial to ‘fix’ the trip matrix (does not allow for people to transfer from driving to park and ride or other non-car modes) between the do-minimum and the do-something scenarios to aid comparison.
- 5.46 The traffic flows and delays per vehicle in seconds in the PM peak where significant changes have occurred in the town centre are illustrated in Figure 5.7. This shows that generally, while traffic flows on some roads change quite significantly, particularly because of the changes to the network that result from the pedestrianisation proposals, the congestion experienced at junctions does not vary greatly. Taking into account the wider benefits that result from the new junction arrangements on the A120 proposed in the ASR access strategy, particularly the reduction in traffic in the town, the overall congestion levels in the network are reduced. Average speeds for example increase significantly in the ‘with strategy’ scenario compared to the do-minimum as illustrated in Figure 5.6 below.

FIGURE 5.6 CHANGES IN FLOW AND DELAY ON TOWN CENTRE ROADS RESULTING FROM THE TRANSPORT STRATEGY



Note: rectangles represent flow in passenger car units, and circles represent average delay in seconds per vehicle

6. THE RECOMMENDED STRATEGY FOR CONSULTATION

6.1 The recommended strategy has been designed to meet the objectives and the sub-objectives as set out in Table 4.1. The recommended strategy for consultation has been built upon the foundation of:

- detailed analysis of existing conditions, problems and opportunities,
- an assessment of alternative strategy impacts against study objectives to arrive at a broad recommended strategy, and
- preliminary outline feasibility assessments to look further at some of the issues raised by the recommended strategy.

6.2 The strategy measures in relation to the study objectives are summarised in Table 6.1 below.

TABLE 6.1 STRATEGY MEASURES IN RELATION TO STUDY OBJECTIVES

Study Objective	Measure
Reduce car use – encourage modal shift	Real-time bus information, improved bus stop infrastructure, bus priority (UTC), intelligent transport systems, PT information kiosks at key locations, new bus interchange at station, park and ride with limited stop services to Stansted & ASR sites, pedestrian and cycle infrastructure improvements, school and residential travel plans.
Reduce town centre congestion – improve traffic circulation for shoppers	Goods Yard Link Road, Dane St. 2-way, Town Centre UTC, park and ride, real-time car park information, on-street parking controls
Protect town's economy	Improve availability of short-stay parking, UTC to improve traffic flow, pedestrian priority scheme in Potter Street, South Street, North Street, real-time car park information, additional parking capacity through park and ride.
Minimise impact of new developments	ASR access strategy, preliminary mitigation measures identified.
Reduce impacts of through traffic	ASR access strategy, intelligent transport systems to advise of congestion in town centre, bypass improvements.
Reduce cars driven to work	Increase cost / reduced availability of long-stay car parking, on-street parking controls, in combination with park and ride, improved bus infrastructure, real-time information and interchange, improved walk and cycle routes.
Improve accessibility by non-car modes	New landmark pedestrian bridge over River Stort, new cycle routes to Stansted, new pedestrian and cycle routes, new limited stop bus services from ASRs to new bus interchange and from bus interchange to Stansted.

Study Objective	Measure
Encourage use of PT	Real-time bus information, improved bus stop infrastructure, bus priority (UTC), intelligent transport systems, PT information kiosks at key locations, new bus interchange at station, park and ride with limited stop services to Stansted & ASR sites, ASR access strategy.
Minimise environmental impact	Measures to encourage use of non-car modes. ASR access strategy to minimise traffic generation by providing local facilities.
Protect historical heritage of town	Limited new highway construction, use of UTC and intelligent transport systems, and traffic management to increase capacity by making better use of existing infrastructure, pedestrian priority in town centre.
Improve air quality	Reduced traffic congestion reduces emissions. Improved air quality in town centre because of pedestrianisation scheme.
Improve safety	Improved walk and cycle infrastructure, school travel plans,
Reduce negative impacts of parking – long-stay and airport	On-street parking controls to reduce airport parking, long-stay parking encouraged to relocate to park and ride.

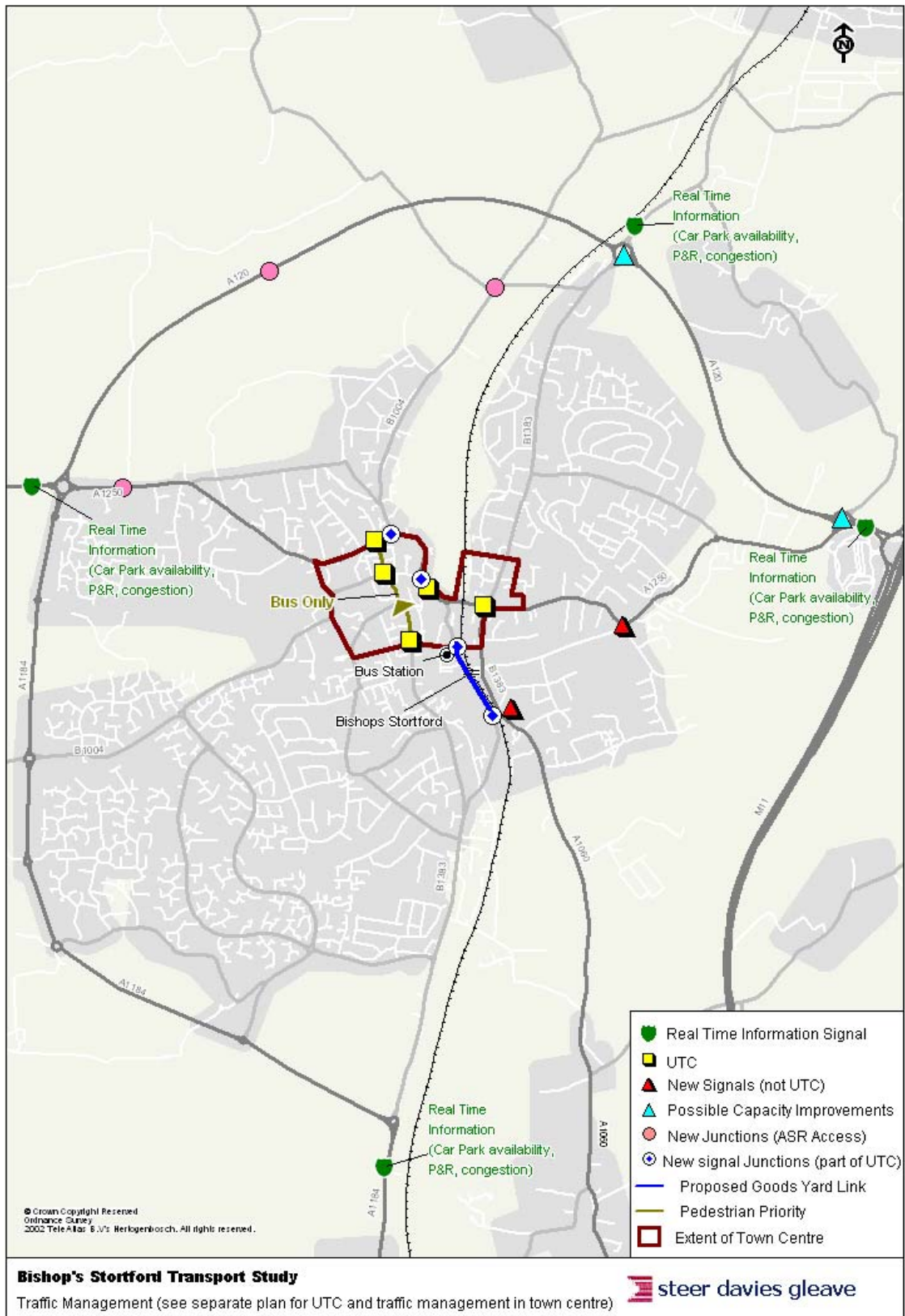
6.3 The impacts of the strategy are summarised in Table 6.2 and the strategy elements are summarised schematically in Figures 6.1 to 6.4; the traffic management proposals are summarised in Figure 6.1, demand management proposals in Figure 6.2, walking and cycling proposals in Figure 6.3, and a summary of the town centre proposals in Figure 6.4.

Table 6.2: Overall Strategy and Study Objectives

Strategy Element	Study Objectives														
	Reduce car use by encouraging modal shift	Reduce town centre congestion	Protect town's economy	Minimise traffic impact of new developments	Reduce through traffic impacts	Reduce the numbers of cars driven to work	Improve accessibility by non car modes	Encourage use of public transport	Encourage walking & cycling	Minimise environmental impact	Protect historic heritage	Protect natural environment	Improve air quality	Improve safety	Reduce on-street parking impacts - long-stay & airport
Highway & Traffic Management															
Goods Yard Link Road	-	✓ ✓	✓ ✓	✓ ✓ ✓	-	×	-	-	-	-	-	-	×	✓	-
Dane Street 2-way	-	✓	✓ ✓	✓ ✓ ✓	-	×	-	-	-	-	-	-	×	✓	-
Banned r/turns at Hockerill Junct.	-	✓ ✓	✓ ✓	-	-	-	-	-	-	✓ ✓ ✓	✓ ✓ ✓	✓	✓	✓	-
Town Centre urban traffic control inc. new signalised junctions / SCOOT cells	✓	✓ ✓ ✓	✓ ✓	✓ ✓	×	-	✓	✓	-	✓ ✓	✓ ✓ ✓	-	✓	✓	-
Intelligent Transport Systems inc. VMS signs & internet site (congestion, park & ride, parking availability).	✓ ✓	✓ ✓	✓ ✓	✓	✓ ✓ ✓	✓	✓	✓	-	✓	✓	✓	✓ ✓	✓	✓
A120 Junction capacity increases A120/B1383, and A120 / A1250	-	✓ ✓	✓ ✓	✓ ✓	✓ ✓ ✓	-	-	-	-	-	-	-	✓	✓	-
Public Transport															
New bus interchange at Station	✓ ✓ ✓	✓	✓	✓	-	✓ ✓	✓ ✓	✓ ✓ ✓	✓	✓	-	✓	✓	✓	-
RTPI on key routes, at railway stn & town centre	✓ ✓	✓	✓	✓	-	✓ ✓	✓	✓ ✓ ✓	✓	✓	-	✓	✓	✓	-
New shelters and bus stop infrastructure inc bus boarders	✓	✓	-	-	-	-	✓ ✓	✓	✓	✓	-	-	-	✓	-
PT information kiosks in town centre	✓	✓	-	✓	-	✓	✓	✓ ✓	✓	✓	-	-	-	✓	-
Park and ride sites on ASR sites and Dunmow Rd Corridor	✓ ✓ ✓	✓ ✓	✓	✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓	✓	-	✓	✓	×	✓	✓	-
Enhanced quality bus service from new bus interchange to Stansted (linked to Dunmow Rd Park & Ride)	✓ ✓ ✓	✓	-	✓	✓	✓ ✓	✓ ✓ ✓	✓ ✓ ✓	-	✓	-	-	✓	-	-
Epping to Stansted quality (guided?) bus improvement via Bishop's Stortford	✓ ✓ ✓	✓	-	-	✓	✓ ✓	✓ ✓	✓ ✓	-	✓	-	✓	✓	-	-
Walking & Cycling															
New landmark footbridge across Stort to Maltings	✓ ✓	✓	✓	-	-	✓	✓ ✓	-	✓ ✓ ✓	✓	✓	✓	✓	✓	-
Improved pedestrian route to town centre from station inc. signage	✓	-	✓	-	-	✓	✓ ✓	✓	✓ ✓ ✓	✓	✓	✓	✓	✓	-
Widen Station Rd Bridge (or banned r/turn)	✓ ✓	-	✓	-	-	✓	✓ ✓ ✓	-	✓ ✓ ✓	-	✓	✓	✓	✓ ✓ ✓	-
Specific routes identified for new school site + traffic calming around school, cycle parking & school travel plan	✓ ✓	✓	-	✓	-	-	✓ ✓	-	✓ ✓ ✓	✓	-	✓	✓	✓ ✓	-
Travel plans for all schools to reduce car trips	✓ ✓	✓	-	✓	-	-	✓ ✓	-	✓ ✓ ✓	✓	-	✓	✓	✓ ✓	-
Pedestrian Phase at Hockerill Junction	✓	-	-	-	-	-	✓ ✓	-	✓ ✓ ✓	-	-	-	✓	✓ ✓ ✓	-
New cycle parking facilities at key locations	✓	-	-	✓	-	✓	✓	-	✓ ✓ ✓	-	-	✓	✓	-	-
Pedestrianisation of South Street / Potter Street / North Street	✓	✓	✓ ✓ ✓	-	-	-	✓ ✓	✓ ✓	✓ ✓	✓	✓ ✓ ✓	✓	✓ ✓ ✓	✓ ✓	-
Green Links leisure routes	-	-	-	-	-	-	✓	-	✓ ✓	-	-	✓	-	-	-
New cycle routes to airport	✓	-	-	✓	-	✓	✓	-	✓ ✓ ✓	✓	-	-	-	✓	-
Parking															
Comprehensive on-street controls within 'residential zone'	✓	✓	-	-	-	-	-	-	-	-	-	-	-	-	✓ ✓ ✓
Reduce long-stay town centre parking / significantly increase long-stay charges over 10 year period as strategy inc P&R is implemented	✓ ✓ ✓	✓ ✓ ✓	✓ ✓	✓	✓ ✓ ✓	✓	✓	✓	-	✓	✓	×	✓	✓	-
Improve availability of short-term parking through conversion of long-term	× ×	× ×	✓ ✓ ✓	-	-	-	-	-	-	-	× ×	× ×	× ×	× ×	-
Longer-term developments															
ASR Access Strategy - new bus services connected to P&R, new junction on A120, protection of Rye Street corridor, flag-ship walk & cycle routes	✓ ✓	×	✓	✓	✓	✓	✓ ✓	✓ ✓	✓ ✓	✓	✓	×	✓	✓	-

KEY	
✓ ✓ ✓	very beneficial
✓ ✓	beneficial
✓	slightly beneficial
-	neutral
×	slightly disbeneficial
× ×	disbeneficial
× × ×	very disbeneficial

FIGURE 6.1 TRAFFIC MANAGEMENT PROPOSALS



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FIGURE 6.2 DEMAND MANAGEMENT PROPOSALS

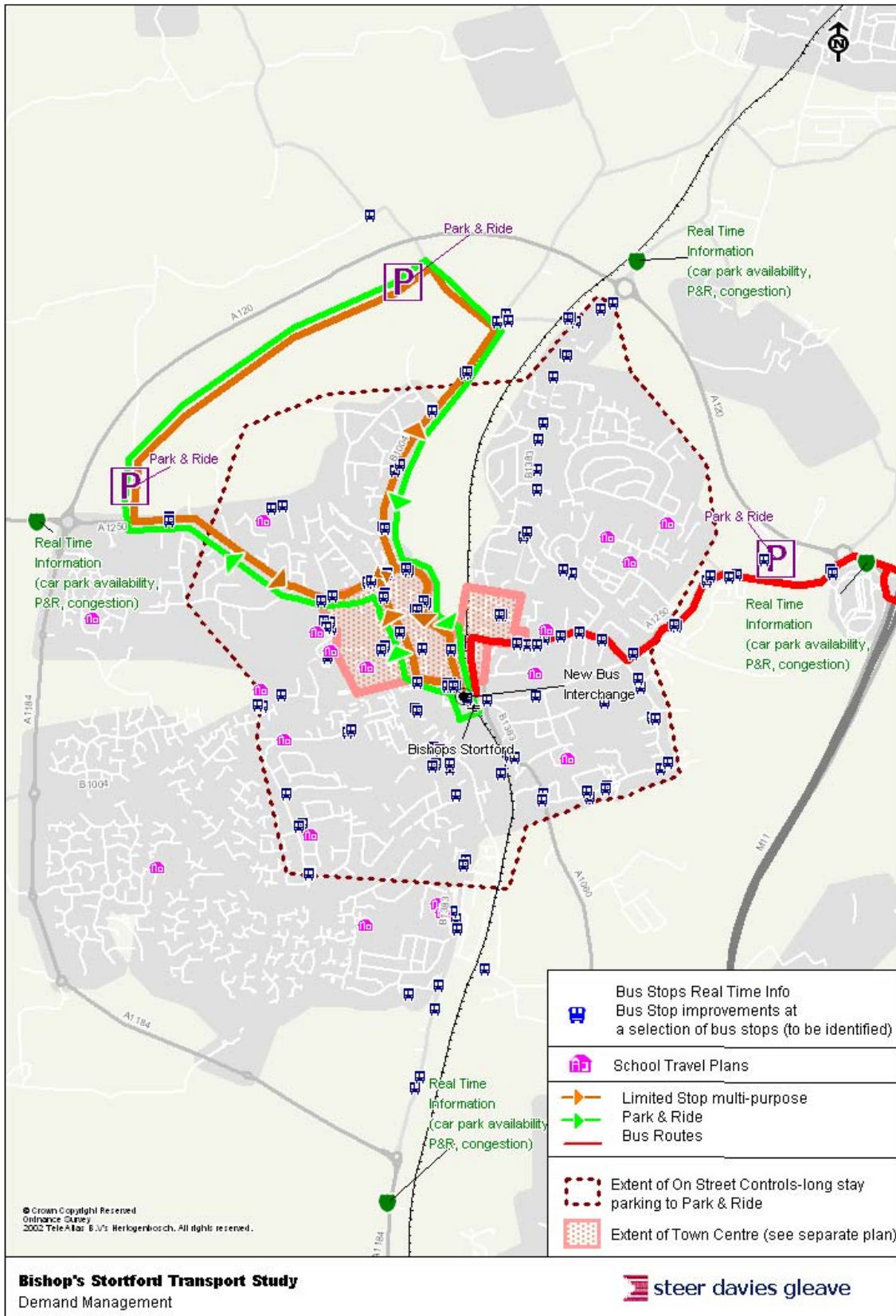


FIGURE 6.3 WALKING AND CYCLING PROPOSALS

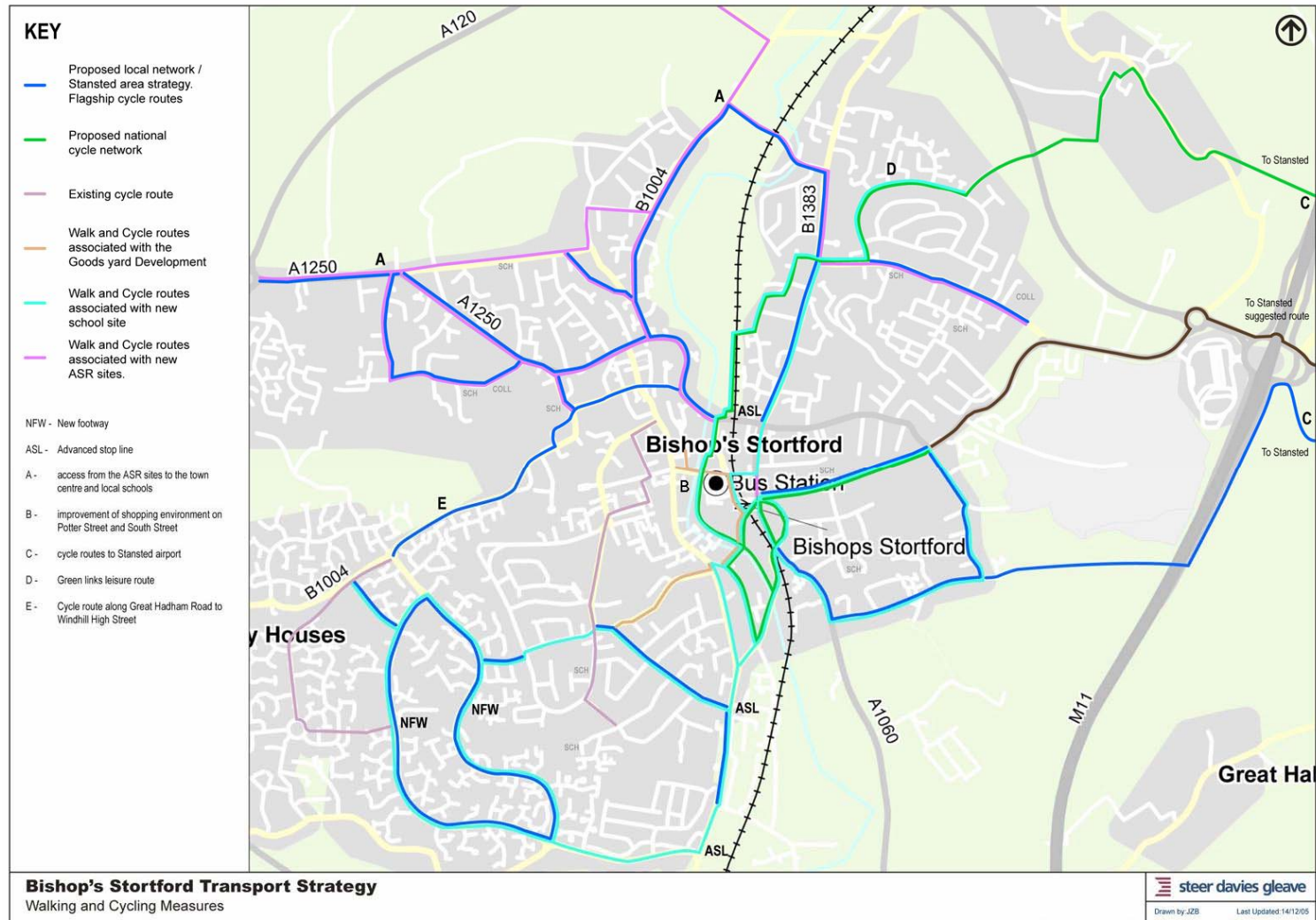
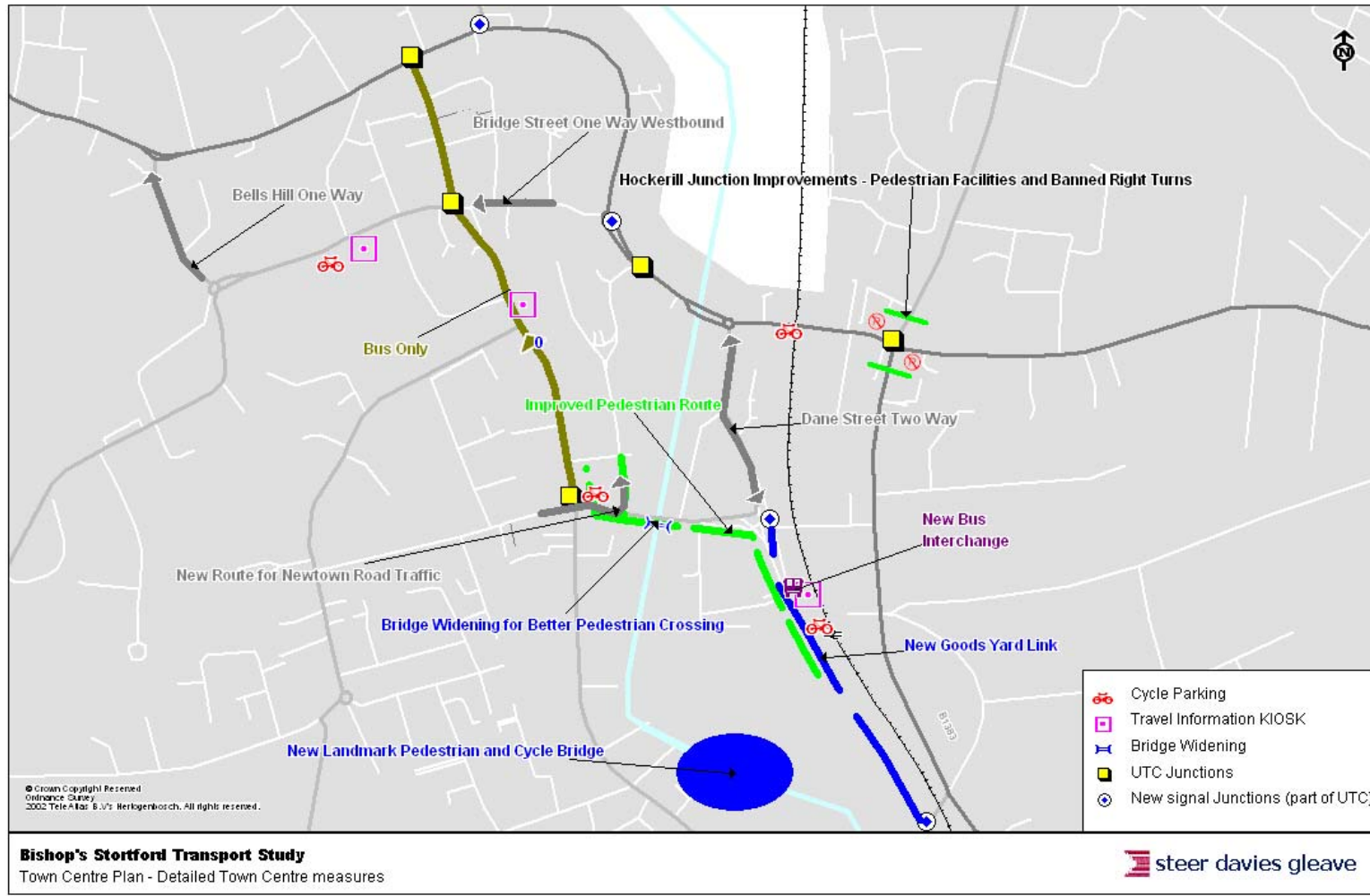


FIGURE 6.4 TOWN CENTRE PROPOSALS



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7. PHASING, IMPLEMENTATION AND FURTHER WORK REQUIRED TO IMPLEMENT THE STRATEGY

- 7.1 The pre-feasibility and testing work outlined in the previous chapter has indicated that the package of measures identified should be effective in addressing many of the transport challenges facing Bishop's Stortford over the next 10 to 15 years. Clearly before any schemes identified are implemented, it will be necessary to seek the views of the public and local stakeholders and to undertake more detailed technical feasibility and detailed design on strategy elements.
- 7.2 We have also examined the potential costs of the strategy, potential phasing and funding opportunities. These are identified in Table 7.1. There is substantial opportunity to implement significant elements of the overall strategy through developer contributions. For example the widespread potential impacts that could arise from the development of all of the ASR sites provides an opportunity to implement a number of schemes to mitigate the impacts. These schemes would be fully necessary to mitigate the development impacts but would in some circumstance provide some wider benefits to the town. As a key element of the future residential composition of the town it is also reasonable to obtain contributions towards more generally aimed schemes such as the town centre pedestrianisation. The longer-term development of Stansted Airport might also provide opportunities to fund additional transport measures to complement the expansion of the airport whilst recognising the proximity and importance of Bishop's Stortford to its long-term development.
- 7.3 Government funding is also potentially available through the Local Transport Plan (LTP), and through the Community Infrastructure Fund (CIF) and Growth Area Funds (GAF). For schemes greater than £5 M, funding through the Local Transport Plan will need to be through the major scheme process. This means that the regional dimension will also be important as the East of England Regional Assembly plays an important role in identifying regional priorities for scheme funding through the Department for Transport.

Table 7.1: Indicative Costs Funding and Phasing

Strategy Element	Indicative Cost (£M)	Funding Opportunity / Source	Development / Other Dependence	Costs / Funding & Phasing			
				2006 - 2011	2012-2016	2017-2021	2021 +
Highway & Traffic Management							
Goods Yard Link Road	Developer Cost	Goods Yard developer	Goods Yard Development				
Dane Street 2-way	Developer Cost	Goods Yard developer	Goods Yard Development				
Banned r/turns at Hockerill Junct.	£0.005	LTP	n/a				
Town Centre urban traffic control inc. new signalised junctions / SCOOT cells	£2.00	ASR developers, Mill Site, LTP / CIF	ASR / Mill Site				
Intelligent Transport Systems inc. VMS signs & internet site (congestion, park & ride, parking availability).	£0.10	ASR developers, Mill Site, LTP / CIF	ASR / Mill Site				
A120 Junction capacity increases A120/B1383, and A120 / A1250	£1.50	LTP3 Major Scheme Bid / GAF2	Linked to UTC & AST developments				
Public Transport							
New bus interchange at Station	£0.985	Goods Yard developer (33%) & GAF Bid (67%)	Goods Yard Development				
RTPI on key routes, at railway stn & town centre	£0.10	ASR developers, Mill Site, LTP	ASR				
New shelters and bus stop infrastructure inc bus boarders	£0.50	LTP / CIF / Developers					
PT information kiosks in town centre	£0.01	LTP, ASR, Mill Site, small developments					
Park and ride sites on ASR sites and Dunmow Rd Corridor	£1.00	ASR Developers / BAA Stansted / additional parking revenue / Fare box revenue					
Enhanced quality bus service from new bus interchange to Stansted (linked to Dunmow Rd Park & Ride)	£150.000	BAA Stansted / Developers					
Epping to Stansted quality (guided?) bus improvement via Bishop's Stortford	£2.000	LTP Major / Stansted					
Walking & Cycling							
New landmark footbridge across Stort to Maltings	£1.94	GAF Bid (99%) Goods Yard Dev. (1%)					
Improved pedestrian route to town centre from station inc. signage	£0.05	Goods Yard Development					
Widen Station Rd Bridge (or banned r/turn)	£0.20	ASR / Mill Site / CIF					
Specific routes identified for new school site + traffic calming around school, cycle parking & school travel plan	£0.10	County Education Authority / LTP	New School site				
Travel plans for all schools to reduce car trips		LTP					
Pedestrian Phase at Hockerill Junction	£0.03	LTP / Developer					
New cycle parking facilities at key locations	£0.02	LTP / ASR developers (contribution)					
Pedestrianisation of South Street / Potter Street / North Street	£1.0 to £2.50	LTP / Developer					
Greenways leisure routes		CIF Bid					
New cycle routes to airport	£0.15	BAA Stansted					
Parking							
Comprehensive on-street controls within 'residential zone'	£0.05	LTP					
Reduce long-stay town centre parking / significantly increase long-stay charges over 10 year period as strategy inc P&R is implemented	£0.02	N/A					
Improve availability of short-term parking through conversion of long-term	£0.02	N/A					
Longer-term developments							
ASR Access Strategy - new bus services connected to P&R, new junction on A120, protection of Rye Street corriodr, flag-ship walk & cycle routes	Development Cost / Planning gain	ASR Developers	ASR				

NOTE: this information provides an illustration of costs, funding opportunities and phasing only

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- 7.4 Additional work will be required to develop the strategy towards implementation:
- i. The strategy will need approval for public consultation from the elected members from both East Herts Council and Hertfordshire County Council.
 - ii. As well as meetings with key stakeholders, the strategy will be the subject of a public consultation exercise. The consultation will give members of the public the opportunity to comment on the proposals. A key focus is likely to be the reaction to the pedestrianisation proposals in the town centre. The consultation could focus on a range of options from doing nothing to full pedestrianisation of South Street, Potter Street and North Street and could include temporal pedestrianisation options such as only implementing the scheme outside of peak periods.
 - iii. The consultation results will be used to amend the strategy and will be subject to further member approval.
 - iv. The strategy elements will need to be subject to more detailed feasibility work to identify more robust costs and impacts. For example the UTC/SCOOT system, and pedestrianisation schemes will need to be modelled in detail ideally using microsimulation packages to enable the systems to be designed in traffic and also engineering terms. Most elements of the package will require further local consultations and additional committee approvals before implementation. The additional feasibility and design work will generally be funded from the source of funding that will ultimately be used to fund implementation.
 - v. In the case of the larger developments such as the ASRs, detailed planning applications will be required and will be accompanied by full transport assessments to understand in detail the acceptability of the impacts and the full range of mitigation measures that would be required to accompany the developments if granted planning permission. Funding for the package of measures can be brought forward in different ways including through a tariff system whereby each new dwelling contributes a sum towards the funding of the transport package.

8. CONCLUSIONS

- 8.1 In this study we have developed a transport strategy for Bishop's Stortford to act as framework for the future development of the town. The town is likely to experience significant development pressures over the next 10 to 15 years; these pressures will present both challenges, and opportunities for investment in transport infrastructure.
- 8.2 The transport strategy can ensure that the investment in transport infrastructure is undertaken in a co-ordinated and effective way to ensure that the town achieves its vision and objectives and that transport improvements are not undertaken in a piecemeal ad-hoc fashion as individual development proposals are brought forward.
- 8.3 The draft strategy outlined in this report addresses the study objectives and provides such a framework for the future. It aims to balance the sometimes conflicting needs of motorists, pedestrians, cyclists, public transport users, shoppers workers and visitors to the town.
- 8.4 The transport strategy will require considerable further development, not least through increased public involvement, but also through necessary further technical work to undertake feasibility and detailed design of the strategy elements.

CONTROL SHEET

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