

7 Major Schemes

The LTP programme contains ten major schemes (those costing more than £5 million). Eight of these, are or will be, the subject of special bids to government. As Chapter 5 showed, these schemes form an essential element in delivering the LTP strategy and meeting objectives.

This chapter describes all of the schemes proposed, showing what they are, where and when they will operate, and how they meet LTP and government objectives for transport.

The schemes in this LTP fall into four different categories as follows.

- Those schemes bid for under the last LTP. These have been accepted by government for funding and are now under construction. In Chapter 5, we showed that we had considered whether these schemes still form an essential element of the strategy and concluded that they remain very important. This chapter gives details on the schemes, while a fuller description in the form of the bid that was submitted (known as an Annex E) is contained in Appendix 14.
- The Rapid Transit scheme between Cambridge and Huntingdon, which has been formally submitted to government and for which we are awaiting the government’s decision. As with those schemes that have already been accepted, this chapter gives details of the scheme and shows how it will help to meet our objectives. Full details of the Rapid Transit scheme are contained in Appendix 14.
- Two schemes that will be funded through development. These, while essential to ensuring that the development will be sustainable, will not form a part of a bid to government. In this case, the chapter gives brief details on the likely scope of the schemes.

- Five schemes that will be the subject of future bids for funding. For these, the chapter gives some details of the schemes as they are emerging and demonstrates the essential role that they will play in meeting our aims and objectives as well as those for government. We will submit full appraisals for these schemes, with further details, through our Annual Progress Reports.

The programme and status of the schemes is shown in Table 7.1.

This represents an unusually large number of major schemes for one area. The reason is because of the unusually rapid rate of growth in Cambridgeshire. In responding to regional guidance (reported in Chapter 2) that requires us to promote the continued economic growth of the county while at the same time allowing many more houses to be built here, such a large number of schemes are inevitable. All of the schemes form part of policies within the Structure Plan, as shown in Chapter 2 and Appendix 10, which has been produced in large part to address regional requirements. The number of major schemes therefore reflects the scale of the task we face.

A142 Fordham Bypass

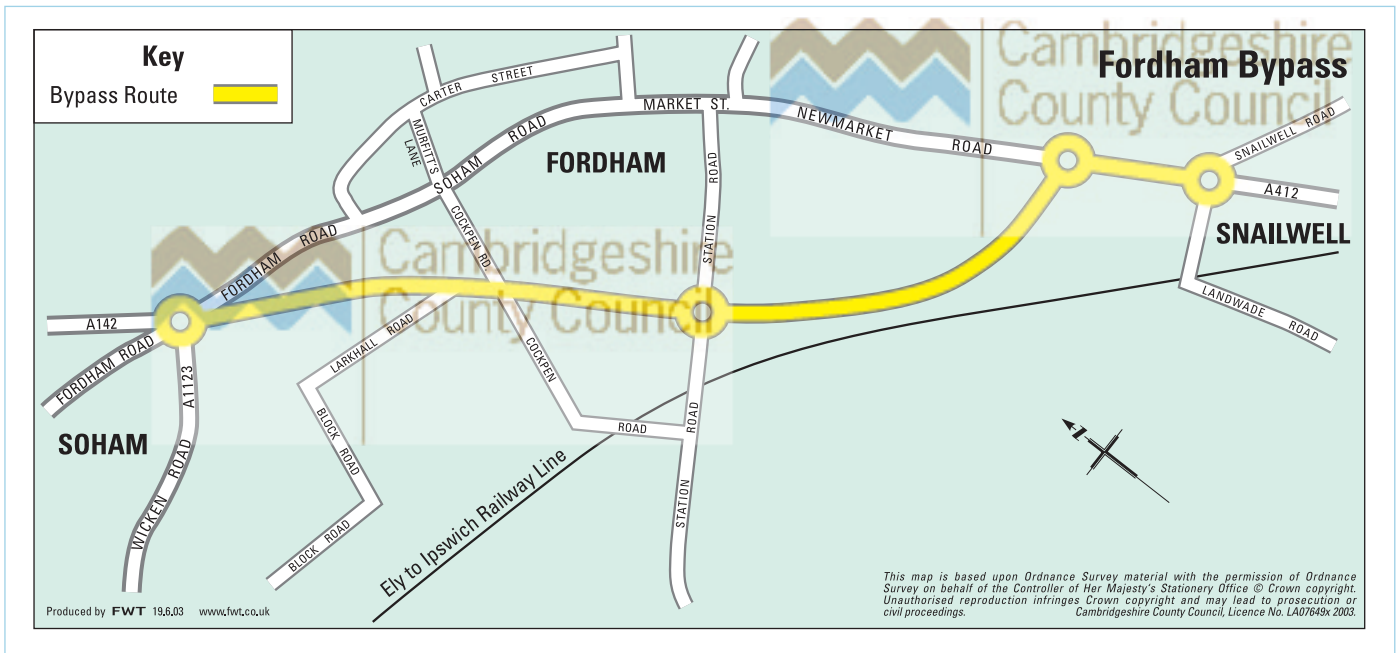
This scheme involves the provision of a bypass to the west of Fordham. The A142 is a primary road providing access to the Fens from the trunk road network. This scheme is vitally important within the LTP, and is recognised as a priority within the Structure Plan as a means by which to reduce environmental

Table 7.1 Programme of major schemes

Scheme	04/05	05/06	06/07	07/08	08/09	09/10	10/11
Fordham Bypass	★	★	★				
Papworth Everard Bypass	★	★	★				
Rapid Transit Cambridge to Huntingdon		●	●	●			
Chesterton Station		★	★	★			
M11 to Addenbrooke’s Link Road		●	●				
King’s Dyke improvements					★	★	★
Eastern Cambridge Rapid Transit					★	★	★
Foxton Level Crossing					★	★	★
Ely Southern Link Road						★	★
Cherry Hinton Access Road						●	●

Key: ★ under construction ● awaiting the results of bid ● developer funded ★ future bid

Map 7.2 Fordham bypass



impact, improve safety and efficiency and maintain economic prosperity.

The bypass will be a 7.3 metre wide single carriageway, some 3.6km long. It will start at an existing roundabout at the southern end of Soham bypass, which will be enlarged to accommodate a fifth arm. The bypass will run in a south-easterly direction to the west of the existing A142 and to the east of Lark Hall Farm. It will cross the B1102 Station Road approximately 200 metres to the east of the existing level crossing, where the first new roundabout junction will be provided. From here, the route carries in a south-easterly direction alongside the Ely to Ipswich railway line for 500 metres, turning eastwards to rejoin the A142 at another new roundabout some 400 metres north of the C147 Snailwell Road and Landwade Road. A final new roundabout will be built at the junction of the A142 with Snailwell Road and Landwade Road. This scheme will be built in one phase, with most of the route constructed on low embankment less than 1 metre high.

The route is shown in Map 7.2.

The scheme also includes measures to improve the environment for pedestrians and cyclists in Fordham. One of the principal measures will be a safe cycle route from Fordham to Soham Village College. A cycle bridge will be provided across the A142, just to the north of the Soham Roundabout, in order that cyclists can cross from Fordham to Soham in safety.

Predicted expenditure

The estimated out-turn cost for this scheme is £13.5 million, as shown in Table 7.3.

Scheme objectives

The Fordham Bypass will deliver the following benefits consistent with our strategy.

Along corridors

It will reduce journey times between the A14 Trunk Road (and, effectively, the Haven Ports) and the Fens, and the expanding industrial area adjacent to the A142 in Landwade Road and Snailwell Road area, by removing delays currently experienced through the village of Fordham.

In rural areas

The scheme will:

- relieve the village of through traffic, particularly heavy goods vehicles
- enhance the environment of Fordham for local people and improve safety for motorists, cyclists and pedestrians, especially school children travelling to and from local schools, and
- relieve pollution from traffic in one of the villages most affected by vehicle emissions in East Cambridgeshire.

Update on scheme progress

Following the acceptance of the scheme for funding, the bypass was granted planning permission in March 2003. This permission included the provision of a cycle route between Fordham and Soham Village College, and a cycle bridge across the A142 in the vicinity of the Soham Roundabout. A Public Inquiry on the scheme was held in March 2002 and we are proceeding with the revised route.

Table 7.3 Fordham bypass cost expenditure profile (£000's)

2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
250	120	159	750	6921	5000	300



Fordham Village

We are now completing the detailed design and the preparation of tender documents. The works will be advertised through the OJEC² procedures, with the notice being advertised shortly. The selected contractors will be asked to tender for the works in October 2003. Construction is currently programmed to commence in March 2004.

A major element of work that will have an impact on the construction programme is the diversion of a high pressure gas main. The county council received a letter from the Secretary of State for Transport in June 2003 confirming the compulsory Purchase Orders following the public inquiry held in March 2003. Notice of confirmation of the orders was published in July 2003. This will allow preliminary design work for the £800,000 diversionary works to commence.

Appraisal summary table

A full appraisal of the scheme has been carried out. The results of this are summarised in Table 7.4.

A1198 Papworth Everard Bypass

A bypass to the west of Papworth Everard is an essential element of the planned growth of the village, which is designated in the South Cambridgeshire Local Plan as a Rural Growth Settlement.

Two residential developments to the north of the village are now largely complete, along with industrial and office units to the south of the village. Two outstanding housing allocations to the south of the village have outline planning approval subject to work commencing on the provision of the bypass. Completion of these two areas will result in a net increase of some 600 houses in the village, doubling the size of the settlement.

The bypass will leave the existing A1198 at a new roundabout to the south of the village, just north of Crow's Nest Farm. From this roundabout, the bypass will curve to the west of the village, through an area of gently rolling arable land, crossing the Papworth stream to join the existing B1040 via a second roundabout. It will then follow the route of an upgraded B1040 to tie back into the existing A1198 at a new roundabout at the Kisby's Hut junction. The route is shown in Map 7.5.

The bypass will be a 7.3 metre wide single carriageway, approximately 3km in length. The majority of the scheme will be in cutting, to a depth of over 2 metres in places. Where the bypass crosses the Papworth stream it will rise on an embankment to about 4 metres above existing ground level. A bridge will be built over the stream and an adjacent footpath. The scheme will be built in one phase, on land wholly owned by the Papworth Trust, and will be outside the limits of the proposed development boundary.

Policy P8/10 of the emerging Cambridgeshire and Peterborough Joint Structure Plan Review Deposit Draft identifies the provision of the A1198 Papworth Everard Bypass as a priority in order to reduce environmental impact, improve safety and efficiency and maintain economic prosperity.

Table 7.4 Appraisal Summary Table for Fordham bypass

Objective	Overall Impact	Description
Environment	Positive	<ul style="list-style-type: none"> 80 properties will receive a noticeable reduction in noise levels, whilst 12 properties will receive a noticeable increase. Vehicle emissions are expected to reduce, resulting in an improvement in air quality at 284 properties. Only 12 properties will experience deterioration in air quality, but the level of pollutants will still be below AQS objectives. The scheme will have limited impact on nature conservation as habitats within the scheme corridor are generally of limited ecological value. A number of landscaping proposals should add to the biodiversity of the area.
Safety	Positive	<ul style="list-style-type: none"> There is expected to be an overall slight reduction in the number of accidents within the study area. Removal of through traffic will make Fordham safer for pedestrians and cyclists. Provision of a cycle route to Soham, including a bridge over the A142, will improve safety for children going to Soham Village College.
Economy	Positive	<ul style="list-style-type: none"> Reduced journey times between the A14 Trunk Road (and, effectively, the Haven Ports) and the Fens.
Accessibility	Positive	<ul style="list-style-type: none"> Access to local industry improved by removing journey time uncertainty caused by delays on the A142 through Fordham.
Integration	Positive	<ul style="list-style-type: none"> Scheme safeguards the future provision of a rail siding to the industrial area adjacent the A142 in Landwade Road, Fordham.

Map 7.5 Papworth Everard Bypass

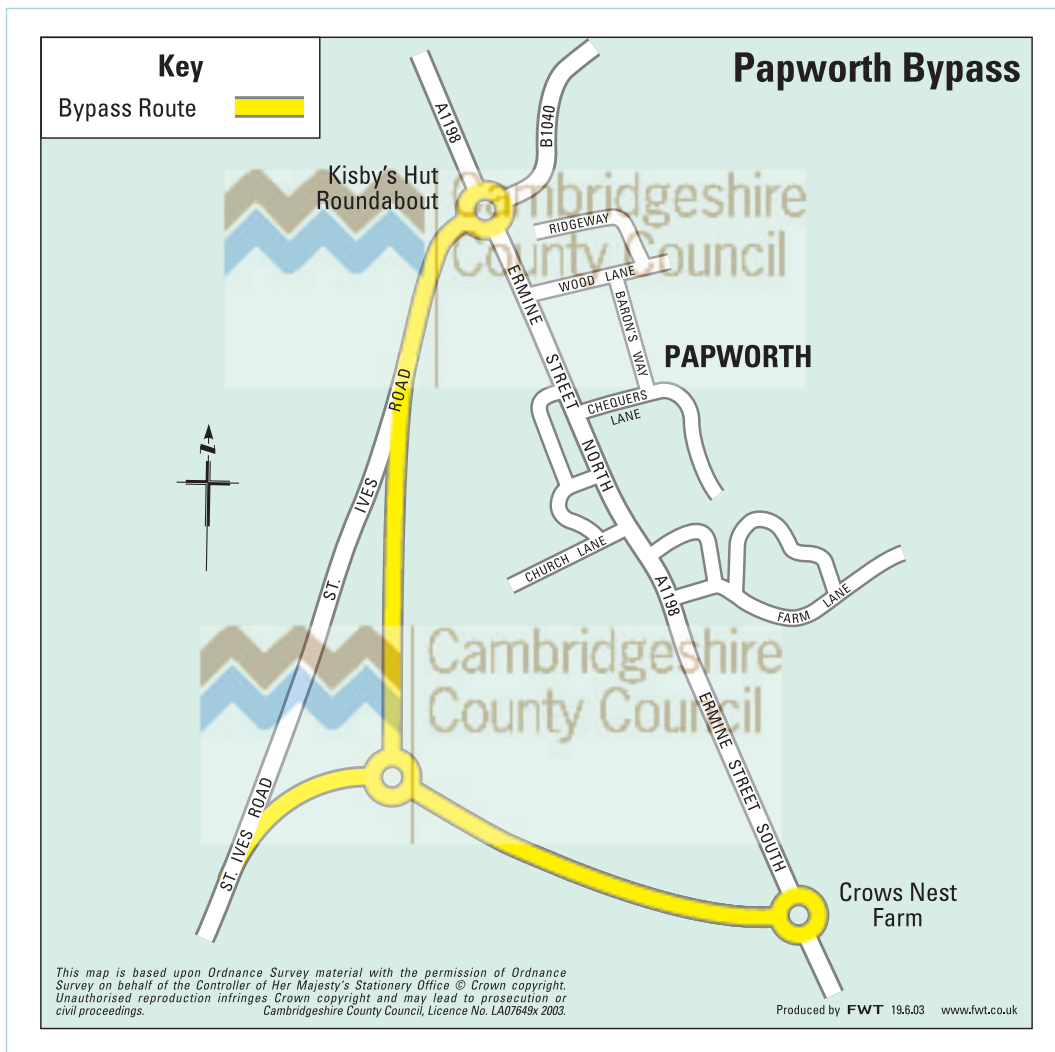


Table 7.6 Scheme cost expenditure profile (£000's)

2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
150	128	200	1322	4500	600

Table 7.7 Appraisal Summary Table for Papworth Everard bypass

Objective	Overall Impact	Description
Environment	Positive	<ul style="list-style-type: none"> Air quality is expected to improve at 400 properties, and deteriorate at 54 properties. However, all concentrations of pollutants are estimated to remain below AQS objectives. 64 fewer people are likely to be annoyed by noise with the proposed bypass. No known sites of ecological importance will be affected by the scheme. Lighting of the roundabouts will result in adverse night-time visual impact.
Safety	Positive	<ul style="list-style-type: none"> There is expected to be an overall slight reduction in the number of accidents within the study area. Removal of through traffic will make Papworth Everard safer for pedestrians, cyclists and the high number of wheelchair users in the village.
Economy	Positive	<ul style="list-style-type: none"> Reduced journey times on the A1198 will improve journey reliability for local trips and business travel.
Accessibility	Positive	<ul style="list-style-type: none"> Improved access to local facilities, especially for elderly and disabled residents.
Integration	Positive	<ul style="list-style-type: none"> Scheme supports planned growth for the village, which will increase the number of jobs available locally.

Expenditure profile

The estimated out-turn cost for the bypass is £6.9 million as shown in Table 7.6.

The scheme is being developed by a partnership consisting of the county council, South Cambridgeshire District Council and the Papworth Trust. The Trust is also responsible for promoting the development of the village as set out in the Cambridgeshire Structure Plan and the South Cambridgeshire Local Plan. Section 106 Agreements have been secured with the developer to a total value of £2.77 million of funding towards the provision of the bypass.

Scheme objectives

This scheme is very important within the LTP, and will make a significant contribution to the overarching aims of the LTP. It contributes to the LTP as follows.

Along corridors

The bypass will reduce congestion on the A1198.

In rural areas

The scheme will:

- support the substantial growth planned at Papworth Everard
- relieve the village of through traffic, particularly heavy goods vehicles
- enhance the environment of Papworth Everard, and improve safety for motorists, cyclists and pedestrians, and
- improve accessibility to local facilities, particularly for elderly and disabled residents.

Update on scheme progress

An archaeological trenching survey along the route of the bypass was completed in 2002, and the survey report was submitted with the planning application in 2003. This was followed by the publication of Compulsory Purchase and Side Road Orders. A planning application has now been submitted.

Only one objection has been received to the scheme, and we are now in the process of holding meetings to determine whether this objection can be resolved without the need to go to a Public Inquiry.

Detailed design work has commenced and we intend to invite tenders in 2004. The works will be advertised through the OJEC procedures.

Appraisal summary table

A full appraisal of the scheme has been carried out. The results of this are summarised in Table 7.7.

Rapid Transit

Rapid Transit uses guided bus technology. It forms an essential element of the Structure Plan programme for the Cambridge Sub-Region, is central to our strategy and objectives, and is one of the main recommendations coming from the Cambridge to Huntingdon Multi Modal Study, discussed in Chapter 2.

Rapid Transit aims to:

- provide a step change in the quality and quantity of public transport services



Papworth Everard

- bring about modal shift in a corridor where the car currently dominates
- maximise flexibility and thus exploit the full opportunities in the Sub-Region, and
- provide congestion relief on the A14.

Route description

The route has five different elements.

1 Huntingdon to St Ives running on roads

In Huntingdon, the proposed route will run on the ring road and out of the town on the A1123 to St Ives. Bus priority measures, discussed in Chapter 6, will ensure consistent journey times.

2 A segregated guided section running from St Ives to the north of Cambridge

The route joins the former alignment of the Cambridge to Huntingdon rail line to the east of the St Ives bypass (A1096), where it will run along a guideway. Along this part of the route, stops will be located at the villages of Swavesey, Longstanton, Histon, and Oakington, and feeder services will be able to enter the system at road crossing points. A local diversion route will also be provided through the proposed Longstanton/Oakington new town, while express services would bypass the development.

3 Cambridge and northern suburbs to the south of the railway station running on roads

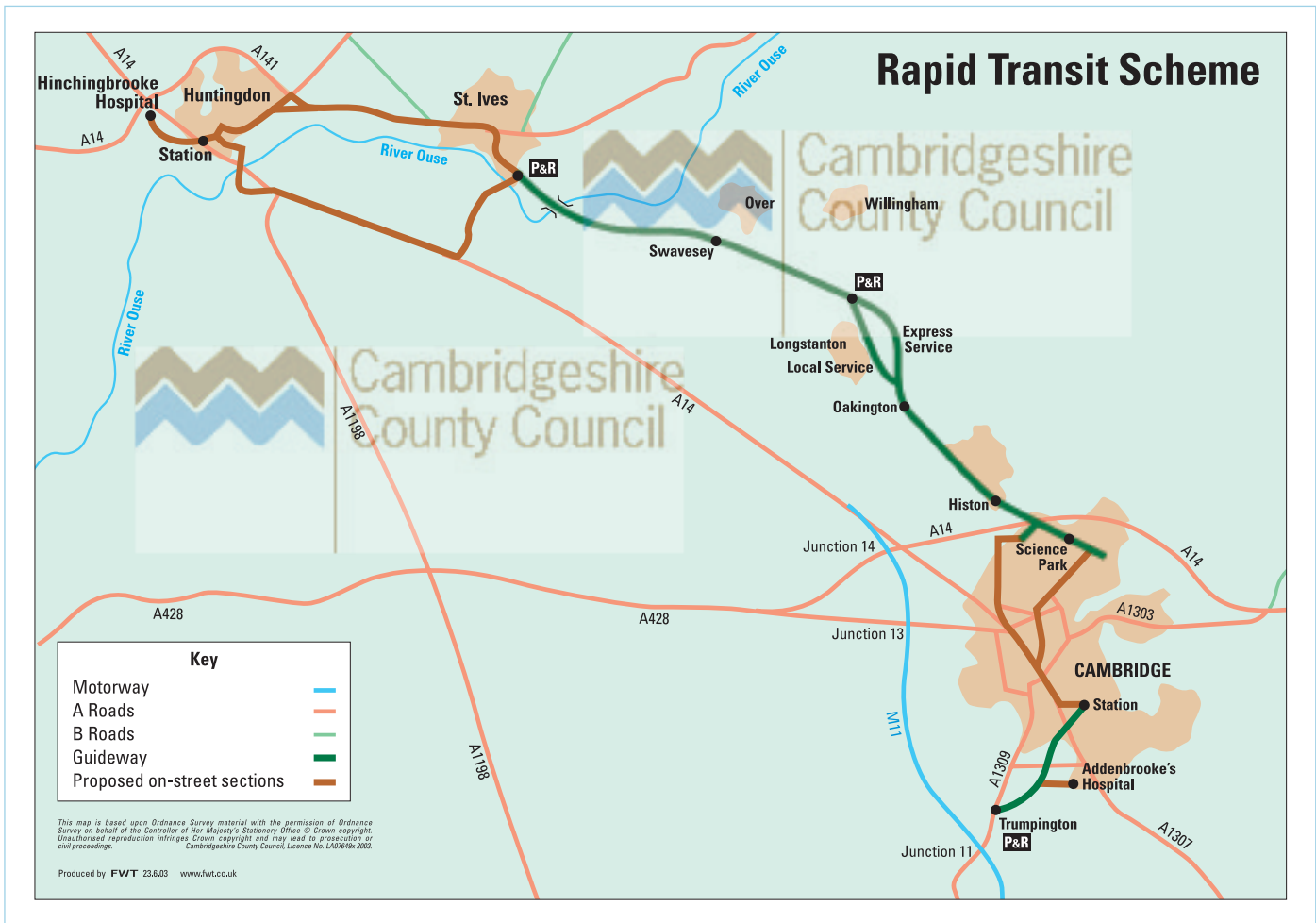
The route will leave the segregated guideway to the north of Cambridge, where on-street services will operate on both Histon Road and Milton Road¹. Proposed inbound routes are as follows.

- Histon Road to Bridge Street, Round Church Street, Park Street, Jesus Lane, Emmanuel Road, Emmanuel Street, Regent Street, Hills Road, Station Road.
- Milton Road to Victoria Avenue, Emmanuel Road, Emmanuel Street, Regent Street, Hills Road and Station Road.

4 South of Cambridge Station to Trumpington Park & Ride running on guideway

From Cambridge Railway Station the route would rejoin a guided section along the former Cambridge to Bedford rail line via a tunnel under Hills Road. The guideway will link into the Trumpington Park and Ride site where provision has already been made for such a new entrance. The new facility will serve large areas of proposed new housing in the Clay Farm and Shelford Road areas.

Map 7.8 Rapid Transit Route



5 A link to Addenbrooke's Hospital

The route is shown in Map 7.8.

Two Park & Ride sites will also be provided as part of the scheme, one 500 space site at the start of the segregated route at St Ives and one 1000 space site at Longstanton.

The guideway will be two way and will be able to accommodate single and double deck vehicles on the northern section, and single deck vehicles on the southern section.

A parallel maintenance track which could also be used by horse riders, cyclists and walkers, is proposed along the whole of the segregated section between St Ives and Cambridge.

System characteristics

Rapid Transit is based on the principle of raising the quality of public transport in order to offer an attractive alternative to the car. Services will be fast and frequent and offer high levels of passenger comfort.

The proposed scheme will have stops at a number of locations along the route serving all of the main residential and employment areas. These include Hinchingsbrooke Hospital,

Huntingdon Railway Station, Huntingdon Town Centre, St Ives, Swavesey, Longstanton, Oakington, and the new town at Longstanton/Oakington, Histon, Cambridge Regional College, Cambridge Science Park, Arbury, Cambridge Rail Station, Addenbrooke's Hospital and Trumpington. All stops will be provided with real-time bus information, ticket machines, covered shelters, seats, security and other facilities.

The system will be 'open', meaning that it can be used by all operators provided that their vehicles meet certain quality standards. These are expected to include low-floor or level boarding, air-conditioning, next-stop information and offer high degrees of passenger comfort.

Predicted expenditure

The total cost of the scheme is estimated at £75 million at 2003 prices. The expenditure profile is shown in Table 7.9.

Scheme objectives

Rapid Transit forms a central principle of the LTP strategy and will play an essential role in delivering both the strategy and the objectives as shown in the causal chain contained in Appendix 14.

Table 7.9 Cost profile for Rapid Transit (£000's)

2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
200	360	500	5,940	34,000	34,000

Table 7.10 Appraisal Summary Table for Rapid Transit

Description: Guided bus way constructed on disused railway alignments. High quality park and ride, real time information, smart ticketing, quality bus partnership				NPV = £255m BCR = 4.84
Objective	Sub-objective	Qualitative impacts	Quantitative measure	Assessment
Environment	Noise	Would introduce new noise source in quiet rural area. Activity at Park & Ride sites could affect small no. of properties. Reduction in traffic on some local roads could improve noise climate.	80 properties <100m 9 properties <200m P&R	Slight adverse
	Local Air Quality	Modal shift would lead to reductions in NOx and Hydrocarbon emissions on road network, increase in emissions locally would affect small number of properties.	PM10 = -0.13t/year NOx = -8.5 t/year	
	Greenhouse Gasses	Modal shift would give reduction in congestion and overall traffic levels but increase in bus km during opening year gives small increase in emissions, becomes reduction by 2016.	CO ₂ net reduction of 2778 tonnes/year (2016)	
	Landscape	Re-use of railway corridor would minimise landscape impact though some loss of vegetation may bring localised impacts.		Slight adverse
	Townscape	Route passes through few built up areas. No appreciable effects on townscape.		Neutral
	Heritage of Historic Resources	No significant effect on historic structures, conservation areas or listed buildings. Passes through area rich in heritage interest but limited take of previously undisturbed land limits potential for disturbing remains. Settings of key buildings/areas not adversely affected.		Slight adverse
	Biodiversity	Limited effect on two county wildlife sites. Loss of habitat on former railway. Potential impact on protected species inc. badger, bat, great crested newt, otter, vole.		Significant adverse
	Water Environment	Increase in impermeable area can be addressed through sustainable drainage design. No impact on capacity or function of Ouse flood plain.		Neutral
	Physical Fitness	Scheme would encourage walking and cycling through integration with Sustrans network, walking to bus stops.		Beneficial
	Journey Ambience	Improved waiting experience, high quality vehicles, real time information, direct route, increase in reliability gives reduction in stress.		Strong beneficial
Safety	Accidents	Modal shift from car to guided bus gives accident reduction of 4 injury accidents per year (2016).	NPV £3.0m	
	Security	CCTV at stops, lit shelters, attended Park & Ride sites.		Beneficial
Economy	Transport Efficiency	Transport benefits arise from time savings for users over A14 services and non-users arising from decongestion. Transport operators' benefit from increased revenue and patronage.	Net impacts Users £+311m Private sector £+1.4m Public Sector £-47.0m Other Government £-10.7m	
	Reliability	Improved reliability through segregation of alignment, vehicle location and real time information.		Strong beneficial
	Wider Economic Impacts	Enhanced access to employment in northern fringe of Cambridge. Provides access to new settlement at Longstanton which is scheme dependent.		Beneficial



Artists impression of a Rapid Transit stop

Along corridors

The route will provide a high quality, high frequent service parallel to the A14, which is the busiest corridor in the county, with the highest number of commuters. It will therefore form the main improvement proposed for this corridor in the LTP strategy.

In urban areas

Rapid Transport Scheme will reduce traffic going into Cambridge. Huntingdon and St Ives, thus easing traffic congestion in these areas.

In rural areas

The flexibility of the guided system means that buses will be able to join and leave the guideway at a number of places. It can therefore be used by buses serving villages and locations away from the guideway, and these services can still benefit from the higher quality ride and consistent journey times offered by the guideway.

Appraisal summary table

A full appraisal of the scheme (contained in Appendix 14) has been carried out. The results of this are summarised in Table 7.10

Chesterton Interchange

Chesterton Interchange is a proposed new railway station on the site of the former Chesterton permanent way depot, to the north of Cambridge, close to the Science Park and A14 trunk road. See Map 7.11 for details. It has significant potential to bring about benefits for the wider transport issues of the Cambridge area whilst also opening up opportunities, to train operators, to grow the railway business in line with the increase in population.

The station would be an important accompaniment to developing a major brownfield site. South Cambridgeshire and Cambridge City councils have reviewed their planning policies for the Cambridge 'Northern Fringe' to include development of this site. A 'master plan' is currently being constructed for the overall site, which will include the station.

The Great Northern (GN) franchise (Kings Cross-Cambridge-Kings Lynn) could form up to 50% of service to Chesterton. The existing GN timetable train-plan does not allow a stop at Chesterton on Kings Lynn services without a change to the train paths over the East Coast Main Line or by reinstatement of the double track between Littleport and Downham Market.

Chesterton Interchange is vitally important for delivering necessary performance enhancements to the railway network. The ability to extend trains currently terminating at Cambridge to Chesterton relieves the pressures on the limited platform capacity at Cambridge station. Currently, a train on layover between trips occupies one of the two through platforms for

Table 7.10 Appraisal Summary Table for Rapid Transit

Description: Guided bus way constructed on disused railway alignments. High quality park and ride, real time information, smart ticketing, quality bus partnership				NPV = £255m BCR = 4.84
<i>Objective</i>	<i>Sub-objective</i>	<i>Qualitative impacts</i>	<i>Quantitative measure</i>	<i>Assessment</i>
Accessibility	Option Values	Improved accessibility to new public transport mode for 29,700 people in corridor, high service frequency.		Beneficial
	Severance	Additional crossing of Great Ouse and new links between Longstanton and Oakington.		Beneficial
	Access to Transport System	Provides public transport access to new settlement and enhanced service to existing PT users.		Beneficial
Integration	Transport Interchange	Smart ticketing, link to rail station, Park & Ride provision, cycle lock up facilities.		Beneficial
	Land Use Policy	Would facilitate development of new settlement in accordance with draft structure plan but may impact on other policy objectives.		Slight adverse
	Other Government Policies	Scheme contributes to Welfare to Work, Healthier Lifestyles, Access to Education and Social Inclusion objectives.		Beneficial

Table 7.12 Scheme Cost Expenditure Profile (£000's out-turn prices)

2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
		100	18,000			

29 minutes out of each hour. Removing this ‘obstruction’ increases the number of ‘through trains’ that can be handled at Cambridge and removes the need for additional through platforms to deliver the desired performance enhancement.

Predicted Expenditure

The preliminary business case, based on the ideal train-plan, indicates a benefit-cost ratio of 9.6:1 and, as such, makes the station a commercial proposition in respect of all its running costs (including additional train-miles or even additional rolling stock brought about by service extension). It is expected that construction costs would be in the order of £18m for the station, bus interchange, car parking, overhead electrification, track and signalling works. Table 7.12 details the expected cost expenditure. There will be additional costs in respect of clearing contaminated land and the relocation of the existing freight operation to an alternative area within the site.

A Network Rail study costed the additional platform scheme at between £10m to £12m but without an identified funding source within the industry. This Network Rail scheme is still in the SRA’s Strategic Plan and the SRA have promised to switch their backing from extra platforms at Cambridge to the alternative of supporting Chesterton. A recent commitment from the SRA’s Chairman/Chief Executive indicated that this action would be followed up for the SRA’s 2004 Strategic Plan.

Scheme objectives

Chesterton Interchange station would deliver the following benefits for:

Along Corridors

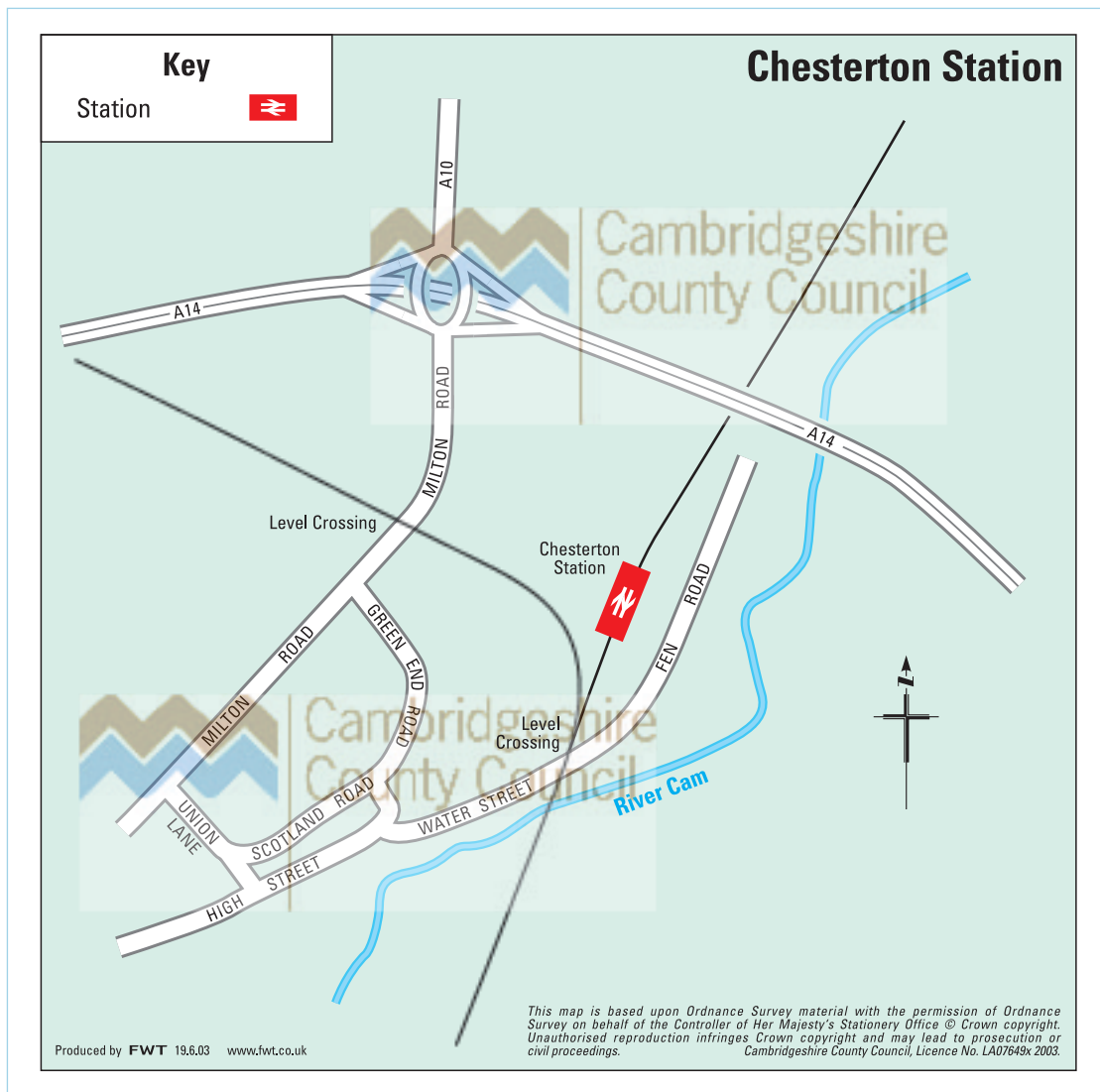
- A key interchange with RTS and therefore an integral part of the quality public transport proposed for Cambridge and surrounding area.

In Urban areas

- Abstracts car traffic from Cambridge City centre: almost 80% of car traffic to Cambridge station originates north/north west of the city and therefore crosses the central area. There are consequent improvements in congestion & air quality if this traffic were tapped to the north.
- Ability to deliver significant car parking away from the centre of Cambridge.
- Close to Science Park, Regional College and northern fringe developments.
- Interchange with northern Park & Ride site: The Cowley Road Park and Ride is located on a leased site less than 1km from the proposed station. There is an option to bring the facilities together to share parking spaces and to bring the benefits of connecting high quality, frequent bus services directly to the city centre.
- Affords direct European links to/from Science Park (via Eurostar at Kings Cross, Stansted Airport and, post Thameslink 2000, Gatwick Airport).

Rural areas

- Close to the proposed cycle way to Milton, and future route to Histon/Oakington.

Map 7.11 Chesterton Interchange

- Good access to nearby primary road network.

The station will help achieve LTP and government objectives as shown in Figure 7.13.

Scheme progress

A pre-feasibility study was jointly commissioned between the County Council and the SRA. This study indicated the best location for the station within the 55-acre site. The study assumed a train-plan of five trains per hour with a station comprising two through platforms on the main line with at least one bay platform to terminate up to two terminating trains per hour. Realisation of the train-plan is dependant on the outcome of timetable changes that might result from implementation of the Thameslink 2000 project and decisions on how to proceed with the GN franchise.

Network Rail are undertaking a further study to Level 2/3 for track and signalling, station design, more detailed passenger demand, operating costs and timetable delivery. The project will need to reach Level 5 prior to final commitment by Network Rail. The SRA are to commit the successful candidate for the Greater Anglia franchise to work with Network Rail to deliver these later stages of feasibility. The Greater Anglia (GA) Franchise Proposition states that there are "other projects" which the SRA is

unable to specify but the new franchisee will be "required to commit to co-operating with the SRA as necessary in development or complementing these schemes". Included under this heading is Chesterton interchange.

We are currently examining the possibility of funding the scheme as a PFF initiative and will report on this in future Annual Progress Reports.

Appraisal summary table

A formal bid for Chesterton will be submitted to government in 2004, this will include a completed appraisal summary table based upon a full analysis. Preliminary research suggests that the scheme will be positive as shown in Table 7.14.

M11 to Addenbrooke's Link Road

This road will link into and serve the development proposed at Cambridge Southern Fringe. The development is described in the Deposit Draft of the Cambridge City Local Plan (2003). It comprises housing and associated community facilities and additional hospital and associated medical facilities adjacent to Addenbrooke's Hospital. This road will not provide a through route to Long Road and Babraham Road.

Figure 7.13 Causal chain for Chesterton

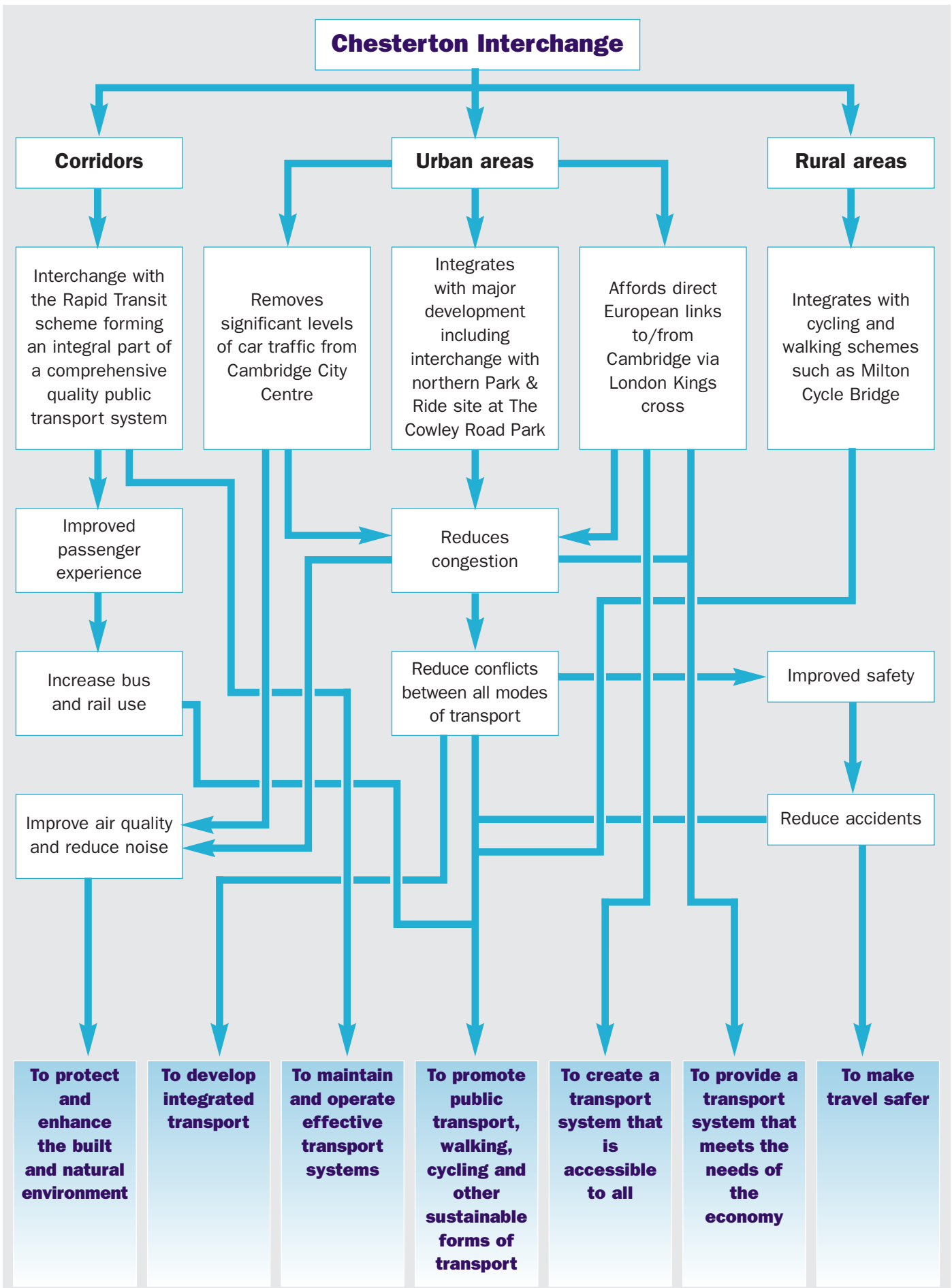


Table 7.14 Preliminary Appraisal Summary Table⁴

Objective	Overall Impact	Description
Environment	Positive	<ul style="list-style-type: none"> Reduced noise due to separation from existing residential/office development. Any contaminated land away from the railway formation will require removal. Appropriate measures to protect the site's proximity to the River Cam will be taken.
Safety	Positive	<ul style="list-style-type: none"> Secure Station accreditation will be sought. Reduced traffic flow in city centre by diversion of trips, should reduce accidents overall.
Economy	Positive	<ul style="list-style-type: none"> Improved reliability leading to less congested access (close to primary road network) than cross-city alternative. Sustainable transport access to Science Park and new development. Direct access from these areas to Europe via Channel Tunnel Rail Link (St Pancras), Stansted and Gatwick Airports.
Accessibility	Positive	<ul style="list-style-type: none"> The station would fully conform to DDA standards. Close to A14, cycleway to Milton, northern Park & Ride site and RTS/cycle route towards Impington/new settlement.
Integration	Positive	<ul style="list-style-type: none"> The station would be an interchange for car, bus and cycle passengers – both for those starting their train journey at Chesterton and for those travelling to other parts of the County.

A605 King's Dyke Level Crossing

The construction of a bridge over the railway at King's Dyke is designed to replace the existing level crossing. The A605 to the west of Whittlesey currently carries about 8000 vehicles per day. Traffic is currently stopped at the King's Dyke level crossing for an average of 15 minutes in every hour, causing significant delays.

The improvement of the A605 between Peterborough and Whittlesey has been a longstanding objective of the County Council. The need for the improvements is based on the high accident rate on the A605 and severe congestion at King's Dyke level crossing. There is also an identified need for new housing within Whittlesey, but any additional development is dependent upon improvements to the A605.

The overall scheme has been broken down into four phases for implementation. The replacement of King's Dyke level crossing with a bridge is the first phase of the development. One other phase is within Cambridgeshire (Horsey Toll to Funthams Lane improvement), whilst the remaining schemes lie within Peterborough (Horsey Toll junction improvement and Stanground Bypass).

In addition, Policy SP7/19A identifies the A605 Peterborough to Whittlesey improvements as a priority for investment. The scheme is also identified in Policy P8/10 of the emerging Cambridgeshire and Peterborough Joint Structure Plan Review Deposit Draft.

The scheme involves the construction of a 7 metre high bridge to take traffic over the Peterborough to Ely railway line, and the removal of the current level crossing. The road construction will consist of a 7.3 metre wide all-purpose single carriageway 1km in length. Funtham's Lane priority junction, at the western end of the scheme, will be converted to a four-arm roundabout. The A605 will be re-aligned to cross the railway to the north of the existing level crossing. The existing A605 will remain open to serve the industrial premises to the south of the road and west of the railway, which will be accessed from the roundabout. East of the railway, the road will also be realigned to the south, taking it away from the residential properties on Peterborough road, which currently have direct access onto the A605. A priority junction will be provided to access these properties. Map 7.15 shows the indicative alignment of this scheme.

Expenditure profile

The estimated out-turn cost for this scheme is £8.2 million as shown in Table 7.16. These costs are based on 2003 prices.

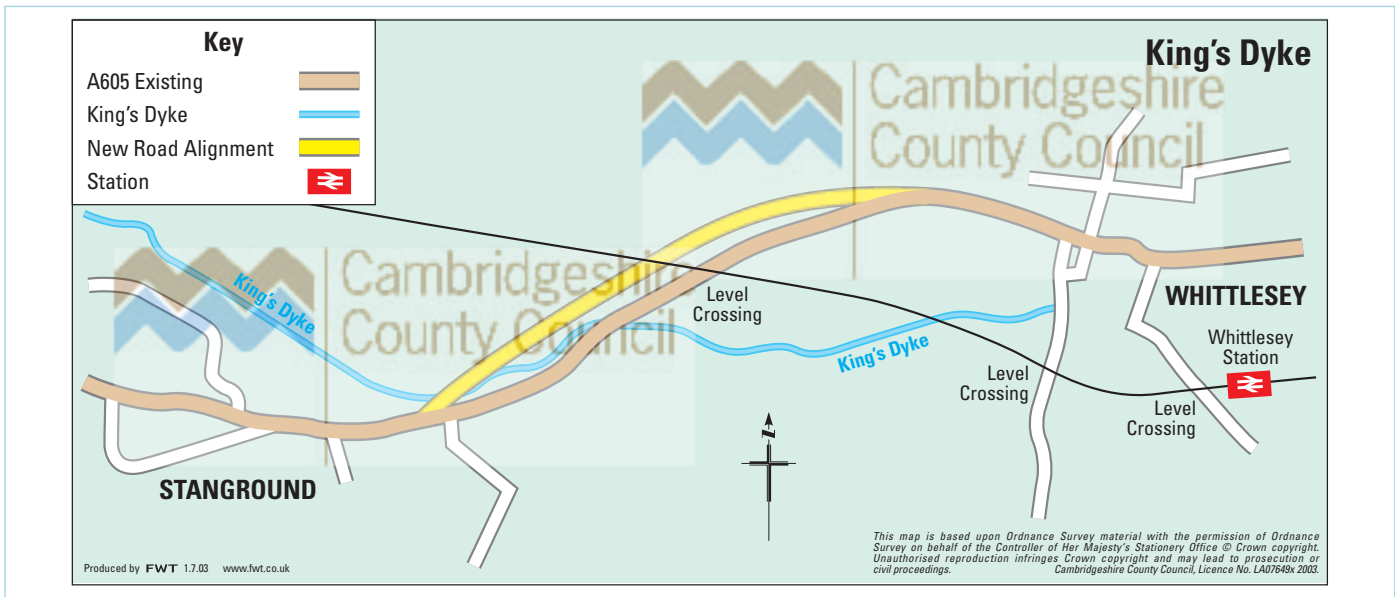
Objectives of the scheme

The scheme is compatible with LTP objectives, as shown in Figure 7.17. It is also consistent with the LTP strategy areas as follows:



Train near Addenbrooke's Hospital

Map 7.15 King's Dyke enhancements



Along corridors

The scheme will:

- reduce journey times on the A605.
- enhance the provision of a rail services.

In urban areas

The scheme will:

- improve access to industrial premises on Funtham's Lane.
- cater for increased housing provision within Whittlesey.

Update on scheme progress

An engineering feasibility study and COBA analysis were undertaken several years ago. This indicated that the scheme would yield a positive net present value between £3 million and £5 million.

Appraisal Summary Table

A full updated appraisal of the improvements at King's Dyke will be carried out as part of the formal bid to government and reported on in an Annual Progress Report on this LTP. A Preliminary assessment of the scheme has been carried out and is shown in Table 7.18.

Eastern Rapid Transit

Background

The need for a Rapid Transit system to the east of Cambridge arises from Structure Plan proposals to develop land at the existing airport. The increase in population that would result from this development will require attractive forms of public transport if the development is to be sustainable. A number of studies carried out in preparing the Structure Plan have

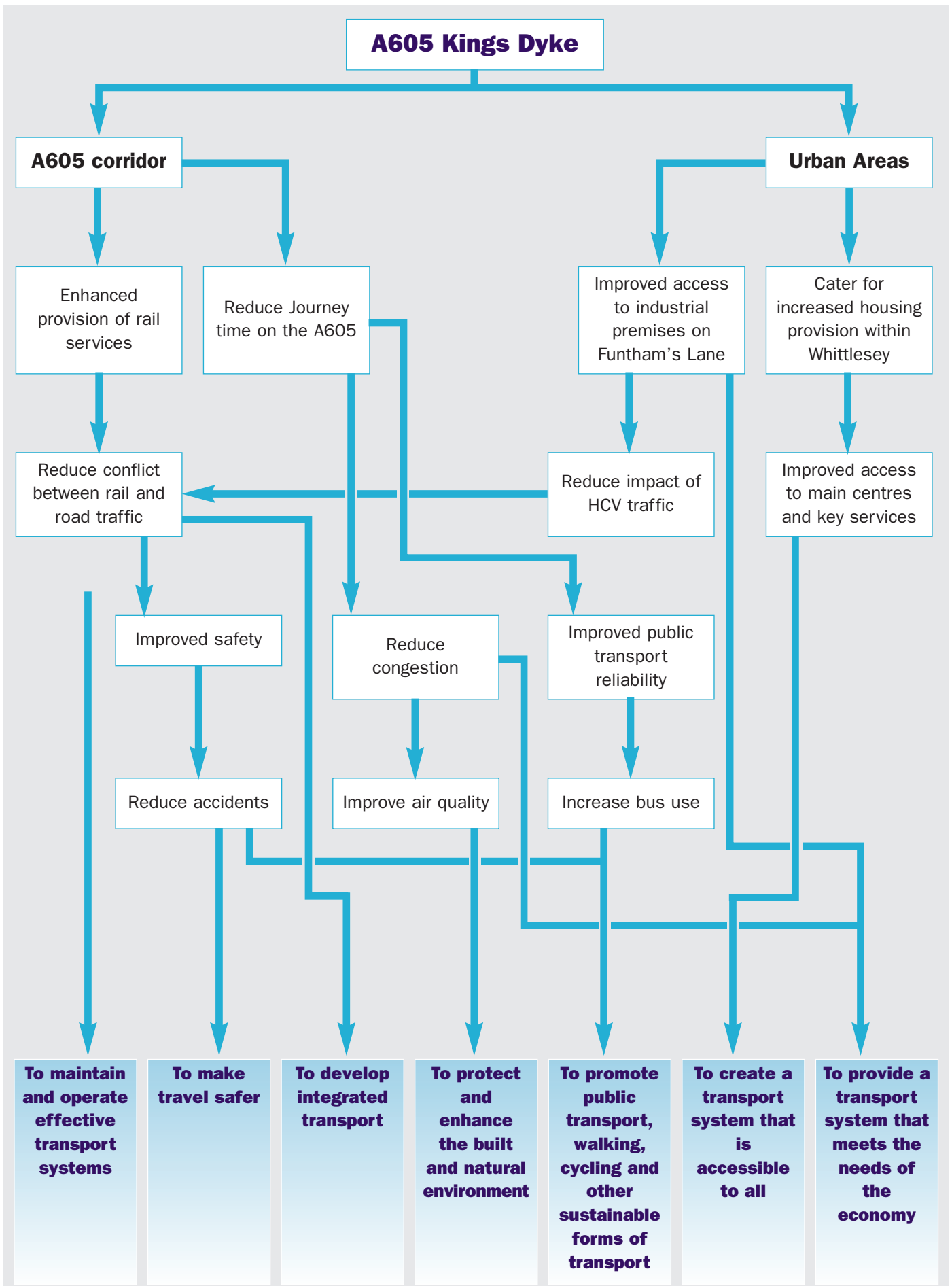
Table 7.16 Expected expenditure on King's Dyke improvements (£000's)

08/09	09/10	10/11
200	4,000	4,000

Table 7.18 Preliminary Assessment of the King's Dyke Improvements

Objective	Overall Impact	Description
Environment	Negative	<ul style="list-style-type: none"> • Impact on properties closest to the bridge in terms of visual intrusion. • Benefit to air quality due to reduction of traffic queues.
Safety	Neutral	<ul style="list-style-type: none"> • Scheme will have no impact on safety, although removing direct access onto the A605 for properties on Peterborough Road will remove the risk of accidents.
Economy	Positive	<ul style="list-style-type: none"> • Reduced journey times on the A605.
Accessibility	Positive	<ul style="list-style-type: none"> • Improved access to industrial premises on Funtham's Lane.
Integration	Positive	<ul style="list-style-type: none"> • Scheme will help to enhance rail services.

Figure 7.17 Causal chain for King’s Dyke enhancements



concluded that the best form of such transport would be a bus-based Rapid Transit System.

Transport appraisal

Three levels of transport testing were undertaken with regard to this new development. These were:

- full public transport access, cycling and walking
- a limited road solution focused on access, and
- an additional orbital road (either as a single or dual carriageway).

The appraisal has been based on traffic generation and modal split levels determined from surveys of person trip generation by mode from recently constructed housing estates in and around Cambridge. On this basis, the assumed traffic forecasts from the eastern expansion allow for 2,900 two way vehicle am trips and 2,400 two-way vehicle pm trips by 2021. This traffic needs to be accommodated on the highway network.

The parts of the airport proposed for development are close to the Cambridge built up area. This means that they can be well served by sustainable modes of transport, such as walking, cycling and public transport.

System proposed and wider links

The proposed scheme is for a Rapid Transit network comprising a series of three new bus priority/guided bus routes. These will be a mixture of on street running with priorities and off road/on guideway operation. Stops would be at key locations, and will connect development to the City Centre, Cambridge Station, and the proposed Chesterton Station. The operating system on the guideways would be fully compatible with Rapid Transit, discussed above.

Estimated costs of the scheme

The main housing elements of the Airport site are likely to be constructed from 2010 onwards. This means that if the ideals of sustainable transport are to be achieved, the Rapid Transit (and cycling) scheme need to be in place by 2010. Allowing for full design and TWA procedures preliminary works need to begin in 2004/5. Much further detail on master planning of the airport site is a prerequisite and will be needed before routing through the site can be planned, but route planning elsewhere can begin before that time.

Full details of the scheme included accurate costings will be submitted as part of the bid during the lifetime of this LTP. It is estimated that the scheme would cost £17.5 million at 2003 prices, but this figure will be refined as further work on the scheme is completed. An indicative expenditure profile for the scheme is shown at Table 7.19.

Modelling and evaluation

Using the County Council's land use transport model extensive multi-modal forecasts were made of travel demand for 2016, 2021, 2026 and 2031. This showed that traffic could be accommodated without major orbital routes and in overall demand terms, the rapid transit would be viable. Preliminary results of the impact of the scheme are given in Table 7.20.

The impact of the project on social inclusion is likely to be strongly positive, because it will provide affordable public transport to key areas within the City, particularly to shopping and employment.

The scheme is consistent with LTP and national objectives, as shown in Figure 7.21.

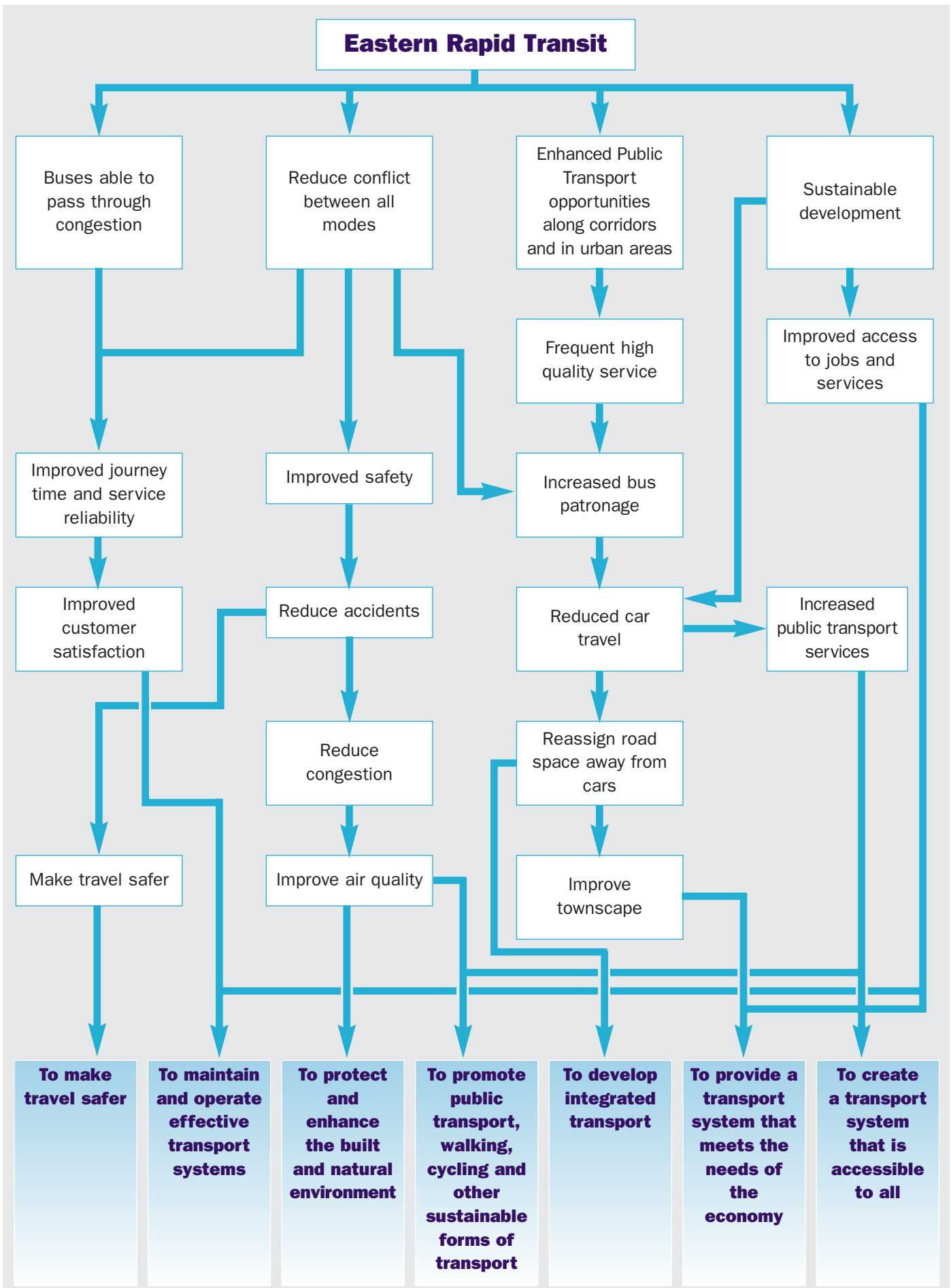
Table 7.19 Indicative expenditure profile for Eastern Rapid Transit (£000's)

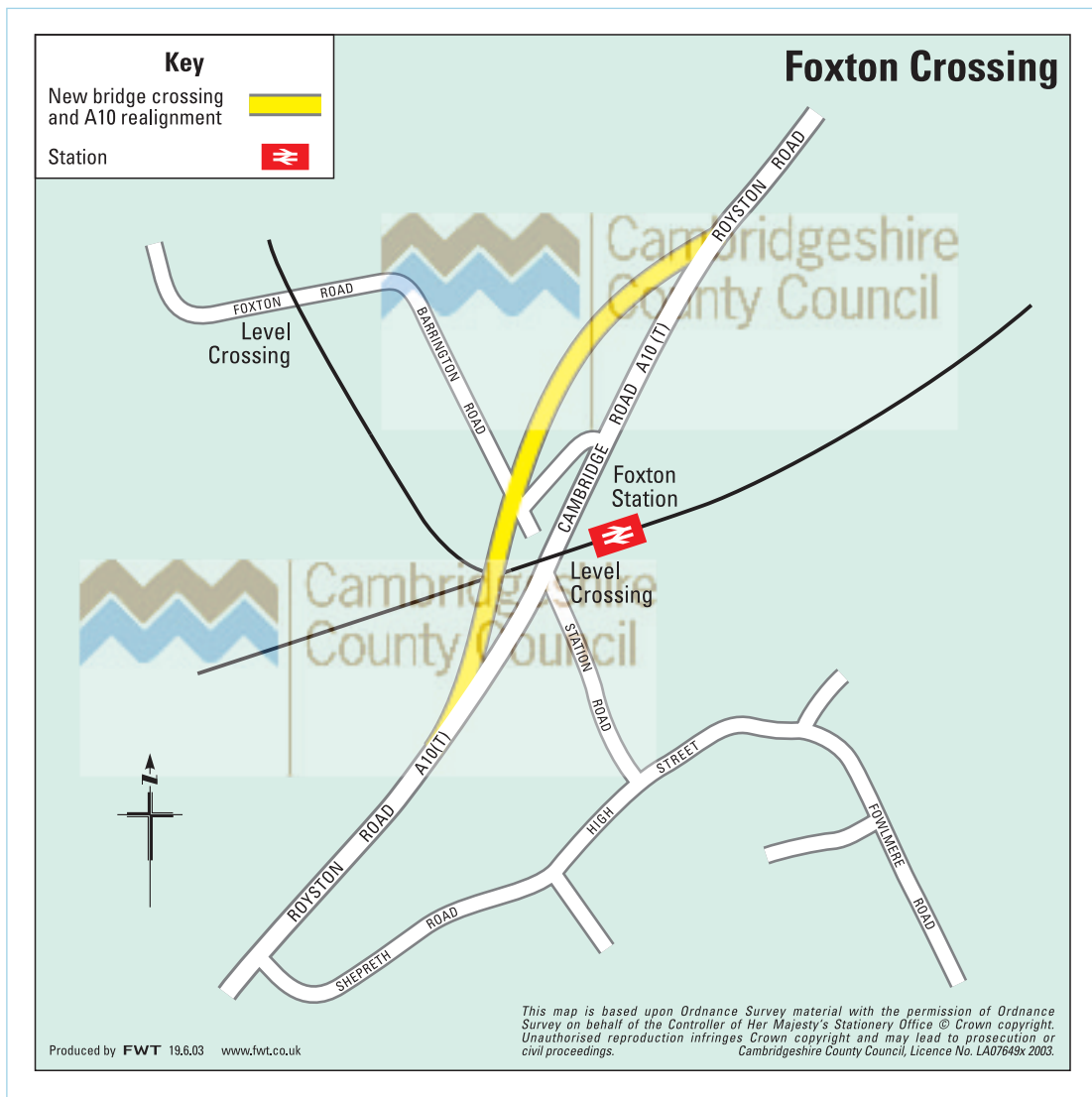
2008/09	2009/10	2010/11	Post 2011
6,000	8,000	2,500	1,000

Table 7.20 Preliminary summary of the impacts of Eastern Rapid Transit

Objective	Overall Impact	Description
Environment	Positive	<ul style="list-style-type: none"> • To improve environment of City through use of HQPT • To provide PT which is more environmentally friendly than the car
Safety	Slightly Positive	<ul style="list-style-type: none"> • To reduce volumes of traffic and provide segregated mode • To improve traveller security, because of supervision and monitoring of the service, particularly through CCTV
Economy	Positive	<ul style="list-style-type: none"> • To improve journey reliability • To provide high quality PT for commuters to local employment and also for links to the rail network • To provide wide ranging economic stimulus within Cambridge
Accessibility	Positive	<ul style="list-style-type: none"> • To improve access to jobs and services by means other than the car • To link to the wider regional transport network
Integration	Positive	<ul style="list-style-type: none"> • To increase travel choices and interchange link with other HQPT and transport services within City • To facilitate integrated local land use and transport.

Figure 7.21 Causal chain for the proposed Eastern Rapid Transit scheme



Map 7.22 Foxton Crossing

A10 Foxton level crossing

The scheme involves the provision of a bridge over the Cambridge to Royston railway line. See Map 7.22 for the indicative alignment of this scheme.

The A10 through Foxton currently carries about 14,500 vehicles per day. At present, traffic is stopped some 76 times in a 12-hour period for an average of 2 minutes 20 seconds. While the barriers are closed, traffic from within the village is blocked from exiting onto the A10. After construction, the barriers will be permanently closed, although it will be necessary to maintain a footway level crossing for access to both station platforms. The scheme will enable the provision of enhanced facilities at the station, including improved cycle and car parking.

The existing A10 will be realigned to the west, with the new bridge constructed approximately 100 metres from the existing level crossing. The new road construction will be 7.3 metres wide and approximately 1km in length. New junctions will be provided off the realigned section of road. A new junction will serve the village and access to the south side of the junction. It will be necessary to provide two new junctions north of the railway in order to access properties and the station.

Policy P8/10 of the emerging Cambridgeshire and Peterborough Joint Structure Plan Review Deposit Draft identifies the provision

of the replacement of the Foxton level crossing with a bridge as a priority for investment.

Scheme objectives

The principal objectives of this improvement are as follows.

Along Corridors

- To reduce journey times on the A10, particularly for goods vehicles.

In Rural areas

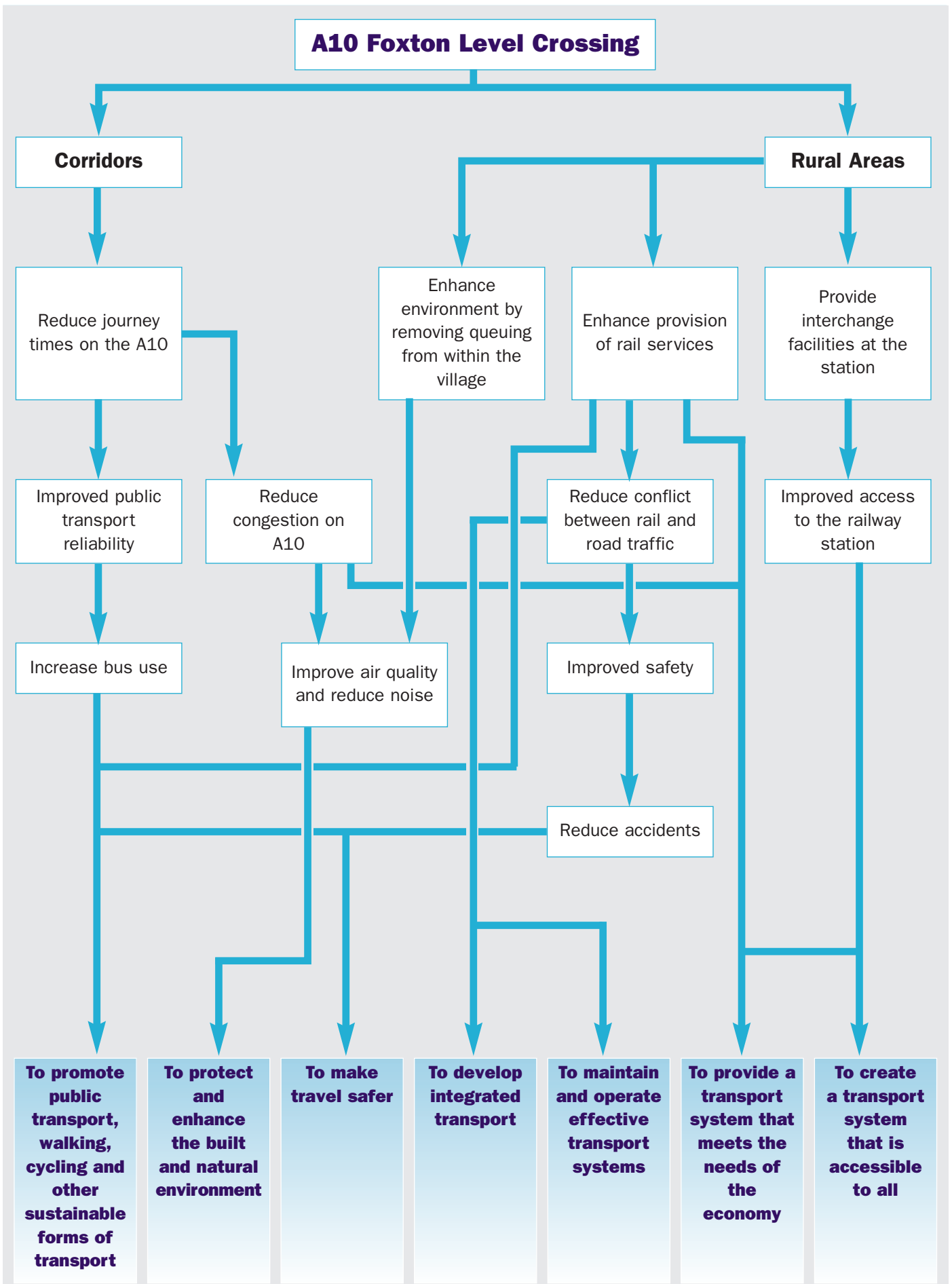
- To enhance the environment in Foxton by removing queuing from within the village.
- To increase interchange facilities at Foxton station.
- Enhance the provision of rail services.

Figure 7.23 shows how the scheme meets LTP and government objectives.

Predicted Expenditure

The estimated out-turn cost for this scheme is £6.5 million as shown in Table 7.24. These costs are based on 2003 prices.

Figure 7.23 Causal chain for Foxton level crossing



Update of progress during 2002/03

Additional preliminary design of the bridge was undertaken in order to facilitate further discussion with Railtrack and landowners.

Work commenced on the preparation of an environmental impact appraisal.

Programme for 2003/04

Work to be undertaken in the current year includes a detailed COBA analysis, environmental assessment and further design work. Table 7.25 shows the Appraisal Summary Table for Foxton Level Crossing.

A142 Ely southern Link Road

The bypass to the south of Ely is designed to reduce congestion on Angel Drove and Station Road. The A142 currently passes under the Ely to Kings Lynn railway line via a low bridge (2.74m high), with HGV traffic having to use a level crossing to the east of the under bridge.

The implementation of better intra regional train services for the East of England and an increase in freight movements through the Felixstowe-Nuneaton corridor has meant that the level crossing is increasingly closed to road traffic and is causing difficulties in terms of congestion. At peak times, and increasingly during off-peak periods, HCV traffic form queues that back onto the main carriageway, blocking access to the under bridge for smaller vehicles. This occasionally results in gridlock when queues block the Station Road roundabout.

In addition, the railway under bridge currently has the third highest vehicle strike rate in the country. Collisions with the bridge result in disruption to the railway, as well as to other traffic, as it is necessary to inspect the bridge after each reported strike.

The bypass will be a 7.3 metre wide single-carriageway, some 1.6km in length. The route will commence from a new roundabout on Angel Drove, 380 metres east of the A10/A142 roundabout, and will run in a south-easterly direction, avoiding permitted development land to the west of the Cambridgeshire Business Park. The bypass crosses the railway just south of where the lines diverge. A bridge 100 metres in length is required in

order to cross the three railway tracks on the Cambridge to Ely line and the two tracks that head from Ely to Bury St. Edmunds. The bypass then turns to head easterly, crossing the River Great Ouse at an angle of 23° on a bridge 130 metres in length. The scheme then terminates at a new roundabout on the A142, approximately 300 metres south of the Queen Adelaide Way junction. The route is shown in Map 7.26.

Expenditure profile

The estimated out-turn cost for the Ely Southern Link Road is £15 million. These costs are based on 2003 prices with 40% added for contingency. The total out-turn cost of £15 million is presented at 1997 prices and has no provision for inflation. It is subject to a confidence interval of ten per cent. Table 7.27 shows the costs of the scheme by the year.

Scheme objectives

The Ely Southern Bypass would deliver the following objectives.

Corridors

The scheme will:

- reduce journey times on the A142, particularly for HCV traffic travelling between the A10 and A14 corridors.

In Urban areas

The scheme will:

- reduce noise and improve air quality in the Station Road area of Ely
- reduce congestion in the vicinity of the railway station
- reduce the risk of vehicles striking the railway under bridge, and
- improve accessibility to the rail station for all modes of transport
- reduce accidents.

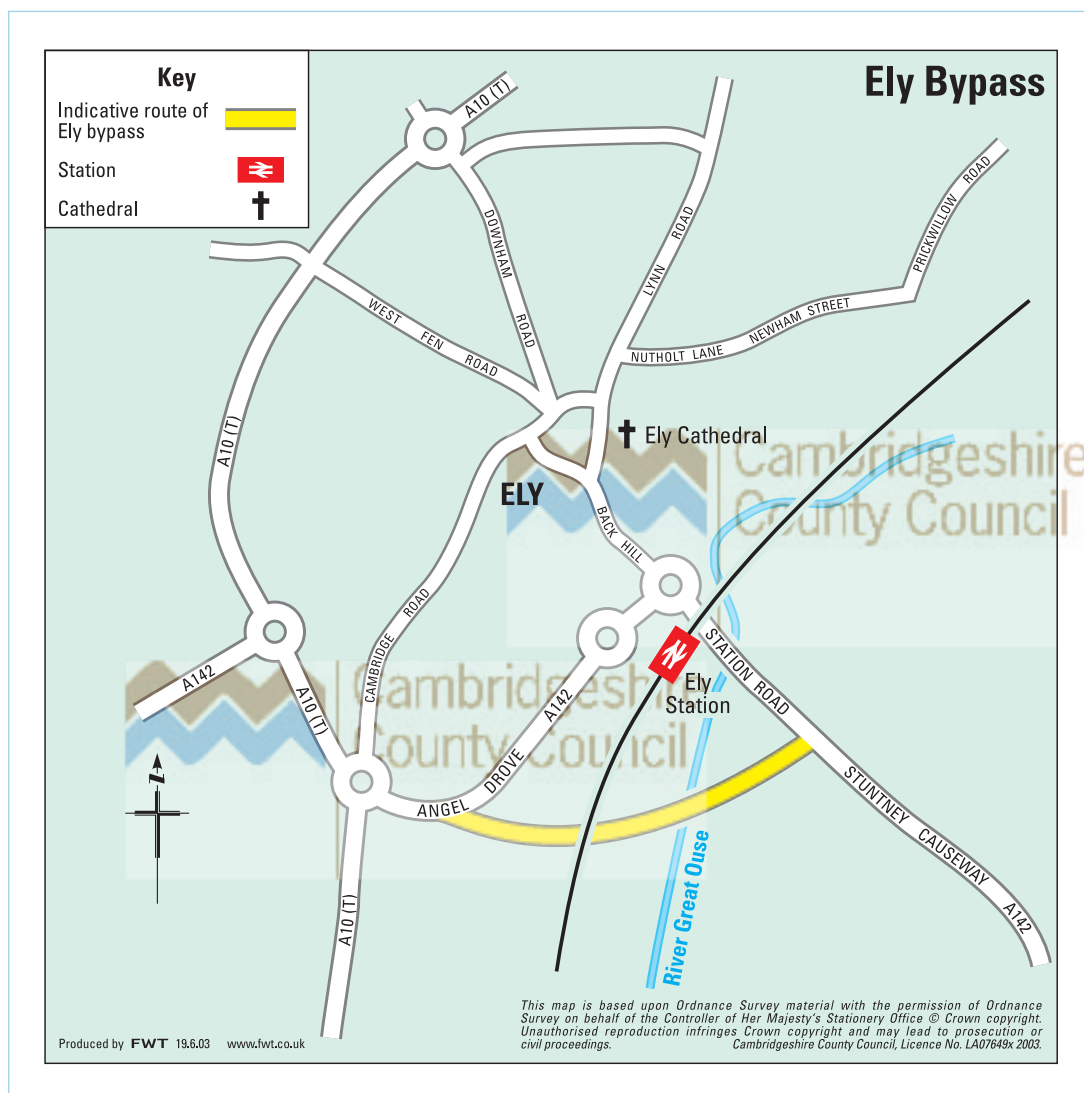
The scheme is entirely consistent with government and LTP objectives, as shown in Figure 7.28. An appraisal summary table for this scheme can be seen in Table 7.29.

Table 7.24 Scheme cost expenditure (£000's)

2008/09	2009/10	2010/11	
500	3,500	2,500	

Table 7.25 Appraisal summary table for Foxton Level Crossing

Objective	Overall Impact	Description
Environment	Negative	<ul style="list-style-type: none"> • Substantial impact on properties closest to the bridge from increased noise and visual intrusion. • Benefit to air quality due to reduction of traffic queues.
Safety	Neutral	<ul style="list-style-type: none"> • Scheme will have no impact on safety.
Economy	Positive	<ul style="list-style-type: none"> • Reduced journey times on the A10.
Accessibility	Positive	<ul style="list-style-type: none"> • Improved access to the railway station.
Integration	Positive	<ul style="list-style-type: none"> • Scheme will help to enhance rail services. • Potential to increase interchange facilities at the railway station.

Map 7.26 Ely Southern Link Road

Update On Scheme Progress

A preliminary environmental framework assessment was undertaken on a total of 20 schemes. This included options for tunnelling under the railway and river, modifications to the existing rail under bridge to accommodate HCV's, and traffic management solutions such as signal controlled HCV queuing lanes away from the level crossing. Many options were disregarded, either on environmental grounds, or due to engineering feasibility. Other options were abandoned because it was evident that the high cost would make the scheme unviable. Five bypass schemes were taken forward for further consideration.

Two of the bypass options have since been abandoned as they were considerably longer than the current proposed scheme and only offered marginally increased benefits in terms of journey time savings for a much higher construction cost. Two other options were shorter than the proposed scheme, but these were

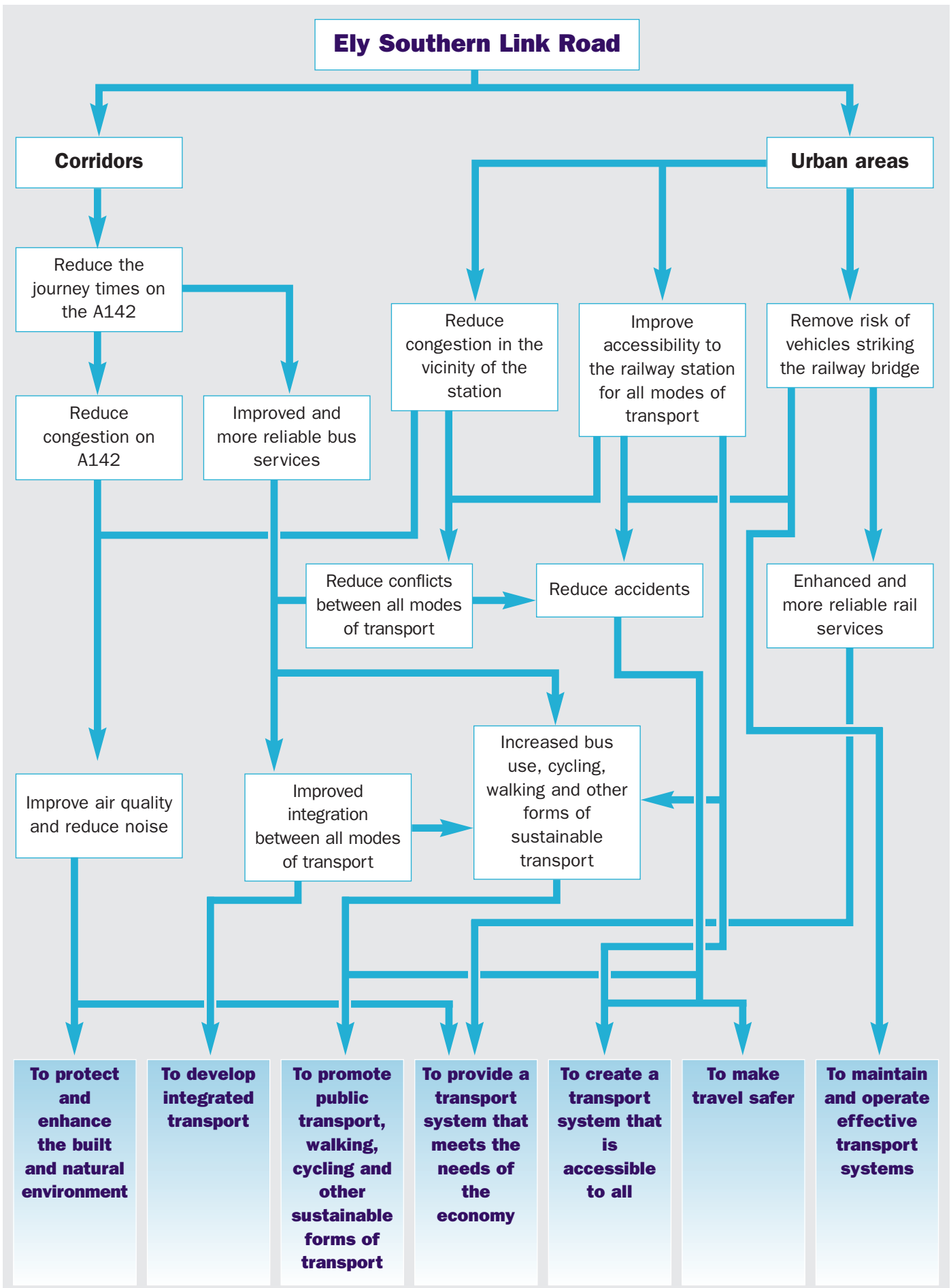
primarily abandoned on environmental grounds. The shortest option crossed committed development land and the Kings School playing fields to terminate at a new roundabout between the railway under bridge and the existing A142 River Ouse Bridge. Although this scheme avoided the need for a new river crossing, it was decided that it would be controversial to propose use of the school playing fields for a road scheme and prohibitively expensive to purchase the permitted development land. The remaining option was only fractionally shorter than the preferred route, but it crossed the River Ouse at a much greater skew and tied into the A142 in the vicinity of a gas compound and would have involved costly diversionary work.

We are currently in the process of working up to a more detailed assessment of the preferred scheme. Our Consultant has validated a SATURN model in order to assess the traffic impacts in greater detail, including the effects of the additional traffic from outstanding permitted developments. A detailed COBA assessment will be carried out in the forthcoming months.

Table 7.27 Cost profile for the Ely Southern Link Road (£000's)

2009/10	2010/11	
7,500	7,500	

Figure 7.28 Causal chain for Ely Southern Link Road





Level crossing at Ely

Appraisal summary table

Table 7.29 Preliminary AST for Ely Southern Link

Objective	Overall Impact	Description
Environment	Negative	<ul style="list-style-type: none"> Noise and pollution reduced in Station Road area. Additional river crossing, including construction on flood plain, and construction over open fields will have a detrimental impact on ecology. Two new bridges will result in some visual intrusion.
Safety	Neutral	<ul style="list-style-type: none"> Conflict between vehicles and pedestrians and cyclists reduced in vicinity of railway station. Risk of railway under bridge strikes reduced. Increased likelihood of road traffic accidents due to additional junctions and length of new road.
Economy	Positive	<ul style="list-style-type: none"> Improved journey time reliability for local trips and for commuter and business travel.
Accessibility	Positive	<ul style="list-style-type: none"> Improved accessibility to Ely railway station, particularly for pedestrians, cyclists and buses.
Integration	Positive	<ul style="list-style-type: none"> Reduction of traffic in vicinity of Station Road will help to encourage walking and cycling to the railway station in partnership with other initiatives promoted through the Ely Transport Strategy. Improved integration between bus and rail.



A142 in Ely

The preferred scheme will be presented at a public consultation later in the year. This will aim to gauge public reaction to the proposed scheme as well as explaining the processes that have taken place in order to reach the chosen route.

An environmental assessment will be commissioned in preparation for submission with a planning application.

Cherry Hinton Access Road

The need for a new road to access connecting Newmarket Road with Cherry Hinton is likely to emerge as a result of development and it is anticipated that funding for the road will be met through developers. The road is contained within Structure Plan polices. This improvement comes at the very end of the LTP period, and at this stage it is not possible to give much information. Progress on the scheme will be reported on through the Annual Progress Report as the scheme is developed.

Conclusions

This chapter has shown how the major schemes proposed within this plan contribute towards LTP objectives and form a vital part of the LTP strategy. In particular, the Rapid Transit schemes and the interchange at Chesterton Station have a vital role to play in promoting public transport, sustainability and accessibility.

Many of these schemes will require further work, which will be reported on in the Annual Progress Reports.

¹ Where a number of bus priority measures discussed in Chapter 6 will ensure consistent bus journey times.

² The Official Journal of the European Union is a recognised publication. All works costing above £3.861 million carried out by public bodies must be tendered at a European level through this journal.

³ A PFI is a Private Finance Initiative. The funding comes from the private sector and is guaranteed by government.

⁴ Subject to change following a formal appraisal.

