

Appendix A

NATA Assessment Checklist

NATA Assessment Checklist

Category	Supplied	Reference
Clear project description	[Y]	Chapter 2
Evidence that a number of realistic alternative options have been seriously considered	[Y]	Chapter 9
Breakdown of the cost estimate	[Y]	Chapter 2 Appendix C
Costs are in expected values (or include an allowance for risk)	[Y]	Chapters 2 & 8 Appendix C
Cost profile of the anticipated out-turn costs	[Y]	Appendix I
Environmental impacts have been included in the appraisal	[Y]	Chapters 5 & 6 Appendix J
The following Statutory Bodies have been consulted: (And their responses included)	[Y]	
English Nature	[Y]	Appendix H Chapter 7
The Environment Agency	[Y]	To follow
English Heritage	[Y]	Appendix H Chapter 7
The Countryside Agency	[Y]	Appendix H Chapter 7
Safety impacts have been included (and monetised if possible) and the assumed accident rates presented	[Y]	Chapter 5
Accessibility impacts have been included in the appraisal	[Y]	Chapter 5
Integration impacts have been included in the appraisal	[Y]	Chapter 5
A comprehensive Appraisal Summary Table is provided along with the underlying worksheets (and an electronic copy of the AST and worksheets submitted)	[Y]	Chapter 5
A clear explanation of the underlying assumptions used in the Cost Benefit Analysis has been provided	[Y]	Appendix I
Existing traffic flow information supplied	[Y]	Figure 6
A spreadsheet showing how the TEE table was derived and / or TUBA inputs / outputs is included	[N]	COBA used
Optimistic and Pessimistic scenarios have been supplied	[N]	High & Low scenarios tested
Appropriate sensitivity testing has been carried out (as outlined in the Appraisal Guidance)	[N]	N/A
A Risk Register has been provided	[Y]	Appendix C
A full assessment of risk has been undertaken	[N]	See Chapter 8
A fully worked up credible lower cost alternative has been supplied:	[Y]	
With a comprehensive AST, TEE tables, and AMCB table	[Y]	Chapter 9 Appendix B
With scenario and sensitivity testing	[Y]	ditto
With supporting analyses	[Y]	ditto
Plans for Monitoring and Evaluation have been outlined / considered	[Y]	Chapter 10
The following supporting analyses have been completed:	[Y]	
Distribution and Equity	[Y]	Chapter 7
Affordability and Financial Sustainability	[Y]	Chapter 7
Practicality and Public Acceptability	[Y]	Chapter 7
(Evidence of public consultation supplied)	[Y]	Appendix E

Appendix B

Assessment of the Lower Cost Alternative against Central Government Objectives

Assessment of the Lower Cost Alternative against Central Government Objectives

This Appendix contains the Appraisal Summary Table (AST), impacts and assessments for the Lower Cost Alternative (LCA) of the Western Relief Road and related measures. There is a section for each of the five Government Objectives of the Environment, Safety, Economy, Accessibility and Integration. Within these sections, each of the sub objectives is assessed.

B.1 Environment

A summary of the assessment of the LCA against each of the Environmental sub-objectives is given below. The worksheets can be found at the end of this appendix.

B 1.1 Noise

Summary Assessment Score: Slight Beneficial (+1)

Qualitative Comments:

This Option would have an overall beneficial impact, reducing annoyance resulting from road noise nuisance. However it should be noted that the construction and operation of a major new route to the west of Sudbury will introduce significant noise disturbance into a presently tranquil area of countryside.

Locations affected but not included in the assessment are the recreational areas of Kings Marsh, Valley Walk, Football Ground and Playing Fields, FP 35 and Bridleway 37.

Reference source(s):

Traffic Data Sources: Mouchel Traffic Model

Population Data Sources: Estimated from National Figures – No of dwellings multiplied by 2.4

B.1.2 Local Air Quality

Summary Assessment Score: Moderate beneficial (+2)

Qualitative comments:

This Option leads to increases of greater than 4 mg/m³ along the new route. However, this impact is balanced by improved air quality in Sudbury town centre, where existing exposure is far greater. The overall impact is moderately beneficial.

Reference source(s):

B.1.3 Greenhouse gases

Summary Assessment Score: Minor beneficial (+1)

Qualitative comments:

This Option leads to lower CO₂ emissions due to a decrease in vehicle kilometres travelled. Overall, a minor beneficial impact is predicted.

Reference source(s):

B.1.4 Landscape

Summary Assessment Score: Large Adverse (-3)

Qualitative comments: (see worksheets)

Reference source(s):

Sudbury TAP and Major Scheme Programme, Environmental Constraints and Opportunities, Draft Report to Environmental Panel of Steering Group, August 2002

B.1.5 Townscape

Summary Assessment Score: Slight Adverse (-1)

Qualitative comments: (also see worksheets)

There will be slight beneficial effects to Ballingdon Core (5A1), Medieval and Ecclesiastical Core (5B). Meanwhile slight adverse impacts to Victorian and Edwardian Town Centre (5C), C20th development north, and the Industrial and Commercial Fringe (5G)

Reference source(s):

Sudbury TAP and Major Scheme Programme, Environmental Constraints and Opportunities, Draft Report to Environmental Panel of Steering Group, August 2002

B.1.6 Heritage of Historic Resources

Summary Assessment Score: Moderate/Large Adverse (-2.5)

Qualitative comments:

- Archaeological fieldwork required in order to mitigate against impact upon archaeological resource.
- Moderate / large benefit to heritage resource within historic town centre.
- Slight adverse impact upon the landscape setting of WWII defences, and a
- Moderate adverse impact upon the landscape setting of the dismantled railway,
- Moderate / Large adverse impact upon the historic townscape to the south of Ballingdon Street.

Reference source(s):

- Sites & Monuments Record – Essex County Council & Suffolk County Council
- Listed Buildings – Babergh District Council
- Research & Archaeology: A Framework for the Eastern Counties, Vol.1, 1997
- Research & Archaeology: A Framework for the Eastern Counties, Vol.2, 2000

B.1.7 Environment: Bio-diversity

Summary Assessment Score: Very Serious Adverse**1 (-5)

Qualitative comments:

- There will be a Very Serious Adverse impact upon Biodiversity features (Belchamp Brook CWS and Coastal and Floodplain Grazing Marsh BAP habitat) as a result of the implementation of this option.
- There will be a Serious Adverse impact upon Biodiversity features (Ancient and Species Rich Hedgerows BAP habitat, Otter, Daubenton's bat, Pipistrelle bat) as a result of the implementation of this option.

Reference source(s):

- *Sudbury TAP and Major Scheme Programme Environmental Constraints and Opportunities*. Report to Environmental Panel of Steering Group. Final Draft (November 2002). The Landscape Partnership (eds.) working as part of Suffolk Transport and Environment Partnership

¹ * denotes impact upon 1 Biodiversity feature

** denotes impact upon 2 Biodiversity features

B.1.7 Water Environment

Summary assessment score: Moderate to Large adverse impact (-2.5)

Qualitative comments:

The following potential impacts were identified:

- There could be an increase in flood risk due to the large increase in hardstanding and/or due to the new bridge over the floodplain. A PPG25 Flood Risk Assessment is likely to be required at a later stage in order to determine the increase in flood risk more accurately. Appropriate mitigation should keep flood risk to a minimum. Mitigation for the bridge is proposed in the A131 Sudbury Western Bypass; River and Bridge Impact Hydraulic Study. The use of sufficient sustainable drainage should reduce the impact of the increase in hardstanding.
- The water quality of the River Stour and the Belchamp Brook, but also the smaller watercourses near the proposed route, could be adversely affected via the road drainage. Silts, heavy metals, PAH's and oils can be discharged into watercourses via the drainage outlets. In addition there could be pollution as a result of road accidents. A full DMRB assessment is required to assess the impact of road drainage and road accidents in more detail. There is also a high risk of pollution of watercourses during construction works. Spills of wet concrete and cement and chemicals like oil, paints and waterproofing can have a major temporary effect on the river quality and result in fish kills. The DMRB methodology does not cover construction pollution, the Environment Agency provides guidelines: Pollution Prevention Guidelines.
- There is a significant direct floodplain habitat loss as a result of the footprint of this route. There could also be some loss of biodiversity as a result of pollution of watercourses, especially during the construction works. See the Biodiversity Section for more details.
- The road and bridge will adversely affect the landscape character of the floodplain. See the Landscape Section for more details.
- The recreation on the river and along the Valley walk will be adversely affected by the new road and bridge.

Reference Sources:

- A131 Sudbury Western Bypass; River and Bridge Impact Hydraulic Study, 31 January 1997, Suffolk Highways Engineering Consultancy
- Drawing No 3325/Annex E/03, Western Bypass Annex E, Mouchel
- Appendix 2 - Hydrology and Water quality baseline
- River Stour Navigation Feasibility Study, December 2001, River Stour Navigation Partnership
- Appendix 7 – Draft Landscape Character Assessment

B.1.8 Physical Fitness

Summary Assessment Score: Slight Beneficial

Qualitative Comments:

- The sustainable transport measures that form part of the scheme include improvements to encourage walking and cycling. The measures are likely to include: development of cycleway and footway networks; ensuring the networks are well signed; providing appropriate facilities at key destinations; and ensuring the network is maintained to a good standard. (see paragraph 2.6 of this report)
- The Western Relief Road has the potential to reduce the current 18hr traffic levels of 44,800 vehicles (two-way) across the Key Traffic Reduction Area (KTRA) cordon of Sudbury to between 8,800 & 9,400. This 80% reduction of traffic in the KTRA will provide the opportunity to enhance cycling and walking facilities.

Reference Sources: LTAP Chapter 7

B.1.9 Journey Ambience

Journey quality on trunk and local road networks can be affected by the following three journey ambience factors: traveller care; traveller's views; and traveller stress. The table shows the assessment of these factors for the Western Relief Road.

Worksheet for Environment: Journey Ambience

Factor	Sub-factor	Better	Neutral	Worse
Traveller Care	Cleanliness		✓	
	Facilities		✓	
	Information		✓	
	Environment		✓	
Travellers Views	-		✓	
Travellers Stress	Frustration	✓		
	Fear of potential accidents	✓		
	Route uncertainty	✓		

Reference Source(s): LTAP

Qualitative comments:

Traveller stress will be improved/reduced with the provision of the Western Relief Road. The scheme will allow for the separation of through-traffic from town centre traffic and thereby reduce the frustration of both these classes of travel. At present the route continuity of the A131 through Sudbury is complex. The Western Relief Road will allow for a logical linkage between the A131 and A134 and improve the route uncertainty for regional traffic.

Summary assessment score: moderate beneficial

B.2 Safety

There are two sub-objectives under the safety objective: accidents and security. The objective is to improve both.

B.2.1 Accidents

The accident data shown in the Table below is extracted from the COBA 11 CBA for the scheme and shows that there will be overall accident benefits. The accident data is tabulated for the low and high scenarios (Low/ High).

Table B.1 Safety: Accidents (Low/ High Scenario)

Year of Assessment (Opening Year): 2010

	Casualties			Number of Personal Injury Accidents (PIAs)	Benefits, £m, in 1998 prices, discounted to 1998 using a 3.5% discount rate
	Fatal	Serious	Slight		
Accident impact of proposal over 30 year assessment period (a)	0.5/0.6	13.9/16.8	127.4/156.9	114.2/139.2	4,4/ 5,3
Accident impact during construction(b)					
Accident impact during future maintenance (c)					
Total accident impact (d=a+b+c):	0.5/0.6	13.9/16.8	127.4/156.9		
For Quantitative column:	0.5/0.6	13.9/16.8	127.4/156.9		
For Summary Assessment column:				114.2/139.2	4,4/ 5,3

Reference sources: COBA 11 output for this Scheme

Qualitative comment: The impact to existing traffic during construction is minimal. There are tie-ins at the northern and southern ends of the bypass and a section of on-line construction along Brundon Lane which has a low ADT (approx. 500vehs).

Overall assessment of impact on Accident sub-objective: Beneficial

B.2.2 Security

The table below assesses the impact that the scheme will have on the security of the road users in the study area. There are 2 components to the scheme, namely the town centre and the proposed relief road.

Table B.2 Safety: Security

Security Indicator	Relative importance (High/ Medium/ Low)	Without project (Poor/ Moderate/ High)	With project (Poor/ Moderate/ High)
Formal surveillance	Medium	Moderate	Moderate
Informal surveillance	Medium	Moderate	Moderate
Landscaping	High	Moderate	High
Lighting and visibility	Medium	Moderate	High
Emergency call facilities	Medium	Moderate	Moderate
Pedestrian and cyclists facilities	High	Poor/Moderate	High

Approximate numbers of users affected: All vehicle drivers, cyclists and pedestrians in the Sudbury town centre are affected. The total traffic entering or leaving the Key Traffic Reduction Area is in the order of 44,800 vehicles in a 18hr day.

Reference Source(s): Sudbury and Great Cornard Local Transport Action Plan

Qualitative comments: The level of security for road users will be improved. Road users that currently travel slowly (with stops at traffic signals) through Sudbury will be able to utilise the Relief Road and be less vulnerable to crime. The town centre improvements that are related to the Relief Road will improve the security of cyclists and pedestrians through improved streetscape and surveillance.

Overall assessment of impact on Security sub-objective: Moderate Beneficial

B.3 Economy

There are three sub-objectives under the economy objective: consumer users, business users and providers and public accounts; reliability; and the wider economic impacts.

B.3.1 Consumer Users, Business Users and Providers and Public Accounts

The achievement of this sub-objective is assessed from the outputs of a cost/benefit analysis (CBA). For this scheme the CBA was conducted using COBA 11 after obtaining permission from the Department at a meeting on 29 May 2003.

Traffic input into the CBA was obtained from a Paramics traffic model that has been developed for the Sudbury study area. The traffic model was built in 2001/2002 for use in the assessment of scheme options for the LTAP for Sudbury. The road networks and demand matrices have been refined and adjusted for use in testing this scheme option. Demand matrices were built for an opening year of 2010 and a design year of 2025.

The results for this sub-objective can be found in the Transport Economic Efficiency (TEE) table for both the Low/ High Scenarios. They are also summarised in the relevant rows of the AST.

B.3.2 Reliability

This sub-objective summarises the schemes impact on the objective to improve journey time reliability for transport users.

The traffic model shows the following reductions in average travel time for the scheme in relation to the do-minimum in 2010 (opening year):

- AM peak: 2 min 24 sec
- PM peak: 1 min 19 sec
- Off-peak: 1 min 16 sec

This reduction in average travel time represents a reduction in congestion levels and therefore an improvement in journey time reliability in Sudbury and on the A131/A134. This will improve its function as a Primary Route and access to the wider Eastern Region.

Overall assessment of impact on reliability sub-objective: Moderate Beneficial

B.3.3 Wider Economic Impacts

This scheme does not fall in to any designated regeneration area, however substantial mixed development is planned in the Chilton area and the viability of the development will be enhanced through the scheme. The scheme aims to reduce traffic in the town centre to improve the 'shopping environment' and hence improve its economic vitality and attractiveness for tourism.

Table B.3 Economy: Wider Economic Impacts

Designated Regeneration Areas	Is the project in a designated regeneration area?		
	Road which the proposal affects passes through regeneration area (A)	Road junction within that area (B)	Access road to/from site (C)
Assisted Area Tier 1, 2 or 3	No	No	No
Single Regeneration Budget	No	No	No
European Structural Funds	No	No	No

Overall Assessment: No for regeneration but some improvement to the local economy.

B.4 Accessibility

There are three sub-objectives under the accessibility objective: option values; severance and access to the transport system.

B.4.1 Option Values

Option values are considered in multi-modal studies if the strategies or plans which are being appraised include measures which will substantially change the availability of transport services within the study area. In general, option values are not applicable for road schemes such as the Sudbury Western Relief Road.

Bus services to and from the south that have a route along the A131 to Sudbury, will be permitted through the 'access only zone' between the Western Relief Road and the town centre.

The sustainable transport measures that form part of the scheme package do include improvements to public transport integration and operation. These measures are subject to further development and consultation and not considered applicable for the AST.

Overall assessment of impact on Option Value sub-objective: Neutral

B.4.2 Severance

This sub-objective is primarily concerned with the severance to pedestrians (and to a lesser extent cyclists and equestrians). In this Western Relief Road scheme there are 2 pedestrian components to consider and also the severance to the residents of Ballingdon.

The two pedestrian components are those on the footpaths along the proposed alignment of the Western Relief Road and the pedestrians in the town centre.

Four footpaths (FP Nos. 33, 34, 35 and The Valley Walk) are affected by the Western Relief Road. From the preliminary design drawings it is apparent that FP No. 35 would pass under the Stour River viaduct and the Valley Walk would pass under the Relief Road. FP No 33 runs along Brundon Lane and would therefore need to be relocated adjacent to the relief road. FP No. 34 would need to cross the relief road in the vicinity of the Brundon Hall farm. There is one bridle way (BW No. 37) that would pass under the viaduct/bridge for the Brook via a short diversion due to the embankment/structure.

In the town centre the pedestrians are currently subjected to high conflicts with vehicles. The total traffic entering or leaving the Key Traffic Reduction Area is in the order of 44,800 vehicles in a 18hr day. According to the outputs of the traffic model for the Western Relief Road, the traffic levels entering/leaving the Key Traffic Reduction Area will reduce to between 8,800 & 9,400 vehicles a reduction of 80%.

The severance to Ballingdon results from the alignment of the proposed relief road dividing the residential area of Ballingdon in half (see Figure 5). The implication of this is that only residents to the east of the relief road will be permitted to access the town centre via an 'access only

zone'. All residents to the west of the relief road will not be permitted to access the town centre via the 'access only zone' and will be required to use the relief road resulting in a trip which is approximately 3,5 km longer.

The table below outlines the severance components:

Table B.4 Accessibility: Severance

Change in Severance	Population Affected			
	Location A: Conservation Area	Location B: Western Relief Road	Location C: Ballingdon Area	Total Affected
Large negative			Residents of Ballingdon	Medium
Moderate negative		Pedestrians on Brundon Lane & FP No 34 (Low: <200)		Low
Slight negative				0
Neutral		Pedestrians on 2 footpaths (Low: <200)		Low
Slight positive				0
Moderate positive				0
Large positive	Pedestrians in town centre (High:>1000)			High

Reference Source(s): Preliminary design drawings (see Appendix G)

Qualitative comments: The severance along the relief road will be slight negative and in the town centre there will be a moderate/large positive benefit. For the residents of Ballingdon the severance will be large negative. The overall score therefore ranges for the 3 components from large negative to moderate/large positive.

Assessment Score: For pedestrians: moderate beneficial. For residents of Ballingdon: large negative (using Table 7.1 Assessment of Change in Severance, GOMMS Vol. 2)

B.4.3 Access to the Transport System

Access to the public transport system will be enhanced through the sustainable transport measures that form part of the package of improvements for the Western Relief Road scheme. These Public Transport measures are listed and described in chapter 2: Scheme Description, of this report.

The overall assessment of this sub-objective is therefore neutral/slight beneficial.

B.5 Integration

There are three sub-objectives to the integration objective: transport interchange; land use policy and other government policy.

B.5.1 Transport Interchange

The transport interchange for passengers will be enhanced through the sustainable transport measures that form part of the package of improvements in the Western Relief Road scheme. These public transport integration measures are listed and described in chapter 2: Scheme

Description, of this report. They include integrating bus and rail station facilities, integration of services and integrated ticketing.

The table below assesses the potential impact of the integration sub-objective.

Table B.5 Integration: Passenger Interchange

Passenger Interchange Indicator	Without project (Poor/Moderate/High)	With project (Poor/Moderate/High)
Waiting environment	Poor	High
Level of facilities	Poor	High
Level of information	Poor	High
Visible staff presence	Poor	Moderate
Physical linkage for next stage of journey	Moderate	Moderate
Connection time and risk of missing connection	Poor	Moderate

Approximate numbers of users affected:

The annual patronage of public transport in Sudbury is as follows (Suffolk County Council data):

All public and Community Transport	1,356,000
Sudbury Urban (town services only)	119,000
Sudbury (bus plus rail)	221,000
Ipswich corridor	142,000
Bury corridor	403,000

Reference Source(s): Based on LTAP public transport strategies.

Qualitative comments: The sustainable transport measures that form part of the scheme package, will be beneficial to passenger interchange.

Overall Assessment of passenger interchange impact: The overall assessment of this sub-objective is therefore neutral/slight beneficial

The Western Relief Road scheme does not specifically address freight interchange and is not envisaged to benefit or dis-benefit the sub-objective.

Table B.6 Integration: Freight Interchange

Freight Indicator	Without project (Poor/Moderate/High)	With project (Poor/Moderate/High)
Reliability (at the interchange facilities only)	Not applicable	Not applicable
Level of facilities for freight users	Not applicable	Not applicable
Freight transfer	Not applicable	Not applicable
Timetabling, connections, co-ordination	Not applicable	Not applicable
Level of information for freight users	Not applicable	Not applicable
Freight security at the interchange	Not applicable	Not applicable

Reference Source(s): Not applicable

Qualitative comments: Not applicable

Overall Assessment of freight interchange impact: Neutral

B.5.2 Land Use Policy

The assessment of the Western Relief Road in the context of local, national and regional planning and transport policies is summarised in Table 5.7.

Table 5.7 Integration: Land-Use Policy

Land-Use/Transport Policies	Assessment
Local	
1. Sudbury and Great Cornard Local Transport Action Plan: 2003	The LTAP study concluded that the strategy for the area would need to include the construction of a bypass together with related traffic management and sustainable transport measures.
2. Babergh District Council Local Plan. (Alteration No 2 - Second Deposit Draft - May 2003)	The Western Relief Road scheme is not referred to
Regional	
1. Suffolk County Council Structure Plan: 2001	The Western Relief Road scheme is not referred to. The Structure Plan also seeks to protect the quality and landscape character of the countryside, both of which are considered to be non-renewable natural resources (Policy ENV4). Policy ENV8 precludes development that would have a detrimental effect on Special Landscape Areas where exceptions would only be permitted if there was an overriding national or local need for the development. The same provisions would apply to development that would have an adverse impact on local wildlife sites (Policy ENV19), but developments affecting Red Data Book species and SSSIs would need to satisfy the more stringent test of an overriding national need (Policy ENV18). Provisions are also made in respect of the historic environment and the protection of archaeological remains. Policy ENV14 seeks to protect flood plains from developments that could impede the flow or storage of flood waters, or increase the risk of flooding elsewhere.
2. Suffolk County Council Local Transport Plan: July 2000	The need to address the transport network in Sudbury and Great Cornard, which may include provision of a bypass, is identified as a priority in the Local Transport Plan and an exploration and assessment of the options has been undertaken as part of the Local Transport Action Plan for the area. The Western Relief Road was not included in the LTP
3. Regional Planning Guidance RPG 6: November 2000	RPG 6 does not contain a full Regional Transport Strategy. The proposed scheme, would however improve the Primary Route Network and hence accessibility to the region. The proposed scheme, including the complementary sustainable transport measures

	is also compatible with the criteria for New Infrastructure set out in paragraphs 6.26 & 6.27
National	
1. A New Deal for Transport: Better for Everyone - July 1998 2. Transport 2010 the Ten Year Plan	The scheme has been assessed using the NATA. The Relief Road would also provide an alternative route for some traffic using trunk roads in the region and would therefore contribute to the National PSA/Ten Year Plan target to <i>reduce congestion on the inter-urban trunk road network, and in large urban areas in England, below 2000 levels by 2010</i> . The Western Relief Road and Related Measures would also contribute to national targets for air quality (in the town), safety and cycling.
3. Planning Policy Guidelines	The Planning Policy Guidelines on development and flood risk (PPG25) describes that areas outside this 1% flood risk area are suitable for development provided that the new development does not increase the flood risk in the floodplain. The EA would therefore ask for the future runoff not to exceed the current Greenfield runoff up to a T=100 rainfall event.

Reference Source(s): See above Plans

Qualitative comments: There is conflicting policy provision within the relevant planning documents. The degree to which these provisions are either met or offended will be dependent on the weight afforded the different policies by the local planning authorities.

Assessment Score: Neutral

B.5.3 Other Government Policies

Table B.8 Integration: Other Government Policy

Government Department	Policies	Policies Helped	Policies Hindered
DETR	Transport, regeneration, housing, environmental protection	✓	✓
DfEE	Education, labour market flexibility	✓	
Dept of Health	Health	✓	
DCMS	Heritage		✓
Cabinet Office	Social inclusion	✓	
HM Treasury	Economic growth, tax and public expenditure	✓	
DTI	National and regional competitiveness	✓	

Reference Source(s): Understanding of policy documents.

Qualitative comments: The scheme will help towards policies of most relevant Government Departments.

Assessment Score: Beneficial

Appraisal Summary Table – Western Relief Road

OBJECTIVE		SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE ASSESSMENT	ASSESSMENT
Option A+C: Western Relief Road and related measures		Description: A Relief Road from the Ballingdon Street/Middleton junction to A131/A134 Melford Road junction including related traffic management and sustainable transport measures in the town centre. See Chapter 9 and Figure 5 for description.		Problems: The A131 and associated Principal routes pass through the Conservation Area of Sudbury. Over 44,800 vehs. in a 18hr day with 3% HGV's. See Chapter 3 for detail description of problems.	
				Present Value of Costs (1998) to Public Accounts £16,1m	
ENVIRONMENT		Noise	This Option would have an overall beneficial impact, reducing annoyance resulting from road noise nuisance although there will be adverse impact to previously tranquil rural locations Locations affected not included in assessment are the recreational areas of Kings Marsh, Valley Walk, Football Ground and Playing Fields, FP 35 and Bridleway 37	No. annoyed (Option C) = 756 No. annoyed (do-minimum) = 924 +1	-168 Slight Beneficial
		Local Air Quality	This Option leads to increases of greater than 4 mg/m3 along the new route. However, this impact is balanced by improved air quality in Sudbury town centre, where existing exposure is far greater. The overall impact is moderately beneficial.	+2	PM10 -1630 NO2 -3530 Moderate beneficial
		Greenhouse Gases	This Option leads to lower CO2 emissions due to a decrease in vehicle kilometres travelled. Overall, a minor beneficial impact is predicted.	+1	-554 tonnes of CO2 Minor beneficial
		Landscape	Relief road would have a large adverse effect on area 1B (introduction of raised elements, loss of vegetation, disturbance to ditchlines, etc). Moderate adverse impact on area 1C (loss of vegetation, ditch lines, tranquility, common land, etc) and area 3 (loss of field patterns, tranquility, proximity to Brundon, footpath diversions, etc). Slight adverse impact on area 8.	-3	Large Adverse
		Townscape	There will be slight beneficial effects to Ballingdon Core (5A1), Medieval and Ecclesiastical Core (5B). Meanwhile slight adverse impacts to Victorian and Edwardian Town Centre (5C), C20th development north, and the Industrial and Commercial Fringe (5G)	-1	Slight Adverse
		Heritage of Historic Resources	Moderate / large benefit to heritage resource within historic town centre. Slight adverse impact upon the landscape setting of WWII defences. Moderate adverse impact upon the landscape setting of the dismantled railway. Moderate / Large adverse impact upon the historic townscape to the south of Ballingdon Street.	-2.5	Moderate/Large Adverse
		Biodiversity	Very Serious Adverse impact upon Biodiversity features (Belchamp Brook CWS and Coastal and Floodplain Grazing Marsh BAP habitat)	-5	Very Serious Adverse**
		Water Environment	Potential moderate impact on river water quality, aquatic biodiversity, conveyance of floodplain flow, aesthetics and recreation. Potential minor impact on floodplain biodiversity, ground water quality and flood risk. Negligible impact on ponds and lakes.	-2.5	Moderate to Large Adverse
		Physical Fitness			Slight Beneficial
		Journey Ambience			Moderate Beneficial
SAFETY		Accidents	The scheme will result in a reduction in PIA's	PIA's: 114/139; Fatal : 0.5/0.6; Serious: 14/17; Slight: 127/157	PVB £4,4/5,4m
		Security	The level of security for road users on the bypass and those remaining in the town centre will be improved	No Entry Required	Moderate Beneficial
ECONOMY		Public Accounts	No Entry Required	Central Govt PVC: £16,0/16,1m, Local Govt PVC: £0m	PVC £16,0/16,1m
		Business Users & Providers	No Entry Required	Users PVB: £43,2/48,6m, Providers PVB: £0m, Other PVB: £0m	PVB £43,2-48,6m
		Consumer Users	No Entry Required		PVB £53,4-59,1m

	Reliability	Improvement in average travel time in am, inter peak and pm	am: 2min 24 sec, inter peak: 1min 16 sec, pm: 1min 19sec	Moderate beneficial
	Wider Economic Impacts	Improvement to local economy	Does not serve designated regeneration area.	No
ACCESSIBILITY	Option values	Scheme includes public transport enhancements		Neutral
	Severance		In town centre: Large positive; along relief road: slight negative; Ballingdon residents: large negative	Pedestrians: moderate beneficial Residents: large negative
	Access to the Transport System	Scheme includes sustainable transport measures including Public transport improvements		Neutral/slight beneficial
INTEGRATION	Transport Interchange	Scheme includes sustainable transport measures	Passenger: slight beneficial; Freight: neutral	Neutral/slight beneficial
	Land-Use Policy		No Entry Required	Beneficial
	Other Government Policies	The scheme will help towards policies of most relevant Government Departments	No Entry Required	Beneficial

Appendix C

Cost Estimates & Risk Register

DETAIL ESTIMATE FOR SUDBURY WESTERN BYPASS (WITH VIADUCT)

HA CONSTITUENTS	INCLUDED	QUANTITY	UNIT	RATE	COST		ELEMENT TOTAL £
					£	£	
Site Clearance	general site clearance	27	Ha	1100	29,700		
	small trees	40		300	12,000		
	large trees	50		750	37,500		
Security and fencing	all highway boundary fence	8725	m	8.5	74,163		
	farm gates	6		140	840		
	stiles	4		190	760		
Demolition	farm buildings	0		800	0		
	farmhouse	0		2000	0	154,963	
Earthworks, excavate and place acceptable		172470	m3	6	1,034,820		
Earthworks, excavate dispose u/s		172470					
		124290	m3	19	2,361,510		
Earthworks, import and place acceptable		63430	m3	17	1,078,310		
Topsoiling		80310	m2	1	80,310		
Landscaping		80310	m2	4	321,240		
Capping 330mm		12650	m3	20	253,000	5,129,190	
Environmental barrier	assumption	2950	m3	2.5	7,375		7,375
Pavement, removal of existing pavement	tie-ins	6720	m2	11	73,920		
Pavement, type 1 s/b	150mm	5750	m3	31	178,250		
Pavement base	215mm	35650	m2	21	748,650		
Pavement, binder course	50mm	41320	m2	12	495,840		
Pavement, thws	30mm	41320	m2	8	330,560		
Drainage	150mm	1240	m	30	37,200		
	225mm	1270	m	43	54,610		
	300mm	1140	m	60	68,400		
	375mm	380	m	90	34,200		
	450mm	50	m	100	5,000		

	filter drain 150mm	6260 m	35	219,100	
	catchpits	120	1000	120,000	
	outfalls	4	1250	5,000	
	gullies	200	225	45,000	2,415,730
<hr/>					
Drainage kerbs		4190 m	120	502,800	
Concrete kerbs		5930 m	17	100,810	
Footway & cycleway		1190 m ²	24	28,560	
		m ²	24	0	632,170
<hr/>					
Ducts for services		200 m	30	6,000	6,000
<hr/>					
Traffic signs			4000	0	
		9	1250	11,250	
		17	600	10,200	
		15	300	4,500	
Road markings		11100 m	0.5	5,550	
Studs		370	6	2,220	
Lighting	at junctions only	34	1050	35,700	
	supply	2	8500	17,000	86,420
<hr/>					
Structures	all inc			4,300,531	4,300,531
<hr/>					
TOTAL WORKS				12,732,379	
Prelims at 10%				1,273,238	
WORKS CONTRACT PRICE				14,005,616	

DETAIL ESTIMATE FOR SUDBURY WESTERN RELIEF ROAD (WITH VIADUCT)

HA ELEMENT	HA CONSTITUENTS	INCLUDED	QUANTITY	UNIT	RATE	COST		ELEMENT TOTAL £	
						£	£		
ROADWORKS	Site Clearance	general site clearance	14.6	Ha	1100		16,060		
		small trees	14		300		4,200		
		large trees	0		750		0		
	Security and fencing	all highway boundary fence	4500	m	8.5		38,250		
		farm gates	5		140		700		
		stiles	4		190		760		
	Demolition	farm buildings	0		800		0		
		restaurant	1		2000		2,000	61,970	
	EARTHWORKS	Earthworks, excavate and place acceptable		0	m3	6		0	
		Earthworks, excavate dispose u/s		11300	m3	19		214,700	
Earthworks, import and place acceptable			167900	m3	17		2,854,300		
Topsoiling			36900	m2	1		36,900		
Landscaping			0	m2	4		0		
Capping		330mm	7100	m3	20		142,000	3,247,900	
ENV BARRIER	Environmental barrier	assumption	200	m	32		6,400	6,400	
PAVEMENT	Pavement, removal of existing pavement	tie-ins	4000	m2	11		44,000		
	Pavement, type 1 s/b	150mm	3200	m3	31		99,200		
	Pavement base	215mm	24700	m2	21		518,700		
	Pavement, binder course	50mm	24700	m2	12		296,400		
	Pavement, thws	30mm	24700	m2	8		197,600		
	Drainage	150mm	890	m	30		26,700		
		225mm	870	m	43		37,410		
		300mm	800	m	60		48,000		
		375mm	270	m	90		24,300		
450mm		40	m	100		4,000			
	filter drain 150mm catchpits	4500	m	35		157,500			
		90		1000		90,000			

		outfalls	2	1250	2,500	
		gullies	140	225	31,500	1,577,810
KERBS ETC	Drainage kerbs		3000 m	120	360,000	
	Concrete kerbs		6800 m	17	115,600	
	Footway and cycleway		600 m2	24	14,400	
			m2	24	0	490,000
DUCTS	Ducts for services		100 m	30	3,000	3,000
SIGNS & LIGHTS	Traffic signs		0	4000	0	
			5	1250	6,250	
			15	600	9,000	
			12	300	3,600	
	Road markings		8200 m	0.5	4,100	
	Studs		270	6	1,620	
	Lighting	at junctions only	26	1050	27,300	
		supply	1	8500	8,500	60,370
STRUCTURES	Structures	all inc			4,807,717	4,807,717
TOTAL WORKS					10,255,167	
Prelims at 10%					1,025,517	
WORKS CONTRACT PRICE					11,280,684	

DETAIL ESTIMATE FOR SUDBURY RELATED TRAFFIC MANAGEMENT

HA ELEMENT	HA CONSTITUENTS INCLUDED	QUANTITY	UNIT	RATE	COST		ELEMENT TOTAL £
					£	£	
ROADWORKS	Site Clearance	general site clearance	0	Ha	500	0	
		small trees	0		300	0	
		large trees	0		750	0	
	Security and fencing	all highway boundary fence	0	m	8.5	0	
		farm gates	0		140	0	
		stiles	0		190	0	
	Demolition	farm buildings	0		800	0	
		farmhouse	0		2000	0	0
	EARTHWORKS	Earthworks, excavate and place acceptable	0	m3	6	0	
		Earthworks, excavate dispose u/s	0	m3	19	0	
Earthworks, excavate dispose hard material		45	m3	51	2,295		
Earthworks, import and place acceptable		0	m3	17	0		
Topsoiling		0	m2	1	0		
Landscaping		0	m2	4	0		
Capping		330mm	0	m3	20	0	2,295
ENV BARRIER	Environmental barrier	0	m3	2.5	0	0	
PAVEMENT	Pavement, removal of existing pavement	tie-ins	10	m2	11	110	
	Pavement, type 1 s/b	150mm	0	m3	31	0	
	Pavement base	270mm	0	m2	23	0	
	Pavement, binder course	50mm	0	m2	12	0	
	Pavement, thws Block paving c'way	30mm	1250	m2	8	10,000	
			450	m2	75	33,750	
	Drainage	225mm	50	m	43	2,150	
150mm		25	m	30	750		
300mm		0	m	60	0		

		375mm	0 m	90	0	
		450mm	0 m	100	0	
		filter drain 150mm	0 m	35	0	
		catchpits	0	1000	0	
		outfalls	0	1250	0	
		gullies	5	225	1,125	47,885
<hr/>						
KERBS ETC	Drainage kerbs		0 m	120	0	
	Concrete kerbs		1285 m	17	21,845	
	Footway and cycleway		3225 m2	24	77,400	
						99,245
<hr/>						
DUCTS	Ducts for services		40 m	30	1,200	1,200
<hr/>						
SIGNS & LIGHTS	Traffic signs	chevrons	0	1000	0	
		A.D.S.	0	1250	0	
		route comformation	9	600	5,400	
		speed limit & turn left etc	65	300	19,500	
	Road markings		3200 m	0.5	1,600	
	Studs		0	6	0	
	Lighting	all inc			7,500	
	Posts, bollards, cycle stand				12,500	46,500
	"Gateway"		7	5000	35,000	
<hr/>						
STRUCTURES	Structures	all inc			0	0
<hr/>						
	TOTAL WORKS				232,125	
	Prelims at 10%				23,213	
	WORKS CONTRACT PRICE				255,338	

SUDBURY WESTERN BYPASS and RELIEF ROAD

PROJECT RISK REGISTER

No	Risk	Cat	Prob	Impact	Rank	Risk response
1	Poor ground conditions across the Stour River flood plain	2	3	2	6	Early geotechnical input and include ground treatment costs in estimate
2	Landfill site on route of bypass needing special treatment	2	3	3	9	Ditto. Remember may need to deal with hazardous waste
3	Need to maintain suitable opening for river in flood	3	2	2	4	Can have affect on structure size. Need early liaison with waterway authority
4	Traffic flows in excess of forecast – bypass	1	1	2	2	Could lead to premature carriageway failure, review traffic model
5	Traffic flows in excess of forecast – junctions	1	1	1	1	Could lead to excessive queues early in its life, review traffic model
6	Extensive statutory undertakers works	8	1	2	2	Plan ahead and consider advance works to avoid construction delays
7	Unknown statutory undertakers plant	8	1	1	1	Thorough advance consultation
8	Protected species along bypass route	4	2	2	4	Programme to avoid nesting season. Early research and survey to identify species
9	Difficulties of site access	5	2	1	2	The river is a barrier to construction traffic, consider temporary bridge
10	Routes banned to construction traffic	5	2	1	2	Emotive subject, needs early liaison with local authority
11	River board requirements	3	2	1	2	Early liaison with the board
12	Additional provision for walkers or cyclists	5	2	2	4	Early liaison with local groups
13	Land ownership unknown	6	1	1	1	Land registry and other searches needed at an early stage
14	Additional works needed in mitigation of scheme	5	2	2	4	Allow contingency in estimate
15	Incorrect assumption made about using raised material for construction	2	2	2	4	Need early geotechnical advice
16	Construction period assessed incorrectly	7	2	2	4	Seek expert guidance
17	Construction cost assessed incorrectly	7	2	2	4	Seek different methods of costing for comparison
18	Extensive screening requirements (visual or noise)	4	2	1	2	Extensive early liaison needed
19	Land estimate inaccuracies (area and cost)	6	1	1	1	Seek expert advice
20	Contractual Dispute	9	1	2	2	Independent review of contract
21	Disruptive action by environmental groups	4	1	1	1	Early security measures

KEY:-

CATEGORIES	
1	Traffic modelling
2	Geotechnical
3	Water Regime
4	Environment
5	Local Network
6	Land Matters
7	Programme
8	Utilities
9	Contract

PROBABILITY and IMPACT	
1	Low
2	Medium
3	High

Rank is the product of Probability and Impact

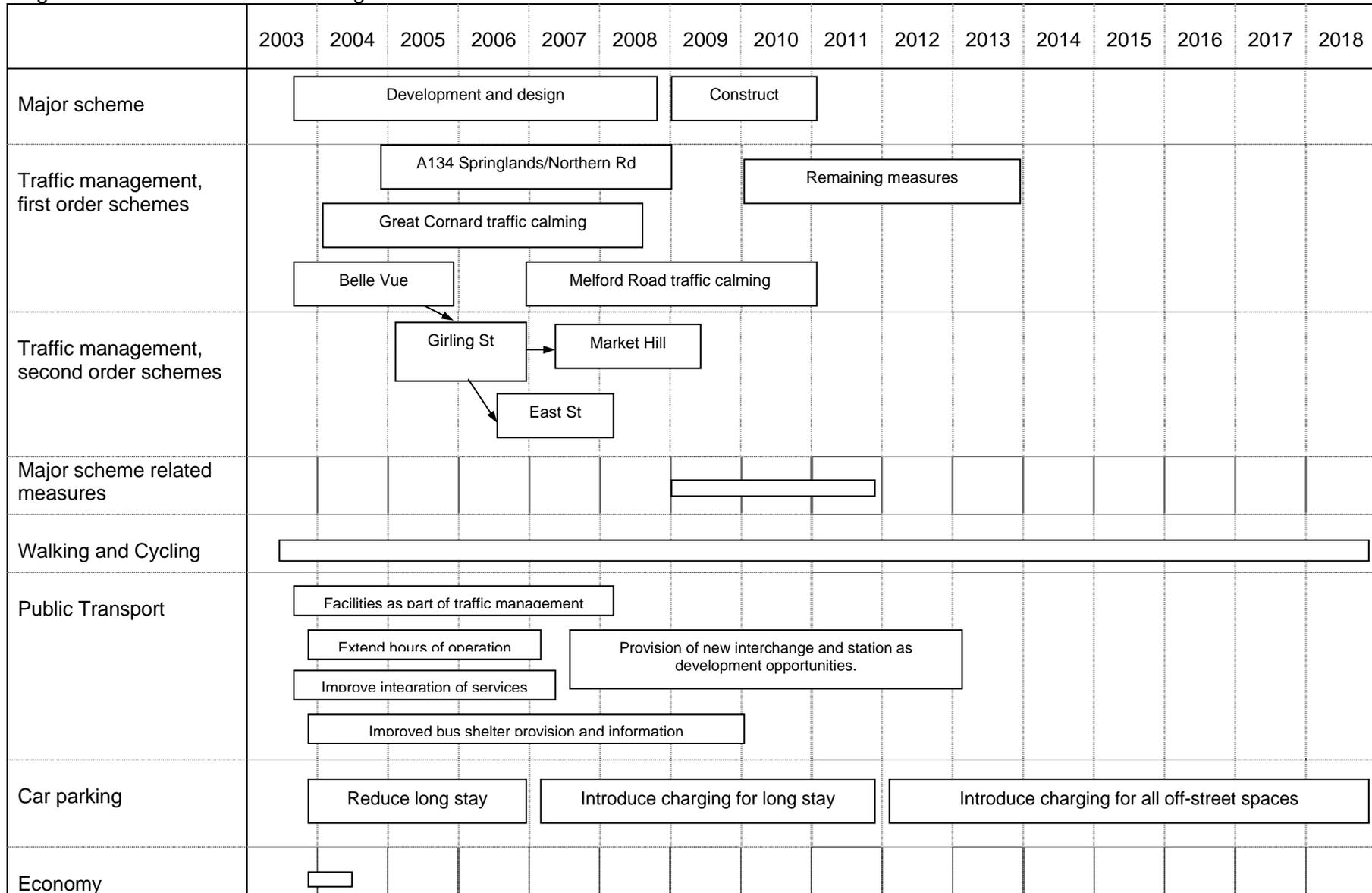
Appendix D

Outline LTAP Programme

Indicative Overall Implementation Programme

Figure 13.1 (from the LTAP) is an indicative programme covering each of the strategy areas and highlighting the major and separately identifiable proposals. The bar denotes the likely timespan of a proposal and represents the time from the commencement of outline design, through any public consultation, detailed design and construction or implementation.

Figure 13.1: Indicative Overall Programme



Appendix E

Community Involvement

(LTAP Chapter 3)

3. Community Involvement

3.1 *The Need for Community Involvement*

Community involvement is now seen as a fundamental part of local government. The White Paper “Modern Local Government” requires authorities to be in touch with local people to provide high quality services, vision and leadership for local communities. From April 2000 local authorities have had a duty to consult and engage with local people about plans and services. The “Best Value” initiative also requires that local people and service users be involved in deciding what services should be available and how they should be delivered.

The 1998 Transport White Paper also stated that everyone had a part to play in transport decisions. Effective public participation and consultation are seen as a way of encouraging acceptance of new directions through exchange and ownership of information.

Suffolk County Council in their LTP (Chapter 5), therefore made the following commitment to public involvement:

Para 5.2.2 The County Council will work with local people as individuals, communities, groups and organisations to promote debate about their issues of concern, needs and priorities in order to:

- *Develop the most appropriate and effective services;*
- *Stimulate involvement and interest in local democracy; and*
- *Strengthen accountability.*

Public consultation for the development of the Sudbury and Great Cornard LTAP was, therefore, always considered to be of fundamental importance to ensure that the views of the general public inform the process as it evolves. Due to the nature of the LTAP formulation process, public consultation was structured to ensure that consultation was not seen as a ‘once off’ event in the context of the LTAP but rather a transparent process of partnership between the public and the authorities. Public consultation was, therefore, structured around the concept of community involvement to be undertaken at key points in the process. The events undertaken are listed in Appendix 5 and are summarised in the following paragraphs.

3.2 *Reference and Partnership Group Workshops*

To identify key issues and objectives at a more strategic level (January 2002)

The Reference Group composition included identified stakeholders in the Sudbury and Great Cornard area who were tasked with identifying key transport issues in the area. The Partnership Group comprised of representatives from Suffolk County Council, Essex County Council, Babergh District Council, Braintree District Council and a number of town and parish councils.

The views from the partnership and reference group meetings, were consolidated and drafted as specific within the Government’s five key objectives laid down for transport planning work. They are as follows:

- Environment
- Safety
- Economy
- Accessibility
- Integration

Furthermore, draft Key Performance Indicators (KPI's) were developed which could assist in quantitatively measuring these local objectives. These draft objectives for Sudbury and Great Cornard were taken forward and consulted upon as part of the "Mapping the Future" workshop in May 2002

The local objectives or issues agreed as a result of this process and against which the performance of the various options was subsequently assessed, are given below:

Table 3.1 LTAP Objectives for Sudbury and Great Cornard

Objectives for the ENVIRONMENT			
I	<p>Reduce through traffic in order to</p> <ul style="list-style-type: none"> • protect the historical environment • improve safety on the road • reduce pollution • enhance living, working, shopping and leisure spaces <p><i>To be measured by reduced count of all motor vehicles going through the town, reduced number of traffic related accidents, reduced levels of air pollution in the town</i></p>	II	<p>Integrate public transport in order to</p> <ul style="list-style-type: none"> • provide a real alternative to private cars • increase access to Sudbury town centre from Sudbury & Great Cornard and surrounding towns and villages • promote greater use of public transport by making it easier to switch from one mode to another <p><i>To be measured by number buses arriving in town centre, number of integrated ticket schemes operating, number of multi-modal journeys undertaken such as train - bus</i></p>
III	<p>Protect / enhance natural environment, especially</p> <ul style="list-style-type: none"> • the unique relationship between Sudbury and Stour Valley • landscape • semi-natural habitats • wildlife corridors <p><i>To be measured by baseline study and assessment of change in sensitive landscape character, populations of selected indicator species or groups for example numbers/varieties of birds, butterflies etc, and/or success of species associated with a particular habitat, for example, otter, water vole, dormouse</i></p>	IV	<p>Provide improved facilities for cycling and walking especially for local trips within Sudbury and Gt Cornard in order to</p> <ul style="list-style-type: none"> • encourage residents to walk or cycle rather than use the private car <p><i>To be measured by increased length of cycleway/footway, number of secure cycle parking places in the centre of town and the usage of these facilities (ie the number of pedestrians and cyclists), length of time taken to cross the road in the centre of town</i></p>
V	<p>Introduce constraints on consequential development in order to</p> <ul style="list-style-type: none"> • ensure there is no creeping urbanisation • protect wildlife outside the current boundaries of the town <p><i>To be measured by number of houses and other developments between the town and any new road</i></p>		

Objectives for **SAFETY**

I	<p>Reduce speed and volume of traffic in order to:</p> <ul style="list-style-type: none"> • improve safety for all road users • reduce number of personal injury accidents <p><i>To be measured by the number of 20 mph zones and/or 'Home Zones' introduced, the average speed of traffic in the town in key sensitive locations, the number of heavy vehicles in the town centre, number of personal injury accidents at key sensitive locations</i></p>	II	<p>Improve facilities for cycling and walking in order to:</p> <ul style="list-style-type: none"> • encourage residents to walk or cycle instead of using the car <p>To be measured by length of cycle tracks and pedestrian routes particularly those linking schools, bus stops, rail and bus stations and the number of people using them, number of pedestrian crossings and pedestrian refuges with new / improved disabled facilities, traffic management schemes</p>
III	<p>Re-route traffic away from unsuitable areas in order to:</p> <ul style="list-style-type: none"> • reduce the level of 'rat-running' • reduce number of vehicle accidents involving children and other vulnerable groups <p><i>To be measured by reduction in through traffic using unsuitable residential streets and by a reduction in the number of personal injury accidents involving pedestrians and cyclists</i></p>	IV	<p>Introduce other measures (such as car park lighting, street lighting renovated bus / rail waiting rooms at stations, improved bus shelters, walking buses, etc) in order to:</p> <ul style="list-style-type: none"> • improve the level of safety and the perceived level of personal security in the town <p><i>To be measured by the increase in lighting levels in car parks, number of children walking or cycling to school, bus and train passenger numbers, perception of increased personal safety</i></p>

Objectives for **ECONOMY**

I	<p>Improve road infrastructure in order to:</p> <ul style="list-style-type: none"> • enhance and improve the vitality and viability of the town centres • attract more small and medium sized enterprises to the area • decrease any drift away from Sudbury to other towns <p><i>To be measured by reduction in congestion and reduction in vacant retail and business units</i></p>	II	<p>IMPROVE RAIL INFRASTRUCTURE IN ORDER TO:</p> <ul style="list-style-type: none"> • create a viable multi-mode network which will enable employers and residents to move around with ease • encourage greater use of rail network for passengers and freight alike <p><i>To be measured by increase in passenger numbers and freight moved by rail</i></p>
III	<p>Provision of sufficient car parking in order to:</p> <ul style="list-style-type: none"> • encourage residents to shop in Sudbury rather go elsewhere • encourage visitors to the town • encourage use of other town centre facilities <p><i>To be measured by use of car parks by shoppers and visitors</i></p>	IV	<p>Designate land for employment with best possible access to road/rail infrastructure in order to:</p> <ul style="list-style-type: none"> • attract new business and employment to the area • retain the character of Sudbury and Gt. Cornard while enhancing its viability <p><i>To be measured by the number of new VAT registrations</i></p>

Objectives for ACCESSIBILITY

I	<p>Ensure all residents, including mobility impaired, have access to good quality transport in order to:</p> <ul style="list-style-type: none"> ensure social inclusion enable all to travel where they wish encourage all to play a full role in local life <p><i>To be measured by mileage operated by bus companies, number of 'kneeling' buses per route kilometre, number of buses after 7 pm and on Sundays, the availability and use of mobility and community transport schemes such as 'Dial a Ride'</i></p>	II	<p>Ensure all residents, including mobility impaired, can use the town centre in safety, securely and with ease of access to all facilities:</p> <ul style="list-style-type: none"> reduce leakage of trade to centres outside Sudbury encourage modal shift away from the private car <p><i>To be measured by number of traffic management schemes, pedestrian crossings with measures to assist the mobility impaired, increase in length of footway/cycleway in the town and their use, proportion of all journeys of under a mile undertaken by foot or bike</i></p>
III	<p>Reduce the number of HGVs travelling through the town in order to</p> <ul style="list-style-type: none"> ensure cohesion of the town reduce severance <p><i>To be measured by the number of HGVs travelling through the town that do not need access to the town</i></p>	IV	<p>Ensure access by public transport to all major facilities in the town (e.g. leisure centre, library) in order to</p> <ul style="list-style-type: none"> provide all residents with a means of getting to all important facilities <p><i>To be measured by the % of people within 10 minutes' walk of a bus stop with hourly service and the % travelling by bus</i></p>
V	<p>Improve transport links to other parts of the county and beyond in order to</p> <ul style="list-style-type: none"> provide local people with a viable means of travel, other than the private car, to all parts of Suffolk and elsewhere ensure access to the area for visitors especially the mobility impaired and non car drivers <p><i>To be measured by an increased in the number of services by bus and train, including routes to London Colchester, Ipswich and Stansted</i></p>		

Objectives for INTEGRATION

I	<p>Provide a flexible integrated bus service (e.g. taxibus, dial-a-ride) including shuttle. circular bus route in order to</p> <ul style="list-style-type: none"> encourage modal shift from the private car simplify travel by bus in the area <p><i>To be measured by number of integrated bus schemes set up, town bus service routes in and around the town and passenger numbers</i></p>	II	<p>Provide integrated transport between all modes of travel in order to</p> <ul style="list-style-type: none"> encourage modal shift away from the car <p><i>To be measured by the use made of cycle parking and % increases in people travelling by bus, cycle, and foot</i></p>
III	<p>Provide integrated ticketing (rail/bus/taxi) in order to</p> <ul style="list-style-type: none"> make journeys by public transport, including bus/taxi and train/taxi as attractive, simple and speedy as possible <p><i>To be measured by number of ticketing arrangements introduced and their take-up</i></p>	IV	<p>Provide integration of timetabling between rail and bus in order to</p> <ul style="list-style-type: none"> encourage greater use of public transport reduce waiting time and hence improve personal security <p><i>To be measured by increase in number of town bus services which link in to rail/inter urban services</i></p>

V	<p>Integrate land use and transport planning in order to</p> <ul style="list-style-type: none"> • encourage more sustainable and energy efficient patterns of development • ensure new business and new housing development are located within easy access of transport network • ensure road network improvements take account of developments elsewhere <p><i>To be measured by the % of people and businesses within 10 minutes' walk of a bus stop with hourly service and % travelling by bus</i></p>		
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3.3 Questionnaire survey – April 2002

A questionnaire drop to all households in Sudbury and Great Cornard and environs, including Parishes

The purpose of this initiative was:

- to ensure that local residents were kept informed about the consultation process, its progress and way forward
- to ensure that the public views were incorporated into the development of the Sudbury and Great Cornard Local Transport Action Plan.
- To raise awareness and encourage involvement in the 'Mapping the Future' workshop.

A total of 1,397 responses to the questionnaire were received. A brief summary of the findings is given below. It should be noted that in questionnaire exercises of this nature, there tends to be a bias to that component of the population that has both the time and the interest to reply to such an initiative. This is highlighted, for instance, by the large percentage of respondents who replied that were not formally employed or were retired.

- a) 46% of respondents to the questionnaire were either not working or retired and 53 % were employed in some form
- b) 39% of those in education or formally employed used a car to get to their place of education/employment and 8% walked
- c) 76% of respondents have lived in the Sudbury area for more than 10 years
- d) 32% of respondents indicated that they were satisfied with transport facilities in Sudbury, 47% indicated it could be better and 9% felt that it was unacceptable
- e) 40% of respondents felt that the environment in the area was acceptable and 37% felt it could be better

With respect to the detailed questions about specific issues in the town and related, in turn to the 5 key government objectives, the responses are summarised in Appendix 6.

Other results from the questionnaire which give an appreciation and overview of travel preferences in Sudbury and Great Cornard, are summarised below.

When asked what single key objective they considered the most important, the percentage was as follows:

- Environment - 31%
- Safety - 37%
- Economy - 10%
- Accessibility - 15%

- Integration - 6%

Safety and the environment are clearly considered the most important objectives, each getting around one third of the preferences.

With respect to travel, the table 3.2 gives an indication of the general public's attitude to different modes and how they may react to future changes.

Table 3.2 Attitude to travel by different modes

<p>Rail</p> <ul style="list-style-type: none"> • 55% of respondents indicated that they occasionally use rail as a mode of transport • 17% of respondents indicated that they use rail to access leisure facilities of some from • 46% of respondents indicated that the cheaper fares would be the most effective way of encouraging rail travel 	<p>Bus</p> <ul style="list-style-type: none"> • 38% of respondents indicated that they occasionally use a bus as a mode of transport • 21% of respondents indicated that they use a bus to access shopping facilities of some from • 18% of respondents indicated that the cheaper fares would be the most effective way of encouraging bus travel • 21% of respondents indicated that frequent services would be the most effective way of encouraging bus travel • 20% of respondents indicated that relevant services would be the most effective way of encouraging bus travel
<p>Cycling</p> <ul style="list-style-type: none"> • 48% of respondents indicated that they would use cycling as a mode of transport if facilities were improved • 34% of respondents indicated that cycle lanes were the most desirable feature to assist cyclists 	<p>Walking</p> <ul style="list-style-type: none"> • 17% of respondents indicated that often walk for leisure purposes • 22% of respondents indicated they walked for shopping purposes • 70% of respondents indicated that they would walk more regularly if pedestrian facilities were improved
<p>Parking</p> <ul style="list-style-type: none"> • 44% of respondents felt that the removal of convenient on-street parking would not improve traffic flow in the area • 51% of respondents felt that the removal of convenient on-street parking would improve traffic flow in the area • 36% of respondents felt that the removal of convenient on-street parking to improve pedestrian access would not be acceptable • 59% of respondents felt that the removal of convenient on-street parking to improve pedestrian access would be acceptable 	<p>The main issue of concern</p> <ul style="list-style-type: none"> • 8% of respondents indicated bus service improvements • 9% indicated the lack of a western bypass • 7% indicated parking as the main issue • 7% indicated speeding as the main issue • 10% indicated HGV's as the main issue

3.4 'Mapping the Future' workshop - May 2002

To afford the general public an opportunity to assess the Reference and Partnership group strategy and objectives as well as to identify specific problem areas and potential associated solutions

The Mapping the Future workshop was geared towards affording the public an opportunity to view the outcomes of the process to that point (including Reference and Partnership and questionnaire outcomes) and more importantly to enable the public themselves to identify issues and areas of concern. The public were able to identify specific locations where they felt specific problems needed attention and these were structured to enable such problems/solutions to be allocated into any one of the 5 key government objectives. These identified areas of concern were used as a basis of assessing which possible schemes would best address the issues of public concern.

The local objectives in Table 3.1, where further tested and refined as part of the workshop and the responses allowed a priority order to be placed on them. This ordering, weighted in accordance with the degree of concern raised, is given in Appendix 7. This highlights the importance to residents of Sudbury of issues related particularly to the environment, safety and accessibility. Any strategy for developing the transport system in Sudbury further should therefore specifically target these areas to ensure sustainability of such solutions as well as ensuring public acceptance of such strategies.

The Mapping the Future workshop was also used as a platform to assess the public's view on the importance of each of the 5 key government objectives. The outcome of this assessment was as follows:

Table 3.3 Importance of Government's key objectives

<i>Government Key Objective</i>	<i>% voting as most important</i>	<i>Number of flags placed</i>
Accessibility	12%	31
Economy	5%	14
Environment	47%	90
Integration	7%	13
Safety	29%	95

These results mirror the earlier outcomes confirming that the environment, safety and accessibility are the key areas of concern in Sudbury and surrounding area.

Fundamental to the Mapping the Future workshop was the opportunity for the general public to identify where in Sudbury and Great Cornard they perceived a transport related problem and for it to be categorised in terms of the Government's key objectives. This was done by asking the public to place a of a colour coded flag (colour relating to a Government key objective) in the appropriate place on large map of the area. On the flag was written a description of the perceived problem. Over the 3 days the workshop was held, 243 flags were placed on the map distributed across the Government objectives as given in Table 3.4. The comments made have been used to formulate the strategies in this LTAP and they are summarised in Appendix 7 which gives an indication of the spread of issues across Sudbury and Great Cornard.

3.5 *Citizens' Panel*

To scrutinise the work carried out and to give views on the options

A Citizens' Panel was convened in advance of the final exhibition to consider in detail the work carried out and to give a view on the options and any refinement necessary before the exhibition and consultation. The panel comprised stakeholder representatives from Sudbury and Great Cornard invited to give a broad representation of the diverse views known to exist. This ensured that the panel attitude was balanced and did not bias any particular viewpoint.

The panel found it too onerous to come to view on single preferred option and could not reach a consensus on this. The meeting, therefore, highlighted the clear diversity of issues and views in the town and furthermore confirmed that no single solution would benefit all interests all of the time. Furthermore, various compromises would need to be made on certain issues in the interest of benefiting the town and

surrounding area as a whole. As such, it was accepted that there would be a 'price to pay' to achieve the overall objective of reducing traffic in and around the Sudbury area.

The panel confirmed that the work had been very thorough and agreed with the approach taken. They highlighted the need for the testing of one further option variation before the Exhibition and requested a further public presentation on environmental matters and constraints.

3.6 *Exhibition – October 2002*

The presentation of the proposed strategy options and final objectives

The exhibition in October 2002 was used as a platform to present the proposals for the LTAP to the general public as well as present options proposed to address the many prevalent issues in the area. The exhibition included the many key environmental characteristics and constraints of the area as well as possible strategies to address the problem of through traffic in the town in general and in the town centre in particular. This included presenting major scheme proposals that would contribute to diverting traffic away from traffic sensitive areas whilst at the same time improving the environment in and around such areas.

Of key interest at the exhibition were the major scheme proposals for Sudbury particularly in light of the previously proposed Western Bypass Scheme aimed at diverting 'through' traffic away from the town centre and surrounding areas around the town. 5 options including major scheme proposals were presented to the public. They are briefly described below but they are described in more detail in Section 4.

Option A

This option involves the introduction of traffic management in the town centre and creating a town centre pedestrian area/square in the Market Hill area that would largely eliminate through vehicular traffic from this area and create a pedestrian friendly environment. (includes Belle Vue upgrade)

Option B

Western bypass realigned at its southern most extremity to avoid, as far as possible, sensitive environmental areas and including traffic management in the town centre (includes Belle Vue upgrade)

Option C

Northern part of western bypass combined with the southern part of the relief road linking to Ballingdon Street at Bulmer Road, traffic management in conservation area with Bulmer Lane closed at the junction with Ballingdon Hill and a new arm provided as a replacement that effectively avoids the residential area on Bulmer Lane, (includes Belle Vue upgrade) including closure of Cross Street to all through traffic and access to local residents only i.e closure of Ballingdon Street north of Bulmer Lane junction

Option D

Southern relief road - Relief road joining Great Eastern Road to Ballingdon Street at approximately the location of the unused Railway Bridge with traffic management in the conservation area (includes Belle Vue upgrade)

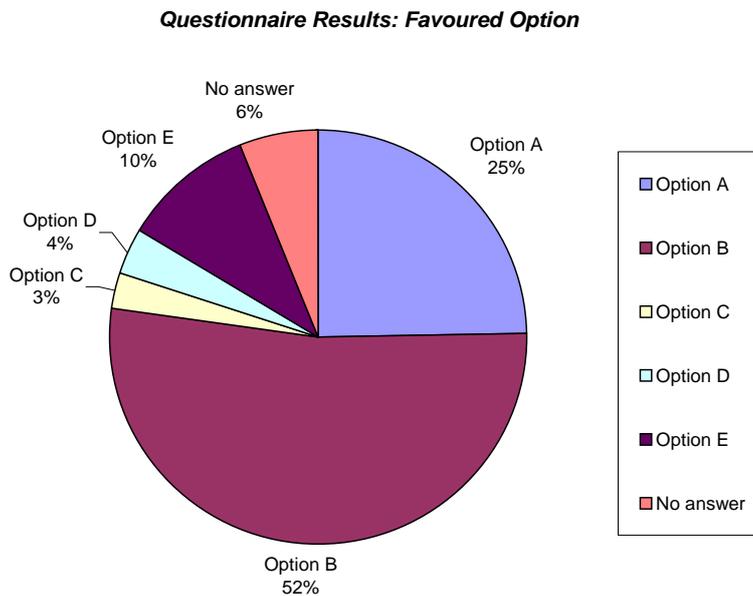
Option E

Option C and D combined including closure of Cross Street to all through traffic and access to local residents only both south and north of the southern relief junction with Cross Street (includes Belle Vue upgrade)

3.7 Results of Consultation on Options

The outcome of the public consultation conducted as part of the exhibition process, was that Option B was the most favoured option followed by Option A. The chart in Figure 3.1 shows the results from the questionnaires returned by the general public only.

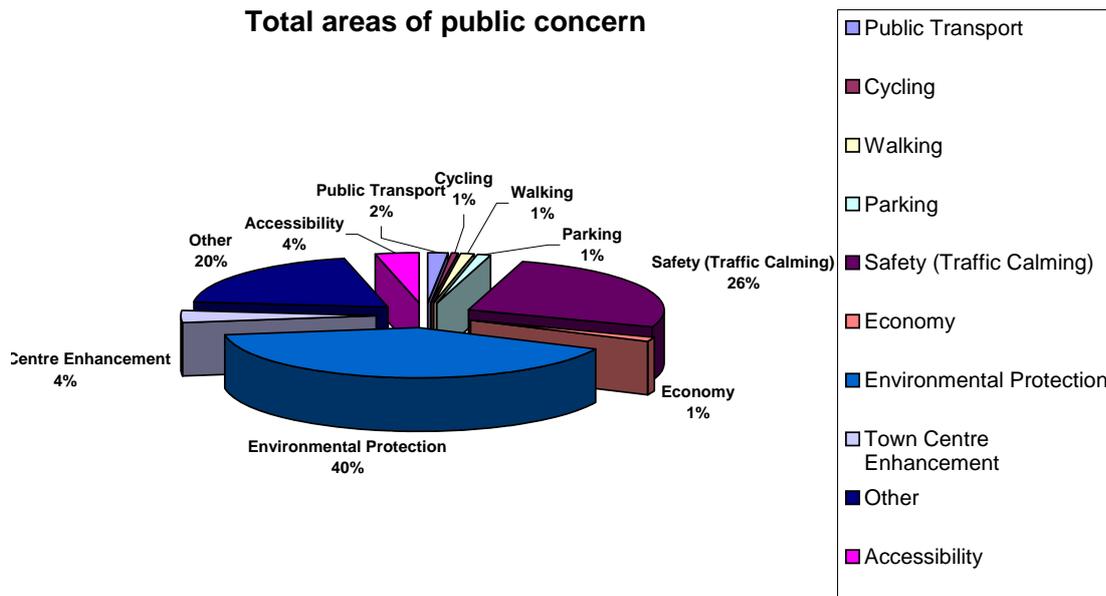
Figure 3.1 Questionnaire results: the preferred option



The comments made by public bodies and organisations, also aligned with those from the general public, with Options A and B being favoured by most. The exception was the group supporting the case to revert to the reinstatement of the pre-Ballingdon Bridge traffic circulation in the town who preferred Option D and Bulmer Parish Council who favoured Option C over B as it has lesser impact on their area of jurisdiction.

The diagram below (Fig 3.2) summarises the results of the assessment of specific concerns raised by the general public. It again shows Environmental and Safety matters to be the major areas of concern.

Figure 3.2 Areas of concern



Following the extensive consultation process, the transport related local key issues combined with the 5 key government objectives of Accessibility, Economy, Environment, Integration and Safety and the key priorities of Suffolk County Council (listed below), were used to develop a transport strategy.

- Raise levels of achievement in schools, particularly for 11 to 14 year olds
- Improve the quality of life for children in care and their families
- Help young people to get good jobs and training and reduce the chances of them getting involved in crime, drug-taking and antisocial behaviour
- Help more older people live independently in their local communities
- **Encourage more people to use public transport**
- Recycle or compost more household waste and reduce the amount going to landfill
- **Maintain our roads and footpaths to a higher standard**
- Better co-ordinate our support for those communities which need it most
- Help more people to access our services more easily and tell us how we can improve
- Support local businesses, develop the local economy and improve training opportunities
- **Reduce the number of lives lost or damaged by accidents or crime**

The Suffolk County Council key priorities that directly affect transport are shown in bold although transport strategies will indirectly contribute to the achievement of other priority areas.

Appendix F

A131 Sudbury Western Bypass

Appendix G

Western Relief Road

Appendix H

Statutory Bodies Responses

Appendix I

COBA Audit Trail

COBA Audit Trail

Criteria	Assumption
Discount Rate	3.5%
Opening Year	2010
Base Year	1998
Project Life	30 years
Forecast Year	2039
Value of time	Defaults
Value of time for construction delay	Transport Economics Note
ADT	Factored from Paramics peak hour model using factors from five ATC sites in Sudbury
Accidents	User defined (3yrs of data available)
Induced traffic	None assumed
Land cost	£0,5m (2003) discounted to 1998 for COBA (factor = 0.89531). Assumed in 2007/2008
Works cost	£21m (2003) discounted to 1998 for COBA (factor = 0.89531)
Construction period	2 years (1.5 years for bypass and 0.5 year for related measures) ie. 2008/2009 & 2009/2010
Cost allocation	47% in year 1; 50% in year 2; 3% in year after opening
Scenarios	Low growth and high growth using defaults.
Network	Same as Paramics network with 25 junctions (link and node diagram to be provided separately for assessor)

Economic Efficiency of the Transport System (TEE) - The Western Bypass

Consumers	ALL MODES	ROAD	BUS & COACH	RAIL	OTHER	
<i>User benefits</i>	TOTAL	Private Cars and LGVs	Passengers	Passengers		
Travel time	37,0 / 38,9	31,6/ 32,9	5,4/ 6,0			
Vehicle operating costs	-0,9 / -1,0	-0,9/ -1,0				
User charges						
During Construction & Maintenance	-0,05					
NET CONSUMER BENEFITS	36,0/ 37,9 (1)	30,7/ 32,0	5,4/ 6,0			
Business		Goods Vehicles	Business Cars & LGVs	Passengers	Freight	Passengers
<i>User benefits</i>						
Travel time	30,4/ 32,4	10,1/ 10,5	19,4/ 20,8	0,9/ 1,0		
Vehicle operating costs	-0,7	-0,6	-0,1			
User charges						
During Construction & Maintenance	-0,04					
Subtotal	29,7/ 31,6 (2)	9,5/ 9,9	19,3/ 20,7	0,9/ 1,0		
Private sector provider impacts				Freight	Passengers	
Revenue						
Operating costs						
Investment costs						
Grant/subsidy						
Subtotal	- (3)					
Other business impacts						
Developer contributions	(4)					
NET BUSINESS IMPACT	29,7/ 31,6 (5) = (2) + (3) + (4)					
TOTAL						
Present Value of Transport Economic Efficiency Benefits	65,7/ 69,4 (6) = (1) + (5)					

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are discounted present values, in 1998 prices and values

Public Accounts – The Western Bypass

	ALL MODES TOTAL	ROAD INFRASTRUCTURE	BUS AND COACH	RAIL	OTHER
Local Government Funding					
Revenue	-				
Operating Costs	-				
Investment Costs	-				
Developer and Other Contributions	-				
Grant/Subsidy Payments	-				
NET IMPACT	-				
Central Government Funding					
Revenue	-				
Operating costs	0,1				
Investment Costs	15,7				
Developer and Other Contributions	-				
Grant/Subsidy Payments	-				
Indirect Tax Revenues	0,04/ 0,07				
NET IMPACT	15,8				
TOTAL Present Value of Costs (PVC)	15,8				

(7)

(8)

(9) = (7) + (8)

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values, in 1998 prices and values

Analysis of Monetised Costs and Benefits – The Western Bypass

Noise	For future use	
Local Air Quality	For future use	
Greenhouse Gases	For future use	
Journey Ambience	-	
Accidents	2,4/ 2,9	
Consumer Users	36,0/ 37,9	
Business Users and Providers	29,7/ 31,6	
Reliability	For future use	
Option Values	For future use	
<i>Present Value of Benefits</i> <small>(see notes)</small> (PVB)	68,1/ 72,3 (Low/ High)	
Public Accounts		
<i>Present Value of Costs</i> <small>(see notes)</small> (PVC)	15,8	
OVERALL IMPACTS		
Net Present Value (NPV)	52,4/ 56,5 (Low/ High)	$NPV=PVB-PVC$
Benefit to Cost Ratio (BCR)	4.31/ 4.57 (Low/ High)	$BCR=PVB/PVC$
<p>Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.</p>		

Economic Efficiency of the Transport System (TEE) – The Western Relief Road

Consumers	ALL MODES	ROAD	BUS & COACH	RAIL	OTHER	
<i>User benefits</i>	TOTAL	Private Cars and LGVs	Passengers	Passengers		
Travel time	51,1 / 56,7	43,4/ 47,8	7,7/ 8,9			
Vehicle operating costs	2,3 / 2,4	2,3/ 2,4				
User charges						
During Construction & Maintenance	-0,04					
NET CONSUMER BENEFITS	53,4/ 59,1	(1) 45,7/ 50,2	7,7/ 8,9			
Business		Goods Vehicles	Business Cars & LGVs	Passengers	Freight	Passengers
<i>User benefits</i>						
Travel time	41,8/ 47,0	13,8/ 15,3	26,7/ 30,2	1,3/ 1,5		
Vehicle operating costs	1,5	1,1	0,4			
User charges						
During Construction & Maintenance	-0,03					
Subtotal	43,2/ 48,6	(2) 14,9/ 16,5	27,1/ 30,6	1,3/ 1,5		
<i>Private sector provider impacts</i>				Freight	Passengers	
Revenue						
Operating costs						
Investment costs						
Grant/subsidy						
Subtotal	0,4	(3)			0,4	
<i>Other business impacts</i>						
Developer contributions		(4)				
NET BUSINESS IMPACT	43,6/ 49,0	(5) = (2) + (3) + (4)				
TOTAL						
Present Value of Transport Economic Efficiency Benefits	97,0/ 108,1	(6) = (1) + (5)				

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.
All entries are discounted present values, in 1998 prices and values

Public Accounts – The Western Relief Road

	ALL MODES TOTAL	ROAD INFRASTRUCTURE	BUS AND COACH	RAIL	OTHER
Local Government Funding					
Revenue	-				
Operating Costs	-				
Investment Costs	-				
Developer and Other Contributions	-				
Grant/Subsidy Payments	-				
NET IMPACT	-				
Central Government Funding					
Revenue	-				
Operating costs	0,2/ 0,2				
Investment Costs	13,5/ 13,5				
Developer and Other Contributions	-				
Grant/Subsidy Payments	-				
Indirect Tax Revenues	2,3/ 2,4				
NET IMPACT	16,0/ 16,1				
TOTAL Present Value of Costs (PVC)	16,0/ 16,1				

(7)

(8)

(9) = (7) + (8)

Notes: Costs appear as positive numbers, while revenues and 'Developer and Other Contributions' appear as negative numbers.
All entries are discounted present values, in 1998 prices and values

Analysis of Monetised Costs and Benefits – The Western Relief Road

Noise	For future use
Local Air Quality	For future use
Greenhouse Gases	For future use
Journey Ambience	-
Accidents	4,4/ 5,4
Consumer Users	53,4/ 59,1
Business Users and Providers	43,2/ 48,6
Reliability	For future use
Option Values	For future use

Present Value of Benefits ^(see notes) (PVB) 101,4/ 113,4 (Low/ High)

Public Accounts

Present Value of Costs ^(see notes) (PVC) 16,0/ 16,1

OVERALL IMPACTS

Net Present Value (NPV)	85,4/ 97,4 (Low/ High)	$NPV = PVB - PVC$
Benefit to Cost Ratio (BCR)	6.35/ 7.06 (Low/ High)	$BCR = PVB / PVC$

Note : This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Appendix J

Environmental Worksheets for the Western Bypass

Appendix K

Environmental Worksheets for the Western Relief Road

Appendix L

Environmental Assessment for Town Centre Traffic Management

Environmental Assessment for Town Centre Traffic Management

Worksheets and an AST were also completed for the impacts resulting from implementation of the Town Centre traffic management measures in isolation. The following subjects were addressed: Landscape, Townscape, Heritage of historic resource, Biodiversity and Water Environment.

The findings of this study were as follows:

- Impacts upon Landscape were considered to be negligible
- There are slight beneficial effects to the historic core of Sudbury, however these were outweighed by adverse impacts elsewhere in Sudbury resulting from increased traffic flows where vehicles are re-routed to currently relatively tranquil areas
- There is a substantial benefit to the heritage resource resulting from displacement of traffic away from the historic core
- There is no impact upon Biodiversity as a result of implementation of traffic management measures
- Impact upon the Water Environment is considered to be negligible.

Overall, the implementation of town centre traffic management measures is considered to have a beneficial impact upon the local environment, with few adverse effects.

A copy of the relevant worksheets is available from Mouchel on request.

Appraisal Summary Table – Town Centre Traffic Management

Option A Town Centre Measures		Description: Traffic management and sustainable transport measures in the town centre	Problems: The A131 and associated Principal routes pass through the Conservation Area of Sudbury. Over 10,000 vehs. in a 16hr day with 3% HGV's.	Present Value of Costs to Public Accounts £m
OBJECTIVE	SUB-OBJECTIVE	QUALITATIVE IMPACTS	QUANTITATIVE ASSESSMENT	ASSESSMENT
ENVIRONMENT	Noise	n/a	-	net properties win / lose
	Local Air Quality	n/a	-	-
	Greenhouse Gases	n/a	-	-
	Landscape	Changes in traffic flow arising from regional traffic management proposals considered to have negligible impact on landscape	0	Neutral
	Townscape	There are slight beneficial effects to Ballingdon Core (5A1), and the Medieval Ecclesiastical Core (5B). Meanwhile, slight adverse effects to the Industrial and Commercial Fringe (5G).	-1	Slight Adverse
	Heritage of Historic Resources	Moderate / large benefit to heritage resource within historic town centre.	+2.5	Moderate/Large Beneficial
	Biodiversity	There will be no impact upon Biodiversity features as a result of the implementation of this option.	0	Neutral
	Water Environment	Negligible impact upon water environment.	0	Neutral impact
	Physical Fitness	n/a	-	Score
Journey Ambience	n/a	-	Score	