APPENDICES

APPENDIX A

CONSULTATION REPORT

ACCESS TO HASTINGS

Consultation Report

ACCESS TO HASTINGS

MULTI-MODAL STUDY

Consultation Report

September 2000

ACCESS TO HASTINGS

Consultation Report

Contents

1. INTRODUCTION

Study Remit

1.1 The Access to Hastings brief recognised that consultation was "a fundamental component of the Study" that would "assist in building consensus for all the Study's recommendations". Further it was expected that the communication/consultation strategy would "underpin all stages of the Study". The approach adopted by the consultants reflected this importance, putting consultation and participation at the heart of the study process.

Role of Consultation, Participation and Communication

1.2 Traditionally, consultation has involved inviting people to respond to proposals, eliciting their opinions on a proposed solution. This has sometimes led to people feeling excluded from the processes of recognising problems, setting objectives and devising solutions. In the Access to Hastings study, great emphasis was placed upon giving people just such opportunities – to participate in problem identification, strategy formulation and the derivation of solutions.

1.3 This approach was totally in keeping with recent Government guidance, which has encouraged greater emphasis on increased participation. By inviting greater involvement, it was hoped that the solutions arrived at would be more appropriate and, importantly, that they would be understood by a broad spectrum of the community.

1.4 The approach to participation has been to develop a hierarchy to inform and listen to as wide a group of interested parties as possible. This hierarchy reflects the interests of different groups within the study area and can be broadly categorised as follows:

- Steering Group, including local authorities, regional authorities and business and environmental groups;
- Statutory consultees;
- Public Transport Working Group;
- Wider Reference Group (see Appendix A); and
- General public.

1.5 In addition to the consultation tools reported here, regular meetings where held with interested parties within each of the first two tiers of the participation hierarchy.

1.6 Meetings of a technical working group were held to advise the consultant team on key matters such as the methodology for examining the economic impact of strategies. A public transport working group, consisting of the sSRA, Railtrack, rail and bus operators and passenger user groups met three times during the study to discuss public transport initiatives and their feasibility, cost and benefits.

Consultation Programme

1.7 A programme of public participation was compiled and undertaken within each stage of the study. The programmes drew upon the experience and expertise of those represented on the Wider Reference Group and also incorporated the views and opinions of members of the public.

1.8 Each element of the programme is reported in the following Chapters of this report. Chapter 2 covers the Problem Identification phase which incorporated group discussions with members of the public, workshops with representatives of the Wider Reference Group, distribution of the first study Newsletter inviting contributions, and a programme of research among the business community.

1.9 The Strategy Formulation period of the study included a further series of workshops and a second Newsletter inviting contributions for the public. The results are described in Chapter 3.

1.10 The most comprehensive phase of the consultation programme, undertaken during the Strategy Evaluation period of the study, is reported in Chapter 4. A series of exhibitions, staffed and unstaffed, was held throughout the study area and a further round of workshops held with members of the Wider Reference Group. With the third Newsletter, a questionnaire sought more detailed and structured views regarding the options, as set out in the newsletter and at the exhibitions.

1.11 The business community's views were obtained using a telephone survey with a sample of companies throughout the study area. A total of 198 interviews were conducted.

1.12 To ensure the study was able to benefit from the views of a totally representative sample of the residents of the area, in addition to those of the self-selecting sample who chose to respond to the various invitations to contribute their views, a 1,400 household survey was undertaken.

2. PROBLEM IDENTIFICATION

Group Discussions

2.1 A total of six group discussions were held in order to inform the problem identification stage of the study. Whilst not intended to obtain a representative, statistically robust picture of attitudes and perceptions, the groups gathered a broad understanding of the issues relating to travel and transport in the locality. Full details are provided in the Problem Identification Report.

2.2 Cross sections of people were selected in each location to participate in the "general" groups. In addition, a group of younger people (18-30 years) were recruited in Hastings and a group of elderly/retired people in Bexhill. The schedule of discussion groups was as follows:

Hastings	-	Young people	13.12.99
		General	15.12.99
Bexhill	-	Elderly/retired people	14.12.99
		General	14.12.99
Tonbridge	-	General	13.1.00
Tunbridge Wells	-	General	13.1.00

2.3 Each discussion was facilitated by the consultants' professional staff, aided by a detailed discussion guide which encompassed:

- General views of the area;
- What it was like for shopping, leisure, employment etc.;
- Where they went for shopping, leisure, employment etc.;
- What the area was like for travelling by public transport, walking and cycling;
- What the roads were like;
- Congestion;
- Pollution;
- Solutions;
- Improvements; and

- What they were prepared to do about it.

2.4 Within that broad format, the younger persons' group also investigated a number of issues thought to impact specifically upon young people: the effect of the cost of travelling, the effect of the lack of a car, cost of public transport and congestion on access to employment, and the range and level of employment opportunities in the area including perceptions of wage rates.

2.5 The older persons' group investigated, in addition to the issues described in paragraph 2.3, the cost of travelling, personal security, and perceptions of the pedestrian environment, including access to the town centre and access to bus stops.

2.6 The Tonbridge and Tunbridge Wells groups were more specifically focused on perceptions of travel between the two towns, influences on mode choice, perceptions of the problems associated with the A21, the causes of those problems, potential solutions and the changes that they were prepared to make.

Hastings and Bexhill

2.7 Views expressed regarding Hastings and Bexhill were neither overtly positive nor overtly negative, though the latter was thought of as a quieter, safer and slower place than Hastings. In Bexhill, younger people expressed boredom with the location and seemed to orientate themselves towards Hastings. Older people were more content, having chosen to live in Bexhill for the fresh air and quiet life, and hardly mentioned Hastings, seeming to orientate themselves towards Eastbourne.

2.8 Proximity to the countryside was raised as a plus point, as was the sea. Shopping facilities in both towns, whilst different in nature, were viewed favourably. The recent improvements in Hastings' leisure facilities, notably bars and pubs were commented on favourably, and appeared to be well used by local residents and many from Bexhill. Education was considered to be relatively good in Hastings and Bexhill.

2.9 Negative elements in both towns included the relatively dilapidated state of older buildings along the seafront, the influx of foreign language students and tourists into Bexhill in the summer months, the lack of facilities for young people, particularly in Bexhill, and the prevalence of drugs and drug taking, alcoholics and vandalism in Hastings. There was resentment at the way the area is perceived as a "dumping ground" for refugees and those claiming DSS benefits.

2.10 The seasonal/retail nature of the majority of jobs available was held responsible for the low wage rates locally. Commuting to London was viewed as the only viable option to earn a relatively high sum. The presence of significant numbers of refugees and benefits recipients was further considered to encourage very low wage rates.

2.11 Despite considering "their" services better than those in Hastings consider, buses and bus services were not very highly thought of in either town. Services were thought to have deteriorated since deregulation, and to lag behind other places such as London and Eastbourne, though the Conquest Hospital, in Hastings, was acknowledged to have good bus connections. Criticism covered most aspects of services, particularly the cost of travel, frequency, waiting conditions, adherence to timetables, and a lack of

conductors. People did not feel that they could depend on buses to get them somewhere on time.

2.12 Personal safety and security did not appear to be a major influence on people's propensity to use buses. Carrying heavy shopping and travelling with children often influenced mode choice, with taxi being considered the next best option in these circumstances. The lack of a "decent", fast and direct bus service between Hastings and Bexhill was noted, as was the lack of a night bus service which young people suggested would be well patronised.

2.13 The older people in Bexhill considered that the elderly should be eligible for free travel, as they are elsewhere in the country. Some misconception was apparent regarding the transferability of concessionary bus passes between the two authorities.

2.14 Bus fares were perceived as being too high, though actual knowledge was at a very low level. Participants admitted to a lack of knowledge and to being confused as to the service(s) on offer, with different fares, different bus companies and a lack of easily accessible information compounding the situation. The lack of timetables was a particular concern. It seemed that this confusion played a key role in the low level of bus usage.

2.15 Suggested improvements to encourage more bus use comprised increased service frequency, more and clearer information, interchangeable tickets, better shelters with seats at bus stops, warmer conditions, more competitive pricing, and seamless travel between buses and trains. Cost and frequency were probably the main areas for improvement.

2.16 Although trains were generally viewed more favourably than buses, there were still many criticisms. Residents in Bexhill considered their service adequate only for journeys to Eastbourne, opting to use Hastings or St Leonards Warrior Square stations for northbound trips. Bexhill Station was described as "terrible", "a nightmare", where people did not feel safe at night. This contrasted strongly with the view of Bexhill generally. The fact that access to the station was from the wrong side for the town centre was another criticism.

2.17 Hastings Station was not viewed positively either. Although personal experience was limited, the morning peak hour trains were perceived to be packed so one had to be prepared to stand for the journey to London. Frequent delays and cancellations were mentioned, as was the poor Sunday service and the "filthy" state of the trains. There was a feeling that the train service existed more to bring people to the south coast than to facilitate movement out of the area.

2.18 Rail fares particularly in the peak came in for criticism, not being considered value for money. The off-peak return fare to London was also cited as being too expensive. People were reported to drive as far as Orpington and catch the train there, to save money.

2.19 The lack of a late night service from London was criticised, since this made a trip to London quite awkward. Young people, however, were already concerned about safety and security, especially at night. Stories were recounted of rape and attack.

Train guards were believed to be as much in fear of attack as their passengers, and thus not to represent adequate protection.

2.20 Whilst the topography of the area was suggested as a deterrent to walking, personal safety and security was not considered an issue in Bexhill. Of greater concern was the lack of footway maintenance. In Hastings it was thought that a lack of pedestrian crossings, given the flow of traffic, rendered walking and crossing roads hazardous. The installation of CCTV in the pedestrian area was not thought to be any substitute for more (visible) policing.

2.21 The topography of the area, the lack of cycle routes and a safe environment for cyclists, and the volume of traffic, were cited as reasons for the almost universal refusal to cycle. Few people were convinced of the safety of leaving their bikes parked in Hastings town centre, and there appeared to be a low level of awareness of cycle routes and facilities. Although unwilling to cycle, the young persons group did suggest scooters/mopeds as realistic, environmentally friendly and quicker means of alternative transport.

2.22 Virtually everyone was unhappy with the traffic situation on the roads and routinely encountered difficulties travelling by car. The problem was widely accepted as being "too much traffic" and "too many cars", coupled with a poor road infrastructure. A year round problem, traffic is particularly acute at times of the school run, and on Sundays.

2.23 Congestion was cited as a very serious problem between Hastings and Bexhill, with Glyne Gap frequently identified as "a nightmare". The traffic generated by the new shopping complex and leisure facilities, the narrowness of the road, and the sheer volume of traffic, particularly that influenced by the school run, were seen as the primary causes of the problems.

2.24 The A21 was described as a joke, with the journey time from/to the M25 considered disproportionately long. Any accident along the route was acknowledged to require detours "through the country". Business people were reported to "hate coming down the A21".

2.25 People generally recognised the aim of charging for car parking in the town centres but feelings were mixed about having to pay to park. In Hastings, some people accepted that the new system had made it easier to park. It was suggested that some people now parked further away and walked in, and that it may have encouraged some people to leave their cars at home and start walking to work. In Bexhill, concern was expressed about the ability to park close to one's destination, with evidence of cars driving round and round the town centre to pick up, or set down, passengers or to find a suitable parking space.

2.26 A number of roads were notorious for congestion, including Queen's Road in Hastings and the A259 between Hastings and Bexhill. It was accepted that congestion was getting worse, such that some journeys – particularly to London – were now made by train, and others were timed to avoid the worst of the congestion. The school run was widely seen as a root cause of congestion. Traffic problems and congestion were seen as deterring investment in Hastings.

2.27 Pollution was generally not perceived as a problem, mainly due to the location of Hastings and Bexhill by the sea. Although vehicle generated pollution was recognised in some places such as Bexhill Road and St Helen's Road, it was not considered to be in the same league as pollution in London.

2.28 Potential solutions to the problems identified were relatively limited. In addition to the specific improvements to bus and train services and the walking/cycling environment, mentioned above, it was acknowledged that a lot of unnecessary journeys were made – raising the possible need to restrict car ownership. One group discussed the merits of car sharing, and the viability of a tram service was discussed. Some restriction on the numbers of refugees and the "care in the community type people" was also suggested as a way of improving the environment and appeal of Hastings – and possibly local wage rates.

2.29 The prevailing thinking was that taxation on motorists was not yielding any return in terms of improved road structure. Financial responsibility for improvements in transport therefore lay with central and local government. If road tax was abolished, road charging might be palatable. Otherwise it would probably be resisted.

2.30 Despite the acceptance of the need to change, and the recognition of the cause of the problem, people were reluctant to change their behaviour without some incentive. The situation had not become sufficiently dire for them to act and, at the moment, they could continue to manoeuvre around the problems.

Tonbridge and Tunbridge Wells

2.31 Overall, people in the Tonbridge group were quite contented about living in the area, with its easy accessibility to London, and proximity to the countryside. In Tunbridge Wells, residents were not happy with the one-way system and felt the town centre improvements had been focused on visitors rather than residents.

2.32 Whilst Tonbridge was considered to have adequate day-to-day shopping facilities, major shopping meant travelling to Bluewater, Tunbridge Wells or Brighton. Evening entertainment in the town was thought to have improved, though participants tended to look to London or Tunbridge Wells, particularly the young people. It was noted, however, that it was difficult to go anywhere except London and get home again, without driving. Residents had no major concerns about safety and security either in Tonbridge town or around the station.

2.33 Tunbridge Wells residents, wishing to shop elsewhere, tended to travel to London and to Brighton. The town was now something of a "night spot", somewhat surprisingly it was felt in view of the lack of transport services, particularly at night. Walking along the High Street on a Friday or Saturday night could be a frightening experience.

2.34 Employment opportunities throughout the area were acknowledged as being good, as were the educational establishments.

2.35 People in Tonbridge were generally positive about the train services, some opting to travel by train rather than drive to Tunbridge Wells. Fares on that route were considered reasonable compared with the costs of using the car. Peak fares to London were not so popular.

2.36 Opinions of the train service were markedly worse in the Tunbridge Wells group. High fares and poor service quality, in terms of overcrowding, infrequent trains and unreliability, were cited. People were keen to know where the money paid in fares had been used, as it was felt that "nothing had been done to the route for years". These problems were compounded by the lack of a lift at Tunbridge Wells station.

2.37 The main area for improvement concerned late night trains from London and Tunbridge Wells. There were also calls for the trains to be more regular and reliable, and cheaper (particularly in relation to the cost of parking).

2.38 Overall, the bus services appeared to be shrouded in mystery, and people tended to view the local services as poor. The few people who had travelled by bus between Tonbridge and Tunbridge Wells did, however, view the service positively. The major criticism was the fact that the bus lane ended in Southborough, just where the traffic problems were most acute.

2.39 In Tunbridge Wells, the bus service to Gatwick was reported to take longer than the car – a disincentive to use it – as was the service to Brighton. The latter was particularly regretted, in view of the difficulties of parking in the town. Taxis were frequently chosen in preference to buses where heavy shopping was involved.

2.40 Tonbridge residents had a positive and pragmatic attitude towards walking. The size of the town ("not too big to walk around") and the cost of parking encouraged many to make journeys on foot. In Tunbridge Wells, it was agreed that the pedestrian environment had improved recently although the condition of the footways in some areas was still considered "dangerous" and "disgusting".

2.41 Whilst the benefits of cycling were acknowledged, the inconsistency of cycle lanes in Tonbridge was criticised. People were more amenable to recreational cycling than to cycling to work. In Tunbridge Wells, cycling was not considered safe, and cycle parking inadequate. The topography was thought not to favour cycling, and the narrow road widths to mitigate against cycle lanes in the town.

2.42 Congestion was acknowledged in both towns, as was the fact it had got worse in recent years. Increased population density and increasing numbers of visitors to the town were thought to have caused the problem in Tunbridge Wells. Heavy goods vehicles, opting to travel through Tonbridge town centre rather than using the bypass, were of particular concern. The school run was widely blamed for the congested conditions.

2.43 The difficulties of travelling between Tonbridge and Tunbridge Wells on the A26 were raised in both towns, with traffic in Southborough being described as "a nightmare". Problems on the A21 were also raised spontaneously, with safety and the high incidence of accidents of particular concern. People in both groups admitted to using country lanes frequently to bypass the congestion on the A21 and A26, though they acknowledged that this was far from ideal.

2.44 On the A26, the main cause of the problems was identified as being when the road narrows from dual carriageway to single carriageway, and the traffic lights at Southborough. The enforced speed reductions cause accidents and traffic jams.

2.45 On the A21, the problems were thought to be caused by through traffic, to Hastings and elsewhere in Kent, rather than by people trying to get to Tunbridge Wells. Extension of the dual carriageway was suggested as a potential solution, as was some form of speed control.

2.46 In the Tonbridge group, there was some agreement that any road widening would just lead to it being filled up again with more traffic. A suggested alternative was to improve the train service so more people would use it rather than drive to work.

2.47 People in Tonbridge recognised that traffic and congestion problems were set to get worse, that travelling by train was frequently easier than by car, and that parking charges could deter people from driving. They were also of the opinion, however, that such charges would only be acceptable if public transport services were improved first and that, in any event, travelling by car would always be the first choice, if only to justify the cost of owning the vehicle.

2.48 There was a feeling that, although people would not give up their cars, a range of measures could be used to encourage them to use other means of travel. A tax incentive to car share, reliable public transport, free public transport or vouchers to be redeemed in local shops were suggested. Whatever was done, however, should be paid for by the council, with local businesses possibly making some contribution.

2.49 The findings of the group discussions broadly concurred with the results of several pieces of research conducted towards the end of 1999, on behalf of the Hastings Borough Council and the Rother District Council. More details are provided in the Problem Identification Report.

Workshops

2.50 A number of meetings were held at which the role of the study and its aims were outlined and representatives of East Sussex, Kent, Tonbridge & Malling and Tunbridge Wells Councils, the shadow Strategic Rail Authority, and a number of local environmental and transport groups, were given the opportunity to voice their concerns. The key points raised are summarised below.

2.51 With respect to the road network, it was noted that there were a number of safety and congestion relating to the A26 between Tonbridge and Tunbridge Wells. Resolving the A21 ‘missing link’ had significant implications for each borough’s transport strategy. Junction improvements on the A21 would permit heavy goods traffic to avoid Tonbridge town centre. If trunk road congestion was reduced, measures intended to relive traffic congestion and improve safety in parallel rural communities could be introduced.

2.52 The A259 coast road between Bexhill and Hastings was acknowledged to suffer congestion and variable journey times. The vast majority of the traffic using the road, however, was local.

2.53 There was a wish to remove the uncertainty surrounding the highway schemes. There was also concern that any road upgrading would simply lead to more traffic using the facility, thus necessitating further upgrading in the coming years.

2.54 Where public transport was concerned, most emphasis was on the rail services to/from and within the Hastings-Bexhill area. The current rail service along the coast was unreliable. An improved railway system would, it was thought, remove the need to construct the Hastings-Bexhill bypass. New stations should be considered at Glyne Gap and at St Leonards West Marina. It was suggested that a light rail system should be investigated to serve the new community planned north of Bexhill.

2.55 There was a call for fast through trains to London in the peaks, not necessarily off-peak. Many commuters were reported to drive to Battle and take the train from there. New rolling stock, which had to be introduced on the Hastings line by 2002/3, would provide greater acceleration and higher top speeds.

2.56 Through ticketing was thought to be an important area of concern where current arrangements were considered unsatisfactory. Since Gatwick represented a key destination, it would be served better by eliminating the need to reverse out of Eastbourne. A local shuttle service to/from Eastbourne should be provided.

2.57 In the north of the study area, there was a call for the Wealden line south of Uckfield to be re-established, and the connection to Tunbridge Wells reinstated. It was thought that park-and-ride schemes should be considered in Tunbridge Wells.

2.58 Under the heading economy and regeneration, the perceived remoteness of the Hastings area was said to impose additional costs on businesses via access to markets, supply chains and restricted labour markets. Research was acknowledged to have shown transport links to be the number one issue for business. There was, however, concern regarding the view that better road links automatically lead to regeneration. There was the risk of road improvements leading to a net outflow of economic activity.

2.59 The Bexhill North Access Road was thought vital to unlock any new development sites. Infill development, resulting from the construction of the bypass, would itself generate additional traffic, however, and not resolve congestion in the long run.

2.60 There was a need for jobs in Hastings, but they needed to be located in the town centre, or suburban nodes serviced by bus and rail, if that regeneration was not to lead to greater traffic problems. It was believed that the role of tourism in the area needed to be included in the study, and that the role of long distance commuting required attention.

2.61 There was recognition that factors other than road access were vital to the underlying competitiveness of the local economy, notably skills training and telecommunication infrastructure, to support high tech businesses.

2.62 A number of issues of concern were identified – congestion, safety, impacts on the surrounding road network and accessibility within the area. There was also concern regarding the environment, and the ability of the appraisal process to give it equal weighting with monetarised costs and benefits. The gap between Hastings and Rother should be retained.

2.63 There was a wish that the study should concentrate on transport links in their widest sense, and not just road building. Scenarios of workplace charging and road user

charging should be tested. The role of cycling and support for a cycle network was emphasised. The effects of the prospective merger of Hastings and Bexhill Colleges needed to be taken into account.

2.64 Attention was brought to the fact that the proposed highway schemes in the Hastings-Bexhill area would lead to a loss of designated protected environmental sites, particularly at Pevensey Levels (RAMSAR); Combe Haven (SSSI), and High Weald (AONB) on the Eastern Bypass.

2.65 A wide range of views were expressed at the consultation meetings. There was inevitable conflict in views expressed in some areas, notably relating to the net benefit of the highway schemes. From those opposed to the trunk road schemes, there was recognition that there is a need to regenerate the Hastings area and enhance economic activity. There was doubt, however, as to whether the trunk road schemes would achieve this.

2.66 There was a broad consensus at meetings that the study had to disentangle conflicts through 'a scientific approach'. Whilst parties reserved the right to defend their positions, a recognition of an objective and logical approach to the multi-modal study was thought likely to enhance the prospect of acceptance of the study's findings.

Newsletter

2.67 In January 2000, the first edition of the Access to Hastings News Update newsletters was distributed. This described the study remit and the first task of understanding the issues. The nature of the consultation process was explained, and the establishment of the Wider Reference Group announced.

2.68 Recipients of the newsletter were invited to send in their views with respect to the study's aims and objectives and also two specific questions:

- What do people like about living in the Hastings/Bexhill or Tonbridge/Tunbridge Wells area and how can these positive attributes be maintained?

- What transport and other problems exist in each area, and how can these be addressed to achieve the economic and wider objectives of the area?

2.69 By 3rd March 2000, 47 individual responses had been received concerning the Bexhill/Hastings area. Five were from Local Authorities or individual councillors writing in their official capacity. A further 19 responses were from organisations represented on the Wider Reference Group, and the remainder from individuals outside the Group. In addition, 173 petition responses had been received, representing 231 people in St Leonards on Sea.

2.70 Twelve responses had been received relating to Tonbridge/Tunbridge Wells, four from Local Authorities, five from the Wider Reference Group and three from other individuals. Three of the responses received raised issues relating to the coastal area and the Pembury area.

What do people like?

2.71 Most responses did not dwell on the area's characteristics and attributes. One Local Authority cited the beautiful countryside, walks, local interesting places, the moderate climate and the fact that London and the coast are within easy reach.

2.72 Among members of the Wider Reference Group, nine suggested positive attributes primarily related to the proximity of the countryside and the coast/sea, and to the relatively mild climate. Some reference was made to the area's historical links and buildings of architectural interest.

2.73 There was the suggestion that the area remains largely protected from the exploitation and development seen in other parts of the country and region. Indeed one response described the towns as having a sense of containment and definition, leading to a strong local identity. This "separateness" had allowed Hastings and St. Leonards to retain many traditional characteristics.

2.74 Proximity to the countryside and to the seaside were top of the area's attributes among the individuals who replied. Three mentioned the mild climate - one of the factors inducing the move to the area on retirement. Two people referred to the fact that the area is unique, with one going further to describe it as "a unique and brilliant place".

2.75 A parish council to the east of Tunbridge Wells cited space, fresh air, room to pursue outdoor activities and less noise as being what people liked about the area. It also mentioned a perceived lower crime rate.

Transport Problems

Local Authorities

2.76 Three of the Local Authority responses mentioned roads. One acknowledged that the A259 could not take the weight of traffic and that the A21 is "inadequate". A second supported "some sort of access to the north of Bexhill" to facilitate the planned housing allocation. This response also noted the congestion on the A21 at Pembury. The third of the Local Authority responses to mention roads was in favour of the Pebsham Link rather than the Bexhill Bypass. A bypass, it was suggested, would do just that, whereas there was a need to encourage visitors and tourists to come to the town.

2.77 Three of these responses were concerned with the nature of the current rail services between Hastings and Gatwick, Hastings and London and Hastings and Tonbridge. Train journey times from Bexhill to London were described as a disgrace, whilst the quality of the trains and the service reliability were labelled "appalling". Train fares were thought too high. Two Local Authority responses suggested that the Hastings-Ashford line should be improved - electrified, and generally brought into the twenty-first century.

2.78 One authority was concerned that the improvement of access to Hastings via the A21, and the building of the A259 bypass would bring unaffordable and unwanted new

housing. This would not only do nothing to encourage younger people to stay in the area but would also have adverse implications for traffic, water supply and waste management.

The Wider Reference Group

2.79 Sixteen members of the Wider Reference Group mentioned traffic congestion and/or the proposed by-passes. Three were in favour of those roads being built. Adverse reaction to the proposed schemes focused on three aspects - the fact that the traffic along the A259 is essentially local so would not use the bypass, the implications of proposed interchanges, particularly at Mayfield, on traffic using local residential roads to access the bypass, and the fact that the bypasses would take trade away from Hastings rather than promoting economic development.

2.80 There was concern, especially with respect to St. Leonards, that the bypass would simply transfer traffic from the seafront which "was constructed as a road capable of serving heavy traffic", to local roads which were not so constructed. Particular mention was made of the number and location of the access points, which for at least one organisation was the focus of concern. Thus whilst acknowledging that "most residents wish to see the removal of unnecessary traffic through both towns", there was concern that "the proliferation of access points could cause serious environmental damage". Another submission was more direct in its request to “move the Mayfield interchange". This was linked with the desire to see the Pebsham Link built, to take waste carrying vehicles directly to the disposal area.

2.81 Three responses from the Wider Reference Group questioned the likelihood of the bypasses providing economic benefit for Hastings. Three responses made reference to the A21. One noted that the issues of access to Hastings related to that road and not to the two proposed bypasses west and east. The other two responses were strongly in favour of the proposals for the A21.

2.82 The most frequently cited transport problems in the area - mentioned by 17 respondents from the Wider Reference Group - related to the rail service from Hastings and Bexhill. Six wished to see the upgrading and electrification of the Hastings-Ashford line "immediately". One group suggested that the first priority should be to have a modernised passenger and freight rail service between Southampton and Ashford.

2.83 The current rail links to London were variously described as out-dated, shabby, slow, expensive, uncomfortable and unreliable. It was suggested that people would be encouraged to use the train "if there were new stations on the coastal line, and the service continued to Ore". Seven further submissions suggested new stations along the coast with Glyne Gap specifically nominated as a suitable siting by two respondents. Another saw Glyne Gap as a suitable park and ride site for Bexhill, St. Leonards and Hastings. The inconvenience of having to travel via Eastbourne was noted by three respondents who advocated adoption of the Polegate Curve. Another pointed out that there was spare capacity on all the rail links into Hastings.

2.84 Of more local importance was the perceived inadequacy of the bus service, attributed, in part, by some to the authorities' inability to restrain road capacity for private cars. Service frequency, or infrequency, was mentioned by nine respondents. Some were

also concerned about poor service reliability, also due to road congestion. Bus operators were said to avoid Bexhill Road because of the traffic.

2.85 Measures suggested to improve the bus services, and provide better interchange with trains, included a "realistic level of subsidy", off-bus ticket sales, smaller vehicles, traffic calming and more bus lanes, accessible buses, and better, less confusing information. The provision of bus and coach feeders to stations coupled with reduced station car parking was also suggested. Two respondents suggested an LRT service to link the three towns.

2.86 Some respondents were more interested in the promotion of walking, cycling and also the use of powered two wheelers. It was noted that there was no provision for cyclists in the Hastings area - no cycle lanes, no safe routes to schools and no cycling in the parks. There was also a perceived need to make the walking environment a lot safer and more attractive.

Other Submissions

2.87 Thirteen of the other submissions received mentioned the two major roads or roads in general. Two were in favour of the Western bypass; and another wished to see a change of alignment. The other submissions were not in favour of the new roads. One submission acknowledged that there was a "dire need for more roads", but went on to advocate a road from Glyne Gap to Pebsham Tip, noting that "the proposed route will not take much of the local traffic".

2.88 Whilst one submission described the A21 as "a disaster at the best of times," another expressed concern that the dualling of the Hastings-Pembury road would swamp existing communities and lead to a massive expansion of Hastings. Just one submission considered that the A259 bypasses would mean that "Hastings would lose visitors".

2.89 Comments on the area's public transport services featured in 12 responses. Perceived inadequacies of the train services included the fact that the Bexhill-London train takes nearly twice as long as the Brighton-London train, the services are infrequent and the rolling stock is old. An express commuter service to Charing Cross was requested, as was a "direct service" to London via the Polegate Chord, to replace what was now considered a "dire" service. Three submissions advocated upgrading the Hastings-Ashford line. Another suggested a "new train halt at Ravenside" and Sunday services at Collington Halt.

2.90 Comments regarding the local bus services ranged from the need for them to be "supported politically and subsidised", to their total absence, "except the community bus" in East Bexhill. There was also a highlighted need for a regular bus service to the new cricket ground.

2.91 Within the urban centres, recently introduced parking restrictions were not universally welcomed. Respondents wanted more done to facilitate bicycle use and walking, including a cycle path between Hastings and Eastbourne. A secure and fast school bus service was advocated.

2.92 There was an acknowledgement that poor access to/from Hastings had prevented economic growth and, indeed, had a negative effect on public morale. It was suggested that the inadequacies of the public transport system were "either not noticed or ignored". Better rail and road communications were thought necessary to encourage business investment, property sales and the inward movement of population to help the area's regeneration.

The Petition

2.93 The total of 173 Petition responses received, including four from one household, represented 231 people in St. Leonards-on-Sea. The great majority were taken directly from the campaigning document. Twelve had used the document as the basis for a more lengthy written submission.

2.94 The primary concerns raised were the increased levels of traffic the bypass would bring to local roads, (suggested by four people as being 20,000 rather than 30,000 vehicles per day), the ensuing safety of residents and schoolchildren, and the damage to wildlife in the area, particularly on Gillsman's Hill.

2.95 Three of those who chose to write and one person submitting the standard pro forma, suggested that the root cause of the problems was not so much the bypass per se as the proposed interchange at Mayfield. There was also mention, in this context, of the fact "by far the greatest proportion of current traffic is local, so what purpose a bypass at an enormous expense?" Two submissions suggested the expenditure would be better directed at the A21, one of which considered it would be "far better to improve the Public Transport links".

2.96 One letter suggested that since the real problem with Hastings was the A21 and the poor railway service to London, any east-west bypass for heavy goods traffic should start on the far side of Rye or Hythe and join up with the A27, bypassing all the intermediate towns. "Another alternative for Hastings and St. Leonards would be to tunnel under the hills".

2.97 There was also concern regarding the effect on property prices in the area, should residents find the noise and congestion unacceptable and decide to move house. "This was most emphatically NOT what I moved down to the area for from London in the early 70s". Two petitioners noted that Springfield Road is a conservation area, and that the increased volume of traffic would damage property there. Another petitioner wished to know what proposals there were to protect small side roads from becoming rat runs. Attention was also brought to the fact that the proposals "would ruin [the] route of [the] best half marathon in the UK".

Business Research

2.98 A number of companies in the Hastings and Bexhill area agreed to be interviewed in the course of this stage, and this process was very useful in developing the understanding of the economy. Companies included five manufacturers and two in the service sector.

2.99 As elsewhere, businesses in Hastings suffer from the peaks and troughs of the economic cycle, and the UK and regional snapshot was taken at, or close to, the peak of that cycle. It was important, therefore, not to draw "steady state" conclusions from these specific observations.

The Manufacturing Companies

2.100 These companies were mostly in niche markets (for example swimming pool equipment and specialist building products) and as such there are few or very few other UK players. Markets were therefore competitive (especially post recession) but did not correspond to the "perfect competition" model; margins in most of the businesses we interviewed appeared to be high. So far as could be judged, managements in the main appeared to be good or very good.

2.101 The principal threat to these companies was acquisition by competitors rather than business failure.

2.102 The majority of businesses had been in Hastings for several years, having come from the London area as part of past re-location exercises. All were happy with the area as a location and none in the manufacturing sector were considering moving. However, one service business was considering a move to Tunbridge Wells to bring a number of offices together in one location.

2.103 Inter-company trading was limited and none of the interviewees bought from / sold to each other. Packaging was the main locally sourced input.

Labour

2.104 In broad terms, there was clearly a segmented labour market, with a distinct skilled segment and an unskilled one. The skilled market was tight at the time and seemed to be clearing at current wage levels. There was some upward pressure on wages but companies were reluctant to bid up their labour costs and so managing to get by with current staffing. Some individual positions had been hard to fill, but the situation was generally described as not ideal but quite manageable. The engineering sector was suffering from its traditional shortages, occasioned to some extent by the industry's own cut backs on training during the low of the cycle. There was no evidence that manufacturing output was being constrained by shortages, but could be in the future if current growth of output continued. The manufacturing companies we interviewed had very little demand for unskilled labour.

2.105 One service sector business found it difficult to hold on to trained staff (in a sector where staff are highly mobile) and to attract new staff to the area. In part this reflected location, but also its inability to pay high enough salaries, because its local client base had limited fee potential.

2.106 The unskilled market was characterised by oversupply and hence unemployment. On the demand side, the jobs on offer in sectors such as care homes were unattractive at the wages on offer. However, wages were not being driven up either to try to increase the attractiveness of these jobs or by pressures from the manufacturing sector. The unwillingness of businesses in the care sector to bid up wages suggested that either

the shortages were not a significant problem, and / or that margins in the sector were such that additional costs could not be absorbed.

Property

2.107 The businesses interviewed were managing to operate satisfactorily with their current premises, although some were operating from multiple locations and would ideally bring together their operations at a single location. While, room for further physical expansion was generally limited, in some cases companies would be able to increase output by increasing shift working rather than expanding use of space.

2.108 As with labour, the property situation at that point in the cycle was not always ideal, but there did not appear to be sufficient demand for expansion for it to be a serious problem or constraint.

2.109 A potentially more serious long term problem was the impact of low property values on company balance sheets. Almost all companies had built or purchased their buildings, but because of the gap between costs and values, properties cost had more to acquire than they were worth on the balance sheet. This was not a major problem at the time, but could have affected companies should they have needed to expand borrowings.

Transport and access

2.110 Companies reported a range of downsides arising from poor transport infrastructure and services. Access to the M25 was cited as adding to drivers' hours and costs for distribution, and one firm noted that its suppliers in the north of the UK would not deliver south of the M25. The routes to the M25 and London were also cited as deterring customers from visiting the area and adding to costs, for example of sales personnel and of management travelling on business.

2.111 If the labour market in the area were to tighten, to the point where lack of staff constrained output, access to more labour within the sub-region would be important. In this regard, east-west links were cited as more important than north-south, as the natural labour market catchment lies mainly to the west of Hastings. However, it should be remembered that as the demand would be for skilled labour, this would involve taking labour from other firms rather than taking people off the unemployment register, and so would add only marginally to regional output. It should also be noted that better links would also enable firms in the Eastbourne-Brighton area to compete with Hastings firms for skilled labour, which may reduce output by Hastings firms if they lose labour and / or find wages bid up through competition.

2.112 While there were problems with access, none of the manufacturers saw these problems as reasons to consider relocating, as they were "nuisance factors" rather than significant costs. This probably reflected the fact that these firms were in imperfectly competitive industries and so could absorb the additional costs of the location within their large profit margins.

2.113 One company in the service sector was considering relocating four offices on the coast into a single unit in Tunbridge Wells. This was partly related to access issues, but mainly to tap into the London market which offered better rewards and a bigger labour catchment.

3. STRATEGY FORMULATION

Workshops

3.1 A series of four workshops were held with representatives of the Wider Reference Group in March 2000, at a hotel in St Leonards. Each session lasted some three hours, beginning with a brief presentation by a member of the study team regarding the progress of the study to date and the outcome of the problem identification phase.

3.2 The first participative session related to those issues which were of most concern to attendees, building on the problem identification as reported. Whilst two of the groups emphasised that Hastings was still a good place in which to live, there was general concern regarding traffic issues – volume, speeds, congestion particularly at Glyne Gap, and the environmental effects of vehicles.

3.3 Despite the concern, there was no desire to see the building of bypasses, though improvements to the A21 were thought necessary, particularly in respect of the need to have better links with the rest of the country for business success. Businesses, it was thought, needed to be located together with land specifically allocated for their development. Housing should be developed on available vacant land, before encroaching on to greenfield sites, and should not be situated next to main roads.

3.4 There was mention of the poor nature of local bus services, with the lack of easy access to the Conquest Hospital singled out for mention. The inadequacies of the rail network were mentioned, between Hastings and Ashford and Hastings to London. The need for improvements to the South Coast rail service, between Ashford and Brighton, was also identified. Others commented on the need for better walking and cycling facilities.

3.5 In the context of economic development, the need to encourage more tourists was identified. One group suggested that much rested on improving standards of education in the area, particularly in the field of information technology. “Hastings must become a wired region, a leader in new technologies”.

3.6 There were suggestions that at least part of the reason for the problems identified was the ineffectiveness of the local authorities in the area. In particular there were complaints that some councils were not willing to address seriously the environmental issues involved. Others perceived the lack of a co-ordinated approach among the various authorities in the area.

3.7 In terms of potential solutions to the problems identified, there was the desire, recorded at all the groups, to see much greater priority given to the non-car modes of transport. Putting people before cars was the required approach, with significant weight apportioned to the non-motorised modes of walking and cycling.

3.8 A high proportion of the suggested solutions related to improved public transport services – a rail shuttle along the coast, particularly between Hastings and Bexhill, with new stations at Glyne Gap and West St Leonards, better bus-rail integration, more affordable services, and more accessible services, with the provision of more park-

and-ride facilities. Improvements to the longer distance rail services, to London and to Hastings, were also deemed necessary.

3.9 Better/more traffic management was a suggested solution, particularly with respect to reducing overall traffic speeds, designating HGV routes, and reducing traffic flows along the seafront/through St Leonards. In two of the groups, improvements to the A21 were advocated, which did not necessarily have to include dualling the road. One group suggested dualling the A259, but also was of the opinion that all options to resolve congestion problems should be considered before beginning road building.

3.10 For economic regeneration, it was considered that emphasis should be placed on modern technology, but that there would still be the need to promote tourism. In two of the groups, it was acknowledged that past programmes of business expansion had not been wealth generating for the local area. This needed to be rectified in any future initiatives.

Newsletter

3.11 The second News Update invited recipients to contribute to the list of options to be evaluated in the study. A total of 53 relevant responses were received by the end of April 2000, from 50 organisations and individuals. Five responses were from Members/Councils, 15 from organisations represented in the Wider Reference Group and the remainder from a wide range of interests among the general public.

Members and Councils

3.12 One County Councillor, representing a rural area near Tunbridge Wells, was keen to see the A21 dualled or improved for the whole of its length. He also advocated improvements to the rail service. The second Councillor, representing the views of her constituents, claimed that the A259 bypass would be environmentally intrusive, and would bypass Bexhill at a time when the town needed to encourage more visitors and tourists. The suggested solution was the Pebsham Link. Improved bus/train integration was also deemed necessary.

3.13 All three Councils were submitting formal responses to the exercise, and as such were concerned, if not solely then in the first instance, with the road schemes. Two were keen to see a range of options considered, particularly "affordable" improvements along the A21. There was concern that any by-pass schemes, whether in relation to the A21 or the A259, should be linked to/accompanied by an appropriate package of traffic/demand management measures. One Council cautioned against viewing the local and long distance journeys as separate issues with separate solutions.

3.14 Two of the Councils were keen to see improvements to the rail services in all directions - Ashford, Tunbridge Wells/London and Gatwick/London. In this context, new stations would be welcomed but were thought likely to have little benefit in terms of generated mode shift "without greatly enhanced services and more affordable fares". One Council suggested that the Polegate Chord should be explained in terms of the time/savings which it would bestow.

3.15 Mention of bus services was made in two submissions - the fact that the Newsletter omitted to mention any service improvements, and the fact that it would be important to include "a major development option" - something more dramatic than a quality partnership and LTP funding.

Wider Reference Group

3.16 Some twelve of the Wider Reference Group submissions mentioned roads, with the significant, virtually even, divergence of opinion which has characterised the debate for some years. In general there was more support for the A21 improvements; indeed two submissions supported them ("the need is not in doubt") whilst also strongly objecting to the Hastings by-passes. There were several references to the cost of the by-passes, in addition to their inability to reduce traffic volumes/congestion in Hastings. Small, local road improvements would, it was suggested, be "cheaper, much less destructive and more effective".

3.17 The bypasses did have their supporters, however, with one submission suggesting that anything less just would not work, and another encouraging the study team not to underestimate the role of the bypass in giving business access to strategic routes without the need to travel through local communities. Two submissions supported the concept of a bypass but not on the currently proposed route.

3.18 Eleven submissions mentioned rail services, of which only three were not advocating the improvements suggested in the Newsletter. One considered the only problems were encountered on Sundays, and another suggested that the local services would simply be made slower with the need to serve additional stations. A further submission pointed out that operating fast trains on single track lines was (for reasons not specified) not safe. Conversely one person wished to see a single fast commuter service to London each day.

3.19 Nine submissions wished to see improvements to the rail services into and out of Hastings - three with respect to all three routes, Ashford, London via Tunbridge Wells and London via Gatwick, four with respect to the Ashford line alone, to provide a direct link with Europe, and two with respect to the Tunbridge Wells line. Where the last was concerned, the requirement was for real improvements not just "lip service".

3.20 Three organisations were specifically in favour of the Polegate Chord. One considered that more should be made of the fact that the Chord would save rail passengers fifteen minutes off their travel times to/from Gatwick and Brighton - compared with the five minute saving which would be derived from the Hastings Bypass.

3.21 There were four calls for better service and ticket integration of trains with both the buses and the local taxis, reinstatement of the Uckfield-Lewes railway, and the provision of a fast, frequent shuttle service between Cooden and Ore. Any increase in the size of station car parks was thought to have little effect on mode split without improvements to the rail services and to the security measures in those car parks.

3.22 Bus services were mentioned in seven submissions, with calls for improved frequency, more accessible vehicles, Sunday services, and higher levels of subsidy particularly for the Bexhill-Hastings route and for schoolchildren in general. Two requests were made for better information, specifically for information at bus stops to

be audible and at "eye-level". One organisation was of the view that improvements to bus services need to be "more radical than just new vehicles".

3.23 There was one call for the study team to take account of the contribution that motorcycling can make, and to consider specific measures to assist motorcyclists. Non-motorised modes were included in only two submissions. One considered that pedestrians are already well catered for, whereas cyclists could do with more facilities. The need, it was suggested in the other submission, was for cycle tracks to be designed for work rather than recreation - separate, well-maintained and policed. Walking facilities, it was claimed, should be for pedestrians only and never shared with cyclists.

3.24 Reaction to the concept of demand management was mixed, with only one submission giving it unqualified support. Increased parking charges were said not to result in mode shift, though there was a call for the modification of parking meters in tourist car parks - to accept payment for time used rather than payment in advance. Other demand management measures were thought not to work, in at least one case because the road space available was insufficient to permit designated road lanes. One supporter of demand management thought it had to be combined with vastly improved public transport.

3.25 There was a reminder of the "need to provide seamless, integrated transport systems, which must be totally accessible to all". Another respondent pointed out that "cars are not a fact of life, but an artefact of a particular culture".

Other Responses

3.26 One of the most important subjects for the members of the public and other organisations was the upgrading of the A21 and the building of the two Hastings bypasses. Some 14 submissions advocated building the two schemes, three were in favour of dualling the A21 and a further three wished to see the A259 bypass built. The area was said to be just as cut off as "when the King had to ride through the brigand - infested forests in the reign of King John".

3.27 The present A21 was variously described as the "most frustrating journey of all", "not a proper trunk road", and "one of the least efficient main roads in the South East" The Hastings bypasses were considered "imperative" and "desperately needed". Small businesses, it was claimed, "are too small to lose money through the present chaos on the roads in this area".

3.28 Three submissions were not in favour of building the Western Bypass whilst another argued against the inclusion of the Mayfield interchange, not the bypass per se.

3.29 The quality of rail services was mentioned also in 14 submissions. Improvements to the Hastings-Ashford service were most in demand, being mentioned in six submissions. The potential link to Europe was considered important, but the suggestion was that the line has "all the feel of a rural branch line, not a serious transport link".

3.30 The need to improve services via Tunbridge Wells and via Gatwick to London was mentioned in five submissions respectively, while a further submission wished to see improvements to the services on all three of the rail lines out of Hastings. Commuting by train was described as "Connex inspired misery". Just one person advocated using rail, including the opening of currently disused lines, for the movement of freight traffic.

3.31 Other suggestions included increasing the size of Battle Station car park, integrated ticketing, new stations along the coast, and the Polegate Curve. The last, it was acknowledged, probably would not be viable, but would be a welcome improvement for commuters. The absence of an Uckfield-Lewes service was described as "irritating".

3.32 Only five submissions mentioned buses, two of which favoured improved information, particularly real-time information. Others advocated better routeing, new vehicles, reduced fares, recessed bus stops, more regular/frequent services, park and ride services for tourists, and the re-introduction of conductors.

3.33 Walking and cycling were mentioned in three submissions. One considered cycle routes should be a priority, whilst the second was "strongly in favour" of the encouragement of bicycling and walking. The third submission suggested providing a pedestrian underpass to the Glyne Gap beach and the Ravenside Shopping and Leisure Centre, possibly making use of the "old tramway route".

3.34 One person objected to workplace parking charges and road pricing, whilst another admitted having "genuine reservations" about road pricing schemes, since they wanted to encourage, not deter, visitors. Car parking charges and congestion fees needed to be raised said one contributor and another acknowledged that the on-street parking restrictions have been beneficial to residents.

4. STRATEGY EVALUATION

Newsletter

4.1 The third edition of the Newsletter was published in June. This described each of the five strategies which had been devised for assessment, explaining their nature and anticipated impact with respect to the northern, western and eastern corridors, together with brief references to strategy costs split by road building and public transport improvements.

4.2 As with the earlier editions, the Newsletter invited comments and contributions from the readers. In this instance, however, a more detailed questionnaire was enclosed with each copy. This was designed to determine basic attitudes towards some of the issues which had been featured throughout the study, and to quantify the preferences expressed for each of the strategies.

4.3 The Newsletter was distributed through all the local government, business and interest group channels as before, and was also made available at each of the exhibitions, discussed below. The Newsletter and questionnaire were derived in conjunction with the study Steering Group. A copy was sent to each member of the Wider Reference Group Somewhat unusually, the Study Team received a number of favourable remarks concerning the clarity with which the Newsletter specified the content of the strategies.

4.4 A copy of the Newsletter is provided in Appendix B.

Exhibitions

4.5 To ensure that as many people as possible were made aware of the progress of the study, a series of exhibitions was held across the study area. In the main centres of population, Hastings, Bexhill, Tunbridge Wells and Tonbridge, each exhibition was staffed by the consultants for its duration. At smaller locations – Hurst Green, Lamberhurst, Pembury, Pevensey, Rye and Battle – the exhibition was set up in a central venue over a number of days, but was not staffed.

4.6 The primary exhibition programme covered an eight day period as follows:

Friday 30th June – Tuesday 4th July	De La Warr Pavillion, Bexhill
	Angel Leisure Centre, Tonbridge
Wednesday 5th July – Saturday 8th July	Priory Meadow Shopping Centre, Hastings
	Royal Victoria Shopping Centre, Tunbridge Wells

4.7 At each location, the exhibition was open daily until 5pm with one late night opening, till 8pm, to allow those who wished to attend at the end of their working day. Venues were selected on the grounds of their expected high footfall.

4.8 In the event, the exhibitions were attended by many local residents who were well informed and fully aware of the study and the issues involved. Attendance was generally brisk, particularly in Hastings, but somewhat disappointing in Tonbridge, where some residents appeared deterred by the exhibition's title – Hastings having relatively little interest for them.

4.9 It was thus decided to hold a second series of exhibitions at Tonbridge, and at Hastings where interest was greatest. These exhibitions were held from Wednesday 2nd August to Saturday 5th August 2000.

4.10 Overall, some 4,500 people were recorded as having attended one of the exhibitions. "Attendance" was defined as stopping to read the boards, if only for a short while. At some periods in almost all of the venues "business" was so brisk that detailed counts were not possible. Some of those who attended engaged the staff in detailed conversation at great length. Others preferred to stay only a short while. All were encouraged to take with them a copy of the Newsletter together with a questionnaire.

4.11 Estimated attendance at each of the staffed exhibitions was as follows:

Bexhill	-	800 - 1,000
Hastings	-	1,400 – 1,600, and 800 – 1,000
Tunbridge Wells	-	800 – 1,000
Tonbridge	-	100 – 150, and 100

No records are available of the numbers attending the unstaffed exhibitions.

4.12 A total of 2,653 questionnaires were returned by the consultation deadline of 11th August. A copy of the questionnaire is attached in Appendix C. Analysis was based primarily on the postcode sectors provided on the majority of questionnaires. Not surprisingly, the distribution reflected closely the exhibition attendance. The areas were defined as follows:

(i)	TN 34 and 35	-	Hastings
(ii)	TN 37 and 38	-	St Leonards
(iii)	TN 39 and 40	-	Bexhill
(iv)	TN 31 and 36	-	Rye and Winchelsea
(v)	TN 19, 32 and 33	-	Hurst Green, Robertsbridge and Battle
(vi)	TN 1, 2 and 4	-	Tunbridge Wells, including Pembury
(vii)	TN 9, 10 and 11	-	Tonbridge
(viii)	TN 6, 7, 20-22 and BN	-	Crowborough, Heathfield etc, Eastbourne etc

(ix) TN 3 and 5 - Wadhurst and Ticehurst

(x) TN 12, 17 and 18 - Paddock Wood, Cranbrook

(xi) All other areas and non-respondence to the postcode question.

These areas are shown in Figure 4.1.

Attitudes towards transport issues

4.13 The questionnaire began by asking the degree to which people agreed with a number of statements. Detailed responses to these and the subsequent questions may be found in Appendix D.

4.14 More than half of all respondents – 56% - agreed that the countryside should be protected even if it meant restricting car use; 26% said they agreed completely, while 30% agreed somewhat. In general, those from the more rural areas were more likely to be in complete agreement with protecting the countryside, particularly those from Rye and Winchelsea where the proportion was 48%.

4.15 Almost three quarters of respondents, however - 72% - also agreed that it is worth building bypasses through the countryside if it helps the local economy, with 46% in complete agreement. Those most likely to be in complete agreement lived in Wadhurst, Bexhill, Hastings and St Leonards.

4.16 Reducing congestion on the roads as the highest priority met with full agreement from 50% of respondents, while 28% agreed somewhat. Again, those most strongly in agreement lived in Wadhurst, Bexhill, St Leonards and Hastings. Respondents from the Rye and Winchelsea area were least in agreement with this philosophy – some 22% declaring that they disagreed completely, compared with 7% overall.

4.17 Among those who had a view as to whether money should be spent on improving public transport rather than building more roads, two thirds were in agreement. Residents of Rye/Winchelsea were most enthusiastic about the concept; respondents from Bexhill and from the rural area to the east of the A21 were the least likely to agree with the idea.

4.18 Some 61% of respondents agreed that enhancing the character of the local area is more important than attracting edge of town new development, with 37% totally in agreement. As many as 71% of those living in Rye/Winchelsea agreed with the sentiment. Respondents from Bexhill were least likely to agree.

4.19 Two thirds of respondents agreed that additional road building is acceptable if it is complemented by measures to make existing town centres more attractive, with 44% in complete agreement. Respondents from Rye/Winchelsea were again most likely to disagree completely with this concept.

4.20 Overall, 59% of respondents agreed that the local area needs to attract new businesses, even at the expense of some countryside, with 34% agreeing completely. Those in Hastings, St Leonards and Bexhill were the most likely to be totally in agreement (See Table 4.1).

FIGURE 4.1

Choice of Strategy

4.21 Strategy 5 was clearly the most popular of the strategies offered for assessment, with 48% of all respondents selecting it as their first choice. While some 9% chose Strategy 4, opinions were virtually evenly divided among the remainder. Strategy 2 was nominated by 15% of respondents, and each of the other two by 14%. Thus, the aggregated first choice preference for new road building options was 71:29

4.22 When asked for their second preference, respondents tended to remain supportive of the road-based Strategies. In this instance, Strategy 4 came top of the poll, with 44% selecting it. The public transport based Strategies, 1 and 2, were supported by 16% and 14% of respondents respectively. Strategy 5 was second choice for 15% of respondents with the remaining Strategy, 3, last of the list with 11% saying it was their second choice.

4.23 Among those living in Kent, the largest proportion, 47% in Tunbridge Wells and 51% in Tonbridge, considered that Strategy 3 would most improve travel conditions between the two towns. Just under a quarter of respondents in both areas thought Strategy 5 would be most effective. Of the public transport options, Strategy 1 was considered best by 12% in Tunbridge Wells and 13% in Tonbridge; Strategy 2 was the choice of 10% and 8% respectively. (See Table 4.2).

4.24 Again, Strategy 4, which was initially the least favoured strategy, came top of the second choices with 42% of responses in Tunbridge Wells and 45% in Tonbridge. Strategy 2 was the second choice for 19% and 22% with Strategy 5 selected by 16% and 14% respectively. (See Table 4.3).

4.25 When asked which of the strategies they would definitely reject, respondents presented a series of packages. Top of the list by far, independently and as part of three packages, was Strategy 1. In all 30% said they would reject it on its own, and a further 19% thought they would reject it in combination with other strategies. At the other end of the spectrum, whilst only 7% said they would reject Strategy 5 independently, around a quarter would reject all the road based strategies, 3, 4 and 5.

4.26 Respondents in the Rye/Winchelsea area were much less likely than average to reject Strategies 1 and 2 and, by the same token, most likely to reject Strategies 3, 4 and 5. The residents of St Leonards and the area to the west of the A21, including Crowborough/Mayfield/Heathfield/Eastbourne, were also most in favour of rejecting Strategies 3, 4 and 5. (See Table 4.4).

Most Favoured Features

4.27 Respondents were asked to indicate the three key features of the strategies of which they were most in favour. Although, their responses did include a wide range of general transport issues, there was considerable consensus overall. The Western Bypass found favour with 39% of respondents and as many as 59% in Bexhill. Almost a quarter of respondents were in favour of the Eastern Bypass.

4.28 Improvements to the A21 were also popular and of the same order of magnitude – 40% of which 14% specified the Tonbridge-Pembury dualling proposals. In Tunbridge

Wells and Tonbridge 60% and 51% respectively were in favour of the dualling proposals. One fifth of respondents in each town were in favour of unspecified small improvements to the A21.

4.29 There was significant support for improved rail services, nominated by 45% of all respondents. Improved services to London were favoured by 19% (37% in Tunbridge Wells), while 9% wished to see improvements to the Hastings-Ashford service. A third of respondents in Rye/Winchelsea were of this view. A further 17% of total respondents were in favour of rail improvements generally.

4.30 The concept of improved bus services was supported by some 21% of all respondents. Those living in Tunbridge Wells and Tonbridge were particularly keen to have such services with 32% and 30% respectively favouring the idea. Better public transport provision per se was favoured by one in ten of all respondents – 14% of those from Rye/Winchelsea. (See Table 4.5).

4.31 Analysis of the range of favoured options in the context of the preferred overall strategy, illustrates clearly the dichotomy of views between those in favour of the promotion of public transport and those wishing to have greater concentration on development of the road network. (See Table 4.6).

Least Favoured Features

4.32 When considering the features which respondents nominated as being least liked, it should be remembered that this question appears to have been answered in a variety of ways, from simply those features liked less than others to those features definitely not wanted. In either event, however, this question generally generated a relatively low response.

4.33 Top of the list of least favoured features was the concept of having more station car parking. One in eight of all respondents cited this, 15% of those living in the Hurst Green/Robertsbridge/Battle area, and 15% of the residents of Hastings.

4.34 The potential spoiling of the environment/countryside was not favoured by 11% of all respondents. Residents in Tunbridge Wells (16%) and Tonbridge (14%) were more concerned than average, presumably in response to the Tonbridge-Pembury dualling proposals.

4.35 Some 10% of respondents were least in favour of the two bypass schemes. In general, it would appear that respondents registered their dislike of bypasses per se – the same people apparently nominating both schemes. People in Rye were particularly concerned about the possibility of the bypasses though here there was greater reaction to the Eastern Bypass with 32% saying it was a least favoured feature compared with 19% who did not favour the Western Bypass. Some 18% of respondents from Crowborough and the surrounding area to the west of the A21 were not in favour of either bypass.

Business Survey

4.36 To ensure that the attitudes and views of the business community within the study area were given due cognisance, a telephone survey was conducted with a total of 199 businesses. Companies covered a wide spectrum of activity. The largest proportion, 22%, were engaged in manufacturing, with a further 20% in the retail sector. The demand for/reliance on transport also varied widely with companies ranging from construction firms to communications technology businesses. (See Table 4.10).

4.37 The majority of the companies were of small-medium size with respect to the numbers of employees. Whilst 4% were owner/proprietors with no employees, 24% employed three to five people, 20% between six and ten people, and a further 19% of companies employed 11-20 people. At the upper end of the range, one company had 350 employees and another 450. (See Table 4.11)

4.38 The companies interviewed were essentially UK based, with only 4% having premises overseas. Indeed, 70% did not have premises outside the Hastings/Tonbridge/ Tunbridge Wells area, and 10% had as many as two separate premises within the area (Table 4.12). Companies overall dealt with other companies rather than individual members of the public. The geographic extent of their markets was small, with 57% dealing mainly with customers in Sussex and Kent (Table 4.13), although in terms of sales Hastings, Tonbridge and Tunbridge Wells accounted for relative low proportions (Table 4.14).

4.39 For almost three quarters of the companies, transport related costs represented no more than 10% of all costs (Table 4.15). More than half the companies considered that transport difficulties affected their businesses – 32% reported that the effect was significant. Three major problems were cited – congestion, delays and staff lateness.

4.40 Some companies also believed that transport difficulties lost them business and affected their ability to meet orders on time. This was reportedly a more serious problem in Hastings itself, then elsewhere along the coast. The delays to public transport, which doubtless contribute to staff lateness, were mentioned by 4% of companies overall, more in Tunbridge Wells and Tonbridge (see Table 4.16).

4.41 Not surprisingly perhaps, companies in all locations were concerned about the "bottlenecks" encountered on journeys to/from London and the north on the A21. Some 54% cited this road, particularly the stretch south of Pembury where the need for more bypasses was noted. The Tonbridge-Pembury section was identified as a bottleneck by 9% of respondents. Companies in Tonbridge and Tunbridge Wells were particularly concerned.

4.42 The A259 was the other major identified bottleneck for companies located along the coast. Nine out of ten businesses in St Leonards were concerned about the road, and more than two thirds of those located in Hastings and Bexhill. Congestion on the A26 was of particular concern to almost a third of the companies in Tunbridge Wells (see Table 4.17).

4.43 When asked which of a number of specific factors affected their businesses regularly, more than two thirds said they were affected by slow journey times to/from London

(69%) whilst 62% were affected by the unpredictability of such journey times. Interestingly, within the locality, the length of journey times per se was also a greater problem than the predictability of those times.

4.44 The perceived paucity of local public transport was a particular problem for companies in Tunbridge Wells and Tonbridge (67% and 63% respectively). It was also said to have a significant effect on almost half the companies in St Leonards and Bexhill. Overall, a third of companies considered that poor public transport links to/from London adversely affected their business (see Table 4.18).

4.45 The overall impact of transport problems was considered to be greatest with respect to increased costs, 36% and, as a result, reduced profits – 22%. There was concern as to the amount of time wasted particularly among companies in Tunbridge Wells. Here the general inconvenience and sense of frustration regarding transport issues was a particular concern for 46% of companies (see Table 4.19).

4.46 When asked to predict the effects on their businesses of worsening road congestion, the largest proportion of companies (18%) said they would lose custom. A further 12% used the term “slowing down” to describe the same effect. Some 13% saw costs increasing/profit reducing.

4.47 One in ten of the companies thought they would consider changing their location in the face of increased road congestion. In St Leonards, this proportion rose to 29%, potentially affecting some 200 employees. Others foresaw the need to change their shift patterns/hours of business (6%). A similar proportion suggested that increased congestion could put them out of business altogether (see Table 4.20).

4.48 Awareness of the Access to Hastings Study was generally low. Only 30% of the companies interviewed claimed to know anything about it; another 14% had heard of it. Not surprisingly, businesses in St Leonards, Bexhill and Hastings were generally more actively aware of the study.

4.49 Penetration of the Newsletter was also highest in these three locations. It was however only in Hastings itself that the majority of respondents said that they had seen, if not read, a copy of the Newsletter (see Table 4.21).

4.50 Before discussing the Study’s strategies with respondents, each was asked their opinion on a number of transport related issues. There was widespread agreement (81%) that it is worth building bypasses through the countryside if it helps the local economy, although only 30% were in complete agreement with this sentiment.

4.51 Opinion was spread as to whether money should be spent on improving public transport rather than building more roads. Respondents in Tunbridge Wells were particularly in agreement with this principle – 45% in complete agreement. There was also no consensus of view regarding the suggestion that the local area needs to attract new people even at the expense of some countryside. Respondents in Battle and Tunbridge Wells were least convinced with only 10% of the latter being somewhat in agreement.

4.52 Businesses throughout the area did, however, generally agree that the area needs better links to the rest of the South East. All the companies interviewed in Bexhill and

97% of those in St Leonards were of this view, compared with 87% overall. A similar proportion (86%) agreed that car users should not be penalised any more than they are already. Those in the more rural parts of the area, in Rye and Battle, were particularly in agreement with this philosophy.

4.53 Attitudes towards the effects of road building – reducing congestion or encouraging more traffic – were mixed. The largest proportion overall (47%) did not think new roads encouraged more traffic, particularly those located along the south coast. It was generally accepted, however, that some tough policies will need to be introduced soon to stop worsening congestion. The majority in each location, and 76% overall, were in agreement with this suggestion. The most significant level of dissention – 30% - was in Hastings (see Table 4.22).

4.54 Companies taking part in the survey were asked to allocate a level of priority to each of four conflicting aims which the Access to Hastings Study had to address. The highest level of support for top priority went to supporting the economy to reduce unemployment and improve prosperity – 45% said it should be rated thus. The second most popular aspect for having top priority was improving public transport to provide an alternative to car use (43%). Around a third of respondents considered the remaining aims should have top priority – protecting the countryside and reducing town centre congestion, pollution and road accidents (See Table 4.23).

4.55 When asked which strategy elements they supported, the largest proportion (84%) said the A21 bypasses and upgrading. This was not surprising in view of that road's nomination as the worst bottleneck as discussed in paragraph 4.41. Fast direct trains to London were supported by 66% of companies, as was the Tonbridge-Pembury dualling scheme.

4.56 Support for the A259 Western Bypass and Eastern Bypass came from 65% and 61% of companies respectively. Businesses in St Leonards and Bexhill were particularly in favour of all these schemes and, indeed, of additional minor road improvements. They were also, in company with the businesses in Rye, keen to see improvements in bus services along the A259 (see Table 4.24).

4.57 When asked to nominate one of the measures as top priority, 29% said the A259 Western Bypass, and 28% the A21 improvements south of Pembury. Almost a quarter nominated the Pembury-Tonbridge dualling. Support for the Eastern Bypass being given top priority came from only 2% of respondents.

4.58 At the end of the interview, companies were questioned as to the difficulties they experience recruiting staff, and the influence of travelling time in that context. A third of companies acknowledged having problems in recruiting staff. The influence of a rural location was unclear with companies in Rye experiencing most problems and those in Battle the least.

4.59 While 17% of companies attributed some of these problems to the influence of travel time, this proportion rose to 43% in Rye and 29% in Bexhill. Most significant of the other factors said to make recruitment of staff difficult was the lack of applicants with the required skills. This was cited by 28% of companies overall and, interestingly, 44% in Hastings which has relatively high unemployment.

Household Survey

4.60 Whilst all the elements of the consultation programme achieved good rates of interest and response, it was important to assess the opinions of the public at large rather than rely solely on the reactions of the self-selecting sample and known pressure groups. A survey of almost 1,400 households was thus undertaken, covering all the major centres of population within the study area, and those smaller communities which would be directly affected by some elements of the suggested strategies.

4.61 The survey was conducted in each ward of the selected areas – Pevensey, Hastings, St Leonards, Bexhill, Rye, Battle, Tunbridge Wells, Tonbridge, Pembury, Hurst Green and Lamberhurst. Within each ward, interviews were conducted to a precise quota, which reflected their characteristics at the last Census in terms of age profile and working status. The sample size provides results with confidence limits of $\pm$ 3%.

Awareness of the Study

4.62 Overall, around a third of respondents had not only heard of the study but were aware of what it entailed. Not surprisingly, perhaps, this positive awareness was highest in Hastings (43%), St Leonards (43%) and Bexhill (40%). Awareness was lowest in Pevensey, Battle and Tunbridge Wells.

4.63 Penetration of the newsletter was relatively low throughout the area. It was highest in Tonbridge where 31% had seen a copy, and 19% had looked at it. For Hastings and St Leonards the corresponding proportions seeing a copy were 20% and 15%.

4.64 Some 6% of respondents said they had attended an exhibition. Somewhat surprisingly in view of the low numbers at the Tonbridge exhibition, the highest reported attendance was in Tonbridge, and also in Bexhill, at 9% (see Table 4.27).

Travel Frequency

4.65 Car was the dominant mode of transport throughout the area, with more than half the respondents in each area driving a car at least twice a week. This proportion was highest in Bexhill (73%) and lowest in Hastings (53%). More than half of all respondents travelled by car as passengers at least once a week.

4.66 More than half the respondents had experience of travelling by train, but generally not frequently. Only in Tonbridge (17%) and in Battle (14%) did as many as 10% travel at least once a week. Overall, more than one in five made a journey by bus or coach at least once a week. In direct correlation with car driving, the most frequent bus users were in Hastings – 29% making such a journey at least once a week – and the least frequent bus users lived in Bexhill (10%).

4.67 The incidence of motorcycle use was low in all areas except Tonbridge where 8% rode at least once a week and a further 6% at less frequent intervals. One in five respondents rode a bicycle at some time in the year – only one in eight of the residents of Battle. Frequent cycle use was most prevalent in Rye where 9% travelled by bicycle five or more times a week. Three quarters of all respondents made a trip on foot at least twice a week – 88% in Battle and 71% in Tonbridge (see Table 4.28).

Congestion and Transport Problems

4.68 The largest proportion of respondents (48%) considered the level of congestion in the vicinity of their home to be "quite bad". This was particularly so in Battle (70%). Around a quarter of respondents in Pevensey and Tunbridge Wells judged congestion to be at a very bad or critical level, as did 40% of those living in Tonbridge. Residents in Tonbridge were most concerned about congestion in their town centre with 55% rating it as very bad or critical. Almost half of those living in Bexhill thought congestion there was very bad or critical (46%) (see Table 4.29).

4.69 Delays caused by congestion were cited as the main transport problem by 44% of all respondents and as many as 69% of those living in Bexhill. In Tonbridge, respondents were somewhat more concerned about the pollution caused by cars and their impact on road safety, than those in other areas.

4.70 Poor bus and train services represented a problem for a quarter of all respondents, and more than a third of those living in Pembury/Hurst Green/Lamberhurst and in Hastings. The high level of bus and rail fares was considered a problem by 14% of all respondents, and 25% of those in Tonbridge where frequency of train travel was also highest (see Table 4.30).

Attitudes Towards Transport Issues

4.71 Almost 75% of respondents agreed that the countryside should be protected, even if that meant car use had to be restricted. Residents of Tunbridge Wells were most likely to agree with that sentiment and those in Tonbridge the least likely to agree. Almost a third of the latter group disagreed, compared with 17% overall.

4.72 The majority (67%) agreed that bypasses were worth building to help the economy, except in Tunbridge Wells where 48% agreed. The residents of Hastings and Bexhill were the least likely to disagree. They were however the most likely to agree that the reduction of congestion should be the highest priority.

4.73 The same proportion of respondents (67%) agreed that money should be spent on public transport rather than building more roads. This was particularly true of those living in Bexhill, Rye and Tonbridge. The majority overall agreed that additional road building was acceptable if complemented by town centre improvements (73%), but there was less support for the idea that the area needed to attract new businesses, even at the expense of the countryside (47%).

4.74 Whilst residents along the south coast were generally in agreement that the area needed better links to the South East, people in Tunbridge Wells and Tonbridge were more content with the current situation, and a third of the former disagreed with the idea. The residents of the two towns in Kent were also less likely than other respondents to agree that car users should not be penalised anymore. Particularly strong support for this view came for the more rural areas of Rye, Battle, and Pembury/Hurst Green/Lamberhurst.

4.75 Only in Tonbridge did the majority of respondents not agree that it was every person's right to use their car as much as they liked, (48% compared with 70% overall). Strong support again came from the same three rural areas, and from Pevensey.

4.76 Some 55% of respondents agreed that building more roads was likely to increase traffic rather than reduce congestion (70% in Tunbridge Wells). Dissent was strongest in Rye, St Leonards, Bexhill and Hastings. It was generally acknowledged that tough policies would need to be introduced soon – 80% agreed overall; 88% in Bexhill (see Table 4.31).

Priority to be awarded

4.77 When asked to award a level of priority to each of the study's conflicting aims, the most popular aim was that of improving public transport to provide a better alternative to car use. Some 59% of all respondents gave this top priority, as many as 76% in Rye and 69% in St Leonards. Only in Tonbridge, where arguably public transport provision is already better than average for the study area, did more than 10% give this aim a low priority.

4.78 Support for the aim of reducing congestion in town centres being given top priority came from 44% of respondents. Supporting the economy and protecting the countryside were each nominated for top priority by 38% of respondents (see Table 4.32).

Strategy Effectiveness

4.79 Respondents were asked to study the strategies as presented in the Newsletter, and to rate each of them with respect to their effectiveness in dealing with the four aims. The strategies were given a score of 1 to 4 depending on whether they were judged to be very effective, quite effective, not very effective, or not at all effective. These scores were weighted by the number of respondents awarding each of them and an average derived for all respondents. Thus the lower the score, the more effective the strategy was thought to be.

4.80 Overall, none of the strategies were judged to be very effective in terms of reducing town centre traffic, supporting the economy, protecting the countryside or improving public transport. Respondents living along the south coast east of Pevensey, and in Rye, were most enthusiastic about each of the road based strategies and their effectiveness in reducing town centre traffic.

4.81 In general, the road-based strategies were thought likely to be more effective in supporting the economy than either Strategies 1 or 2. Again those living along the coast east of Pevensey, and in Rye, were most in favour of Strategy 5 in particular, whilst residents in Pevensey did not expect it to be very effective.

4.82 Respondents throughout the study area tended to consider that the road based strategies would do very little to protect the countryside, particularly those living inland. Interestingly those living along the coast were more likely to consider that the road-based strategies would be equally, if not more, effective in improving public transport as Strategies 1 and 2 (see Table 4.33).

Choice of Strategy

4.83 Opinions were divided with regard to the first choice of strategy. Overall, 24% chose Strategy 1, whilst 26% opted for Strategy 3 and the same proportion for Strategy 5. More than half the residents of Pevensey, and 46% of those in Tonbridge, preferred Strategy 1. The largest proportion of the residents of Hastings and St Leonards, Rye, Battle and Pembury/Hurst Green/Lamberhurst opted for Strategy 5. For the largest proportion of the residents of Bexhill and Tunbridge Wells, Strategy 3 was favourite.

4.84 As in the other surveys, Strategy 4 was top of the second choice list, finding favour with as many as 47% of respondents living in Rye. Residents of Tonbridge remained the most steadfast supporters of the public transport options (see Table 4.34).

4.85 When asked specifically which of the Strategies would do most to improve travel conditions between Tonbridge and Tunbridge Wells, it was again the residents of the former who opted for Strategy 1 (43%), with 46% of the residents of Tunbridge Wells selecting Strategy 3 (see Table 4.35).

4.86 Some two thirds of respondents said they would not reject outright any of the Strategies. The most likely to be rejected, individually or as part of a package, was Strategy 5. Some 27% of those in Pevensey would definitely reject it, together with 23% of the respondents in both Tonbridge and Tunbridge Wells. Strategy 1 would be rejected by 12% of respondents in Bexhill and 13% of those in Battle (see Table 4.36).

Favoured Features

4.87 Support for the A259 Western Bypass came from 63% of all respondents. Those living in Bexhill, Hastings and St Leonards were most enthusiastic – 83%, 67% and 66% respectively, supported the scheme. Bypasses and upgrades to the A21 were favoured by 45% overall. The greatest level of support came from Tunbridge Wells (79%) and from the residents of Battle (64%).

4.88 There was also support among 44% of respondents for the Eastern Bypass. For this, above average support came from St Leonards and Bexhill at 52% each. In Rye there was support from 44%. New fast rail links with London were supported by 27% of all respondents, 31% of the residents of St Leonards and 28% of the respondents from Hastings and Bexhill (see Table 4.37).

4.89 There was wide-ranging response to the invitation to specify the proportion of the available transport budget that should be spent on roads. One in twenty considered it should be no more than 21% (as in Strategy 2) whilst 17% felt that 82% (as in Strategy 5) was the minimum acceptable level (see Table 4.38).

Individual Submissions

4.90 Despite being asked to respond to a detailed questionnaire, many people chose to submit written responses either in addition to or instead of the questionnaire. By the submission date of 11th August 2000, more than three hundred submissions had been received.

The Steering Group

4.91 Nine representations were received from organisations represented on the Steering Group – the two County Councils, one District and three Borough Councils, one business consortium and two environmental groups. Both County Councils and three of the other Councils backed Option 5, with two keen to see the public transport elements of Options 1 and 2 also implemented. One Council in Kent was concerned that the study had neither given due consideration to potential on-line A21 improvements nor provided the basis for a reasoned conclusion regarding a dual three-lane scheme between Tonbridge and Pembury.

4.92 The business interest also considered Option 5 the best, "the only option that will deliver the long-term regenerative impact the study requires." The two environmental groups were supportive of the public transport options. One cautioned against taking any final decisions regarding the A259 bypasses without giving due regard to their effects on the traffic levels in the surrounding road network.

Councils

4.93 Some seven submissions were received from Councils outside the Steering Group, and four from individual councillors. The majority were in favour of all the road schemes. Five of the Councils supported improvements to the A21, "a constant bottleneck, extremely dangerous and long overdue for upgrading". One generally favoured "major" improvements to the road, and two specified the Tonbridge-Pembury section, whilst three advocated improvements south of Pembury. Both Flimwell and Lamberhurst were nominated for improvement largely on the grounds of safety. A Hurst Green Bypass should be built, it was said, "on the EASTERN side not the western side of the settlement".

4.94 Whilst one Council regarded both A259 bypasses as "vital" to the regeneration of its area, two of the other Councils' submissions favoured the "Bexhill Bypass", but not the Eastern Bypass. The latter was thought likely to make access to the Channel Tunnel and ports worse by generating extra traffic for already congested roads. Two Councils wished to see significant and wide-ranging improvements to the Hastings-Ashford railway line.

4.95 Two County Councillors were in favour of the A259 bypasses, to facilitate new housing development in North Bexhill, and to avoid such future housing being "displaced to rural villages, currently tightly defined". One submission was also very keen to see improvements to the northern approach to Hastings, but acknowledged that they would not be easy to achieve on the A21, suggesting that the Hastings to Hawkhurst Road might be considered instead, "possibly bypassing Hawkhurst to the west and Flimwell to the east before rejoining the A21."

4.96 These submissions were also in favour of rail service improvements, particularly the Ore-Bexhill metro. One suggested that expanded car parking was "essential at Robertsbridge". One Parish Councillor was totally against all road building, particularly the Eastern Bypass, on environmental grounds.

The Wider Reference Group

4.97 By 11th August 2000, 25 submissions had been received from the Wider Reference Group. As in earlier phases of the study, there was a dichotomy of view. Thirteen were very much in favour of public transport improvements rather than more road building. One did acknowledge that the A21 dualling at Castle Hill was an "essential prerequisite" to improved bus services between Tonbridge and Tunbridge Wells. Conversely another foresaw the dualling as worsening the already severe congestion between the two towns making public transport services less viable.

4.98 There were two calls for the re-opening of the Lewes-Tunbridge Wells Railway, several for improved train services to London and to Ashford, and two suggestions that the case for road building contributing to economic regeneration had yet to be proved. "A busy teashop attracts more custom". One submission noted that economic regeneration was most likely to be achieved from within, through education and technological innovation. The impending impact of Global Warming on the coastal area and Romsey Marshes was also brought to the study team's attention.

4.99 Nine submissions were heavily in favour of the road building schemes. Hastings was described as being "marooned so far as the transport system is concerned". Option 5 was strongly supported as "the only option that will deliver the long-term regenerative impact that the study requires". The loss of environmental amenity was noted in another submission as being "regrettable but necessary".

4.100 One specific issue which featured in earlier segments of the consultation was that of the Mayfield interchange. In three instances concern regarding the interchange, and the increased traffic which would be generated through St Leonards, was a factor in rejecting the Western Bypass itself. In a fourth, there was support for the bypass per se but a desire for "more proper intersections, NOT Mayfield".

4.101 Three submissions noted the overlap between the Access to Hastings Study and the South Coast Corridor Study, with respect to the A259 bypasses. Two suggested that the outcome of the latter study, which should "be given a free hand", take precedence over any local decisions concerning the bypasses. The third merely queried the relationship between the two studies.

Other Submissions

4.102 By 11th August 2000, 155 submissions had been received from members of the public in the Hastings and Bexhill area. Some 80 of these had been generated in direct response to the encouragement to respond from the local Member of Parliament. Of these, three did not agree with the road building proposals. Fourteen favoured Option 5, 27 supported the "5+ Option" of Options 5 plus 2, and a further 28 wished to see Option 5 and a new road between Rye and Brenzett. Specific mention was made in some of these submissions to the Western and Eastern Bypasses (9) improvements to the A21 (6) and improvements to the area's rail services (4).

4.103 Further submissions were received in response to the distribution in the area of a leaflet by the HABIT group promoting option 5, and one by Friends of the Earth, in association with a number of voluntary groups, which urged support for the "the public transport based option 2".

4.104 Forty four of the general submissions supported the A21 improvements. Castle Hill was mentioned 12 times. It was described as "a national disgrace" and "a disgrace to the UK". Many people drew attention to its poor safety record and asked just how many had to die/be injured before something was done. "The sheer numbers of accidents make the Castle Hill stretch of road one of the most dangerous in the country". Solutions suggested included a three lane road "with lights to control an alternating contraflow system". Two submissions claimed this section was more important than the Lamberhurst bypass.

4.105 The lack of a link between the two dual carriageway sections of the A21 was labelled "one of the motoring scandals of the last 20 years" and "Prescott's Folly". More environmental damage is being caused (to the Great Crested Newts) than would be caused by the building/use of a dual carriageway.

4.106 South of Pembury, the A21 was likened to "a rag-bag of farm tracks". As a major artery to the South Coast, the road needed to be treated as such. Until granted the same standard of construction as the A23 or the roads to Portsmouth and Bournemouth, Hastings will "always be a poor brother of the flock, and lose out on its potential". Adverse comparisons were also made with road quality in other parts of the country.

4.107 One submission suggested that "to upgrade the A21 would make it a much safer road… and would encourage more people to visit Hastings and this would, in turn, help this rundown town to improve as it really does have quite a lot to offer".

4.108 Eleven submissions from the Tonbridge/Tunbridge Wells area were against the dualling proposals. Whilst one was concerned about land drainage, and another found it "unfathomable" that anyone should want to treat such a beautiful landscape in such a disrespectful manner, two considered that the proposals would simply add to congestion and move the problems to other locations.

4.109 Alternative solutions were suggested, primarily to improve/re-open/restore the area's railway services. Others thought a crawler lane up Castle Hill would suffice. Gridlock, it was suggested, "is not entirely bad. It is the natural way of saying that people should learn to use other forms of transport."

4.110 Sixteen of the submissions from Hastings mentioned the A21, all but one of which were also in favour of significant improvements. Again the poor safety record was mentioned and the fact that in modern terms the road is "the equivalent to a lane". "All road improvements finance should be put into this very dangerous road".

4.111 One submission specified that the study "must concentrate more on the A21", with a dual carriageway up to the M25 the favoured strategy for many. "Without major improvement to the A21….I cannot see how this area will be greatly improved economically", said another. Without such a dual carriageway, it was suggested, "Hastings can be written off for another 30 years".

4.112 The one submission which did not favour A21 dualling, since the speed of traffic "would just cause queues elsewhere", did wish to see road safety improvements along the route.

4.113 The greatest number of submissions from the Hastings area – 61 – were in favour of the A21 improvements and one or both of the bypass schemes; improvements which were wanted "in our lifetime". The most frequently cited reason for supporting the bypasses was to eliminate congestion in the coastal towns. For many, however, improving the A21 was the primary need. "The Snail Trail is an abomination". "The A21 is an accident waiting to happen". "The whole of the A21 is a greater need than the bypasses". "Without the fully dualled A21, I doubt whether it is worth bothering with the rest of the present project. Bypasses would make life easier for residents, but do little to bring new lifeblood to the town".

4.114 Several of those in favour of road-building did acknowledge the environmental cost to be paid. Some thought that in time the damage would heal since most of the countryside "will still be there and very beautiful". Another, having seen the landscaping of bypasses around Coventry, now felt that the green protest was ill-founded. In addition there was a feeling that the schemes had been the subject for discussion for far too long. "Forget the mending, let's have some spending". "Stop talking and writing reports. Start digging".

4.115 Support for the A259 bypasses came from 58 people in the Hastings area, with a variety of adjectives used – desperate/vital/urgent/priority/obvious/essential/need. Again the elapsed period over which schemes have been discussed was alluded to, with the suggestion "Let's not just talk; let's make it happen". "Stop shilly-shallying after 50 years of promises".

4.116 Journeys to specific locations, such as the Conquest Hospital, were singled out for mention – the bypasses would make them "a much nicer experience for patients and colleagues". In other submissions, the accent was on the more general issue of it being vital to economic regeneration and the fact that, without the bypass, "Hastings and its surrounds will suffer a slow inexorable slide into oblivion". The environmental benefit of removing traffic from "quiet lanes" should, it was suggested, be taken into account.

4.117 One submission suggested that the issue of the bypass, "such as is required here", would feature prominently at the next election, and that "grey power" was something which politicians would "ignore at their peril". None of the cheaper options, said another, would remove the heavy through traffic.

4.118 Thirty-five submissions from Hastings were against the A259 bypasses. The main reasons cited were that they would "destroy the town", "create as many problems as they solve", and be a futile gesture since the overwhelming cause of congestion was local, not through, traffic. It was also suggested that the bypasses would provide people with a means of leaving the town – for work and leisure – and that they were too expensive. "Spend the money on rail".

4.119 Again the issue of the Mayfield interchange was raised, with four submissions alluding to the additional traffic which would pass through, not around St Leonards. Another submission echoed the point that improved car transport links do not necessarily increase jobs. Improved education was the key.

4.120 For many, the solution to the congestion problems lay in re-prioritising some of the junctions, re-phasing traffic lights and modifying the Glyne Gap roundabout. Certainly

one family from the United States, holidaying in the area, was adamant that it "will certainly choose to vacation elsewhere if the area gets built up with new roads".

4.121 It is significant to note that 59 of the submissions from the Hastings area advocated improvements to public transport provision in addition to/or instead of the road schemes proposed. Sixteen submissions requested improved local bus services/information/shelters. Two suggested consideration of the re-introduction of trolleybuses whilst another favoured electric, not diesel vehicles. There was also a call for low-floor buses. Improved access to the Conquest Hospital was a frequent suggestion. Evening, Sunday and rural bus services were identified as being in need of improvement. Hastings Buses came in for particular criticism ("a shambles", "a joke"), though it was claimed that some residents could remember when the town had an "effective" public transport system.

4.122 The majority of public transport related submissions referred to train services. Eleven simply wished to have generally improved rail links, described as being "desperately needed". One request was to "please carry on fighting for our rail links". There were some references to the fact that railway services to/from the area had not changed (or indeed had worsened) since "pre-war" (the 1930s), or "when I used it daily in the 1950s".

4.123 A further 12 submissions specified improvements to the Hastings-Ashford line, likened in its current form to "a dustbin" and "like a railway waiting for preservation". One submission pointed out that improving the Hastings-Ashford service would "give better access to London without the expense of rebuilding the tunnels".

4.124 Twenty-two submissions referred to the train services to London. The terms poor, disgraceful, and antiquated were used to describe the current situation. The primary demands were for faster more frequent services, with modern rolling stock, less over-crowding and thus improved safety. It was suggested that "a fast, frequent train service would go a long way to easing congestion on the A21".

4.125 There were some calls for faster access to Gatwick, and even Heathrow, with the reinstatement of the Polegate Chord a pre-requisite. There was also mention of the level of fares, particularly in the morning peak. "The people who work should have priority over others since we are making a sacrifice".

4.126 Several submissions referred positively to the Bexhill-Ore Metro, and there were nine calls for a new station at Glyne Gap (although another two were not in favour of this concept). Some seven submissions advocated the station at West Marina, and another suggested a new station "between West St Leonards and Crowhurst".

4.127 There were calls for more station parking, more taxis at stations (which would also improve perceptions of security) and for measures to encourage rail freight. Three submissions also requested improved provision/facilities for cyclists. In one submission it was suggested that "if people could see that public transport is modern, reliable and frequent and cheaper, then they would use it for some journeys, especially into towns and cities, and they could still use their cars for certain journeys like leisure activities".

Petitions

4.128 In addition to the individual responses, three petitions were also received. The first, representing 59 people in the congregation of a Hastings religious community, was strongly in favour of the bypasses.

4.129 A141 page petition, representing 335 people living in the north of Tonbridge, referred to the Tunbridge-Pembury dualling scheme. The petition urged that the scheme "should be completed without further delay".

4.130 The third petition was from 46 inhabitants of East Guldeford – said to comprise every member of the village over voting age, baring one who was too ill and those currently away. Their demand was for the realignment of the A259 in order to remove a narrow twisting section.

4.131 In an identically worded letter, some 92 businesses in the Eastbourne area pledged their support for the bypass, the A21 improvements and the rail improvements planned for the London to Hastings and Ashford to Hastings Lines.

Workshops

4.132 A series of five workshops were held with members of the Wider Reference Group during July, after the first round of exhibitions. Three were held at a hotel in St Leonards and two at a hotel in Tunbridge Wells. Following a presentation by a member of the study team, the first half of each session concentrated on addressing issues of clarity concerning the five strategies offered for evaluation.

4.133 A wide range of factors was addressed when the discussion moved on to address the effects of the strategies and their strengths and weaknesses. In the St Leonards groups there was concern that the study's activities had been constrained by its remit. Whilst the need for regeneration was acknowledged, this could not be achieved only through transport measures.

4.134 The economic benefits of saving two to five minutes on journey times were considered marginal and probably not worth the costs, economically or environmentally. In the same vein, the continuing need to protect the area's SSSIs and RAMSAR was stressed. The natural assets of the area were responsible for encouraging retired people to live in the area, bringing income for the local economy.

4.135 The need for the road schemes was again questioned, and it was argued that the Eastern bypass, if it must be built, should be in tunnel and not through the ANOB. There was concern that all measures of traffic restraint and management should be explored before embarking upon major road building. The Glyne Gap was a case in point, where it was believed that congestion could be relieved with a small link road rather than the bypasses.

4.136 Significant attention was paid to the need for improved public transport services to attract people out of their cars, and there was support for the Ore-Bexhill Metro, a tram system to relieve congestion on the Ridge and improved rail services to London. Whilst agreeing that the Hastings-Ashford service should be improved, it was stressed

that this should not be at the expense of enhancements to the route via Tunbridge Wells.

4.137 Members of these groups were also in favour of re-opening the West Marina Station, improving local bus services and making better provision for pedestrians and cyclists.

4.138 The strengths and weaknesses of the strategies nominated by the St Leonards groups were as follows. It was agreed that those for Strategy 2 were incremental to Strategy 1, and likewise for Strategies 3, 4 and 5. It was also agreed that the reverse of a strength or weakness was implicit, and did not require recording.

Strategy 1

Strength	Weakness
Cost effective and rapid implementation possible	Concern over urban traffic levels and implications for health
Protects the countryside	Does not address access issues to the Ridge
Encourages modal shift from the car	Does not address road journey time reliability
Sustainable strategy	West Marina station is not on the 'metro', service should be extended to include Collington, Coombe Haven
'Metro' rail service	
Access to Channel Tunnel	

Comments

Currently takes longer to commute to London in the peak than off-peak.
Whilst there is currently excess demand for parking at stations such as Battle and Crowhurst, expanded car parks may just encourage more car trips. Would this be to the detriment of potential bus service improvements? Currently only one bus per hour between Hastings and Battle.
Need integration between 'metro' and bus services, provide level access to public transport.

Strategy 2

Strength	Weakness
Greatest impact on air pollution	Concern over accident levels due to lack of relief on local roads
Most revenue for public transport operators (potential for new jobs)	Encouraging movement to stations, greater traffic concerns, especially Battle, Crowhurst
Encouragement for green tourism, protecting assets and providing transport links	

Comments

Counterveiling safety issues.
Scope for Park & Ride.

Strategy 3

Strength	Weakness
Opens up Bexhill Business Park	No 'metro'
	Western Bypass achieves nothing that could not be accomplished by a local relief road
	No new station at Glyne Gap
	Does not assist economic development

Comments

Relocating problems associated with traffic from Glyne Gap and Bexhill Road to Gillsman's Hill and the Ridge.
As more through traffic on A21 with Strategies 3,4 & 5, bypasses help management of this traffic.

Strategy 4

Strength	Weakness
Could transform seafront, if bring in calming measures	Better road links may encourage firms to move out and still serve market
Remove HGVs from the urban area, historic fabric would benefit from reduced road vibration	Encourages greater car use May attract traffic off the M25
	Environmental implications of the Eastern Bypass
	Guestling Thorn residents suffer

Comments

Strong agreement that should implement traffic calming measures along the seafront.
Need for partnerships with bus operators.
Problems of access to Conquest Hospital.

Strategy 5

Strength	Weakness
Most safety benefits (treating the A21)	Generates most traffic, so safety issues on some roads
Best strategy for economic development	
Most reliable journey times	

Comments

Western bypass is the key local issue, A21 key strategic route.
Need local road measures, Queensway to De La Warr road.
Public transport could benefit in some cases from private vehicles transferring e.g. bus routes on the Ridge, but be worse off in Bohemia.

4.139 In the Tunbridge Wells groups, there was also concern that the remit of the study had not permitted a full investigation of the Tonbridge-Tunbridge Wells problems. Particular emphasis fell upon traffic problems in the Pembury area, where the volumes were thought to be approaching those experienced before the bypass was built. Rat-running, particularly through Southborough, was identified as a problem, as was the large and increasing volume of HGV traffic.

4.140 Improvements to the rail services were thought necessary to ease road congestion. These ranged from increasing the frequency of current services and extending the period of operation, to the re-opening of the Lewes-Uckfield-Tunbridge Wells Link. Improvements to the Tunbridge-Wadhurst services and to those on the Crowborough link were suggested to relieve traffic on the A21 and A26.

4.141 Concern was expressed regarding the implications of new developments including the potential new hospital at Knights Court, housing development on the old hospital site, and a new Tesco's supermarket, on the transport infrastructure. The regeneration of the Hastings area and the advent of improved rail services to London were perceived as likely to bring added pressures to the Tunbridge Wells area in terms of increased through traffic and further demands for housing.

4.142 The strengths and weaknesses ascribed to each strategy were as follows:

Strategy 1

Strength	Weakness
Less environmental impact	Does little to encourage Access to Hastings
Low cost	Minimal help to freight
Best Value for Money	Does not address A21 safety
Won't encourage car use (viewed as both good and bad)	

Comments

Public transport fares are high.
Need through ticketing, bus drivers to be in radio contact, Real Time Information, clear destination information displayed on vehicles. Bus and rail timetables should be integrated and services should run longer hours. Bus shelters should be designed to a high standard.
Problem of getting enough bus drivers to provide the service wanted and keep down costs.
Concern that DETR can fund recommended road schemes, but less certain that rail and bus measures will be implemented. Quality Bus Partnerships only work if all the parties work together.

Strategy 2

Strength	Weakness
Less environmental impact	Loss of Tonbridge-Wadhurst rail option
Low cost	No new hospital possible
Best Value for Money	

Strategy 3

Strength	Weakness
Solves Castle Hill problems – addresses safety, driver frustration	Generates more traffic as increased road capacity and encourages more car trips
Serves new developments – new hospital	
More viable	

Comments

Network benefits of addressing Castle Hill, as currently if there is an incident there are no alternative routes.
Issue of the existing road, if kept untreated likely to fill up with traffic over time.
Potential for dual section on existing road and then just new construction for two more lanes off-line.
Concern over bird sanctuary, Iron Age fort on either side of existing A21.
Don't believe hospital in TW likely with Strategies 1 & 2. However, current hospital easier to access by public transport. New hospital site will have more facilities, role in major incident plan for M25.

Strategy 4

Strength	Weakness
None in addition to Strategy 3	

Strategy 5

Strength	Weakness
Addresses A21 problems by providing passing facilities	May take people away from Hastings
Would improve economic activity along the route	
A21 seen as main artery, "carrying lifeblood"	
Provides regional solution, links with Europe through feeder routes to A21	

Comments

Connex do not want freight back on the railways.
Rather than trying to shift freight which needs to be on the roads, scope should be for removing people from the roads.

4.143 Discussions in each group culminated in an attempt to seek consensus on how the strategies should be taken forward. In St Leonards, the proposed "Strategy 6" had the following characteristics:

- Maximum public transport measures (importance of timing, prioritise any PT schemes before road measures).

- New stations on the 'metro' service at Wilting Farm and West Marina.
- A21 treatment of accident blackspots (unanimous).
- Measures for Hastings seafront to increase its attractiveness, whilst retaining access.
- Refurbish Ore station (rename Ore Valley).
- Encourage behavioural change, schoolchildren using buses.
- Improve safety on public transport and at stations.
- Harness employment opportunities in Ashford.
- A western link road, avoiding the schools.
- One fast commuter train, morning and evening running Ore Valley-Hastings-TW-Charing X.

4.144 In Tunbridge Wells, group members wished to see Strategy 6 have the following components:

- On-line improvements to the A21 – speed attenuation from Quarry Hill, move the slip road, introduce a crawler lane from the road off to Tonbridge, close side roads to prevent incursion of traffic (some dissent), 30 mph speed limit and close the petrol station.
- Longfield junction should be grade separated to increase capacity.
- Lewes to Uckfield rail line, Park & Rail site in Sussex with shuttle train service.
- Tunbridge Wells parking restraint, provide bus station on site of current Town Hall multi-storey car park. Provide local circular shuttle bus around the town.
- Pedestrianisation of the High Street, bus and cycles permitted only.
- Introduce HGV restrictions across the town.
- Bus link between Wadhurst station and the centre of Wadhurst.
- Extensive implementation of 'soft' measures such as 20 mph zones by schools, Home Zones.
- Address Tonbridge – Tunbridge Wells interconnectedness and relationship with settlements to the south.
- Light rail service, spur to the hospital, new stops along the existing line.

- Crowborough to London rail service, Crowborough to Tunbridge Wells public transport links.

Unanimous agreement that Tonbridge-Pembury dualling link should be four lanes rather than six. General view that the dualling link was necessary.

Public Transport Working Group

4.145 The Working Group met twice during the study period, in March and September. Those invited to attend were representatives from the incumbent rail operator Connex, Stagecoach and Arriva the dominant bus operators in Hastings/Bexhill and Tonbridge/Tunbridge Wells respectively, Railtrack, sSRA, the National Federation of Bus Users and a representative of Hastings Transport 2000.

4.146 At the first meeting there was discussion of the findings from the Problem Identification phase, the current initiatives of the operators and issues arising from operating in the Hastings and Bexhill and Tonbridge and Tunbridge Wells areas.

4.147 The second meeting addressed the preferred public transport schemes emerging as a result of the public consultation process and technical assessment. Discussions were held on the feasibility and costings of them and the attitudes of operators, public transport bodies and users to them.

APPENDIX A
THE WIDER REFERENCE GROUP

Access to Hastings – Reference Group Organisations

1066 Housing Association Tenants Consultative Group
A27 Action Group
Age Concern
Ashdown Friends of the Earth
Association for the Disabled
Astec Computing Services
Automobile Association
Baldslow Memorial Community Association
Better Braybrook Residents Association
Bexhill Caring Community
Bexhill College
Bexhill Road Residents
Bexhill Tourism Information Centre
Bohemia Road Fire Station
Brenchley Parish Council
British Rail Property Board
Burtons St Leonards Society
Capel Parish Council
Combe Haven Holiday Camp
Comford Lane/Holes Hall Road Group
Community Health Council
Connex South East
Co-Operative Retail Services Limited
Council for the Protection of Rural England
Countryside Agency
Country Landowners Association
Cyclists Touring Club Tunbridge Wells
Cyclists Touring Club Hastings
East Sussex, Brighton and Hove Area Health Authority
East Sussex Economic Partnership
Eastbourne Friends of the Earth
Energy Technology Support Unit
English Heritage
English Nature
Environment Agency
Fairlight Down Conservation Society
Farming and Rural Conservation Agency
Filsham Valley Residents Association
Freight Transport Association
Friends of Brede Valley
Gateway Food Markets Limited
George Street Traders' Association
Goudhurst Parish Council
Harley Shute Residents Association
Hastings Agenda 21 Group - Transport working group
Hastings and Rother Agenda 21 Group
Hastings and Bexhill Integrated Transport Partnership

Hastings and Rother Access Interests
Hastings and Rother Childcare Campaign
Hastings and Rother Disability Forum
Hastings and Rother NHS Trust
Hastings and Rother Voluntary Association for the Blind
Hastings and St Leonards Cycling Club
Hastings and St Leonards Hotels and Tourism Association
Hastings and St Leonards Taxi Proprietors Association
Hastings Association of Language Course Organisers
Hastings Business Centre
Hastings College of Arts and Technology
Hastings Dial-a-Ride
Hastings Friends of the Earth
Hastings Motorcycle Action Group
Hastings Rambling Club
Hastings Tenants Consultative Group
Hastings Tramway Club
Hastings Trolleybus Group
Hastings Trust
Hastings Urban Design Group
Hastings Urban Wildlife Group
High Street Traders' Association
Hildenborough Parish Council
Horsmonden Parish Council
In Business in Southborough
J Sainsbury Plc
Jarvis Cooden Beach Hotel
Kent & Sussex Weald NHS Trust
Kent Association for the Blind
Kent Association for the Disabled
Kent County Archaeologist
Kent Wildlife Trust
Kings Road Traders' Association
Lamberhurst Parish Council
Local Agenda 21 Forum
Mermaid Sackville
National Farmers Union (South East Region)
National Federation of Bus Users
National Power plc
National Rivers Authority
National Society for the Blind
Old Hastings Preservation Society
Orbit Housing Association Limited
Ore Valley Forum
Pedestrians Association
Pelham Arcade and Pelham Crescent Association
Pembury Parish Council
Pembury Society
RAC Foundation
Railway Development Society
Railway Forum

Ramblers Association Sussex Area
Regeneration Partnership
Rother Environmental Group
Royal Society for the Protection of Birds
Royal Tunbridge Wells Civic Society
Rye Conservation Society
Safeway Stores Plc
Sealife Centre
Seeboard plc
SERPLAN
Sidley Community Centre
South East Tourist Board
Southborough Town Council
Southern Water plc
St Helens Down Preservation Society
Sussex Ambulance Service
Sussex Archaeological Society
Sussex Federation of Amenity Societies
Sussex Police
Sussex Wildlife Trust
SUSTRANS
Tesco Stores Limited
The Association for Bexhill Citizens
The Countryside Association
The High Weald Unit
The Wider View Group
Ticehurst Blind Goup
Tonbridge & District Railway Association
Tonbridge & District Railway Travellers Association
Tonbridge Civic Society
Tonbridge Conservation Group
Tonbridge Townswomen's Guild
Tunbridge Wells Friends of the Earth
Tunbridge Wells Ramblers Association
Tunbridge Wells Transport Action Group
Wealden Line Campaign
West Hill and District Community Association
West Kent Chamber of Commerce & Industry
West Marina Society
West St Leonards Community Association
White Rock and Town Centre Residents Association
Wishing Tree Residents Association
Women's Institute

APPENDIX B
STUDY NEWSLETTERS

APPENDIX C
DISCUSSION GUIDE & QUESTIONNAIRES

APPENDIX D
SURVEY TABULATIONS

ACCESS TO HASTINGS

Consultation Report

These tables should be read in conjunction with Chapter 4 of the main report.

TABLE 4.1: ATTITUDES TOWARDS TRANSPORT ISSUES – NEWSLETTER SURVEY

		Hastings	St Leonards	Bexhill	Rye/Winchelsea	Hurst Green/ Robertsbridge/Battle	Tunbridge Wells/ Pembury	Tonbridge	Crowborough/West of A21	Wadhurst	Paddock Wood/East of A21	Elsewhere/NA	TOTAL
		%	%	%	%	%	%	%	%	%	%	%	%
The countryside should be protected even if it means restricting car use	Agree completely	24	29	23	48	24	24	22	36	28	18	30	26
	Agree somewhat	31	30	28	26	32	31	31	26	20	31	27	30
	Neither	12	9	11	8	11	19	13	9	10	16	10	11
	Disagree somewhat	22	20	25	14	25	21	27	21	32	27	22	22
	Disagree completely	11	12	13	4	8	5	7	8	10	7	11	11
It is worth building bypasses through the countryside if it helps the local economy	Agree completely	49	48	51	27	48	32	27	33	55	42	44	46
	Agree somewhat	26	21	26	22	29	40	45	29	26	44	21	26
	Neither	2	5	3	4	5	7	5	3	5	2	7	4
	Disagree somewhat	9	13	8	14	9	10	12	8	8	11	11	10
	Disagree completely	14	13	12	32	9	11	12	28	6	2	18	13
Reducing congestion on the roads should be the highest priority	Agree completely	51	53	58	29	45	40	44	36	58	47	46	50
	Agree somewhat	27	26	26	17	33	34	30	27	23	33	35	28
	Neither	7	8	4	16	8	9	2	11	3	4	4	7
	Disagree somewhat	9	8	5	16	8	11	15	16	3	9	6	8
	Disagree completely	6	5	7	22	8	7	9	11	13	7	9	7
Money should be spent on improving public transport rather than building more roads	Agree completely	31	34	26	54	32	30	34	44	24	19	36	32
	Agree somewhat	21	18	20	12	19	22	26	9	19	17	16	19
	Neither	14	14	14	13	15	20	15	15	24	19	7	15
	Disagree somewhat	19	20	21	14	23	20	13	20	19	28	27	20
	Disagree completely	14	14	19	7	11	8	11	12	13	19	14	14

TABLE 4.1 (CONTD): ATTITUDES TOWARDS TRANSPORT ISSUES – NEWSLETTER SURVEY

		Hastings	St Leonards	Bexhill	Rye/Winchelsea	Hurst Green/ Robertsbridge/Battle	Tunbridge Wells/ Pembury	Tonbridge	Crowborough/West of A21	Wadhurst	Paddock Wood/East of A21	Elsewhere/NA	TOTAL
		%	%	%	%	%	%	%	%	%	%	%	%
Enhancing the character of the local area is more important than attracting edge of town new development	Agree completely	36	39	32	51	36	34	42	41	35	33	32	37
	Agree somewhat	19	22	25	20	25	38	33	14	29	27	29	24
	Neither	19	16	16	12	19	16	16	21	11	18	11	17
	Disagree somewhat	16	15	19	12	12	10	5	14	19	18	21	15
	Disagree completely	10	7	8	4	7	1	4	9	5	4	7	7
Additional road building is acceptable if complemented by measures to make town centres attractive	Agree completely	50	41	49	25	37	43	42	36	45	45	40	44
	Agree somewhat	25	24	27	27	33	27	35	18	19	25	21	26
	Neither	7	11	8	12	11	13	6	13	11	15	12	10
	Disagree somewhat	7	10	6	8	8	7	8	9	16	7	14	8
	Disagree completely	11	14	10	29	11	10	9	24	8	7	14	12
The local area needs to attract new businesses, even at the expense of some countryside	Agree completely	41	38	38	29	26	17	14	24	27	22	24	34
	Agree somewhat	23	22	29	19	26	32	34	29	19	28	25	25
	Neither	6	6	6	4	11	14	14	11	8	13	8	8
	Disagree somewhat	12	13	9	17	15	14	18	13	30	22	15	13
	Disagree completely	18	21	19	31	22	24	20	24	16	15	28	20
TOTAL RESPONDENTS		601	798	439	79	221	157	88	78	64	57	76	2658

TABLE 4.2: STRATEGY PREFERENCE – NEWSLETTER SURVEY

		Hastings	St Leonards	Bexhill	Rye/Winchelsea	Hurst Green/ Robertsbridge/Battle	Tunbridge Wells/ Pembury	Tonbridge	Crowborough/West of A21	Wadhurst	Paddock Wood/East of A21	Elsewhere/NA	TOTAL
		%	%	%	%	%	%	%	%	%	%	%	%
Strategy that would contribute most towards creating sort of area you would like to live in:													
First Choice:	Strategy 1	10	17	14	29	11	13	16	19	9	9	17	14
	Strategy 2	14	19	12	31	11	12	14	23	7	8	15	15
	Strategy 3	9	9	16	10	9	39	36	16	23	26	15	14
	Strategy 4	8	7	17	9	5	8	5	1	4	8	6	9
	Strategy 5	59	48	42	21	64	29	29	41	58	49	46	48
Second Choice:	Strategy 1	12	21	11	31	13	14	14	21	9	10	19	16
	Strategy 2	13	16	13	27	12	14	19	21	9	6	18	14
	Strategy 3	8	8	15	10	13	10	11	7	22	29	9	11
	Strategy 4	53	41	46	25	45	41	44	49	43	33	40	44
	Strategy 5	15	14	15	6	17	20	13	3	17	23	13	15
TOTAL RESPONDENTS		601	798	439	79	221	157	88	78	64	57	76	2658

TABLE 4.3: WHICH OF THE FIVE STRATEGIES DO YOU THINK WOULD MOST IMPROVE TRAVEL CONDITIONS BETWEEN TONBRIDGE AND TUNBRIDGE WELLS – NEWSLETTER SURVEY

		Tunbridge Wells/ Pembury	Tonbridge
		%	%
First Choice:	Strategy 1	12	13
	Strategy 2	10	8
	Strategy 3	47	51
	Strategy 4	7	5
	Strategy 5	24	23
Second Choice:	Strategy 1	13	8
	Strategy 2	19	22
	Strategy 3	10	12
	Strategy 4	42	45
	Strategy 5	16	14
TOTAL RESPONDENTS		144	84

TABLE 4.4: WHICH OF THE FIVE STRATEGIES WOULD YOU DEFINITELY REJECT? – NEWSLETTER SURVEY

	Hastings	St Leonards	Bexhill	Rye/Winchelsea	Hurst Green/ Robertsbridge/Battle	Tunbridge Wells/ Pembury	Tonbridge	Crowborough/West of A21	Wadhurst	Paddock Wood/East of A21	Elsewhere/NA	TOTAL
	%	%	%	%	%	%	%	%	%	%	%	%
Strategy 1	34	29	32	19	28	30	27	20	39	35	26	30
Strategies 1 & 2	11	10	16	10	13	19	15	13	11	24	10	13
Strategies 1, 2 & 3	4	5	4	0	6	0	1	0	4	2	10	4
Strategies 1, 2, 3 & 4	2	2	2	0	2	0	1	1	2	2	2	2
Strategy 2	2	2	3	1	4	5	9	1	7	9	3	3
Strategy 3	6	3	1	3	6	2	4	3	0	4	3	4
Strategies 3, 4 & 5	7	22	8	29	10	9	9	24	2	6	11	13
Strategy 4	2	2	2	9	2	2	0	0	2	6	5	2
Strategies 4 & 5	4	2	2	7	3	5	4	1	4	4	6	3
Strategy 5	7	6	9	9	5	7	8	10	13	0	11	7
Other	2	2	3	3	3	3	0	3	0	0	2	2
None	19	16	18	11	19	19	21	24	17	9	11	17

TABLE 4.5: MOST FAVOURED FEATURES BY AREA OF RESIDENCE – NEWSLETTER SURVEY

	Hastings	St Leonards	Bexhill	Rye/Winchelsea	Hurst Green/ Robertsbridge/Battle	Tunbridge Wells/ Pembury	Tonbridge	Crowborough/West of A21	Wadhurst	Paddock Wood/East of A21	Elsewhere/NA	TOTAL
	%	%	%	%	%	%	%	%	%	%	%	%
Three most favoured features:												
A259 Western bypass	47	44	59	35	31	4	3	32	11	2	21	39
Improvements to A21	31	29	22	16	37	11	10	15	25	18	24	26
A259 Eastern bypass	32	27	31	19	18	2	-	21	3	2	18	24
Improved bus services	22	27	25	26	14	35	30	29	20	19	20	24
Improved rail services to London	20	17	11	20	17	37	30	19	41	16	21	19
Improve rail services – not specific	18	17	16	15	15	14	16	18	14	26	16	17
Tonbridge-Pembury dualling	7	5	6	9	18	60	51	14	52	60	13	14
Better public transport	10	12	9	14	10	8	7	9	6	7	9	10
Hastings-Ashford rail improvements	12	6	8	32	8	6	1	19	3	4	5	9
Small improvements to A21	6	4	3	5	22	20	20	13	16	35	7	9
Small improvements to A259	5	9	10	9	3	17	13	9	3	14	7	8
Ore-Bexhill Metro	7	7	10	13	3	3	-	9	2	2	4	7
Glyne Gap Station	5	8	9	4	6	-	2	9	-	-	4	6
Less accidents	4	5	4	6	5	6	2	6	2	5	7	5
Small scale road improvements – not specific	3	5	4	4	3	4	7	5	8	5	5	4
Preserve the countryside/environment	3	4	4	3	2	4	7	1	2	5	3	3
More jobs	3	3	3	-	4	3	1	1	3	2	4	3
More parking at Stations	1	1	2	3	4	4	1	3	5	2	1	2
TOTAL RESPONDENTS	601	798	439	79	221	157	88	78	64	57	76	2658

TABLE 4.6: MOST FAVOURED FEATURES BY MOST FAVOURED STRATEGY – NEWSLETTER SURVEY

PREFERRED STRATEGY	STRATEGY 1	STRATEGY 2	STRATEGY 3	STRATEGY 4	STRATEGY 5	TOTAL
	%	%	%	%	%	%
Three most favoured features:						
A259 Western bypass	8	5	42	69	55	39
Improvements to A21	7	10	11	12	45	26
A259 Eastern bypass	4	1	11	50	39	24
Improved bus services	47	48	32	15	10	24
Improved rail services to London	12	35	25	14	17	19
Improve rail services – not specific	25	29	17	17	12	17
Tonbridge-Pembury dualling	3	3	35	13	17	14
Better public transport	19	19	7	10	5	10
Hastings-Ashford rail improvements	17	20	7	5	5	9
Small improvements to A21	3	3	11	3	13	9
Small improvements to A259	7	11	13	10	6	8
Ore-Bexhill Metro	13	22	2	3	3	7
Glyne Gap Station	14	18	5	2	2	6
Less accidents	11	7	5	3	2	5
Small scale road improvements – not specific	9	9	3	3	1	4
Preserve the countryside/environment	9	5	4	2	1	3
More jobs	2	1	3	4	3	3
More parking at Stations	2	4	2	1	1	2
TOTAL RESPONDENTS	339	370	333	207	1163	2412

TABLE 4:7 LEAST FAVOURED FEATURES BY AREA OF RESIDENCE – NEWSLETTER SURVEY

	Hastings	St Leonards	Bexhill	Rye/Winchelsea	Hurst Green/ Robertsbridge/Battle	Tunbridge Wells/ Pembury	Tonbridge	Crowborough/West of A21	Wadhurst	Paddock Wood/East of A21	Elsewhere/NA	TOTAL
	%	%	%	%	%	%	%	%	%	%	%	%
Three least favoured features:												
More station car parking	15	12	13	10	14	3	3	13	8	9	3	12
Spoiling countryside/environment	12	12	8	11	8	16	14	4	6	7	7	11
A259 Western Bypass	8	14	7	19	9	6	7	18	6	9	13	10
A259 Eastern Bypass	11	11	5	32	13	7	7	18	6	9	13	10
Glyne Gap Station	10	9	13	6	9	4	5	13	8	5	8	9
Environmental improvements to A259	12	8	13	9	8	5	3	3	2	5	3	9
Small scale road improvements – not specified	6	6	8	3	9	5	9	13	6	9	4	7
Building less houses	4	5	12	3	6	5	1	3	6	7	4	6
More traffic through St Leonards	3	15	1	1	-	1	-	3	-	-	4	6
Ore-Bexhill Metro	6	4	6	6	6	3	-	1	5	2	4	5
More/new/bigger/wider roads	5	4	4	6	3	4	5	5	3	7	3	4
Improved rail services to London	3	3	4	3	5	6	2	1	2	11	4	3
Improved bus services on A259	3	4	4	4	2	2	-	6	2	4	1	3
Improved bus services generally	2	2	2	1	4	6	3	8	8	11	-	3
East and West Bypasses	3	3	3	3	1	4	-	8	5	-	7	3
All of Strategy 1	4	3	3	4	3	1	3	-	5	7	1	3
TOTAL RESPONDENTS	601	798	439	79	221	157	88	78	64	57	76	2658

TABLE 4.8: LEAST FAVOURED FEATURES BY MOST FAVOURED STRATEGY – NEWSLETTER SURVEY

PREFERRED STRATEGY	STRATEGY 1	STRATEGY 2	STRATEGY 3	STRATEGY 4	STRATEGY 5	TOTAL
	%	%	%	%	%	%
Three least favoured features:						
More station car parking	5	5	11	15	17	12
Spoiling countryside/environment	19	21	16	6	5	11
A259 Western Bypass	29	38	2	-	1	10
A259 Eastern Bypass	24	36	9	-	1	10
Glyne Gap Station	2	2	9	15	14	9
Environmental improvements to A259	1	2	8	15	14	9
Small scale road improvements – not specified	-	1	7	10	11	7
Building less houses	10	8	5	6	4	6
More traffic through St Leonards	10	12	4	2	3	6
Ore-Bexhill Metro	1	-	4	9	8	5
More/new/bigger/wider roads	16	9	1	-	1	4
Improved rail services to London	2	1	5	3	5	3
Improved bus services on A259	1	-	2	6	5	3
Improved bus services generally	-	-	4	3	4	3
East and West Bypasses	9	9	1	-	-	3
All of Strategy 1	-	-	4	2	4	3
TOTAL RESPONDENTS	339	370	333	207	1163	2412

TABLE 4.9: RESPONDENT CHARACTERISTICS – NEWSLETTER SURVEY

	Hastings	St Leonards	Bexhill	Rye/Winchelsea	Hurst Green/ Robertsbridge/Battle	Tunbridge Wells/ Pembury	Tonbridge	Crowborough/West of A21	Wadhurst	Paddock Wood/East of A21	Elsewhere/NA	TOTAL
	%	%	%	%	%	%	%	%	%	%	%	%
Public transport used:												
Never	18	23	29	13	17	10	7	8	14	18	25	20
Once a month or less	43	42	43	46	61	43	40	43	46	59	35	45
About once a week	14	12	12	17	9	18	25	18	14	9	11	13
More than once a week	25	22	16	24	13	29	28	30	25	14	29	22
Cars in household:												
None	15	15	9	8	2	11	8	18	3	-	17	12
One	55	55	55	38	38	48	41	19	35	35	48	50
Two	25	26	31	46	50	33	48	49	52	51	27	32
Three or more	5	5	5	8	9	8	3	13	10	10	8	6
Children in household:												
None	77	77	86	82	70	77	72	71	77	71	76	78
Aged under 5	4	5	3	3	8	5	9	4	7	5	4	5
Aged 5-15	17	14	10	16	18	18	16	22	17	20	17	15
In both groups	2	3	2	-	3	1	2	3	-	4	3	2
Working status:												
Working full time	45	50	36	62	60	47	43	73	52	64	55	49
Working part time	15	12	13	12	13	12	10	6	8	14	9	13
Student (16-18)	-	-	-	-	-	-	2	-	2	-	1	*
Not working	39	37	50	26	27	40	44	21	39	21	35	38
TOTAL RESPONDENTS	601	798	439	79	221	157	88	78	64	57	76	2658

* < 0.5%

TABLE 4.10: TYPE OF BUSINESS – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
Manufacturing	26	36	13	56	19	5	13	22	22
Suppliers/Distributors	13	3	4	11	19	10	16	22	12
Marketing/Advertising	4	-	-	-	6	-	-	6	2
Retail	20	27	13	11	13	30	25	11	20
Leisure	-	-	8	-	6	5	3	-	3
Agriculture	-	-	4	-	6	-	-	-	2
Hotel/Catering/Restaurant/Public House	2	6	8	-	6	5	9	-	5
Engineering/Electronics	4	6	8	-	6	5	9	17	7
Contractors	2	-	-	-	6	-	-	-	1
Publishers	9	3	4	-	6	20	-	-	6
Construction/Surveyors/Landscape Gardening	-	3	13	11	-	-	9	-	5
Insurance/Finance	7	6	21	-	-	15	3	12	8
Taxi/Transport	-	6	4	-	-	-	-	6	2
Import/Export	-	-	-	-	-	-	6	-	2
Vehicle Repairs/Caravan Conversion	7	-	-	11	6	-	3	-	3
Laboratory	-	-	-	-	-	5	-	-	1
Communications/Technology	7	-	-	-	-	-	-	6	2
Commercial Vehicle Dismantler	-	-	-	-	-	-	3	-	1
TOTAL RESPONDENTS	46	33	24	9	16	20	32	18	198

TABLE 4.11: NUMBER OF EMPLOYEES – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
None	2	3	4	12	-	-	9	6	4
One	13	-	-	-	12	5	3	6	6
Two	4	9	8	-	6	15	16	6	9
Three – Five	35	6	8	25	31	20	22	50	24
Six – Ten	11	16	26	25	19	30	22	22	20
11 –20	15	39	26	13	19	10	12	11	19
21 – 30	8	6	12	12	13	-	3	-	7
31 – 50	4	12	12	13	-	-	12	-	7
51 – 100	4	3	4	-	-	10	-	-	3
101 – 125	4	3	-	-	-	5	-	-	2
350	-	-	-	-	-	5	-	-	*
450	-	3	-	-	-	-	-	-	*
TOTAL RESPONDENTS	46	32	24	8	16	20	32	18	196

* = <0.5%

TABLE 4.12: EXTENT OF COMPANY OPERATIONS – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
Premises in Hastings/Bexhill:									
None	-	-	-	33	88	100	94	61	38
One	87	82	75	44	12	-	3	39	52
Two	7	18	17	-	-	-	3	-	7
More than two	7	-	8	22	-	-	-	-	3
Premises in Tonbridge/Tunbridge Wells:									
None	89	85	83	100	100	-	-	50	62
One	9	6	13	-	-	90	91	44	32
Two	2	6	-	-	-	5	9	-	4
More than two	-	3	4	-	-	5	-	6	2
Premises elsewhere in UK									
None	73	77	70	57	6	75	88	72	70
One	13	7	-	29	69	10	3	11	14
Two	4	-	9	-	6	5	-	6	4
Three	4	-	-	14	-	-	-	11	3
More than Three	2	17	22	-	19	10	9	-	10
Premises Overseas									
None	98	97	91	100	100	100	97	94	97
One	-	3	4	-	-	-	-	6	2
More than One	2	-	4	-	-	-	3	-	2
TOTAL RESPONDENTS	46	34	24	9	16	20	32	18	199

TABLE 4.13: CUSTOMER TYPE & MAIN MARKETS – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere/	TOTAL
	%	%	%	%	%	%	%	%	%
Customers Are:									
individuals	28	14	18	-	50	50	44	12	29
other businesses	63	62	41	71	44	40	47	82	55
both	9	24	41	29	6	10	9	6	16
Main Markets Are:									
In Sussex/Kent	78	62	58	33	44	60	48	33	57
elsewhere in the UK	18	32	33	67	50	35	39	39	34
overseas	4	6	8	-	6	5	13	28	9
TOTAL RESPONDENTS	46	34	24	9	16	20	32	18	199

TABLE 4.14: PROPORTION OF SALES IN THE HASTINGS AND TONBRIDGE/TUNBRIDGE WELLS AREA – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
% of Sales in Hastings									
Nil	7	19	10	11	19	60	44	78	29
1 – 5	18	29	40	44	38	30	38	11	29
6 – 10	9	6	5	-	19	5	19	-	9
11 –29	9	6	-	-	6	5	-	6	5
30 – 59	7	10	15	11	19	-	-	-	7
60 – 79	9	6	10	22	-	-	-	-	5
80 – 99	20	10	10	-	-	-	-	-	7
100	22	13	10	11	-	-	-	6	9
% of Sales in Tonbridge/Tunbridge Wells									
Nil	67	64	60	33	13	10	6	56	42
1 –5	17	21	20	44	38	11	22	28	22
6 – 10	5	-	15	11	25	-	6	6	7
11 – 29	7	7	-	-	12	16	9	-	7
30 – 59	5	7	-	11	12	16	6	6	7
60 – 79	-	-	-	-	-	1	16	6	4
80 – 99	-	-	5	-	-	26	19	-	6
100	-	-	-	-	-	10	16	-	4
TOTAL RESPONDENTS	42	28	20	9	16	19	32	18	184

TABLE 4.15: PROPORTION OF COSTS THAT ARE TRANSPORT RELATED – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
Transport Costs as % of Total:									
Nil	28	12	19	-	6	11	-	8	13
1 – 5	33	24	29	25	38	56	48	31	36
6 – 10	18	36	29	38	38	17	16	23	25
11 – 20	3	16	14	-	6	11	10	15	9
21 – 30	5	4	-	12	6	-	19	8	7
31 – 50	10	4	-	25	6	-	3	8	6
51+	3	4	10	-	-	6	3	8	4
TOTAL RESPONDENTS	39	25	21	8	16	18	31	13	171

TABLE 4.16: EXTENT TO WHICH TRANSPORT DIFFICULTIES AFFECT BUSINESS – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
Transport difficulties affect business:									
Not at all	33	15	21	-	63	37	25	28	28
Hardly at all	15	3	-	33	6	10	9	17	10
A little	26	41	42	11	12	32	38	17	30
A great deal	26	41	37	56	19	21	28	39	32
Problems generated:									
Congestion	33	52	42	56	33	46	57	23	44
Delays	26	52	42	44	83	46	35	39	42
Staff lateness	22	21	26	11	-	31	17	15	20
Increased costs	11	3	5	-	-	-	9	8	6
Loss of custom	15	3	5	-	17	-	4	15	7
Inability to meet orders	11	10	5	-	-	8	-	8	7
Parking problems	7	3	5	-	-	23	-	-	5
Public transport delays	4	-	5	11	-	8	9	-	4
Late clients/Missed appointments	3	-	-	11	17	23	4	15	7
TOTAL RESPONDENTS	27	29	19	9	6	13	23	13	139

TABLE 4.17: "BOTTLENECKS" IN THE NETWORK – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
A21/Bypasses needed	48	48	38	50	40	54	80	64	54
A259	67	89	69	25	20	-	-	9	45
Motorways	4	4	-	-	20	15	40	9	11
A21 – Tonbridge – Pembury	7	15	6	13	-	-	5	27	9
A22	4	-	19	-	-	-	-	18	5
A27	4	4	25	-	-	-	-	-	5
A26	-	-	-	-	-	31	5	-	4
Elsewhere	15	4	12	13	20	34	20	-	12
TOTAL RESPONDENTS	27	27	16	8	5	13	20	11	127

TABLE 4.18: TRANSPORT RELATED FACTORS SIGNIFICANTLY AFFECTING BUSINESS – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
Slow journey time to/from London	65	68	68	57	100	67	71	73	69
Unpredictable journey time to/from London	50	54	68	43	100	67	71	64	62
Slow journey time in Hastings	73	82	90	71	33	-	21	36	56
Slow journey time in Tonbridge/Tunbridge Wells	19	54	42	86	100	92	67	55	55
Unpredictable journey time in Tonbridge/Tunbridge Wells	15	46	42	57	33	100	71	46	49
Unpredictable journey time in Hastings	50	79	79	43	33	-	29	9	47
Poor local public transport	19	46	47	29	17	67	63	27	42
Poor public transport to/from London	35	32	32	43	33	33	38	18	33
TOTAL RESPONDENTS	26	28	19	7	6	12	24	11	133

TABLE 4.19: IMPACT OF TRANSPORT PROBLEMS ON BUSINESSES – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere/	TOTAL
	%	%	%	%	%	%	%	%	%
Increased costs	22	48	50	57	67	23	25	25	36
Reduced profits	22	22	50	14	17	8	29	8	22
Time wasted	17	19	-	29	-	39	13	17	16
Loss of custom/sales	13	-	11	14	-	-	21	25	11
Late deliveries/service calls	17	7	-	-	-	23	8	25	11
Major inconvenience/frustration	13	4	-	-	-	46	8	-	9
Difficult to recruit staff	-	-	11	-	-	-	13	-	4
Minimal/No impact	22	11	6	-	17	-	-	25	12
TOTAL RESPONDENTS	23	27	18	7	6	13	24	12	130

TABLE 4.20: IMPACT OF WORSENING ROAD CONDITIONS ON BUSINESSES – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
Worsening road conditions would mean:									
Lost custom	19	7	24	22	-	23	30	9	18
Increased costs	19	4	24	22	17	8	4	27	13
Reduced profit	14	7	12	44	33	8	9	9	13
Business would slow down	5	-	12	11	33	8	13	-	12
Major impact – unspecified	5	14	12	22	17	-	9	27	12
Considering changing location	14	29	6	-	-	8	-	9	11
Little impact	19	7	-	11	-	8	13	9	9
Delays	5	11	6	-	-	8	17	18	9
Need to change shifts/opening hours	5	7	-	11	-	15	4	9	6
Could go out of business	5	4	6	-	-	-	13	9	6
Reduced reliability	5	-	6	-	17	8	-	27	6
Other effects	-	11	23	22	-	15	9	-	20
TOTAL RESPONDENTS	21	28	17	9	6	13	23	11	128

TABLE 4.21: AWARENESS OF ACCESS TO HASTINGS STUDY – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
Aware?									
Yes	39	47	42	33	25	10	9	18	30
Yes, but know nothing of it	41	15	4	-	-	5	6	-	14
No	20	38	54	67	75	85	85	82	56
Newsletter?									
Seen and returned comments	15	12	8	-	13	5	-	6	9
Seen and looked at it	22	15	21	13	13	-	6	12	14
Seen but not looked at it	17	18	13	-	-	5	-	-	9
Not seen	46	55	58	87	75	90	94	82	68

TABLE 4.22: ATTITUDES TOWARDS TRANSPORT ISSUES – BUSINESS SURVEY

		Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
		%	%	%	%	%	%	%	%	%
It is worth building bypasses through the countryside if it helps the local economy	Agree completely	30	32	38	22	13	15	53	11	30
	Agree somewhat	48	47	58	78	63	55	31	67	51
	Neither	11	9	-	-	-	5	6	11	6
	Disagree somewhat	11	9	4	-	25	15	6	11	10
	Disagree completely	-	3	-	-	-	10	3	-	2
Money should be spent on improving public transport rather than building more roads	Agree completely	13	9	17	22	-	45	22	22	18
	Agree somewhat	24	44	29	33	25	15	28	33	29
	Neither	26	6	13	11	-	10	22	33	17
	Disagree somewhat	27	35	38	33	50	20	19	11	27
	Disagree completely	15	6	4	-	25	10	9	-	9
The local area needs to attract new people even at the expense of some countryside	Agree completely	4	15	13	11	-	-	19	11	10
	Agree somewhat	56	32	33	33	31	10	22	28	34
	Neither	17	15	8	11	-	15	6	6	11
	Disagree somewhat	17	32	42	22	44	50	31	56	34
	Disagree completely	4	6	4	22	25	25	22	-	12
This area needs better links to the rest of the South East	Agree completely	59	88	92	67	25	20	39	39	57
	Agree somewhat	37	9	8	22	44	55	32	39	30
	Neither	2	-	-	-	-	5	-	6	2
	Disagree somewhat	2	3	-	11	25	20	19	11	10
	Disagree completely	-	-	-	-	6	-	10	6	2

TABLE 4.22: ATTITUDES TOWARDS TRANSPORT ISSUES (CONTINUED) – BUSINESS SURVEY

		Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere/	TOTAL
		%	%	%	%	%	%	%	%	%
Car users should not be penalised any more than they are already	Agree completely	59	59	67	78	69	60	75	44	63
	Agree somewhat	33	12	25	11	25	25	13	33	23
	Neither	4	6	-	-	-	-	3	11	3
	Disagree somewhat	4	18	8	11	6	15	6	11	10
	Disagree completely	-	6	-	-	-	-	3	-	2
Building roads does not reduce congestion, it encourages more traffic	Agree completely	4	-	25	-	-	25	19	-	9
	Agree somewhat	15	18	21	33	50	35	28	44	27
	Neither	22	21	4	-	6	15	9	22	15
	Disagree somewhat	44	47	46	44	38	15	22	28	36
	Disagree completely	15	15	4	22	6	10	22	6	13
Some tough policies will need to be introduced soon to stop worsening congestion	Agree completely	11	49	54	56	7	40	28	17	31
	Agree somewhat	44	33	33	-	73	45	53	67	45
	Neither	15	9	8	22	-	10	13	11	11
	Disagree somewhat	26	9	4	11	20	5	3	6	12
	Disagree completely	4	-	-	11	-	-	3	-	2
TOTAL RESPONDENTS		46	34	24	9	16	20	31	18	198

TABLE 4.23: STRATEGY PRIORITY ALLOCATION – BUSINESS SURVEY

		Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
		%	%	%	%	%	%	%	%	%
Reducing town centre congestion, pollution and road accidents	Top priority	41	29	29	44	19	45	29	28	33
	A priority	41	38	46	44	63	40	52	56	46
	A low priority	11	32	17	-	19	15	10	11	16
	Not a priority	7	-	8	11	-	-	10	6	5
Support the economy to reduce unemployment and improve prosperity	Top priority	48	65	46	67	19	30	35	47	45
	A priority	46	29	50	22	69	50	42	47	44
	A low priority	6	6	4	11	12	15	23	6	10
	Not a priority	-	-	-	-	-	5	-	-	1
Protecting the countryside	Top priority	13	18	38	56	50	60	47	39	34
	A priority	40	77	42	33	25	30	37	56	45
	A low priority	38	3	21	11	25	5	16	-	17
	Not a priority	9	3	-	-	-	5	-	6	4
Improving public transport to provide alternative to car use	Top priority	22	44	42	44	-	65	70	71	43
	A priority	61	44	33	56	94	30	27	23	45
	A low priority	13	9	21	-	6	5	3	-	9
	Not a priority	4	3	4	-	-	-	-	6	3

TABLE 4.24: MOST FAVOURED FEATURES – BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
A21 bypasses and upgrading	85	100	83	89	100	53	84	67	84
Fast direct Hastings-London trains	67	68	71	56	100	63	53	56	66
A259 Western Bypass	61	97	83	56	100	21	47	44	65
A259 Eastern Bypass	63	88	83	78	88	16	34	39	61
Minor road improvements	52	74	75	67	69	21	41	61	57
Better Hastings-Ashford service	48	56	54	44	63	32	44	39	48
Improved bus services on A259	41	62	63	67	38	26	41	28	46
Improved bus services – not specified	37	56	33	33	13	21	34	33	35
More parking at Battle station	24	27	49	44	88	21	34	28	35
New Glyne Gap station	33	41	50	22	50	11	9	17	30
More parking at Robertsbridge Station	13	18	21	33	31	21	31	44	24
A21 improvements south of Pembury	44	71	38	56	100	84	88	89	68
Tonbridge-Pembury dualling	30	68	33	56	94	100	88	78	66
Minor improvements to A26	17	32	33	44	44	93	91	89	51
Improved rail service to London	24	15	13	56	56	63	63	67	39
Improved bus services on A21	11	6	-	67	13	74	69	56	31
Improved Wadhurst-Tonbridge trains	9	3	-	44	25	63	41	61	25
Improved bus services on A26	4	-	-	33	-	68	50	50	22

TABLE 4.25: TOP STRATEGY PRIORITY -– BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
The one measure for priority:									
A259 Western bypass	28	55	67	-	50	-	3	6	29
A21 Pembury – Hastings bypasses and upgrades	41	24	16	55	19	17	29	24	28
Pembury – Tunbridge A21 dualling	7	6	-	33	25	61	52	47	24
Improved rail services to London	13	6	4	-	-	11	7	18	8
Glyne Gap Station	2	3	4	-	6	-	-	6	3
Minor improvements to A26 & A21	-	3	-	-	-	11	6	-	3
A259 Eastern bypass	4	3	4	-	-	-	-	-	2
Others	5	-	5	12	-	-	3	-	3

TABLE 4.26: LABOUR ISSUES - BUSINESS SURVEY

	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Elsewhere	TOTAL
	%	%	%	%	%	%	%	%	%
Difficult to recruit?									
Yes	33	41	42	44	25	30	31	21	34
No	67	59	58	55	69	65	69	79	65
Don't know	-	-	-		6	5	-		1
Influence of travelling time:									
None	86	97	71	57	75	75	88	90	83
Yes/some	9	3	25	29	13	5	9	10	11
Yes/great extent	5	-	4	14	6	20	3		6
Don't know	-	-	-	-	6	-	-	-	*
Other factors:									
None	51	57	52	14	69	70	74	67	59
Lack of skills	44	37	26	14	19	10	19	22	28
Low wages	2	-	-	43	6	5	7	-	5
Poor public transport	-	-	4	-	-	10	-	11	2
Hours of work	-	3	4	-	-	-	-	-	1
Ageing population	-	-	9	-	-	-	-	-	1
Quality of area	2	-	4	-	-	5	-	-	2
Other/Don't know	-	3	-	29	6	-	-	-	2

* = <0.5%

TABLE 4.27: AWARENESS OF THE STUDY - HOUSEHOLD SURVEY

	Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
	%	%	%	%	%	%	%	%	%	%
Heard of it?										
Yes	11	47	43	40	36	15	12	21	38	32
Yes, but know nothing	4	8	15	21	1	-	7	24	8	12
No	85	46	43	40	63	85	81	55	55	57
Seen the Newsletter?										
Yes	1	15	15	10	5	7	3	19	13	11
Yes, not looked at it	1	5	5	3	-	-	2	12	5	4
No	98	80	79	87	95	93	95	69	82	84
Been to an exhibition?										
Yes	4	4	7	9	5	-	4	9	8	6
No	96	96	93	91	95	100	96	91	92	94
Total Respondents	81	197	240	220	80	106	157	180	119	1380

TABLE 4.28: FREQUENCY OF TRAVEL - HOUSEHOLD SURVEY

	Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
	%	%	%	%	%	%	%	%	%	%
Travel by car as driver:										
5+ times per week	54	42	44	57	32	59	48	39	57	48
2-4 times a week	6	11	13	16	17	11	13	20	13	14
About once a week	3	3	1	4	-	2	6	11	3	4
Less often	-	2	1	2	4	-	-	-	1	1
Never	37	43	42	21	47	28	32	29	26	33
Travel by car as passenger:										
5+ times per week	11	10	17	11	15	6	12	8	13	12
2-4 times a week	30	27	24	25	22	26	29	29	30	27
About once a week	14	22	14	12	16	23	21	23	13	17
1-3 times a month	10	11	12	6	19	13	16	11	13	12
3-10 times a year	5	6	4	11	6	2	10	4	3	6
1-2 times a year or less	6	6	6	12	4	3	6	3	5	6
Never	25	19	22	24	19	28	7	22	22	21
Travel by train:										
5+ times per week	-	1	2	1	1	6	4	9	2	3
2-4 times a week	-	3	1	2	-	3	1	7	3	2
About once a week	-	1	2	3	7	5	4	11	3	4
1-3 times a month	9	9	14	11	14	10	12	17	10	12
3-10 times a year	15	13	11	17	12	13	17	14	11	14
1-2 times a year or less	16	28	25	21	21	17	36	11	20	22
Never	61	47	46	46	44	46	27	31	51	43
Total Respondents	81	197	242	220	81	106	157	181	119	1384

TABLE 4.28 (CONTD): FREQUENCY OF TRAVEL - HOUSEHOLD SURVEY

	Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
	%	%	%	%	%	%	%	%	%	%
Travel by bus/coach:										
5+ times per week	4	9	6	1	5	4	5	3	3	5
2-4 times a week	16	12	11	6	12	8	8	11	6	10
About once a week	5	8	9	3	6	8	5	8	6	7
1-3 times a month	5	6	5	6	10	3	8	11	3	7
3-10 times a year	12	4	8	7	5	7	8	9	7	7
1-2 times a year or less	17	14	15	12	16	5	19	12	15	14
Never	41	48	45	66	46	67	47	45	59	52
Travel by motorcycle:										
At least once a week	-	1	2	4	2	-	1	8	3	3
Less often	2	2	2	2	-	1	-	6	1	2
Never	98	96	96	95	98	99	99	87	97	96
Travel by bicycle:										
5+ times per week	1	3	5	1	9	2	6	6	3	4
2-4 times a week	3	4	4	4	6	1	3	6	5	4
About once a week	4	3	4	3	3	3	1	3	3	3
1-3 times a month	3	1	3	4	4	5	6	3	7	4
3-10 times a year	5	2	2	5	5	2	4	6	5	4
1-2 times a year or less	1	2	1	3	3	-	3	8	2	3
Never	84	86	82	81	72	88	78	69	75	80
Total Respondents	81	197	240	220	81	106	157	181	119	1384

TABLE 4.28 (CONTD): FREQUENCY OF TRAVEL - HOUSEHOLD SURVEY

	Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
	%	%	%	%	%	%	%	%	%	%
Walk:										
5+ times per week	46	55	55	58	61	60	60	34	45	53
2-4 times a week	27	20	25	21	15	28	18	37	25	24
About once a week	7	10	5	7	6	5	14	12	13	9
1-3 times a month	6	5	5	3	1	2	3	4	5	4
3-10 times a year	-	-	1	2	3	-	-	1	1	1
1-2 times a year or less	-	-	*	2	1	-	-	1	-	1
Never	14	11	9	7	14	5	6	11	10	9
Total Respondents	81	197	240	220	80	106	157	180	119	1384

* > 0.5%

TABLE 4.29: LEVELS OF CONGESTION - HOUSEHOLD SURVEY

	Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
	%	%	%	%	%	%	%	%	%	%
Locally, congestion is:										
Not a problem	19	12	8	16	9	3	1	8	4	9
Not too bad	12	29	30	21	27	10	23	15	13	22
Quite bad	43	46	45	46	44	70	51	37	55	48
Very bad	20	12	13	12	19	17	21	19	22	16
Critical	6	2	3	6	1	-	4	21	6	6
In Hastings/Tonbridge/Tunbridge Wells, congestion is:										
Not a problem	21	5	5	1	1	17	1	5	4	5
Not too bad	20	31	23	7	21	25	10	12	16	18
Quite bad	17	42	46	37	33	47	47	27	39	39
Very bad	10	17	21	34	32	11	36	26	29	25
Critical	4	3	2	12	-	-	4	29	8	8
Don't go into the town centre	28	3	4	9	12	1	3	1	4	6
Total Respondents	81	192	240	208	81	102	157	180	119	1360

TABLE 4.30: MAIN TRANSPORT PROBLEMS - HOUSEHOLD SURVEY

	Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
	%	%	%	%	%	%	%	%	%	%
Delays caused by congestion	10	37	42	69	42	26	47	35	63	44
Poor bus and rail services	16	36	29	17	24	18	23	21	37	25
Insufficient car parking	10	29	20	20	26	15	19	25	6	20
Road safety	21	12	14	10	29	23	8	36	31	19
Pollution from cars	5	19	14	13	23	33	16	37	6	19
Poor road maintenance	10	17	14	15	20	18	10	28	8	16
Pedestrian safety	2	16	11	8	23	37	6	28	17	16
Expensive bus and rail fares	15	17	17	5	15	15	10	25	8	14
Car theft/vandalism	5	13	13	7	15	22	4	21	2	11
Cyclists' safety	5	6	9	6	14	8	10	16	6	9
Personal safety fears on buses	-	3	4	1	3	1	2	12	-	4
Total Respondents	61	167	203	196	66	101	146	174	110	1224

TABLE 4.31: ATTITUDES TOWARDS TRANSPORT ISSUES

		Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
		%	%	%	%	%	%	%	%	%	%
The countryside should be protected, even if car use has to be restricted	Agree completely	44	33	36	23	36	37	52	24	42	35
	Agree somewhat	26	43	43	45	51	42	35	31	29	39
	Neither	13	11	8	10	5	7	8	12	11	10
	Disagree somewhat	10	12	10	16	6	10	3	21	12	12
	Disagree completely	8	1	3	6	3	5	2	11	7	5
It is worth building bypasses if it helps the local economy	Agree completely	39	34	26	36	37	30	16	18	36	29
	Agree somewhat	26	38	45	42	37	27	32	44	29	38
	Neither	21	20	15	12	12	14	23	18	14	17
	Disagree somewhat	3	6	10	8	7	12	20	11	7	10
	Disagree completely	11	4	5	3	6	16	9	9	13	8
Reducing congestion on the road should be the highest priority	Agree completely	55	41	37	50	37	35	38	35	42	41
	Agree somewhat	23	43	41	34	49	34	37	39	33	39
	Neither	13	9	7	8	6	14	11	14	12	10
	Disagree somewhat	5	6	12	7	4	11	13	11	8	9
	Disagree completely	5	1	3	1	4	3	1	1	6	2
Money should be spent on public transport rather than building more roads	Agree completely	52	42	46	30	38	58	49	33	53	43
	Agree somewhat	25	28	29	29	28	19	29	34	16	27
	Neither	14	17	11	18	17	9	10	19	11	14
	Disagree somewhat	4	9	10	19	12	9	10	11	8	11
	Disagree completely	6	3	5	5	4	5	2	3	13	5

TABLE 4.31: ATTITUDES TOWARDS TRANSPORT ISSUES (CONTD) - HOUSEHOLD SURVEY

		Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
		%	%	%	%	%	%	%	%	%	%
Enhancing the character of the local area is more important than edge of town development	Agree completely	30	34	35	20	31	47	28	21	43	31
	Agree somewhat	33	30	34	40	44	27	39	36	24	34
	Neither	31	21	20	21	11	10	25	29	22	22
	Disagree somewhat	4	13	7	17	11	11	6	12	7	10
	Disagree completely	3	1	5	3	3	4	2	3	5	3
Additional road building is acceptable if complemented by town centre measures	Agree completely	32	36	41	26	34	47	29	22	38	33
	Agree somewhat	27	42	40	47	49	25	40	49	27	40
	Neither	32	15	13	16	11	15	22	21	21	18
	Disagree somewhat	6	6	5	10	6	8	5	5	4	6
	Disagree completely	3	1	2	1	-	6	3	3	10	3
The local area needs to attract new businesses even if at the expense of the countryside	Agree completely	17	32	22	18	26	9	4	16	16	18
	Agree somewhat	25	32	28	36	33	16	22	36	21	29
	Neither	20	1	19	12	11	13	15	18	12	15
	Disagree somewhat	10	16	21	26	25	21	36	18	17	22
	Disagree completely	28	6	11	8	5	42	22	12	35	16
This area needs better links to the rest of the South East	Agree completely	53	60	66	68	57	59	23	27	45	52
	Agree somewhat	12	21	20	20	16	17	27	32	17	21
	Neither	14	12	6	6	11	5	17	18	10	11
	Disagree somewhat	11	5	6	7	14	9	26	18	14	12
	Disagree completely	10	1	2	1	3	10	7	5	14	5

TABLE 4.31: ATTITUDES TOWARDS TRANSPORT ISSUES (CONTD) - HOUSEHOLD SURVEY

		Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
		%	%	%	%	%	%	%	%	%	%
Car users should not be penalised any more than they are already	Agree completely	63	50	59	58	68	73	45	29	77	55
	Agree somewhat	20	26	26	29	19	11	22	27	5	22
	Neither	9	17	6	10	7	8	13	17	10	11
	Disagree somewhat	7	6	6	2	6	6	15	11	7	7
	Disagree completely	1	2	3	1	-	3	6	17	1	4
It's every person's right to use their car as much as they like	Agree completely	61	33	34	30	42	59	31	21	53	37
	Agree somewhat	20	40	41	35	42	20	30	27	27	33
	Neither	11	12	10	13	9	7	12	16	8	11
	Disagree somewhat	6	9	10	17	7	11	17	14	5	12
	Disagree completely	3	6	5	5	-	3	11	22	7	7
Building roads doesn't reduce congestion	Agree completely	42	19	21	13	12	31	44	21	37	25
	Agree somewhat	17	33	29	35	37	29	26	37	14	30
	Neither	17	15	18	18	11	15	10	18	12	15
	Disagree somewhat	10	22	26	25	27	16	11	12	18	19
	Disagree completely	14	11	7	9	12	9	9	12	19	11
Some tough policies will need to be introduced soon	Agree completely	58	42	42	46	40	53	45	36	61	45
	Agree somewhat	20	38	40	42	38	28	39	36	22	35
	Neither	11	14	9	7	15	13	12	21	7	12
	Disagree somewhat	3	5	7	5	1	5	3	6	4	5
	Disagree completely	9	1	3	1	6	1	1	1	7	3

TABLE 4.32: PRORITY TO BE AWARDED - HOUSEHOLD SURVEY

		Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
		%	%	%	%	%	%	%	%	%	%
Reducing town centre traffic, congestion, pollution and road accidents	Top priority	44	49	45	54	64	24	29	46	33	44
	A priority	37	43	49	39	33	67	65	49	58	49
	Low priority	16	7	6	7	1	9	5	5	8	7
	Not a priority	2	3	1	3	1	1	2	-	2	1
Supporting the economy to reduce unemployment and improve prosperity	Top priority	31	53	53	35	68	22	15	27	25	38
	A priority	57	44	43	55	31	71	65	53	52	52
	Low priority	7	1	3	9	1	7	20	13	18	9
	Not a priority	5	-	1	1	-	1	1	7	5	2
Protecting the countryside	Top priority	49	38	45	39	65	31	35	22	27	38
	A priority	44	49	48	51	33	66	58	56	65	52
	Low priority	8	14	7	10	1	4	6	18	6	9
	Not a priority	-	-	*	1	-	-	1	4	3	1
Improving public transport to give better alternative to car use	Top priority	60	61	69	60	76	58	54	39	62	59
	A priority	36	37	28	39	23	39	41	44	29	36
	Low priority	3	2	3	1	1	4	5	16	9	5
	Not a priority	1	-	*	1	-	-	1	1	-	*

* < 0.5%

TABLE 4.33 EFFECTIVENESS OF STRATEGIES (WEIGHTED AVERAGE SCORES) - HOUSEHOLD SURVEY

		Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
Reducing town centre traffic	Strategy 1	3	2.5	2.6	2.3	2.4		1.4	2.3	2.5	2.5
	Strategy 2	3	2.2	2.5	2.1	2.4		2.5	2.4	2.5	2.4
	Strategy 3	2.6	1.9	1.9	1.5	1.9		2.2	2.3	2.4	2.0
	Strategy 4	2.8	1.7	1.9	1.5	1.7		2.3	2.4	2.4	2.0
	Strategy 5	2.9	1.6	1.9	1.6	1.7		2.3	2.5	2.3	2.0
Supporting the economy	Strategy 1	2.6	2.7	2.6	2.4	2.9		2.8	2.5	2.6	2.6
	Strategy 2	2.7	2.5	2.5	2.3	2.8		2.7	2.5	2.6	2.5
	Strategy 3	3.2	2.1	2.1	2.0	2.2		2.3	2.0	2.4	2.1
	Strategy 4	2.7	2.0	2.1	1.9	2.0		2.4	2.0	2.4	2.1
	Strategy 5	2.7	1.9	1.7	1.9	1.9		2.5	2.0	2.3	2.1
Protecting the countryside	Strategy 1	2.2	2.3	2.3	2.2	2.2		2.5	2.4	2.4	2.4
	Strategy 2	2.2	2.2	2.3	2.2	2.2		2.5	2.3	2.4	2.3
	Strategy 3	2.7	2.6	2.8	2.9	2.8		3.2	3.0	3.1	2.9
	Strategy 4	2.9	2.6	2.8	2.9	2.7		3.3	3.1	3.2	2.9
	Strategy 5	2.9	2.5	2.7	2.8	2.7		3.3	3.1	3.2	2.9
Improving public transport	Strategy 1	1.7	1.9	2.0	1.8	2.0		2.1	2.0	2.1	2.0
	Strategy 2	1.7	1.8	1.9	1.7	1.7		2.2	2.0	2.1	1.6
	Strategy 3	2.3	1.9	2.1	1.8	1.9		2.4	2.0	2.3	2.1
	Strategy 4	2.3	1.8	2.0	1.8	1.7		2.5	2.1	2.4	2.0
	Strategy 5	2.5	1.8	2.0	1.9	1.9		2.6	2.2	2.3	2.1

1 = Very effective 4 = Not effective at all

TABLE 4.34 PREFERRED STRATEGY - HOUSEHOLD SURVEY

		Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
		%	%	%	%	%	%	%	%	%	%
First choice:	Strategy 1	56	15	18	11	29	22	27	46	20	24
	Strategy 2	13	10	13	12	9	15	18	14	15	13
	Strategy 3	20	19	23	42	9	22	38	19	24	26
	Strategy 4	4	23	15	12	13	5	3	4	6	11
	Strategy 5	8	33	31	23	41	36	14	17	36	26
Second choice:	Strategy 1	9	13	12	14	9	13	20	11	14	13
	Strategy 2	25	11	17	14	20	17	31	44	19	21
	Strategy 3	41	25	18	21	16	25	16	17	33	22
	Strategy 4	19	34	36	35	47	23	20	19	22	29
	Strategy 5	6	17	16	17	9	23	13	10	12	14

TABLE 4.35: WHICH STRATEGY WOULD DO MOST TO IMPROVE TRAVEL CONDITIONS BETWEEN TONBRIDGE AND TUNBRIDGE WELLS? - HOUSEHOLD SURVEY

		Tunbridge Wells	Tonbridge
		%	%
First Choice:	Strategy 1	25	43
	Strategy 2	8	9
	Strategy 3	46	24
	Strategy 4	3	5
	Strategy 5	9	11
Second Choice:	Strategy 1	18	7
	Strategy 2	28	47
	Strategy 3	12	8
	Strategy 4	12	18
	Strategy 5	23	9
TOTAL RESPONDENTS		158	181

TABLE 4.36: WHICH OF THE FIVE STRATEGIES WOULD YOU DEFINITELY REJECT? - HOUSEHOLD SURVEY

	Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
	%	%	%	%	%	%	%	%	%	%
Strategy 1	4	7	7	10	3	12	7	4	6	1
Strategies 1 & 2	-	1	1	1	-	1	3	5	3	2
Strategies 1, 2 & 3	-	-	-	1	-	-	-	2	-	*
Strategies 1, 2, 3 & 4	-	-	*	-	-	-	-	-	-	*
Strategy 2	4	3	1	1	5	6	1	2	3	2
Strategies 2, 3 & 4	-	-	*	-	-	-	-	1	-	*
Strategy 3	9	4	4	2	3	8	3	2	1	3
Strategies 3, 4 & 5	2	5	4	1	1	-	6	7	3	3
Strategy 4	4	2	1	2	3	4	2	1	1	2
Strategies 4 & 5	-	-	*	-	-	1	4	8	-	2
Strategy 5	25	5	6	7	9	2	13	8	3	8
None	53	76	73	76	72	65	58	53	81	68
All	-	1	1	-	1	-	2	4	-	1
Other	-	1	1	-	-	-	1	2	-	1
Total Respondents	80	194	239	215	79	104	154	175	114	1354

* < 0.5%

TABLE 4.37: MOST FAVOURED FEATURES - HOUSEHOLD SURVEY

	Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
	%	%	%	%	%	%	%	%	%	%
A259 Western Bypass	44	67	66	83	57	52	7	10	21	63
A21 Bypasses and Upgrades	20	48	46	31	46	64	79	40	82	45
A259 Eastern Bypass	44	49	52	52	44	22	7	5	15	44
New fast rail links to London	16	29	31	29	28	23	7	20	3	27
Improved buses along A259	26	19	23	32	29	13	7	-	3	22
New station at Glyne Gap	4	13	15	17	17	18	-	10	9	14
Minor road improvements to A259	20	9	11	11	23	9	-	20	-	11
Better Hastings-Ashford/Ore-Bexhill rail services	2	14	10	9	22	7	7	5	-	10
Improved bus services along A2100	2	14	9	8	8	17	-	-	-	9
More parking at Battle & Crowborough Stations	10	1	1	3	-	18	-	-	-	4
More parking at Robertsbridge Station	2	1	1	-	1	2	-	-	3	1

TABLE 4.38: HOW MUCH OF THE BUDGET SHOULD BE SPENT ON ROADS?

	Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
	%	%	%	%	%	%	%	%	%	%
Up to 21%	4	3	5	6	-	1	10	6	3	5
22-30%	6	3	8	5	-	2	10	5	2	5
31-40%	6	2	3	5	3	-	4	11	6	5
41-50%	25	15	13	10	11	13	19	19	40	17
51-60%	9	11	9	3	18	1	6	7	7	8
61-70%	1	13	10	7	17	3	3	5	9	8
71-80%	11	23	21	21	34	10	17	11	11	18
82-100%	33	12	16	29	6	10	14	20	11	17
NA/DK	5	19	16	15	11	62	17	16	11	19
Total Respondents	80	194	239	215	79	104	154	175	114	1354

TABLE 4.39: RESPONDENT CLASSIFICATION

	Pevensey	Hastings	St Leonards	Bexhill	Rye	Battle	Tunbridge Wells	Tonbridge	Pembury/Hurst Green/Lamberhurst	TOTAL
	%	%	%	%	%	%	%	%	%	%
Cars in Household:										
None	28	22	23	10	27	17	20	21	12	19
One	42	53	53	60	57	43	48	49	45	51
Two	26	21	21	26	13	32	27	26	35	25
Three +	4	3	3	5	4	8	5	4	8	5
Children in Household:										
None	68	71	72	80	78	72	73	60	70	72
Under 5	11	12	9	4	6	8	7	19	10	10
5-15	21	17	19	15	15	20	20	21	19	19
Status:										
Working full time	16	25	31	25	25	32	42	38	33	30
Working part time	11	18	14	13	15	22	14	14	23	16
Student	1	5	3	2	4	2	3	6	3	3
Seeking work	4	3	1	1	3	1	1	6	1	2
Other, not working	68	50	51	59	54	43	40	36	40	48
Age group:										
16-24	9	8	10	5	6	11	8	9	8	8
25-34	14	17	17	6	12	12	13	19	13	14
35-44	16	17	20	18	11	19	20	24	22	19
45-54	11	14	12	15	20	15	18	16	18	15
55-64	17	13	16	18	17	12	16	9	20	15
65+	33	31	27	38	33	32	26	22	19	29

APPENDIX B

LIST OF ROAD AND RAIL LINKS FOR ASSESSMENT

B.1. LIST OF ROAD AND RAIL LINKS FOR ASSESSMENT

Road links:

- A21 Tonbridge & Pembury off-line dual
- A21 Tonbridge - Tunbridge Wells
- A21 Hurst Green - John's Cross
- A21 John's Cross - Hastings
- A2100 Battle Road (Battle to Baldslow)
- A259 Bexhill & Hastings Western Bypass
- A259 Hastings Eastern Bypass
- A259 Pevensey - Western Bypass
- A259 Western Bypass - Bexhill
- A259 Bexhill - Hastings Town Centre
- A259 Hastings Town Centre
- A259 Hastings Town Centre - Eastern Bypass
- A259 Eastern Bypass - Rye
- A26 Tonbridge - Tunbridge Wells
- A28 Baldslow - A268
- B2093 The Ridge
- Gillsman's Hill
- Bexhill Northern Approach Road

Rail links:

- Hastings - Wadhurst
- Wadhurst - Tonbridge
- Eastbourne - Polegate
- Pevensey - Bexhill
- Bexhill - Hastings
- Hastings - Ashford

APPENDIX C

ECONOMIC IMPACT REPORT

ACCESS TO HASTINGS

MULTI-MODAL STUDY

Economic Impact

Final Report

November 2000

steer davies gleave Llewelyn-Davies WS Atkins

1. INTRODUCTION

Approach

1.1 This paper presents the findings from work conducted on the regeneration and economic impacts of changes in access to the Hastings area. The work was undertaken along two complementary paths. The first concentrated on reviewing the available evidence regarding the role of transport infrastructure on economic development. The second has sought to produce a model which illustrates the causative links between accessibility and economic regeneration.

1.2 The review of evidence provides findings, firstly, on the role of transport infrastructure on economic development and then relates these more specifically to Hastings and Rother. From a consideration of recent economic performance the work turns to assess the potential for regeneration.

1.3 For the model the basis of the work is outlined and an explanation of the links between the transport and economic elements within it given. From these general characteristics the specifics of the Hastings and Bexhill context is introduced. Section 3 of this appendix contains summary of the methodology for this work. A more detailed explanation is set out as Appendix D.

1.4 Each of the above elements is presented in turn, and then based upon them conclusions are drawn assessing the potential of each strategy for achieving economic regeneration in the final section.

2. REGENERATION AND ECONOMIC DEVELOPMENT: IMPACTS OF CHANGES IN TRANSPORT INFRASTRUCTURE INVESTMENT AND ACCESS

Introduction

2.1 While this study is concerned with the appraisal of a range of transport options, and with whether, and how, wider economic impacts may be taken into that appraisal, it is useful to approach the issue of wider impacts from an economic development perspective in order to identify the role of transport infrastructure investment in the process of economic development or regeneration. This approach is taken because it is evident that transport infrastructure almost invariably plays a complementary or catalytic role alongside other factors, and it is important therefore to adopt a holistic approach first before looking at the specific role of transport infrastructure investment.

2.2 For this work, consideration has been given only to the impacts at the level of the Hastings and Rother regeneration area, and not at the level of the south east region[1] nor at the UK level.

Findings from case studies and review of research

2.3 The extensive review of the available evidence regarding the role of transport infrastructure on economic development has been undertaken in parallel with other work which has included a series of case studies in the US, Japan and Europe. These have shed valuable additional light on the issues under review. The findings from this work need to be stated, as they form part of the basis for the findings here: in summary, these are:

- built infrastructure is not a sufficient condition for economic development: where networks already exist, building additional transport or other infrastructure can in some circumstances help to sustain on going processes of economic development, but will not by itself bring such development about

- new infrastructure can, therefore, play a complementary role where other factors generate growth, especially where there are bottlenecks, including road constraints and lack of physical resources such as developable land: positive economic performance impacts are greatest (and may only exist) in buoyant economies, where investment in infrastructure can improve competitiveness and access to resources, including labour

- labour market impacts may be most significant in (spatial) areas where there are growing clusters of businesses engaged in related activities, where the existence of a large number of employers is important in building and retaining a skilled labour pool;

[1] We have used the term region to refer to the Hastings and Rother area or sub region, and on occasions have used the word sub in brackets in order to emphasis that we are referring to this small area. Where we refer to a larger area we use its name, such as the south east region.

local transport accessibility can facilitate expansion of the effective accessible pool of skills available to employers in the cluster area

- in less dynamic and static areas, economic development impacts are likely to arise only where lack of infrastructure is a significant constraint on (suppressed) growth or where investment in infrastructure enables critical performance thresholds are crossed, such as travelling times or drivers' hours constraints

- there can be image benefits from infrastructure, of which the most important include changes in the perceptual maps of external decision makers such as inward investors and commuters, who may, for example, view an area as less remote where access time is reduced by a non-marginal amount; there can also be image benefits where new technology is applied, for example with innovative public transport schemes

- the role of built infrastructure, and especially transport infrastructure, is changing with growth of the knowledge based economy, which places greater emphasis on local interactions of people and just in time movements of critical components and outputs

- the balance of evidence suggests that investment in transport infrastructure has helped to promote centralisation of economic activities, and that this has been consistent with increasing competitiveness and productivity particularly where associated with growth clusters

- growth of clusters is central to national and regional competitiveness; critical growth conditions for cluster developments include expertise (frequently involving academic linkages), entrepreneurship, venture capital, sites, a high quality environment and other factors which impact on quality of life such as schools and housing, business and personal networking: transport infrastructure is basic to physical access to land and to enable personal interaction / movement.

Key findings for Hastings and Rother

2.4 Based on this extensive body of work, the principal and central conclusion is that, where transport networks are already well developed and where there is little dynamism in the local or sub-regional economy, marginal changes to the amount and/or quality of the transport infrastructure will have a limited impact on economic performance.

2.5 However, where transport networks are such that other factors which would generate economic development are constrained, new investment in transport infrastructure may release such constraints and in such circumstances would therefore contribute positively towards enhancing economic development performance.

2.6 Such constraints may be local or intra (sub) regional, or inter regional, or both. Intra regional constraints would primarily affect access to resources, particularly labour and land. The impacts which would occur as a consequence of new infrastructure investment would arise because the underlying demand conditions were present but suppressed because of the constraints on accessibility at the (sub) regional level.

2.7 In Hastings and Rother, such constraints seem more likely to affect the ability of existing local businesses to expand, and hence where there is constrained demand for development within local businesses release of land would be expected to enable new development to take place.

2.8 The ability of an area to attract incoming businesses, including foreign direct investment, may also be affected where land supply is seriously constrained a combination of lack of suitable sites and accessibility problems at potential new development sites.

2.9 In such circumstances, transport infrastructure investment may be the catalyst which releases constraints and enables development to take place. However, at the local or sub-regional level, the economic benefits arising from the development and productive use of land is attributable to transport infrastructure (such as new roads to access sites) only where there is genuinely no other alternative land.

2.10 Where there are alternative land areas which could be physically available but which have a higher environmental value, the gain from accessing a lower value site through investment in transport infrastructure is really an environmental gain, as it obviates the use of higher quality land for economic development.

2.11 Inter regional constraints on access and movement, including impacts on costs, may also affect both existing local and new incoming businesses, but typically in different ways. Local businesses may have problems with the availability, cost and reliability of incoming supplies and outgoing products, and depending on the extent of this and the competitiveness of their market, these problems may range from being of marginal significance in terms of costs and profitability, through to factors which render the whole activity in a particular location highly marginal.

2.12 For the potential inward investor, one problem with locations such as Hastings and Rother appears to be one of perceived remoteness, which makes the particular location uncompetitive alongside locations such as the M4 corridor. However, as the importance of cluster factors such as high level labour skills, inter company and inter personal networking and interaction with universities have become more important, settlement size and the presence of a critical mass of similar activities in close proximity has become increasingly important in location decisions.

2.13 As there is already a basic road and rail network, together with an associated services superstructure in place in Hastings and Rother, key issues are the extent to which deficiencies in that infrastructure and / or the associated services are in effect suppressing underlying “growth factors”; and the potential impact of marginal or non-marginal changes in that infrastructure.

2.14 The findings from the literature review and from other research into the impacts of infrastructure investment[2] do suggest that, *except* where transport infrastructure imposes critical constraints on development, marginal changes in the infrastructure will have little or no impact on regional competitiveness or performance. As transport infrastructure acts as a complement to the production process and as a catalyst to

[2] Additional research was undertaken for another regional study in Germany, Japan, the USA and Ireland, by means of a series of local case studies.

development, other key factors must also be present for investment in transport to have any effect.

2.15 The foregoing applies to investment at a level which would pass realistic tests of affordability and public acceptability. Beyond this level, there may be non-marginal changes which could be made. This involves investment at a considerably larger scale, of which the CTRL would be regarded as a current example. Such investment would deliver significant step changes in transport performance such as journey times. Other examples of such infrastructure investment would be, at the inter regional scale, a motorway link or a high speed rail link; at the intra regional level, an example would be a large rapid transit system.

2.16 In the case of such major inter regional schemes, there is potentially scope for threshold type effects. Of these, the most significant could be image / positioning benefits which would positively affect the competitiveness of Hastings and Rother as a business location. In this instance, the transport investment would itself potentially change the level of demand for resources in Hastings and Rother.

2.17 While major investment in inter-regional transport infrastructure may benefit peripheral locations, as SACTRA has pointed out, such investments open up the potential for two way effects, such as opening up the local market to strong external competition. There is for example, some evidence that over the long term major transport investment has tended to centralise activities. However, while such spatial effects may disadvantage more remote locations, there is also evidence that at the national level there are efficiency and competitiveness benefits.

2.18 Large scale intra regional investments in infrastructure appear less likely to have an impact on demand side conditions, except possibly where such an investment opens up a much larger labour pool which in turn attracts additional investors to the area. The more likely scenario for intra regional investment is that it would have a greater impact in terms of releasing constraints, especially on labour. In this scenario, for economic development impacts to arise, there must be demand side pressures present in the system which are released by the transport infrastructure investment, or the potential for the transport investment to attract economically productive investment.

The role of infrastructure in assisting regeneration in Hastings and Rother

Recent economic performance of Hastings and Rother

2.19 In order to consider the impacts which increased provision of infrastructure may have on Hastings and Rother, it is important to start by looking at the area's recent economic performance and at the reasons for this.

2.20 In common with many towns around the coast of the UK, Hastings and Rother's original and historical economic role has changed significantly through a process of economic change and the loss of traditional markets and activities. The town of Hastings was a successful tourist destination until the 1970's, and was relatively successful in attracting manufacturing investment in the 1970's and early 1980's. The economy is now dominated by services, of which the public sector is a key player.

Bexhill has developed rather differently as a residential area, with a higher proportion of its population in the over 50 age group. Much of this service base appears to have little potential for dynamic growth through external trading, though there are exceptions such as Hastings Direct. In order to establish a new growth oriented economic structure, the area must now seek to re- invent its own vision for the future, and find new productive roles within the national and regional economy.

2.21 The primary industries which were the original basis for growth have declined significantly, as they have throughout most of the UK. In the early to mid 1900's, Hastings and Rother successfully replaced some of the employment and income lost from fishing, maritime related activities and agriculture, with tourism and day visitors. However, the UK's domestic tourist market has also changed dramatically, largely due to the growth of overseas tourism by UK residents.

2.22 Domestic tourism is now dominated by short breaks to locations such as major cities, countryside / sports hotels, theme parks and a small number of traditional resorts which have re-invented themselves. Hastings has not developed its products to compete in this market with resorts such as Blackpool, and Hastings has lost much of its traditional bucket and spade market and also seaside day trips, although other parts of the area such as Rye and Camber appear to retain high levels of visitors.

2.23 The fact that Hastings has not gone down the resort route should benefit the area as it seeks to develop more upscale products based on its history and heritage, including Battle and the Old Town of Hastings, which are being marketed to the London and south east day trip market and should appeal to segments of the UK and European staying market.

2.24 Accordingly, day visits and tourism can be expected to develop outside the former mass markets, where day and particularly stay visitor numbers will be much less than in the days when UK resorts were popular. Niche marketing and the development of high quality products should attract higher spending visitors, which will improve the productivity of the area's tourism assets while not causing significant problems in terms of traffic or environmental degradation. Nonetheless, while the development of new tourism markets is welcome, it is unlikely that tourism will contribute significantly to economic regeneration in the area.

2.25 The area has also lost some of its manufacturing base, which was mainly in low tech areas. However, it has had some success in retaining some companies in mid to high technology sectors, and while manufacturing accounts for only some 12 % of employment the area does now have some good quality manufacturing employers who are important players in their respective industry sectors. What is evident, however, is that most of these companies :

- originally came to Hastings and Rother as part of London dispersal policies in the 1970's / 80's;
- serve UK and in some cases international markets from Hastings and Rother, but have very limited local markets;
- have limited economic logic for being in the area other than relatively low wage rates and proximity to Europe in some cases;

- have very little interaction with each other, and hence do not form any sort of cluster or generate agglomeration economies;

- are in sectors where there are few competitors and relatively high margins;

- are in cyclical sectors and are currently at or near a cyclical peak;

- experience some labour shortages at the peak, but companies have been unwilling to engage in a process of bidding up wages: this suggests that labour constraints are presently having a relatively minor impact on actual output

2.26 It is clear that manufacturing companies do suffer marginally from the transport costs of their location (that is, in relation to the rest of the UK), with regard to the movements of goods and for trips by sales staff, customers and senior managers. However, these additional costs appear to be absorbed by these businesses, who are able to do so largely because of their high profit margins.

2.27 There are also some local disadvantages associated with a location in Hastings in particular, of which the most important is an apparent unwillingness of people to travel to work. The study suggests that in large part this is because of actual or perceived length and cost of trips; this can limit labour supply to companies, and there was evidence of lengthy delays in filling some vacancies and limited choice of potential new recruits. However, there was little evidence that this actually limited output by companies or affected decisions to investment or remain in the area. Nonetheless, such constraints may impact on productivity and competitiveness, and hence intra regional infrastructure investment may have a small but positive impact on business performance.

2.28 However, the interviews also indicate that in some cases a location in Hastings and Rother also gives companies (particularly those in the manufacturing sector) some protection from external competition, including –

- protection from companies located in surrounding areas which could otherwise attract away their labour by offering higher wages; the costs of competing to retain labour could be much more costly than continuing to bear the additional transport costs associated with a Hastings and Rother location;

- from take over by external competitors.

2.29 There was, however, no protection of local product markets, because all of the companies concerned compete in national and international markets rather than local markets.

2.30 A number of the manufacturing businesses see themselves as being vulnerable to being taken over by other larger players in their respective industries. However, at present purchasing a business in Hastings and Rother is probably unattractive to competitors because of time and distance factors. However, if inter regional access were improved substantially, competitors may make acquisitions in the area. This would be advantageous if this led to growth through increased investment, but disadvantageous if, as has happened in other regions, the more remote sites were

most vulnerable to closure in times of recession. It was noted that a number of key companies are in relatively cyclical sectors.

2.31 The point about distance affording protection from competition illustrates quite well the so called “two way street” argument which applies to economic development and transport, and which was noted in the SACTRA report on Transport and the Economy. This effect arises because, for example opening up a remote area may expose companies in that area to competition for labour or other resources and / or in final markets, leading in the short term to higher costs and loss of competitiveness. Greater competition in product markets may lead to loss of output where competitors enter local markets, or an expansion of output where the (formerly remote) business is itself competitive in new markets to which it has improved access. This point is taken up later.

2.32 The service sector is numerically more significant than manufacturing, reflecting the importance of the public sector and the development of the care sector. It is clear that the area has, over time, attracted an elderly population which generates income through expenditure on health care and other, mainly low added value, services.

2.33 It is difficult to judge the role of perceived remoteness and possibly of poor inter regional access and infrastructure in the performance of Hastings and Rother. In common with some other settlements in the south east which are on or near the coast, Hastings and Rother has not participated fully in the economic growth enjoyed by the region as a whole, and to a degree this is related to actual and perceived remoteness of location, for example through limited success in attracting inward investment to replace loss of businesses through closures and relocations.

2.34 However, such perceptions are probably very difficult to change without significant investment, such as a motorway from the M25 or a high speed rail link direct to the town from London. However, in view of the locational competitiveness of other locations outside London in the south east region, and especially the M4 corridor, the impact on location perceptions of smaller inter regional changes, or form more local changes in transport infrastructure, is likely to be minimal.

Potential for regeneration

Introduction

2.35 Regeneration at the level of a town or sub-region typically depends upon success in all or most of the following sectors:

- development of existing indigenous tradable goods and services sectors;
- increased birth and survival rates for new indigenous tradable goods and services; sectors
- attraction of mobile / inward investment in goods and services sectors;

- additional outward commuting to employment opportunities outside the area, by existing residents and through the attraction of new residents;

- developing tourism and day trip visitors.

2.36 Here we consider how well Hastings and Rother might perform in each area, and assess the possible role of transport infrastructure. In view of the importance of demand side factors, particular attention is given to the issue of whether there are currently existing demand side pressures which are constrained by a lack of either inter or intra regional transport infrastructure.

Indigenous sectors

2.37 The existing manufacturing base is limited in size and accounts for only around 12 % of jobs, so that even a significant expansion by existing businesses would not generate large numbers of new jobs. Sectors such as food processing and electrical engineering, which nationally have some potential for growth, have reduced significantly in the town. Nonetheless there are companies in niche sectors such as swimming pool and building equipment which are successful in their niches and have therefore the scope for expansion.

2.38 The principal local constraints[3] facing these companies are

- land for any large expansion

- attracting certain types of labour to, and within, the area

- costs of goods and personal movements to / from outside the area

2.39 Companies also see threats from possible acquisition, from labour commuting out to higher wage areas and the entry of new industries to the area, which would be likely to bid up local wage rates.

2.40 It is clear that land is a potential constraint for both indigenous businesses and for new entrants, and this constraint will be relaxed through transport infrastructure which opens up sites for development. However, at present it is likely that any speculative development of premises will require funding intervention by the public sector. This reflects the weakness of the property market, where there is little evidence of demand pressure either from existing businesses. This reflects current trading conditions, with most companies reluctant to invest in fixed assets. However, if conditions improved, or if there were demand from an inward investor, it would currently prove very difficult to meet demand for good quality premises or sites.

2.41 Taking a longer term view of existing businesses, there are instances of companies which could potentially enhance their competitiveness by rationalisation of activities to new (single) premises, but the timing of such investment is uncertain. One issue identified was that many manufacturing companies prefer to own their premises rather than rent, but these face the problem that the cost of building will exceed re-sale

[3] that is, ignoring limits set by the size of the market

values, reflecting the weak market for industrial property. This factor contributes to uncertainty with regard to future investment by existing companies.

2.42 Despite the current strength of Sterling affecting overseas markets, most companies took the view that they were close to a cyclical high and were not contemplating expansion, partly because of concern that the next turn would be down rather than up. A soft landing for Sterling and sustained domestic demand and consumer and business confidence could change companies expectations and lead to demand for sites, but equally economic circumstances could worsen, delaying any expansion for several years. Therefore the study suggests that providing site access will not bring about development, while lack of sites could nonetheless constrain growth if companies decide to expand due to better external economic circumstances.

2.43 Local labour constraints affecting the manufacturing sector are primarily concerned with the length of time needed to fill some types of vacancies and an occasional lack of choice of candidates for jobs. Both arise in part due to the reluctance of people in the area to travel to work, which was reported by employers and employment agencies. There was anecdotal evidence that this was due to the length of time which can be spent travelling in the area, and to the money cost of travel in relation to local wages.

2.44 Investment in intra-regional transport infrastructure (and services) can help to address this by expanding the effective labour catchment area, which may also have a marginal positive impact on productivity by expanding employers' choice of recruits. Investment in transport infrastructure would ideally be undertaken in parallel with training measures to expand the size and depth of the skilled labour pool.

2.45 One consequence of the diverse mix of manufacturing activities in the area is that companies report that many production skills are specific to individual employers and are not viewed as inter changeable in the short run. There was evidence from manufacturing companies that operatives and production staff change jobs quite rarely, and some companies reported they had a proportion of employees who had been with the business since the 1970's or 1980's.

2.46 A further, and for the longer term a more significant, consequence of the diversity of the manufacturing base is that there are none of the interactions which characterise so-called clusters, in which companies and personnel interact and share, while also competing. Insofar as the spatial grouping of similar businesses together creates an additional dynamic, it is not present among the manufacturing businesses in Hastings and Rother.

2.47 Turning to inter regional movements, the costs of movements of goods and key personnel (which include time costs and the costs associated with the actual deterrence of some customers and suppliers) can in principle be addressed through investment in inter-regional transport infrastructure. The evidence from the manufacturing companies is that these costs and other factors, such as reluctance of customers to visit their factories, are a minor problem at present.

2.48 These problems do not constrain sales or outputs, but do have a small effect on profit margins by adding to costs or restricting sources of supply. At present, these transport / access related factors appear not to affect decisions of manufacturing companies to remain or invest in the area. There is also evidence (but from a small sample) that

some locally owned service sector businesses that transport / access factors may play a more significant role in future investment plans.

2.49 Investment in transport infrastructure will also open up the area to competition for labour with surrounding areas, where wage costs are currently higher than in Hastings and Rother. Companies expect that this new external competition will lead to an escalation in wage rates for personnel with transferable skills such as office staff, who are less reluctant than production staff to travel to work and have more job opportunities from which to choose.

2.50 In general, companies view the cost implications of an increase in wage rates as potentially more serious for profitability and future investment than the benefits of lower costs from easier access to supplies and markets. The opening up of the labour market could therefore have negative impacts on manufacturing employment in the short term, but may be beneficial in the longer term through its stimulus to productivity and by raising disposable incomes in the sub-region.

2.51 It is very difficult to judge the possibility of acquisition and the ultimate impact of the purchase of a business in Hastings and Rother by an external competitor or suitor. This was nonetheless a matter of concern for a surprisingly large proportion of interviewees in the manufacturing sector. The implications of improved access is not clear, but it was suggested that one reason predators have not purchased businesses in Hastings and Rother is their remote location, which makes them unattractive for absorption into a larger group. The impact of any acquisition can not be predicted, as much depends on the potential for productivity growth and cost reduction in the acquired business, rather than directly on accessibility.

2.52 While the service sector is proportionately very large, the private sector services base is weak and is overly dependent on lower paid areas of personal services. There has been some growth in areas such as financial and business services, but these appear to be locally focused businesses, rather than export sectors. The medical sector has seen significant employment growth and is the single largest employing sector, reflecting the role of Bexhill in particular for retirement and the age structure of the population. These are all essentially local services, which are dependent on the size and income level of the local market. These are, therefore, not export services which would develop as their wider regional and / or national markets expand, but they would benefit from an expansion of the population of the area.

2.53 The capacity for developing the existing indigenous business base appears, therefore, to be limited, even though the companies which now exist appear to perform well in their niche markets. Expansion is limited by the size of these markets, and companies at present appear unwilling to attempt to expand significantly. This is because of the nature of competition in these markets and possibly the fear that larger competitors would act if they threatened existing market structures. There are of course also uncertainties as to the medium term performance of the UK and European economies, which are the key markets for most manufacturing businesses in the area.

2.54 Intra-regional transport improvements would have some benefits especially where land is required and will help recruitment marginally. However, wider market related factors will tend to constrain this potential, unless companies succeed in entering new markets in which there is greater scope for expanding sales.

2.55 Inter-regional transport infrastructure investment will confer marginal benefits, but also poses potential threats, at least in the short run - the two way street argument found in SACTRA's report Transport and the Economy. Taking a longer term view, if greater interaction with other parts of the south east leads to higher wage rates, this will make companies either move away or close, or will force them to introduce new technologies to reduce labour costs. This would benefit the area through higher wages in businesses which survive and would free up some skills, which may help the area to generate new starts or to attract inward investment.

2.56 Among present businesses, however, the long term economic logic for a location in Hastings and Rother is weak for most of the area's manufacturing companies, and the logic appears to be based largely on low labour costs. Accordingly, the possibility that there will be negative effects on existing businesses, especially in the manufacturing sector, from improved accessibility to other areas has to be considered.

2.57 The service sector also appears to have limited potential for growth, as much of it is heavily oriented to meeting local needs, and does not appear to be capable of developing export markets. Expansion of the local population will improve the base for businesses such as retailing and personal services and this is expected to lead to some employment growth (compared with a no growth base). This in turn depends on measures to attract population to the area.

2.58 Improvements in intra-regional travel can be expected to make the use of local services more attractive compared with making occasional external trips, for example to Eastbourne by residents of Bexhill. However, better inter-regional travel opportunities would tend to make shopping trips to Tunbridge Wells and Eastbourne, and in the longer term to Ashford and possibly to France, more appealing. It is not clear how these factors will interact in the context of both inter and intra regional access improvements, and much will depend on decisions by retailers and other services regarding new investment. Clearly, if retailers concentrate growth in centres such as Tunbridge Wells and Ashford, this will tend to draw expenditure out of Hastings and Rother, which will be exacerbated by improved inter-regional access.

New starts

2.59 The prospects for new business start ups appear poor, except possibly in the personal services sector where there is potential to serve an expanding population base (especially in the context of the RPG targets for housing development). The principal ingredients which contribute to new starts in the manufacturing and business services sectors include:

- existing dynamic businesses, usually in high technology areas, which spin off new companies;
- major businesses which purchase goods and services, which create opportunities for outsourcing;
- a university or similar institution which generates products and services which can be developed into businesses, for example through joint ventures;

- a general enterprise culture with large numbers of potential risk takers within the business and / or resident community.

2.60 All of these ingredients appear to be missing to some degree in Hastings and Rother, where the business and academic bases are limited and the existing population structure appears unlikely to generate many new businesses.

2.61 None of these factors appears to be directly related to physical access constraints, although as discussed below, location and access have probably helped to position the town as a retirement venue rather than as a hotbed of new technology. However, as a location on the fringe of a regional market of 15 million people, arguably access to local markets is a good deal better than that enjoyed by regions further north.

2.62 It may also be the case that anyone living in Hastings and Rother and starting a new business would be unlikely to do so in Hastings and Rother, because of factors such as lack of synergy with other businesses or lack of local markets. Whether the owners / managers of such a business would remain is Hastings and Rother is discussed below.

Inward investment

2.63 The attraction of inward / mobile investment is one route to regeneration which, if successful, can deliver rapid results and transform the fortunes and image of an area. For Hastings and Rother, which is vulnerable to decline in its current base of externally owned businesses, inward investment has to be a key policy in order to have a chance of replacing businesses which close or move as part of the normal process of industrial change.

2.64 The attraction of inward investment is nonetheless a high risk strategy, particularly in sectors where global markets fluctuate, and an area exposes itself to the risk that externally owned businesses can leave just as easily as they come. With the exception of Hastings Direct (which benefited from significant financial incentives), Hastings and Rother has not attracted such investment recently but did do in the past so thanks largely to London overspill policies. The reasons underlying recent performance are complex and are related to regional competitiveness factors, and the degree of competition offered by other locations within the South East. Specific factors affecting Hastings and Rother include:

- limited ability to offer attractive financial incentives;
- absence of existing successful inward investors;
- competition from the M4 and M3 corridors and the Heathrow – Oxford area;
- external image and perceptions of remoteness;
- shortage of high quality sites and premises;
- absence of cluster factors including a local university and other similar businesses;
- lack of local specialist skills;

- limited business support base.

2.65 While the South East as a whole suffers from high costs of land and labour and lacks incentive packages, the region has nonetheless been able to attract high technology manufacturing and a wide range of service investment. Hastings and Rother has failed to share in this, for a number of reasons. Inward investors typically determine a long list of possible regions for location, and then select a short list from with the chosen region or regions. This process is sometimes characterised as starting with macro location factors followed by micro location factors. Macro factors include incentives, the presence of other successful inward investors in the same sector and / or the same country, access to skills, expertise and business services and to international air services, and proximity to a major political and cultural centre. Micro factors include sites and premises, local labour accessibility and the costs of resources.

2.66 Based on macro factors, already dynamic parts of the south east are regularly considered within the long list and in some sectors emerge on the short list. However, other locations such as Hastings and Rother appear to be considered only in exceptional circumstances, and the study found that most recent investment took place through chance.

2.67 Location and transport access do, therefore, affect the ability of Hastings and Rother to compete within the South East region for mobile investment. However, it is difficult to assess the relative role of location against factors such as the lack of a university and the inability to point to other successful recent inward investors, especially in high technology sectors. The evidence from Norwich, which is much further from London and suffers from poor road access north of Newmarket, would suggest that the skill and academic base has been a critical factor in developing a growing industrial cluster, and that distance has not been a significant deterrent to investment.

2.68 In contrast, among coastal locations in the (former) south east region, Southend has performed very poorly even though it has reasonably good rail connections, an airport and is closer to London than either Hastings or Norwich. Thus distance from London is arguably not a critical factor in determining whether a town satisfies investors' macro location factors.

2.69 At the micro level (where the south coast does meet micro location factors) Hastings, Bexhill and other settlements are clearly at some competitive disadvantage compared with other coastal locations in Sussex and Kent. For example, Hastings and Rother's road and rail links with London and with Gatwick are poor compared with Brighton or Eastbourne, while its links to continental Europe are poorer than those of Dover and Folkestone. There is probably also a perception of remoteness, which clearly might adversely affect the area's competitiveness as a location. However, there may be other stronger perceptions, for example of a retirement town (which is not the case in Hastings where the population age structure is similar to the national average), which would also help to deter potential investors.

2.70 Therefore, for any mobile investment project for which physical access and proximity to other businesses in related industries is important, Hastings and Rother may well be ruled out of contention. However, it does not follow that addressing access will deliver mobile investment, as Hastings and Rother scores poorly across the range of macro

location criteria, especially skills, higher education and synergies with other businesses.

2.71 It is clear that action to address all of these areas of deficiency is required for Hastings and Rother to be a competitive location, and it is likely that simply improving physical access alone will not improve locational competitiveness. However, if Hastings and Rother is to be a player in inward investment, tackling both inter and intra regional access is an essential element. Indeed tackling local access is arguably a prerequisite, as improving local access will, critically, also help to address local constraints including access to good quality employment and labour supply. However, unless the scale of infrastructure investment in inter regional access is very substantial, it is unlikely that such investment would help address perceptions of remoteness and poor image as well. It also does not follow that a major improvement in inter regional access will, by itself, have any impact on inward investment performance, because of poor ratings against other macro location factors.

2.72 Investment in infrastructure is, therefore, not sufficient to attract mobile investment, but is required in order to improve the probability of attracting a share of inward investment coming to the south east. However, in view of the highly competitive market for inward investment, this is a sector in which a significant step change in access is required if Hastings and Rother is to change its presently poor competitive positioning.

Outward commuting

2.73 Where the prospects for local business development and for attracting inward investment appear to be poor, one partial solution is to enable existing residents to commute to jobs elsewhere in the region. This would in effect piggy-back on economic and employment growth in other surrounding areas. This would play to Hastings and Rother's key strength as a place to live and would help to raise personal incomes, but would also increase road traffic if such commuting were undertaken by car.

2.74 Expanding outward commuting by existing residents should raise income levels as external jobs would tend to be better paid than local jobs, and the injection of additional income would have further local impacts through the local multiplier process. However, there would be downside impacts on existing businesses if they lose key staff; such impacts may only be a problem in the short term until businesses adjust their own wage levels and recruitment policies.

2.75 In addition to enabling (and possibly taking additional measures to assist) existing residents to work outside the area, Hastings and Rother could also seek to attract new residents who would travel from Hastings and Rother for work. Such an expansion of the resident base would similarly feed through to the existing base through the local multiplier process.

2.76 As a generalisation, the attraction of new residents (and retention of existing ones) will depend on a range of factors, including overall quality of life, and specifically factors such as housing, education and other local facilities, and on accessibility. The development of additional housing (set out as part of the recent planning guidelines, and estimated to amount to 13,600 additional homes in Hastings and Rother to 2020) will enable the strategy of developing the resident base to take place at a relatively high

rate. However, the proportion of new residents who are economically active and who will have, or will look for jobs, outside Hastings and Rother will in part be influenced by access related factors.

2.77 Rail services and road links which are perceived to be poor and / or expensive will deter potential incomers who already have jobs elsewhere, but the relative importance of travel against other factors is difficult to assess. Clearly, good access is necessary for a town such as Hastings and Rother to attract new commuting residents, but the provision of good inter regional access by itself will not attract commuting residents. The prospects for attracting such people would be improved through the provision of housing and other facilities, especially in the context of limited expansion of housing elsewhere in the region.

2.78 The extent to which the attraction of new residents ultimately benefits Hastings and Rother and drives local regeneration also depends on the rate at which expenditure leaks out of Hastings and Rother to other areas[4]. Thus if commuters living in Hastings and Rother spend a high proportion of their incomes where they work instead of where they live, the benefits to Hastings and Rother could be minimal, apart from an increase in the local tax base. At the same time there will be additional local costs imposed by additional residents, including environmental costs associated with additional commuting both within the (sub) region and then from the region to other areas.

2.79 Developing the working / commuting resident base is clearly an element of the regeneration strategy where improved inter and intra regional access is potentially important. However, the achievement of actual regeneration could be limited because of leakages, while the costs could be high. This is because it will almost certainly be necessary to address not only access issues but a whole range of quality of life factors in order for Hastings and Rother to become a competitive place to live for commuters.

Tourism and day visits

2.80 With a few exceptions, traditional UK seaside resorts have fared quite badly in recent years because of fundamental changes in domestic holiday taking by UK residents. There is little prospect of a turnaround in the fortunes of these resorts, because of factors such as the weather and the appeal of foreign travel and adventure. Many UK coastal resorts have survived on low income families unable to afford foreign trips, the elderly and non-tourist visitors such as the unemployed and asylum seekers. Within a declining market, there has been space for only a very few leaders which have been able to attract an increased share of that market. However, this has been achieved through the provision of a particular type of experience which tends to position these resorts at the unsophisticated end of the market.

2.81 Hastings and Rother appears not to have gone too far down the route of copying the market leaders and still retains features which make the town attractive to the small up-scale domestic market. However, there is some incompatibility between this market

[4] In technical terms, the value of the local income multiplier.

and the bucket and spade tourist[5] market, the mainstream day trip market and also non-tourist long stay visitors.

2.82 It is very unlikely that Hastings and Rother could re-emerge as a leader in the domestic holiday market that is currently dominated by resorts such as Blackpool. Rather, the best prospects for tourism in Hastings and Rother probably lie in up-scale short break niche tourist markets, including special interest and activity groups, who might be attracted by the town's architecture and maritime heritage.

2.83 The role of access times in developing such tourist markets is complex. For general short break markets there is some evidence that a travel time of up to three hours is generally acceptable, so that for much of the south east Hastings and Rother comes within this threshold. Therefore unless journey times became unacceptably long and/or unpredictable, improving access would have little or no impact on performance. The types of niche markets where there is potential are by their nature small in terms of numbers, and so would not add to demand for road space and could even reduce it if, as part of the tourism strategy the town were able to replace large numbers of low spend visitors with smaller numbers of high spend visitors.

2.84 Day trip markets are necessarily more affected by inter regional access times and trip quality, as time spent in travelling is time not available for activities at the destination. Therefore access improvements could help Hastings and Rother to attract more day trip visitors and hence expenditure. However, day trip visitors spend considerably less than staying (tourist) visitors and hence have a very limited role within a regeneration strategy. There is also the issue that mainstream day trip visitors could be incompatible with up-scale staying visitors; and where day visitors arrive by car, they also add to congestion in the seafront area.

Assessment of options

Overview of key findings

2.85 The assessment of transport infrastructure investment options is based on the results of extensive local research and interviews, which have identified the strengths and weaknesses of the structure and performance of the area's economy, and the opportunities for development, the competitive threats from other locations, and the physical and other constraints to be addressed.

2.86 This has set the context and has helped to identify the potential role of infrastructure investment in developing the area's economy; this analysis has been undertaken on a sector by sector basis and has considered the potential sources of development and regeneration in each sector. This micro appreciation of the sub-regional economy has been considered in the light of extensive desk research and case studies, which provide clear evidence on the economic and other impacts of transport infrastructure investment. This body of work provides the following findings:

[5] Here a tourist means someone who stays one or more nights away from home in the area, while a day trip is made by someone who does not spend a night in the area; using this definition, a day visitor may be on holiday in another area and makes a part or whole day trip to Hastings and Rother.

- first, the economy is not buoyant and as a consequence local demand for resources is weak; there is no evidence of widespread suppressed demand side pressures arising due to lack of infrastructure. The area does not participate in the growth of the rest of the south east region, apart from some companies in the manufacturing sector which are in good niche sectors and enjoying cyclical growth;

- second, in the short term poor inter-regional access works, on balance, to the advantage of the tradable goods sector and does not appear to disadvantage the services sector, apart from the day trip leisure market;

- third, in contrast, intra-regional access is a current problem which affects the labour market and has some impacts on recruitment, job search, productivity and activity rates;

- fourth, the area is at a competitive disadvantage for the attraction of new inward investment to which poor inter-regional access is a contributory factor, including its negative impact on external perceptions;

- fifth, taking a longer term view, and recognising that business activity will change for a variety of reasons not connected with access, Hastings and Rother will have to attract new investment in manufacturing and services if it is to avoid long term decline in its economic base;

- sixth, many of the complementary measures needed to kick start regeneration have until recently been inadequate, reflecting lack of resources and problems such as access to good quality developable land; however, these issues are being addressed by the various agencies active in the area, and specifically land constraints would be addressed to an extent by transport strategies which include the Hastings and Bexhill Western Bypass.

2.87 Based on this, the study has examined the short and longer term prospects for the economy in the context of changes in transport infrastructure which improve intra and / or inter regional accessibility. In assessing options, the focus has been on the expected impacts of the specific options, in which the changes in journey times and journey time reliability are examined. In undertaking this, the study has taken account of the regeneration measures which are now being implemented, including the ERDF Objective 2 programme.

2.88 First, it is our view, based on the evidence from both the review of research and from the research undertaken in Hastings and Rother, that only non marginal changes in travel opportunities or in the quality of the travel experience have the potential to bring about changes in economic behaviour. Whether non-marginal changes in accessibility will actually deliver improved economic performance depends critically on the buoyancy of the economy, the demand for infrastructure and other resources and the extent to which performance is constrained by lack of suitable transport infrastructure.

2.89 Of the strategies considered, only the impacts identified below have the potential to generate non-marginal changes in both local (intra regional) and longer distance (inter regional) access. These provide non-marginal changes in access as noted below, against each of which are a broad assessment of how these potentially work through to economic (GDP and employment) impacts.

- Improvements to key intra regional journey times: these offer the potential to generate beneficial labour market impacts by opening up a geographically wider labour market to employers within the Hastings and Rother area.

- Significant improvement in journey times between Hastings and Ashford, and potentially also to London via the CTRL. This is expected to enable additional net external commuting, which in turn will enable population growth in Hastings and Rother.

- The release of housing land, which has to be considered in a wider regional context where housing land is scarce and where there are few or no other land opportunities available.

- The release of high quality industrial and commercial development land with good physical (road based) access.

2.90 These impacts are likely to emerge in the medium term, and are dependent on a number of external and local circumstances including

- the performance of the UK economy and of national and international product markets, which sets the context for the area's manufacturing base

- the success of planning policies intended to develop or conserve other parts of the (former) south east region, which will enhance the scarcity value of land in Hastings and Rother for housing

- the implementation of local regeneration measures, including the Objective 2 programme

2.91 These potential impacts have been quantified in order of magnitude terms as an input to the modelling of the area, which is discussed in the following section. Here the qualitative aspects of these impacts are discussed more fully.

Labour market impacts

2.92 As the knowledge economy develops, the ability to attract staff with appropriate high quality skills increases in importance. There is evidence of reluctance to travel to work in Hastings and Rother and problems of recruitment of certain skills, which at present has a marginal impact on business competitiveness. Measures which expand the size of the available labour market will contribute marginally to the expansion of the productive potential of the (sub) region, by offering a better fit between skills and job opportunities and by reducing lead times in filling vacancies.

2.93 These impacts are difficult to quantify. While it is likely that improvement in intra area accessibility will enable a marginal but positive impact on output, it is also likely that this will not be accompanied by employment growth. However, in circumstances in which local businesses are seeking to expand to meet external demand, but experience labour related constraints, improved labour market efficiency is likely to enable both

productivity and employment growth. This is an example of the catalytic effect of transport infrastructure investment.

Commuting

2.94 Improved inter regional access between Hastings and Rother and Ashford, and potentially also to London, enables growth in commuting, which is needed if Hastings and Rother is to achieve substantial growth in housing while also in broad terms maintaining its current population age structure.

2.95 To the extent that Ashford develops rapidly, and especially if that area experiences labour shortages, this will impact on Hastings and Rother in two main ways. First, growth in outward commuting will raise personal incomes in Hastings and Rother and will raise local wage rates, which in turn will spur companies in Hastings and Rother to become more productive, potentially raising local GDP. Second, enhanced commuting opportunities will help to make Hastings and Rother more attractive as a place to live and from which to commute.

2.96 Our analysis of population and labour market growth indicate that growth in commuting is necessary if the area is to come close to achieving RPG targets for housing. The accompanying population growth in Hastings and Rother also generates expansion of local and public service employment.

2.97 Again, this impact is difficult to quantify, as much depends on how Ashford's labour market develops. Our view is that around 2,000 additional commuting trips could be generated; this level is consistent with projected population

Housing development

2.98 Housing development is required to meet regional housing targets, and has the benefit of increasing service sector employment in order to meet demand generated by new residents. There is also the point that this also expands the labour supply, and jobs will be required if people of working age are to be attracted.

2.99 The south east as a whole needs large numbers of new housing units, but has limited land opportunities which do not involve environmental costs, and one such opportunity exists in the study area. However, this opportunity can be exploited fully only where road access is provided. If alternative land opportunities were readily available, the benefit of enabling such development in Hastings and Rother would be merely distributional in nature.

2.100 However, because land suitable to accommodate major housing sites is very scarce, there is arguably a wider benefit to the south east region, in that if the land in Hastings and Rother is not available, alternative sites with higher environmental and other costs will have to be used to meet the housing targets. Accordingly there is a specific land use related benefit associated with some options which is due to the impact on use of housing land. This is an instance of an additional impact where the benefit is at least the avoided environmental damage associated with use of the next best alternative site(s).

2.101 Our assessment is that provided there is additional commuting and creation of local employment opportunities through a combination of regeneration efforts and service jobs to meet the needs of the expanded population, the housing targets can be achieved. If the great majority of housing growth can be achieved in the medium term – around 10 years - this will also help to stimulate greater confidence in the area and create a mass of population and development on which longer term development can be based.

Release of industrial and commercial land

2.102 The release of good quality industrial and commercial land offers potential for new development, which is essential if the economy is to develop. However, in the context of a relatively flat economy, supply of sites will not necessarily lead to demand. However, combined with measures such as gap funding, provision of development incentives and marketing of the area, it is reasonable to expect an enhanced future level of development of land (designated to be North Bexhill Business Park) for new industrial and commercial uses and for some re-locations by existing businesses.

2.103 Success in attracting such development is critical to the achievement of medium term economic objectives, especially with regard to the parallel attraction of additional population and hence workers to the area. As discussed in the next section, the role of land development has been assessed using a spreadsheet model which examined demand and supply side interactions.

Demand and supply model

2.104 In order to evaluate how potential demand and supply side factors might interact, an iterative spreadsheet model was developed. This recognises that plans for release of industrial and commercial development land and of housing land are supply side measures, and that to achieve economic impacts there must be demand side responses, such as industrial businesses taking up the additional land for productive purposes, and for new residents to come to the area.

2.105 It is taken as given that a series of regeneration measures will take place in Hastings and Rother, and hence the issue is the extent to which the non-marginal transport changes will act in a catalytic manner alongside these other measures to achieve additional impacts. The transport impacts are as discussed above, namely improved intra and inter regional access and the release of land. Alternative demand side responses are modelled, and there is also an explicit multiplier effect between additional population and service sector employment.

2.106 The model takes the approach that housing take up and employment growth, including commuting, have to be mutually consistent. The model was set up in order to iterate towards an equilibrium in which the number of houses taken up would lead to a zero local jobs gap, in which the number of new workers generated through housing development would be balanced by a combination of new local jobs and external commuting. It was assumed that the development of new inter regional links would lead to both outward and inward commuting and that this would balance.

2.107 Higher levels of net external commuting would enable more housing to be developed, while low or negative net external commuting would mean that either fewer houses would be developed and / or that a higher than assumed proportion of the houses built would be occupied by smaller family units or the elderly (both of which lower the number of additional workers per additional house).

2.108 In the case of no land release or non-marginal changes in intra regional travel times, generates an equilibrium with

- 7,600 housing units
- 4,900 additional workers
- 3,900 additional local jobs, of which 1,200 are in local services
- 1,000 additional outward commuting trips (net).

2.109 This is substantially below the RPG housing target, and, as discussed below, arises primarily because of the lack of land release.

2.110 Where there are intra regional travel time improvements and significant land release for housing and industrial and commercial uses, there is potential for a much greater overall impact provided there is a demand side response, which is the role of the various regeneration measures being implemented. With land release and travel time improvements within Hastings and Rother, the equilibrium position has:

- 13,500 housing units
- 10,300 additional workers
- 8,200 additional local jobs, of which 2,200 are in local services
- 2,100 additional outward commuting trips (net).

2.111 This scenario is very close to the RPG target for housing, and illustrates the very significant economic uplift which is required to employ the additional residents in the additional houses. This outcome represents an equilibrium, but it does involve 20 % of the new workforce commuting (net), assuming no net change among existing residents.

2.112 In terms of the components of change, the scenario which includes intra regional access and land release generates 4,300 additional local job opportunities, comprising the following additional elements:

- 2,800 jobs on new and brownfield industrial and commercial sites and in existing businesses, of which 2,700 are at NBBP
- 500 jobs through more effective regeneration, to which the transport investment contributes through its catalytic effects

- 1,000 additional jobs through the effect of attracting additional population, which is generated through better employment performance compared with the scenario involving no land release or intra regional travel time gains.

2.113 Investment in transport infrastructure therefore has the potential to add significant value to other regeneration efforts being undertaken for Hastings and Rother. The final outcome depends on the ability of regeneration and other measures to achieve the demand side effects needed to exploit the potential for growth opened up through implementation of the transport measures discussed above.

Cost benefit analysis and economic impacts

2.114 The analysis carried out in the above sections is concerned with identifying and evaluating what can be termed the economic activity and locational impacts arising from transport infrastructure investment. This corresponds to SACTRA's Appraisal Requirement 3. Ultimately these should be assessed in terms of the increase in GDP which arises because of the transport investment. To date employment has been used rather than GDP, as the former is more readily understood as an indicator, and GDP impact is more difficult to quantify.

2.115 While the term wider economic impacts is frequently used for GDP and employment effects, in reality GDP is a narrow measure of economic welfare which is better captured by the wider welfare measures used in cost benefit analysis (CBA). Therefore we prefer to treat GDP and employment impacts as narrow impacts which we would describe as economic activity and locational impacts. These aim to describe the impacts of the transport investment on these particular economic indicators.

2.116 As SACTRA and others have indicated, two key issues are whether these economic activity and locational impacts are captured fully in the CBA, and whether inclusion of these narrow impacts represents double counting. A related issue is the extent to which GDP and welfare measures are actually comparable, as the former is imperfect, narrow but straightforward and easily understood, while the latter is in principle correct but involves numerous problems, including double counting, coverage and valuation.

2.117 This report is not the place to discuss these issues in detail, but it may be useful to offer some comment at this point.

2.118 First, while there are clearly imperfections in both the transport and the transport using sectors, we are not convinced that the use of a CBA approach which properly values transport externalities will seriously mis-estimate the economic welfare benefits of the proposed options, with the provisos that this may not apply to all of the impacts associated with changes in land use, and that arguably some of the additional benefits are joint products of transport infrastructure investment and regeneration measures.

2.119 With regard to impacts which arise through time savings, SACTRA notes that under-estimation will be more serious, the larger is:

- the demand elasticity facing the representative transport using firm
- the extent of market power in the transport using sector

- the size of linkage effects working through reductions in prices of input goods
- gains in efficiency from agglomeration

2.120 The businesses in the region engaged in tradable goods and services sectors do not appear to be in sectors in which demand is highly elastic, and there appear to be very little or no linkage or agglomeration effects. However, some major businesses are in sectors in which they have substantial market power. Having said that, though, these businesses will be affected only marginally through impacts on their own transport costs.

2.121 We also did not find evidence of market failure in those segments of the labour market relevant to the tradable goods and services sectors. Excess supply in the labour market arises in part because of the attractiveness of the area as a place to live for the unemployed, and because of imperfections in the care home sector, in which the public sector is a key purchaser.

2.122 The use of willingness to pay for travel in the CBA, therefore, will arguably not result in significant distortions provided this analysis can capture fully the changes in the economic base, and hence in the scale of travel activity, which is driven by the combination of transport investment and land use changes. However, changes in the economic base occasioned by land use policies and the opening up of (otherwise unavailable) development land are very significant, and it is important that these are captured properly.

2.123 There is also the issue that, while changes in industrial and commercial use of land may be assessed through correct evaluation of willingness to pay for travel, a key driver in growth is population growth arising through housing development. It is not clear that all of the benefits (and costs) associated with the use of housing will be captured in transport CBA.

2.124 There is also the issue that in the plans to regenerate the area, there is a critical need for a combination of soft initiatives such as business development assistance, financial assistance and place marketing, together with relaxation of physical constraints, of which land is by far the most significant. Without these measures, the transport investment will achieve much less by itself, and hence both the transport CBA welfare gains and the economic activity and locational impacts are joint products of the transport investment and the regeneration initiatives. Arguably, all of the costs of the regeneration initiatives and all of the other benefits need to come within the overall appraisal.

3. MODELLING ACCESS AND REGENERATION

Introduction

3.1 The starting point for this piece of work is to identify the contribution that transport makes towards the economic well-being of the town. A simplified view of this is that it provides access, of three types:

- Access to jobs for residents;
- Access to a workforce for employers;
- Access to external markets and supply chains for employers.

3.2 If the capacity of the transport system is expanded to make a wider range of employment opportunities available to residents, this will tend to diversify the pattern of travel to work trips, while also, all else being equal, making the place more attractive to live in. Similarly, if access to a workforce is improved, this might be expected to make the town more attractive as a location for employers.

Access and Regeneration

3.3 Figure 3.1 presents a 'causal link' diagram expressing these ideas. It sets the transport system in the context of the economic and demographic dynamics of the town, showing how, we propose, the different elements are related.

3.4 Items in boxes are 'stocks', quantities of infrastructure, land or people that can be added to or taken away from. The other text items are intermediate quantities, perceptions or 'attributes' of the system. The arrows indicate causal links, and the +/- signs indicate the direction of correlation. Increasing the size of the skilled workforce will increase the accessible workforce available to employers, for example, and while decreases in the workforce will reduce the available workforce.

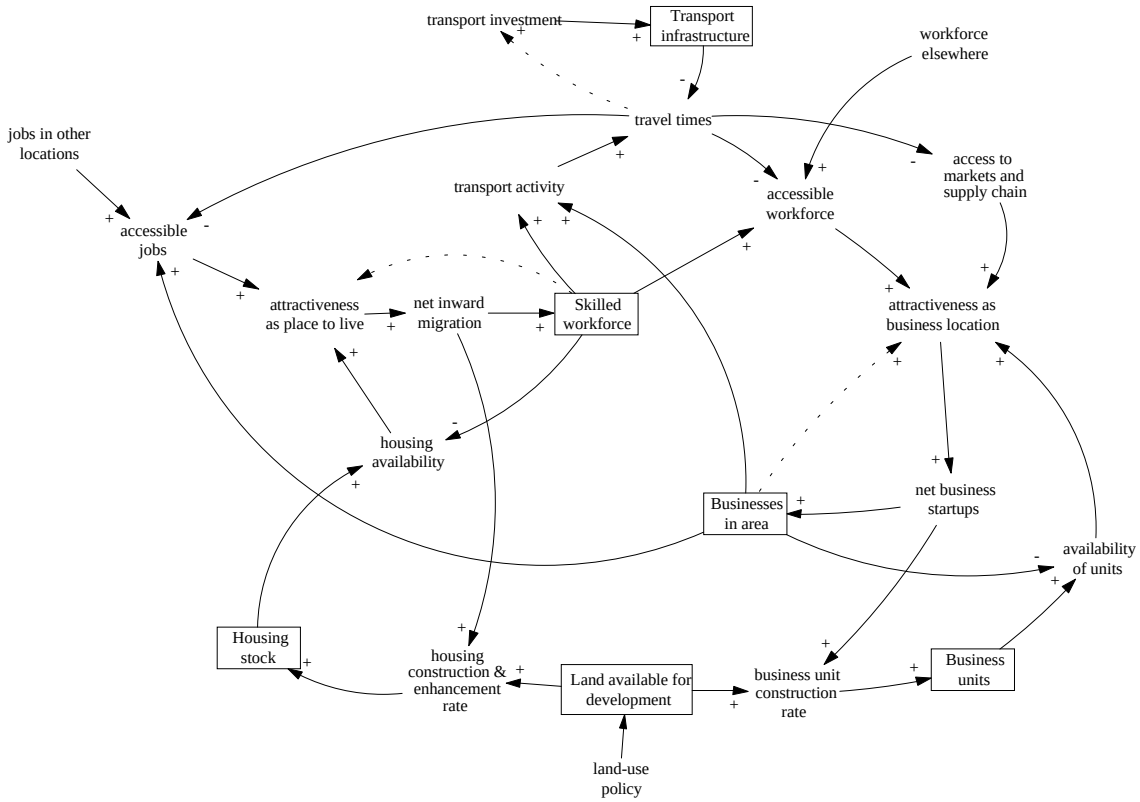


Figure 3.1: Causal Link Diagram for Transport and the Economy

3.5 If the town is to be successful economically then it must attract and retain a suitable workforce and range of employers. This leads to the idea of the 'attractiveness' of the town as a place to live or to locate a business. Figure 3.1 suggests that the attractiveness of the town as a place to live is related to access to jobs and access to housing. There are obviously many more factors than this, but these have been chosen as the ones most relevant to the context of this study.

3.6 For employers, a similarly simplified view is that the attractiveness of the town as a location is related to access to a workforce, the availability of suitable premises ('business units') and access to external markets and supply chains. (The diagram allows for the possibility that the presence of existing businesses also of itself adds to attractiveness because of access to local suppliers etc.)

3.7 It is possible to trace on the diagram the possible sequences of changes through the system following changes in any part of it. For example, investment in the transport infrastructure might be expected to reduce average travel times, which in turn will improve access of the workforce to jobs, of employers to the workforce, and of employers to external markets and supply chains.

3.8 The increase in access to jobs can come from improved accessibility within the town or to other employment locations outside it. As this rises, the attractiveness of the town as a place to live improves, and the net inward migration will increase, leading to an increased workforce. (This may not necessarily be generated by migration from other locations; it may be achieved by reducing the outflow of people, retaining the existing workforce and young people leaving education and training.)

3.9 In turn, this will raise the attractiveness of the town as a business location, and increase the net business start-up rate. A virtuous circle is now achieved, because rising business activity in the town increases its attractiveness as a place to live, and so on. However, three constraining factors limit this process.

3.10 First, if the local population rises, so does demand for houses. If the availability of housing falls prices rise and the increase in workforce may be choked off. Similarly businesses need premises to operate in, and inadequate supply may choke growth. Third, rising business activity and population increases the volume of transport activity, leading to congestion, and reductions in accessibility.

3.11 This leads to land-use. Figure 3.1 proposes that the construction and renewal of the housing and business unit stock depends upon two factors: the availability of land, and market prospects. If land is available and demand for housing is rising, then construction and refurbishment of houses will tend to rise. If land is available and demand for business premises is rising, then this too will tend to stimulate increased construction and refurbishment rates. However, the availability of land alone will not necessarily stimulate any additional construction.

3.12 If the housing and business unit stock increases, then this will tend to support the growth process described above until new constraints come into play. Also at work, although not shown explicitly on the diagram, is the ageing process. If premises are not kept in good repair and refurbished the attractiveness of the stock will tend to fall as time progresses. Maintaining the quality of the stock itself requires a steady stream of rebuilding and refurbishment work.

The Hastings context

3.13 In the context of Hastings and Bexhill, Figure 3.1 would be characterised in the following ways:

- Transport links to the outside area, and hence accessibility, are not good;
- Transport between Hastings and Bexhill is poor, and congestion is worsened by the volumes of through-traffic. This affects accessibility within the towns;
- The housing stock is not a constraint – houses are available but empty/derelict rates are high;
- Business units are constraining, with a shortage of supply but little new construction;
- Land availability is also a constraint for both housing and business units, but with a new site planned on the northern edge of Bexhill;
- There is a shortage of skilled workers.

The Model

3.14 A model has been built to simulate how the processes described in Figure 3.1 operate. In particular it tries to show how transport and land-use interventions might affect the

level of business activity in the towns. The model focuses on travel to work, and does not address other trip purposes, other than in allowing for a background volume of trips to and from Hastings and Bexhill not related to travel to work. This limitation must be born in mind when interpreting results. It is a simulation, showing how events might unfold through time.

3.15 The model uses a set of strategic zones based on Districts or sub-sets of districts. In Hastings and Bexhill the zones are comprised of sets of wards. The zones are:

- Hastings
- Bexhill
- Eastbourne
- Brighton and Hove
- Gatwick and Crawley
- Tunbridge Wells and Tonbridge
- Ashford
- West Rother (minus Bexhill)
- North Rother
- East Rother
- North Wealden
- South Wealden
- Lewes
- Central London

3.16 Access times between these zones are provided by the Transport Model developed in parallel for the Access to Hastings Study. This provides base times, and changes in times that each of the strategies delivers. The dynamic model takes these changes and calculates the sequence of consequences as a result in changes to accessibility patterns.

3.17 A full explanation of how the model works is given in the technical Appendix D.

4. TESTING THE STRATEGIES

Using the model

4.1 This chapter describes the use of the dynamic model to test the impact of each of the strategies on the local economies of Hastings and Bexhill. The model provides an analysis of the likely outcomes over a fifteen year simulated period following the introduction of the changes. However it should be kept in mind that while the model includes many of the key linkages between land use and transport, it is not comprehensive – for instance it focuses on access to and from employment, but excludes access to leisure or retail. There are many other factors that can influence future outcomes, and for this reason the results reported in this chapter should not be regarded as forecasts so much as comparative assessments under controlled conditions. Similarly very small differences between model runs are unlikely to be significant, given the likely margins of error involved.

Base Case

4.2 The model was initially set up such that at the outset it gives a representation of Hastings and Bexhill as in the base year and generates stable behaviour thereafter. Technically, this was done by adjusting the transport deterrence functions so that the current travel to work trip distribution, as estimated from the 1991 census[6], is held steady through simulated time. In other words if no changes are made to the transport system, the model will tick over with no changes in travel to work patterns, or to accessibility patterns. Consequently there is no transport induced shift in land use or populations in this case.

4.3 Following discussions with the study Technical Working Group, it was felt however that the base case should include a slow decline in the economies of both towns to represent the current position more closely. This has been introduced by arranging that the levels of re-investment in the housing and business infrastructure are insufficient to halt a slow ageing process. The infrastructure slowly deteriorates over simulated time, causing a slow drift away from the towns. Table 4.1 summarises the net effect over 15 simulated years. There is a population loss of about 1%, and a job loss of about 1.4%. This is the initial position, the 'Do Nothing', or DN case.

Table 4.1: Reductions in Workforce and Jobs over 15 Simulated Years in DN Case

	Workforce	Jobs
Hastings	-1.2%	-1.4%
Bexhill	-0.8%	-1.4%

Test Cases

4.4 The model calculates estimates of population, employment and travel-to-work trip distribution as they change through simulated time. In the DN case, the long term

[6] The most recent source available at the time of the work.

shifts in population and housing are as in Table 4.1. The modelling procedure for the other cases was as follows.

4.5 The transport model developed for the study was used to provide estimates of changes in the inter-zonal travel times[7] by road and rail associated with each strategy. Despite the careful initialisation of the model there are still some small transient effects in the early period of the simulation that eventually settle down. The procedure was therefore to run the simulation in each case for a total of 20 simulated years, using the first five years to allow these transients to work out. The transport improvements were then introduced, and the model run for a further fifteen simulated years. All the analysis and figures that follow are based on those fifteen simulated years.

4.6 The transport improvements are 'switched on' simultaneously. The changes in road travel times generated by the transport model are changes in the long-term equilibrium times, but in the dynamic model they are assumed to take effect immediately. The changes are not always directionally symmetric because they are for morning peak travel, and reflect current patterns of traffic flow and congestion in that peak.

4.7 A 'Do Minimum+' option has been used as a base case against which all the others are tested. This includes changes to the rail services that can be expected whatever the final strategy. The DM+ rail service improvements are imposed on the base DN case, including the long-term decline of the local economies. In what follows, each of the test strategies is then compared to the DM+.

4.8 Each of scenarios has been tested, with and without land releases. The land releases have been introduced at the same time as the transport changes (i.e. after five years). These releases can be assigned to the commercial or housing sectors. All the new land becomes available immediately, but will only be developed if the conditions are right. This takes time, and in some cases not all the land is developed at the end of the simulation period. The land releases are conditional upon the transport schemes, since only the Western bypass releases a substantial area of land. The test cases are as follows:

Table 4.1: Combination of Strategies and Land Releases

	Houses	**Commercial**
Strategy 1	Land for 500 houses in Bexhill zone	None
Strategy 2	Land for 500 houses in Bexhill zone	None
Strategy 3	Land for 1500 houses in Bexhill zone	40 ha in Bexhill zone
Strategy 4	Land for 1500 houses in Bexhill zone	40 ha in Bexhill zone
Strategy 5	Land for 1500 houses in Bexhill zone	40 ha in Bexhill zone
Strategy 12	Land for 500 houses in Bexhill one	None
Strategy 13	Land for 1500 houses in Bexhill zone	40 ha in Bexhill zone

4.9 No other changes have been introduced. In other words all the changes in employment, travel etc are generated by the new transport infrastructure plus any land releases. The following section provides a discussion of the results for each Strategy tested.

[7] They are actually changes in generalised times, calculated so as to include the effects of changes in rail service frequencies.

Do minimum + (DM +)

4.10 The DM + strategy includes significant changes to the rail service, compared to the do-nothing, but no changes to the roads. Table 4.2 summarises the changes in the rail services, in terms of generalised time savings[8].

Table 4.2: Changes in Rail Generalised Minutes to/from Hastings and Bexhill, DM +

		From:				To:	
		Hastings	Bexhill			Hastings	Bexhill
To:	Eastbourne	0	0	From:	Eastbourne	0	0
	Brighton	0	0		Brighton	0	0
	Crawley	0	0		Crawley	0	0
	Ton/Tun	-2	-2		Ton/Tun	-2	-2
	Ashford	0	0		Ashford	0	0
	Rother West	0	0		Rother West	0	0
	Rother North	-1	-1		Rother North	-1	-1
	Rother East	0	0		Rother East	0	0
	Wealden North	0	0		Wealden North	0	0
	Wealden South	0	0		Wealden South	0	0
	Lewes	0	0		Lewes	0	0
	London	-5	-5		London	-5	-5

4.11 The figures below plot the changes in jobs and workforce in each of the towns for the DM +. The horizontal axes are months, and the DM + changes become active after 60 months (i.e. five years). The downward trend in workforce introduced in the base case continues, and while there is a small initial increase in jobs, the downward trend resumes after a couple of years.

4.12 The tables after the graphs summarise the position at the end of the simulated period. These are the base against which the strategies are compared.

[8] i.e. these are savings in minutes that represent the joint effect of travel time reductions and changes in service frequencies.

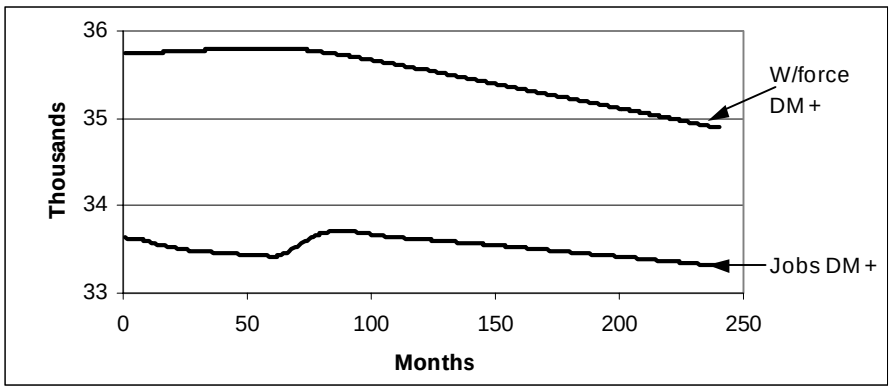


Figure 4.1: Effect of DM+ on Hastings

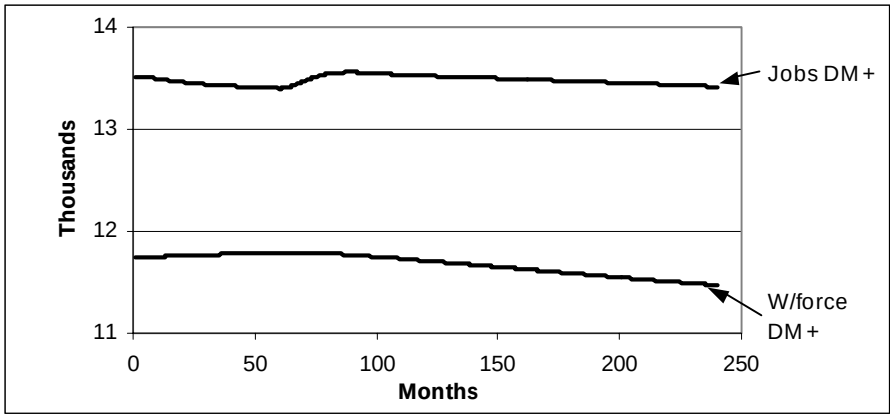


Figure 4.2: Effect of DM+ on Bexhill

Table 4.2: Summary of DM+ End of Simulated Period

	Hastings		Bexhill	
	Workforce	Jobs	Workforce	Jobs
DM+	34.9	33.3	11.5	13.4

Table 4.3: Commuting Patterns at End of Simulated Period (trips per day, thousands)

	Car Trips		Car trips within HB	Rail trips		Total inward trips	Total outward trips
	To H&B	From H&B		To H&B	From H&B		
DM+	9.6	7.7	22.2	1.2	.8	10.8	8.4

Figures are thousands, rounded.

Strategy 1

4.13 This strategy introduces improvements to the Hastings-Ashford rail services, and relatively small changes to the road travel times. Tables 4.4(a) and 4.4(b) summarise the position. The changes are compared to the DN.

Table 4.4(a): Changes in Rail Generalised Time to and from Hastings/Bexhill, Strategy 1

		From:					To:	
		Hastings	Bexhill				Hastings	Bexhill
To:	Eastbourne	0	0		From:	Eastbourne	0	0
	Brighton	0	0			Brighton	0	0
	Crawley	0	0			Crawley	0	0
	Ton/Tun	-2	-2			Ton/Tun	-2	-2
	Ashford	-8	-8			Ashford	-10	-10
	Rother West	0	0			Rother West	0	0
	Rother North	-1	-1			Rother North	-1	-1
	Rother East	-4	-4			Rother East	-5	-5
	Wealden North	0	0			Wealden North	0	0
	Wealden South	0	0			Wealden South	0	0
	Lewes	0	0			Lewes	0	0
	London	-5	-5			London	-5	-5

Table 4.4(b): Changes in drive times (minutes) to and from Hastings/Bexhill, Strategy 1

		From:					To:	
		Hastings	Bexhill				Hastings	Bexhill
To:	Eastbourne	-1.1	-0.2		From:	Eastbourne	0	0
	Brighton	-1.2	0			Brighton	0.1	0.1
	Crawley	-0.9	-0.2			Crawley	0.3	-0.1
	Ton/Tun	-1	-0.2			Ton/Tun	0.4	0.4
	Ashford	-1	-0.2			Ashford	-0.1	0
	Rother West	-0.8	-0.2			Rother West	0	0
	Rother North	-0.7	0			Rother North	0.5	0.5
	Rother East	-0.9	-0.2			Rother East	-0.1	-0.1
	Wealden North	-0.8	-0.1			Wealden North	0.6	-0.1
	Wealden South	-0.9	-0.1			Wealden South	0	0
	Lewes	-1.3	-0.1			Lewes	0.1	0.2
	London	-0.9	-0.2			London	-1.9	-1.9

4.14 The modelled effects of these changes on jobs and workforce in Hastings and Bexhill are shown in Figures 4.3 and 4.4.

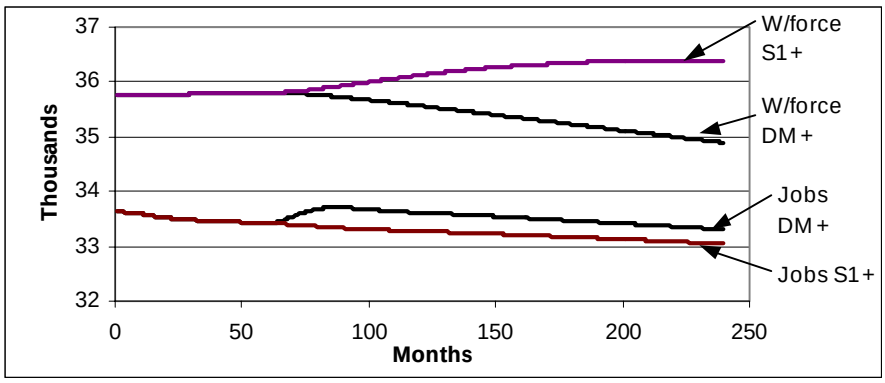


Figure 4.3: Effect of Strategy 1, Hastings

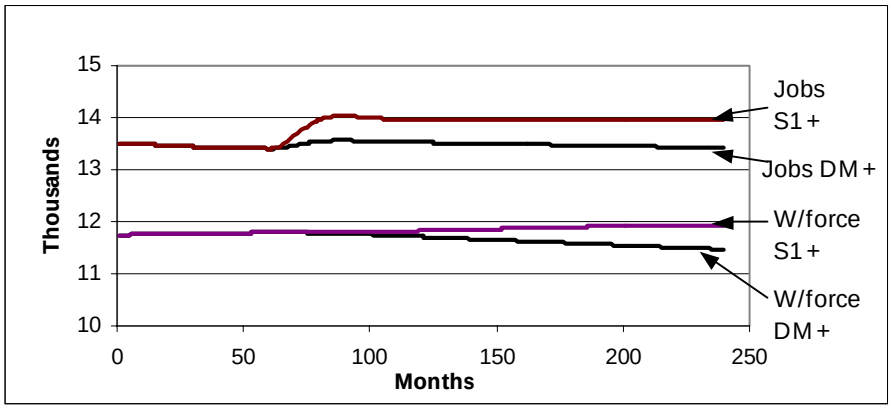


Figure 4.4: Effect of Strategy 1, Bexhill

4.15 It is fairly clear that the effect is small. The workforce in Hastings rises, attracted by improved commuting prospects, while somewhat paradoxically, the number of jobs decreases very slightly due greater competition for the local workforce (i.e. people now have access to a wider range of jobs). In Bexhill the effects are also small, leading to small rises in workforce and jobs. Table 4.5 summarises the changes at the end of the simulated period.

Table 4.5: Summary of Strategy 1 Compared to DM+ at End of Simulated Period

	Hastings		Bexhill	
	Workforce	Jobs	Workforce	Jobs
DM+	34.9	33.3	11.5	13.4
Strategy 1+	36.4	33.0	11.9	14.0
% changes wrt DM+:	*+4.3%*	*-0.8%*	*+4.0%*	*+4.1%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

4.16 There is also some shift in commuting patterns, summarised in Table 4.6. Compared to the DM+, car trips and rail trips inwards fall slightly, because the local jobs are increasingly taken up by the local workforce and the road conditions inwards actually worsen in some cases, but outward commuting by both modes rises.

Table 4.6: The Impact of Strategy 1 on Commuting Patterns to/from Hastings & Bexhill

	Car trips in	Car trips out	Car trips within	Rail trips in	Rail Trips out	Total trips in	Total trips out
DM+	9.6	7.7	22.2	1.2	.8	10.8	8.4
Strategy 1+	8.7	8.2	23.3	1.1	.9	9.9	9.1
% changes wrt DM+:	*-8.9%*	*+7.5%*	*+5.3%*	*-4.0%*	*+16%*	*-8.4%*	*+8.3%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

Strategy 2

4.17 Tables 4.7(a) and 4.7(b) show the changes in rail and road generalised times introduced by Strategy 2, compared to DN. The rail time improvements are greater than in Strategy 1, while the drive times change by fairly small amounts.

Table 4.7(a): Changes in Rail Generalised Times, Strategy 2

		From:				To:	
		Hastings	Bexhill			Hastings	Bexhill
To:	Eastbourne	0	0	From:	Eastbourne	0	0
	Brighton	0	0		Brighton	0	0
	Crawley	0	0		Crawley	0	0
	Ton/Tun	-7	-7		Ton/Tun	-9	-9
	Ashford	-8	-8		Ashford	-10	-10
	Rother West	0	0		Rother West	0	0.0
	Rother North	-3.5	-3.5		Rother North	-4.5	-4.5
	Rother East	-4	-4		Rother East	-5	-5
	Wealden North	0	0		Wealden North	0	0
	Wealden South	0	0		Wealden South	0	0
	Lewes	0	0		Lewes	0	0
	London	-11.2	-7.2		London	-14.7	-8.7

Table 4.7(b): Changes in Road Generalised Times, Strategy 2

		From:				To:	
		Hastings	Bexhill			Hastings	Bexhill
To:	Eastbourne	0.3	0.1	From:	Eastbourne	0	0
	Brighton	0	0.1		Brighton	0.1	-0.1
	Crawley	0.1	-0.3		Crawley	0.3	-0.1
	Ton/Tun	0.2	-0.2		Ton/Tun	0.4	0.4
	Ashford	0.2	-0.3		Ashford	-0.2	0
	Rother West	0.2	-0.2		Rother West	0.1	0
	Rother North	0.4	0		Rother North	0.5	0.5
	Rother East	0.2	-0.2		Rother East	-0.2	-0.2
	Wealden North	0.2	-0.1		Wealden North	0.5	-0.1
	Wealden South	0.2	-0.1		Wealden South	0.1	0
	Lewes	-0.3	0		Lewes	0.1	0.1
	London	0	-0.4		London	-2.0	-2.0

4.18 Figures 4.5 and 4.6 shows the effects on the workforce and numbers of jobs in each town.

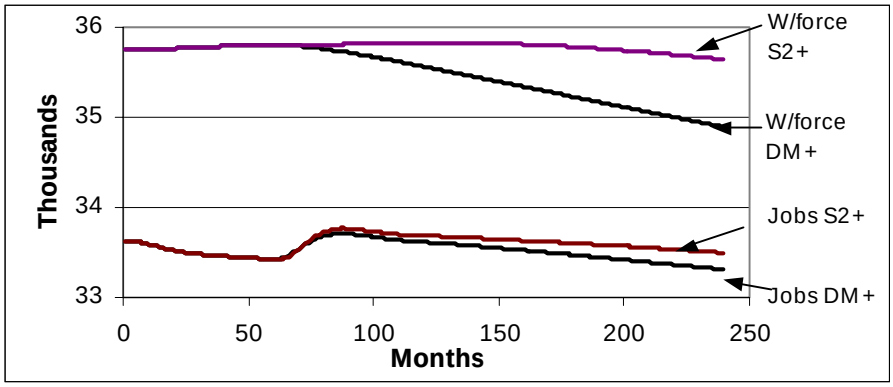


Figure 4.5: Effect of Strategy 2, Hastings

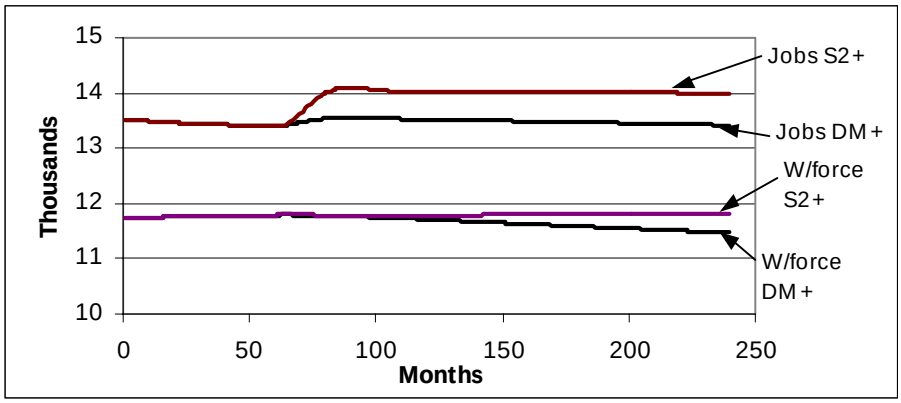


Figure 4.6: Effect of Strategy 2, Bexhill

4.19 There are small increases in the workforce in both towns, and a rise in the number of jobs in Bexhill and Hastings by about +800 in total. Table 4.8 summarises the position at the end of the simulated period. The differences are small.

Table 4.8: Summary of Strategy 2 Compared to DM+ at End of Simulated Period

	Hastings		Bexhill	
	Workforce	Jobs	Workforce	Jobs
DM+	34.9	33.3	11.5	13.4
Strategy 2+	35.6	33.5	11.8	14.0
% changes wrt DM+	2.2%	0.6%	3.1%	4.3%

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

4.20 Table 4.9 shows the effects on commuting patterns. Car trips inwards have fallen, because driving conditions inwards are slightly poorer while rail conditions have improved significantly, and because the local workforce has increased, meaning that local jobs are more likely to be taken by locals. Outward commuting by car rises very slightly. Inward and outward commuting by rail rises because of the service improvements.

Table 4.9: The Impact of Strategy 2 on Commuting Patterns to/from Hastings & Bexhill

	Car trips in	Car trips out	Car trips within	Rail trips in	Rail Trips out	Total trips in	Total trips out
DM+	9.6	7.7	22.2	1.2	.8	10.8	8.4
Strategy 2+	9.0	7.8	23.2	1.5	.9	10.5	8.7
% changes wrt DM+	*-6.3%*	*+1.8%*	*+4.7%*	*+26%*	*+18%*	*-2.7%*	*+3.3%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

Strategy 3

4.21 Strategy 3 introduces the Western by-pass, but not the Eastern. It also enhances highway journey times to/from London with the investment in the A21 between Tonbridge and Pembury. Table 4.10(a) and 4.10(b) summarise the changes in rail and road generalised time compared to the DN case.

Table 4.10(a): Changes in Rail Generalised Times, Strategy 3

		From:				To:	
		Hastings	Bexhill			Hastings	Bexhill
To:	Eastbourne	0	0	From:	Eastbourne	0	0
	Brighton	0	0		Brighton	0	0
	Crawley	0	0		Crawley	0	0
	Ton/Tun	-7	-7		Ton/Tun	-9	-9
	Ashford	-8	-8		Ashford	-10	-10
	Rother West	0	0		Rother West	0	0.0
	Rother North	-3.5	-3.5		Rother North	-4.5	-4.5
	Rother East	-4	-4		Rother East	-5	-5
	Wealden North	0	0		Wealden North	0	0
	Wealden South	0	0		Wealden South	0	0
	Lewes	0	0		Lewes	0	0
	London	-11.2	-7.2		London	-14.7	-8.7

Table 4.10(b): Changes in Road Generalised Times, Strategy 3

		From:				To:	
		Hastings	Bexhill			Hastings	Bexhill
To:	Eastbourne	-8.7	1	From:	Eastbourne	-7.1	0
	Brighton	-6.5	0.8		Brighton	-7.0	0.6
	Crawley	-3.2	-1.1		Crawley	1.1	-0.6
	Ton/Tun	-1.9	-1.7		Ton/Tun	0.6	-1.0
	Ashford	-1.4	-6.4		Ashford	2.9	-2.0
	Rother West	-3.3	-1.3		Rother West	-1.2	-1.1

	Rother North	-1.8	-1.7
	Rother East	-1.4	-6.4
	Wealden North	-2.1	-1.9
	Wealden South	-7	0.3
	Lewes	-6.6	1
	London	-4.6	-4.5

	Rother North	0.8	-0.8
	Rother East	4.2	-1.8
	Wealden North	0.9	-1.2
	Wealden South	-5.5	0
	Lewes	-7.1	0.6
	London	-2.8	-4.4

4.22 Figures 4.7 and 4.8 show the effects on the workforce and numbers of jobs in each town.

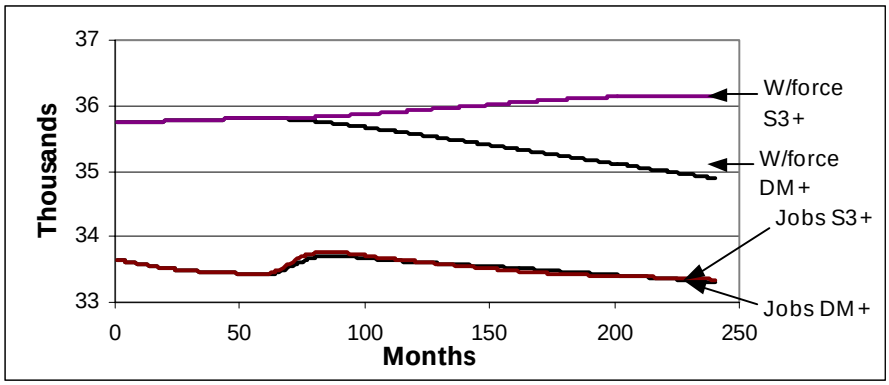


Figure 4.7: Effect of Strategy 3, Hastings

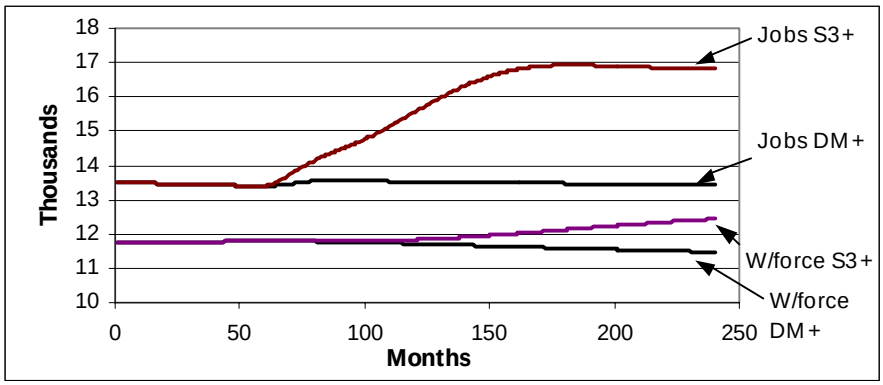


Figure 4.8: Effect of Strategy 3, Bexhill

4.23 Tables 4.11 and 4.12 summarise the position at the end of the simulated period. The workforce in both towns rises, compared to the DM+. Jobs rise in Bexhill as the new land is developed and businesses move in, although the process takes about nine years to complete. There is no change in job numbers in Hastings. From Table 4.12 it is clear that levels of car commuting have increased due to the combined effects of improved road conditions and the new jobs in Bexhill attracting inward commuting. Rail inward commuting also increases, due to the service improvements and new jobs. Total net job growth is 3,400, all of which takes place in Bexhill.

Table 4.11: Summary of Strategy 3 Compared to DM+ at End of Simulated Period

	Hastings		Bexhill	
	Workforce	Jobs	Workforce	Jobs
DM+	34.9	33.3	11.5	13.4
Strategy 3+	36.2	33.3	12.4	16.8
% changes wrt DM+	*-3.6%*	*+0.1%*	*+8.4%*	*+26%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

Table 4.12: The Impact of Strategy 3 on Commuting Patterns to/from Hastings & Bexhill

	Car trips in	Car trips out	Car trips within	Rail trips in	Rail Trips out	Total trips in	Total trips out
DM+	9.6	7.7	22.2	1.2	.8	10.8	8.4
Strategy 3+	10.5	8.6	23.9	1.7	.8	12.2	9.5
% changes wrt DM+	*9.7%*	*13%*	*7.7%*	*39%*	*7.6%*	*13%*	*12%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

Strategy 4

4.24 Strategy 4 includes the Western and Eastern bypasses in addition to A21 investment. Table 4.13(a) and 4.13(b) summarises the changes in travel times compared to the DN case.

Table 4.13(a): Changes in Rail Generalised Times, Strategy 4

		From:				To:	
		Hastings	Bexhill			Hastings	Bexhill
To:	Eastbourne	0	0	From:	Eastbourne	0	0
	Brighton	0	0		Brighton	0	0
	Crawley	0	0		Crawley	0	0
	Ton/Tun	-7	-7		Ton/Tun	-9	-9
	Ashford	-8	-8		Ashford	-10	-10
	Rother West	0	0		Rother West	0	0.0
	Rother North	-3.5	-3.5		Rother North	-4.5	-4.5
	Rother East	-4	-4		Rother East	-5	-5
	Wealden North	0	0		Wealden North	0	0
	Wealden South	0	0		Wealden South	0	0
	Lewes	0	0		Lewes	0	0
	London	-11.2	-7.2		London	-14.7	-8.7

Table 4.13(b): Changes in Road Generalised Times, Strategy 4

		From:				To:	
		Hastings	Bexhill			Hastings	Bexhill
To:	Eastbourne	-8.1	1.4	From:	Eastbourne	-7.1	0.1
	Brighton	-5.9	1.2		Brighton	-7.1	0.6
	Crawley	-3.5	-1.2		Crawley	0.6	-0.7
	Ton/Tun	-1.8	-1.8		Ton/Tun	0.4	-1.0
	Ashford	-2.2	-7.5		Ashford	-0.8	-6.7
	Rother West	-3.2	-1.3		Rother West	-1.3	-1.0

	Rother North	-1.9	-1.8
	Rother East	-2.3	-7.9
	Wealden North	-2.1	-2
	Wealden South	-6.6	0.4
	Lewes	-6.1	1.3
	London	-4.6	-4.6

	Rother North	0.6	-0.8
	Rother East	-0.9	-9.0
	Wealden North	0.8	-1.1
	Wealden South	-5.6	0
	Lewes	-7.4	0.4
	London	-3.0	-4.5

4.25 Figures 4.9 and 4.10 show the effects on the workforce and jobs in each town.

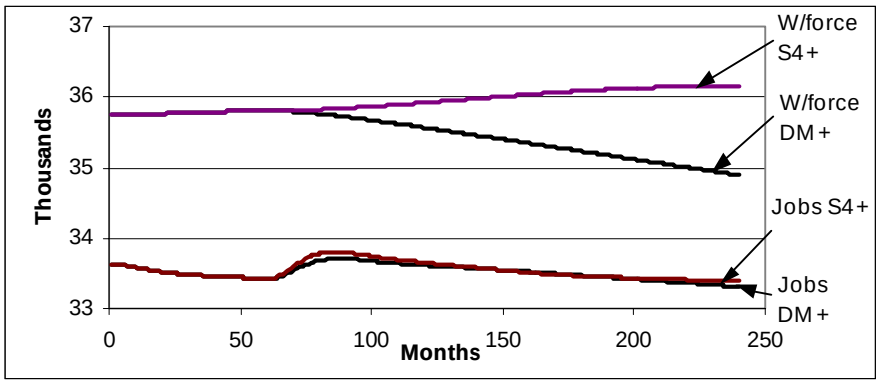


Figure 4.9: Effect of Strategy 4, Hastings

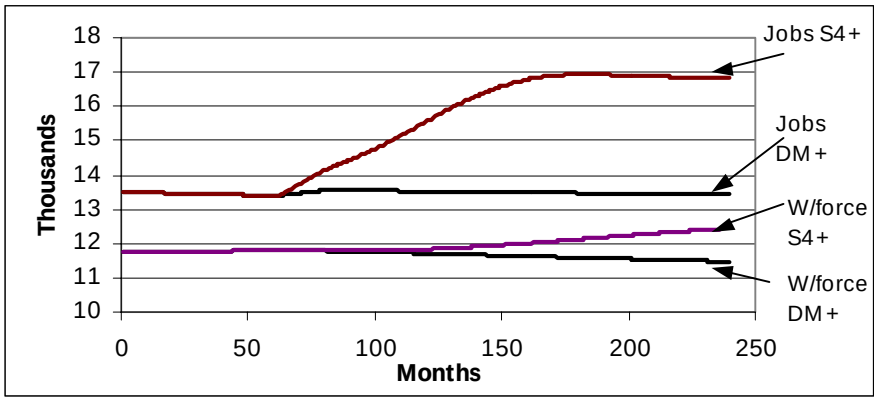


Figure 4.10: Effect of Strategy 4, Bexhill

4.26 Tables 4.14 and 4.15 summarise the position after fifteen simulated years. It is similar to Strategy 3 in the magnitude and distribution of impacts. This may seem surprising, but it arises because the model reaches capacity limits (e.g. land availability) under Strategy 3 alone, so Strategy 4 can add little.

4.27 Community growth by road is +1,900 person trips, evenly split between inbound and outbound travel.

Table 4.14: Summary of Strategy 4 Compared to DM+ at End of Simulated Period

	Hastings		Bexhill	
	Workforce	Jobs	Workforce	Jobs
DM+	34.9	33.3	11.5	13.4
Strategy 4+	36.2	33.4	12.4	16.8
% changes wrt DM+	*+3.6%*	*+0.2%*	*+8.4%*	*+25.5%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

Table 4.15: The Impact of Strategy 4 on Commuting Patterns to/from Hastings & Bexhill

	Car trips in	Car trips out	Car trips within	Rail trips in	Rail Trips out	Total trips in	Total trips out
DM+	9.6	7.7	22.2	1.2	.8	10.8	8.4
Strategy 4+	10.6	8.6	23.9	1.6	.9	12.2	9.5
% changes wrt DM+	*+10%*	*+13%*	*+7.6%*	*+38%*	*+8.0%*	*+13%*	*+12%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

Strategy 5

4.28 Strategy 5 offers the additional drive time improvements in the northern corridor. Tables 4.16(a) and 4.16(b) summarise.

Table 4.16(a): Changes in Rail Generalised Times, Strategy 5

		From:				To:	
		Hastings	Bexhill			Hastings	Bexhill
To:	Eastbourne	0	0	From:	Eastbourne	0	0
	Brighton	0	0		Brighton	0	0
	Crawley	0	0		Crawley	0	0
	Ton/Tun	-7	-7		Ton/Tun	-9	-9
	Ashford	-8	-8		Ashford	-10	-10
	Rother West	0	0		Rother West	0	0
	Rother North	-3.5	-3.5		Rother North	-4.5	-4.5
	Rother East	-4	-4		Rother East	-5	-5
	Wealden North	0	0		Wealden North	0	0
	Wealden South	0	0		Wealden South	0	0
	Lewes	0	0		Lewes	0	0
	London	-11.2	-7.2		London	-14.7	-8.7

Table 4.16(b): Changes in Road Generalised Times, Strategy 5

		From:				To:	
		Hastings	Bexhill			Hastings	Bexhill
To:	Eastbourne	-8.2	1.3	From:	Eastbourne	-7.2	0
	Brighton	-5.7	1.3		Brighton	-6.9	0.7
	Crawley	-3.7	-1.4		Crawley	-0.8	-0.7
	Ton/Tun	-3.8	-3.5		Ton/Tun	-0.8	-1.9
	Ashford	-2.2	-7.3		Ashford	-0.8	-6.8
	Rother West	-3.3	-1.3		Rother West	-1.3	-1.0
	Rother North	-2.2	-1.8		Rother North	-0.2	-1.4

	Rother East	-2.3	-7.8
	Wealden North	-3.2	-2.8
	Wealden South	-6.6	0.4
	Lewes	-6	1.4
	London	-6.8	-6.6

	Rother East	-0.9	-9.0
	Wealden North	-0.5	-1.3
	Wealden South	-5.6	0
	Lewes	-7.2	0.7
	London	-5.7	-6.9

4.29 Figures 4.11 and 4.12 show the effects on the workforce and jobs in each town.

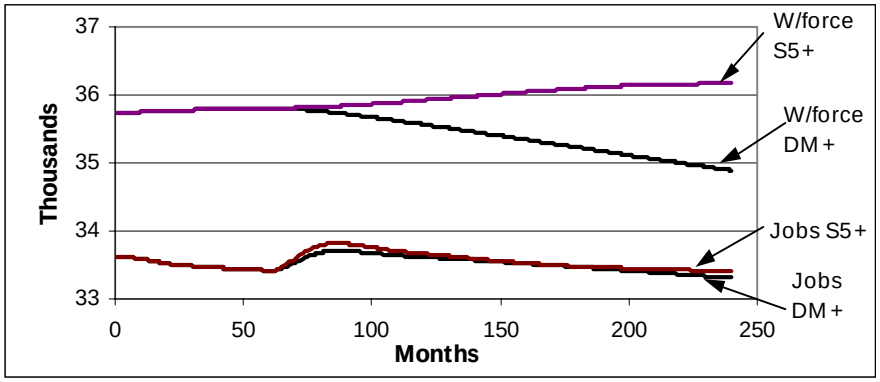


Figure 4.11: Effect of Strategy 5, Hastings

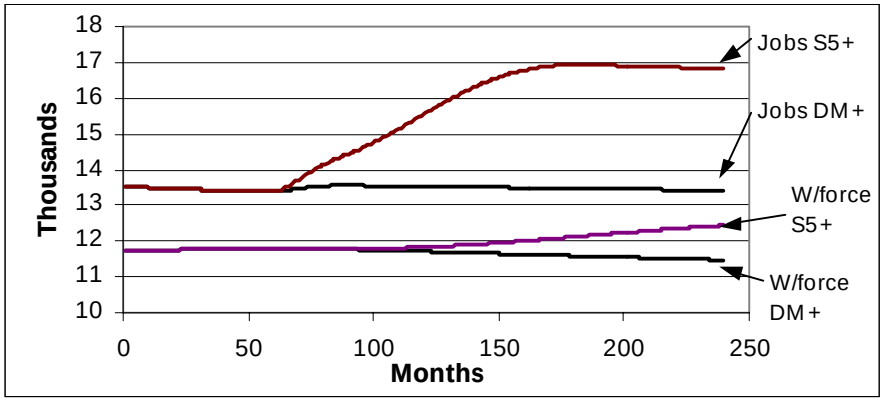


Figure 4.12: Effect of Strategy 5, Bexhill

4.30 Tables 4.17 and 4.18 summarise the impacts on workforce and jobs and on commuting patterns. By and large they are almost identical to Strategy 4.

Table 4.17: Summary of Strategy 5 Compared to DM+ at End of Simulated Period

	Hastings		Bexhill	
	Workforce	Jobs	Workforce	Jobs
DM+	34.9	33.3	11.5	13.4
Strategy 5+	36.2	33.4	12.4	16.8
% changes wrt DM+	*+3.7%*	*+0.8%*	*+5.4%*	*+21%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

Table 4.18: The Impact of Strategy 5 on Commuting Patterns to/from Hastings & Bexhill

	Car trips in	Car trips out	Car trips within	Rail trips in	Rail Trips out	Total trips in	Total trips out
DM+	9.6	7.7	22.2	1.2	.8	10.8	8.4
Strategy 5+	10.7	8.7	23,9	1.6	.9	12.3	9.5
% changes wrt DM+	*+11%*	*+13%*	*+7.5%*	*+38%*	*+7.9%*	*+14%*	*+13%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

Strategy 12

4.31 Strategy 12 does not have either by-pass, but offers variants on the road and rail services. It has been tested with the smaller land release for housing development and no land release for employment. Tables 4.19(a) and 4.19(b) summarise the changes in generalised time compared to the DN.

Table 4.19(a): Changes in Rail Generalised Times, Strategy 12

		From:					To:	
		Hastings	Bexhill				Hastings	Bexhill
To:	Eastbourne	0	0		From:	Eastbourne	0	0
	Brighton	0	0			Brighton	0	0
	Crawley	0	0			Crawley	0	0
	Ton/Tun	-2	-2			Ton/Tun	-2	-2
	Ashford	-8	-8			Ashford	-10	-10
	Rother West	0	0			Rother West	0	0.0
	Rother North	-1	-1			Rother North	-1	-1
	Rother East	-4	-4			Rother East	-5	-5
	Wealden North	0	0			Wealden North	0	0
	Wealden South	0	0			Wealden South	0	0
	Lewes	0	0			Lewes	0	0
	London	-5	-5			London	-5	-5

Table 4.19(b): Changes in Road Generalised Times, Strategy 12

		From:					To:	
		Hastings	Bexhill				Hastings	Bexhill
To:	Eastbourne	0.4	0		From:	Eastbourne	0.7	0.7
	Brighton	0.6	0.1			Brighton	0.1	-0.1
	Crawley	-0.7	0			Crawley	-1.1	-0.5
	Ton/Tun	-0.8	-0.5			Ton/Tun	-2.1	-2
	Ashford	1.1	0.1			Ashford	0.1	-0.1
	Rother West	0.3	0			Rother West	0.1	-0.1
	Rother North	-0.2	0			Rother North	0	0.1
	Rother East	1.1	0.9			Rother East	0.3	0
	Wealden North	-0.6	-0.1			Wealden North	-1	-0.9
	Wealden South	0.5	0			Wealden South	0	0
	Lewes	0.7	0.1			Lewes	0.1	0.1
	London	-5.2	-5.0			London	-4.3	-4.3

4.32 Figures 4.13 and 4.14 plot the changes in workforce and jobs in each town, compared to the DM+. The pattern is similar to Strategy 1.

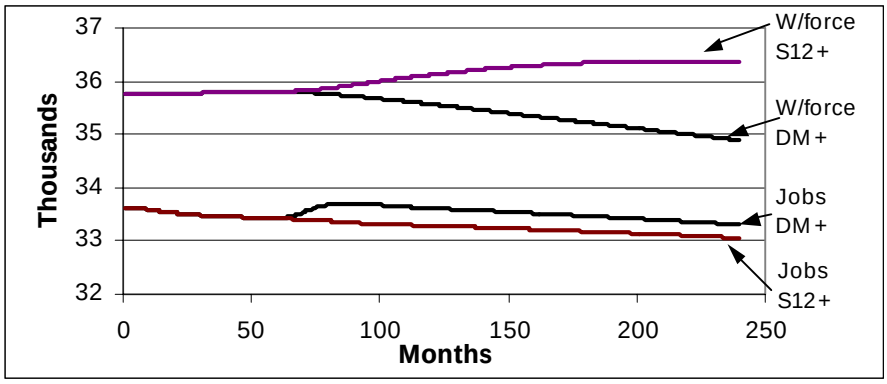


Figure 4.13: Effect of Strategy 12, Hastings

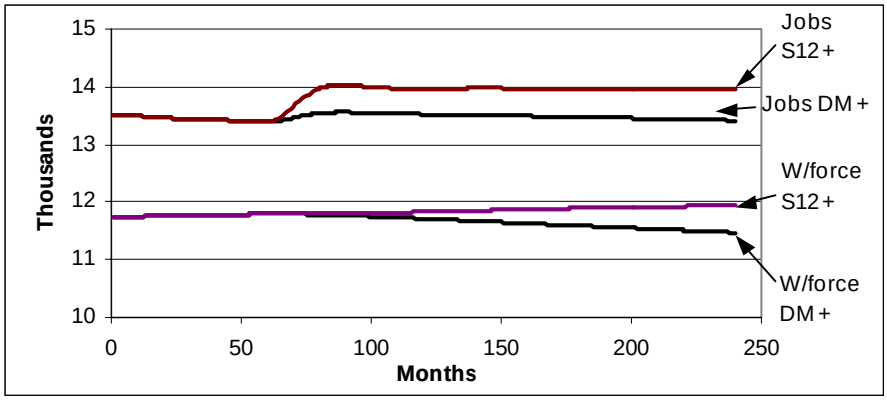


Figure 4.14: Effect of Strategy 12, Bexhill

4.33 The tables below summarise the position at the end of the simulated period.

Table 4.20: Summary of Strategy 12 compared to DM+ at End of Simulated Period.

	Hastings		Bexhill	
	Workforce	Jobs	Workforce	Jobs
DM+	34.9	33.3	11.5	13.4
Strategy 12+	36.4	33.1	11.9	14.0
% changes wrt DM+	*+4.2%*	*-0.8%*	*+4.0%*	*+4.1%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

Table 4.21:The Impact of Strategy 12 on Commuting Patterns to/from Hastings & Bexhill.

	Car trips in	Car trips out	Car trips within	Rail trips in	Rail Trips out	Total trips in	Total trips out
DM+	9.6	7.7	22.2	1.2	.8	10.8	8.4
Strategy S12+	8.7	8.2	23.4	1.1	.9	9.9	9.1
% changes wrt DM+	*-9.0%*	*+6.8%*	*+5.4%*	*-4.3%*	*+16%*	*-8.5%*	*+7.6%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

Strategy 13

4.34 This is a further sensitivity test, including the Western by-pass. It was tested with the larger land release. Tables 4.22(a) and (b) summarise the changes in generalised time compared to the DN.

Table 4.22(a): Changes in Rail Generalised Times, Strategy 13

		From:					To:	
		Hastings	Bexhill				Hastings	Bexhill
To:	Eastbourne	0	0		From:	Eastbourne	0	0
	Brighton	0	0			Brighton	0	0
	Crawley	0	0			Crawley	0	0
	Ton/Tun	-2	-2			Ton/Tun	-2	-2
	Ashford	-10	-10			Ashford	-10	-10
	Rother West	0	0			Rother West	0	0
	Rother North	-1	-1			Rother North	-1	-1
	Rother East	-5	-5			Rother East	-5	-5
	Wealden North	0	0			Wealden North	0	0
	Wealden South	0	0			Wealden South	0	0
	Lewes	0	0			Lewes	0	0
	London	-5	-5			London	-5	-5

Table 4.22(b): Changes in Road Generalised Times, Strategy 13

		From:					To:	
		Hastings	Bexhill				Hastings	Bexhill
To:	Eastbourne	-5.6	2.1		From:	Eastbourne	-7.2	0.1
	Brighton	-3.6	1.9			Brighton	-7.2	0.5
	Crawley	-2.2	-1.4			Crawley	-0.8	-0.6
	Ton/Tun	-2.7	-3.8			Ton/Tun	-0.7	-2.0
	Ashford	-0.8	-7.6			Ashford	-0.8	-6.6
	Rother West	-1.8	-1.3			Rother West	-1.3	-1.1
	Rother North	-0.8	-1.8			Rother North	-0.2	-1.4
	Rother East	-1.6	-9.1			Rother East	-0.9	-9.9
	Wealden North	-1.8	-2.7			Wealden North	-0.6	-1.4
	Wealden South	-4.9	0.4			Wealden South	-5.6	0.0
	Lewes	-3.7	2.1			Lewes	-7.4	0.4
	London	-4.9	-6.1			London	-5.2	-6.4

4.35 Figures 4.15 and 4.16 plot the changes in workforce and jobs over the simulated period. The effect in Hastings is slight, while the additional land in Bexhill is, in time, developed to deliver an increase in jobs.

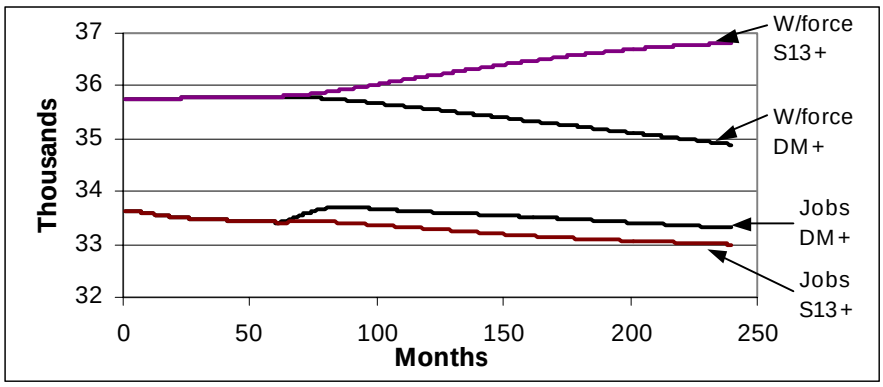


Figure 4.15: Effect of Strategy 13, Hastings

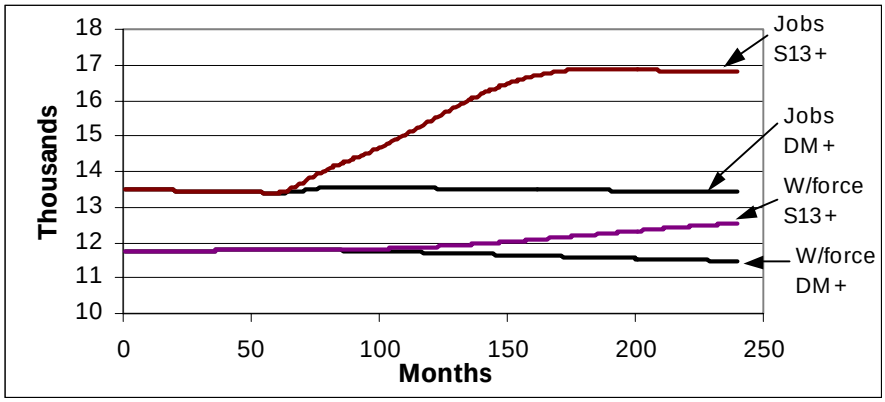


Figure 4.16: Effect of Strategy 13, Bexhill

4.36 Tables 4.23 and 4.24 summarise the position at the end of the simulated period. There is a small increase in the Hastings workforce but little effect on jobs, while both increase in Bexhill. Commuting increases in both directions because of the new jobs and wider access to jobs outside the towns.

Table 4.23: Summary of Strategy 13 compared to DM+ at End of Simulated Period.

	Hastings		Bexhill	
	Workforce	Jobs	Workforce	Jobs
DM+	34.9	33.3	11.5	13.4
Strategy 13+	37.8	33.0	12.5	16.8
Strategy 13+	*+5.5%*	*-0.9%*	*+9.3%*	*+25%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

Table 4.24:The Impact of Strategy 13 on Commuting Patterns to/from Hastings & Bexhill.

	Car trips in	Car trips out	Car trips within	Rail trips in	Rail Trips out	Total trips in	Total trips out
DM+	9.6	7.7	22.2	1.2	.8	10.8	8.4
Strategy S13+	10.2	8.6	24.2	1.2	.9	11.4	9.5
% changes wrt DM+	*+6.5%*	*+13%*	*+8.9%*	*+3.8%*	*+8.0%*	*+6.2%*	*+13%*

Figures are thousands, rounded. Percentages are to 2 significant figures, calculated before rounding.

5. CONCLUSIONS

5.1 It is our view that only non marginal changes in travel opportunities and in the quality of the travel experience will bring about changes in economic behaviour with regard to decisions on industrial, commercial and residential investment, development and improvement of property, travel to work and choice of place to live and work. Positive changes in the behaviour of economic actors, including local businesses, businesses located outside the area, land and property owners, residents and visitors are essential to the regeneration of the Hastings and Rother area.

5.2 Transport infrastructure investment and associated improvements in services, journey times and journey time reliability will influence the choices of these economic actors. However, investment in transport infrastructure and services is essentially an enabling mechanism which is most effective alongside other positive measures to improve the competitiveness of the area as a place to live, work and invest.

5.3 Strategies 3, 4, 5 and 13 have the potential to maximise the combined effects arising from changes in travel opportunities and from other regeneration measures and strategies being implemented:

- by improving key intra regional journey times, which will generate beneficial labour market impacts, which will help to expand the productive potential of the (sub) region

- by improving journey times between Hastings and Rother and Ashford; in a scenario where Ashford develops rapidly and experiences labour shortages, this will impact on Hastings and Rother if journey times are improved to the extent made possible by these strategies

- by releasing housing land in a wider regional context where housing land is scarce; provided this land is used, this will enable the environmental and other costs of using other land to be avoided: developing better links with an Ashford growth pole makes it more likely that such demand will develop.

5.4 These impacts are likely to emerge in the medium term, and their scale and timing will be dependent on external as well as local circumstances. External factors include the performance of national and international markets for the goods and tradable services supplied by companies in the Hastings and Rother area, the success or otherwise of policies to develop or conserve other parts of the south east region, and the extent to which Ashford's labour market provides opportunities for growth in commuting.

5.5 Given favourable external circumstances, the combination of the improvements in inter and intra area accessibility and the release of constrained land resources offered by these strategies has the potential to contribute to the regeneration of Hastings, alongside other regeneration measures being implemented in the Hastings and Rother area.

6. FINAL APPRAISAL ISSUES

6.1 This final section deals with technical aspects of the appraisal relating to the use of transport economic efficiency measures as the value of the economic impacts of the proposed measures. These issues relate to matters raised in the SACTRA report Transport and the Economy. This discussion can be omitted by the general reader.

6.2 The study shows that there are clearly imperfections in both the transport and the transport using sectors, as evidenced by *inter alia* congestion on many parts of the road network in Hastings and Rother, and the oligopolistic nature of many of the markets for manufactured products produced in the area.

6.3 SACTRA notes that under-estimation will be more serious, the larger is:

- the demand elasticity facing the representative transport using firm
- the extent of market power in the transport using sector
- the size of linkage effects working through reductions in prices of input goods
- gains in efficiency from agglomeration

6.4 The businesses in the region engaged in tradable goods and services sectors do not appear to be in sectors in which demand is highly elastic, and there appear to be very little or no linkage or agglomeration effects. However, some major businesses are in sectors in which they have substantial market power. Having said that, however, these businesses will be affected only very marginally through impacts on their own transport costs.

6.5 We also did not find evidence of market failure in those segments of the labour market relevant to the tradable goods and services sectors. Excess supply in the labour market arises in part because of the attractiveness of the area as a place to live for the unemployed, and because of imperfections in the care home sector, in which the public sector is a key purchaser.

6.6 Accordingly, while market imperfections exist, it is our view that use of a CBA approach which properly values transport externalities and any land use effects which are additional at the sub-regional level will not seriously mis-estimate the economic benefits of the proposed transport options.

APPENDIX D

ACCESSIBILITY AND REGENERATION

D.1. INTRODUCTION

D.1.1 The Hastings and Bexhill dynamic model was designed to simulate how changes in the transport network might impact upon the economy of the towns. It is an attempt to explore what might happen, based on descriptions of some of the sequences of cause and effect we might expect to see.

D.1.2 The model starts with the assumption that what transport provides is *access*, and if transport improvements are to stimulate the local economy it will be because of the way access to economic activities are stimulated. The model takes a somewhat restricted view of this, considering access of the following types:

- Access of the workforce to employment; and
- Access for employers to a workforce.

D.1.3 The assumption is that if transport improves access to jobs, this will make Hastings and Bexhill a more attractive place to live, stimulating inward migration of a workforce. This will only happen however if other factors are in place, and in the model these are chiefly related to the availability of suitable housing. If developers see that demand for housing is rising, then they may build more, or refurbish the existing stock, provided land is available.

D.1.4 On the other hand, if access to a workforce is improved, this will tend to make the towns more attractive as a place o locate a business, but only if, at the same time, suitable premises are available. Once again, if developers see that vacancies are low and demand is rising then they may build new premises or refurbish existing ones, provided the land is available.

D.1.5 Figure 1.1 illustrates the set of linkages between transport, land use, population and economic activity that the model considers. Items in boxes are 'stocks', quantities of infrastructure, land or people that can be added to or taken away from. The other text items are intermediate quantities, perceptions or 'attributes' of the system. The arrows indicate causal links, and the +/- signs indicate the direction of correlation. Increasing the size of the skilled workforce will tend to increase the accessible workforce available to employers, for example, and while decreases in the workforce will tend to reduce the available workforce (all else being equal, in each case).

D.1.6 The model simulates the processes indicated in the diagram. It is grounded in data from the census and other sources describing numbers of jobs and the workforce in the towns, and information about transport conditions from the transport model built by WS Atkins. Otherwise it is an attempt to represent systematically the relationships that shape the towns in a more precise way than would have been achieved in a more discursive narrative.

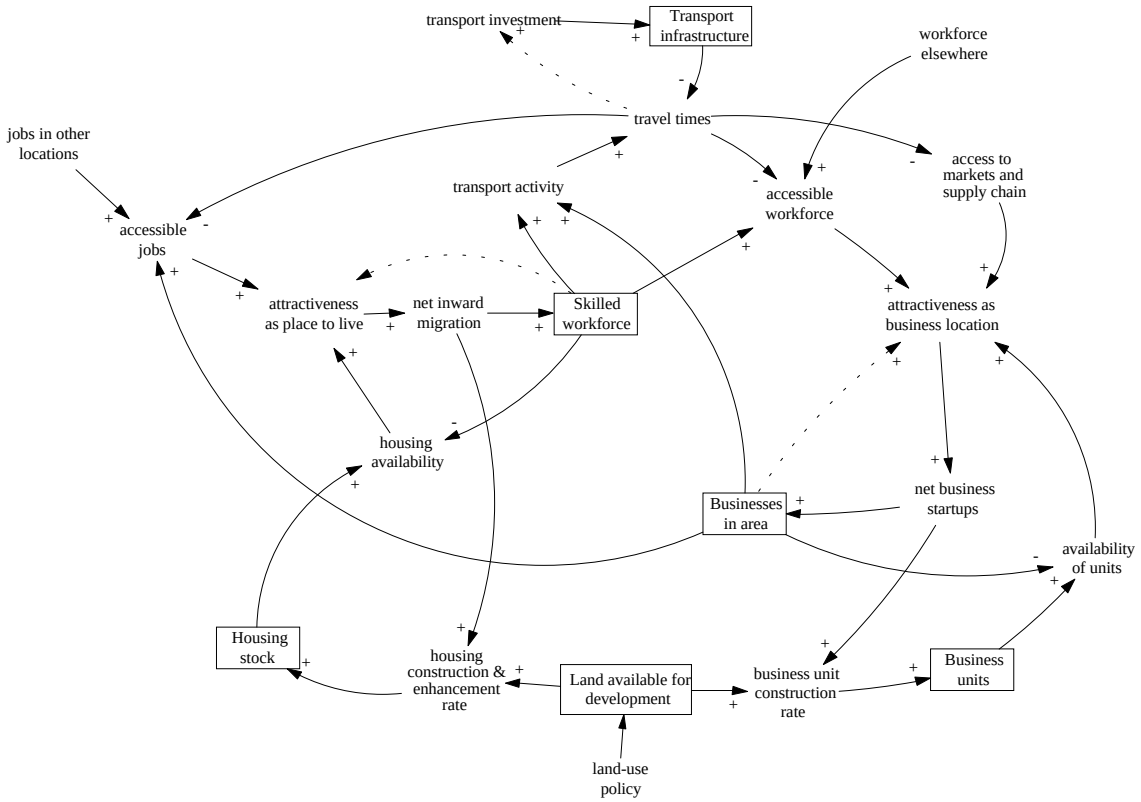


Figure D 1 Causal Link Diagram for Transport and the Economy

D.1.7 Chapter 2 describes the zone system used. Chapter 3 discusses how changes in the transport system have been represented, and how accessibility, the key driver of change, has been calculated and applied. Chapter 4 then describes how the 'stocks' of businesses, business premises, workforce and housing have been modelled in each town. It takes the view that these stocks are in a permanent state of change, as businesses open and close, people migrate in and out, buildings are constructed and demolished, and that change occurs as these *rates* of activity alter in response to local circumstances. For instance, if construction rates increase (and demolition does not), the stock of buildings will increase, and the average age of the stock will fall, possibly making the location more attractive for other activities.

D.1.8 Parameters have sometimes been identified and assigned values based on information gathered in interviews and on a considered view of how the local economy in Hastings operates. This especially so in Chapter 4. Many of these parameters have been standardised with reference to a starting value, making them similar to elasticities. We do not claim these have all been calibrated – but we do claim they provide a robust and plausible representation of how local businesses, construction etc operate. Further research would of course improve these models: quantitative interview methods designed to measure preference structure, such as Stated Preference, would be well suited to this task.

D.2. ZONES AND ZONE DYNAMICS

Zone structure

D.1.9 The model zones are based on Districts or sub-sets of districts. In Hastings and Bexhill the zones are comprised of sets of wards. The zones are:

- Hastings
- Bexhill
- Eastbourne
- Brighton and Hove
- Gatwick and Crawley
- Tunbridge Wells and Tonbridge
- Ashford
- West Rother (minus Bexhill)
- North Rother
- East Rother
- North Wealden
- South Wealden
- Lewes
- Central London

D.1.10 Estimates of the workforce and number of jobs in each zone in 1996 were made using information provided by ESCC, Regional Trends and other sources.

D.1.11 The model only applies the full dynamics described in this note to Hastings and Bexhill. Activity in all the other zones (ie workforce and the number of jobs) is kept static. Travel times by road and rail to these other zones vary as transport strategies are implemented, and these can generate changes in Hastings and Bexhill as a result of the changes in accessibility patterns.

D.1.12 Hastings and Bexhill are each represented as a single zone, each with its stock of businesses, business units, houses and workforce. The model also 'knows' the road and rail access details within and between these zones, and to/from each of them and all the other zones.

D.3. TRANSPORT AND ACCESSIBILITY

Transport

D.1.13 The model has information about the inter-zonal drive times and rail services derived from the WS Atkins transport model. Changes in those times in future years as a result of transport infrastructure investments, as estimated by the transport model are provided to the dynamic simulation. We have assumed that these modified journey times apply throughout the simulated period – in other words the dynamic model adds no additional congestion effects.

D.1.14 The model distinguishes between car and rail travel for journeys between Hastings/Bexhill and elsewhere. Within Hastings/Bexhill a proportion of trips, currently held fixed, is assigned to walk and cycle. The model uses an incremental mode choice format. It is initialised with the current actual mode shares, derived from an analysis of the 1991 census data, and will alter these proportions as the travel times vary. The formula describing the shifts in mode share is:

$$p^*_{car} = \frac{p_{car} \cdot \exp(\Delta_{car})}{p_{car} \cdot \exp(\Delta_{car}) + p_{rail} \cdot \exp(\Delta_{rail})}$$

where Δcar is the change in the car 'utility' etc. If there is no change to the utilities, the formula reduces to:

$$p^*_{car} = \frac{p_{car} \cdot \exp(0)}{p_{car} \cdot \exp(0) + p_{rail} \cdot \exp(0)} = p_{car}$$

D.1.15 In other words there would be no change in the mode share. The utility changes are expressed as –0.06 x (change in generalised minutes), as given in the WS Atkins report 'Draft Transport Model Development and Validation Report'. For instance, if the car times between a pair of zones decreased by 5 minutes, the change in the car utility would be –0.06 x (-5) = +0.3. The new car mode share would be:

$$p^*_{car} = \frac{p_{car} \cdot \exp(0.3)}{p_{car} \cdot \exp(0.3) + p_{rail} \cdot \exp(0)}$$

$$p^*_{car} = \frac{p_{car} \cdot 1.35}{p_{car} \cdot 1.35 + p_{rail} \cdot 1.0}$$

D.1.16 For instance, if the current car mode share was 80%, the new car share would be 84%.

D.1.17 More generally, the utility of a journey by each mode is taken to be –0.06 x (the generalised time in minutes). For car trips the generalised time is equal to the travel time, as estimated by the transport model. For rail we have also incorporated the

effect of services frequency. Rail service headways have been converted into time penalties in the way used in the rail industry, and set out in Table D1.

Table D 1 Conversion of Headways to Time Penalties

Service interval (mins)	Time penalty (mins)
5	5
10	10
15	14
20	18
30	24
40	27
60	33
90	43
120	52
180	70

Accessibility

D.1.18 Accessibility is one of the key factors that drives the model, since it is this that provides the link between transport and the economy. The measure of accessibility of employers in Hastings to workforce is as follows:

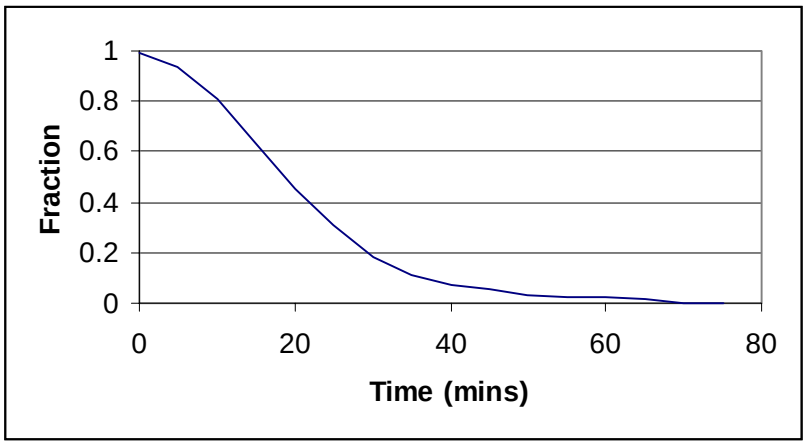
$$A_{ew} = \sum pop_j \cdot af(time_j)$$

where pop_j is the workforce living in zone *j* and $af(time_j)$ is a function of the travel time from zone *j*, giving the proportion of people willing to travel that far. Similarly, the number of jobs accessible to residents of Hastings is:

$$A_{we} = \sum jobs_j \cdot af(time_j)$$

D.1.19 This sums the number of jobs weighted by willingness to travel to them. The function $af(time_j)$ is a declining curve of the type shown in Figure 2. In practice the curve was 'calibrated' by trial and error once the model was set up. A curve was chosen that maintained the starting travel to work distribution as the simulation was run.

Figure D 2 Typical accessibility function



D.1.20 The model distinguishes between rail and road access, which complicates the calculation of accessibility. On the basis of the transport conditions at any simulated point of time, the model calculates the expected mode shares for travel between each zone and Hastings/Bexhill (see below). The accessibility calculation is adjusted to reflect preferred choice of mode and willingness to tolerate travel time in the following way:

$$A_{ew} = \sum (pop_j \cdot af_{car}(time_j) \cdot car\%_j + pop_j \cdot af_{rail}(time_j) \cdot rail\%_j)$$

D.1.21 This calculates the number of people who would prefer to travel by car, then applies an appropriate accessibility function to them, does the same for rail, and adds the two figures together. For rail, 'time' is taken to mean generalised time, incorporating the effect of headways. This is repeated for each zone. A similar reformulation is used for access of the workforce to jobs.

D.4. BUSINESSES, PEOPLE AND INFRASTRUCTURE

D.1.22 The economy of Hastings and Bexhill is represented by stocks of:

- Businesses, generating employment;
- Business units, in which businesses are located;
- A workforce;
- Houses, in which the workforce lives.

D.1.23 Each of these is initialised to be equal to the present values in Hastings and Bexhill, so far as they can be estimated from existing statistics. The model assumes each of them is in constant flux, as businesses open and close, people move in and out etc. Changes are generated as conditions change in the simulated towns as time advances.

Businesses

D.1.24 The Hastings and Bexhill zones each have a 'stock' of businesses. The model assumes that businesses are constantly in a state of flux, opening and closing as conditions vary. The rates of creation and closure can vary in response to other factors in the model, leading to changes in the total stocks.

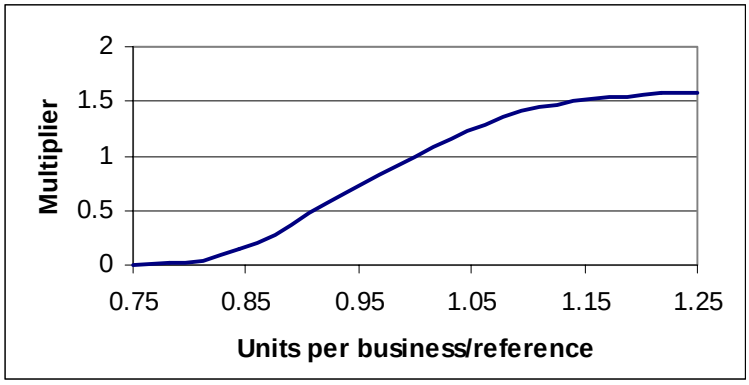
D.1.25 We assume and average business 'life' of ten years. This means that on average 10% businesses will start up each year, while 10% will close or move away. This would lead to a steady state, with a constant number of businesses in operation.

D.1.26 The rates of start-ups and closures are then varied as the 'attractiveness' of each zone changes. Attractiveness is represented as a multiplier, pivoting about the value 1 as conditions change. In the model it is the product of three components of attractiveness, each of which is also a variable pivoting around the value 1. They are:

- The business unit occupancy multiplier, representing the availability of business units, or premises;
- The unit age multiplier, reflecting the physical condition of the business units;
- The access to workforce multiplier.

D.1.27 Thus, if business premises are hard to obtain, this will tend to reduce the rate of start-ups, so the unit occupancy multiplier falls below 1; conversely if they are easily available the multiplier will rise above 1. The model calculates the ratio of the current number of business units per business to a 'reference' value of 1.03 (equivalent to a vacancy rate of 3%) and calculates a multiplier value using a look-up table. Figure A1 plots the lookup function used.

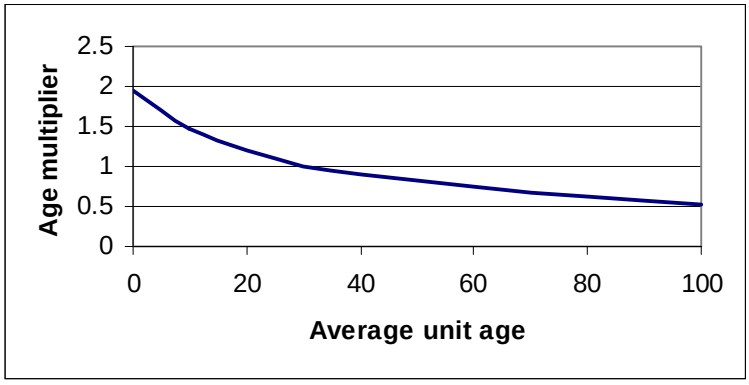
Figure D 3 the effect of business unit availability



D.1.28 Thus if the number of units per business is 1.03 (equivalent to a 3% vacancy rate) then this is the same as the reference value and the multiplier will be 1.0. If there was a surplus, with units per business rising to, say, 1.08 (equivalent to a vacancy rate of 7.4%) the ratio would be would rise to about 1.08/1.03 = 1.05, and the multiplier, found from the graph, would be around 1.25. If there was a shortage of units, with the units per business down to 1.01, say, the ratio would be 1.01/1.03 = 0.98 and the multiplier would be about 0.9.

D.1.29 The unit age multiplier is designed to reflect the condition of the stock of business units. The model calculates their average 'age', which is interpreted to mean time since major refurbishment, rather than construction. This average age will rise if insufficient investment is made in the stock of premises. The assumption is that with an average age of 30 years the age multiplier takes the value 1, and varies as follows:

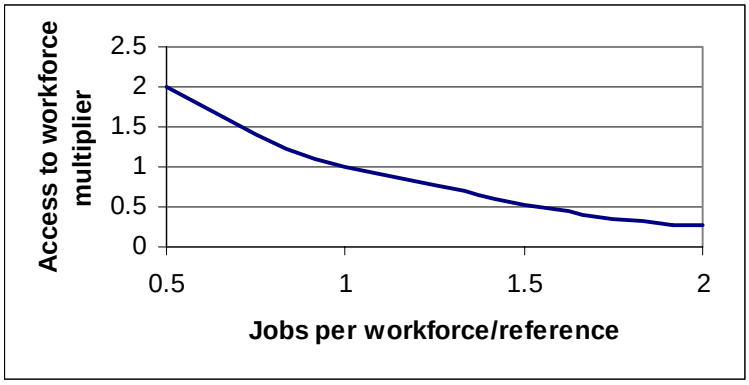
Figure D 4 The effect the age of business infrastructure



D.1.30 Thus, if the average age falls to 40 years, the age multiplier will be 0.90. If the stock of buildings is only 10 years old, the multiplier is 1.5.

D.1.31 The access to workforce multiplier provides a measure of how easy it is to reach a workforce. The model monitors the total workforce accessible from each of Hastings and Bexhill, and the total number of jobs accessible from each and calculates the jobs to labour ratio as (accessible jobs)/(accessible workforce). This ratio is used to reflect not only the workforce pool available, but also the number of employers competing for it. Larger values tend towards an excess of jobs, so the attractiveness should fall; lower values mean a surplus of labour, which will tend to increase attractiveness. Again, the model compares the current ratio to a reference value (actually the long-term equilibrium value, found by running the model for a long simulated period) and returns a multiplier based on the proportional shift from the reference value. Example values are:

Figure D 5 Access to a workforce



D.1.32 Taking all these together, suppose at a simulated instant in time the modelled town was found to have a business unit vacancy rate of 4%, with the average age of the stock of units at 40 years, and with improved access to labour such that the jobs/labour factor is 0.92. Then the component multipliers would be:

Units per business multiplier:	1.05
Average age multiplier:	0.90
Access to workforce multiplier:	1.11
Attractiveness as a business location:	**1.05 x 0.90 x 1.11 = 1.05**

D.1.33 The town is interpreted as having a raised attractiveness, with the vacancy rates and an accessible workforce offset slightly by the ageing condition of the buildings.

D.1.34 It is also assumed however that it takes time for news of this shift in attractiveness to spread. The perceived attractiveness lags behind the 'real' attractiveness by and assumed average of six months. In the example above therefore, six simulated months later the perceived attractiveness of the zone would be 1.05, and the business start-up rate would be the product of this and the 'reference' startup rate of 10%pa: 1.05*10%pa = 10.5%pa.

D.1.35 Conversely, as the attractiveness rises we also assume the existing businesses are more likely to stay, and the closure rate falls. The model uses the reciprocal of the

attractiveness multiplier to scale the closure rate. Thus, after six simulated months the closure rates will be (1/1.05)x10%pa = 9.5%pa.

Business Units

D.1.36 A similar mechanism is used to generate changes in the stocks of business units. The model assumes an initial construction rate and corresponding demolition rate, then modulates this as conditions change, using a set of multipliers.

D.1.37 The model assumes an average unit lifetime of 75 years, meaning that in steady state on average the construction and demolition rates will be 1.3% of the stock per year. (This is not enough to maintain the reference age of 30 years in the unit age multiplier for businesses. The reasons for this are discussed below.)

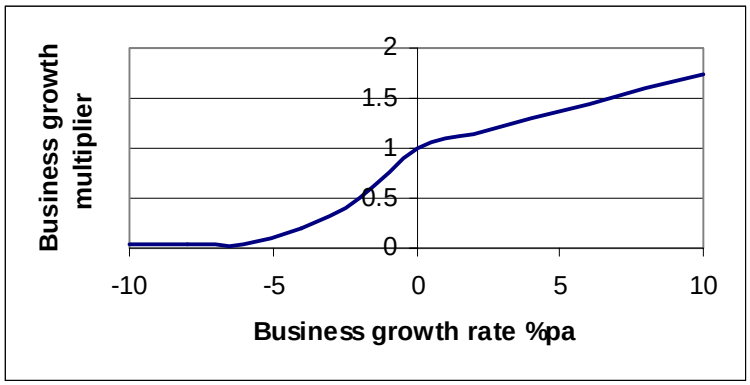
D.1.38 Construction and demolition rates are varied in response to:

- Growth rates in business activity in the town;
- The availability of land;
- The vacancy rates.

D.1.39 To do this, the model includes a simple representation of how developers might operate. If business activity is growing, the model assumes that this indicates rising demand and that will tend to increase construction activity. The converse is also assumed. However the availability of land may constrain activity, while a land surplus, on its own, will tend to increase construction activity. Finally, construction will not take place if vacancy rates are high, while it will be encouraged if there is a shortage of units.

D.1.40 To calculate the effect of growth in business activity, the model calculates an average annual growth rate, on the basis of what has actually happened in the simulation. High or low rates are then used to calculate a growth rate multiplier, in the following way:

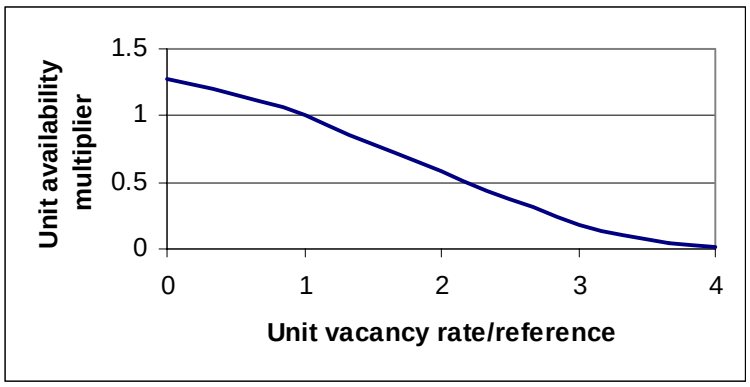
Figure D 6 The effect of business growth rates



D.1.41 Thus, if there is no growth, and business activity is static, the multiplier will be returned as one, so that construction activity continues to tick over. If growth falls below zero the multiplier rapidly falls away to zero, so that activity stops. If it rises, then so does the multiplier. The graph is asymmetric to allow for a rather conservative view towards development risk.

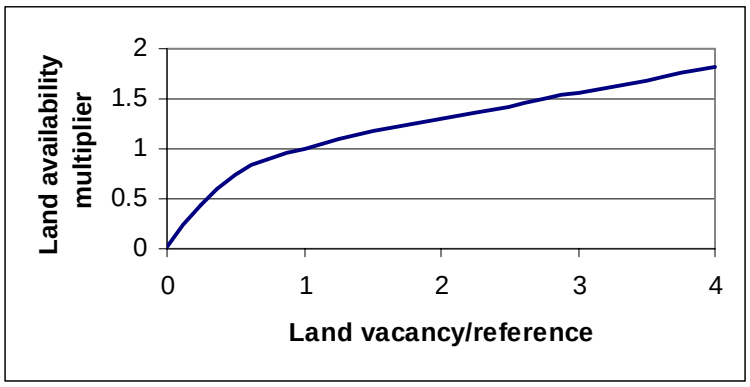
D.1.42 The vacancy rate multiplier is there to reflect the effect of existing supply. If vacancy rates are high then the assumption is that construction rates will tend to fall, while a shortage of units will tend to stimulate activity. Vacancy rates are compared to a reference level, taken to be 3%, and a multiplier generated as a function of the ratio (current vacancy rate)/(reference vacancy rate). The figure below plots the function used. If vacancies are 3%, then the multiplier will be one; higher values will reduce construction, while lower values increase it.

Figure D 7 The effect of unit vacancies on construction rates



D.1.43 Finally there is the effect of land availability. The assumption is that increased availability, all else being equal, will tend to increase construction rates. This land may come from new releases, or because of demolition of existing stock. Again, the model compares the current land vacancy rate with a reference value, taken to be 3%, and adjusts the multiplier depending on how far the current position varies from this point. The graph below gives the multiplier values assumed.

Figure D 8 The effect of land availability on construction



D.1.44 As an example, if the currently simulated position were an average growth in business activity of 1%pa, with 2% land availability and a low vacancy rate of 1%, the multipliers would be as follows:

Business growth multiplier:	1.07
Land availability multiplier:	0.84
Unit vacancy rate multiplier:	1.20
Construction rate multiplier:	**1.07 x 0.84 x 1.20 = 1.08**

D.1.45 In this case rising demand coupled with a shortage of units is stimulating increased construction, but a shortage of land for development is constraining what is possible. The reference construction rate of 1.3%pa would be increased to 1.08 x 1.03 = 1.4%pa. However there is also a delay, since it takes time for awareness of the current position to spread and for changes in construction to be implemented, and this has been set to 12 months. In other words the construction rate would be reach 1.4%pa a year after the conditions that gave rise to that value.

D.1.46 Demolition rates are assumed to respond to the same factors as construction, but in a rather different way. If land is constrained, then rising business activity coupled with shortages of business units would tend to increase demolition, since there is an incentive to refurbish existing property to meet demand. On the other hand, if new land becomes available the need for demolition is reduced, since developers prefer to use green field sites. On this basis the demolition multiplier is defined to be: (business growth multiplier)x(vacancy multiplier)x(1/land availability multiplier).

D.1.47 Using the example above, the demolition multiplier would thus be: 1.075x(1/0.84)x(1.20) = 1.53, so that the demolition rate becomes 1.53x1.3%pa = 2.0%pa. In other words rising business activity and demand coupled with a shortage of land has stimulated increased demolition to clear space for redevelopment.

D.1.48 As with construction, a delay of 12 months is assumed before the new rate is implemented.

Business, business units, land, jobs and the age of stock

D.1.49 The model treats business offices and other premises as 'units' in an aggregate sense. It assumes each unit can house one business, and each business employs, on average, 15 people. Furthermore, business units are constructed at an average density of 20 per hectare. These figures are based on typical averages in the Hastings and Bexhill area.

D.1.50 Each business unit might house a separate enterprise, or may be an extension to an existing one. In other words if business activity rises, the model does not explicitly recognise whether this is due to new businesses or expansion of existing ones. Essentially is it dealing in employment units of 15 people, with up to 20 such units per hectare.

D.1.51 An initial quantity of land is allocated to business use in each of Hastings and Bexhill, sufficient to locate the starting number of business units plus a surplus of 3%. If new land is released it is added to this stock of land. There is a rudimentary representation of the difference between green and brown-field sites, for if land availability is restricted, then demolition must take place before construction. However if land

availability is high, demolition rates will be reduced, and construction will take place on the empty (green) land.

D.1.52 Construction and demolition is taken as shorthand for refurbishment as well as new construction. The average age of the stock is taken to mean the age since construction or refurbishment. Construction or refurbishment can only take place if there is land available, so when land availability is low demolition is needed to release land first.

D.1.53 As explained elsewhere the model was initialised with a slow decline in economic activity, rather than stability. This has been created by assuming that re-investment in the infrastructure is not sufficient to prevent its deterioration, which in turn reduces its attractiveness to businesses. As seen above, the model takes an average of 30 years since refurbishment as a reference point for attractiveness as a business location. To sustain this requires a construction rate of 3.3%pa, but the reference actual construction rate has been set to 1.3%pa. With no changes to the transport system this leads to an increase in the average age of the business stock of just over five years over the fifteen year simulated period.

Houses

D.1.54 The mechanism for houses is similar to that for business units. Houses are assumed to be built (or refurbished) at rates that vary with conditions, after a lag to allow for awareness and delays in the construction process.

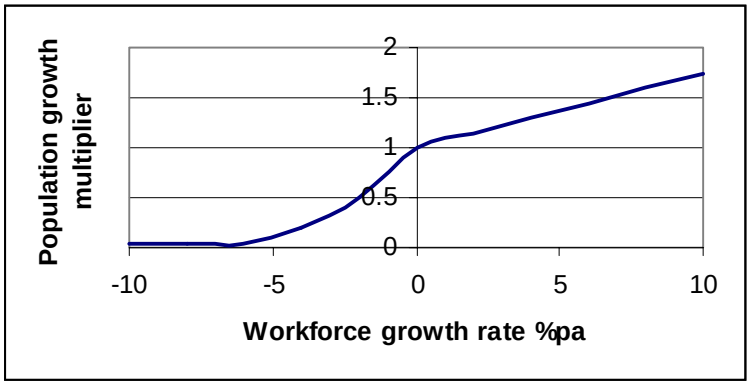
D.1.55 The model only deals with units needed to house the workforce in each town. The numbers of housing units it generates will therefore be lower than actually exists.

D.1.56 A reference construction rate is assumed of 1.3%pa, or an average lifetime of 75 years. The reference demolition rate is the same. Construction then varies in response to two sets of conditions:

- Growth in the population;
- Availability of land;
- Housing demand

D.1.57 The model calculates the moving annual average growth rate for the workforce population in each town, and generates a construction rate multiplier using the following table.

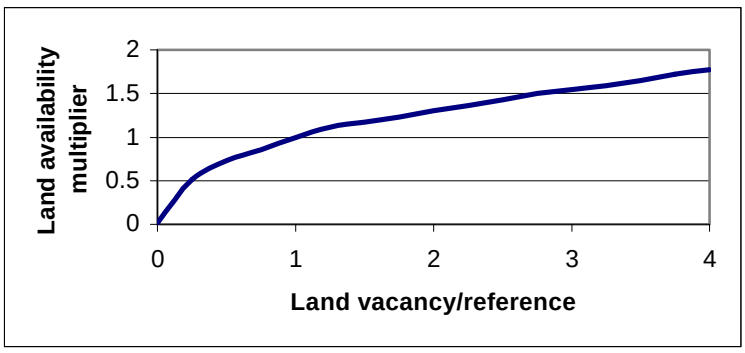
Figure D 9 The effect of workforce growth



D.1.58 In this way, if the population is static, the multiplier will be one, and construction will continue to tick over. If the population actually falls, the construction multiplier falls off to zero, while if it rises the multiplier also increases. The graph is asymmetric to allow for a rather conservative approach to construction.

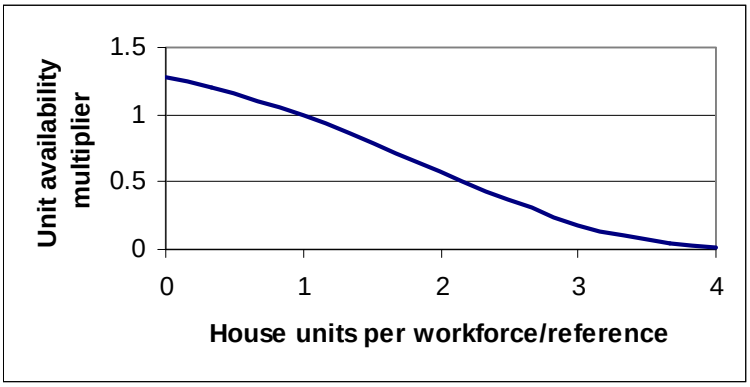
D.1.59 Land availability also influences the construction rates. We assume that, all else being equal, increased availability of land for housing will tend to increase construction of housing units, and that when land is no longer available, construction stops. The multiplier table is as follows.

Figure D 10 The effect of land availability on housing



D.1.60 Demand for housing is represented by the ratio of housing units to the workforce. If this rises it indicates excess supply, and the construction rate should fall. Similarly low values indicate a shortage which would be expected to stimulate new construction. Once again, the model considers the ratio of the current number of housing units per worker with a reference value, and sets the construction multiplier on that basis. The reference value is based on an assumed 1.1 workers per housing unit, or 1/1.1 = 0.91 houses per worker. The function used is below.

Figure D 11 The effect of housing demand



D.1.61 As an example, suppose the population has been growing at 1%pa, that there has been strong demand for houses so that the number of houses per worker has fallen by 5%, but there is little spare land available, at 2%. The construction multipliers would then be:

Population growth multiplier:	1.07
Land availability multiplier:	0.81
House demand multiplier:	1.01
Construction rate multiplier:	**1.07 x 0.81 x 1.01 = 0.88**

D.1.62 In this case rising demand and a shortage of houses would stimulate construction, but the shortage of land means there is no scope to increase the rate. The construction rate would become 0.88 x 1.3%pa = 1.14%pa.

D.1.63 Demolition uses the same factors, but in a different way, much as with business units. We assume that rising demand and rising population will stimulate more demolition as existing property is redeveloped and refurbished, but that if more land is released the demolition rate will fall, reflecting a preference to build on green field sites rather than brown. The demolition multiplier is therefore (population growth multiplier)x(house demand multiplier)x(1/land availability multiplier). In the example above, the demolition multiplier would have been 1.07 x 1.01 x (1/0.81) = 1.33 so that the demolition rate would rise to 1.33 x 1.3%pa = 1.73%pa. Rising demand for housing coupled with a shortage of land has stimulated demolition to make way for refurbishment and/or new construction.

D.1.64 We also assume that there is a delay before these changes can be implemented, to allow for awareness and the time it takes to begin work. The delay is assumed to be one year for construction and demolition.

Workforce

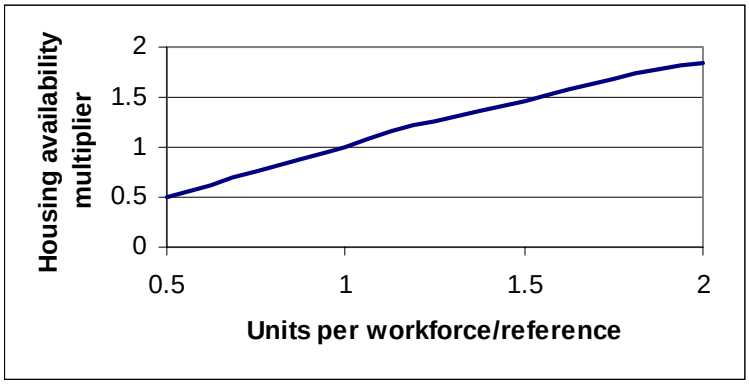
D.1.65 The only population the model deals with is the workforce. An underlying process of migration into and out of the towns is assumed, at rates that vary with local conditions.

D.1.66 The reference migration rate is taken to be 2%pa into and out of the towns. This is then modified by the attractiveness multiplier, which is itself the product of three further multipliers relating to:

- Housing availability
- The age of the housing stock
- Access to jobs.

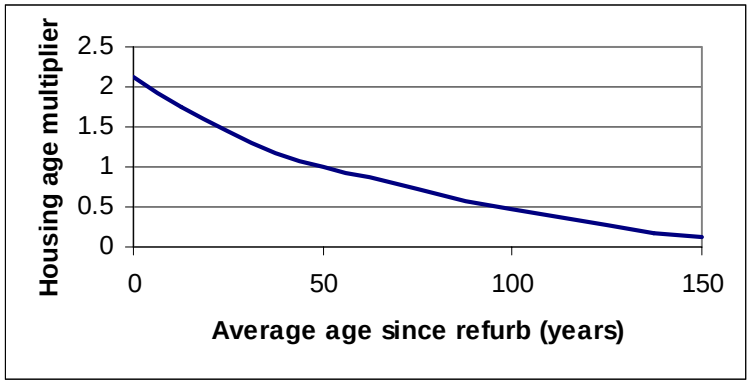
D.1.67 If housing is easily available, this is assumed to make the town more attractive, on balance, as a place to live, since house prices would reduce. Housing shortages would increase prices, leading to a reduction in attractiveness, all else being equal. The housing availability multiplier is therefore calculated by looking at the current ratio of housing units to workers, and comparing this to a reference value. The reference value assumes an average of 1.1 workers per housing unit, or, conversely, 1/1.1=0.91 housing units per worker. The multiplier is based on the ratio of the current number of housing units per worker to the reference value, 0.91, using the following graph. For example, if the number of housing units per worker rose to 1, the ratio with the reference value is 1.10, and the multiplier would be 1.12.

Figure D 62 The effect of housing availability



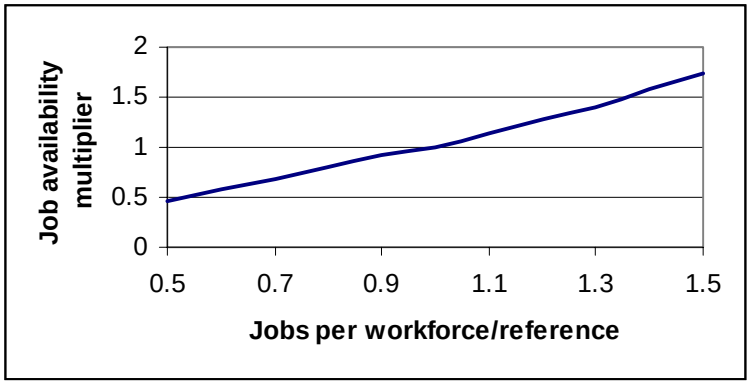
D.1.68 The attractiveness of the housing stock is also assumed to vary with its condition. The model calculates the average age of the stock since construction or refurbishment, and uses a multiplier related to that average age. If the age is high, this is taken to reflect a failure to re-invest, and so the quality of the stock is likely to be low. The table below sets out how the housing age multiplier is calculated, pivoting about a reference age of 50 years.

Figure D 73 The effect of the age of the housing stock



D.1.69 Finally there is access to employment. This is based on the number of accessible jobs per worker. If this increases the attractiveness of the town as a place to live rises; when it is low attractiveness falls. The ratio is compared to a reference value (actually the long run equilibrium value, found by running the model for a long simulated period), and the multiplier found from the following graph.

Figure D 84 Access to employment



D.1.70 As an example, suppose the housing stock has been allowed to decline, so that the average age is 60 years, the availability of housing has increased by 5% compared to the reference, and job availability has declined by 5% compared to the reference level. This is a fairly poor economic picture, with plentiful housing, but in a relatively poor condition, and with a shortage of employment. The multipliers would be:

House age multiplier:	0.90
Housing availability multiplier:	1.06
Access to jobs multiplier:	0.96
Construction rate multiplier:	**0.90 x 1.06 x 0.96 = 0.92**

D.1.71 Once again we assume a delay before awareness of the situation spreads and to reflect the fact that it takes time for people to respond. Inward migration depends on the awareness of people outside the towns, and this delay has been set to two years. Migration outwards depends on people within the towns, where awareness is likely to spread more quickly, so this delay has been set to one year. Thus after one year the emigration rate would be 2%pa x (1/0.92) = 2.17%pa, and after another year the inward migration rate would be 2%pa x 0.92 = 1.84%pa. The poor conditions have led to a net outflow of population.

Travel to Work Trips

D.1.72 The model is initialised with a travel to work matrix derived from the 1991 census data. This summarises the starting pattern of trip made within and between each of Hastings and Bexhill, and the other zones in the model.

D.1.73 The model assumes that people change jobs on average every three years. The model assumes they join a pool of job seekers, while at the same time they create a pool of job vacancies that employers seek to fill. Employers will recruit staff from job seekers that present themselves, and these are those for whom the jobs are accessible. The net effect is that if changes to the transport system are made, the range of jobs that can be accessed from Hastings and Bexhill changes, and in time, as people cycle through employment, the pattern of travel to work trips will alter.

APPENDIX E

STRATEGY ASSESSMENT

E.1. STRATEGY 1

New Approach to Appraisal (NATA)

E.1.1 This section describes the assessment of Strategy 1 against the five Central Government objectives and sub-objectives as set out in GoMMMS.

Environment

Noise

E.1.2 Table E.1.1 shows the results of the noise assessment for specific road links, in terms of the noise level ($L_{10\text{-}18\ hour}$ dB(A)) in the Do Minimum Plus and Strategy 1 scenarios and the number of people annoyed by exposure to road traffic noise. The population annoyed represents the number of people who are disturbed by different levels of road traffic noise (according to the annoyance response function given in GoMMMS).

Table E 1.1 Noise Assessment for Specific Roads

Location	L10-18 hour dB(A)		Changes	Pop. Annoyed [1]		Changes
	Do-Min+	Strat. 1	dB(A)	Do-Min+	Strat. 1	popul.
A21 Tonbridge - Pembury off-line dual	-	-	0.00	0	0	0
A21 Tonbridge - Pembury	72.97	74.43	1.46	82	94	13
A21 Hurst Green - John's Cross	72.38	72.46	0.08	40	40	0
A21 John's Cross – Hastings	72.59	72.47	-0.13	842	842	0
A2100 Battle Road (Battle to Baldslow)	70.39	70.40	0.01	91	91	0
A259 Bexhill & Hastings Western Bypass	-	-	0.00	0	0	0
A259 Hastings Eastern Bypass	-	-	0.00	0	0	0
A259 Pevensey – Western Bypass	72.54	72.54	0.00	5	5	0
A259 Western Bypass – Bexhill	71.45	71.46	0.00	284	284	0
A259 Bexhill - Hastings Town Centre	71.08	71.08	-0.01	774	774	0
A259 Hastings Town Centre	68.84	68.85	0.01	240	240	0
A259 Hastings Town Centre - Eastern Bypass	68.21	68.24	0.04	534	534	0
A259 Eastern Bypass - Rye	67.76	68.47	0.70	72	78	6
A26 Tonbridge - Tunbridge Wells	72.56	72.51	-0.05	594	594	0
A28 Baldslow - A268	69.10	69.05	-0.05	119	119	0
B2093 The Ridge	70.00	69.98	-0.02	269	246	-24
Gillsman's Hill	68.57	68.66	0.09	62	62	0
Bexhill Northern Approach Road	-	-	0.00	0	0	0
Total on selected links				**4,008**	**4,002**	**-6**

Notes: 1) The estimate of the population potentially affected by noise has been defined as the number of people living within a 50 metre buffer of each road, for urban roads and 250 metres for new roads (namely the Western and Eastern bypasses and A21 Tonbridge to Pembury off-line dual), where the unobstructed distance from source to receptor can be significantly higher.

E.1.3 Changes in noise levels are chiefly driven by the combined effect of changes in traffic flows and speeds. Increases in both flows and speed contribute to increasing noise levels. The only impacts in terms of people affected by noise levels were estimated for the existing A21 between Tonbridge and Pembury and the A259 east of Hastings, but these are small and only affect a few people in the selected roads.

E.1.4 Table E.1.2 presents the noise assessment results for the selected rail links.

Table E 1.2 Noise Assessment for Rail Links

Location	L10-18 hour dB(A)		Changes	Pop. annoyed		Changes
	Do-Min+	Strat. 1	dB(A)	Do-Min+	Strat. 1	Popul.
Hastings - Wadhurst	58.83	58.96	0.12	242	242	0
Wadhurst - Tonbridge	58.84	60.98	2.13	231	252	21
Eastbourne - Polegate	63.00	63.00	0.00	243	243	0
Pevensey - Bexhill	62.28	63.11	0.83	230	246	15
Bexhill - Hastings	61.43	63.54	2.11	334	412	77
Hastings - Ashford	58.23	61.20	2.98	253	299	46
Total				**1,534**	**1,693**	**160**

E.1.5 Changes in rail noise levels are only significant for the Wadhurst to Tonbridge and Hastings to Ashford sections of the line. On the Hastings to Ashford line, the benefits from electrification are outweighed by increases in frequencies. Overall, there would be an additional 160 people annoyed by rail noise in comparison to the Do Minimum Plus scenario.

E.1.6 The overall noise impact can be considered **neutral**.

Air pollution

E.1.7 Table E 1.3 presents the results of the calculations of local (NO_2 and PM_{10}) and global (CO_2) emissions for Strategy 1, considering the point-of-use and production stage emissions.

Table E 1.3 Assessment of Local and Global Emission Levels

Source	Indicator	Do-Min +	Strategy 1
Local emissions			
Point-of-use	NO_2 emissions (tonne/year)	13,775	13,773
	Index (tonne-people/km^2)	6,554,935	6,553,761
	Changes NO_2 (tonne/year)		-2.5
	% changes		0.0%
	changes car		22.6
	changes bus		7.9
	changes rail		-33.0
Production	Petrol	773	772
	Diesel	67	67
	Electricity	1,863	2,019
	Total	2,703	2,859
	% changes		5.8%
Total	Point-of-use + Production	16,478	16,632
	% changes		0.9%

Point-of-use	PM_{10} emissions (tonne/year)	145	143
	Index (tonne-people/km^2)	69,033	68,173
	Changes PM_{10} (tonne/year)		-1.8
	% changes		-1.2%
	changes car		-0.3
	changes bus		0.6
	changes rail		-2.1
Production	Petrol	44	44
	Diesel	2	2
	Electricity	206	223
	Total	252	269
	% changes		6.9%
Total	Point-of-use + Production	398	412
	% changes		3.9%
Global emissions			
Point-of-use	CO_2 emissions (tonne/year)	1,368,634	1,365,227
	Changes CO_2 (tonne/year)		-1,054.1
	% changes		-0.1%
	changes car		-1,142.2
	changes bus		777.0
	changes rail		-688.9
Production	Petrol	169,554	169,421
	Diesel	12,705	12,697
	Electricity	494,680	536,334
	Total	676,939	718,451
	% changes		6.1%
Total	Point-of-use + Production	2,043,219	2,083,678
	% changes		2.0%

E.1.8 Strategy 1 would provoke a small reduction in point-of-use emission levels of PM_{10} (by 1.2%) and negligible changes for NO_2 and CO_2. The rail schemes are responsible for a significant proportion of the reduction in emissions. Therefore, in terms of local emissions the overall impact is **slight positive**.

E.1.9 Considering the emissions produced at the power station, there is an increase in the emission level for all pollutants (between 5.8 and 6.9%). Overall, considering the emissions at the point-of-use and the production stage emissions at the power station, the total increases in the levels of NO_2, PM_{10} and CO_2 are 0.9, 3.9 and 2.0%. In terms of global emissions, the overall impact is **slight negative**.

E.1.10 A separate assessment of local air pollution emissions has been made for a selection of road and rail links, in terms of NO_2 and PM_{10}. Because CO_2 is a global pollutant its assessment is not made at the local level. Table 1.4 shows the results of the assessment of local air pollution (in terms of emissions) at specific road and rail links.

Table E 1.4 Local Air Pollutant Emission Levels at Specific Road and Rail Links

	NO_2 (kg/year)			PM_{10} (kg/year)		
	Do-Min	**+ Strat. 1**	**Change**	**Do-Min**	**+ Strat. 1**	**Change**
Road links:						
A21 Tonbridge - Pembury Off-line dualled	-	-	-	-	-	-
A21 Tonbridge - Pembury (existing)	82,962	92,846	9,884	2,004	1,669	-335
A21 Hurst Green - John's Cross	74,378	81,017	6,640	842	885	43
A21 John's Cross - Hastings	122,179	117,654	-4,525	1,472	1,406	-65
A2100 Battle Road (Battle to Baldslow)	54,690	54,744	54	712	711	-1
A259 Bexhill & Hastings Western Bypass	-	-	-	-	-	-
A259 Hastings Eastern Bypass	-	-	-	-	-	-
A259 Pevensey - Western Bypass	62,700	62,679	-21	621	620	0
A259 Western Bypass - Bexhill	34,377	34,436	60	358	359	1
A259 Bexhill - Hastings Town Centre	32,782	32,699	-83	779	776	-3
A259 Hastings Town Centre	22,891	22,913	22	532	532	0
A259 Hastings Town Centre - Eastern bypass	24,684	24,958	274	290	294	4
A259 Eastern Bypass - Rye	56,135	59,605	3,470	691	657	-35
A26 Tonbridge - Tunbridge Wells	76,549	74,524	-2,025	2,036	1,937	-99
A28 Baldslow - A268	86,518	85,477	-1,041	1,107	1,092	-14
B2093 The Ridge	46,101	45,876	-226	652	649	-3
Gillsman's Hill	6,311	6,446	135	85	87	2
Bexhill Northern Approach Road	-	-	-	-	-	-
Total selected roads			**12,617**			**-507**
Rail links:						
Hastings – Wadhurst	0	0	0	0	0	0
Wadhurst – Tonbridge	0	0	0	0	0	0
Eastbourne – Polegate	0	0	0	0	0	0
Pevensey – Bexhill	0	0	0	0	0	0
Bexhill – Hastings	0	0	0	0	0	0
Hastings – Ashford	33,009	0	-33,009	2,095	0	-2,095

E.1.11 For road traffic, the most substantial benefits in terms of emission reductions occur at the A21 between John's Cross and Hastings, while the most significant increases in emissions are also on A21 between Tonbridge and Pembury and between Hurst Green and John's Cross. As far as rail emissions are concerned, electrification of the Hastings to Ashford link means the elimination of local emissions at the point-of-use.

Landscape

E.1.12 The landscape impacts from the implementation of Strategy 1 are summarised in Table E 1.5.

Table E 1.5 Landscape Impacts

Location	Features	Importance	Impact
Western bypass	Landscape character, High Weald AONB and setting of SSSI	High	neutral
Western bypass	Loss of agricultural land	High	neutral
Eastern bypass	Landscape character, High Weald AONB and setting of SSSI	High	neutral
Eastern bypass	Loss of agricultural land	High	neutral
A21 Tonbridge-Pembury dual	Landscape character, High Weald AONB and setting of SSSI	High	neutral
A21 Tonbridge-Pembury dual	Loss of woodland and agricultural land	High	neutral
Provision of parking at rail stations	Land for parking within High Weald AONB	Moderate	neutral
Hastings-Ashford rail line	Landscape quality within High Weald AONB	Moderate	slight adverse
A21 Pembury-Hastings	Landscape quality in AONB	Moderate	neutral
Overall			Neutral

E.1.13 The overall landscape impact can be considered **neutral**.

Townscape

E.1.14 The townscape impacts from the implementation of Strategy 1 are summarised in Table E 1.6.

Table E 1.6 Townscape Impacts

Location	Features	Importance	Impact
A259 Baldslow junction	Urban setting	Moderate	neutral
Gillsman's Hill	Local character	Moderate	neutral
Hastings	Old town	High	neutral
The Ridge	Local character	Moderate	slight adverse
A21/Hurst Green	Local character	Moderate	neutral
Overall			Neutral

E.1.15 The overall townscape impacts are considered **neutral**.

Heritage

E.1.16 The heritage impacts are summarised in Table E 1.7

Table E 1.7 Heritage Impacts

Location	Features	Importance	Impact
Western bypass	Listed building Grade II (demolition)	Moderate	neutral
Eastern bypass	Archaeological features, historical buildings	Moderate	neutral
A21 Tonbridge-Pembury	Listed Park Grade II	Moderate	neutral
Overall			**Neutral**

E.1.17 The overall heritage impacts are considered **neutral**.

Biodiversity

E.1.18 The biodiversity impacts are summarised in Table E 1.8

Table E 1.8 Biodiversity Impacts

Location	Features	Importance	Impact
Eastern bypass	Loss of woodland (incl. Ancient)	High	neutral
Tonbridge-Pembury dual	Loss of woodland (incl. Ancient)	High	neutral
Western bypass	Impact on SSSI	High	neutral
Hastings - Ashford rail line	Impact on SSSI NE of Rye	Moderate	slight adverse
Overall			**Slight adverse**

E.1.19 The overall biodiversity impacts are considered **slight adverse**.

Water environment

E.1.20 The water envronment impacts are summarised in Table E 1.9.

Table E 1.9 Water Envrionment Impacts

Location	Features	Importance	Impact
Western bypass	Ditches and streams lost or culverted	High	neutral
Eastern bypass	Ditches and streams lost or culverted	High	neutral
Hastings - Ashford rail line	Ditches and streams in SSSI maybe affected	Moderate	slight adverse
Overall			**Slight adverse**

E.1.21 The overall water environment impacts are considered **slight adverse**.

Journey Ambience

E.1.22 Table E 1.10 illustrates the assessment of changes in private and public transport journey ambience. The impact is measured in terms of positive (+), negative (-) or neutral (0). The table also shows the number of travellers benefited or disbenefited by each indicator.

Table E 1.10 Journey Ambience

Factor	Indicator	Strategy 1	
		Impact (-, 0, +)	N. travellers affected (per day)
Travel care	Cleanliness	+	41,563
	Facilities	+	41,563
	Information	+	41,563
	Environment	+	41,563
Travellers' views	Visual intrusion	0	2,207,903
Traveller stress	Frustration	0	2,166,341
	Fear of accidents	0	2,166,341
	Route uncertainty	0	2,207,903
Overall impact			**Slight beneficial**

E.1.23 The benefits in traveller care are experienced by public transport users, most especially for those travelling on the Ore-Bexhill 'metro', the improved Wadhurst-Tonbridge service and the Hastings to Ashford line. Without the construction of new roads the conditions for travellers on the road network will not significantly differ from the Do Minimum Plus.

E.1.24 Therefore the results of the framework suggest that the overall impact of Strategy 1 on journey ambience can be considered **slightly beneficial**. Particular benefits in terms of journey ambience can be expected for the Hastings to Ashford rail scheme.

Safety

Accidents

E.1.25 The public transport accident impacts, in terms of the number and monetary valuation of accidents, according to different injury types, are summarised in Table E 1.11.

Table E 1.11 Public Transport Annual Accident Impacts

	DO-MINIMUM +				Strategy 1			
Injury	**N. accidents**		**Valuation (£m)**		**N. accidents**		**Valuation (£m)**	
	Bus	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**
Slight	7.95	46.79	£0.06	£0.32	7.95	48.06	£0.06	£0.33
Serious	0.12	1.92	£0.01	£0.17	0.12	1.97	£0.01	£0.18
Fatal	0.00	0.21	£0.00	£0.16	0.00	0.21	£0.00	£0.17
Total	8.08	48.91	£0.07	£0.66	8.08	50.24	£0.07	£0.68
Changes					0.00	1.33	£0.00	£0.02

E.1.26 The total number of public transport accidents is predicted to increase slightly (by about 1.2 per year), mostly as a result of the implementation of rail schemes. In monetary terms, this represents about £20,000 annually. The location of accidents is considered under the "Distribution and Equity" section of the Supporting Analyses.

E.1.27 Table E 1.12 shows the predictions in changes in private transport accident impacts. This is due to mode split and trip suppression effects.

Table E 1.12 Private Transport Annual Accident Impacts

	DO-MINIMUM +		Strategy 1	
Injury	**N. accidents**	**Valuation (£m)**	**N. accidents**	**Valuation (£m)**
Slight	6,189	£42.83	6,186	£42.81
Serious	1167.58	104.36	£1,167.31	£104.33
Fatal	109.83	86.12	£109.86	£86.14
Total	7466.63	233.31	£7,463.56	£233.29
Changes			-£3.06	-£0.02

E.1.28 The total number of private transport accidents is estimated to decrease by about 3 annually (most of which would be slight). In monetary terms, this represents about £20,000 annually.

E.1.29 The overall safety impacts can be considered **neutral**.

Security

E.1.30 Table E 1.13 presents the changes in the security indicators and the respective impact assessment.

Table E 1.13 Public Transport Security Impacts

Indicator	Importance	DO-MINIMUM + Assessment	Strategy 1 Assessment
Site perimeters, entrances and exits	low	moderate	moderate
Formal surveillance	medium	poor	poor
Informal surveillance	low	poor	poor
Landscaping	medium	moderate	high
Lighting and visibility	high	poor	moderate
Emergency call	high	moderate	moderate
Overall impact			**Neutral**

E.1.31 The introduction of public transport measures in three quality bus partnership schemes will slightly improve pedestrian and public transport user security, but the overall score is **neutral**.

Economy

Economic Efficiency

E.1.32 The economy impacts are assessed in terms of the cost and benefit implications from the combined effect of all schemes implemented in the scope of each strategy.

E.1.33 The benefits of the schemes in Strategy 1 have been calculated as recommended in GoMMMS, and the summary is presented in Table E 1.14.

Table E 1.14 Summary of Net Benefits (£ annual in 2020, 1994 prices)

Benefit	Road	Rail	Bus	Total
Revenue	£0	£499,801	£120,046	£619,847
Other benefits				
Travel time	£1,318,194	£825,399	£292,532	£2,436,124
Vehicle operating costs	£24,991	£0	£0	£24,991
Accident	£19,494	-£17,880	£0	£1,614
Total other benefits	£1,362,678	£807,518	£292,532	£2,462,729

E.1.34 The highest saving is associated with travel time reductions.

E.1.35 The assessment of Transport Economic Efficiency (TEE) is based on the GoMMMS TEE table, given in Table E 1.15, in terms of the net changes.

Table E 1.15 Transport Economic Efficiency for Strategy 1 (£m PV)

	Total	Net economic changes (£ m)			
User benefits		**Car**	**Bus & coach**	**Rail**	**Other**
Travel time	16.1	8.5	2.0	5.6	0.0
Vehicle operating costs	0.2	0.2	0.0	0.0	0.0
User charges	-4.4	0.0	-1.0	-3.4	0.0
Net impact	11.9	0.0	0.0	0.0	0.0
Private Sector Provider Impacts			**Bus & coach**	**Rail**	**Other**
Revenue	4.4	0.0	1.0	3.4	0.0
Operating costs	-31.4	0.0	0.0	-31.4	0.0
Investment costs	-15.2	0.0	-0.1	-15.1	0.0
Grant/subsidy	0.0	0.0	0.0	0.0	0.0
Net impact	-42.2	0.0	0.0	0.0	0.0
Public Sector Provider Impacts		**Road infrastr.**	**Bus & coach**	**Rail**	**Other**
Revenue	0.0	0.0	0.0	0.0	0.0
Operating costs	-10.3	-10.3	0.0	0.0	0.0
Investment costs	-7.6	-6.2	-1.4	0.0	0.0
Net impact	-17.9	0.0	0.0	0.0	0.0
Other Government Departments		**Road infrastr.**	**Bus & coach**	**Rail**	**Other**
Grant/subsidy payments	42.2	0.0	-0.9	43.1	0.0
Indirect tax revenues	0.0	0.0	0.0	0.0	0.0
Net impact	42.2				
Total					
Net Present Value (no accident benefit)	-48.2				
Net Present Value (with accident benefit)	-48.2				
Present Value of Costs	-64.5				
Present Value of Cost to Govern.	-60.1				
Benefit/Cost ratio	0.3				
Value/Cost to Government ratio	-0.8				

Notes: Beneficial Cost ratio and Value/Cost ratio based in the net present value including accident benefits
Net present value excludes Grant/Subsidy payments by Government Grant/Subsidy payments by Government assumed equal to the net impact from the private sector provider (transfer of funds), if positive (as a subsidy only, not as a surplus).
User charges are assumed equal (but with opposite signal) to the revenue from the private sector Provider.
Bus (private sector) investment costs: assume £120,000 per corridor in 1st year of operation.
Bus operating costs: benefits recycled in more reliable services (zero).
Bus revenue assumed at £50,000 per corridor per annum (1999 prices).
Bus travel time and accident savings assumed Zero due to the lack of bus trip data.
A £5m PV has been assumed as the benefit from travel time savings for the Strategies including both Western and Eastern bypasses, in order to account for the strategic trips.
QBP passenger benefits: A259: £1.2m PV. A2100: £1m PV. A21: £1.5m PV. A26: £0.8m PV
The freight user benefits are included in the personal travel user benefits

E.1.36 The net present value for this strategy has been calculated at -£48.3 million, while the present value of costs is -£64.5 million and the present value of costs to the Government is -£60.1 million. The benefit/cost ratio is 0.3, which suggests that the transport benefits are lower than the costs incurred.

Reliability

E.1.37 The impact on reliability was estimated with basis on the changes to the Volume/Capacity ratio in the selected road links. Table E 1.16 presents the results of changes in V/C ratio and the overall impact assessment score.

Table E 1.16 Changes in V/C Ratio and Impact Assessment Score

	Do Min +		Strategy 1		
Link	**V/C**	**Weight**	**V/C**	**Change**	**Weighted**
A21 Tonbridge - Pembury off-line dualled	-	-	-	-	
A21 Tonbridge - Pembury	0.99	31,525	1.09	10.18%	38,273
A21 Hurst Green - John's Cross	0.69	10,348	0.66	-4.44%	9,451
A21 John's Cross – Hastings	0.79	13,802	0.76	-3.97%	12,729
A2100 Battle Road (Battle to Baldslow)	0.81	14,511	0.81	0.06%	14,530
A259 Bexhill & Hastings Western Bypass	-	-	-	-	
A259 Hastings Eastern Bypass	-	-	-	-	
A259 Pevensey - Western Bypass	0.92	18,692	0.92	-0.04%	18,677
A259 Western Bypass - Bexhill	0.78	13,271	0.78	0.21%	13,328
A259 Bexhill - Hastings Town Centre	1.03	33,817	1.03	-0.25%	33,645
A259 Hastings Town Centre	0.61	11,726	0.61	0.09%	11,748
A259 Hastings Town Centre-Eastern Bypass	0.43	4,116	0.44	1.20%	4,215
A259 Eastern Bypass - Rye	0.42	3,798	0.43	2.55%	3,995
A26 Tonbridge - Tunbridge Wells	1.04	23,857	1.02	-2.38%	22,733
A28 Baldslow - A268	0.30	2,026	0.30	-1.23%	1,977
B2093 The Ridge	0.80	14,179	0.80	-0.49%	14,041
Gillsman's Hill	0.55	6,609	0.56	2.17%	6,899
Bexhill Northern Approach Road	-	-	-	-	
Weighted change		0.81			0.82
					1.25%
Overall impact					**Neutral**

E.1.38 As a result of a small overall increase in traffic onto the road network, with little improvement to road capacity, it can be said that the highway routes are a little less reliable, but the average impact from private transport can be considered to be neutral. As a result of improved public transport (particularly on rail route from Bexhill and Hastings to Ashford) public transport journeys may be more reliable. The overall impact is **slight positive**.

Wider Economic Impacts

E.1.39 Strategy 1 is compatible with a regeneration policy to enhance the existing urban area and to promote more intensive use of sites with good public transport access. It also assists with brownfield regeneration at Ore Valley through the Bexhill-Ore Metro. A significant improvement in public transport accessibility to Ashford can help link Hastings to economic growth. However, this strategy doesn't enable full exploitation of allocated land at North Bexhill for housing or business. Following the guidelines in GoMMMS, Table E 1.17 illustrates the wider economic impacts from Strategy 1.

Table E 1.17 Wider Economic Impacts

REGENERATION				
	Is the project in a designated regeneration area?			
	Road or rail line which the proposal affects passes through regeneration area?	Road junction or rail station in regeneration area?	Access road or rail to/from site?	
Designated areas	Y/N	Y/N	Y/N	First criterion
Assisted Area Tier 1, 2 or 3	N	Y	N	N
Single Regeneration Budget	N	Y	N	N
European Structural Funds	N	N	N	N
	Is project consistent with strategy to achieve local regeneration objectives? Y/N			2nd criterion
	Y			Y
Overall assessment	Project does not have potential for significant regeneration benefits			

E.1.40 The application of the framework confirms that the **project does not have potential for significant regeneration benefits**.

Accessibility

Option Values

E.1.41 The effect of two quality bus partnership and four rail improvement schemes provide new options for public transport use. The new rail station at Glyne Gap would provide a local station for 7,532 residents (considering a 2 Km catchment around the station, using 1996 mid census data. The North Bexhill housing development would lead to a further 1,080 residents). The overall impact is considered to be **slight positive**.

Severance

E.1.42 Table E 1.18 shows the assessment of the severance impacts at selected road locations. The assessment was based on the changes in pedestrian delay when crossing the road. The overall severance impact takes into account the number of people affected in each location. The number of people affected has been measured in terms of the population living within 250 metres of each side of the link.

Table E 1.18 Severance Impacts

	Change in ped. delay(s)	**Impact level Do Min**	**+ Strategy 1**	**Severance impact**
Road location				
A21 Tonbridge - Pembury Off-line dualled	0	None	None	None
A21 Tonbridge - Pembury	5	Severe	Severe	None
A21 Hurst Green - John's Cross	-1	None	None	None
A21 John's Cross - Hastings	0	None	None	None
A2100 Battle Road (Battle to Baldslow)	0	Slight	Slight	None
A259 Bexhill & Hastings Western Bypass	0	None	None	None
A259 Hastings Eastern Bypass	0	None	None	None
A259 Pevensey - Western Bypass	0	Slight	Slight	None
A259 Western Bypass - Bexhill	0	Slight	Slight	None
A259 Bexhill - Hastings Town Centre	0	Severe	Severe	None

A259 Hastings Town Centre	0	Slight	Slight	None
A259 Hastings Town Centre - Eastern Bypass	0	None	None	None
A259 Eastern Bypass - Rye	0	None	None	None
A26 Tonbridge - Tunbridge Wells	-1	Slight	Slight	None
A28 Baldslow – A268	0	None	None	None
B2093 The Ridge	0	Slight	Slight	None
Gillsman's Hill	0	None	None	None
Bexhill Northern Approach Road	0	None	None	None
Overall impact				**Neutral**

E.1.43 There are very small changes in pedestrian delay in the selected roads and the weighted scores indicate that the overall impact of the strategy can be considered **neutral**.

Access to Public Transport

E.1.44 Strategy 1 enhances access to public transport by increasing service frequencies, particularly for local trips, and reducing journey times. Public transport measures include two quality bus partnership schemes and four rail improvement measures. The new station at Glyne Gap contributes for increased access to public transport. The overall assessment suggests that this strategy would provide **moderate positive** benefits.

Integration

Interchange

E.1.45 The impacts on public transport passenger interchange have been assessed as illustrated in Table E 1.19.

Table E 1.19 Passenger Interchange Impacts

Passenger interchange indicator	DO-MIN +	Strategy 1
Waiting environment	poor	moderate
Level of facilities	moderate	moderate
Level of information	moderate	moderate
Visible staff presence	moderate	moderate
Physical linkage for next stage journey	moderate	moderate
Connection time and risk of missing a connection	poor	poor
Qualitative score		**Slight beneficial**

E.1.46 The measures introduced within the three quality bus partnerships will improve pedestrian facilities at stops and interchanges. The overall impact has been estimated as **slight beneficial**.

Land Use

E.1.47 Strategy 1 includes schemes which are compatible with local plans in relation to public transport improvements, which would also assist with brownfield regeneration at Ore Valley. However, this strategy doesn't enable full exploitation of allocated land for housing or business. The overall impact can be considered **neutral**.

Integration with Other Government Policies

E.1.48 Strategy 1 is compatible with policies to encourage public transport use. This strategy is compatible with a regeneration policy to enhance the existing urban area and promote more intensive use of sites with good public transport access. The overall assessment impact is **slight beneficial**.

Supporting Analyses

E.1.49 This section presents the additional issues which accompany the Appraisal Summary Tables for the assessment of multi-modal studies. They are grouped under three headings: distribution and equity; affordability and financial sustainability; and practicality and public acceptability. All comparisons are made against the Do Minimum Plus strategy.

Distribution and Equity

Noise and Local Air Pollution

E.1.50 On the A21 between Tonbridge and Pembury there will be an increase in noise of nearly 2 dB(A) and around 25% for nitrogen dioxide levels (NO_2). However, particulate matter (PM) decreases by around 8%. To the west on the A26 between Tonbridge and Tunbridge Wells there will be a reduction of 5% for particulate matter and 2% for nitrogen dioxide. South of Pembury the on-line improvements will have the effect of an increase in noise of about 0.25 dB(A) and a worsening of air quality around 10%. The new station at Glyne Gap may encourage car trips to the station and hence associated noise and Local Air Pollution impacts.

E.1.51 On the A259 between Bexhill and Hastings there will be a small increase in noise (0.1-0.2 dB(A)), and NO_2 (3%) with a matching decrease in PM. For The Ridge air quality conditions will worsen by around 10% and noise will increase by 0.4 dB(A). Likewise for Gillsman's Hill the values will be around 15% and 0.6 Db(A). Between Hastings and Guestling Thorn and then on to Rye there is an increase in noise of 1 dB(A). Increased levels for NO_2 will range from 13% to 28% and for PM from 1% to 30%.

E.1.52 With the railway improvements there will be an increase in air pollution and noise (over 2 dB(A)) for those adjacent to the line between Tonbridge and Wadhurst. With the electrification of the Hastings to Ashford line there will be air quality benefits, but the increase in service frequency will lead to increased noise levels (nearly 3 dB(A)).

Other Environmental impacts

E.1.53 The construction of a new station at Glyne Gap could have an impact on an extensive archaeological site to the east and two sites of importance for nature conservation.

Accident Savings

E.1.54 The overall level of accident savings by road and rail are presented under the safety sub-objective within the NATA table. In terms of the spatial distribution of accident

savings they will be most associated with the corridors in which there is a transfer of journeys from private vehicles to public transport as encouraged by the Quality Bus Partnerships and Ore-Bexhill 'metro' and/or traffic management measures to encourage safe driving.

E.1.55 In addition to savings for transport users, the traffic managed urban areas such as the Hastings and Bexhill sea front and town centres will benefit the safety of pedestrians and cyclists.

Transport economic benefits

E.1.56 The TEE table presents the economic impacts of the strategy to transport users and transport system operators. There will however, also be particular benefits for particular types of users related to their trip purpose.

Work trips

E.1.57 There will not be significant journey time savings for car trips from areas such as Bexhill to employment centres such as the Ridge. Accessing employment opportunities at Glyne Gap however, will be improved with the new station and the metro rail service. Public transport users will also benefit from improved journey reliability delivered by the A259 Quality Bus Partnership. The Hastings to Ashford line will provide a journey time of under half an hour to access employment or connect to London or international rail services. The Wadhurst to Tonbridge rail service may enable those without access to a car to access job opportunities in Tunbridge Wells and Tonbridge.

Shopping and Leisure trips

E.1.58 The metro rail service and new station at Glyne Gap will improve access to retail facilities at Glyne Gap and the town centres of Bexhill and Hastings. The Wadhurst to Tonbridge rail service may enable those without access to a car to access retail and leisure job opportunities in Tunbridge Wells and Tonbridge.

Educational trips

E.1.59 The increased level of rail service delivered by the metro, integrated with the bus services, may provide greater opportunities for school pupils to travel by public transport in Hastings and Bexhill. The Wadhurst to Tonbridge rail service may enable some current school-run car journeys to Tunbridge Wells and Tonbridge to be replaced by rail trips.

Social exclusion

E.1.60 Whilst social exclusion is not explicitly stated as a supporting analyses issue it is a key element for the study. It has, therefore, been covered in the two sections below.

Wider economic impacts

E.1.61 The AST entry for Economy presents the assessment at the strategic level. There are however within this important impacts at the disaggregate level, in terms of equity between different economic groups, most pertinently for the unemployed.

E.1.62 In Gensing, Maze Hill, Central St Leonards and Castle the unemployment rate is above 8.5%. For those in those wards seeking work or on low wages the strategy will bring benefits. The public transport investment will aid travel to employment opportunities.

Access to the Transport system

E.1.63 In Hastings and Bexhill over 20% of households are without a car. In a number of wards the figure is greater than 40%. In most instances the higher figures are around the town centres of Bexhill, St Leonards and Hastings (Central (over 50%), Sackville, Gensing, Central St Leonards (over 50%), Braybrooke, Castle (over 50%), Mount Pleasant and Old Hastings), as well as the wards of Hollington and Broomgrove.

E.1.64 The strategy will have a significant benefit to those who are reliant upon public transport. These will be derived from the metro rail service, new station at Glyne Gap and Quality Bus Partnerships along the A259. The traffic management measures introduced will improve conditions for cyclists and pedestrians along the existing A259 between Bexhill and Guestling Thorn. Rail services to Ashford will also be improved.

Affordability and financial sustainability

E.1.65 Whilst the overall value for money of the strategy is presented in the AST, Tables E 1.20 and E 1.21 identify the disaggregation of funding, both for investment and operation, between public and private organisations. The financial breakdown is presented against the time profile for the strategy.

Table E 1.20 Strategy 1 Private Sector Affordability and Financial Sustainability

	£ (million undiscounted)			
Private Sector Investment	**TOTAL**	**Rail**	**Bus**	**explanation**
Investment Cost				
Year 1 (2001)	£0.00	£0.00	£0.00	
Year 2	-£3.44	-£3.44	£0.00	
Year 3	-£13.71	-£13.61	-£0.10	
Year 4	-£10.39	-£10.39	£0.00	
Year 5	£0.00	£0.00	£0.00	
TOTAL	-£27.55	-£27.44	-£0.10	(1)
Capital Grants	£0.00			(2)
Private Sector Operators				
Year 1				
Change in operator costs	£0.00	£0.00	£0.00	(3)
Change in operator revenue	£0.04	£0.00	£0.04	(4)
NET IMPACT	£0.04	£0.00	£0.04	(5) = (4) + (3)
Subsidy	£0.00	£0.00	£0.00	= -(5)

Year 5				
Change in operator costs	-£4.07	-£4.07	£0.00	(7)
Change in operator revenue	£0.44	£0.34	£0.10	(8)
NET IMPACT	-£3.63	-£3.73	£0.10	(9)=(8)-(7)
Subsidy	£3.73	£3.73	£0.00	(10)
Year 10				
Change in operator costs	-£4.07	-£4.07	£0.00	(11)
Change in operator revenue	£0.50	£0.40	£0.11	(12)
NET IMPACT	-£3.57	-£3.68	£0.11	(13)=(12)+(11)
Subsidy	£3.68	£3.68	£0.00	(14)
Private Sector NET IMPACT				
Investm. net of capital grant	-£27.55	-£27.44	-£0.10	(1)+(2)
Operations net of subsidy				
Year 1	£0.04	£0.00	£0.04	(5)+(6)
Year 5	-£3.63	-£3.73	£0.10	(9)+(10)
Year 10	-£3.57	-£3.68	£0.11	(13)+(14)

Table E 1.21 Strategy 1 Public Sector Affordability and Financial Sustainability

	£ (million undiscounted)				
Public Sector Investment	**Total**	**HA**	**Rail**	**Bus**	**explanation**
Investment Cost					
Year 1 (2001)	-£0.09	-£0.09	£0.00	£0.00	
Year 2	-£3.56	-£2.15	£0.00	-£1.41	
Year 3	-£2.06	-£2.06	£0.00	£0.00	
Year 4	-£7.03	-£7.03	£0.00	£0.00	
Year 5	£0.00	£0.00	£0.00	£0.00	
TOTAL	-£12.73	-£11.33	£0.00	-£1.41	(15)
Private Sector Contributions	£0.00	£0.00	£0.00	£0.00	(16)
Investment net of contributions	-£12.73	-£11.33	£0.00	-£1.41	(17)=(15)+(16)
Public Sector Operation					
Year 1					
Change in operator costs	£0.00	£0.00			(18)
Change in operator revenue	£0.00	£0.00			(19)
NET IMPACT	£0.00	£0.00			(20)=(19)+(18)
Subsidy	£0.00		£0.00		
Year 5					
Change in operator costs	-£1.33	-£1.33			(21)
Change in operator revenue	£0.00	£0.00			(22)
NET IMPACT	-£1.33	-£1.33			(23)=(22)+(21)
Subsidy	£1.33		£1.33		
Year 10					
Change in operator costs	-£1.33	-£1.33			(24)
Change in operator revenue	£0.00	£0.00			(25)
NET IMPACT	-£1.33	-£1.33			(26)=(25)+(24)
Subsidy	£1.33		£1.33		

Practicality and public acceptability

Feasibility

Technical

E.1.66 Discussions over the schemes in the strategy were held with local authorities, Highways Agency, sSRA, Railtrack and public transport operators. The online improvements along the A21 south of Pembury were only chosen to be indicative and therefore their full technical feasibility has not been evaluated. The online traffic management measures also require further design work and evaluation.

Legal

E.1.67 There are no legal issues regarding the schemes in the strategy.

Political

E.1.68 This strategy does not have local political support, except with regard to Guestling Thorn Parish Council's opposition to the Eastern bypass scheme.

Funding

E.1.69 The schemes in the strategy have been developed in cooperation with potential investment and operation funders. The local transport authorities will be responsible for the local road schemes, including investment related to Quality Bus Partnerships. On the operations side of the Partnership are the bus companies. For the rail service improvement funding could be provided by the sSRA and train operators. For rail infrastructure measures Railtrack and the operator would provide funding, with scope for local authority involvement.

Enforcement

E.1.70 The only schemes proposed which will potentially require enforcement are the local road schemes for traffic management and Quality Bus Partnerships. The former will be largely self-enforcing.

'Breadth of Decision'

E.1.71 The study area extends north from Hastings along the A21 corridor to Tonbridge and west and east as far as Pevensey and Rye respectively. The study seeks to provide a transport strategy at the strategic level within this area and related to the wider South-east.

E.1.72 Among the members of the Steering Group are representatives of the County Councils for East Sussex and Kent, the Borough Councils of Hastings, Tunbridge Wells, and Tonbridge and Malling as well as Rother District Council. Alongside them sit a number of agencies (sSRA, SERPLAN, SEEDA and HA) in additional to local business and environmental interests.

Complexity ("depth" of the decision)

E.1.73 By its nature as a strategic study the strategy comprises a number of schemes. These encompass a variety of complex inter-related issues, some of which have implications for transport services beyond the study area (e.g. timetabling Ashford-London rail services).

Time-scale

E.1.74 It is envisaged that the strategy will be in place by 2010.

Phasing

E.1.75 In the lifetime of current LTP the majority of the schemes within the strategy will be implemented.

E.1.76 Whilst it is an integrated strategy the schemes within it are scheduled to be completed in phases. These would be in the following order:

- The Quality Bus Partnership on the A26.
- Rail improvements between Wadhurst and Tonbridge and the A259 traffic management measures and Quality Bus Partnership.
- The Ore-Bexhill 'metro' service and new station at Glyne Gap.
- A26 traffic management measures, A259 online improvements east of Hastings and the Hastings to Ashford rail improvements.
- Beyond 2006, and reliant on a further decision making process, the online improvements between Pembury and Hastings would be constructed.

Partitioning

E.1.77 This strategy has clearly differentiated elements in terms of the north-south axis and coastal axis. However, there will be little merit in partitioning them due to their comprehensive nature for the study area meaning that they are highly unlikely to become redundant.

Complementarity

E.1.78 A key objective in the study has been the development of a set of schemes, which are complementary to each other, to achieve a comprehensive integrated strategy. An example of this includes traffic management measures and a Quality Bus Partnership on the A26 to complement the A21 online improvements between Tonbridge and Pembury.

Conflicts

E.1.79 The local authorities argue that this strategy conflicts with the housing requirements placed upon them by Central Government.

E.1.80 Access to Hastings is a free-standing study in its own right. Whilst the South Coast MMS will also address the integration of the Hastings area into the wider South-east region the two studies are not in conflict.

Political nature of proposals

E.1.81 There is political agreement on the need for regeneration of the Hastings and Bexhill local economy and the role that transport can play in contributing to this. It is argued that the road-based transport measures are required to enable land to be opened up for development.

Public Acceptability

E.1.82 From the public consultation exercise this strategy was joint third favourite for respondents to the newsletter questionnaire, receiving 14% of support (along with Strategy 3). From the household survey it received 24% of responses, only 2% less than both Strategies 3 and 5.

E.1.83 From 25 submissions from the Wider Reference Group 13 were heavily in favour of the public transport improvements rather than more road building.

E.2. STRATEGY 2

New Approach to Appraisal (NATA)

E.2.1 This section describes the assessment of Strategy 2 against the five Central Government objectives and sub-objectives as set out in GoMMMS.

Environment

Noise

E.2.2 Table E 2.1 shows the results of the noise assessment for specific road links, in terms of the noise level ($L_{10\text{-}18\ hour}$ dB(A)) in the Do Minimum Plus and Strategy 2 scenarios and the number of people annoyed by exposure to road traffic noise. The population annoyed represent the number of people who are disturbed by different levels of road traffic noise (according to the annoyance response function given in GoMMMS).

Table E 2.1 Noise Assessment for Specific Roads

Location	L10-18 hour dB(A)		Changes	Pop. Annoyed [1]		Changes
	Do-Min+	Strat. 2	dB(A)	Do-Min+	Strat. 2	popul.
A21 Tonbridge - Pembury off-line dual	-	-	0.00	0	0	0
A21 Tonbridge - Pembury	72.97	74.44	1.47	82	94	13
A21 Hurst Green - John's Cross	72.38	72.46	0.07	40	40	0
A21 John's Cross – Hastings	72.59	72.47	-0.13	842	842	0
A2100 Battle Road (Battle to Baldslow)	70.39	70.39	0.00	91	91	0
A259 Bexhill & Hastings Western Bypass	-	-	0.00	0	0	0
A259 Hastings Eastern Bypass	-	-	0.00	0	0	0
A259 Pevensey – Western Bypass	72.54	72.53	0.00	5	5	0
A259 Western Bypass – Bexhill	71.45	71.45	0.00	284	284	0
A259 Bexhill - Hastings Town Centre	71.08	71.08	0.00	774	774	0
A259 Hastings Town Centre	68.84	68.83	-0.01	240	240	0
A259 Hastings Town Centre - Eastern Bypass	68.21	68.25	0.04	534	534	0
A259 Eastern Bypass - Rye	67.76	68.46	0.70	72	78	6
A26 Tonbridge - Tunbridge Wells	72.56	72.51	-0.05	594	594	0
A28 Baldslow - A268	69.10	69.04	-0.05	119	119	0
B2093 The Ridge	70.00	69.99	-0.02	269	246	-24
Gillsman's Hill	68.57	68.59	0.02	62	62	0
Bexhill Northern Approach Road	-	-	0.00	0	0	0
Total on selected links				**4,008**	**4,002**	**-6**

Notes: 1) The estimate of the population potentially affected by noise has been defined as the number of people living within a 50 metre buffer of each road, for urban roads and 250 metre for new roads (namely the Western and Eastern bypasses and A21 Tonbridge to Pembury off-line dual), where the unobstructed distance from source to receptor can be significantly higher.

E.2.3 Changes in noise levels are chiefly driven by the combined effect of changes in traffic flows and speeds. Increases in both flows and speed contribute to increasing noise levels. The highest reduction in noise level is on the A21 John's Cross-Hastings, which is due to the reduction of flows, despite slight increase in speed. The only impacts in terms of people affected by noise levels were estimated for the existing A21 between

Tonbridge and Pembury and the A259 east of Hastings, but these are small and only affect a few people in the selected locations.

E.2.4 Table E 2.2 presents similar noise assessment results for rail links.

Table E 2.2 Noise Assessment for Rail Links

Location	L10-18 hour dB(A)		Changes	Pop. annoyed		Changes
	Do-Min+	Strat. 2	dB(A)	Do-Min+	Strat. 2	Popul.
Hastings - Wadhurst	58.83	61.07	2.24	242	286	44
Wadhurst - Tonbridge	58.84	59.61	0.76	231	252	21
Eastbourne - Polegate	63.00	63.00	0.00	243	243	0
Pevensey - Bexhill	62.28	63.11	0.83	230	246	15
Bexhill - Hastings	61.43	63.61	2.18	334	412	77
Hastings - Ashford	58.23	61.20	2.98	253	299	46
Total				**1,534**	**1,737**	**204**

E.2.5 Changes in rail noise levels are only significant for the Wadhurst to Tonbridge and Hastings to Ashford sections of the line. On the Hastings to Ashford line, the benefits from electrification are outweighed by increases in frequencies. Overall, there would be an additional 204 people annoyed by rail noise in comparison to the Do Minimum Plus scenario.

E.2.6 The overall noise impact for Strategy 2 is **neutral**.

Air pollution

E.2.7 Table E 2.3 the results of the calculations of local (NO_2 and PM_{10}) and global (CO_2) emissions for Strategy 2, considering the point-of-use and production stage emissions.

Table E 2.3 Assessment of Local and Global Emission Levels

Source	Indicator	Do-Min +	Strategy 2
Local emissions			
Point-of-use	NO_2 emissions (tonne/year)	13,775	13,762
	Index (tonne-people/km^2)	6,554,935	6,548,919
	Changes NO_2 (tonne/year)		-12.6
	% changes		-0.1%
	changes car		12.3
	changes bus		8.0
	changes rail		-33.0
Production	Petrol	773	771
	Diesel	67	67
	Electricity	1,863	2,083
	Total	2,703	2,922
	% changes		8.1%
Total	Point-of-use + Production	16,478	16,684
	% changes		1.2%

Point-of-use	PM_{10} emissions (tonne/year)		145	143
	Index (tonne-people/km^2)		69,033	68,085
	Changes PM_{10} (tonne/year)			-2.0
	% changes			-1.4%
		changes car		-0.5
		changes bus		0.6
		changes rail		-2.1
Production		Petrol	44	44
		Diesel	2	2
		Electricity	206	230
	Total		252	276
	% changes			9.6%
Total	Point-of-use + Production		398	419
	% changes			5.6%
Global emissions				
Point-of-use	CO_2 emissions (tonne/year)		1,368,634	1,363,451
	Changes CO_2 (tonne/year)			-2,830.3
	% changes			-0.2%
		changes car		-2,918.4
		changes bus		777.0
		changes rail		-688.9
Production		Petrol	169,554	169,203
		Diesel	12,705	12,679
		Electricity	494,680	553,189
	Total		676,939	735,070
	% changes			8.6%
Total	Point-of-use + Production		2,043,219	2,098,521
	% changes			2.7%

E.2.8 Looking at the changes in emissions at the point-of-use, Strategy 2 would cause a negligible reduction in the emission level of NO_2 and CO_2 and a small reduction in PM_{10} (by 1.4%). The rail schemes are responsible for a significant proportion of the reduction in emissions. The overall impact in terms of local air pollution can be considered **slight positive**.

E.2.9 Considering the emissions produced at the power station, there is an increase in the emission level for all pollutants (between 8.1 and 9.6%). Overall, considering the emissions at the point-of-use and the production stage emissions at the power station, the total increases in the levels of NO_2, PM_{10} and CO_2 are 1.2, 5.6 and 2.7%. In terms of global pollution, the overall impact is **slight negative**.

E.2.10 A separate assessment of local air pollution emissions has been made for a selection of road and rail links, in terms of NO_2 and PM_{10}. Because CO_2 is a global pollutant its assessment is not made at the local level. Table E 2.4 shows the results of the assessment of local air pollution (in terms of emissions) at specific road and rail links.

Table E 2.4 Local Air Pollutant Emission Levels at Specific Road and Rail Links

	NO_2 (kg/year)			PM_{10} (kg/year)		
	Do-Min	+ Strat. 2	Change	Do-Min	+ Strat. 2	Change
Road links:						
A21 Tonbridge - Pembury Off-line dualled	-	-	-	-	-	-
A21 Tonbridge - Pembury (existing)	82,962	92,755	9,793	2,004	1,664	-341
A21 Hurst Green - John's Cross	74,378	80,787	6,409	842	882	40
A21 John's Cross - Hastings	122,179	117,585	-4,594	1,472	1,405	-67
A2100 Battle Road (Battle to Baldslow)	54,690	54,707	16	712	712	0
A259 Bexhill & Hastings Western Bypass	-	-	-	-	-	-
A259 Hastings Eastern Bypass	-	-	-	-	-	-
A259 Pevensey - Western Bypass	62,700	62,654	-46	621	620	0
A259 Western Bypass - Bexhill	34,377	34,417	40	358	359	1
A259 Bexhill - Hastings Town Centre	32,782	32,745	-38	779	776	-3
A259 Hastings Town Centre	22,891	22,838	-54	532	530	-2
A259 Hastings Town Centre - Eastern bypass	24,684	25,005	320	290	295	5
A259 Eastern Bypass - Rye	56,135	59,547	3,413	691	656	-35
A26 Tonbridge - Tunbridge Wells	76,549	74,364	-2,185	2,036	1,927	-109
A28 Baldslow - A268	86,518	85,367	-1,150	1,107	1,091	-16
B2093 The Ridge	46,101	45,990	-112	652	652	0
Gillsman's Hill	6,311	6,333	21	85	85	0
Bexhill Northern Approach Road	-	-	-	-	-	-
Total selected roads			**11,834**			**-527**
Rail links:						
Hastings – Wadhurst	0	0	0	0	0	0
Wadhurst – Tonbridge	0	0	0	0	0	0
Eastbourne – Polegate	0	0	0	0	0	0
Pevensey – Bexhill	0	0	0	0	0	0
Bexhill – Hastings	0	0	0	0	0	0
Hastings – Ashford	33,009	0	-33,009	2,095	0	-2,095

E.2.11 For road traffic, the most substantial benefits in terms of NO_2 emission reductions occur at the A21 between John's Cross and Hastings, while the most significant increases in these emissions are also on A21 between Tonbridge and Pembury and between Hurst Green and John's Cross. The first of thes two also has the greatest reduction in PM. As far as rail emissions are concerned, electrification of the Hastings to Ashford link means the elimination of local emissions at the point-of-use.

Landscape

E.2.12 The landscape impacts from the implementation of Strategy 2 are summarised in Table E 2.5.

Table E 2.5 Landscape Impacts

Location	Features	Importance	Impact
Western bypass	Landscape character, High Weald AONB and setting of SSSI	High	neutral
Western bypass	Loss of agricultural land	High	neutral
Eastern bypass	Landscape character, High Weald AONB and setting of SSSI	High	neutral
Eastern bypass	Loss of agricultural land	High	neutral
A21 Tonbridge-Pembury dual	Landscape character, High Weald AONB and setting of SSSI	High	neutral
A21 Tonbridge-Pembury dual	Loss of woodland and agricultural land	High	neutral
Provision of parking at rail stations	Land for parking at High Weald AONB	Moderate	moderate adverse
Hastings-Ashford rail line	Landscape quality within High Weald AONB	Moderate	slight adverse
A21 Pembury-Hastings	Landscape quality in AONB	Moderate	neutral
Overall			**Slight adverse**

E.2.13 The overall landscape impact can be considered **slight adverse**.

Townscape

E.2.14 The townscape impacts from the implementation of Strategy 2 are summarised in Table E 2.6.

Table E 2.6 Townscape Impacts

Location	Features	Importance	Impact
A259 Baldslow junction	Urban setting	Moderate	neutral
Gillsman's Hill	Local character	Moderate	neutral
Hastings	Old town	High	neutral
The Ridge	Local character	Moderate	neutral
A21/Hurst Green	Local character	Moderate	neutral
Overall			**Neutral**

E.2.15 The overall townscape impacts are considered to be **neutral**.

Heritage

E.2.16 The heritage impacts are summarised in Table E 2.7

Table E 2.7 Heritage Impacts

Location	Features	Importance	Impact
Western bypass	Listed building Grade II (demolition)	Moderate	neutral
Eastern bypass	Archaeological features, historical buildings	Moderate	neutral
A21 Tonbridge-Pembury	Listed Park Grade II	Moderate	neutral
Overall			**Neutral**

E.2.17 The overall heritage impacts are considered **neutral**.

Biodiversity

E.2.18 The biodiversity impacts are summarised in Table E 2.8.

Table E 2.8 Biodiversity Impacts

Location	Features	Importance	Impact
Eastern bypass	Loss of woodland (incl. Ancient)	High	neutral
Tonbridge-Pembury dual	Loss of woodland (incl. Ancient)	High	neutral
Western bypass	Impact on SSSI	High	neutral
Hastings - Ashford rail line	Impact on SSSI NE of Rye	Moderate	slight adverse
Overall			**Slight adverse**

E.2.19 The overall biodiversity impacts are considered **slight adverse**.

Water environment

E.2.20 The water environment impacts are summarised in Table E 2.9.

Table E 2.9 Water Environment Impacts

Location	Features	Importance	Impact
Western bypass	Ditches and streams lost or culverted	High	neutral
Eastern bypass	Ditches and streams lost or culverted	High	neutral
Hastings - Ashford rail line	Ditches and streams in SSSI maybe affected	Moderate	slight adverse
Overall			**Slight adverse**

E.2.21 The overall water environment impacts are considered **slight adverse**.

Journey Ambience

E.2.22 Table E 2.10 illustrates the assessment of changes in private and public transport journey ambience. The impact is measured in terms of positive (+), negative (-) or neutral (0). The table also shows the number of travellers benefited or disbenefited by each indicator.

Table E 2.10 Journey Ambience

Factor	Indicator	Strategy 2	
		Impact (-, 0, +)	N. travellers affected (per day)
Travel care	Cleanliness	+	41804
	Facilities	+	41804
	Information	+	41804
	Environment	+	41804
Travellers' views	Visual intrusion	0	2207372
Traveller stress	Frustration	0	2165568
	Fear of accidents	0	2165568
	Route uncertainty	0	2207372
Overall impact			**Slight beneficial**

E.2.23 The benefits in traveller care are experienced by public transport users, most especially for those travelling on the Ore-Bexhill ‘metro’ and the Hastings to Ashford line. Without

the construction of new roads the conditions for travellers on the road network will not significantly differ from the Do Minimum Plus.

E.2.24 Therefore the results of the framework suggest that the overall impact of Strategy 2 on journey ambience can be considered **slight beneficial.**

Safety

Accidents

E.2.25 The public transport accident impacts, in terms of the number and monetary valuation of accidents, according to different injury types, are summarised in Table 2.11.

Table E 2.11 Public Transport Annual Accident Impacts

	DO-MINIMUM +				Strategy 2			
Injury	**N. accidents**		**Valuation (£m)**		**N. accidents**		**Valuation (£m)**	
	Bus	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**
Slight	7.95	46.79	£0.06	£0.32	7.95	48.57	£0.06	£0.34
Serious	0.12	1.92	£0.01	£0.17	0.12	1.99	£0.01	£0.18
Fatal	0.00	0.21	£0.00	£0.16	0.00	0.22	£0.00	£0.17
Total	8.08	48.91	£0.07	£0.66	8.08	50.78	£0.07	£0.68
Changes					0.00	1.87	£0.00	£0.03

E.2.26 The total number of public transport accidents is predicted to increase (by about 2 per year) as a result of the implementation of rail schemes. In monetary terms, this represents about £30,000 annually. The location of accidents is considered under the "Distribution and Equity" section of the Supporting Analyses.

E.2.27 Table E 2.12 shows the predictions in changes in private transport accident impacts.

Table E 2.12 Private Transport Annual Accident Impacts

	DO-MINIMUM +		Strategy 2	
Injury	**N. accidents**	**Valuation (£m)**	**N. accidents**	**Valuation (£m)**
Slight	6,189	£42.83	6,186	£42.81
Serious	1167.58	104.36	£1,167.31	£104.33
Fatal	109.83	86.12	£109.86	£86.14
Total	7466.63	233.31	£7,463.56	£233.29
Changes			-£3.06	-£0.02

E.2.28 The total number of private transport accidents is estimated to decrease by about 10 annually, the monetary implication of which is estimated at £0.2 million saving.

E.2.29 The overall safety impact on accidents can be considered **neutral**.

Security

E.2.30 Table E 2.13 presents the changes in the security indicators and the respective impact assessment.

Table E 2.13 Public Transport Security Impacts

Indicator	Importance	DO-MINIMUM + Assessment	Strategy 2 Assessment
Site perimeters, entrances and exits	low	moderate	moderate
Formal surveillance	medium	poor	poor
Informal surveillance	low	poor	moderate
Landscaping	medium	moderate	high
Lighting and visibility	high	poor	moderate
Emergency call	high	moderate	moderate
Overall impact			**Slight beneficial**

E.2.31 The introduction of public transport measures in 3 quality bus partnership schemes will slightly improve pedestrian and public transport user security, and the overall score is **slight beneficial**.

Economy

Economic Efficiency

E.2.32 The economy impacts are assessed in terms of the cost and benefit implications from the combined effect of all schemes implemented in the scope of each strategy.

E.2.33 The benefits of the schemes in Strategy 2 have been calculated as recommended in GoMMMS, and the summary is presented in Table E 2.14.

Table E 2.14 Summary of Net Benefits (£ annual in 2020, 1994 prices)

Benefit	Road	Rail	Bus	Total
Revenue	£0	£712,125	£179,958	£892,083
Other benefits				
Travel time	£2,067,225	£982,735	£504,579	£3,554,538
Vehicle operating costs	£32,191	£0	£0	£32,191
Accident	£222,247	-£25,135	£0	£197,112
Total other benefits	£2,321,663	£957,600	£504,579	£3,783,841

E.2.34 The highest saving is associated with reductions in travel time savings, but vehicle operating costs and revenue also represent considerable benefits.

E.2.35 The assessment of Transport Economic Efficiency (TEE) is based on the GoMMMS TEE table, given in Table E 2.15 in terms of the net changes.

Table E 2.15 Transport Economic Efficiency for Strategy 2 (£m PV)

	Total	Net economic changes (£ m)			
User benefits		**Car**	**Bus / coach**	**Rail**	**Other**
Travel time	23.6	13.3	3.5	6.8	0.0
Vehicle operating costs	0.2	0.2	0.0	0.0	0.0
User charges	-6.5	0.0	-1.6	-5.0	0.0
Net impact	17.3	0.0	0.0	0.0	0.0
Private Sector Provider Impacts			**Bus / coach**	**Rail**	**Other**
Revenue	6.5	0.0	1.6	5.0	0.0
Operating costs	-55.0	0.0	0.0	-55.0	0.0
Investment costs	-21.0	0.0	-0.2	-20.8	0.0
Grant/subsidy	0.0	0.0	0.0	0.0	0.0
Net impact	-69.5	0.0	0.0	0.0	0.0
Public Sector Provider Impacts		**Road infrast.**	**Bus / coach**	**Rail**	**Other**
Revenue	0.0	0.0	0.0	0.0	0.0
Operating costs	-10.3	-10.3	0.0	0.0	0.0
Investment costs	-8.5	-6.2	-2.3	0.0	0.0
Net impact	-18.8	0.0	0.0	0.0	0.0
Other Government Departments		**Road infrast.**	**Bus / coach**	**Rail**	**Other**
Grant/subsidy payments	69.5	0.0	-1.4	70.8	0.0
Indirect tax revenues	0.0	0.0	0.0	0.0	0.0
Net impact	69.5				
Total					
Net Present Value (no accident benefit)	-69.5				
Net Present Value (with accident benefit)	-70.9				
Present Value of Costs	-94.8				
Present Value of Cost to Govern.	-88.2				
Benefit/Cost ratio	0.3				
Value/Cost to Government ratio	-0.8				

Notes: Beneficial Cost ratio and Value/Cost ratio based in the net present value including accident benefits
Net present value excludes Grant/Subsidy payments by Government Grant/Subsidy payments by Government assumed equal to the net impact from the private sector provider (transfer of funds), if positive (as a subsidy only, not as a surplus).
User charges are assumed equal (but with opposite signal) to the revenue from the private sector Provider.
Bus (private sector) investment costs: assume £120,000 per corridor in 1st year of operation.
Bus operating costs: benefits recycled in more reliable services (zero).
Bus revenue assumed at £50,000 per corridor per annum (1999 prices).
Bus travel time and accident savings assumed Zero due to the lack of bus trip data.
A £5m PV has been assumed as the benefit from travel time savings for the Strategies including both Western and Eastern bypasses, in order to account for the strategic trips.
QBP passenger benefits: A259: £1.2m PV. A2100: £1m PV. A21: £1.5m PV. A26: £0.8m PV
The freight user benefits are included in the personal travel user benefits

E.2.36 The net present value for this strategy has been calculated at -£71.1 million, while the present value of costs is -£94.8 million and the present value of costs to the Government is £88.2 million. The benefit/cost ratio is 0.3, which suggests that the transport benefits are lower than the costs incurred.

Reliability

E.2.37 The impact on reliability was estimated with basis on the changes to the Volume/Capacity ratio in the selected road links. Table E 2.16 presents the results of changes in V/C ratio and the overall impact assessment score.

Table E 2.16 Changes in V/C Ratio and Impact Assessment Score

	Do Min +		Strategy 2		
Link	**V/C**	**Weight**	**V/C**	**Change**	**Weighted**
A21 Tonbridge - Pembury off-line dualled	-	-	-	-	
A21 Tonbridge - Pembury	0.99	31,525	1.09	10.04%	38,171
A21 Hurst Green - John's Cross	0.69	10,348	0.65	-4.75%	9,388
A21 John's Cross – Hastings	0.79	13,802	0.76	-4.04%	12,709
A2100 Battle Road (Battle to Baldslow)	0.81	14,511	0.81	0.04%	14,522
A259 Bexhill & Hastings Western Bypass	-	-	-	-	
A259 Hastings Eastern Bypass	-	-	-	-	
A259 Pevensey - Western Bypass	0.92	18,692	0.92	-0.05%	18,671
A259 Western Bypass - Bexhill	0.78	13,271	0.78	0.15%	13,311
A259 Bexhill - Hastings Town Centre	1.03	33,817	1.03	-0.12%	33,734
A259 Hastings Town Centre	0.61	11,726	0.60	-0.24%	11,670
A259 Hastings Town Centre-Eastern Bp	0.43	4,116	0.44	1.41%	4,233
A259 Eastern Bypass - Rye	0.42	3,798	0.43	2.45%	3,987
A26 Tonbridge - Tunbridge Wells	1.04	23,857	1.01	-2.57%	22,648
A28 Baldslow - A268	0.30	2,026	0.30	-1.36%	1,971
B2093 The Ridge	0.80	14,179	0.80	-0.20%	14,122
Gillsman's Hill	0.55	6,609	0.55	0.30%	6,649
Bexhill Northern Approach Road	-	-	-	-	
Weighted change		0.81			0.82
					1.17%
Overall impact					**Neutral**

E.2.38 As a result of a small overall increase in traffic onto the road network, with little improvement to road capacity, it can be said that the highway routes are a little less reliable, but the average impact can be considered to be neutral. However, as a result of improved public transport (particularly on rail route to Ashford) public transport journeys may be more reliable. The overall impact is, therefore, **slight positive**.

Wider Economic Impacts

E.2.39 Strategy 2 is compatible with a regeneration policy to enhance the existing urban area and to promote more intensive use of sites with good public transport access. It also assists with brownfield regeneration at Ore Valley through the Bexhill-Ore Metro. A significant improvement in public transport accessibility to Ashford can help link Hastings to economic activity growth. However, this strategy doesn't enable full exploitation of allocated land at North Bexhill for housing or business. Following the guidelines in GoMMMS, Table E 2.17 illustrates the wider economic impacts from Strategy 2.

Table E 2.17 Wider Economic Impacts

REGENERATION				
	Is the project in a designated regeneration area?			
	Road or rail line which the proposal affects passes through regeneration area?	Road junction or rail station in regeneration area?	Access road or rail to/from site?	
Designated areas	Y/N	Y/N	Y/N	First criterion
Assisted Area Tier 1, 2 or 3	N	Y	N	N
Single Regeneration Budget	N	Y	N	N
European Structural Funds	N	N	N	N
	Is project consistent with strategy to achieve local regeneration objectives? Y/N			2nd criterion
	Y			Y
Overall assessment	Project does not have potential for significant regeneration benefits			

E.2.40 The application of the framework confirms that the **project does not have potential for significant regeneration benefits**.

Accessibility

Option Values

E.2.41 The effect of 3 quality bus partnership and 5 rail improvement schemes provide new options for public transport use. The new rail station at Glyne Gap would provide a local station for 7,532 residents (considering a 2 Km catchment around the station, using 1996 mid census data. The Northern Bexhill housing development would lead to a further 1,080 residents). The overall impact is considered to be **moderate positive**.

Severance

E.2.42 Table E 2.18 shows the assessment of the severance impacts at selected road locations. The assessment was based on the changes in pedestrian delay when crossing the road. The overall severance impact takes into account the number of people affected in each location. The number of people affected has been measured in terms of the population living within 250 metres of each side of the link.

Table E 2.18 Severance Impacts

	Change in ped. delay (s)	**Impact level Do Min**	**+ Strategy 1**	**Severance impact**
Road location				
A21 Tonbridge - Pembury Off-line dualled	0	None	None	None
A21 Tonbridge - Pembury (existing)	5	Severe	Severe	None
A21 Hurst Green - John's Cross	-1	None	None	None
A21 John's Cross - Hastings	0	None	None	None
A2100 Battle Road (Battle to Baldslow)	0	Slight	Slight	None
A259 Bexhill & Hastings Western Bypass	0	None	None	None
A259 Hastings Eastern Bypass	0	None	None	None
A259 Pevensey - Western Bypass	0	Slight	Slight	None
A259 Western Bypass - Bexhill	0	Slight	Slight	None
A259 Bexhill - Hastings Town Centre	0	Severe	Severe	None

A259 Hastings Town Centre	0	Slight	Slight	None
A259 Hastings Town Centre - Eastern Bypass	0	None	None	None
A259 Eastern Bypass - Rye	0	None	None	None
A26 Tonbridge - Tunbridge Wells	-1	Slight	Slight	None
A28 Baldslow – A268	0	None	None	None
B2093 The Ridge	0	Slight	Slight	None
Gillsman's Hill	0	None	None	None
Bexhill Northern Approach Road	0	None	None	None
Overall impact				**Neutral**

E.2.43 There are very small changes in pedestrian delay in the selected roads and the weighted scores indicate that the overall impact of the strategy can be considered **neutral**.

Access to Public Transport

E.2.44 Strategy 2 enhances access to public transport by increasing service frequencies, particularly for longer distance rail trips, and reducing journey times. Public transport measures include 3 quality bus partnership schemes and 5 rail improvement measures. The new station at Glyne Gap contributes for increased access to public transport. The overall assessment suggests that this strategy would provide **large benefits**.

Integration

Interchange

E.2.45 The impacts on public transport passenger interchange have been assessed as illustrated in Table E 2.19

Table E 2.19 Passenger Interchange Impacts

Passenger interchange indicator	DO-MIN +	Strategy 2
Waiting environment	poor	moderate
Level of facilities	moderate	moderate
Level of information	moderate	moderate
Visible staff presence	moderate	moderate
Physical linkage for next stage journey	moderate	moderate
Connection time and risk of missing a connection	poor	moderate
Qualitative score		**Moderate beneficial**

E.2.46 The measures introduced within the 3 quality bus partnerships will improve pedestrian facilities at stops and interchanges. The overall impact has been estimated as **moderate beneficial**.

Land Use

E.2.47 Strategy 2 includes schemes which are compatible with local plans in relation to public transport improvements, which would also assist with brownfield regeneration at Ore Valley. However, this strategy doesn't enable full exploitation of allocated land for housing or business. The overall impact can be considered **neutral**.

Integration with Other Government Policies

E.2.48 Strategy 2 is compatible with policies to encourage public transport use. This strategy is compatible with a regeneration policy to enhance the existing urban area and promote more intensive use of sites with good public transport access. The overall assessment impact is **slight beneficial**.

Supporting Analyses

E.2.49 This section presents the additional issues which accompany the Appraisal Summary Tables for the assessment of multi-modal studies. They are grouped under three headings: distribution and equity; affordability and financial sustainability; and practicality and public acceptability. All comparisons are made against the Do Minimum Plus strategy.

Distribution and Equity

Noise and Local Air Pollution

E.2.50 On the A21 between Tonbridge and Pembury there will be an increase in noise (nearly 1.5 dB(A)) and for nitrogen dioxide (NO_2) (over 10%). However particulate matter (PM) will reduce by a greater level (over 15%). On the parallel A26 section between Tonbridge and Tunbridge Wells there will be no impact on noise and an improvement in air quality of around 5%. Likewise on the A21 south of Pembury there will be no change in the noise level and both improvements and deterioration north and south of John's Cross. Additional station car parking at Battle and Crowhurst will encourage an increase in car trips and therefore contribute to greater noise and a reduction in Local Air Pollution for those in the vicinity of the stations. The new station at Glyne Gap may encourage car trips to the station and hence associated noise and Local Air Pollution impacts.

E.2.51 On the A259 between Bexhill and Hastings and on to Guestling Thorn there will be no effect on the level of noise or air quality. It is the same for the Ridge, and on Gillsman's Hill the only change of note is a 2% increase in NO_2. Beyond Guestling Thorn to Rye there will be an increase in noise of 0.7 dB(A) and nitrogen dioxide of 6%, set against a 5% reduction in particulate matter.

E.2.52 With the railway improvements there will be an increase in air pollution and noise (over 2 dB(A)) for those adjacent to the line between Hastings and Wadhurst. With the electrification of the Hastings to Ashford line there will be air quality benefits, but the increase in service frequency will lead to increased noise levels (nearly 3 dB(A)).

Other Environmental impacts

E.2.53 Additional car parking at Battle and Crowhurst will require land which is within the High Weald AONB. The construction of a new station at Glyne Gap could have an impact on an extensive archaeological site to the east and two sites of importance for nature conservation.

Accident Savings

E.2.54 The overall level of accident savings by road and rail are presented under the safety sub-objective within the NATA table. In terms of the spatial distribution of accident savings they will be most associated with the corridors in which there is a transfer of journeys from private vehicles to public transport as encouraged by the Quality Bus Partnerships and Ore-Bexhill 'metro' and/or traffic management measures to encourage safe driving.

E.2.55 In addition to savings for transport users, the traffic managed urban areas such as the Hastings and Bexhill sea front and town centres will benefit the safety of pedestrians and cyclists.

Transport economic benefits

E.2.56 The TEE table presents the economic impacts of the strategy to transport users and transport system operators. There will however, also be particular benefits for particular types of users related to their trip purpose.

Work trips

E.2.57 There will not be significant journey time savings for car trips from areas such as Bexhill to employment centres such as the Ridge. Accessing employment opportunities at Glyne Gap however, will be improved with the new station and the metro rail service. Public transport users will also benefit from improved journey reliability delivered by the A259 Quality Bus Partnership. The Hastings to Ashford line will provide a journey time of under half an hour to access employment or connect to London or international rail services.

Shopping and Leisure trips

E.2.58 The metro rail service and new station at Glyne Gap will improve access to retail facilities at Glyne Gap and the town centres of Bexhill and Hastings.

Educational trips

E.2.59 The increased level of rail service delivered by the metro, integrated with the bus services, may provide greater opportunities for school pupils to travel by public transport.

Social exclusion

E.2.60 Whilst social exclusion is not explicitly stated as a supporting analyses issue it is a key element in the study. It has therefore been covered in the two sections below.

Wider economic impacts

E.2.61 The AST entry for Economy presents the assessment at the strategic level. There are however within this important impacts at the disaggregate level, in terms of equity between different economic groups, most pertinently for the unemployed.

E.2.62 In Gensing, Maze Hill, Central St Leonards and Castle the unemployment rate is above 8.5%. For those in those wards seeking work or on low wages the strategy will bring benefits. The public transport investment will aid travel to employment opportunities.

Access to the Transport system

E.2.63 In Hastings and Bexhill over 20% of households are without a car. In a number of wards the figure is greater than 40%. In most instances the higher figures are around the town centres of Bexhill, St Leonards and Hastings (Central (over 50%), Sackville, Gensing, Central St Leonards (over 50%), Braybrooke, Castle (over 50%), Mount Pleasant and Old Hastings), as well as the wards of Hollington and Broomgrove.

E.2.64 The strategy will have a significant benefit to those who are reliant upon public transport. These will be derived from the metro rail service, new station at Glyne Gap and Quality Bus Partnerships along the A21 Battle Road and A259. The traffic management measures introduced will improve conditions for cyclists and pedestrians along the existing A259 between Bexhill and Guestling Thorn. Rail services to Tunbridge Wells and Ashford will also be improved.

Affordability and financial sustainability

E.2.65 Whilst the overall value for money of the strategy is presented in the AST, Tables E 2.20 and E 2 .21 identify the disaggregation of funding, both for investment and operation, between public and private organisations. The financial breakdown is presented against the time profile for the strategy.

Table E 2.20 Strategy 2 Private Sector Affordability and Financial Sustainability

	£ (million undiscounted)			
Private Sector Investment	**TOTAL**	**Rail**	**Bus**	**explanation**
Investment Cost				
Year 1 (2001)	-£0.09	-£0.09	£0.00	
Year 2	-£2.15	-£2.15	£0.00	
Year 3	-£2.17	-£2.06	-£0.10	
Year 4	-£7.03	-£7.03	£0.00	
Year 5	£0.00	£0.00	£0.00	
TOTAL	-£11.43	-£11.33	-£0.10	(1)
Capital Grants	£0.00			(2)
Private Sector Operators				
Year 1				
Change in operator costs	£0.00	£0.00	£0.00	(3)
Change in operator revenue	£0.09	£0.00	£0.09	(4)
NET IMPACT	£0.09	£0.00	£0.09	(5) = (4) + (3)
Subsidy	£0.00	£0.00	£0.00	= -(5)

Year 5				
Change in operator costs	-£6.94	-£6.94	£0.00	(7)
Change in operator revenue	£0.62	£0.47	£0.15	(8)
NET IMPACT	-£6.32	-£6.47	£0.15	(9)=(8)-(7)
Subsidy	£6.47	£6.47	£0.00	(10)
Year 10				
Change in operator costs	-£6.94	-£6.94	£0.00	(11)
Change in operator revenue	£0.71	£0.55	£0.16	(12)
NET IMPACT	-£6.23	-£6.39	£0.16	(13)=(12)+(11)
Subsidy	£6.39	£6.39	£0.00	(14)
Private Sector NET IMPACT				
Investm. net of capital grant	-£11.43	-£11.33	-£0.10	(1)+(2)
Operations net of subsidy				
Year 1	£0.09	£0.00	£0.09	(5)+(6)
Year 5	-£6.32	-£6.47	£0.15	(9)+(10)
Year 10	-£6.23	-£6.39	£0.16	(13)+(14)

Table E 2.21 Strategy 2 Public Sector Affordability and Financial Sustainability

	£ (million undiscounted)				
Public Sector Investment	**Total**	**HA**	**Rail**	**Bus**	**explanation**
Investment Cost					
Year 1	-£0.09	-£0.09	£0.00	£0.00	
Year 2	-£3.56	-£2.15	£0.00	-£1.41	
Year 3	-£2.06	-£2.06	£0.00	£0.00	
Year 4	-£7.03	-£7.03	£0.00	£0.00	
Year 5	£0.00	£0.00	£0.00	£0.00	
TOTAL	-£12.73	-£11.33	£0.00	-£1.41	(15)
Private Sector Contributions	£0.00	£0.00	£0.00	£0.00	(16)
Investment net of contributions	-£12.73	-£11.33	£0.00	-£1.41	(17)=(15)+(16)
Public Sector Operation					
Year 1					
Change in operator costs	£0.00	£0.00			(18)
Change in operator revenue	£0.00	£0.00			(19)
NET IMPACT	£0.00	£0.00			(20)=(19)-(18)
Subsidy	£0.00		£0.00		
Year 5					
Change in operator costs	-£1.33	-£1.33			(21)
Change in operator revenue	£0.00	£0.00			(22)
NET IMPACT	-£1.33	-£1.33			(23)=(22)-(21)
Subsidy	£1.33		£1.33		
Year 10					
Change in operator costs	-£1.33	-£1.33			(24)
Change in operator revenue	£0.00	£0.00			(25)
NET IMPACT	-£1.33	-£1.33			(26)=(25)-(24)
Subsidy	£1.33		£1.33		

Practicality and public acceptability

Feasibility

Technical

E.2.66 Discussions over the schemes in the strategy were held with local authorities, Highways Agency, sSRA, Railtrack and public transport operators. Their feasibility has been examined leading to concern over the ability to provide the improvements to the Hastings to Tunbridge Wells rail service due to track capacity constraints north of Tonbridge. The online improvements along the A21 south of Pembury were only chosen to be indicative and therefore their full technical feasibility has not been evaluated. The online traffic management measures also require further design work and evaluation.

Legal

E.2.67 There are no legal issues regarding the schemes in the strategy.

Political

E.2.68 This strategy has received local political support in East Sussex from Michael Foster MP (Hastings and Rye) and the local authorities in respect to the public transport schemes being added to the schemes in Strategy 5. Guestling Thorn Parish Council specificaly opposed the Eastern bypass scheme.

Funding

E.2.69 The schemes in the strategy have been developed in cooperation with potential investment and operation funders. The local transport authorities will be responsible for the local road schemes, including investment related to Quality Bus Partnerships. On the operations side of the Partnership are the bus companies. For the rail service improvement funding could be provided by the sSRA and train operators. For rail infrastructure measures Railtrack and the operator would provide funding, with scope for local authority involvement.

Enforcement

E.2.70 The only schemes proposed which will potentially require enforcement are the local road schemes for traffic management and Quality Bus Partnerships. The former will be largely self-enforcing.

'Breadth of Decision'

E.2.71 The study area extends north from Hastings along the A21 corridor to Tonbridge and west and east as far as Pevensey and Rye respectively. The study seeks to provide a transport strategy at the strategic level within this area and related to the wider South-east.

E.2.72 Among the members of the Steering Group are representatives of the County Councils for East Sussex and Kent, the Borough Councils of Hastings, Tunbridge Wells, and Tonbridge and Malling as well as Rother District Council. Alongside them sit a number of agencies (sSRA, SERPLAN, SEEDA and HA) in additional to local business and environmental interests.

Complexity ("depth" of the decision)

E.2.73 By its nature as a strategic study the strategy comprises a number of schemes. These encompass a variety of complex inter-related issues, some of which have implications for transport services beyond the study area (e.g. timetabling Ashford-London rail services).

Time-scale

E.2.74 It is envisaged that the strategy will be in place by 2010.

Phasing

E.2.75 In the lifetime of current LTP the majority of the schemes within the strategy will be implemented.

E.2.76 Whilst it is an integrated strategy the schemes within it are scheduled to be completed in phases. These will be in the following order:

- Battle and Crowhurst car park expansions and the Quality Bus Partnerships on the A26 and A21 Battle Road.
- Rail improvements between Hastings and Tunbridge Wells and the A259 traffic management measures and Quality Bus Partnership.
- The Ore-Bexhill 'metro' service and new station at Glyne Gap.
- A26 traffic management measures, A259 online improvements east of Hastings and the Hastings to Ashford rail improvements.
- Beyond 2006, and reliant on a further decision making process, the online improvements between Pembury and Hastings would be constructed.

Partitioning

E.2.77 This strategy has clearly differentiated elements in terms of the north-south axis and coastal axis. However, there will be little merit in partitioning them due to their comprehensive nature for the study area meaning that they are highly unlikely to become redundant.

Complementarity

E.2.78 A key objective in the study has been the development of a set of schemes, which are complementary to each other, to achieve a comprehensive integrated strategy. An example of this includes traffic management measures and a Quality Bus Partnership on the A26 to complement the A21 online improvements between Tonbridge and Pembury.

Conflicts

E.2.79 The local authorities argue that this strategy conflicts with the housing requirements placed upon them by Central Government.

E.2.80 Access to Hastings is a free-standing study in its own right. Whilst the South Coast MMS will also address the integration of the Hastings area into the wider South-east region the two studies are not in conflict.

Political nature of proposals

E.2.81 There is political agreement on the need for regeneration of the Hastings and Bexhill local economy and the role that transport can play in contributing to this. It is argued that the road-based transport measures are required to enable land to be opened up for development.

Public Acceptability

E.2.82 From the public consultation exercise this strategy was second favourite for respondents to the newsletter questionnaire, receiving 15% of support (just ahead of Strategies 1 and 3 which each obtained 14%). From the household survey it received 13% of responses, the second lowest figure.

E.2.83 From 25 submissions from the Wider Reference Group 13 were heavily in favour of the public transport improvements rather than more road building.

E.3. STRATEGY 3

New Approach to Appraisal (NATA)

E.3.1 This section describes the assessment of Strategy 3 against the five Central Government objectives and sub-objectives as set out in GoMMMS.

Environment

Noise

E.3.2 Table E 3.1 shows the results of the noise assessment for specific road links, in terms of the noise level ($L_{10\text{-}18\ hour}$ dB(A)) in the Do Minimum Plus and Strategy 3 scenarios and the number of people annoyed by exposure to road traffic noise. The population annoyed represent the number of people who are disturbed by different levels of road traffic noise (according to the annoyance response function given in GoMMMS).

Table E 3.1 Noise Assessment for Specific Roads

Location	L10-18 hour dB(A)		Changes	Pop. Annoyed [1]		Changes
	Do-Min+	Strat. 3	dB(A)	Do-Min+	Strat. 3	popul.
A21 Tonbridge - Pembury off-line dual	-	79.27	79.27	0	278	278
A21 Tonbridge - Pembury	72.97	58.03	-14.94	82	23	-59
A21 Hurst Green - John's Cross	72.38	72.46	0.08	40	40	0
A21 John's Cross – Hastings	72.59	72.55	-0.04	842	842	0
A2100 Battle Road (Battle to Baldslow)	70.39	69.74	-0.65	91	83	-8
A259 Bexhill & Hastings Western Bypass	-	76.38	76.38	0	191	191
A259 Hastings Eastern Bypass	-	-	0.00	0	0	0
A259 Pevensey – Western Bypass	72.54	72.61	0.07	5	5	0
A259 Western Bypass – Bexhill	71.45	69.46	-1.99	284	245	-40
A259 Bexhill - Hastings Town Centre	71.08	68.77	-2.31	774	602	-172
A259 Hastings Town Centre	68.84	66.61	-2.23	240	206	-34
A259 Hastings Town Centre - Eastern Bypass	68.21	68.51	0.30	534	534	0
A259 Eastern Bypass - Rye	67.76	67.81	0.05	72	72	0
A26 Tonbridge - Tunbridge Wells	72.56	71.68	-0.89	594	549	-46
A28 Baldslow - A268	69.10	69.19	0.10	119	119	0
B2093 The Ridge	70.00	70.37	0.37	269	269	0
Gillsman's Hill	68.57	70.62	2.06	62	75	13
Bexhill Northern Approach Road	-	71.81	71.81	0	318	318
Total on selected links				**4,008**	**4,450**	**442**

Notes: 1) The estimate of the population potentially affected by noise has been defined as the number of people living within a 50 metre buffer of each road, for urban roads and 250 metres for new roads (namely the Western and Eastern bypasses and A21 Tonbridge to Pembury off-line dual), where the unobstructed distance from source to receptor can be significantly higher.

E.3.3 The largest disbenefit in terms of people affected by noise levels was predicted for the A21 between Tonbridge and Pembury (the off-line dual carriageway), followed by the Western bypass. This is due to the diversion of traffic onto the new road segments. Small benefits occur on other roads, such as the A259 between Bexhill and Hastings, A21 Tonbridge - Pembury and A26 Tonbridge - Tunbridge Wells. Although there is a significant reduction in the volume of traffic on many existing roads, this does not

necessarily connect to a large change in noise nuisance when the road remains well used.

E.3.4 Table E 3.2 presents similar noise assessment results for rail links.

Table E 3.2 Noise Assessment for Rail Links

Location	L10-18 hour dB(A)		Changes	Pop. annoyed		Changes
	Do-Min +	Strat. 3	DB(A)	Do-Min +	Strat. 3	Popul.
Hastings - Wadhurst	58.83	60.97	2.14	242	264	22
Wadhurst - Tonbridge	58.84	59.61	0.76	231	252	21
Eastbourne - Polegate	63.00	63.00	0.00	243	243	0
Pevensey - Bexhill	62.28	62.28	0.00	230	230	0
Bexhill - Hastings	61.43	61.62	0.20	334	334	0
Hastings - Ashford	58.23	61.20	2.98	253	299	46
Total				**1,534**	**1,623**	**89**

E.3.5 Changes in rail noise levels are only significant for the Hastings to Ashford line. The effect of increases in frequencies (from 18 to 25 trains per day) overrides the benefits from electrification. There would be also perceptible increases for the section between Hastings and Tonbridge. Overall, there would be an additional 89 people annoyed by rail noise in comparison to the Do Minimum Plus scenario.

E.3.6 The overall noise impact assessment can be considered **slight negative**.

Air pollution

E.3.7 Table E 3.3 presents the results of the calculations of local (NO_2 and PM_{10}) and global (CO_2) emissions for Strategy 3, considering the point-of-use and production stage emissions.

Table E 3.3 Assessment of Local and Global Emission Levels

Source	Indicator	Do-Min +	Strategy 3
Local emissions			
Point-of-use	NO_2 emissions (tonne/year)	13,775	13,880
	Index (tonne-people/km^2)	6,554,935	6,604,733
	Changes NO_2 (tonne/year)		104.6
	% changes		0.8%
	changes car		127.4
	changes bus		10.3
	changes rail		-33.0
Production	Petrol	773	773
	Diesel	67	67
	Electricity	1,863	2,060
	Total	2,703	2,900
	% changes		7.3%
Total	Point-of-use + Production	16,478	16,779
	% changes		1.8%

Point-of-use	PM_{10} emissions (tonne/year)		145	143
	Index (tonne-people/km^2)		69,033	68,098
	Changes PM_{10} (tonne/year)			-2.0
	% changes			-1.4%
		changes car		-0.6
		changes bus		0.8
		changes rail		-2.1
Production		Petrol	44	44
		Diesel	2	2
		Electricity	206	228
	Total		252	274
	% changes			8.7%
Total	Point-of-use + Production		398	417
	% changes			5.0%
Global emissions				
Point-of-use	CO_2 emissions (tonne/year)		1,368,634	1,365,333
	Changes CO_2 (tonne/year)			-947.5
	% changes			-0.1%
		changes car		-1,035.6
		changes bus		777.0
		changes rail		-688.9
Production		Petrol	169,554	169,472
		Diesel	12,705	12,671
		Electricity	494,680	547,085
	Total		676,939	729,228
	% changes			7.7%
Total	Point-of-use + Production		2,043,219	2,094,561
	% changes			2.5%

E.3.8 Strategy 3 would cause a small increase in the point-of-use emission level of NO_2 (by 0.8%), but a reduction in PM_{10} (by 1.4%) and negligible change for CO_2. The rail schemes are responsible for a significant proportion of the reduction in emissions. The overall local air pollution impact is **neutral**.

E.3.9 Considering the emissions produced at the power station, there is an increase in the emission level for all pollutants (between 7.3 and 8.7%). Overall, considering the emissions at the point-of-use and the production stage emissions at the power station, the total increases in the levels of NO_2, PM_{10} and CO_2 are 1.8, 5.0 and 2.5%, respectively. The overall global air pollution impact is **slight negative**.

E.3.10 A separate assessment of local air pollution emissions has been made for a selection of road and rail links, in terms of NO_2 and PM_{10}. As CO_2 is a global pollutant, such assessment would have been meaningless. Table E 3.4 shows the results of the assessment of local air pollution at specific road and rail links.

Table E 3.4 Local Air Pollutant Emission Levels at Specific Road and Rail Links

	NO_2 (kg/year)			PM_{10} (kg/year)		
	Do-Min	+ Strat. 3	Change	Do-Min	+ Strat. 3	Change
Road links:						
A21 Tonbridge - Pembury Off-line dualled	-	131,788	131,788	-	1,375	1,375
A21 Tonbridge - Pembury (existing)	82,962	1,357	-81,606	2,004	16	-1,989
A21 Hurst Green - John's Cross	74,378	81,090	6,712	842	888	46
A21 John's Cross - Hastings	122,179	120,438	-1,742	1,472	1,444	-27
A2100 Battle Road (Battle to Baldslow)	54,690	43,156	-11,534	712	508	-204
A259 Bexhill & Hastings Western Bypass	-	271,383	271,383	-	2,314	2,314
A259 Hastings Eastern Bypass	-	-	-	-	-	-
A259 Pevensey - Western Bypass	62,700	56,710	-5,990	621	616	-5
A259 Western Bypass - Bexhill	34,377	19,418	-14,959	358	185	-173
A259 Bexhill - Hastings Town Centre	32,782	15,648	-17,135	779	248	-531
A259 Hastings Town Centre	22,891	13,643	-9,248	532	360	-172
A259 Hastings Town Centre - Eastern bypass	24,684	26,991	2,307	290	325	35
A259 Eastern Bypass - Rye	56,135	56,769	634	691	700	8
A26 Tonbridge - Tunbridge Wells	76,549	63,002	-13,546	2,036	1,701	-335
A28 Baldslow - A268	86,518	88,120	1,603	1,107	1,123	17
B2093 The Ridge	46,101	51,912	5,811	652	767	115
Gillsman's Hill	6,311	9,314	3,003	85	112	27
Bexhill Northern Approach Road	-	24,881	24,881	-	295	295
Total selected roads			292,362			795
Rail links:						
Hastings – Wadhurst	0	0	0	0	0	0
Wadhurst – Tonbridge	0	0	0	0	0	0
Eastbourne – Polegate	0	0	0	0	0	0
Pevensey – Bexhill	0	0	0	0	0	0
Bexhill – Hastings	0	0	0	0	0	0
Hastings – Ashford	33,009	0	-33,009	2,095	0	-2,095

E.3.11 Clearly, increases in emissions are greatest at locations where new roads are proposed (bypasses and A21 off-line dualled). The most substantial benefits in terms of emission reductions occur at the current A21 between Tonbridge and Pembury (due to traffic relief) and on A259 from the proposed Western bypass to Hastings town centre. Benefits occur due to lower traffic levels and less congested road conditions. As far as rail emissions are concerned, electrification of the Hastings to Ashford link means the elimination of local emissions at the point-of-use.

Landscape

E.3.12 The landscape impacts from the implementation of Strategy 3 are summarised in Table E 3.5

Table E 3.5 Landscape Impacts

Location	Features	Importance	Impact
Western bypass	Landscape character, High Weald AONB and setting of SSSI	High	large adverse
Western bypass	Loss of agricultural land	High	large adverse
Eastern bypass	Landscape character, High Weald AONB and setting of SSSI	High	neutral
Eastern bypass	Loss of agricultural land	High	neutral
A21 Tonbridge-Pembury dual	Landscape character, High Weald AONB and setting of SSSI	High	large adverse
A21 Tonbridge-Pembury dual	Loss of woodland and agricultural land	High	large adverse
Provision of parking at rail stations	Land for parking at High Weald AONB	Moderate	moderate adverse
Hastings-Ashford rail line	Landscape quality within High Weald AONB	Moderate	slight adverse
A21 Pembury-Hastings	Landscape quality in AONB	Moderate	large adverse
Overall			**Large adverse**

E.3.13 The overall landscape impact can be considered **large adverse**.

Townscape

E.3.14 The townscape impacts from the implementation of Strategy 3 are summarised in Table E 3.6.

Table E 3.6 Townscape Impacts

Location	Features	Importance	Impact
A259 Baldslow junction	Urban setting	Moderate	large adverse
Gillsman's Hill	Local character	Moderate	slight adverse
Hastings	Old town	High	slight beneficial
The Ridge	Local character	Moderate	moderate adverse
A21/Hurst Green	Local character	Moderate	neutral
Overall			**Slight adverse**

E.3.15 The impact on Gillsman's Hill has been considered slight adverse due to the implementation of the package of measures proposed to mitigate the traffic impacts in the area. The overall townscape impacts are considered **slight adverse**.

Heritage

E.3.16 The heritage impacts are summarised in Table E 3.7.

Table E 3.7 Heritage Impacts

Location	Features	Importance	Impact
Western bypass	Listed building Grade II (demolition)	Moderate	moderate adverse
Eastern bypass	Archaeological features, historical buildings	Moderate	neutral
A21 Tonbridge-Pembury	Listed Park Grade II	Moderate	slight adverse
Overall			**Moderate adverse**

E.3.17 The overall heritage impacts are considered **moderate adverse**.

Biodiversity

E.3.18 The biodiversity impacts are summarised in Table E 3.8.

Table E 3.8 Biodiversity Impacts

Location	Features	Importance	Impact
Eastern bypass	Loss of woodland (incl. Ancient)	High	neutral
Tonbridge-Pembury dual	Loss of woodland (incl. Ancient)	High	moderate adverse
Western bypass	Impact on SSSI	High	large adverse
Hastings - Ashford rail line	Impact on SSSI NE of Rye	Moderate	slight adverse
Overall			**Moderate adverse**

E.3.19 The overall biodiversity impacts are considered **moderate adverse**.

Water environment

E.3.20 The Western bypass would affect 3 wetland sites of national importance (on the Pevensey Levels SSSI, a ditch near New Lodge Farm and in the Combe Haven SSSI). Four ponds would be directly affected and 5,645 metres of ditches and streams would be lost or culverted. The Eastern bypass would directly affect 0.35 ha and 3,795 metres of ditches would be lost. The Hastings-Ashford railway line improvements could have an adverse impact on ditches and streams in AONB and East Guldeford Levels SSSI. The water environment impacts are summarised in Table E 3.9.

Table E 3.9 Water Environment Impacts

Location	Features	Importance	Impact
Western bypass	Ditches and streams lost or culverted	High	large adverse
Eastern bypass	Ditches and streams lost or culverted	High	neutral
Hastings - Ashford rail line	Ditches and streams in SSSI maybe affected	Moderate	slight adverse
Overall			**Moderate adverse**

E.3.21 The overall water environment impacts are considered **moderate adverse**.

Journey Ambience

E.3.22 Table E 3.10 illustrates the assessment of changes in private and public transport journey ambience. The impact is measured in terms of positive (+), negative (-) or neutral (0). The table also shows the number of travellers benefited or disbenefited by each indicator.

Table E 3.10 Journey Ambience

Factor	Indicator	Strategy 3	
		Impact (-, 0, +)	N. travellers affected (per day)
Travel care	Cleanliness	0	40893
	Facilities	0	40893
	Information	0	40893
	Environment	0	40893

Travellers' views	Visual intrusion	+	2224401
Traveller stress	Frustration	0	2183507
	Fear of accidents	0	2183507
	Route uncertainty	+	2224401
Overall impact			**Moderate beneficial**

E.3.23 The benefits in traveller care are experienced by rail users on the Hastings-Ashford line who will benefit from electric rolling stock. The Western Bypass and Tonbrige-Pembury dualling will improve route certainty and enhance the quality of the view from the vehicle.

E.3.24 Therefore the results of the framework suggest that the overall impact of Strategy 3 on journey ambience can be considered **moderate beneficial**.

Safety

Accidents

E.3.25 The public transport accident impacts, in terms of the number and monetary valuation of accidents, according to different injury types, are summarised in Table E 3.11.

Table E 3.11 Public Transport Annual Accident Impacts

	DO-MINIMUM +				Strategy 3			
Injury	**N. accidents**		**Valuation (£m)**		**N. accidents**		**Valuation (£m)**	
	Bus	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**
Slight	7.95	46.79	£0.06	£0.32	7.95	46.62	£0.06	£0.32
Serious	0.12	1.92	£0.01	£0.17	0.12	1.91	£0.01	£0.17
Fatal	0.00	0.21	£0.00	£0.16	0.00	0.21	£0.00	£0.16
Total	8.08	48.91	£0.07	£0.66	8.08	48.74	£0.07	£0.66
Changes					0.00	-0.17	£0.00	-£0.00

E.3.26 The total number of public transport accidents is predicted to decrease (by about 0.2 per year) as a result of the implementation of rail schemes. This has a negligible monetary impact. The location of accidents is considered under the "Distribution and Equity" section of the Supporting Analyses.

E.3.27 Table E 3.12 shows the predictions in changes in private transport accident impacts.

Table E 3.12 Private Transport Annual Accident Impacts

	DO-MINIMUM +		Strategy 3	
Injury	**N. accidents**	**Valuation (£m)**	**N. accidents**	**Valuation (£m)**
Slight	6,189	£42.83	6,119	£42.34
Serious	1167.58	104.36	£1,155.06	£103.24
Fatal	109.83	86.12	£109.27	£85.68
Total	7466.63	233.31	£7,382.92	£231.26
Changes			-£83.70	-£2.05

E.3.28 The total number of private transport accidents is estimated to decrease by about 84 annually (of which 1 would be fatal and 14 serious), the monetary implication of which is estimated at £2.1 million saving.

E.3.29 The overall safety impact on the number of accidents can be considered **moderate positive**.

Security

E.3.30 Table E 3.13 presents the changes in the security indicators and the respective impact assessment.

Table E 3.13 Public Transport Security Impacts

Indicator	Importance	DO-MINIMUM + Assessment	Strategy 3 Assessment
Site perimeters, entrances and exits	low	moderate	moderate
Formal surveillance	medium	poor	poor
Informal surveillance	low	poor	moderate
Landscaping	medium	moderate	high
Lighting and visibility	high	poor	moderate
Emergency call	high	moderate	moderate
Overall impact			**Slight beneficial**

E.3.31 The introduction of public transport measures in 3 quality bus partnership schemes will slightly improve pedestrian and public transport user security, and the overall score is **slight beneficial**.

Economy

Economic Efficiency

E.3.32 The economy impacts are assessed in terms of the cost and benefit implications from the combined effect of all schemes implemented in the scope of each strategy.

E.3.33 The benefits of the schemes in Strategy 3 have been calculated as recommended in GoMMMS, and the summary is presented in Table E 3.14.

Table E 3.14 Summary of Net Benefits (£ annual in 2020, 1994 prices)

Benefit	Road	Rail	Bus	Total
Revenue	£0	-£69,823	£182,457	£112,634
Other benefits				
Travel time	£11,929,063	£109,950	£522,664	£12,561,677
Vehicle operating costs	£205,818	£0	£0	£205,818
Accident	£2,051,849	£2,264	£0	£2,054,112
Total other benefits	£14,186,730	£112,214	£522,664	£14,821,608

E.3.34 By far, the highest saving is associated with travel time reductions, but accident savings also represent considerable benefits.

E.3.35 The assessment of Transport Economic Efficiency (TEE) is based on the GoMMMS TEE table, given in Table E 3.15, in terms of the net changes.

Table E 3.15 Transport Economic Efficiency for Strategy 3 (£m PV)

	Total	Net economic changes (£ m)			
User benefits		**Car**	**Bus & coach**	**Rail**	**Other**
Travel time	83.2	78.6	3.8	0.8	0.0
Vehicle operating costs	1.5	1.5	0.0	0.0	0.0
User charges	-1.1	0.0	-1.6	0.5	0.0
Net impact	83.6	0.0	0.0	0.0	0.0
Large beneficial			**Bus & coach**	**Rail**	**Other**
Revenue	1.1	0.0	1.6	-0.5	0.0
Operating costs	-39.4	0.0	0.0	-39.4	0.0
Investment costs	-17.8	0.0	-0.2	-17.6	0.0
Grant/subsidy	0.0	0.0	0.0	0.0	0.0
Net impact	-56.1	0.0	0.0	0.0	0.0
Public Sector Provider Impacts		**Road infrastr.**	**Bus & coach**	**0.0**	**Other**
Revenue	0.0	0.0	0.0	0.0	0.0
Operating costs	-34.9	-34.9	0.0	0.0	0.0
Investment costs	-58.6	-56.3	-2.3	0.0	0.0
Net impact	-93.5	0.0	0.0	0.0	0.0
Other Government Departments		**Road infrastr.**	**Bus & coach**	**Rail**	**Other**
Grant/subsidy payments	56.1	0.0	-1.4	57.5	0.0
Indirect tax revenues	0.0	0.0	0.0	0.0	0.0
Net impact	56.1				
Total					
Net Present Value (no accident benefit)	-51.8				
Net Present Value (with accident benefit)	-66.0				
Present Value of Costs	-150.7				
Present Value of Cost to Govern.	-149.7				
Benefit/Cost ratio	0.6				
Value/Cost to Government ratio	-0.4				

Notes: Beneficial Cost ratio and Value/Cost ratio based in the net present value including accident benefits
Net present value excludes Grant/Subsidy payments by Government Grant/Subsidy payments by Government assumed equal to the net impact from the private sector provider (transfer of funds), if positive (as a subsidy only, not as a surplus).
User charges are assumed equal (but with opposite signal) to the revenue from the private sector Provider.
Bus (private sector) investment costs: assume £120,000 per corridor in 1st year of operation.
Bus operating costs: benefits recycled in more reliable services (zero).
Bus revenue assumed at £50,000 per corridor per annum (1999 prices).
Bus travel time and accident savings assumed Zero due to the lack of bus trip data.
A £5m PV has been assumed as the benefit from travel time savings for the Strategies including both Western and Eastern bypasses, in order to account for the strategic trips.
QBP passenger benefits: A259: £1.2m PV. A2100: £1m PV. A21: £1.5m PV. A26: £0.8m PV
The freight user benefits are included in the personal travel user benefits

E.3.36 The net present value for this strategy has been calculated at -£66 million, while the present value of costs is -£150.7 million and the present value of costs to the Government is -£149.7 million. The benefit/cost ratio is 0.7, which suggests that the transport benefits are lower than the costs incurred.

Reliability

E.3.37 The impact on reliability was estimated with basis on the changes to the Volume/Capacity ratio in the selected road links. Table E 3.16 presents the results of changes in V/C ratio and the overall impact assessment score.

Table E 3.16 Changes in V/C Ratio and Impact Assessment Score

	Do Min +		Strategy 3		
Link	**V/C**	**Weight**	**V/C**	**Change**	**Weighted**
A21 Tonbridge - Pembury off-line dualled	-	-	0.64	-	27,985.53
A21 Tonbridge - Pembury	0.99	31,525	0.01	-98.56%	7
A21 Hurst Green - John's Cross	0.69	10,348	0.66	-4.30%	9,478
A21 John's Cross – Hastings	0.79	13,802	0.78	-1.62%	13,359
A2100 Battle Road (Battle to Baldslow)	0.81	14,511	0.62	-23.32%	8,532
A259 Bexhill & Hastings Western Bypass	-	-	0.36	-	8,645.24
A259 Hastings Eastern Bypass	-	-	-	-	-
A259 Pevensey - Western Bypass	0.92	18,692	1.07	16.48%	25,359
A259 Western Bypass - Bexhill	0.78	13,271	0.42	-45.31%	3,970
A259 Bexhill - Hastings Town Centre	1.03	33,817	0.47	-54.49%	7,005
A259 Hastings Town Centre	0.61	11,726	0.36	-40.33%	4,176
A259 Hastings Town Centre-Eastern Bypass	0.43	4,116	0.48	10.07%	4,987
A259 Eastern Bypass - Rye	0.42	3,798	0.42	1.11%	3,883
A26 Tonbridge - Tunbridge Wells	1.04	23,857	0.86	-17.86%	16,095
A28 Baldslow - A268	0.30	2,026	0.31	1.70%	2,096
B2093 The Ridge	0.80	14,179	0.91	13.64%	18,309
Gillsman's Hill	0.55	6,609	0.78	41.75%	13,279
Bexhill Northern Approach Road	-	-	0.32	-	7,125.08
Weighted change		0.81			0.63
					-22.49%
Overall impact					**Moderate positive**

E.3.38 Strategy 3 enabled the provision of additional road space, with an overall increase in traffic. As a result, there would be reduced congestion in some locations, which makes highway routes more reliable. The average impact for road transport is considered moderate positive. In addition, as a result of improved public transport (particularly on rail route to Ashford) public transport journeys may be more reliable. The overall impact is therefore **large positive**.

Wider Economic Impacts

E.3.39 The strategy improves access to regeneration areas in Hastings. It opens land for development of housing, industry and commerce, which assist economic development and increase in business activity and workforce. Following the guidelines in GoMMMS, Table E 3.17 illustrates the wider economic impacts from Strategy 3.

Table E 3.17 Wider Economic Impacts

REGENERATION				
	Is the project in a designated regeneration area?			
Designated areas	Road or rail line which the proposal affects passes through regeneration area? Y/N	Road junction or rail station in regeneration area? Y/N	Access road or rail to/from site? Y/N	First criterion
Assisted Area Tier 1, 2 or 3	Y	N	N	N
Single Regeneration Budget	Y	N	Y	Y
European Structural Funds	N	N	N	N
	Is project consistent with strategy to achieve local regeneration objectives? Y/N			2nd criterion
	Y			Y
Overall assessment	Project has potential regeneration benefits			
DEVELOPMENT DEPENDENCY				
Have development dependent sites been identified? Y/N				Y
If yes, then:				
Likely that the Highways Agency, Local Highway Authority or public transport providers or operators would object to the project? Y/N				N
Planning permission for site is conditional on project? Y/N				Y
Would investors still come forward or proceed beyond feasibility in the absence of the strategy Y/N				Y
Overall assessment	Project has development dependency			

E.3.40 The above framework indicates that the project has both **potential regeneration benefits** and **development dependency**.

Accessibility

Option Values

E.3.41 The effect of 3 quality bus partnership and 3 rail improvement schemes provide new options for public transport use. The overall impact is considered to be **slight positive**.

Severance

E.3.42 Table E 3.18 shows the assessment of the severance impacts at selected road locations. The assessment was based on the changes in pedestrian delay when crossing the road. The overall severance impact takes into account the number of people affected in each location. The number of people affected has been measured in terms of the population living within 250 metres of each side of the link.

Table E 3.18 Severance Impacts

	Change in ped. delay (s)	**Impact level**		**Severance impact**
		Do Min +	**Strategy 3**	
Road location				
A21 Tonbridge - Pembury Off-line dualled	73	None	Severe	Large negative
A21 Tonbridge - Pembury	-39	Severe	None	Large positive
A21 Hurst Green - John's Cross	0	None	None	None
A21 John's Cross - Hastings	0	None	None	None

A2100 Battle Road (Battle to Baldslow)	-4	Slight	None	Slight positive
A259 Bexhill & Hastings Western Bypass	22	None	Moderate	Moderate negative
A259 Hastings Eastern Bypass	0	None	None	None
A259 Pevensey - Western Bypass	6	Slight	Moderate	Slight negative
A259 Western Bypass - Bexhill	-7	Slight	None	Slight positive
A259 Bexhill - Hastings Town Centre	-33	Severe	Slight	Moderate positive
A259 Hastings Town Centre	-6	Slight	None	Slight positive
A259 Hastings Town Centre - Eastern Bypass	1	None	None	None
A259 Eastern Bypass - Rye	0	None	None	None
A26 Tonbridge - Tunbridge Wells	-5	Slight	Slight	None
A28 Baldslow – A268	0	None	None	None
B2093 The Ridge	2	Slight	Slight	None
Gillsman's Hill	4	None	Slight	Slight negative
Bexhill Northern Approach Road	15	None	Slight	Slight negative
Overall impact				**Slight positive**

E.3.43 The above scores indicate that there are positive and negative severance impacts, depending on the location. Weighted according to the population in each location, the overall impact of the strategy can be considered **slight positive.**

Access to Public Transport

E.3.44 Strategy 3 enhances access to public transport by increasing service frequencies and reducing journey times. Public transport measures include 3 quality bus partnership schemes and 3 rail improvement measures. The overall assessment can be considered **slight beneficial**.

Integration

Interchange

E.3.45 The impacts on public transport passenger interchange have been assessed as illustrated in Table E 3.19

Table E 3.19 Passenger Interchange Impacts

Passenger interchange indicator	DO-MIN +	Strategy 3
Waiting environment	poor	moderate
Level of facilities	moderate	moderate
Level of information	moderate	moderate
Visible staff presence	moderate	moderate
Physical linkage for next stage journey	moderate	moderate
Connection time and risk of missing a connection	poor	moderate
Qualitative score		Moderate beneficial

E.3.46 The measures introduced within the 3 quality bus partnerships will improve pedestrian facilities at stops and interchanges. The overall impact has been estimated as **moderate beneficial**.

Land Use

E.3.47 Strategy 3 includes schemes which are compatible with local plans (in relation to public transport improvements) and regional land use policy, such as enabling employment and residential areas to develop partially (strategy doesn't enable exploitation of land for housing or business at east Hastings). However, other schemes (in particular, the Western bypass) are incompatible with regional plan policy on affecting AONB and national policies. The overall impact can be considered **slight beneficial**.

Integration with Other Government Policies

E.3.48 Strategy 3 helps to integrate Hastings and Rother into the wider sub-region (which includes Tonbridge/Tunbridge Wells and Ashford), but has little impact on wider integration with the rest of the South-East (including London, the M25 and Gatwick). The strategy is compatible with policies to promote modal shift. The overall assessment impact is **moderate beneficial**.

Supporting Analyses

E.3.49 This section presents the additional issues which accompany the Appraisl Summary Tables for the assessment of multi-modal studies. They are grouped under three headings: distribution and equity; affordability and financial sustainability; and practicality and public acceptability. All comparisons are made against the Do Minimum Plus strategy.

Distribution and Equity

Noise and Local Air Pollution

E.3.50 The key distributional impacts of noise and Local Air Pollution are an improvement for those communities relieved of traffic whilst a deterioration for those in the vicinity of routes to which traffic is transferred.

E.3.51 Between Tonbridge and Pembury, with the introduction of the off-line section there is a reduction of nearly 15 dB(A) on the existing A21. However, due to the limited number of properties along the existing A21, there will be a net benefit to only 13 properties. On the A26 between Tonbridge and Tunbridge Wells there will be a reduction of noise of nearly 0.9 dB(A) and an improvement in air quality of around 17%.

E.3.52 South of Pembury the on-line improvements will produce marginal beneficial changes to Local Air Pollution south of John's Cross, but a deterioration north of it between 5-10%. Additional station car parking at Battle and Crowhurst will encourage an increase in car trips and therefore contribute to greater noise and a reduction in Local Air Pollution for those in the vicinity of the stations.

E.3.53 The Western bypass will bring improvement to the A259 from Lamb Inn through Bexhill to Glyne Gap, and along Hastings town centre and sea front. The noise level will be reduced by around 2.3 dB(A) benefiting over 200 people. Air quality will improve significantly, by up to 50% for nitrogen dioxide levels and 70% for particulate matter.

E.3.54 Along the Western bypass route there will be an adverse impact on noise with levels greater than 76 dB(A) being introduced to the area and increased air pollution. This is most significant for the residents in the Bohemia area where daily traffic levels will increase, especially on Gillsman's Hill which is part of the link to the Western bypass (there will be a 50% increase eastbound in the AM peak). Noise levels will increse by over 2 dB(A) and air quality worsen between 34-50%. The residential area around the Mayfield interchange also contains four schools (Churchwood County Primary School, Grove School, Robsack Wood Community School and Westerleigh School).

E.3.55 East of Hastings town centre along the A259 to the Eastern bypass at Guestling Thorn there will be a deterioration in noise (0.3 dB(A)) and air quality (around 10%). Likewise on the Ridge on which Conquest hospital is sited, along with Helenswood School (Upper and Lower) and Sandown County Primary School, there is an increase in noise (nearly 0.4 dB(A)) and deterioration of air quality (13% NO_2, 18% PM). Between Guestling Thorn and Rye, there will be a negligible negative impact on noise and air quality, although the quantitative analysis excludes the diverted long distance traffic (from SERTM) and will therefore underestimate this effect.

E.3.56 With the railway improvements there will be an increase in air pollution and noise (over 2 dB(A)) for those adjacent to the line between Hastings and Wadhurst. With the electrification of the Hastings to Ashford line there will be air quality benefits, but the increase in service frequency will lead to increased noise levels (nearly 3 dB(A)).

Other Environmental impacts

E.3.57 The A21 dualled link between Tonbridge and Pembury will have a significant effect on the landscape within the High Weald AONB. There will be loss of woodland, some of which is ancient and a deep cutting through Castle Hill Ridge which provides a focal point for many views, including those from Tunbridge Wells of the south facing valley. Additional car parking at Battle and Crowhurst will also require land which is within the High Weald AONB.

E.3.58 The Western bypass will impact on the landscape along most of its route including that of the effect of the viaduct over Combe Haven. This will affect views from both within the SSSIs (Combe Haven, Pevensey Levels and Marline Valley Woods) and north Bexhill, and southwards from Hooe, Ninfield, and from within the High Weald AONB including from Crowhurst.

E.3.59 There will be effects from the bypass for biodiversity and loss of water channels in three SSSIs. One grade II listed building (East Lodge at Beaufort Park) will be demolished.

Accident Savings

E.3.60 The overall level of accident savings by road and rail are presented under the safety sub-objective within the NATA table. In terms of the spatial distribution of accident savings they will be most associated with the transfer of traffic to the newly constructed roads, namely the Western bypass and the Tonbridge-Pembury link. In addition to savings for transport users, the reduction in traffic in the urban areas of Bexhill and Hastings town centres, will benefit the safety of pedestrians and cyclists.

E.3.61 To the detriment of safety will be the increased traffic flows in the residential area around the Mayfield interchange with the Western bypass.

Transport economic benefits

E.3.62 The TEE table presents the economic impacts of the strategy to transport users and transport system operators. There will however, also be particular benefits for particular types of users related to their trip purpose.

Work trips

E.3.63 Benefits from the strategy will include journey time savings for car trips from areas such as Bexhill to employment centres such as the Ridge (around six minutes in the peak) and improved journey time reliability within the study area. For public transport users journey reliability is provided by the Quality Bus Partnership on the A259. The Hastings to Ashford line will provide a journey time of under half an hour to access employment or connect to London or international rail services.

Shopping and Leisure trips

E.3.64 Congestion at Glyne Gap will be reduced improving access to the retail and leisure facilities there. This will also be the case for both Bexhill and Hastings town centres.

Educational trips

E.3.65 With a number of schools situated in West Hastings the proximity of the bypass may attract school-run trips. On the existing network improved access will also be achieved through improved journey time reliability both for private vehicle users and public transport users.

Social exclusion

E.3.66 Whilst social exclusion is not explicitly stated as a supporting analyses issue it is a key issue in the study. It has therefore been covered in the two sections below.

Wider economic impacts

E.3.67 The AST entry for Economy presents the assessment at the strategic level. There are however within this important impacts at the disaggregate level, in terms of equity between different economic groups, most pertinently for the unemployed.

E.3.68 In Gensing, Maze Hill, Central St Leonards and Castle the unemployment rate is above 8.5%. For those in those wards seeking work the strategy will bring limited benefits in the way of increasing potential employment opportunities. For those with access to a car the Western Bypass will provide a route to the developments at North Bexhill. For those without a car the traffic management measures on the A259 will aid travel to Bexhill by bus or bicycle.

E.3.69 For those on low incomes there will be a similar level on benefit. However, in both cases there will be competition for the job opportunities with those attracted into the area by the housing developments.

Access to the Transport system

E.3.70 In Hastings and Bexhill over 20% of households are without a car. In a number of wards the figure is greater than 40%. In most instances the higher figures are around the town centres of Bexhill, St Leonards and Hastings (Central (over 50%), Sackville, Gensing, Central St Leonards (over 50%), Braybrooke, Castle (over 50%), Mount Pleasant and Old Hastings), as well as the wards of Hollington and Broomgrove.

E.3.71 The strategy will have limited benefit to those who are reliant upon public transport. These will be derived from the Quality Bus Partnerships along the A21 Battle Road and A259, and improvements in journey time reliability elsewhere on the road network. The complementary traffic management measures introduced will improve conditions for cyclists and pedestrians along the existing A259 between Bexhill and Guestling Thorn. Rail services to Tunbridge Wells and Ashford will also be improved.

Affordability and financial sustainability

E.3.72 Whilst the overall value for money of the strategy is presented in the AST, Tables E 3.20 and E 3.21 identify the disaggregation of funding, both for investment and operation, between public and private organisations. The financial breakdown is presented against the time profile for the strategy.

Table E 3.20 Strategy 3 Private Sector Affordability and Financial Sustainability

	£ (million undiscounted)			
Private Sector Investment	**TOTAL**	**Rail**	**Bus**	**explanation**
Investment Cost				
Year 1 (2001)	-£0.22	-£0.22	£0.00	
Year 2	-£10.45	-£10.45	£0.00	
Year 3	-£10.50	-£10.39	-£0.10	
Year 4	-£10.39	-£10.39	£0.00	
Year 5	£0.00	£0.00	£0.00	
TOTAL	-£31.56	-£31.46	-£0.10	(1)
Capital Grants	£0.00			(2)
Private Sector Operators				
Year 1				
Change in operator costs	£0.00	£0.00	£0.00	(3)
Change in operator revenue	£0.09	£0.00	£0.09	(4)
NET IMPACT	£0.09	£0.00	£0.09	(5)=(4)+(3)
Subsidy	£0.00	£0.00	£0.00	=-(5)
Year 5				
Change in operator costs	-£4.93	-£4.93	£0.00	(7)
Change in operator revenue	£0.10	-£0.05	£0.15	(8)
NET IMPACT	-£4.83	-£4.98	£0.15	(9)=(8)-(7)
Subsidy	£4.98	£4.98	£0.00	(10)

Year 10				
Change in operator costs	-£4.93	-£4.93	£0.00	(11)
Change in operator revenue	£0.10	-£0.06	£0.16	(12)
NET IMPACT	-£4.82	-£4.99	£0.16	(13) = (12) + (11)
Subsidy	£4.99	£4.99	£0.00	(14)
Private Sector NET IMPACT				
Investm. net of capital grant	-£31.56	-£31.46	-£0.10	(1) + (2)
Operations net of subsidy				
Year 1	£0.09	£0.00	£0.09	(5) + (6)
Year 5	-£4.83	-£4.98	£0.15	(9) + (10)
Year 10	-£4.82	-£4.99	£0.16	(13) + (14)

Table E 3.21 Strategy 3 Public Sector Affordability and Financial Sustainability

	£ (million undiscounted)				
Public Sector Investment	**TOTAL**	**HA**	**Rail**	**Bus**	**explanation**
Investment Cost					
Year 1	£0.00	£0.00	£0.00	£0.00	
Year 2	-£2.43	-£1.02	£0.00	-£1.41	
Year 3	-£2.32	-£2.32	£0.00	£0.00	
Year 4	-£7.90	-£7.90	£0.00	£0.00	
Year 5	-£38.98	-£38.98	£0.00	£0.00	
TOTAL	-£51.63	-£50.22	£0.00	-£1.41	(15)
Private Sector Contributions	£0.00	£0.00	£0.00	£0.00	(16)
Investment net of contributions	-£51.63	-£50.22	£0.00	-£1.41	(17) = (15) + (16)
Public Sector Operation					
Year 1					
Change in operator costs	£0.00	£0.00			(18)
Change in operator revenue	£0.00	£0.00			(19)
NET IMPACT	£0.00	£0.00			(20) = (19)-(18)
Subsidy	£0.00		£0.00		
Year 5					
Change in operator costs	-£0.96	-£0.96			(21)
Change in operator revenue	£0.00	£0.00			(22)
NET IMPACT	-£0.96	-£0.96			(23) = (22)-(21)
Subsidy	£0.96		£0.96		
Year 10					
Change in operator costs	-£5.40	-£5.40			(24)
Change in operator revenue	£0.00	£0.00			(25)
NET IMPACT	-£5.40	-£5.40			(26) = (25)-(24)
Subsidy	£5.40		£5.40		

Practicality and public acceptability

Feasibility

Technical

E.3.73 Discussions over the schemes in the strategy were held with local authorities, Highways Agency, sSRA, Railtrack and public transport operators. Their feasibility has been examined leading to concern over the ability to provide the improvements to the

Hastings to Tunbridge Wells rail service due to track capacity constraints north of Tonbridge. The online improvements along the A21 south of Pembury were only chosen to be indicative and therefore their full technical feasibility has not been evaluated. Work will need to be undertaken on the precise design of the Badslow interchange and the termination of the Western bypass in the vicinity of the A21.

Legal

E.3.74 For the four remitted road schemes the Orders from the Public Inquiries still stand and the alignments for the new road construction are protected. However, in order to proceed with the new proposed roundabout at Lamb Inn and the start of the Western bypass a modification to the orders may be required, as it will also be for the revised Baldslow interchange. The Tonbridge-Pembury offline dual-2 scheme will require new orders and powers to approve it. In addition, the three year shelf life of the CPOs expired in May 1999.

Political

E.3.75 This strategy does not have local political support, in that there is a preference for the Western and Eastern bypassses both to be constructed. Guestling Thorn Parish Council specificaly opposed the Eastern bypass scheme.

Funding

E.3.76 The schemes in the strategy have been developed in cooperation with potential investment and operation funders. The remitted road schemes will come under Highways Agency responsibility, whilst the local transport authorities will be responsible for the local road schemes, including investment related to Quality Bus Partnerships. On the operations side of the Partnership are the bus companies. For the rail service improvement funding could be provided by the sSRA and train operators. For rail infrastructure measures Railtrack and the operator would provide funding, with scope for local authority involvement.

Enforcement

E.3.77 The only schemes proposed which will potentially require enforcement are the local road schemes for traffic management and Quality Bus Partnerships. The former will be largely self-enforcing.

'Breadth of Decision'

E.3.78 The study area extends north from Hastings along the A21 corridor to Tonbridge and west and east as far as Pevensey and Rye respectively. The study seeks to provide a transport strategy at the strategic level within this area and related to the wider South-east.

E.3.79 Among the members of the Steering Group are representatives of the County Councils for East Sussex and Kent, the Borough Councils of Hastings, Tunbridge Wells, and Tonbridge and Malling as well as Rother District Council. Alongside them sit a number

of agencies (sSRA, SERPLAN, SEEDA and HA) in additional to local business and environmental interests.

Complexity ("depth" of the decision)

E.3.80 By its nature as a strategic study the strategy comprises a number of schemes. These encompass a variety of complex inter-related issues, some of which have implications for transport services beyond the study area (e.g. timetabling Ashford-London rail services).

Time-scale

E.3.81 It is envisaged that the strategy will be in place by 2010.

Phasing

E.3.82 In the lifetime of current LTP the majority of the schemes within the strategy will be implemented.

E.3.83 Whilst it is an integrated strategy the schemes within it are scheduled to be completed in phases. These will be in the following order:

- Traffic management measures for Gillsman's Hill and the Bexhill Northern Approach Road.
- Battle and Crowhurst car park expansions and the Quality Bus Partnerships on the A26 and A21 Battle Road.
- Rail improvements between Hastings and Tunbridge Wells and the A259 Quality Bus Partnership.
- The Western bypass and complementary measures on the A259.
- The Tonbridge-Pembury dual link and Hastings-Ashford rail improvement.
- Beyond 2006, and reliant on a further decision making process, the online improvements between Pembury and Hastings would be constructed.

Partitioning

E.3.84 This strategy has clearly differentiated elements in terms of the north-south axis and coastal axis. However, there will be little merit in partitioning them due to their integrated nature, e.g. the Western Bypass and A21 improvements.

Complementarity

E.3.85 A key objective in the study has been the development of a set of schemes, which are complementary to each other, to achieve a comprehensive integrated strategy. An

example of this includes traffic management measures and a Quality Bus Partnership on the A26 to complement the A21 dualled link between Tonbridge and Pembury.

Conflicts

E.3.86 The strategy has been developed in discussion with local authorities with regard to their LTP proposals and their housing requirements.

E.3.87 Access to Hastings is a free-standing study in its own right. Whilst the South Coast MMS will also address the integration of the Hastings area into the wider South-east region the two studies are not in conflict.

Political nature of proposals

E.3.88 There is political agreement on the need for regeneration of the Hastings and Bexhill local economy and the role that transport can play in contributing to this. It is argued that the transport measures are required to enable land to be opened up for development.

Public Acceptability

E.3.89 From the public consultation exercise this strategy was joint third favourite for respondents to the newsletter questionnaire, receiving 14% of support (compared to 14% and 15% for Strategies 1 and 2). From responses to the household survey it was jointly, with Strategy 5, the most supported strategy receiving 26%.

E.3.90 From 25 submissions from the Wider Reference Group 9 were heavily in favour of the road building schemes.

E.4. STRATEGY 4

New Approach to Appraisal (NATA)

E.4.1 This section describes the assessment of Strategy 4 against the five Central Government objectives and sub-objectives as set out in GoMMMS.

Environment

Noise

E.4.2 Table E 4.1 shows the results of the noise assessment for specific road links, in terms of the noise level ($L_{10\text{-}18\ hour}$ dB(A)) in the Do Minimum Plus and Strategy 4 scenarios and the number of people annoyed by exposure to road traffic noise. The population annoyed represent the number of people who are disturbed by different levels of road traffic noise (according to the annoyance response function given in GoMMMS).

Table E 4.1 Noise Assessment for Specific Roads

Location	L10-18 hour dB(A)		Changes	Pop. Annoyed [1]		Changes
	Do-Min+	Strat. 4	dB(A)	Do-Min+	Strat. 4	popul.
A21 Tonbridge - Pembury off-line dual	-	79.27	79.27	0	278	278
A21 Tonbridge - Pembury	72.97	58.03	-14.94	82	23	-59
A21 Hurst Green - John's Cross	72.38	72.46	0.08	40	40	0
A21 John's Cross – Hastings	72.59	72.58	-0.02	842	842	0
A2100 Battle Road (Battle to Baldslow)	70.39	69.75	-0.64	91	83	-8
A259 Bexhill & Hastings Western Bypass	-	76.58	76.58	0	191	191
A259 Hastings Eastern Bypass	-	73.03	73.03	0	58	58
A259 Pevensey – Western Bypass	72.54	72.58	0.05	5	5	0
A259 Western Bypass – Bexhill	71.45	69.44	-2.02	284	245	-40
A259 Bexhill - Hastings Town Centre	71.08	68.71	-2.37	774	602	-172
A259 Hastings Town Centre	68.84	66.09	-2.75	240	206	-34
A259 Hastings Town Centre - Eastern Bypass	68.21	68.03	-0.18	534	534	0
A259 Eastern Bypass - Rye	67.76	68.64	0.87	72	78	6
A26 Tonbridge - Tunbridge Wells	72.56	71.68	-0.89	594	549	-46
A28 Baldslow - A268	69.10	68.82	-0.27	119	108	-12
B2093 The Ridge	70.00	70.09	0.09	269	269	0
Gillsman's Hill	68.57	70.65	2.08	62	75	13
Bexhill Northern Approach Road	-	71.84	71.84	0	318	318
Total on selected links				**4,008**	**4,502**	**495**

Notes: 1) The estimate of the population potentially affected by noise has been defined as the number of people living within a 50 metre buffer of each road, for urban roads and 250 metre for new roads (namely the Western and Eastern bypasses and A21 Tonbridge to Pembury off-line dual), where the unobstructed distance from source to receptor can be significantly higher.

E.4.3 The largest disbenefit in terms of people affected by noise levels was predicted for the Bexhill Northern Approach Road, followed by the A21 between Tonbridge and Pembury (the off-line dual carriageway) and Western bypass. This is due to the diversion of traffic onto the new road segments. Small benefits occur on other roads, such as the A259 at Hastings town centre, A259 between Bexhill and Hastings, A26 Tonbridge - Tunbridge Wells and A21 Tonbridge - Pembury. Although there is a

significant reduction in the volume of traffic on many existing roads, this does not necessarily connect to a large change in noise nuisance when the road remains well used.

E.4.4 Table E 4.2 presents similar noise assessment results for rail links.

Table E 4.2 Noise Assessment for Rail Links

Location	L10-18 hour dB(A)		Changes	Pop. annoyed		Changes
	Do-Min+	Strat. 4	DB(A)	Do-Min+	Strat. 4	Popul.
Hastings - Wadhurst	58.83	60.97	2.14	242	264	22
Wadhurst - Tonbridge	58.84	59.61	0.76	231	252	21
Eastbourne - Polegate	63.00	63.00	0.00	243	243	0
Pevensey - Bexhill	62.28	62.28	0.00	230	230	0
Bexhill - Hastings	61.43	61.62	0.20	334	334	0
Hastings - Ashford	58.23	61.20	2.98	253	299	46
Total				**1,534**	**1,623**	**89**

E.4.5 Changes in rail noise levels are only significant for the Hastings to Ashford line. The effect of increases in frequencies (from 18 to 25 trains per day) overrides the benefits from electrification. There would be also perceptible increases for the section between Hastings and Tonbridge. Overall, there would be an additional 89 people annoyed by rail noise in comparison to the Do Minimum Plus scenario.

E.4.6 The overall score for the noise impact as a result of the implementation of Strategy 4 is **slight negative**.

Air pollution

E.4.7 Table E 4.3 presents the results of the calculations of local (NO_2 and PM_{10}) and global (CO_2) emissions for Strategy 4, considering the point-of-use and production stage emissions.

Table E 4.3 Assessment of Local and Global Emission Levels

Source	Indicator	Do-Min +	Strategy 4
Local emissions			
Point-of-use	NO_2 emissions (tonne/year)	13,775	13,938
	Index (tonne-people/km^2)	6,554,935	6,632,321
	Changes NO_2 (tonne/year)		162.6
	% changes		1.2%
	changes car		185.8
	changes bus		9.8
	changes rail		-33.0
Production	Petrol	773	773
	Diesel	67	67
	Electricity	1,863	2,060
	Total	2,703	2,900
	% changes		7.3%
Total	Point-of-use + Production	16,478	16,838
	% changes		2.2%

Point-of-use	PM_{10} emissions (tonne/year)	145	143
	Index (tonne-people/km^2)	69,033	67,989
	Changes PM_{10} (tonne/year)		-2.2
	% changes		-1.5%
	changes car		-0.8
	changes bus		0.7
	changes rail		-2.1
Production	Petrol	44	44
	Diesel	2	2
	Electricity	206	228
	Total	252	274
	% changes		8.7%
Total	Point-of-use + Production	398	417
	% changes		4.9%
Global emissions			
Point-of-use	CO_2 emissions (tonne/year)	1,368,634	1,365,755
	Changes CO_2 (tonne/year)		-525.5
	% changes		0.0%
	changes car		-613.7
	changes bus		777.0
	changes rail		-688.9
Production	Petrol	169,554	169,542
	Diesel	12,705	12,662
	Electricity	494,680	547,085
	Total	676,939	729,289
	% changes		7.7%
Total	Point-of-use + Production	2,043,219	2,095,044
	% changes		2.5%

E.4.8 Looking at the changes in emissions at the point-of-use, Strategy 4 would cause a small increase in the emission level of NO_2 (by 1.2%), but a reduction in PM_{10} (by 1.5%) and no change for CO_2. The rail schemes are responsible for a significant proportion of the reduction in emissions. The overall local air pollution impact can be considered to be **neutral**.

E.4.9 Considering the emissions produced at the power station, there is an increase in the emission level for all pollutants (between 7.3 and 8.7%). Overall, considering the emissions at the point-of-use and the production stage emissions at the power station, the total increases in the levels of NO_2, PM_{10} and CO_2 are 2.2, 4.9 and 2.5%. The overall global pollution impact is **slight negative**.

E.4.10 A separate assessment of local air pollution emissions has been made for a selection of road and rail links, in terms of NO_2 and PM_{10}. As CO_2 is a global pollutant, such assessment would not have been meaningfull. Table 4.4 shows the results of the assessment of local air pollution at specific road and rail links.

Table E 4.4 Local Air Pollutant Emission Levels at Specific Road and Rail Links

	NO_2 (kg/year)			PM_{10} (kg/year)		
	Do-Min	+ Strat. 4	Change	Do-Min	+ Strat. 4	Change
Road links:						
A21 Tonbridge - Pembury Off-line dualled	-	131,813	131,813	-	1,375	1,375
A21 Tonbridge - Pembury (existing)	82,962	1,357	-81,606	2,004	16	-1,989
A21 Hurst Green - John's Cross	74,378	81,023	6,645	842	886	44
A21 John's Cross - Hastings	122,179	120,839	-1,340	1,472	1,446	-25
A2100 Battle Road (Battle to Baldslow)	54,690	43,134	-11,556	712	506	-206
A259 Bexhill & Hastings Western Bypass	-	285,814	285,814	-	2,433	2,433
A259 Hastings Eastern Bypass	-	78,007	78,007	-	659	659
A259 Pevensey - Western Bypass	62,700	57,124	-5,576	621	629	8
A259 Western Bypass - Bexhill	34,377	19,312	-15,065	358	184	-174
A259 Bexhill - Hastings Town Centre	32,782	15,329	-17,453	779	241	-539
A259 Hastings Town Centre	22,891	12,215	-10,676	532	308	-224
A259 Hastings Town Centre - Eastern bypass	24,684	23,409	-1,275	290	272	-18
A259 Eastern Bypass - Rye	56,135	68,623	12,488	691	846	154
A26 Tonbridge - Tunbridge Wells	76,549	63,006	-13,543	2,036	1,702	-335
A28 Baldslow - A268	86,518	80,532	-5,986	1,107	1,022	-84
B2093 The Ridge	46,101	46,411	310	652	646	-6
Gillsman's Hill	6,311	9,375	3,064	85	113	28
Bexhill Northern Approach Road	-	25,179	25,179	-	300	300
Total selected roads			379,244			1,402
Rail links:						
Hastings – Wadhurst	0	0	0	0	0	0
Wadhurst – Tonbridge	0	0	0	0	0	0
Eastbourne – Polegate	0	0	0	0	0	0
Pevensey – Bexhill	0	0	0	0	0	0
Bexhill – Hastings	0	0	0	0	0	0
Hastings – Ashford	33,009	0	-33,009	2,095	0	-2,095

E.4.11 Increases in emissions are greatest at locations where new roads are proposed (bypasses and A21 off-line dualled). The most substantial benefits in terms of NO_2 emission reductions occur where the new road sections relieve traffic, namely the current A21 between Tonbridge and Pembury, the parallel A26 route, and the A259 through Hastings and Bexhill. It is broadly the same for the impact on particulate matter levels. As far as rail emissions are concerned, electrification of the Hastings to Ashford link means the elimination of local emissions at the point-of-use.

Landscape

E.4.12 The landscape impacts from the implementation of Strategy 4 are summarised in Table E 4.5.

Table E 4.5 Landscape Impacts

Location	Features	Importance	Impact
Western bypass	Landscape character, High Weald AONB and setting of SSSI	High	large adverse
Western bypass	Loss of agricultural land	High	large adverse
Eastern bypass	Landscape character, High Weald AONB and setting of SSSI	High	large adverse
Eastern bypass	Loss of agricultural land	High	large adverse
A21 Tonbridge-Pembury dual	Landscape character, High Weald AONB and setting of SSSI	High	large adverse
A21 Tonbridge-Pembury dual	Loss of woodland and agricultural land	High	large adverse
Provision of parking at rail stations	Land for parking at High Weald AONB	Moderate	moderate adverse
Hastings-Ashford rail line	Landscape quality within High Weald AONB	Moderate	slight adverse
A21Pembury-Hastings	Landscape quality in AONB	Moderate	moderate adverse
Overall			**Large adverse**

E.4.13 The overall landscape impact can be considered **large adverse**.

Townscape

E.4.14 The townscape impacts from the implementation of Strategy 4 are summarised in Table E 4.6.

Table E 4.6 Townscape Impacts

Location	Features	Importance	Impact
A259 Baldslow junction	Urban setting	Moderate	moderate adverse
Gillsman's Hill	Local character	Moderate	slight adverse
Hastings	Old town	High	moderate beneficial
The Ridge	Local character	Moderate	neutral
A21/Hurst Green	Local character	Moderate	neutral
Overall			**Neutral**

E.4.15 The impact on Gillsman's Hill has been considered slight adverse due to the implementation of the package of measures proposed to mitigate the traffic impacts in the area. The overall townscape impacts are considered **neutral**.

Heritage

E.4.16 The heritage impacts are summarised in Table E 4.7

Table E 4.7 Heritage Impacts

Location	Features	Importance	Impact
Western bypass	Listed building Grade II (demolition)	Moderate	moderate adverse
Eastern bypass	Archaeological features, historical buildings	Moderate	neutral
A21 Tonbridge-Pembury	Listed Park Grade II	Moderate	slight adverse
Overall			**Moderate adverse**

E.4.17 The overall heritage impacts are considered **moderate adverse**.

Biodiversity

E.4.18 The biodiversity impacts are summarised in Table E 4.8.

Table E 4.8 Biodiversity Impacts

Location	Features	Importance	Impact
Eastern bypass	Loss of woodland (incl. Ancient)	High	large adverse
Tonbridge-Pembury dual	Loss of woodland (incl. Ancient)	High	moderate adverse
Western bypass	Impact on SSSI	High	large adverse
Hastings - Ashford rail line	Impact on SSSI NE of Rye	Moderate	slight adverse
Overall			**Large adverse**

E.4.19 The overall biodiversity impacts are considered **large adverse**.

Water environment

E.4.20 The Western bypass would affect 3 wetland sites of national importance (on the Pevensey Levels SSSI, a ditch near New Lodge Farm and in the Combe Haven SSSI). Four ponds would be directly affected and 5,645 metres of ditches and streams would be lost or culverted. The Eastern bypass would directly affect 0.35 ha and 3,795 metres of ditches would be lost. The Hastings-Ashford railway line improvements could have an adverse impact on ditches and streams in AONB and East Guldeford Levels SSSI. The water environment impacts are summarised in Table E 4.9.

Table E 4.9 Water Environment Impacts

Location	Features	Importance	Impact
Western bypass	Ditches and streams lost or culverted	High	large adverse
Eastern bypass	Ditches and streams lost or culverted	High	large adverse
Hastings - Ashford rail line	Ditches and streams in SSSI maybe affected	Moderate	slight adverse
Overall			**Large adverse**

E.4.21 The overall water environment impacts are considered **large adverse**.

Journey Ambience

E.4.22 Table E 4.10 illustrates the assessment of changes in private and public transport journey ambience. The impact is measured in terms of positive (+), negative (-) or neutral (0). The table also shows the number of travellers benefited or disbenefited by each indicator. The results of the framework suggest that the overall impact of Strategy 4 on journey ambience can be considered large beneficial.

Table E 4.10 Journey Ambience

Factor	Indicator	Strategy 4	
		Impact (-, 0, 1)	N. travellers affected (per day)
Travel care	Cleanliness	0	40848
	Facilities	0	40848
	Information	0	40848
	Environment	0	40848
Travellers' views	Visual intrusion	+	2230292
Traveller stress	Frustration	+	2189443
	Fear of accidents	0	2189443
	Route uncertainty	+	2230292
Overall impact			**Large beneficial**

E.4.23 The benefits in traveller care are experienced by rail users on the Hastings-Ashford line who will benefit from electric rolling stock. The Western and Eastern Bypasses and Tonbrige-Pembury dualling will improve route certainty and enhance the quality of the view from the vehicle. The complete bypassing of Hastings and Bexhill will also positively address frustration through aiding good journey progress.

E.4.24 Therefore the results of the framework suggest that the overall impact of Strategy 4 on journey ambience can be considered **large beneficial**.

Safety

Accidents

E.4.25 The public transport accident impacts, in terms of the number and monetary valuation of accidents, according to different injury types, are summarised in Table E 4.11.

Table E 4.11 Public Transport Annual Accident Impacts

	DO-MINIMUM +				Strategy 4			
Injury	**N. accidents**		**Valuation (£m)**		**N. accidents**		**Valuation (£m)**	
	Bus	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**
Slight	7.95	46.79	£0.06	£0.32	7.95	46.53	£0.06	£0.32
Serious	0.12	1.92	£0.01	£0.17	0.12	1.91	£0.01	£0.17
Fatal	0.00	0.21	£0.00	£0.16	0.00	0.21	£0.00	£0.16
Total	8.08	48.91	£0.07	£0.66	8.08	48.64	£0.07	£0.65
Changes					0.00	-0.27	£0.00	-£0.00

E.4.26 The total number of public transport accidents is predicted to decrease (by about 0.3 per year) as a result of the implementation of rail schemes. This represents a negligible amount in monetary terms. The location of accidents is considered under the "Distribution and Equity" section of the Supporting Analyses.

E.4.27 Table E 4.12 shows the predictions in changes in private transport accident impacts.

Table E 4.12 Private Transport Annual Accident Impacts

	DO-MINIMUM +		Strategy 4	
Injury	**N. accidents**	**Valuation (£m)**	**N. accidents**	**Valuation (£m)**
Slight	6,189	£42.83	6,116	£42.32
Serious	1167.58	104.36	£1,155.18	£103.25
Fatal	109.83	86.12	£109.41	£85.78
Total	7466.63	233.31	£7,380.76	£231.36
Changes			-£85.87	-£1.95

E.4.28 The total number of private transport accidents is estimated to decrease by about 86 annually, the monetary implication of which is estimated as a £1.9 million saving.

E.4.29 The overall safety impact on the number of accidents is **moderate positive**.

Security

E.4.30 Table E 4.13 presents the changes in the security indicators and the respective impact assessment.

Table E 4.13 Public Transport Security Impacts

Indicator	**Importance**	**DO-MINIMUM + Assessment**	**Strategy 4 Assessment**
Site perimeters, entrances and exits	low	moderate	moderate
Formal surveillance	medium	poor	poor
Informal surveillance	low	poor	moderate
Landscaping	medium	moderate	high
Lighting and visibility	high	poor	high
Emergency call	high	moderate	moderate
Overall impact			**Moder. beneficial**

E.4.31 The introduction of public transport measures in 4 quality bus partnership schemes will slightly improve pedestrian and public transport user security, and the overall score is **moderate beneficial**.

Economy

Economic Efficiency

E.4.32 The economy impacts are assessed in terms of the cost and benefit implications from the combined effect of all schemes implemented in the scope of each strategy.

E.4.33 The benefits of the schemes in Strategy 4 have been calculated as recommended in GoMMMS, and the summary is presented in Table E 4.14.

Table E 4.14 Summary of Net Benefits (£ annual in 2020, 1994 prices)

Benefit	Road	Rail	Bus	Total
Revenue	£0	-£108,631	£244,391	£135,760
Other benefits				
Travel time	£15,440,769	£107,195	£655,863	£16,203,827
Vehicle operating costs	£265,932	£0	£0	£265,932
Accident	£1,948,546	£3,618	£0	£1,952,164
Total other benefits	£17,655,248	£110,813	£655,863	£18,421,923

E.4.34 The highest saving is associated with travel time reductions, but accident savings also represent considerable benefits.

E.4.35 The assessment of Transport Economic Efficiency (TEE) is based on the GoMMMS TEE table, given in Table E 4.15, in terms of the net changes.

Table E 4.15 Transport Economic Efficiency for Strategy 4 (£m PV)

	Total	Net economic changes (£ m)			
User benefits		**Car**	**Bus & coach**	**Rail**	**Other**
Travel time	113.3	107.8	4.8	0.8	0.0
Vehicle operating costs	1.9	1.9	0.0	0.0	0.0
User charges	-1.3	0.0	-2.1	0.8	0.0
Net impact	114.0	0.0	0.0	0.0	0.0
Private Sector Provider Impacts			**Bus & coach**	**Rail**	**Other**
Revenue	1.3	0.0	2.1	-0.8	0.0
Operating costs	-39.4	0.0	0.0	-39.4	0.0
Investment costs	-17.9	0.0	-0.3	-17.6	0.0
Grant/subsidy	0.0	0.0	0.0	0.0	0.0
Net impact	-55.9	0.0	0.0	0.0	0.0
Public Sector Provider Impacts		**Road infrastr.**	**Bus & coach**		**Other**
Revenue	0.0	0.0	0.0	0.0	0.0
Operating costs	-43.5	-43.5	0.0	0.0	0.0
Investment costs	-73.4	-70.4	-3.0	0.0	0.0
Net impact	-116.9	0.0	0.0	0.0	0.0
Other Government Departments		**Road infrastr.**	**Bus & coach**	**Rail**	**Other**
Grant/subsidy payments	55.9	0.0	-1.9	57.8	0.0
Indirect tax revenues	0.0	0.0	0.0	0.0	0.0
Net impact	55.9				
Total					
Net Present Value (no accident benefit)	-45.1				
Net Present Value (with accident benefit)	-58.8				
Present Value of Costs	-174.1				
Present Value of Cost to Govern.	-172.8				
Benefit/Cost ratio	0.7				
Value/Cost to Government ratio	-0.3				

Notes: Beneficial Cost ratio and Value/Cost ratio based in the net present value including accident benefits
Net present value excludes Grant/Subsidy payments by Government Grant/Subsidy payments by Government assumed equal to the net impact from the private sector provider (transfer of funds), if positive (as a subsidy only, not as a surplus).

User charges are assumed equal (but with opposite signal) to the revenue from the private sector Provider.
Bus (private sector) investment costs: assume £120,000 per corridor in 1st year of operation.
Bus operating costs: benefits recycled in more reliable services (zero).
Bus revenue assumed at £50,000 per corridor per annum (1999 prices).
Bus travel time and accident savings assumed Zero due to the lack of bus trip data.
A £5m PV has been assumed as the benefit from travel time savings for the Strategies including both Western and Eastern bypasses, in order to account for the strategic trips.
QBP passenger benefits: A259: £1.2m PV. A2100: £1m PV. A21: £1.5m PV. A26: £0.8m PV
The freight user benefits are included in the personal travel user benefits

E.4.36 The net present value for this strategy has been calculated at -£23 million, while the present value of costs is -£174 million and the present value of costs to the Government is -£171 million. The benefit/cost ratio is 1.0, which suggests that the transport benefits in the long run equal the costs incurred.

Reliability

E.4.37 The impact on reliability was estimated with basis on the changes to the Volume/Capacity ratio in the selected road links. Table E 4.16 presents the results of changes in V/C ratio and the overall impact assessment score.

Table E 4.16 Changes in V/C Ratio and Impact Assessment Score

	Do Min +		Strategy 4		
Link	**V/C**	**Weight**	**V/C**	**Change**	**Weighted**
A21 Tonbridge - Pembury off-line dualled	-	-	0.64	-	27,995.41
A21 Tonbridge - Pembury	0.99	31,525	0.01	-98.56%	7
A21 Hurst Green - John's Cross	0.69	10,348	0.66	-4.42%	9,454
A21 John's Cross – Hastings	0.79	13,802	0.78	-1.37%	13,427
A2100 Battle Road (Battle to Baldslow)	0.81	14,511	0.62	-23.44%	8,506
A259 Bexhill & Hastings Western Bypass	-	-	0.38	-	9,662.94
A259 Hastings Eastern Bypass	-	-	0.47	-	7,116.28
A259 Pevensey - Western Bypass	0.92	18,692	1.09	17.87%	25,969
A259 Western Bypass - Bexhill	0.78	13,271	0.42	-45.61%	3,926
A259 Bexhill - Hastings Town Centre	1.03	33,817	0.46	-55.50%	6,696
A259 Hastings Town Centre	0.61	11,726	0.32	-46.54%	3,351
A259 Hastings Town Centre-Eastern Bypass	0.43	4,116	0.41	-5.58%	3,669
A259 Eastern Bypass - Rye	0.42	3,798	0.51	22.22%	5,674
A26 Tonbridge - Tunbridge Wells	1.04	23,857	0.86	-17.86%	16,096
A28 Baldslow - A268	0.30	2,026	0.28	-7.19%	1,745
B2093 The Ridge	0.80	14,179	0.80	0.26%	14,251
Gillsman's Hill	0.55	6,609	0.78	42.72%	13,462
Bexhill Northern Approach Road	-	-	0.33	-	7,332.98
Weighted change		0.81			0.61
					-24.26%
Overall impact					**Moderate positive**

E.4.38 Strategy 4 enabled the provision of additional road space, with an overall increase in traffic. As a result, there would be reduced congestion in some locations, which makes highway routes more reliable. The average impact for road transport is considered moderate positive. In addition, as a result of improved public transport (particularly on

rail route to Ashford) public transport journeys may be more reliable. The overall impact is therefore **large positive**.

Wider Economic Impacts

E.4.39 The strategy improves access to regeneration areas in Hastings. It opens land for development of housing, industry and commerce, which assist economic development and increase in business activity and workforce. Following the guidelines in GoMMMS, Table 4.17 illustrates the wider economic impacts from Strategy 4.

Table E 4.17 Wider Economic Impacts

REGENERATION				
	Is the project in a designated regeneration area?			
Designated areas	Road or rail line which the proposal affects passes through regeneration area? Y/N	Road junction or rail station in regeneration area? Y/N	Access road or rail to/from site? Y/N	First criterion
Assisted Area Tier 1, 2 or 3	Y	N	N	N
Single Regeneration Budget	Y	N	Y	Y
European Structural Funds	N	N	N	N
	Is project consistent with strategy to achieve local regeneration objectives? Y/N			2nd criterion
	Y			Y
Overall assessment	Project has potential regeneration benefits			
DEVELOPMENT DEPENDENCY				
Have development dependent sites been identified? Y/N				Y
If yes, then:				
Likely that the Highways Agency, Local Highway Authority or public transport providers or operators would object to the project? Y/N				N
Planning permission for site is conditional on project? Y/N				Y
Would investors still come forward or proceed beyond feasibility in the absence of the strategy Y/N				Y
Overall assessment	Project has development dependency			

E.4.40 The above framework indicates that the **project has development dependency**.

Accessibility

Option Values

E.4.41 The effect of 4 quality bus partnership and 3 rail improvement schemes provide new options for public transport use. The overall impact is considered to be **moderate positive**.

Severance

E.4.42 Table E 4.18 shows the assessment of the severance impacts at selected road locations. The assessment was based on the changes in pedestrian delay when crossing the road. The overall severance impact takes into account the number of people affected in each location. The number of people affected has been measured in terms of the population living within 250 metres of each side of the link.

Table E 4.18 Severance Impacts

	Change in ped. delay (s)	Impact level Do Min +	Strategy 4	Severance impact
Road location				
A21 Tonbridge - Pembury Off-line dualled	73	None	Severe	Large negative
A21 Tonbridge - Pembury	-39	Severe	None	Large positive
A21 Hurst Green - John's Cross	0	None	None	None
A21 John's Cross - Hastings	0	None	None	None
A2100 Battle Road (Battle to Baldslow)	-5	Slight	None	Slight positive
A259 Bexhill & Hastings Western Bypass	26	None	Moderate	Moderate negative
A259 Hastings Eastern Bypass	12	None	Slight	Slight negative
A259 Pevensey - Western Bypass	7	Slight	Moderate	Slight negative
A259 Western Bypass - Bexhill	-7	Slight	None	Slight positive
A259 Bexhill - Hastings Town Centre	-34	Severe	Slight	Moderate positive
A259 Hastings Town Centre	-8	Slight	None	Slight positive
A259 Hastings Town Centre - Eastern Bypass	-1	None	None	None
A259 Eastern Bypass - Rye	3	None	None	None
A26 Tonbridge - Tunbridge Wells	-5	Slight	Slight	None
A28 Baldslow – A268	0	None	None	None
B2093 The Ridge	-1	Slight	Slight	None
Gillsman's Hill	5	None	Slight	Slight negative
Bexhill Northern Approach Road	16	None	Slight	Slight negative
Overall impact				**Slight positive**

E.4.43 The above scores indicate that there are positive and negative severance impacts, but weighted according to the population in each location, the overall impact of the strategy can be considered **Slight positive.**

Access to Public Transport

E.4.44 Strategy 4 enhances access to public transport by increasing service frequencies and reducing journey times. Public transport measures include 4 quality bus partnership schemes and 3 rail improvement measures. The overall assessment of the impacts on the access to public transport is **slight beneficial**.

Integration

Interchange

E.4.45 The impacts on public transport passenger interchange have been assessed as illustrated in Table E 4.19.

Table E 4.19 Passenger Interchange Impacts

Passenger interchange indicator	DO-MIN +	Strategy 4
Waiting environment	poor	moderate
Level of facilities	moderate	high
Level of information	moderate	moderate
Visible staff presence	moderate	moderate
Physical linkage for next stage journey	moderate	moderate
Connection time and risk of missing a connection	poor	moderate
Qualitative score		**Large beneficial**

E.4.46 The measures introduced within the 4 quality bus partnerships will improve pedestrian facilities at stops and interchanges. The overall impact has been estimated as **large beneficial**.

Land Use

E.4.47 Strategy 4 includes schemes which are compatible with local plans and regional land use policy (such as enabling employment and residential areas to develop both east and west of Hastings), but other schemes (in particular, the bypasses) which can be considered to be incompatible with regional plan policy on affecting AONB and national policies. The overall impact can be considered **moderate beneficial**.

Integration with Other Government Policies

E.4.48 Strategy 4 helps to integrate Hastings and Rother into the wider sub-region (which includes Tonbridge/Tunbridge Wells and Ashford), but has little impact on wider integration with the rest of the South-East (including London, the M25 and Gatwick). The strategy is compatible with policies to promote modal shift. The overall assessment impact is **moderate beneficial**.

Supporting Analyses

E.4.49 This section presents the additional issues which accompany the Appraisal Summary Tables for the assessment of multi-modal studies. They are grouped under three headings: distribution and equity; affordability and financial sustainability; and practicality and public acceptability. All comparisons are made against the Do Minimum Plus strategy.

Distribution and Equity

Noise and Local Air Pollution

E.4.50 The key distributional impacts of noise and Local Air Pollution are an improvement for those communities relieved of traffic whilst a deterioration for those in the vicinity of routes to which traffic is transferred.

E.4.51 Between Tonbridge and Pembury, with the introduction of the off-line section there is a reduction of nearly 15 dB(A) on the existing A21. However, due to the limited number of properties along the existing A21, there will be a net benefit to only 13 properties.

On the A26 between Tonbridge and Tunbridge Wells there will be a reduction of noise of nearly 0.9 dB(A) and an improvement in air quality of around 17%.

E.4.52 South of Pembury the on-line improvements will produce worsening air quality conditions north of John's Cross (between 5-8%) and marginal improvements to the south the Hastings. Noise will increase by aroud 0.3 dB(A) along the whole route. Additional station car parking at Battle and Crowhurst will encourage an increase in car trips and therefore contribute to greater noise and a reduction in Local Air Pollution for those in the vicinity of the stations.

E.4.53 The Western bypass will bring improvement to the A259 from Lamb Inn through Bexhill to Glyne Gap, and along Hastings town centre and sea front. The noise level will be reduced by around 2.5 dB(A) benefiting around 200 people. Air quality will improve significantly, by up to 50% for nitrogen dioxide levels and 70% for particulate matter. East of Hastings town centre along the A259 to the Eastern bypass at Guestling Thorn there will be a negligible improvement in noise and around 5% benefit to air quality.

E.4.54 However, along the bypass route there will be an adverse impact on noise with levels on both the Eastern and Western bypasses greater than 72 dB(A) and increased air pollution. This is most significant for the residents in the Bohemia area where daily traffic levels will increase, especially on Gillsman's Hill which is part of the link to the Western bypass (50% increase eastbound in the AM peak). NO_2 levels will rise by 50% alongside a 34% rise in PM and 2.1 dB(A). The residential area around the Mayfield interchange also contains four schools (Churchwood County Primary School, Grove School, Robsack Wood Community School and Westerleigh School).

E.4.55 There will be no discernible noise or air quality impact on the Ridge on which Conquest hospital is sited, along with Helenswood School (Upper and Lower) and Sandown County Primary School. Beyond Guestling Thorn to Rye there will be an increase in levels of noise (by 0.9 dB(A) and air pollution (22% in both cases). The population of Crowhurst and Westfield will be adversely affected by the Western and Eastern bypasses.

E.4.56 With the railway improvements there will be an increase in air pollution and noise (over 2 dB(A)) for those adjacent to the line between Hastings and Wadhurst. With the electrification of the Hastings to Ashford line there will be air quality benefits, but the increase in service frequency will lead to increased noise levels (nearly 3 dB(A)).

Other Environmental impacts

E.4.57 The A21 dualled link between Tonbridge and Pembury will have a significant effect on the landscape within the High Weald AONB. There will be loss of woodland, some of which is ancient and a deep cutting through Castle Hill Ridge which provides a focal point for many views, including those from Tunbridge Wells of the south facing valley. Additional car parking at Battle and Crowhurst will also require land which is within the High Weald AONB.

E.4.58 The Western and Eastern bypasses will impact on the landscape along most of their route including that of the effect of the viaduct over Combe Haven. This will affect views from both within the SSSIs (Combe Haven, Pevensey Levels and Marline Valley Woods) and north Bexhill, and southwards from Hooe, Ninfield, and from within the

High Weald AONB including from Crowhurst and Westfield. The Eastern bypass will impact on the tranquility of Great Maxwell.

E.4.59 There will be effects from the Western bypass for biodiversity and loss of water channels in three SSSIs. One grade II listed building (East Lodge at Beaufort Park) will be demolished. In terms of townscape, benefits will be experienced by Hastings Old Town due to the reduction in traffic in the area.

Accident Savings

E.4.60 The overall level of accident savings by road and rail are presented under the safety sub-objective within the NATA table. In terms of the spatial distribution of accident savings they will be most associated with the transfer of traffic to the newly constructed roads, namely the Eastern and Western bypasses and the Tonbridge-Pembury link. In addition to savings for transport users, the reduction in traffic in the urban areas of Bexhill and Hastings town centres, will benefit the safety of pedestrians and cyclists.

E.4.61 To the detriment of safety will be the increased traffic flows in the residential area around the Mayfield interchange with the Western bypass.

Transport economic benefits

E.4.62 The TEE table presents the economic impacts of the strategy to transport users and transport system operators. There will however, also be particular benefits for particular types of users related to their trip purpose.

Work trips

E.4.63 Benefits from the strategy will include journey time savings for car trips from areas such as Bexhill to employment centres such as the Ridge and improved journey time reliability within the study area. For public transport users journey reliability is provided by the Quality Bus Partnership on the A259 and on The Ridge. The Hastings to Ashford line will provide a journey time of under half an hour to access employment or connect to London or international rail services.

Shopping and Leisure trips

E.4.64 Congestion at Glyne Gap will be reduced improving access to the retail and leisure facilities there. This will also be the case for both Bexhill and Hastings town centres.

Educational trips

E.4.65 With a number of schools situated in West Hastings the proximity of the bypass may attract school-run trips. On the existing network improved access will also be achieved through improved journey time reliability both for private vehicle users and public transport users.

Social exclusion

E.4.66 Whilst social exclusion is not explicitly stated as a supporting analyses issue it is a key element for the study. It has therefore been covered in the two sections below.

Wider economic impacts

E.4.67 The AST entry for Economy presents the assessment at the strategic level. There are however within this important impacts at the disaggregate level, in terms of equity between different economic groups, most pertinently for the unemployed.

E.4.68 In Gensing, Maze Hill, Central St Leonards and Castle the unemployment rate is above 8.5%. For those in those wards seeking work the strategy will bring limited benefits in the way of increasing potential employment opportunities. For those with access to a car the Western Bypass will provide a route to the developments at North Bexhill. For those without a car the traffic management measures on the A259 will aid travel to Bexhill by bus or bicycle.

E.4.69 For those on low incomes there will be a similar level on benefit. However, in both cases there will be competition for the job opportunities with those attracted into the area by the housing developments.

Access to the Transport system

E.4.70 In Hastings and Bexhill over 20% of households are without a car. In a number of wards the figure is greater than 40%. In most instances the higher figures are around the town centres of Bexhill, St Leonards and Hastings (Central (over 50%), Sackville, Gensing, Central St Leonards (over 50%), Braybrooke, Castle (over 50%), Mount Pleasant and Old Hastings), as well as the wards of Hollington and Broomgrove.

E.4.71 The strategy will have limited benefit to those who are reliant upon public transport. These will be derived from the Quality Bus Partnerships along the Ridge, A21 Battle Road and A259, and improvements in journey time reliability elsewhere on the road network. The complementary traffic management measures introduced will improve conditions for cyclists and pedestrians along the existing A259 between Bexhill and Guestling Thorn. Rail services to Tunbridge Wells and Ashford will also be improved.

Affordability and financial sustainability

E.4.72 Whilst the overall value for money of the strategy is presented in the AST, Tables E 4.20 and E 4.21 identify the disaggregation of funding, both for investment and operation, between public and private organisations. The financial breakdown is presented against the time profile for the strategy.

Table E 4.20 Strategy 4 Private Sector Affordability and Financial Sustainability

	£ (million undiscounted)			
Private Sector Investment	**TOTAL**	**Rail**	**Bus**	**explanation**
Investment Cost				
Year 1 (2001)	-£0.22	-£0.22	£0.00	
Year 2	-£10.45	-£10.45	£0.00	
Year 3	-£10.50	-£10.39	-£0.10	
Year 4	-£10.50	-£10.39	-£0.10	
Year 5	£0.00	£0.00	£0.00	
TOTAL	-£31.67	-£31.46	-£0.21	(1)
Capital Grants	£0.00			(2)
Private Sector Operators				
Year 1				
Change in operator costs	£0.00	£0.00	£0.00	(3)
Change in operator revenue	£0.09	£0.00	£0.09	(4)
NET IMPACT	£0.09	£0.00	£0.09	(5) = (4) + (3)
Subsidy	£0.00	£0.00	£0.00	= -(5)
Year 5				
Change in operator costs	-£4.93	-£4.93	£0.00	(7)
Change in operator revenue	£0.12	-£0.08	£0.20	(8)
NET IMPACT	-£4.80	-£5.01	£0.20	(9) = (8)-(7)
Subsidy	£5.01	£5.01	£0.00	(10)
Year 10				
Change in operator costs	-£4.93	-£4.93	£0.00	(11)
Change in operator revenue	£0.13	-£0.09	£0.21	(12)
NET IMPACT	-£4.80	-£5.02	£0.21	(13) = (12) + (11)
Subsidy	£5.02	£5.02	£0.00	(14)
Private Sector NET IMPACT				
Investm. net of capital grant	-£31.67	-£31.46	-£0.21	(1) + (2)
Operations net of subsidy				
Year 1	£0.09	£0.00	£0.09	(5) + (6)
Year 5	-£4.80	-£5.01	£0.20	(9) + (10)
Year 10	-£4.80	-£5.02	£0.21	(13) + (14)

Table E 4.21 Strategy 4 Public Sector Affordability and Financial Sustainability

	£ (million undiscounted)				
Public Sector Investment	**Total**	**HA**	**Rail**	**Bus**	**explanation**
Investment Cost					
Year 1	£0.00	£0.00	£0.00	£0.00	
Year 2	-£15.71	-£13.75	£0.00	-£1.96	
Year 3	-£15.61	-£15.06	£0.00	-£0.55	
Year 4	-£6.88	-£6.88	£0.00	£0.00	
Year 5	-£38.98	-£38.98	£0.00	£0.00	
TOTAL	-£77.18	-£74.67	£0.00	-£2.51	(15)
Private Sector Contributions	£0.00	£0.00	£0.00	£0.00	(16)
Invest. net of contributions	-£77.18	-£74.67	£0.00	-£2.51	(17) = (15) + (16)
Public Sector Operation					
Year 1					
Change in operator costs	£0.00	£0.00			(18)
Change in operator revenue	£0.00	£0.00			(19)
NET IMPACT	£0.00	£0.00			(20) = (19)-(18)
Subsidy	£0.00		£0.00		

Year 5				
Change in operator costs	-£2.06	-£2.06		(21)
Change in operator revenue	£0.00	£0.00		(22)
NET IMPACT	-£2.06	-£2.06		(23)=(22)-(21)
Subsidy	£2.06		£2.06	
Year 10				
Change in operator costs	-£6.51	-£6.51		(24)
Change in operator revenue	£0.00	£0.00		(25)
NET IMPACT	-£6.51	-£6.51		(26)=(25)-(24)
Subsidy	£6.51		£6.51	

Practicality and public acceptability

Feasibility

Technical

E.4.73 Discussions over the schemes in the strategy were held with local authorities, Highways Agency, sSRA, Railtrack and public transport operators. Their feasibility has been examined leading to concern over the ability to provide the improvements to the Hastings to Tunbridge Wells rail service due to track capacity constraints north of Tonbridge. The online improvements along the A21 south of Pembury were only chosen to be indicative and therefore their full technical feasibility has not been evaluated.

Legal

E.4.74 For the four remitted road schemes the Orders from the Public Inquiries still stand and the alignments for the new road construction are protected. However, in order to proceed with the new proposed roundabout at Lamb Inn and the start of the Western bypass a modification to the orders may be required. The Tonbridge-Pembury offline dual-2 scheme will require new orders and powers to approve them. In addition, the three-year shelf life of the CPOs expired in May 1999.

Political

E.4.75 This strategy is not perceived to be sufficiently comprehensive in that it does not address issues on the A21 south of Pembury.

Funding

E.4.76 The schemes in the strategy have been developed in cooperation with potential investment and operation funders. The remitted road schemes will come under Highways Agency responsibility, whilst the local transport authorities will be responsible for the local road schemes, including investment related to Quality Bus Partnerships. On the operations side of the Partnership are the bus companies. For the rail service improvement funding could be provided by the sSRA and train operators.

For rail infrastructure measures Railtrack and the operator would provide funding, with scope for local authority involvement.

Enforcement

E.4.77 The only schemes proposed which will potentially require enforcement are the local road schemes for traffic management and Quality Bus Partnerships. The former will be largely self-enforcing.

'Breadth of Decision'

E.4.78 The study area extends north from Hastings along the A21 corridor to Tonbridge and west and east as far as Pevensey and Rye respectively. The study seeks to provide a transport strategy at the strategic level within this area and related to the wider South-east.

E.4.79 Among the members of the Steering Group are representatives of the County Councils for East Sussex and Kent, the Borough Councils of Hastings, Tunbridge Wells, and Tonbridge and Malling as well as Rother District Council. Alongside them sit a number of agencies (sSRA, SERPLAN, SEEDA and HA) in additional to local business and environmental interests.

Complexity ("depth" of the decision)

E.4.80 By its nature as a strategic study the strategy comprises a number of schemes. These encompass a variety of complex inter-related issues, some of which have implications for transport services beyond the study area (e.g. timetabling Ashford-London rail services).

Time-scale

E.4.81 It is envisaged that the strategy will be in place by 2010.

Phasing

E.4.82 In the lifetime of current LTP the majority of the schemes within the strategy will be implemented.

E.4.83 Whilst it is an integrated strategy the schemes within it are scheduled to be completed in phases. These will be in the following order:

- Traffic management measures for Gillsman's Hill and the Bexhill Northern Approach Road.
- Battle and Crowhurst car park expansions and the Quality Bus Partnerships on the A26 and A21 Battle Road.
- Rail improvements between Hastings and Tunbridge Wells and the A259 Quality Bus Partnership.

- The Western and Eastern bypasses, complementary measures on the A259 and the Quality Bus Partnership on The Ridge.

- The Tonbridge-Pembury dual link and Hastings-Ashford rail improvement.

- Beyond 2006, and reliant on a further decision making process, the online improvements between Pembury and Hastings would be constructed.

Partitioning

E.4.84 This strategy has clearly differentiated elements in terms of the north-south axis and coastal axis. However, there will be little merit in partitioning them due to their integrated nature, e.g. the Western Bypass and A21 improvements.

Complementarity

E.4.85 A key objective in the study has been the development of a set of schemes, which are complementary to each other, to achieve a comprehensive integrated strategy. An example of this includes traffic management measures and a Quality Bus Partnership on the A26 to complement the A21 dualled link between Tonbridge and Pembury. In addition, the Eastern bypass is reliant upon the construction of the Western bypass.

Conflicts

E.4.86 The strategy has been developed in discussion with local authorities with regard to their LTP proposals and their housing requirements.

E.4.87 Access to Hastings is a free-standing study in its own right. Whilst the South Coast MMS will also address the integration of the Hastings area into the wider South-east region the two studies are not in conflict.

Political nature of proposals

E.4.88 There is political agreement on the need for regeneration of the Hastings and Bexhill local economy and the role that transport can play in contributing to this. It is argued that the transport measures are required to enable land to be opened up for development. It is also argued that the transport measures should go beyond those included in this strategy, especially with regard to north-south access on the A21.

Public Acceptability

E.4.89 From the public consultation exercise there was clear support for many of the schemes within this strategy. However, as a strategy it only received 9% support from respondents to the newsletter questionnaire, and 11% from the household survey. It was though the most popular second choice in both cases with 44% and 29% respectively.

E.4.90 From 25 submissions from the Wider Reference Group 9 were heavily in favour of the road building schemes.

E.5. STRATEGY 5

New Approach to Appraisal (NATA)

E.5.1 This section describes the assessment of Strategy 5 against the five Central Government objectives and sub-objectives as set out in GoMMMS.

Environment

Noise

E.5.2 Table E 5.1 shows the results of the noise assessment for specific road links, in terms of the noise level ($L_{10\text{-}18\ hour}$ dB(A)) in the Do Minimum Plus and Strategy 5 scenarios and the number of people annoyed by exposure to road traffic noise. The population annoyed represent the number of people who are disturbed by different levels of road traffic noise (according to the annoyance response function given in GoMMMS).

Table E 5.1 Noise Assessment for Specific Roads

Location	L10-18 hour dB(A)		Changes	Pop. Annoyed [1]		Changes
	Do-Min+	Strat. 5	dB(A)	Do-Min+	Strat. 5	popul.
A21 Tonbridge - Pembury off-line dual	-	79.31	79.31	0	278	278
A21 Tonbridge - Pembury	72.97	58.03	-14.94	82	23	-59
A21 Hurst Green - John's Cross	72.38	72.51	0.13	40	40	0
A21 John's Cross – Hastings	72.59	73.58	0.99	842	907	65
A2100 Battle Road (Battle to Baldslow)	70.39	69.74	-0.65	91	83	-8
A259 Bexhill & Hastings Western Bypass	-	76.57	76.57	0	191	191
A259 Hastings Eastern Bypass	-	73.02	73.02	0	58	58
A259 Pevensey – Western Bypass	72.54	72.60	0.07	5	5	0
A259 Western Bypass – Bexhill	71.45	69.43	-2.02	284	245	-40
A259 Bexhill - Hastings Town Centre	71.08	68.74	-2.35	774	602	-172
A259 Hastings Town Centre	68.84	66.11	-2.73	240	206	-34
A259 Hastings Town Centre - Eastern Bypass	68.21	68.05	-0.16	534	534	0
A259 Eastern Bypass - Rye	67.76	68.63	0.87	72	78	6
A26 Tonbridge - Tunbridge Wells	72.56	71.67	-0.89	594	549	-46
A28 Baldslow - A268	69.10	68.82	-0.27	119	108	-12
B2093 The Ridge	70.00	70.08	0.07	269	269	0
Gillsman's Hill	68.57	70.62	2.05	62	75	13
Bexhill Northern Approach Road	-	71.83	71.83	0	318	318
Total on selected links				**4,008**	**4,567**	**559**

Notes: 1) The estimate of the population potentially affected by noise has been defined as the number of people living within a 50 metre buffer of each road, for urban roads and 250 metres for new roads (namely the Western and Eastern bypasses and A21 Tonbridge to Pembury off-line dual), where the unobstructed distance from source to receptor can be significantly higher.

E.5.3 The largest disbenefit in terms of people affected by noise levels was predicted for the Bexhill Northern Approach Road, followed by the A21 between Tonbridge and Pembury (the off-line dual carriageway) and Western bypass. This is due to the diversion of traffic onto the new road segments. Small benefits occur on other roads, such as the A259 at Hastings town centre, A259 between Bexhill and Hastings, A26 Tonbridge - Tunbridge Wells and A21 Tonbridge - Pembury. Although there is a

significant reduction in the volume of traffic on many existing roads, this does not necessarily connect to a large change in noise nuisance when the road remains well used.

E.5.4 Table E 5.2 presents similar noise assessment results for rail links.

Table E 5.2 Noise Assessment for Rail Links

Location	L10-18 hour dB(A)		Changes	Pop. annoyed		Changes
	Do-Min+	Strat. 5	dB(A)	Do-Min+	Strat. 5	Popul.
Hastings - Wadhurst	58.83	59.78	0.95	242	264	22
Wadhurst - Tonbridge	58.84	59.61	0.76	231	252	21
Eastbourne - Polegate	63.00	63.00	0.00	243	243	0
Pevensey - Bexhill	62.28	62.28	0.00	230	230	0
Bexhill - Hastings	61.43	61.62	0.20	334	334	0
Hastings - Ashford	58.23	61.20	2.98	253	299	46
Total				**1,534**	**1,623**	**89**

E.5.5 Changes in rail noise levels are only significant for the Hastings to Ashford line. The effect of increases in frequencies (from 18 to 25 trains per day) overrides the benefits from electrification. There would be also perceptible increases for the section between Hastings and Tonbridge. Overall, there would be an additional 89 people annoyed by rail noise in comparison to the Do Minimum Plus scenario.

E.5.6 The overall noise impact is **slight negative**.

Air pollution

E.5.7 Table 5.3 presents the results of the calculations of local (NO_2 and PM_{10}) and global (CO_2) emissions for Strategy 5, considering the point-of-use and production stage emissions.

Table E 5.3 Assessment of Local and Global Emission Levels

Source	Indicator	Do-Min +	Strategy 5
Local emissions			
Point-of-use	NO_2 emissions (tonne/year)	13,775	13,924
	Index (tonne-people/km^2)	6,554,935	6,625,722
	Changes NO_2 (tonne/year)		148.8
	% changes		1.1%
	changes car		171.4
	changes bus		10.4
	changes rail		-33.0
Production	Petrol	773	772
	Diesel	67	67
	Electricity	1,863	2,061
	Total	2,703	2,900
	% changes		7.3%
Total	Point-of-use + Production	16,478	16,824
	% changes		2.1%

Point-of-use	PM_{10} emissions (tonne/year)	145	143
	Index (tonne-people/km^2)	69,033	68,002
	Changes PM_{10} (tonne/year)		-2.2
	% changes		-1.5%
	changes car		-0.8
	changes bus		0.8
	changes rail		-2.1
Production	Petrol	44	44
	Diesel	2	2
	Electricity	206	228
	Total	252	274
	% changes		8.7%
Total	Point-of-use + Production	398	417
	% changes		5.0%
Global emissions			
Point-of-use	CO_2 emissions (tonne/year)	1,368,634	1,364,910
	Changes CO_2 (tonne/year)		-1,371.0
	% changes		-0.1%
	changes car		-1,459.1
	changes bus		777.0
	changes rail		-688.9
Production	Petrol	169,554	169,436
	Diesel	12,705	12,655
	Electricity	494,680	547,271
	Total	676,939	729,361
	% changes		7.7%
Total	Point-of-use + Production	2,043,219	2,094,271
	% changes		2.5%

E.5.8 Looking at the changes in emissions at the point-of-use, Strategy 5 would cause a small increase in the emission level of NO_2 (by 1.1%), but a reduction in PM_{10} (by 1.5%) and a negigible redeuction in CO_2. The rail schemes are responsible for a significant proportion of the reduction in emissions. The overall local air pollution impact is considered **neutral**.

E.5.9 Considering the emissions produced at the power station, there is an increase in the emission level for all pollutants (between 7.3 and 8.7%). Overall, considering the emissions at the point-of-use and the production stage emissions at the power station, the total increases in the levels of NO_2, PM_{10} and CO_2 are 2.1, 5.0 and 2.5%. The overall global pollution impact is **slight negative**.

E.5.10 A separate assessment of local air pollution emissions has been made for a selection of road and rail links, in terms of NO_2 and PM_{10}. As CO_2 is a global pollutant, such assessment would have been meaningless. Table 5.4 shows the results of the assessment of local air pollution at specific road and rail links.

Table E 5.4 Local Air Pollutant Emission Levels at Specific Road and Rail Links

	NO_2 (kg/year)			PM_{10} (kg/year)		
	Do-Min	**+ Strat. 5**	**Change**	**Do-Min**	**+ Strat. 5**	**Change**
Road links:						
A21 Tonbridge - Pembury Off-line dualled	-	133,688	133,688	-	1,397	1,397
A21 Tonbridge - Pembury (existing)	82,962	1,357	-81,606	2,004	16	-1,989
A21 Hurst Green - John's Cross	74,378	78,990	4,612	842	918	76
A21 John's Cross - Hastings	122,179	145,594	23,415	1,472	1,592	121
A2100 Battle Road (Battle to Baldslow)	54,690	42,977	-11,713	712	504	-207
A259 Bexhill & Hastings Western Bypass	-	284,944	284,944	-	2,426	2,426
A259 Hastings Eastern Bypass	-	77,822	77,822	-	657	657
A259 Pevensey - Western Bypass	62,700	57,413	-5,287	621	632	12
A259 Western Bypass - Bexhill	34,377	19,290	-15,087	358	184	-174
A259 Bexhill - Hastings Town Centre	32,782	15,416	-17,366	779	242	-537
A259 Hastings Town Centre	22,891	12,261	-10,630	532	291	-241
A259 Hastings Town Centre - Eastern bypass	24,684	23,541	-1,144	290	274	-16
A259 Eastern Bypass - Rye	56,135	68,573	12,439	691	792	101
A26 Tonbridge - Tunbridge Wells	76,549	62,897	-13,652	2,036	1,696	-340
A28 Baldslow - A268	86,518	80,485	-6,033	1,107	1,022	-85
B2093 The Ridge	46,101	46,202	100	652	642	-10
Gillsman's Hill	6,311	9,315	3,004	85	112	27
Bexhill Northern Approach Road	-	25,159	25,159	-	300	300
Total selected roads			402,666			1,517
Rail links:						
Hastings – Wadhurst	0	0	0	0	0	0
Wadhurst – Tonbridge	0	0	0	0	0	0
Eastbourne – Polegate	0	0	0	0	0	0
Pevensey – Bexhill	0	0	0	0	0	0
Bexhill – Hastings	0	0	0	0	0	0
Hastings – Ashford	33,009	0	-33,009	2,095	0	-2,095

E.5.11 Clearly, increases in emissions are greatest at locations where new roads are proposed (bypasses and A21 off-line dualled). The most substantial benefits in terms of emission reductions occur at the current A21 between Tonbridge and Pembury (due to traffic relief) and on A259 from the proposed Western bypass to Hastings town centre. Benefits occur due to lower traffic levels and less congested road conditions. As far as rail emissions are concerned, electrification of the Hastings to Ashford link means the elimination of local emissions at the point-of-use.

Landscape

E.5.12 The landscape impacts from the implementation of Strategy 5 are summarised in Table E 5.5.

Table E 5.5 Landscape Impacts

Location	Features	Importance	Impact
Western bypass	Landscape character, High Weald AONB and setting of SSSI	High	large adverse
Western bypass	Loss of agricultural land	High	large adverse
Eastern bypass	Landscape character, High Weald AONB and setting of SSSI	High	large adverse
Eastern bypass	Loss of agricultural land	High	large adverse
A21 Tonbridge-Pembury dual	Landscape character, High Weald AONB and setting of SSSI	High	large adverse
A21 Tonbridge-Pembury dual	Loss of woodland and agricultural land	High	large adverse
Provision of parking at rail stations	Land for parking at High Weald AONB	Moderate	slight adverse
Hastings-Ashford rail line	Landscape quality within High Weald AONB	Moderate	slight adverse
A21Pembury-Hastings	Landscape quality in AONB	Moderate	moderate adverse
Overall			**Large adverse**

E.5.13 The overall landscape impact can be considered **large adverse**.

Townscape

E.5.14 The townscape impacts from the implementation of Strategy 5 are summarised in Table E 5.6.

Table E 5.6 Townscape Impacts

Location	Features	Importance	Impact
A259 Baldslow junction	Urban setting	Moderate	moderate adverse
Gillsman's Hill	Local character	Moderate	slight adverse
Hastings	Old town	High	moderate beneficial
The Ridge	Local character	Moderate	neutral
A21/Hurst Green	Local character	Moderate	large beneficial
Overall			**Slight beneficial**

E.5.15 The impact on Gillsman's Hill has been considered slight adverse due to the implementation of the package of measures proposed to mitigate the traffic impacts in the area. The overall townscape impacts are considered slight beneficial.

Heritage

E.5.16 The heritage impacts are summarised in Table E 5.7.

Table E 5.7 Heritage Impacts

Location	Features	Importance	Impact
Western bypass	Listed building Grade II (demolition)	Moderate	moderate adverse
Robertsbridge	Parking provision at designated area	Moderate	moderate adverse
Battle	Parking provision at Battle of Hastings area	Moderate	slight adverse
Overall			**Moderate adverse**

E.5.17 The overall heritage impacts are considered **moderate adverse**.

Biodiversity

E.5.18 The biodiversity impacts are summarised in Table E 5.8.

Table E 5.8 Biodiversity Impacts

Location	Features	Importance	Impact
Eastern bypass	Loss of woodland (incl. Ancient)	High	large adverse
Tonbridge-Pembury dual	Loss of woodland (incl. Ancient)	High	moderate adverse
Western bypass	Impact on SSSI	High	large adverse
Hastings - Ashford rail line	Impact on SSSI NE Rye	Moderate	slight adverse
Overall			**Large adverse**

E.5.19 The overall biodiversity impacts are considered **large adverse**.

Water environment

E.5.20 The Western bypass would affect 3 wetland sites of national importance (on the Pevensey Levels SSSI, a ditch near New Lodge Farm and in the Combe Haven SSSI). Four ponds would be directly affected and 5,645 metres of ditches and streams would be lost or culverted. The Eastern bypass would directly affect 0.35 ha and 3,795 metres of ditches would be lost. The Hastings-Ashford railway line improvements could have an adverse impact on ditches and streams in AONB and East Guldeford Levels SSSI. The water environment impacts are summarised in Table E 5.9.

Table E 5.9 Water Environment Impacts

Location	Features	Importance	Impact
Western bypass	Ditches and streams lost or culverted	High	large adverse
Eastern bypass	Ditches and streams lost or culverted	High	large adverse
Hastings - Ashford rail line	Ditches and streams in SSSI maybe affected	Moderate	slight adverse
Overall			**Large adverse**

E.5.21 The overall water environment impacts are considered **large adverse.**

Journey Ambience

E.5.22 Table E 5.10 illustrates the assessment of changes in private and public transport journey ambience. The impact is measured in terms of positive (+), negative (-) or neutral (0). The table also shows the number of travellers benefited or disbenefited by each indicator.

Table E 5.10 Journey Ambience

Factor	Indicator	Strategy 5	
		Impact (-, 0, +)	N. travellers affected (per day)
Travel care	Cleanliness	0	40855
	Facilities	0	40855
	Information	0	40855
	Environment	0	40855
Travellers' views	Visual intrusion	+	2230821
Traveller stress	Frustration	+	2189966

	Fear of accidents	+	2189966
	Route uncertainty	+	2230821
Overall impact			**Large beneficial**

E.5.23 The benefits in traveller care are experienced by rail users on the Hastings-Ashford line, who will benefit from electric rolling stock. The Western and Eastern bypasses, Tonbrige-Pembury dualling and off-line improvements to the A21 south of Pembury will all positively contribute to travellers' views and traveller stress.

E.5.24 Therefore the results of the framework suggest that the overall impact of Strategy 5 on journey ambience can be considered **large beneficial**.

Safety

Accidents

E.5.25 The public transport accident impacts, in terms of the number and monetary valuation of accidents per annum, according to different injury types, are summarised in Table E 5.11.

Table E 5.11 Public Transport Annual Accident Impacts

	DO-MINIMUM +				Strategy 5			
Injury	**N. accidents**		**Valuation (£m)**		**N. accidents**		**Valuation (£m)**	
	Bus	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**
Slight	7.95	46.79	£0.06	£0.32	7.95	46.54	£0.06	£0.32
Serious	0.12	1.92	£0.01	£0.17	0.12	1.91	£0.01	£0.17
Fatal	0.00	0.21	£0.00	£0.16	0.00	0.21	£0.00	£0.16
Total	8.08	48.91	£0.07	£0.66	8.08	48.66	£0.07	£0.65
Changes					0.00	-0.25	£0.00	-£0.00

E.5.26 The total number of public transport accidents is predicted to increase (by about 0.25 per year) as a result of the implementation of rail schemes. The location of accidents is considered under the "Distribution and Equity" section of the Supporting Analyses.

E.5.27 Table E 5.12 shows the predictions in changes in private transport accident impacts.

Table E 5.12 Private Transport Annual Accident Impacts

	DO-MINIMUM +		Strategy 5	
Injury	**N. accidents**	**Valuation (£m)**	**N. accidents**	**Valuation (£m)**
Slight	6,189	£42.83	6,093	£42.16
Serious	1167.58	104.36	£1,151.78	£102.95
Fatal	109.83	86.12	£109.25	£85.66
Total	7466.63	233.31	£7,353.67	£230.77
Changes			-£112.95	-£2.54

E.5.28 The total number of private transport accidents is estimated to decrease by about 113 annually (of which 1 would be fatal and 17 serious), the monetary implication of which is estimated at a £2.5 million saving.

E.5.29 The overall safety impact in terms of the changes in the number of accidents is **large beneficial**.

Security

E.5.30 Table E 5.13 presents the changes in the security indicators and the respective impact assessment.

Table E 5.13 Public Transport Security Impacts

Indicator	Importance	DO-MINIMUM + Assessment	Strategy 5 Assessment
Site perimeters, entrances and exits	low	moderate	moderate
Formal surveillance	medium	poor	poor
Informal surveillance	low	poor	moderate
Landscaping	medium	moderate	high
Lighting and visibility	high	poor	moderate
Emergency call	high	moderate	moderate
Overall impact			**Slight beneficial**

E.5.31 The introduction of public transport measures in 3 quality bus partnership schemes will slightly improve pedestrian and public transport user security, and the overall score is **slight beneficial**.

Economy

Economic Efficiency

E.5.32 The economy impacts are assessed in terms of the cost and benefit implications from the combined effect of all schemes implemented in the scope of each strategy.

E.5.33 The benefits of the schemes in Strategy 5 have been calculated as recommended in GoMMMS, and the summary is presented in Table E 5.14.

Table E 5.14 Summary of Net Benefits (£ annual in 2020, 1994 prices)

Benefit	Road	Rail	Bus	Total
Revenue	£0	-£102,061	£183,337	£81,276
Other benefits				
Travel time	£15,616,248	£88,231	£439,264	£16,143,742
Vehicle operating costs	£258,595	£0	£0	£258,595
Accident	£2,535,319	£3,404	£0	£2,538,723
Total other benefits	£18,410,162	£91,635	£439,264	£18,941,061

E.5.34 The highest saving is associated with travel time reductions, but accident savings also represent considerable benefits.

E.5.35 The assessment of Transport Economic Efficiency (TEE) is based on the GoMMMS TEE table, given in Table E 5.15, in terms of the net changes.

Table E 5.15 Transport Economic Efficiency for Strategy 5 (£m PV)

	Total	Net economic changes (£ m)			
User benefits		**Car**	**Bus & coach**	**Rail**	**Other**
Travel time	115.2	111.2	3.3	0.7	0.0
Vehicle operating costs	1.8	1.8	0.0	0.0	0.0
User charges	-0.8	0.0	-1.5	0.8	0.0
Net impact	116.3	0.0	0.0	0.0	0.0
Private Sector Provider Impacts			**Bus & coach**	**Rail**	**Other**
Revenue	0.8	0.0	1.5	-0.8	0.0
Operating costs	-39.4	0.0	0.0	-39.4	0.0
Investment costs	-17.8	0.0	-0.2	-17.6	0.0
Grant/subsidy	0.0	0.0	0.0	0.0	0.0
Net impact	-56.4	0.0	0.0	0.0	0.0
Public Sector Provider Impacts		**Road infrastr.**	**Bus & coach**	**Rail**	**Other**
Revenue	0.0	0.0	0.0	0.0	0.0
Operating costs	-53.6	-53.6	0.0	0.0	0.0
Investment costs	-81.8	-79.8	-2.1	0.0	0.0
Net impact	-135.5	0.0	0.0	0.0	0.0
Other Government Departments		**Road infrastr.**	**Bus & coach**	**Rail**	**Other**
Grant/subsidy payments	56.4	0.0	-1.4	57.7	0.0
Indirect tax revenues	0.0	0.0	0.0	0.0	0.0
Net impact	56.4				
Total					
Net Present Value (no accident benefit)	-57.9				
Net Present Value (with accident benefit)	-75.6				
Present Value of Costs	-192.7				
Present Value of Cost to Govern.	-191.9				
Benefit/Cost ratio	0.6				
Value/Cost to Government ratio	-0.4				

Notes: Beneficial Cost ratio and Value/Cost ratio based in the net present value including accident benefits
Net present value excludes Grant/Subsidy payments by Government Grant/Subsidy payments by Government assumed equal to the net impact from the private sector provider (transfer of funds), if positive (as a subsidy only, not as a surplus).
User charges are assumed equal (but with opposite signal) to the revenue from the private sector Provider.
Bus (private sector) investment costs: assume £120,000 per corridor in 1st year of operation.
Bus operating costs: benefits recycled in more reliable services (zero).
Bus revenue assumed at £50,000 per corridor per annum (1999 prices).
Bus travel time and accident savings assumed Zero due to the lack of bus trip data.
A £5m PV has been assumed as the benefit from travel time savings for the Strategies including both Western and Eastern bypasses, in order to account for the strategic trips.
QBP passenger benefits: A259: £1.2m PV. A2100: £1m PV. A21: £1.5m PV. A26: £0.8m PV
The freight user benefits are included in the personal travel user benefits

E.5.36 The net present value for this strategy has been calculated at -£75.6 million, while the present value of costs is -£192.7 million and the present value of costs to the Government is -£191.9 million. The benefit/cost ratio is 0.7, which suggests that the transport benefits are lower that the costs incurred.

Reliability

E.5.37 The impact on reliability was estimated with basis on the changes to the Volume/Capacity ratio in the selected road links. Table E 5.16 presents the results of changes in V/C ratio and the overall impact assessment score.

Table E 5.16 Changes in V/C Ratio and Impact Assessment Score

	Do Min +		Strategy 5		
Link	**V/C**	**Weight**	**V/C**	**Change**	**Weighted**
A21 Tonbridge - Pembury off-line dualled	-	-	0.65	-	28,934.19
A21 Tonbridge - Pembury	0.99	31,525	0.01	-98.56%	7
A21 Hurst Green - John's Cross	0.69	10,348	0.74	7.34%	11,923
A21 John's Cross – Hastings	0.79	13,802	0.85	6.83%	15,750
A2100 Battle Road (Battle to Baldslow)	0.81	14,511	0.62	-23.72%	8,444
A259 Bexhill & Hastings Western Bypass	-	-	0.38	-	9,600.15
A259 Hastings Eastern Bypass	-	-	0.47	-	7,079.13
A259 Pevensey - Western Bypass	0.92	18,692	1.09	18.48%	26,240
A259 Western Bypass - Bexhill	0.78	13,271	0.42	-45.68%	3,916
A259 Bexhill - Hastings Town Centre	1.03	33,817	0.46	-55.25%	6,771
A259 Hastings Town Centre	0.61	11,726	0.32	-46.35%	3,376
A259 Hastings Town Centre-Eastern Bypass	0.43	4,116	0.41	-5.01%	3,714
A259 Eastern Bypass - Rye	0.42	3,798	0.51	22.12%	5,665
A26 Tonbridge - Tunbridge Wells	1.04	23,857	0.85	-17.99%	16,047
A28 Baldslow - A268	0.30	2,026	0.28	-7.25%	1,743
B2093 The Ridge	0.80	14,179	0.80	-0.25%	14,108
Gillsman's Hill	0.55	6,609	0.78	41.77%	13,284
Bexhill Northern Approach Road	-	-	0.33	-	7,321.39
Weighted change		0.81			0.62
					-22.89%
Overall impact					**Moderate positive**

E.5.38 Strategy 5 enabled the provision of additional road space, with an overall increase in traffic. The overall result is that there would be reduced congestion in some locations, which makes highway routes more reliable. The average impact for road transport is considered moderate positive. In addition, as a result of improved public transport (particularly on rail route from Hastings to Ashford) public transport journeys may be more reliable. The overall impact is, therefore, **large positive**.

Wider Economic Impacts

E.5.39 The strategy improves access to regeneration areas in Hastings. It opens land for development of housing, industry and commerce, which assist economic development and increase in business activity and workforce. Following the guidelines in GoMMMS, Table E 5.17 illustrates the wider economic impacts from Strategy 5.

Table E 5.17 Wider Economic Impacts

REGENERATION				
	Is the project in a designated regeneration area?			
Designated areas	Road or rail line which the proposal affects passes through regeneration area? Y/N	Road junction or rail station in regeneration area? Y/N	Access road or rail to/from site? Y/N	First criterion
Assisted Area Tier 1, 2 or 3	Y	N	N	N
Single Regeneration Budget	Y	N	Y	Y
European Structural Funds	N	N	N	N
	Is project consistent with strategy to achieve local regeneration objectives? Y/N			2nd criterion
	Y			Y
Overall assessment	Project has potential regeneration benefits			
DEVELOPMENT DEPENDENCY				
Have development dependent sites been identified? Y/N				Y
If yes, then:				
Likely that the Highways Agency, Local Highway Authority or public transport providers or operators would object to the project? Y/N				N
Planning permission for site is conditional on project? Y/N				Y
Would investors still come forward or proceed beyond feasibility in the absence of the strategy Y/N				N
Overall assessment	Project has development dependency			

E.5.40 The above framework indicates that the project has both **potential regeneration benefits** and **development dependency**.

Accessibility

Option Values

E.5.41 The effect of 3 quality bus partnership and 5 rail improvement schemes provide new options for public transport use. The overall impact is considered to be **slight positive**.

Severance

E.5.42 Table 5.18 shows the assessment of the severance impacts at selected road locations. The assessment was based on the changes in pedestrian delay when crossing the road. The overall severance impact takes into account the number of people affected in each location. The number of people affected has been measured in terms of the population living within 250 metres of each side of the link.

Table E 5.18 Severance Impacts

	Change in ped. delay (s)	**Impact level Do Min**	**+ Strategy !**	**Severance impact**
Road location				
A21 Tonbridge - Pembury Off-line dualled	76	None	Severe	Large negative
A21 Tonbridge - Pembury	-39	Severe	None	Large positive
A21 Hurst Green - John's Cross	2	None	Slight	Slight negative
A21 John's Cross - Hastings	1	None	None	None

A2100 Battle Road (Battle to Baldslow)	-5	Slight	None	Slight positive
A259 Bexhill & Hastings Western Bypass	25	None	Moderate	Moderate negative
A259 Hastings Eastern Bypass	12	None	Slight	Slight negative
A259 Pevensey - Western Bypass	7	Slight	Moderate	Slight negative
A259 Western Bypass - Bexhill	-7	Slight	None	Slight positive
A259 Bexhill - Hastings Town Centre	-34	Severe	Slight	Moderate positive
A259 Hastings Town Centre	-8	Slight	None	Slight positive
A259 Hastings Town Centre - Eastern Bypass	-1	None	None	None
A259 Eastern Bypass - Rye	3	None	None	None
A26 Tonbridge - Tunbridge Wells	-5	Slight	Slight	None
A28 Baldslow – A268	0	None	None	None
B2093 The Ridge	-1	Slight	Slight	None
Gillsman's Hill	5	None	Slight	Slight negative
Bexhill Northern Approach Road	16	None	Slight	Slight negative
Overall impact				**Slight positive**

E.5.43 The above scores indicate that there are positive and negative severance impacts, but weighted according to the population in each location, the overall impact of the strategy can be considered Slight positive.

Access to Public Transport

E.5.44 Strategy 5 enhances access to public transport by increasing service frequencies and reducing journey times. Public transport measures include 3 quality bus partnership schemes and 5 rail improvement measures. The overall assessment of the impacts on the access to public transport is **slight beneficial**.

Integration

Interchange

E.5.45 The impacts on public transport passenger interchange have been assessed as illustrated in Table E 5.19.

Table E 5.19 Passenger Interchange Impacts

Passenger interchange indicator	DO-MIN +	Strategy 5
Waiting environment	poor	moderate
Level of facilities	moderate	moderate
Level of information	moderate	moderate
Visible staff presence	moderate	moderate
Physical linkage for next stage journey	moderate	moderate
Connection time and risk of missing a connection	poor	moderate
Qualitative score		**Moderate beneficial**

E.5.46 The measures introduced within the 3 quality bus partnerships will improve pedestrian facilities at stops and interchanges. The overall impact has been estimated as **moderate beneficial**.

Land Use

E.5.47 Strategy 5 includes schemes which are compatible with local plans and regional land use policy (such as enabling employment and residential areas to develop), but other schemes (in particular, the bypasses) which can be considered to be incompatible with regional plan policy on affecting AONB and national policies. The overall impact can be considered **moderate beneficial**.

Integration with Other Government Policies

E.5.48 Strategy 5 helps to integrate Hastings and Rother into the wider sub-region (which includes Tonbridge/Tunbridge Wells and Ashford), but has little impact on wider integration with the rest of the South-East (including London, the M25 and Gatwick). The overall assessment impact is **slight beneficial**.

Supporting Analyses

E.5.49 This section presents the additional issues which accompany the Appraisal Summary Tables for the assessment of multi-modal studies. They are grouped under three headings: distribution and equity; affordability and financial sustainability; and practicality and public acceptability. All comparisons are made against the Do Minimum Plus strategy.

Distribution and Equity

Noise and Local Air Pollution

E.5.50 The key distributional impacts of noise and Local Air Pollution are an improvement for those communities relieved of traffic whilst a deterioration for those in the vicinity of routes to which traffic is transferred.

E.5.51 Between Tonbridge and Pembury, with the introduction of the off-line section there is a reduction of nearly 15 dB(A) on the existing A21. However, due to the limited number of properties along the existing A21, there will be a net benefit to only 13 properties. On the A26 between Tonbridge and Tunbridge Wells there will be a reduction of noise of nearly 0.9 dB(A) and an improvement in air quality of around 17%.

E.5.52 South of Pembury some villages along the A21 will benefit from local bypass measures reducing traffic levels for them and hence noise and local air pollution. However along the route as a whole noise will increase by 0.5 dB(A) and air quality will deteriorate by 6-19%. Additional station car parking at Robertsbridge will encourage an increase in car trips and therefore contribute to greater noise and a reduction in Local Air Pollution for those in the vicinity of the station.

E.5.53 The Western bypass will bring improvement to the A259 from Lamb Inn through Bexhill to Glyne Gap, and along Hastings town centre and sea front. The noise level will be reduced by around 2.5 dB(A) benefiting over 200 people. Air quality will improve significantly, by up to 50% for nitrogen dioxide levels and 70% for particulate matter.

East of Hastings town centre along the A259 to the Eastern bypass at Guestling Thorn there will be a benefit for both air quality indicators (around 5%) .

E.5.54 However, along the bypass route there will be an adverse impact on noise with levels on both the Eastern and Western bypasses greater than 72 dB(A) and increased air pollution. This is most significant for the residents in the Bohemia area where daily traffic levels will increase, and especially on Gillsman's Hill which is part of the link to the Western bypass (50% increase eastbound in the AM peak). This translates into an increae in noise of 2.1 dB(A), NO_2 of 50% and PM of 34%. The residential area around the Mayfield interchange also contains four schools (Churchwood County Primary School, Grove School, Robsack Wood Community School and Westerleigh School).

E.5.55 On The Ridge on which Conquest hospital is sited, along with Helenswood School (Upper and Lower) and Sandown County Primary School, there will be negligible effects in terms of noise and air quality. Beyond Guestling Thorn to Rye there will be an increase in levels of noise (by 0.9 dB(A) and air pollution (22% NO_2, 15% PM). The population of Crowhurst and Westfield will be adversely affected by the Western and Eastern bypasses

E.5.56 With the railway improvements there will be increase in air pollution and noise (nearly 1 dB(A)) for those adjacent to the line between Hastings and Wadhurst. With the electrification of the Hastings to Ashford line there will be air quality benefits, but the increase in service frequency will lead to increased noise levels (nearly 3 dB(A)).

Other Environmental impacts

E.5.57 The A21 dualled link between Tonbridge and Pembury will have a significant effect on the landscape within the High Weald AONB. There will be loss of woodland, some of which is ancient and a deep cutting through Castle Hill Ridge which provides a focal point for many views, including those from Tunbridge Wells of the south facing valley.

E.5.58 Along the A21 corridor south of Pembury any selective bypass schemes will lie within the High Weald AONB and affect the landscape views from the bypassed villages and for those within the vicinity. In addition there will be effects on biodiversity. However, the environmental benefits for the bypassed communities themselves are likely to be significant. No detailed assessment has been made though. Additional car parking at Robertsbridge will also require land which is within the High Weald AONB.

E.5.59 The Western and Eastern bypasses will impact on the landscape along most of their route including that of the effect of the viaduct over Combe Haven. This will affect views from both within the SSSIs (Combe Haven, Pevensey Levels and Marline Valley Woods) and north Bexhill, and southwards from Hooe, Ninfield, and from within the High Weald AONB including from Crowhurst and Westfield. The Eastern bypass will impact on the tranquility of Great Maxwell.

E.5.60 There will be effects from the Western bypass for biodiversity and loss of water channels in three SSSIs. One grade II listed building (East Lodge at Beaufort Park) will be demolished. In terms of townscape, benefits will be experienced by Hastings Old Town due to the reduction in traffic in the area.

Accident Savings

E.5.61 The overall level of accident savings by road and rail are presented under the safety sub-objective within the NATA table. In terms of the spatial distribution of accident savings, these will be mostly associated with the transfer of traffic to the newly constructed roads, namely the Eastern and Western bypasses and the Tonbridge-Pembury link. In addition to savings for transport users, the reduction in traffic the built up areas of villages such as Flimwell and Hurst Green, as well as Bexhill and Hastings town centres, will benefit the safety of pedestrians and cyclists.

E.5.62 To the detriment of safety will be the increased traffic flows in the residential area around the Mayfield interchange with the Western bypass.

Transport economic benefits

E.5.63 The TEE table presents the economic impacts of the strategy to transport users and transport system operators. There will however, also be particular benefits for particular types of users related to their trip purpose.

Work trips

E.5.64 Benefits from the strategy will include journey time savings for car trips from areas such as Bexhill to employment centres such as the Ridge (around six minutes in the peak) and improved journey time reliability within the study area. For public transport users journey reliability is provided by the Quality Bus Partnership on the A259 and on The Ridge. The Hastings to Ashford line will provide a journey time of less than half an hour to access employment or connect to London or international rail services.

Shopping and Leisure trips

E.5.65 Congestion at Glyne Gap will be reduced improving access to the retail and leisure facilities there. This will also be the case for both Bexhill and Hastings town centres.

Educational trips

E.5.66 With a number of schools situated in West Hastings the proximity of the bypass may attract school-run trips. On the existing network improved access will also be achieved through improved journey time reliability both for private vehicle users and public transport users.

Social exclusion

E.5.67 Whilst social exclusion is not explicitly stated as a supporting analyses issue (nor under the NATA framework) it is a key element within the objective of the study. It has therefore been covered in the two sections below.

Wider economic impacts

E.5.68 The AST entry for Economy presents the assessment at the strategic level. There are however within this important impacts at the disaggregate level, in terms of equity between different economic groups, most pertinently for the unemployed.

E.5.69 In Gensing, Maze Hill, Central St Leonards and Castle the unemployment rate is above 8.5%. For those in those wards seeking work the strategy will bring limited benefits in the way of increasing potential employment opportunities. For those with access to a car the Western Bypass will provide a route to the developments at North Bexhill. For those without a car the traffic management measures on the A259 will aid travel to Bexhill by bus or bicycle.

E.5.70 For those on low incomes there will be a similar level on benefit. However, in both cases there will be competition for the job opportunities with those attracted into the area by the housing developments.

Access to the Transport system

E.5.71 In Hastings and Bexhill over 20% of households are without a car. In a number of wards the figure is greater than 40%. In most instances the higher figures are around the town centres of Bexhill, St Leonards and Hastings (Central (over 50%), Sackville, Gensing, Central St Leonards (over 50%), Braybrooke, Castle (over 50%), Mount Pleasant and Old Hastings), as well as the wards of Hollington and Broomgrove.

E.5.72 The strategy will have limited benefit to those who are reliant upon public transport. These will be derived from the Quality Bus Partnerships along the Ridge and A259 and improvements in journey time reliability elsewhere on the road network. The complementary traffic management measures introduced will improve conditions for cyclists and pedestrians along the existing A259 between Bexhill and Guestling Thorn. Rail services to Tunbridge Wells and Ashford will also be improved.

Affordability and financial sustainability

E.5.73 Whilst the overall value for money of the strategy is presented in the AST, Tables E 5.20 and E 5.21 identify the disaggregation of funding, both for investment and operation, between public and private organisations. The financial breakdown is presented against the time profile for the strategy.

Table E 5.20 Strategy 5 Private Sector Affordability and Financial Sustainability

	£ (million undiscounted)			
Private Sector Investment	**TOTAL**	**Rail**	**Bus**	**explanation**
Investment Cost				
Year 1 (2001)	-£0.22	-£0.22	£0.00	
Year 2	-£10.45	-£10.45	£0.00	
Year 3	-£10.50	-£10.39	-£0.10	
Year 4	-£10.50	-£10.39	-£0.10	
Year 5	£0.00	£0.00	£0.00	
TOTAL	-£31.67	-£31.46	-£0.21	(1)
Capital Grants	£0.00			(2)
Private Sector Operators				
Year 1				
Change in operator costs	£0.00	£0.00	£0.00	(3)
Change in operator revenue	£0.04	£0.00	£0.04	(4)
NET IMPACT	£0.04	£0.00	£0.04	(5) = (4) + (3)
Subsidy	£0.00	£0.00	£0.00	= -(5)
Year 5				
Change in operator costs	-£4.93	-£4.93	£0.00	(7)
Change in operator revenue	£0.08	-£0.07	£0.15	(8)
NET IMPACT	-£4.85	-£5.00	£0.15	(9) = (8)-(7)
Subsidy	£5.00	£5.00	£0.00	(10)
Year 10				
Change in operator costs	-£4.93	-£4.93	£0.00	(11)
Change in operator revenue	£0.08	-£0.08	£0.16	(12)
NET IMPACT	-£4.85	-£5.01	£0.16	(13) = (12) + (11)
Subsidy	£5.01	£5.01	£0.00	(14)
Private Sector NET IMPACT				
Investm. net of capital grant	-£31.67	-£31.46	-£0.21	(1) + (2)
Operations net of subsidy				
Year 1	£0.04	£0.00	£0.04	(5) + (6)
Year 5	-£4.85	-£5.00	£0.15	(9) + (10)
Year 10	-£4.85	-£5.01	£0.16	(13) + (14)

Table E 5.21 Strategy 5 Public Sector Affordability and Financial Sustainability

	£ (million undiscounted)				
Public Sector Investment	**TOTAL**	**HA**	**Rail**	**Bus**	**explanation**
Investment Cost					
Year 1	£0.00	£0.00	£0.00	£0.00	
Year 2	-£15.71	-£13.75	£0.00	-£1.96	
Year 3	-£15.61	-£15.06	£0.00	-£0.55	
Year 4	-£0.87	-£0.87	£0.00	£0.00	
Year 5	-£38.98	-£38.98	£0.00	£0.00	
TOTAL	-£71.17	-£68.66	£0.00	-£2.51	(15)
Private Sector Contributions	£0.00	£0.00	£0.00	£0.00	(16)
Investment net of contributions	-£71.17	-£68.66	£0.00	-£2.51	(17) = (15) + (16)
Public Sector Operation					
Year 1					
Change in operator costs	£0.00	£0.00			(18)
Change in operator revenue	£0.00	£0.00			(19)
NET IMPACT	£0.00	£0.00			(20) = (19)-(18)
Subsidy	£0.00		£0.00		

Year 5				
Change in operator costs	-£1.36	-£1.36		(21)
Change in operator revenue	£0.00	£0.00		(22)
NET IMPACT	-£1.36	-£1.36		(23) = (22)-(21)
Subsidy	£1.36		£1.36	
Year 10				
Change in operator costs	-£5.81	-£5.81		(24)
Change in operator revenue	£0.00	£0.00		(25)
NET IMPACT	-£5.81	-£5.81		(26) = (25)-(24)
Subsidy	£5.81		£5.81	

Practicality and public acceptability

Feasibility

Technical

E.5.74 Discussions over the schemes in the strategy were held with local authorities, Highways Agency, sSRA, Railtrack and public transport operators. Their feasibility has been examined leading to concern over the ability to provide the improvements to the Hastings to Tunbridge Wells rail service due to track capacity constraints north of Tonbridge. The selective bypasses along the A21 which are part of the improvements south of Pembury were only chosen to be indicative and therefore their full technical feasibility has not been evaluated.

Legal

E.5.75 For the four remitted road schemes the Orders from the Public Inquiries still stand and the alignments for the new road construction are protected. However, in order to proceed with the new proposed roundabout at Lamb Inn and the start of the Western bypass a modification to the orders may be required. The Tonbridge-Pembury offline dual-2 scheme would require new orders and powers to approve them. In addition, the three year shelf life of the CPOs expired in May 1999. The A21 bypass schemes south of Pembury will require Public Inquiry Orders to be made.

Political

E.5.76 In the Hastings and Bexhill area there is political support for this strategy (as part of a greater transport plan) from Michael Foster MP (Hastings and Rye), Charles Wardle MP (Bexhill and Battle), East Sussex County Council, Hastings Borough Council and Rother District Council. In Kent the strategy is supported by Archie Norman MP (Tunbridge Wells), Kent County Council, and Tunbridge Wells Borough Council.

Funding

E.5.77 The schemes in the strategy have been developed in cooperation with potential investment and operation funders. The remitted road schemes would come under Highways Agency responsibility, whilst the local transport authorities would be responsible for the local road schemes, including investment related to Quality Bus

Partnerships. On the operations side of the Partnership are the bus companies. For the rail service improvement funding could be provided by the sSRA and train operators. For rail infrastructure measures Railtrack and the operator would provide funding, with scope for local authority involvement.

Enforcement

E.5.78 The only schemes proposed which will potentially require enforcement are the local road schemes for traffic management and Quality Bus Partnerships. The former will be largely self-enforcing.

'Breadth of Decision'

E.5.79 The study area extends north from Hastings along the A21 corridor to Tonbridge and west and east as far as Pevensey and Rye respectively. The study seeks to provide a transport strategy at the strategic level within this area and related to the wider South-east.

E.5.80 Among the members of the Steering Group are representatives of the County Councils for East Sussex and Kent, the Borough Councils of Hastings, Tunbridge Wells, and Tonbridge and Malling as well as Rother District Council. Alongside them sit a number of agencies (sSRA, SERPLAN, SEEDA and HA) in additional to local business and environmental interests.

Complexity ("depth" of the decision)

E.5.81 By its nature as a strategic study the strategy comprises a number of schemes. These encompass a variety of complex inter-related issues, some of which have implications for transport services beyond the study area (e.g. timetabling Ashford-London rail services).

Time-scale

E.5.82 It is envisaged that the strategy will be in place by 2010.

Phasing

E.5.83 In the lifetime of current LTP the majority of the schemes within the strategy will be implemented.

E.5.84 Whilst it is an integrated strategy the schemes within it are scheduled to be completed in phases. These will be in the following order:

- Traffic management measures for Gillsman's Hill and the Bexhill Northern Approach Road.

- Robertsbridge car park expansion and the Quality Bus Partnership on the A26.

- Rail improvements between Hastings and Tunbridge Wells and the A259 Quality Bus Partnership.

- The Western and Eastern bypasses, complementary measures on the A259 and the Quality Bus Partnership on The Ridge.

- The Tonbridge-Pembury dual link and Hastings-Ashford rail improvement.

- Beyond 2006, and reliant on a further decision making process, the off-line improvements between Pembury and Hastings would be constructed.

Partitioning

E.5.85 This strategy has clearly differentiated elements in terms of the north-south axis and coastal axis. However, there would be little merit in partitioning them due to their integrated nature, e.g. the Western Bypass and A21 improvements.

Complementarity

E.5.86 A key objective in the study has been the development of a set of schemes, which are complementary to each other, to achieve a comprehensive integrated strategy. An example of this includes traffic management measures and a Quality Bus Partnership on the A26 to complement the A21 dualled link between Tonbridge and Pembury. In addition, the Eastern bypass is reliant upon the construction of the Western bypass.

Conflicts

E.5.87 The strategy has been developed in discussion with local authorities with regard to their LTP proposals and their housing requirements.

E.5.88 Access to Hastings is a free-standing study in its own right. Whilst the South Coast MMS will also address the integration of the Hastings area into the wider South-east region the two studies are not in conflict.

Political nature of proposals

E.5.89 There is political agreement on the need for regeneration of the Hastings and Bexhill local economy and the role that transport can play in contributing to this. It is argued that the road-based transport measures are required to enable land to be opened up for development. It is also argued that the transport measures should go beyond those included in this strategy.

Public Acceptability

E.5.90 The public consultation exercise highlights the public acceptability of the strategy. It was clearly the most popular of the strategies for respondents to the newsletter questionnaire, with 48% selecting it as their first choice. From the household survey it was again the most popular strategy, but this time jointly so (with strategy 3), receiving 26% support.

E.5.91 From 25 submissions from the Wider Reference Group, 9 were heavily in favour of the road building schemes.

E.6. STRATEGY 12

New Approach to Appraisal (NATA)

E.6.1 This section describes the assessment of Strategy 12 against the five Central Government objectives and sub-objectives as set out in GoMMMS.

Environment

Noise

E.6.2 Table E 6.1 shows the results of the noise assessment for specific road links, in terms of the noise level ($L_{10\text{-}18\ hour}$ dB(A)) in the Do Minimum Plus and Strategy 12 scenarios and the number of people annoyed by exposure to road traffic noise. The population annoyed represents the number of people who are disturbed by different levels of road traffic noise (according to the annoyance response function given in GoMMMS).

Table E 6.1 Noise Assessment for Specific Roads

Location	L10-18 hour dB(A)		Changes	Pop. Annoyed [1]		Changes
	Do-Min+	Strat. 12	dB(A)	Do-Min+	Strat. 12	popul.
A21 Tonbridge - Pembury off line dual	-	-	0.00	0	0	0
A21 Tonbridge - Pembury	72.97	77.72	4.75	82	113	31
A21 Hurst Green - John's Cross	72.38	72.50	0.12	40	40	0
A21 John's Cross – Hastings	72.59	73.50	0.91	842	907	65
A2100 Battle Road (Battle to Baldslow)	70.39	70.37	-0.02	91	91	0
A259 Bexhill & Hastings Western Bypass	-	-	0.00	0	0	0
A259 Hastings Eastern Bypass	-	-	0.00	0	0	0
A259 Pevensey - Western Bypass	72.54	72.53	0.00	5	5	0
A259 Western Bypass – Bexhill	71.45	71.44	-0.01	284	284	0
A259 Bexhill - Hastings Town Centre	71.08	71.09	0.00	774	774	0
A259 Hastings Town Centre	68.84	68.82	-0.02	240	240	0
A259 Hastings Town Centre - Eastern Bypass	68.21	68.26	0.05	534	534	0
A259 Eastern Bypass - Rye	67.76	68.45	0.69	72	78	6
A26 Tonbridge - Tunbridge Wells	72.56	71.84	-0.72	594	549	-46
A28 Baldslow - A268	69.10	69.02	-0.07	119	119	0
B2093 The Ridge	70.00	70.00	-0.01	269	246	-24
Gillsman's Hill	68.57	68.62	0.05	62	62	0
Bexhill Northern Approach Road	-	-	0.00	0	0	0
Totals				4,008	4,040	32

Notes: 1) The estimate of the population potentially affected by noise has been defined as the number of people living within a 50 metre buffer of each road, for urban roads and 250 metre for new roads (namely the Western and Eastern bypasses and A21 Tonbridge to Pembury off line dual), where the unobstructed distance from source to receptor can be significantly higher.

E.6.3 Significant disbenefits in terms of people affected by noise levels were only predicted for the road segment on the A21 between John's Cross and Hastings, followed by the Tonbridge to Pembury (existing road) segment. On the other hand, benefits occur on different roads, such as the A26 Tonbridge to Tunbridge Wells and The Ridge.

E.6.4 Table E 6.2 presents similar noise assessment results for rail links.

Table E 6.2 Noise Assessment for Rail Links

Location	L10-18 hour dB(A)		Changes	Pop. annoyed		Changes
	Do-Min +	Strat. 12	dB(A)	Do-Min +	Strat. 12	Popul.
Hastings - Wadhurst	58.83	58.96	0.12	242	242	0
Wadhurst - Tonbridge	58.84	60.98	2.13	231	252	21
Eastbourne - Polegate	63.00	63.00	0.00	243	243	0
Pevensey - Bexhill	62.28	63.11	0.83	230	246	15
Bexhill - Hastings	61.43	63.54	2.11	334	412	77
Hastings - Ashford	58.23	61.20	2.98	253	299	46
Total				1,534	1,693	160

E.6.5 Changes in rail noise levels are most significant for the Hastings to Ashford line. The effect of increases in frequencies (from 18 to 25 trains per day) overrides the benefits from electrification. There would be also considerable increases for the sections between Wadhurst and Tonbridge and between Bexhill and Hastings. Overall, there would be an additional 160 people annoyed by rail noise in comparison to the Do Minimum Plus scenario.

E.6.6 The overall road and rail noise impact can be considered **neutral**.

Air pollution

E.6.7 Table E 6.3 presents the results of the calculations of local (NO_2 and PM_{10}) and global (CO_2) emissions for Strategy 12, considering the point-of-use and production stage emissions.

Table E 6.3 Assessment of Local and Global Emission Levels

Source	Indicator	Do-Min +	Strategy 12
Local emissions			
Point-of-use	NO_2 emissions (tonne/year)	13,775	13,770
	Index (tonne-people/km^2)	6,554,935	6,552,573
	Changes NO_2 (tonne/year)		-5.0
	% changes		0.0%
	changes car		18.3
	changes bus		9.8
	changes rail		-33.0
Production	Petrol	773	771
	Diesel	67	67
	Electricity	1,863	2,019
	Total	2,703	2,857
	% changes		5.7%
Total	Point-of-use + Production	16,478	16,627
	% changes		0.9%
Point-of-use	PM_{10} emissions (tonne/year)	145	143
	Index (tonne-people/km^2)	69,033	68,054
	Changes PM_{10} (tonne/year)		-2.1
	% changes		-1.4%

		changes car		-0.7
		changes bus		0.7
		changes rail		-2.1
Production		Petrol	44	44
		Diesel	2	2
		Electricity	206	223
	Total		252	269
	% changes			6.8%
Total	Point-of-use + Production		397	412
	% changes			3.8%
Global emissions				
Point-of-use	CO_2 emissions (tonne/year)		1,366,281	1,362,211
	Changes CO_2 (tonne/year)			-4,069.6
	% changes			-0.3%
		changes car		-4,157.7
		changes bus		777.0
		changes rail		-688.9
Production		Petrol	169,554	169,054
		Diesel	12,705	12,663
		Electricity	494,680	536,334
	Total		676,939	718,051
	% changes			6.1%
Total	Point-of-use + Production		2,043,219	2,080,262
	% changes			1.8%

E.6.8 Looking at the changes in emissions at the point-of-use, Strategy 12 would cause a negligible change in the emission level of NO_2 and a reduction in PM_{10} (by 1.4%) and CO_2 (by 0.3%). The rail schemes are responsible for a significant proportion of the reduction in emissions. The overall impact on local pollution is **slight positive**.

E.6.9 As far as global emissions are concerned, considering the emissions produced at the power station, there is an increase in the emission level for all pollutants (between 5.7 and 6.8%). Overall, considering the emissions at the point-of-use and the production stage emissions at the power station, the total increases in the levels of NO_2, PM_{10} and CO_2 are about 1, 4 and 2%. The overall impact on global emissions is considered **slight negative**.

E.6.10 A separate assessment of local air pollution emissions has been made for a selection of road and rail links, in terms of NO_2 and PM_{10}. As CO_2 is a global pollutant, such assessment would have been meaningless. Table E 6.4 shows the results of the assessment of local air pollution at specific road and rail links.

Table E 6.4 Local Air Pollutant Emission Levels at Specific Road and Rail Links

	NO_2 (kg/year)			PM_{10} (kg/year)		
	Do-Min	**+ Strat. 12**	**Change**	**Do-Min**	**+ Strat. 12**	**Change**
Road links:						
A21 Tonbridge - Pembury Off line dualled	-	-	-	-	-	-
A21 Tonbridge - Pembury (existing)	82,962	124,713	41,751	2,004	1,451	-553
A21 Hurst Green - John's Cross	74,378	79,123	4,745	842	921	79
A21 John's Cross - Hastings	122,179	143,019	20,840	1,472	1,564	93

A2100 Battle Road (Battle to Baldslow)	54,690	54,366	-324	712	707	-5
A259 Bexhill & Hastings Western Bypass	-	-	-	-	-	-
A259 Hastings Eastern Bypass	-	-	-	-	-	-
A259 Pevensey - Western Bypass	62,700	62,607	-93	621	619	-1
A259 Western Bypass - Bexhill	34,377	34,322	-55	358	358	0
A259 Bexhill - Hastings Town Centre	32,782	32,772	-11	779	775	-4
A259 Hastings Town Centre	22,891	22,752	-139	532	527	-5
A259 Hastings Town Centre - Eastern bypass	24,684	25,098	414	290	297	6
A259 Eastern Bypass - Rye	56,135	59,418	3,284	691	655	-36
A26 Tonbridge - Tunbridge Wells	76,549	66,177	-10,371	2,036	1,822	-214
A28 Baldslow - A268	86,518	84,909	-1,609	1,107	1,084	-22
B2093 The Ridge	46,101	46,016	-85	652	651	-1
Gillsman's Hill	6,311	6,370	59	85	86	1
Bexhill Northern Approach Road	-	-	-	-	-	-
Rail links:						
Hastings – Wadhurst	0	0	0	0	0	0
Wadhurst – Tonbridge	0	0	0	0	0	0
Eastbourne – Polegate	0	0	0	0	0	0
Pevensey – Bexhill	0	0	0	0	0	0
Bexhill – Hastings	0	0	0	0	0	0
Hastings – Ashford	33,009	0	-33,009	2,095	0	-2,095

E.6.11 The most substantial changes in terms of PM_{10} reductions occur at the current A21 between Tonbridge and Pembury (due to dramatic speed increase resulting from the on-line dualling). Conversely, substantial increases in NO_2 occur at the same location due to higher traffic levels and more congested road conditions. As far as rail emissions are concerned, electrification of the Hastings to Ashford link means the elimination of local emissions at the point-of-use.

Landscape

E.6.12 The landscape impacts from the implementation of Strategy 12 are summarised in Table E 6.5.

Table E 6.5 Landscape Impacts

Location	Features	Importance	Impact
Western bypass	Landscape character, High Weald AONB and setting of SSSI	High	neutral
Western bypass	Loss of agricultural land	High	neutral
Eastern bypass	Landscape character, High Weald AONB and setting of SSSI	High	neutral
Eastern bypass	Loss of agricultural land	High	neutral
A21 Tonbridge-Pembury dual	Landscape character, High Weald AONB and setting of SSSI	High	slight adverse
A21 Tonbridge-Pembury dual	Loss of woodland and agricultural land	High	neutral
Provision of parking at rail stations	Land for parking at High Weald AONB	Moderate	large adverse
Hastings-Ashford rail line	Landscape quality within High Weald AONB	Moderate	slight adverse
A21 Pembury-Hastings	Landscape quality in AONB	Moderate	neutral

Overall	Slight adverse

E.6.13 The overall landscape impact can be considered **slight adverse**.

Townscape

E.6.14 The townscape impacts from the implementation of Strategy 12 are summarised in Table E 6.6.

Table E 6.6 Townscape Impacts

Location	Features	Importance	Impact
A259 Baldslow junction	Urban setting	Moderate	neutral
Gillsman's Hill	Local character	Moderate	neutral
Hastings	Old town	High	neutral
The Ridge	Local character	Moderate	slight adverse
A21/Hurst Green	Local character	Moderate	large beneficial
Overall			**Slight beneficial**

E.6.15 The overall townscape impacts are considered **Slight beneficial.**

Heritage

E.6.16 The heritage impacts are summarised in Table E 6.7.

Table E 6.7 Heritage Impacts

Location	Features	Importance	Impact
Western bypass	Listed building Grade II (demolition)	Moderate	neutral
Eastern bypass	Archaeological features, 5 historical buildings	Moderate	neutral
A21 Tonbridge-Pembury dualling	Listed Park Grade II	Moderate	neutral
Overall			**Neutral**

E.6.17 The overall heritage impacts are considered **Neutral**.

Biodiversity

E.6.18 The biodiversity impacts are summarised in Table E 6.8.

Table E 6.8 Biodiversity Impacts

Location	Features	Importance	Impact
Eastern bypass	Loss of woodland (incl. Ancient)	High	neutral
Tonbridge-Pembury dual	Loss of woodland (incl. Ancient)	High	slight adverse
Western bypass	Impact on SSSI	High	neutral
Hastings - Ashford rail line	Impact on SSSI NE Rye	Moderate	slight adverse
Overall			**Slight adverse**

E.6.19 The overall biodiversity impacts are considered **Slight adverse**

Water environment

E.6.20 The water environment impacts are summarised in Table E 6.9.

Table E 6.9 Water environment Impacts

Location	Features	Importance	Impact
Western bypass	Ditches and streams lost or culverted	High	neutral
Eastern bypass	Ditches and streams lost or culverted	High	neutral
Hastings - Ashford rail line	Ditches and streams in SSSI maybe affected	Moderate	slight adverse
Overall			**Slight adverse**

E.6.21 The overall water environment impacts are considered **slight adverse.**

Journey Ambience

E.6.22 Table E 6.10 illustrates the assessment of changes in public transport journey ambience. The impact is measured in terms of positive (+), negative (-) or neutral (0). The table also shows the number of travellers benefited or disbenefited by each indicator.

Table E 6.10 Impacts of Public Transport Journey Ambience

Factor	Indicator	Strategy 12	
		Impact (-, 0, +)	N. travellers affected (per day)
Travel care	Cleanliness	+	41963
	Facilities	+	41963
	Information	+	41963
	Environment	+	41963
Travellers' views	Visual intrusion	0	0
Traveller stress	Frustration	0	2,165,568
	Fear of accidents	0	2,165,568
	Route uncertainty	0	0
Overall impact			**Moderate beneficial**

E.6.23 The benefits in traveller care are experienced by rail users on the Hastings-Ashford line who will benefit from electric rolling stock. The Western and Eastern bypasses, Tonbrige-Pembury dualling and off-line improvements to the A21 south of Pembury will all positively contribute to travellers' views and traveller stress.

E.6.24 Therefore the results of the framework suggest that the overall impact of Strategy 12 on journey ambience can be considered **moderate beneficial**.

Safety

Accidents

E.6.25 The public transport accident impacts, in terms of the number and monetary valuation of accidents per annum, according to different injury types, are summarised in Table E 6.11.

Table E 6.11 Public Transport Annual Accident Impacts

	DO-MINIMUM +				Strategy 12			
Injury	**N. accidents**		**Valuation (£m)**		**N. accidents**		**Valuation (£m)**	
	Bus	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**
Slight	7.95	46.79	£0.06	£0.32	7.95	48.91	£0.06	£0.34
Serious	0.12	1.92	£0.01	£0.17	0.12	2.00	£0.01	£0.18
Fatal	0.00	0.21	£0.00	£0.16	0.00	0.22	£0.00	£0.17
Total	8.08	48.91	£0.07	£0.66	8.08	51.13	£0.07	£0.69
Changes					0.00	2.22	£0.00	£0.03

E.6.26 The total number of public transport accidents is predicted to increase (by about 2 rail accidents per year) as a result of the implementation of rail schemes. In monetary terms, this represents about £30,000 annually. The location of accidents is considered under the "Distribution ad Equity" section of the Supporting Analyses.

E.6.27 Table E 6.12 shows the predictions in changes in private transport accident impacts.

Table E 6.12 Private Transport Annual Accident Impacts

	DO-MINIMUM +		Strategy 12	
Injury	**N. accidents**	**Valuation (£m)**	**N. accidents**	**Valuation (£m)**
Slight	6,189	£42.83	6,155	£42.59
Serious	1,168	£104.36	1,163	£103.95
Fatal	110	£86.12	109	£86.01
Total	7,467	£233.31	7,428	£232.55
Changes			-39	-£0.76

E.6.28 The total number of private transport accidents is estimated to decrease by about 39 annually (most of which would be slight), the monetary implication of which is estimated at £0.8 million saving.

E.6.29 The overall road and rail accident impact is considered **slight beneficial**.

Security

E.6.30 Table E 6.13 presents the changes in the security indicators and the respective impact assessment.

Table E 6.13 Public Transport Security Impacts

Indicator	**Importance**	**DO-MINIMUM +**	**Strategy 12**
Site perimeters, entrances and exits	low	moderate	moderate
Formal surveillance	medium	poor	poor
Informal surveillance	low	poor	moderate
Landscaping	medium	moderate	high
Lighting and visibility	high	moderate	moderate
Emergency call	high	moderate	moderate
Overall impact			**Slight beneficial**

E.6.31 The introduction of public transport measures in 3 quality bus partnership schemes will slightly improve pedestrian and public transport user security, and the overall score is **slight beneficial**.

Economy

Economic Efficiency

E.6.32 The economy impacts are assessed in terms of the cost and benefit implications from the combined effect of all schemes implemented in the scope of each strategy. The benefits of the schemes in Strategy 12 have been calculated as recommended in GoMMMS, and the summary is presented in Table E 6.14.

Table E 6.14 Summary of Net Benefits (£ annual in 2020, 1994 prices)

Benefit	Road	Rail	Bus	Total
Revenue	£0	£836,618	£179,841	£1,016,460
Other benefits				
Travel time	£3,170,621	£1,067,623	£515,001	£4,753,245
Vehicle operating costs	£9,252	£0	£0	£9,252
Accident	£756,542	-£29,912	£0	£726,630
Total other benefits	£3,936,415	£1,037,712	£515,001	£5,489,127

E.6.33 The highest saving is associated with travel time reductions, but accident savings also represent considerable benefits.

E.6.34 The assessment of Transport Economic Efficiency (TEE) is based on the GoMMMS TEE table, given in Table E 6.15, in terms of the net changes.

Table E 6.15 Transport Economic Efficiency Table

	Total	Net economic changes (£ m)			
User benefits		**Car**	**Bus & coach**	**Rail**	**Other**
Travel time	32.3	£20.9	£3.7	£7.7	£0.0
Vehicle operating costs	0.1	£0.1	£0.0	£0.0	£0.0
User charges	-7.5	£0.0	-£1.5	-£6.0	£0.0
Net impact	24.8				
Private Sector Provider Impacts					
Revenue	7.5	£1.5	£6.0	£0.0	£1.5
Operating costs	-32.1	£0.0	-£32.1	£0.0	£0.0
Investment costs	-15.6	-£0.2	-£15.4	£0.0	-£0.2
Grant/subsidy	0.0	£0.0	£0.0	£0.0	£0.0
Net impact	-40.2				
Public Sector Provider Impacts					
Revenue	0.0	£0.0	£0.0		£0.0
Operating costs	-25.1	-£25.1	£0.0		£0.0
Investment costs	-23.4	-£21.0	-£2.4		£0.0
Net impact	-48.5				
Other Government Departments					
Grant/subsidy payments	40.2	£0.0	-£1.3	£41.5	£0.0
Indirect tax revenues	0.0	£0.0	£0.0	£0.0	£0.0
Net impact	40.2				
Total					
Net Present Value (with accident benefit)	-59.1				
Net Present Value (no accident benefit)	-63.9				
Present Value of Costs	-96.2				
Present Value of Cost to Govern.	-88.7				
Benefit/Cost ratio	0.3				
Value/Cost to Government ratio	-0.7				

Notes: Beneficial Cost ratio and Value/Cost ratio based in the net present value excluding accident benefits
Net present value excludes Grant/Subsidy payments by Government
Grant/Subsidy payments by Government assumed equal to the net impact from the private sector provider (transfer of funds), if positive (as a subsidy only, not as a surplus).
User charges are assumed equal (but with opposite signal) to the revenue from the private sector Provider
Bus (private sector) investment costs: assume £120,000 per corridor in 1st year of operation
Bus operating costs: benefits recycled in more reliable services (zero)
Bus revenue assumed at £50,000 per corridor per annum (1999 prices)
Bus travel time and accident savings assumed Zero due to the lack of bus trip data.
A £5m PV has been assumed as the benefit from travel time savings for the Strategies and Sensitivities including both Western and Eastern bypasses, in order to account for the strategic trips.
QBP passenger benefits: A259: £1.5m PV. A2100: £1m PV. A21: £1.5m PV. A26: £0.8m PV
The freight user benefits are included in the personal travel user benefits

E.6.35 The net present value for this strategy has been calculated at -£64 million (excluding accident benefits), while the present value of costs is -£96 million and the present value of costs to the Government is -£89 million. The benefit/cost ratio is 0.3, which suggests that the long-term benefits are lower that the actual costs incurred.

Reliability

E.6.36 The impact on reliability was estimated with basis on the changes to the Volume/Capacity ratio in the selected road links. Table E 6.16 presents the results of changes in V/C ratio and the overall impact assessment score.

Table E 6.16 Changes in V/C Ratio and Impact Assessment Score

	Do Min +		Strategy 12		
Link	**V/C**	**Weight**	**V/C**	**Change**	**Weighted**
A21 Tonbridge - Pembury off line dualled	-	-	-	-	-
A21 Tonbridge - Pembury	0.99	31,525	1.31	31.9%	54,882
A21 Hurst Green - John's Cross	0.69	10,348	0.74	7.7%	11,998
A21 John's Cross – Hastings	0.79	13,802	0.83	5.0%	15,219
A2100 Battle Road (Battle to Baldslow)	0.81	14,511	0.81	-0.6%	14,334
A259 Bexhill & Hastings Western bypass	-	-	-	-	-
A259 Hastings Eastern bypass	-	-	-	-	-
A259 Pevensey - Western bypass	0.92	18,692	0.92	-0.2%	18,623
A259 Western Bypass – Bexhill	0.78	13,271	0.78	-0.1%	13,234
A259 Bexhill - Hastings Town Centre	1.03	33,817	1.03	-0.1%	33,783
A259 Hastings Town Centre	0.61	11,726	0.60	-0.6%	11,580
A259 Hastings Town Centre-Eastern bypass	0.43	4,116	0.44	1.8%	4,268
A259 Eastern Bypass - Rye	0.42	3,798	0.42	2.2%	3,969
A26 Tonbridge - Tunbridge Wells	1.04	23,857	0.90	-14.0%	17,663
A28 Baldslow - A268	0.30	2,026	0.30	-1.9%	1,949
B2093 The Ridge	0.80	14,179	0.80	-0.2%	14,124
Gillsman's Hill	0.55	6,609	0.55	0.9%	6,726
Bexhill Northern Approach Road	-	-	-	-	-
Weighted change		**0.81**			**0.86**
					6.1%
Overall impact				**Slight negative**	

E.6.37 As a result of increased traffic flows and the maintenance of existing road capacity, the weighted changes in the V/C ratio for selected road links is 6.1% with road routes less reliable (slight negative impact). In addition, as a result of improved public transport (particularly on rail trips from Hastings to Ashford) more reliable public transport journeys will be possible. The overall reliability score for Strategy 12 is **neutral**.

Wider Economic Impacts

E.6.38 Strategy 12 is compatible with a regeneration policy to enhance the existing urban area and to promote more intensive use of sites with good public transport access. It also assists with brownfield regeneration at Ore Valley through the Bexhill-Ore Metro. A significant improvement in public transport accessibility to Ashford can help link Hastings to economic activity growth. However, this strategy doesn't enable full exploitation of allocated land at North Bexhill for housing or business. Following the guidelines in GoMMMS, Table E 6.17 illustrates the wider economic impacts from Strategy 12.

Table E 6.17 Wider Economic Impacts

REGENERATION				
	Is the project in a designated regeneration area?			
Designated areas	Road or rail line which the proposal affects passes through regeneration area? Y/N	Road junction or rail station in regeneration area? Y/N	Access road or rail to/from site? Y/N	1st criterion
Assisted Area Tier 1, 2 or 3	N	Y	N	N
Single Regeneration Budget	N	Y	N	N
European Structural Funds	N	N	N	N
	Is project consistent with strategy to achieve local regeneration objectives? Y/N			2nd criterion
		Y		Y
Overall assessment	Project does not have potential for significant regeneration benefits			

E.6.39 The application of the framework confirms that the **project does not have potential for significant regeneration benefits**. The Strategy would enable the creation of 297 jobs (more details in Appendix C) and overall impacts score is, therefore, **neutral**.

Accessibility

Option Values

E.6.40 The effect of 3 quality bus partnership and 6 rail improvement schemes provide new options for public transport use. The overall impact is considered to be **large positive**.

Severance

E.6.41 Table 6.18 shows the assessment of the severance impacts at selected road locations. The assessment was based on the changes in pedestrian delay when crossing the road. The overall severance impact takes into account the number of people affected in each location.

Table E 6.18 Severance Impacts

	Change in ped. delay (s)	**Impact level Do Min**	**+ Strat. 12**	**Severance impact**
Road location				
A21 Tonbridge - Pembury Off line dualled	0	None	None	None
A21 Tonbridge - Pembury	28	Severe	Severe	None
A21 Hurst Green - John's Cross	2	None	Slight	Slight negative
A21 John's Cross - Hastings	1	None	None	None
A2100 Battle Road (Battle to Baldslow)	0	Slight	Slight	None
A259 Bexhill & Hastings Western Bypass	0	None	None	None
A259 Hastings Eastern Bypass	0	None	None	None
A259 Pevensey - Western Bypass	0	Slight	Slight	None
A259 Western Bypass - Bexhill	0	Slight	Slight	None
A259 Bexhill - Hastings Town Centre	0	Severe	Severe	None
A259 Hastings Town Centre	0	Slight	Slight	None
A259 Hastings Town Centre - Eastern Bypass	0	None	None	None
A259 Eastern Bypass - Rye	0	None	None	None

A26 Tonbridge - Tunbridge Wells	-4	Slight	Slight	None
A28 Baldslow – A268	0	None	None	None
B2093 The Ridge	0	Slight	Slight	None
Gillsman's Hill	0	None	None	None
Bexhill Northern Approach Road	0	None	None	None
Overall impact				**Neutral**

E.6.42 The above scores indicate that, with the esception of the A21 between Hurst Green and John's Cross (where a slight negative impact is applicable), there are negligible severance impacts is all road links and the overall impact of the strategy can be considered **neutral.**

Access to Public Transport

E.6.43 The public transport schemes included in Strategy 12 (3 quality bus partnership schemes and 6 rail improvement measures) increase access to a range of public transport services, with more frequent services for short (e.g. the metro rail service and Quality Bus Partnerships) and long (e.g. Ashford to Hastings rail improvement) distance trips. The new station at Glyne Gap also contributes for increased access to public transport. The overall impact is considered **large positive**.

Integration

Interchange

E.6.44 The impacts on public transport passenger interchange have been assessed as illustrated in Table E 6.19.

Table E 6.19 Passenger Interchange Impacts

Passenger interchange indicator	DO-MIN +	Strategy 12
Waiting environment	poor	moderate
Level of facilities	moderate	moderate
Level of information	moderate	moderate
Visible staff presence	moderate	moderate
Physical linkage for next stage journey	moderate	moderate
Connection time and risk of missing a connection	poor	moderate
Qualitative score		**Moderate beneficial**

E.6.45 The measures introduced within the 3 quality bus partnerships will improve pedestrian facilities at stops and interchanges. The overall impact has been estimated as **moderate beneficial**.

Land Use

E.6.46 Strategy 12 includes schemes which are compatible with local plans in relation to public transport improvements, which would assist with brownfield regeneration at Ore Valley. However, strategy doesn't enable full exploitation of allocated land for housing or business. The overall impact on land use is **neutral**.

Integration with Other Government Policies

E.6.47 Strategy 12 is compatible with policies to promote modal shift and the overall score is **slight positive**.

Supporting analyses

E.6.48 This section presents the additional issues which accompany the New Approach to Appraisal Summary Tables for the assessment of multi-modal studies. They are grouped under three headings: distribution and equity; affordability and financial sustainability; and practicality and public acceptability. All comparisons are made against the Do Minimum Plus strategy.

Distribution and Equity

Noise and Local Air Pollution

E.6.49 On the A21 between Tonbridge and Pembury, there will be an increase in noise by over 4.7 dB(A)) and for NO_2 there will be over 50% increase. This is due to the increases in traffic flow and speed on this dualled road segment. However, PM_{10} will reduce by nearly one third. On the parallel A26 section between Tonbridge and Tunbridge Wells, there will be a modest impact on noise (0.7 dB(A)) and an improvement in air quality through a notable reduction in pollutant emissions. Likewise on the A21 south of Pembury, there will be small changes in the noise level. Additional station car parking at Battle & Crowhurst and Robertsbridge will encourage an increase in car trips and therefore contribute to greater noise and a reduction in Local Air Pollution for those in the vicinity of the stations. The new station at Glyne Gap may encourage car trips to the station and hence associated noise and Local Air Pollution impacts.

E.6.50 On the A259 between Bexhill and Hastings and on to Guestling Thorn, there will be no significant effect on the level of noise or air quality. It is the same for the Ridge and Gillsman's Hill. Beyond Guestling Thorn to Rye there will be an increase in noise of 0.7 dB(A) and NO_2 of 6%, set against a 5% reduction in PM_{10}.

E.6.51 With the railway improvements, there will be an increase in noise (by over 2 dB(A)) for those adjacent to the line between Wadhurst and Tonbridge, between Bexhill and Hastings and between Hastings and Ashford. On the other hand, with the electrification of the Hastings to Ashford line, there will be air quality benefits, with reduction in emissions.

Other Environmental impacts

E.6.52 Along the A21 corridor south of Pembury any selective bypass schemes will lie within the High Weald AONB and affect the landscape views from the bypassed villages and for those within the vicinity. In addition there will be effects on biodiversity. However, the environmental benefits for the bypassed communities themselves are likely to be significant.

E.6.53 Additional car parking at Battle & Crowhurst and Robertsbridge will require land which is within the High Weald AONB. The construction of a new station at Glyne Gap could

have an impact on an extensive archaeological site to the east and two sites of importance for nature conservation.

Accident Savings

E.6.54 In terms of the spatial distribution of accident savings, these will be mostly associated with the improvements along the A21, both between Tonbridge and Pembury and for the villages which receive bypasses. There is also the benefit from the transfer of journeys from private vehicles to public transport as encouraged by the Quality Bus Partnerships and Ore-Bexhill 'metro' and/or traffic management measures to encourage safe driving.

E.6.55 In addition to savings for motorised transport users, the reduction in traffic in the built up areas of villages such as Flimwell and Hurst Green, as well as Bexhill and Hastings town centres, will benefit the safety of pedestrians and cyclists.

Transport economic benefits

E.6.56 The TEE table presents the economic impacts of the strategy to transport users and transport system operators. There will also be, however, particular benefits for particular types of users related to their trip purpose.

Work trips

E.6.57 There will not be significant journey time savings for car trips from areas such as Bexhill to employment centres such as the Ridge. Accessing employment opportunities at Glyne Gap however, will be improved with the new station and the metro rail service. Public transport users will also benefit from improved journey reliability delivered by the A259 Quality Bus Partnership. The Hastings to Ashford line will provide a journey time of under half an hour to access employment or connect to London or international rail services. The Wadhurst to Tonbridge rail service improvements will encourage those without access to a car to access job opportunities in Tunbridge Wells and Tonbridge.

Shopping and Leisure trips

E.6.58 The metro rail service and new station at Glyne Gap will improve access to retail facilities at Glyne Gap and the town centres of Bexhill and Hastings. The Wadhurst to Tonbridge rail service may enable those without access to a car to access retail and leisure job opportunities in Tunbridge Wells and Tonbridge. Improvements to the A21 will make access easier to shopping facilities at Tunbridge Wells.

Educational trips

E.6.59 The increased level of rail service delivered by the metro, integrated with the bus services, may provide greater opportunities for school pupils to travel by public transport in Hastings and Bexhill. The Wadhurst to Tonbridge rail service enhancement may enable some current school-run car journeys to Tunbridge Wells and Tonbridge to be replaced by rail trips.

Social exclusion

E.6.60 Whilst social exclusion is not explicitly stated as a supporting analyses issue (nor under the NATA framework) it is a key element within the objective of the study. It has therefore been covered in the two sections below.

Wider economic impacts

E.6.61 The AST entry for *Economy* presents the assessment at the strategic level. There are, however, important impacts at the disaggregate level within this indicator, in terms of equity between different economic groups, most pertinently for the unemployed.

E.6.62 For the unemployed (particularly in the wards of Gensing, Maze Hill, Central St Leonards and Castle) seeking work, the strategy will bring limited benefits in the way of increasing potential employment opportunities. For those on low incomes, there will be a similar level of benefit.

Access to the Transport system

E.6.63 In Hastings and Bexhill, over 20% of households are without a car. In a number of wards, the figure is greater than 40%. In most instances, the higher figures are around the town centres of Bexhill, St Leonards and Hastings (Central (over 50%), Sackville, Gensing, Central St Leonards (over 50%), Braybrooke, Castle (over 50%), Mount Pleasant and Old Hastings), as well as the wards of Hollington and Broomgrove. This strategy will have considerable benefit to those who are reliant upon public transport.

Affordability and financial sustainability

E.6.64 Whilst the overall value for money of the strategy is presented in the AST, Tables E 6.20 and E 6.21 identify the disaggregation of funding, both for investment and operation, between public and private organisations. The financial breakdown is presented against the time profile for the strategy.

Table E 6.20 Strategy 12 Private Sector Affordability and Financial Sustainability

	£ (million undiscounted)			
Private Sector Investment	**TOTAL**	**Rail**	**Bus**	**explanation**
Investment Cost				
Year 1 (2001)	-£0.44	-£0.44	£0.00	
Year 2	-£3.44	-£3.44	£0.00	
Year 3	-£13.71	-£13.61	-£0.10	
Year 4	-£10.50	-£10.39	-£0.10	
Year 5	£0.00	£0.00	£0.00	
TOTAL	-£28.09	-£27.88	-£0.21	(1)
Capital Grants	£0.00			(2)
Private Sector Operators				
Year 1				
Change in operator costs	£0.00	£0.00	£0.00	(3)
Change in operator revenue	£0.05	£0.00	£0.05	(4)
NET IMPACT	£0.05	£0.00	£0.05	(5) = (4) + (3)
Subsidy	£0.00	£0.00	£0.00	= -(5)

Year 5				
Change in operator costs	-£4.16	-£4.16	£0.00	(7)
Change in operator revenue	£0.69	£0.54	£0.15	(8)
NET IMPACT	-£3.47	-£3.62	£0.15	(9)=(8)-(7)
Subsidy	£3.62	£3.62	£0.00	(10)
Year 10				
Change in operator costs	-£4.16	-£4.16	£0.00	(11)
Change in operator revenue	£0.80	£0.64	£0.16	(12)
NET IMPACT	-£3.36	-£3.52	£0.16	(13)=(12)+(11)
Subsidy	£3.52	£3.52	£0.00	(14)
Private Sector NET IMPACT				
Investm. net of capital grant	-£28.09	-£27.88	-£0.21	(1)+(2)
Operations net of subsidy				
Year 1	£0.05	£0.00	£0.05	(5)+(6)
Year 5	-£3.47	-£3.62	£0.15	(9)+(10)
Year 10	-£3.36	-£3.52	£0.16	(13)+(14)

Table E 6.21 Strategy 12 Public Sector Affordability and Financial Sustainability

	£ (million undiscounted)				
Public Sector Investment	**TOTAL**	**HA**	**Rail**	**Bus**	**Explanation**
Investment Cost					
Year 1	£0.00	£0.00	£0.00	£0.00	
Year 2	-£4.11	-£2.15	£0.00	-£1.96	
Year 3	-£1.57	-£1.02	£0.00	-£0.55	
Year 4	-£7.46	-£7.46	£0.00	£0.00	
Year 5	-£5.58	-£5.58	£0.00	£0.00	
TOTAL	-£18.71	-£16.20	£0.00	-£2.51	-15
Private Sector Contributions					-16
Investment net of contributions					(17)=(15)+(16)
Public Sector Operation					
Year 1					
Change in operator costs	£0.00	£0.00			-18
Change in operator revenue	£0.00	£0.00			-19
NET IMPACT	£0.00	£0.00			(20)=(19)-(18)
Subsidy	£0.00		£0.00		
Year 5					
Change in operator costs	-£0.61	-£0.61			-21
Change in operator revenue	£0.00	£0.00			-22
NET IMPACT	-£0.61	-£0.61			(23)=(22)-(21)
Subsidy	£0.61		£0.61		
Year 10					
Change in operator costs	-£4.11	-£4.11			-24
Change in operator revenue	£0.00	£0.00			-25
NET IMPACT	-£4.11	-£4.11			(26)=(25)-(24)
Subsidy	£4.11		£4.11		

Practicality and public acceptability

Feasibility

Technical

E.6.65 Discussions over the schemes in the strategy were held with local authorities, Highways Agency, sSRA, Railtrack and public transport operators. The proposed on-line dualling of the A21 between Tonbridge and Pembury has been based on a technical assessment, however it still requires the HA to confirm its feasibility. The selective bypasses along the A21 which are part of the improvements south of Pembury were only chosen to be indicative and therefore their full technical feasibility has not been evaluated. There is also concern over the ability to provide the improvements to the Hastings to Tunbridge Wells rail service due to track capacity constraints north of Tonbridge.

Legal

E.6.66 The schemes on the A21, both between Tonbridge and Pembury and south of Pembury will require Public Inquiry Orders to be made.

Political

E.6.67 There is support for the A21 schemes and Wadhurst to Tonbridge rail scheme from the local authorities in Kent. In the Hastings and Bexhill area, there is opposition to not constructing the Western and Eastern bypasses.

Funding

E.6.68 The schemes in this strategy have been developed in cooperation with potential investment and operation funders. The remitted A21 road scheme would come under Highways Agency responsibility, whilst the local transport authorities would be responsible for the local road schemes, including investment related to Quality Bus Partnerships. On the operations side of the Partnership are the bus companies. For the rail service improvement, funding would be provided by the sSRA and train operators. For rail infrastructure measures, Railtrack and the operator will provide funding, with scope for local authority involvement.

Enforcement

E.6.69 The only schemes proposed which will potentially require enforcement are the local road schemes for traffic management and Quality Bus Partnerships. The former will be largely self-enforcing.

'Breadth of Decision'

E.6.70 The study area extends north from Hastings along the A21 corridor to Tonbridge and west and east as far as Pevensey and Rye, respectively. The study seeks to provide a

transport strategy at the strategic level within this area and related to the wider South-east.

E.6.71 Among the members of the Steering Group are representatives of the County Councils for East Sussex and Kent, the Borough Councils of Hastings, Tunbridge Wells, and Tonbridge and Malling as well as Rother District Council. Alongside them sit a number of agencies (sSRA, SERPLAN, SEEDA and HA) in additional to local business and environmental interests.

Complexity ("depth" of the decision)

E.6.72 By its nature as a strategic study, the strategy comprises a number of schemes. These encompass a variety of complex inter-related issues, some of which have implications for transport services beyond the study area (e.g. timetabling Ashford-London rail services).

Time-scale

E.6.73 It is envisaged that the strategy will be fully in place by 2009.

Phasing

E.6.74 The majority of the schemes within the strategy will be implemented in the lifetime of current LTP. Whilst it is an integrated strategy the schemes within it are scheduled to be completed in phases. These will be in the following order:

- The Quality Bus Partnerships.
- Rail improvements between Wadhurst and Tonbridge.
- The Bexhill-Ore Metro and integrated Public Transport Information and Ticketing Strategy.
- The Tonbridge-Pembury on-line dualling scheme.
- Hastings-Ashford rail improvement.
- Traffic Management measures.
- Beyond 2006, and reliant on a further decision making process, the off-line improvements between Pembury and Hastings would be constructed.

Partitioning

E.6.75 This strategy has clearly differentiated elements in terms of the north-south axis and coastal axis. However, there would be little merit in partitioning them due to their integrated nature, e.g. the Western bypass and A21 improvements.

Complementarity

E.6.76 A key objective in the study has been the development of a set of schemes, which are complementary to each other, to achieve a comprehensive integrated strategy. An example of this includes traffic management measures and Quality Bus Partnerships in Hastings.

Conflicts

E.6.77 The local authorities argue that this strategy conflicts with the housing requirements placed upon them by Central Government.

E.6.78 Access to Hastings is a free-standing study in its own right. Whilst the South Coast MMS will also address the integration of the Hastings area into the wider South-east region the two studies are not in conflict.

Political nature of proposals

E.6.79 There is political agreement on the need for regeneration of the Hastings and Bexhill local economy and the role that transport can play in contributing to this. It is argued that the Hastings and Bexhill bypasses are required to enable land to be opened up for development.

Public Acceptability

E.6.80 This strategy was not presented at the public consultation stage. However, it has been developed to include a number of schemes which drew high support, most notably improvements to the A21 and investment in public transport, specifically the rail schemes.

E.7. STRATEGY 13

New Approach to Appraisal (NATA)

E.7.1 This section describes the assessment of Strategy 13 against the five Central Government objectives and sub-objectives as set out in GoMMMS.

Environment

Noise

E.7.2 Table E 7.1 shows the results of the noise assessment for specific road links, in terms of the noise level ($L_{10\text{-}18\ hour}$ dB(A)) in the Do Minimum Plus and Strategy 13 scenarios and the number of people annoyed by exposure to road traffic noise. The population annoyed represents the number of people who are disturbed by different levels of road traffic noise (according to the annoyance response function given in GoMMMS).

Table E 7.1 Noise Assessment for Specific Roads

Location	L10-18 hour dB(A)		Changes	Pop. Annoyed [1]		Changes
	Do-Min+	Strat. 13	dB(A)	Do-Min+	Strat. 13	popul.
A21 Tonbridge - Pembury off line dual	-	-	0.00	0	0	0
A21 Tonbridge - Pembury	72.97	77.72	4.76	82	113	31
A21 Hurst Green - John's Cross	72.38	72.48	0.10	40	40	0
A21 John's Cross – Hastings	72.59	73.57	0.98	842	907	65
A2100 Battle Road (Battle to Baldslow)	70.39	69.73	-0.66	91	83	-8
A259 Bexhill & Hastings Western Bypass	-	76.55	76.55	0	191	191
A259 Hastings Eastern Bypass	-	73.02	73.02	0	58	58
A259 Pevensey - Western Bypass	72.54	72.61	0.07	5	5	0
A259 Western Bypass – Bexhill	71.45	69.44	-2.01	284	245	-40
A259 Bexhill - Hastings Town Centre	71.08	68.74	-2.34	774	602	-172
A259 Hastings Town Centre	68.84	66.05	-2.79	240	206	-34
A259 Hastings Town Centre - Eastern Bypass	68.21	68.00	-0.20	534	534	0
A259 Eastern Bypass - Rye	67.76	69.35	1.59	72	86	14
A26 Tonbridge - Tunbridge Wells	72.56	71.84	-0.73	594	549	-46
A28 Baldslow - A268	69.10	68.75	-0.35	119	108	-12
B2093 The Ridge	70.00	70.07	0.07	269	269	0
Gillsman's Hill	68.57	70.62	2.05	62	75	13
Bexhill Northern Approach Road	-	71.83	71.83	0	318	318
Totals				4,008	4,387	380

Notes: 1) The estimate of the population potentially affected by noise has been defined as the number of people living within a 50 metre buffer of each road, for urban roads and 250 metre for new roads (namely the Western and Eastern bypasses and A21 Tonbridge to Pembury off line dual), where the unobstructed distance from source to receptor can be significantly higher.

E.7.3 The largest disbenefit in terms of people affected by noise levels was predicted for the Bexhill Northern Approach Road, followed by the Western bypass. This is due to the diversion of traffic onto the new road segments. Small benefits occur on other roads, such as on the A259 between Bexhill and Hastings and A26 Tonbridge - Tunbridge Wells. Although there is a significant reduction in the volume of traffic on many

existing roads, this does not necessarily represent a large change in noise nuisance when the road remains well used.

E.7.4 Table E 7.2 presents similar noise assessment results for rail links.

Table E 7.2 Noise Assessment for Rail Links

Location	L10-18 hour dB(A)		Changes	Pop. annoyed		Changes
	Do-Min+	Strat. 13	DB(A)	Do-Min+	Strat. 13	Popul.
Hastings - Wadhurst	58.83	58.91	0.07	242	242	0
Wadhurst - Tonbridge	58.84	60.96	2.12	231	252	21
Eastbourne - Polegate	63.00	63.00	0.00	243	243	0
Pevensey - Bexhill	62.28	63.11	0.83	230	246	15
Bexhill - Hastings	61.43	63.54	2.11	334	412	77
Hastings - Ashford	58.23	61.20	2.98	253	299	46
Total				1,534	1,693	160

E.7.5 Changes in rail noise levels are significant for the Bexhill to Hasting, Hastings to Ashford and Wadhurst to Tonbridge lines. For the Hastings to Ashford line, the effect of increases in frequencies (from 18 to 25 trains per day) overrides the benefits from electrification. Overall, there would be an additional 160 people annoyed by rail noise in comparison to the Do Minimum Plus scenario.

E.7.6 The oveall road and rail noise impact can be considered **slight negative**.

Air pollution

E.7.7 Table 7.3 presents the results of the calculations of local (NO_2 and PM_{10}) and global (CO_2) emissions for Strategy 13, considering the point-of-use and production stage emissions.

Table E 7.3 Assessment of Local and Global Emission Levels

Source	Indicator	Do-Min +	Strategy 13
Local emissions			
Point-of-use	NO_2 emissions (tonne/year)	13,775	13,845
	Index (tonne-people/km^2)	6,554,935	6,588,286
	Changes NO_2 (tonne/year)		70.1
	% changes		0.5%
	changes car		92.9
	changes bus		10.2
	changes rail		-33.0
Production	Petrol	773	775
	Diesel	67	68
	Electricity	1,863	2,019
	Total	2,703	2,862
	% changes		5.9%
Total	Point-of-use + Production	16,478	16,707
	% changes		1.4%
Point-of-use	PM_{10} emissions (tonne/year)	145	144
	Index (tonne-people/km^2)	69,033	68,529

	Changes PM_{10} (tonne/year)		-1.1
	% changes		-0.7%
	changes car		0.3
	changes bus		0.8
	changes rail		-2.1
Production	Petrol	44	44
	Diesel	2	2
	Electricity	206	223
	Total	252	269
	% changes		6.9%
Total	Point-of-use + Production	397	413
	% changes		4.1%
Global emissions			
`Point-of-use	CO_2 emissions (tonne/year)	1,366,281	1,370,122
	Changes CO_2 (tonne/year)		3,841.2
	% changes		0.3%
	changes car		3,753.1
	changes bus		777.0
	changes rail		-688.9
Production	Petrol	169,554	170,045
	Diesel	12,705	12,730
	Electricity	494,680	536,334
	Total	676,939	719,109
	% changes		6.2%
Total	Point-of-use + Production	2,043,219	2,089,231
	% changes		2.3%

E.7.8 Looking at the changes in emissions at the point-of-use, Strategy 13 would cause a small increase in the emission level of NO_2 (by 0.5%), but a reduction in PM_{10} (by 0.7%). The rail schemes are responsible for a significant proportion of the reduction in emissions. The overall local air pollution impacts are considered to be **neutral**.

E.7.9 Considering the emissions produced at the power station, there is an increase in the emission level for all pollutants (between 6 and 7%). Overall, considering the emissions at the point-of-use and the production stage emissions at the power station, the total increases in the levels of NO_2, PM_{10} and CO_2 are 1.4, 4.1 and 2.3%. In line with the assessment for the other strategies, the overall global pollution impact is **slight negative**.

E.7.10 A separate assessment of local air pollution emissions has been made for a selection of road and rail links, in terms of NO_2 and PM_{10}. Table 7.4 shows the results of the assessment of local air pollution at specific road and rail links.

Table E 7.4 Local Air Pollutant Emission Levels at Specific Road and Rail Links

	NO_2 (kg/year)			PM_{10} (kg/year)		
	Do-Min	+ Strat. 13	Change	Do-Min	+ Strat. 13	Change
Road links:						
A21 Tonbridge - Pembury off-line dualled	-	-	-	-	-	-
A21 Tonbridge - Pembury (existing)	82,962	125,050	42,088	2,004	1,457	-548
A21 Hurst Green - John's Cross	74,378	78,660	4,282	842	915	73

A21 John's Cross – Hastings	122,179	145,203	23,024	1,472	1,588	117
A2100 Battle Road (Battle to Baldslow)	54,690	43,025	-11,665	712	506	-206
A259 Bexhill & Hastings Western bypass	-	283,618	283,618	-	2,415	2,415
A259 Hastings Eastern bypass	-	77,834	77,834	-	657	657
A259 Pevensey - Western bypass	62,700	57,406	-5,294	621	631	11
A259 Western Bypass - Bexhill	34,377	19,360	-15,017	358	185	-173
A259 Bexhill - Hastings Town Centre	32,782	15,464	-17,319	779	243	-536
A259 Hastings Town Centre	22,891	12,102	-10,790	532	305	-227
A259 Hastings Town Centre - Eastern bypass	24,684	23,199	-1,485	290	268	-22
A259 Eastern Bypass – Rye	56,135	73,080	16,945	691	806	115
A26 Tonbridge - Tunbridge Wells	76,549	66,125	-10,424	2,036	1,820	-216
A28 Baldslow - A268	86,518	79,123	-7,395	1,107	1,004	-103
B2093 The Ridge	46,101	46,379	278	652	648	-4
Gillsman's Hill	6,311	9,314	3,003	85	113	28
Bexhill Northern Approach Road	-	25,126	25,126	-	300	300
Rail links:						
Hastings – Wadhurst	0	0	0	0	0	0
Wadhurst – Tonbridge	0	0	0	0	0	0
Eastbourne – Polegate	0	0	0	0	0	0
Pevensey – Bexhill	0	0	0	0	0	0
Bexhill – Hastings	0	0	0	0	0	0
Hastings – Ashford	33,009	0	-33,009	2,095	0	-2,095

E.7.11 Clearly, increases in emissions are greatest at locations where new roads are proposed (bypasses). The most substantial benefits in terms of emission reductions occur at the A259 between Bexhill and Hastings town centre, due to lower traffic levels and less congested road conditions. As far as rail emissions are concerned, electrification of the Hastings to Ashford link means the elimination of local emissions at the point-of-use.

Landscape

E.7.12 The landscape impacts from the implementation of Strategy 13 are summarised in Table E 7.5.

Table E 7.5 Landscape Impacts

Location	Features	Importance	Impact
Western bypass	Landscape character, High Weald AONB and setting of SSSI	High	large adverse
Western bypass	Loss of agricultural land	High	large adverse
Eastern bypass	Landscape character, High Weald AONB and setting of SSSI	High	large adverse
Eastern bypass	Loss of agricultural land	High	large adverse
A21 Tonbridge-Pembury dual	Landscape character, High Weald AONB and setting of SSSI	High	slight adverse
A21 Tonbridge-Pembury dual	Loss of woodland and agricultural land	High	neutral
Provision of parking at rail stations	Land for parking at High Weald AONB	Moderate	neutral
Hastings-Ashford rail line	Landscape quality within High Weald AONB	Moderate	slight adverse
Junction bypass/A21	Landscape quality in AONB	Moderate	moderate

	adverse
Overall	**Large adverse**

E.7.13 The overall landscape impact can be considered **large adverse**.

Townscape

E.7.14 The townscape impacts from the implementation of Strategy 13 are summarised in Table E 7.6.

Table E 7.6 Townscape Impacts

Location	Features	Importance	Impact
A259 Baldslow junction	Urban setting	Moderate	moderate adverse
Gillsman's Hill	Local character	Moderate	slight adverse
Hastings	Old town	High	moderate beneficial
The Ridge	Local character	Moderate	neutral
A21/Hurst Green	Local character	Moderate	large beneficial
Overall			**Slight beneficial**

E.7.15 The impact on Gillsman's Hill has been considered slight adverse due to the implementation of the package of measures proposed to mitigate the traffic impacts in the area. The overall townscape impacts are considered **Slight beneficlal.**

Heritage

E.7.16 The heritage impacts are summarised in Table E 7.7.

Table E 7.7 Heritage Impacts

Location	Features	Importance	Impact
Western bypass	Listed building Grade II (demolition)	Moderate	moderate adverse
Eastern bypass	Archaeological features; 5 historical buildings	Moderate	moderate adverse
A21 Tonbridge-Pembury dualling	Listed Park Grade II	Moderate	neutral
Overall			**Moderate adverse**

E.7.17 The overall heritage impacts are considered **Moderate adverse**.

Biodiversity

E.7.18 The biodiversity impacts are summarised in Table E 7.8.

Table E 7.8 Biodiversity Impacts

Location	Features	Importance	Impact
Eastern bypass	Loss of woodland (incl. Ancient)	High	large adverse
Tonbridge-Pembury dual	Loss of woodland (incl. Ancient)	High	slight adverse
Western bypass	Impact on SSSI	High	large adverse
Hastings - Ashford rail line	Impact on SSSI NE Rye	Moderate	slight adverse
Overall			**Large adverse**

E.7.19 The overall biodiversity impacts are considered **large adverse**.

Water environment

E.7.20 The water environment impacts are summarised in Table E 7.9.

Table E 7.9 Water environment Impacts

Location	Features	Importance	Impact
Western bypass	Ditches and streams lost or culverted	High	large adverse
Eastern bypass	Ditches and streams lost or culverted	High	large adverse
Hastings - Ashford rail line	Ditches and streams in SSSI maybe affected	Moderate	slight adverse
Overall			**Large adverse**

E.7.21 The overall water environment impacts are considered **large adverse**.

Journey Ambience

E.7.22 Table E 7.10 illustrates the assessment of changes in public transport journey ambience. The impact is measured in terms of positive (+), negative (-) or neutral (0). The table also shows the number of travellers benefited or disbenefited by each indicator.

Table E 7.10 Impacts of Public Transport Journey Ambience

Factor	Indicator	Strategy 13	
		Impact (-, 0, +)	N. travellers affected (per day)
Travel care	Cleanliness	+	41321
	Facilities	+	41321
	Information	+	41321
	Environment	+	41321
Travellers' views	Visual intrusion	0	2227603
Traveller stress	Frustration	0	2186282
	Fear of accidents	0	2186282
	Route uncertainty	0	2227603
Overall impact			**Large beneficial**

E.7.23 The benefits in traveller care are experienced by rail users on the Hastings-Ashford line who will benefit from electric rolling stock. The Western and Eastern bypasses, Tonbrige-Pembury on-line dualling and onff-line improvements to the A21 south of Pembury will all positively contribute to travellers' views and traveller stress.

E.7.24 Therefore, the results of the framework suggest that the overall impact of Strategy 13 on journey ambience can be considered **large beneficial**.

Safety

Accidents

E.7.25 The public transport accident impacts, in terms of the number and monetary valuation of accidents per annum, according to different injury types, are summarised in Table E 7.11.

Table E 7.11 Public Transport Annual Accident Impacts

	DO-MINIMUM +				Strategy 13			
Injury	**N. accidents**		**Valuation (£m)**		**N. accidents**		**Valuation (£m)**	
	Bus	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**	**Bus**	**Rail**
Slight	7.95	46.79	£0.06	£0.32	7.95	47.54	£0.06	£0.33
Serious	0.12	1.92	£0.01	£0.17	0.12	1.95	£0.01	£0.17
Fatal	0.00	0.21	£0.00	£0.16	0.00	0.21	£0.00	£0.17
Total	8.08	48.91	£0.07	£0.66	8.08	49.70	£0.07	£0.67
Changes					0.00	0.79	£0.00	£0.01

E.7.26 The total number of public transport accidents is predicted to increase (by about 0.8 per year) as a result of the implementation of rail schemes. In monetary terms, this represents about £10,000 annually. The location of accidents is considered under the "Distribution ad Equity" section of the Supporting Analyses.

E.7.27 Table E 7.12 shows the predictions in changes in private transport accident impacts.

Table E 7.12 Private Transport Annual Accident Impacts

	DO-MINIMUM +		Strategy 13	
Injury	**N. accidents**	**Valuation (£m)**	**N. accidents**	**Valuation (£m)**
Slight	6,189	£42.83	6,096	£42.18
Serious	1,168	£104.36	1,154	£103.12
Fatal	110	£86.12	109	£85.84
Total	7,466	£233.31	7,359	£231.14
Changes			-107.79	-£2.16

E.7.28 The total number of private transport accidents is estimated to decrease by about 108 annually (most of which would be slight), the monetary implication of which is estimated at £2.2 million saving.

E.7.29 The overall road and rail accident impact is considered **large beneficial**.

Security

E.7.30 Table E 7.13 presents the changes in the security indicators and the respective impact assessment.

Table E 7.13 Public Transport Security Impacts

		DO-MINIMUM +	Strategy 13
Indicator	**Importance**	**Assessment**	**Assessment**
Site perimeters, entrances and exits	low	moderate	moderate
Formal surveillance	medium	poor	poor
Informal surveillance	low	poor	moderate
Landscaping	medium	moderate	high
Lighting and visibility	high	moderate	moderate
Emergency call	high	moderate	moderate
Overall impact			**Slight beneficial**

E.7.31 The introduction of public transport measures in 3 quality bus partnership schemes will slightly improve pedestrian and public transport user security, and the overall score is **slight beneficial**.

Economy

Economic Efficiency

E.7.32 The economy impacts are assessed in terms of the cost and benefit implications from the combined effect of all schemes implemented in the scope of this strategy.

E.7.33 The benefits of the schemes in Strategy 13 have been calculated as recommended in GoMMMS, and the summary is presented in Table E 7.14.

Table E 7.14 Summary of Net Benefits (£ annual in 2020, 1994 prices)

Benefit	Road	Rail	Bus	Total
Revenue	£0	£298,631	£182,724	£481,355
Other benefits				
Travel time	£15,626,170	£430,824	£559,683	£16,616,677
Vehicle operating costs	£261,400	£0	£0	£261,400
Accident	£2,164,900	-£10,596	£0	£2,154,304
Total other benefits	£18,052,470	£420,228	£559,683	£19,032,381

E.7.34 The highest saving is associated with travel time reductions, but accident savings also represent considerable benefits.

E.7.35 The assessment of Transport Economic Efficiency (TEE) is based on the GoMMMS TEE table, given in Table E 7.15, in terms of the net changes.

Table E 7.15 Transport Economic Efficiency Table

	Total	Net economic changes (£ m)			
User benefits		**Car**	**Bus & coach**	**Rail**	**Other**
Travel time	107.1	£100.0	£4.0	£3.1	£0.0
Vehicle operating costs	1.8	£1.8	£0.0	£0.0	£0.0
User charges	-3.7	£0.0	-£1.5	-£2.1	£0.0
Net impact	105.2				
Private Sector Provider Impacts			**Bus & coach**	**Rail**	**Other**
Revenue	3.7	£1.5	£2.1	£0.0	£1.5
Operating costs	-31.4	£0.0	-£31.4	£0.0	£0.0
Investment costs	-15.3	-£0.2	-£15.1	£0.0	-£0.2
Grant/subsidy	0.0	£0.0	£0.0	£0.0	£0.0
Net impact	-43.0				
Public Sector Provider Impacts		**Road infrastr.**	**Bus & coach**		**Other**
Revenue	0.0	£0.0	£0.0		£0.0
Operating costs	-52.9	-£52.9	£0.0		£0.0
Investment costs	-82.0	-£79.6	-£2.4		£0.0
Net impact	-134.9				
Other Government Departments		**Road infrastr.**	**Bus & coach**	**Rail**	**Other**
Grant/subsidy payments	43.0	£0.0	-£1.3	£44.3	£0.0
Indirect tax revenues	0.0	£0.0	£0.0	£0.0	£0.0
Net impact	43.0				
Total					
Net Present Value (with accident benefit)	-58.6				
Net Present Value (no accident benefit)	-72.7				
Present Value of Costs	-181.6				
Present Value of Cost to Govern.	-177.9				
Benefit/Cost ratio	0.6				
Value/Cost to Government ratio	-0.4				

Notes: Beneficial Cost ratio and Value/Cost ratio based in the net present value excluding accident benefits
Net present value excludes Grant/Subsidy payments by Government
Grant/Subsidy payments by Government assumed equal to the net impact from the private sector provider (transfer of funds), if positive (as a subsidy only, not as a surplus).
User charges are assumed equal (but with opposite signal) to the revenue from the private sector Provider
Bus (private sector) investment costs: assume £120,000 per corridor in 1st year of operation
Bus operating costs: benefits recycled in more reliable services (zero)
Bus revenue assumed at £50,000 per corridor per annum (1999 prices)
Bus travel time and accident savings assumed Zero due to the lack of bus trip data.
A £5m PV has been assumed as the benefit from travel time savings for the Strategies and Sensitivities including both Western and Eastern bypasses, in order to account for the strategic trips.
QBP passenger benefits: A259: £1.5m PV. A2100: £1m PV. A21: £1.5m PV. A26: £0.8m PV
The freight user benefits are included in the personal travel user benefits

E.7.36 The net present value for Strategy 13 has been calculated at -£72 million (excluding accident benefits), while the present value of costs is -£182 million and the present value of costs to the Government is -£178 million. The benefit/cost ratio is 0.6, which suggests that the overall benefits are lower that the costs incurred.

Reliability

E.7.37 The impact on reliability was estimated with basis on the changes to the Volume/Capacity ratio in the selected road links. Table E 7.16 presents the results of changes in V/C ratio and the overall impact assessment score.

Table E 7.16 Changes in V/C Ratio and Impact Assessment Score

	Do Min +		Strategy 13		
Link	**V/C**	**Weight**	**V/C**	**Change**	**Weighted**
A21 Tonbridge - Pembury off line dualled	-	-	-	-	
A21 Tonbridge - Pembury	0.99	31,525	1.31	32.30%	55,177
A21 Hurst Green - John's Cross	0.69	10,348	0.73	6.94%	11,834
A21 John's Cross – Hastings	0.79	13,802	0.84	6.55%	15,669
A2100 Battle Road (Battle to Baldslow)	0.81	14,511	0.62	-23.59%	8,473
A259 Bexhill & Hastings Western Bypass	-	-	0.37	-	9,505
A259 Hastings Eastern Bypass	-	-	0.47	-	7,081
A259 Pevensey - Western Bypass	0.92	18,692	1.09	18.42%	26,212
A259 Western Bypass - Bexhill	0.78	13,271	0.42	-45.45%	3,949
A259 Bexhill - Hastings Town Centre	1.03	33,817	0.46	-55.09%	6,821
A259 Hastings Town Centre	0.61	11,726	0.32	-47.04%	3,288
A259 Hastings TC-Eastern bypass	0.43	4,116	0.40	-6.54%	3,595
A259 Eastern Bypass - Rye	0.42	3,798	0.52	25.70%	6,001
A26 Tonbridge - Tunbridge Wells	1.04	23,857	0.90	-14.03%	17,633
A28 Baldslow - A268	0.30	2,026	0.28	-8.84%	1,684
B2093 The Ridge	0.80	14,179	0.80	0.27%	14,255
Gillsman's Hill	0.55	6,609	0.78	41.82%	13,294
Bexhill Northern Approach Road	-	-	0.33	-	7,304
Weighted change		**0.81**			**0.72**
					-10.6%
Overall impact					**Moderate positive**

E.7.38 Strategy 13 enabled the provision of additional road space, with an overall increase in traffic. The overall result is that there would be reduced congestion in some locations, which makes highway routes more reliable. The average impact for road transport is considered moderate positive. In addition, as a result of improved public transport (particularly on rail route to Ashford), public transport journeys will be more reliable. The overall impact is therefore **large positive**.

Wider Economic Impacts

E.7.39 The strategy improves access to regeneration areas in Hastings. It opens land for development of housing, industry and commerce, which assist economic development and increase in business activity and workforce. Following the guidelines in GoMMMS, Table E 7.17 illustrates the wider economic impacts from Strategy 13.

Table E 7.17 Wider Economic Impacts

REGENERATION				
	Is the project in a designated regeneration area?			
Designated areas	Road or rail line which the proposal affects passes through regeneration area? Y/N	Road junction or rail station in regeneration area? Y/N	Access road or rail to/from site? Y/N	1st criterion

Assisted Area Tier 1, 2 or 3	N	N	N	N
Single Regeneration Budget	Y	Y	Y	Y
European Structural Funds	N	N	N	N
	Is project consistent with strategy to achieve local regeneration objectives? Y/N			2nd criterion
		Y		Y
Overall assessment	Project has potential regeneration benefits			
DEVELOPMENT DEPENDENCY				
Have development dependent sites been identified? Y/N				Y
If yes, then:				
Likely that the Highways Agency, Local Highway Authority or public transport providers or operators would object to the project? Y/N				N
Planning permission for site is conditional on project? Y/N				Y
Would investors still come forward or proceed beyond feasibility in the absence of the strategy Y/N				N
Overall assessment	Project has development dependency			

E.7.40 The above framework indicates that the project has both **potential regeneration benefits** and **development dependency**. Specific regeneration impacts are covered in more detail under the first section in this chapter (Objectives and Problem Identification). The Strategy would enable the creation of 3,082 jobs (more details in Appendix C) and overall impacts score is, therefore, **moderate positive**.

Accessibility

Option Values

E.7.41 The effect of 3 quality bus partnership and 4 rail improvement schemes provide new options for public transport use. The overall impact is considered to be **moderate positive**.

Severance

E.7.42 Table 7.18 shows the assessment of the severance impacts at selected road locations. The assessment was based on the changes in pedestrian delay when crossing the road. The overall severance impact takes into account the number of people affected in each location.

Table E 7.18 Severance Impacts

	Change in ped. delay (s)	Impact level Do Min	+ Strat. 13	Severance impact
Road location				
A21 Tonbridge - Pembury Off line dualled	0	None	None	None
A21 Tonbridge - Pembury	28	Severe	Severe	None
A21 Hurst Green - John's Cross	2	None	Slight	Slight negative
A21 John's Cross - Hastings	1	None	None	None
A2100 Battle Road (Battle to Baldslow)	-4	Slight	None	Slight positive
A259 Bexhill & Hastings Western bypass	25	None	Moderate	Moderate negat.
A259 Hastings Eastern Bypass	11	None	Slight	Slight negative
A259 Pevensey - Western Bypass	7	Slight	Moderate	Slight negative

A259 Western Bypass – Bexhill	-7	Slight	None	Slight positive
A259 Bexhill - Hastings Town Centre	-33	Severe	Slight	Moderate positive
A259 Hastings Town Centre	-8	Slight	None	Slight positive
A259 Hastings TC - Eastern bypass	-1	None	None	None
A259 Eastern Bypass - Rye	3	None	None	None
A26 Tonbridge - Tunbridge Wells	-4	Slight	Slight	None
A28 Baldslow – A268	0	None	None	None
B2093 The Ridge	0	Slight	Slight	None
Gillsman's Hill	5	None	Slight	Slight negative
Bexhill Northern Approach Road	16	None	Slight	Slight negative
Overall impact				**Slight positive**

E.7.43 The above scores indicate that there are positive and negative severance impacts, but weighted according to the population in each location, the overall impact of the strategy can be considered **slight positive**.

Access to Public Transport

E.7.44 Strategy 13 enhances access to public transport by increasing service frequencies and reducing journey times (in particular, the new station at Glyne Gap and metro rail service along with Quality Bus Partnerships increase public transport accessibility). Public transport measures include 3 quality bus partnership schemes and 4 rail improvement measures. The overall assessment of the impacts on the access to public transport is **moderate beneficial**.

Integration

Interchange

E.7.45 The impacts on public transport passenger interchange have been assessed as illustrated in Table E 7.19.

Table E 7.19 Passenger Interchange Impacts

Passenger interchange indicator	DO-MIN +	Strategy 13
Waiting environment	poor	moderate
Level of facilities	moderate	moderate
Level of information	moderate	moderate
Visible staff presence	moderate	moderate
Physical linkage for next stage journey	moderate	moderate
Connection time and risk of missing a connection	poor	moderate
Qualitative score		**Moderate beneficial**

E.7.46 The measures introduced within the 3 quality bus partnerships and the new station at Glyne Gap will improve pedestrian facilities at stops and interchanges. The overall impact has been estimated as **moderate beneficial**.

Land Use

E.7.47 Strategy 13 includes schemes which are compatible with local plans and regional land use policy (such as enabling employment and residential areas to develop), but other

schemes (in particular, the bypasses) which can be considered to be incompatible with regional plan policy on affecting AONB and national policies. The overall impact can be considered **moderate beneficial**.

Integration with Other Government Policies

E.7.48 Strategy 13 helps to integrate Hastings and Rother into the wider sub-region (which includes Tonbridge/Tunbridge Wells and Ashford), but has little impact on wider integration with the rest of the South-East (including London, the M25 and Gatwick). The overall assessment impact is **moderate beneficial**.

Supporting analyses

E.7.49 This section presents the additional issues which accompany the New Approach to Appraisal Summary Tables for the assessment of multi-modal studies. They are grouped under three headings: distribution and equity; affordability and financial sustainability; and practicality and public acceptability. All comparisons are made against the Do Minimum Plus strategy.

Distribution and Equity

Noise and Local Air Pollution

E.7.50 The key distributional impacts of noise and Local Air Pollution are an improvement for those communities relieved of traffic whilst a deterioration for those in the vicinity of routes to which traffic is transferred.

E.7.51 Between Tonbridge and Pembury, due to the limited number of properties along the existing A21, there will be a net disbenefit to 31 people only, despite the fact that noise levels increase by nearly 5 dB(A). On the A26 between Tonbridge and Tunbridge Wells, there will be a reduction of noise of almost 1 dB(A) and an improvement in air quality through reductions in emissions by about 14% for NO_2 and 11% for PM_{10}.

E.7.52 South of Pembury, some villages along the A21 will benefit from local bypass measures reducing traffic levels for them and hence noise and local air pollution.

E.7.53 The Western bypass will bring improvement to the A259 from Lamb Inn through Bexhill to Glyne Gap, and along Hastings town centre and the sea front. The noise level will be reduced by up to 2.9 dB(A) benefiting nearly 250 people. Air quality will improve significantly, due to significant emission reductions. East of Hastings town centre along the A259 to the Eastern bypass at Guestling Thorn there will also be a benefit for both air quality indicators, but disbenefits occur between the Eastern bypass and Rye.

E.7.54 However, along the Eastern and Western bypass route there will be an adverse impact on noise with the creation of noise levels in excess of 73 dB(A). Newly generated emissions are also predicted to represent a highly detrimental impact locally. This is most significant for the residents in the Bohemia area where daily traffic levels will increase, and especially on Gillsman's Hill which is part of the link to the Western bypass. The residential area around the Mayfield interchange also contains four

schools (Churchwood County Primary School, Grove School, Robsack Wood Community School and Westerleigh School).

E.7.55 On The Ridge, on which hospitals and schools are sited, there will be negligible effects in terms of noise and emissions. The population of Crowhurst and Westfield will be adversely affected by the Western and Eastern bypasses.

E.7.56 With the railway improvements, there will be an increase in noise (over 2 dB(A)) for those adjacent to the line between Wadhurst and Tonbridge. With the electrification of the Hastings to Ashford line, there will be air quality benefits, but the increase in service frequency will lead to increased noise levels (almost 3 dB(A)).

Other Environmental impacts

E.7.57 The on-line dualled A21 link between Tonbridge and Pembury will only have a slight effect on the landscape within the High Weald AONB. Along the A21 corridor south of Pembury, any selective bypass schemes will lie within the High Weald AONB and affect the landscape views from the bypassed villages and for those within the vicinity. In addition, there will be effects on biodiversity. However, the environmental benefits for the bypassed communities themselves are likely to be significant.

E.7.58 The Western and Eastern bypasses will impact on the landscape along most of their route including that of the effect of the viaduct over Combe Haven. This will affect views from both within the SSSIs (Combe Haven, Pevensey Levels and Marline Valley Woods) and north Bexhill, and southwards from Hooe, Ninfield, and from within the High Weald AONB including from Crowhurst and Westfield.

E.7.59 There will be effects from the Western bypass for biodiversity and loss of water channels in three SSSIs. One grade II listed building (East Lodge at Beaufort Park) will be demolished. In terms of townscape, benefits will be experienced by Hastings Old Town due to the reduction in traffic in the area.

Accident Savings

E.7.60 The overall level of accident savings by road and rail are presented under the safety sub-objective within the NATA table. In terms of the spatial distribution of accident savings they will be most associated with the transfer of traffic to the new road sections, namely along the A21, both between Tonbridge and Pembury and for the villages which receive bypasses, and the Eastern and Western bypasses.

E.7.61 In addition to savings for motorised transport users, the reduction in traffic in the built up areas of villages such as Flimwell and Hurst Green, as well as Bexhill and Hastings town centres, will benefit the safety of pedestrians and cyclists.

E.7.62 There is also the benefit from the transfer of journeys from private vehicles to public transport as encouraged by the Quality Bus Partnerships and Ore-Bexhill ‘metro’ and/or traffic management measures to encourage safe driving.

E.7.63 The increased traffic flows in the residential area around the Mayfield interchange with the Western bypass will be to the detriment of safety.

Transport economic benefits

E.7.64 The TEE table presents the economic impacts of the strategy to transport users and transport system operators. There will, however, also be particular benefits for particular types of users related to their trip purpose.

Work trips

E.7.65 Benefits from the strategy will include journey time savings for car trips from areas such as Bexhill to employment centres such as the Ridge and improved journey time reliability within the study area. For public transport users, the new station at Glyne Gap and the metro rail service will also improve access to employment opportunities there, while improved journey reliability is provided by the Quality Bus Partnership on the A259 and on The Ridge.

E.7.66 The Hastings to Ashford rail line will provide a journey time of less than half an hour to access employment or connect to London or international rail services. The Wadhurst to Tonbridge rail service improvements will encourage those without access to a car to access job opportunities in Tunbridge Wells and Tonbridge.

Shopping and Leisure trips

E.7.67 Congestion at Glyne Gap will be reduced, improving access to the retail and leisure facilities there. This will also be the case for both Bexhill and Hastings town centres, with the construction of the bypasses.

E.7.68 The metro rail service and new station at Glyne Gap will improve access to retail facilities at Glyne Gap and the town centres of Bexhill and Hastings. The Wadhurst to Tonbridge rail service may enable those without access to a car to access retail and leisure job opportunities in Tunbridge Wells and Tonbridge. Improvements to the A21 will make access easier to shopping facilities at Tunbridge Wells.

Educational trips

E.7.69 With a number of schools situated in West Hastings, the proximity of the bypass may attract school-run trips. On the existing network, improved access will also be achieved through improved journey time reliability both for private vehicle users and public transport users.

E.7.70 The increased level of rail service delivered by the metro, integrated with the bus services, may provide greater opportunities for school pupils to travel by public transport in Hastings and Bexhill. The Wadhurst to Tonbridge rail service enhancement may enable some current school-run car journeys to Tunbridge Wells and Tonbridge to be replaced by rail trips.

Social exclusion

E.7.71 Whilst social exclusion is not explicitly stated as a supporting analyses issue (nor under the NATA framework) it is a key element within the objective of the study. It has therefore been covered in the two sections below.

Wider economic impacts

E.7.72 The AST entry for *Economy* presents the assessment at the strategic level. There are, however, important impacts at the disaggregate level within this indicator, in terms of equity between different economic groups, most pertinently for the unemployed.

E.7.73 In Gensing, Maze Hill, Central St. Leonards and Castle the unemployment rate is above 8.5%. For those in these wards seeking work or on low wages, the strategy will bring benefits. The public transport investment will aid travel to employment opportunities. For those with access to a car, the Western bypass will provide a route to the developments at North Bexhill.

E.7.74 For those on low incomes, there will be a similar level on benefit. However, in both cases there will be competition for the job opportunities with those attracted into the area by the housing developments.

Access to the Transport system

E.7.75 In Hastings and Bexhill over 20% of households are without a car. In a number of wards, the figure is greater than 40%. In most instances, the higher figures are around the town centres of Bexhill, St Leonards and Hastings (Central (over 50%), Sackville, Gensing, Central St Leonards (over 50%), Braybrooke, Castle (over 50%), Mount Pleasant and Old Hastings), as well as the wards of Hollington and Broomgrove.

E.7.76 The strategy will have a significant benefit to those who are reliant upon public transport. These will be derived from the metro rail service, new station at Glyne Gap and Quality Bus Partnerships. The traffic management measures introduced will improve conditions for cyclists and pedestrians along the existing A259 between Bexhill and Guestling Thorn. Rail services to Ashford will also be improved.

Affordability and financial sustainability

E.7.77 Whilst the overall value for money of the strategy is presented in the AST, Tables E 7.20 and E 7.21 identify the disaggregation of funding, both for investment and operation, between public and private organisations. The financial breakdown is presented against the time profile for the strategy.

Table E 7.20 Strategy 13 Private Sector Affordability and Financial Sustainability

	£ (million undiscounted)			
Private Sector Investment	**TOTAL**	**Rail**	**Bus**	**explanation**
Investment Cost				
Year 1 (2001)	£0.00	£0.00	£0.00	
Year 2	-£3.44	-£3.44	£0.00	
Year 3	-£13.71	-£13.61	-£0.10	
Year 4	-£10.50	-£10.39	-£0.10	
Year 5	£0.00	£0.00	£0.00	

TOTAL	-£27.65	-£27.44	-£0.21	(1)
Capital Grants	£0.00			(2)
Private Sector Operators				
Year 1*				
Change in operator costs	£0.00	£0.00	£0.00	(3)
Change in operator revenue	£0.05	£0.00	£0.05	(4)
NET IMPACT	£0.05	£0.00	£0.05	(5) = (4) + (3)
Subsidy	£0.00	£0.00	£0.00	= -(5)
Year 5				
Change in operator costs	-£4.07	-£4.07	£0.00	(7)
Change in operator revenue	£0.35	£0.20	£0.15	(8)
NET IMPACT	-£3.72	-£3.88	£0.15	(9) = (8)-(7)
Subsidy	£3.72	£3.88	£0.00	(10)
Year 10				
Change in operator costs	-£4.07	-£4.07	£0.00	(11)
Change in operator revenue	£0.39	£0.23	£0.16	(12)
NET IMPACT	-£3.68	-£3.84	£0.16	(13) = (12) + (11)
Subsidy	£3.68	£3.84	£0.00	(14)
Private Sector NET IMPACT				
Investm. net of capital grant	-£27.65	-£27.44	-£0.21	(1) + (2)
Operations net of subsidy				
Year 1	£0.05	£0.00	£0.05	(5) + (6)
Year 5	-£3.72	-£3.88	£0.15	(9) + (10)
Year 10	-£3.68	-£3.84	£0.16	(13) + (14)

Table E 7.21 Strategy 13 Public Sector Affordability and Financial Sustainability

	£ (million undiscounted)				
Public Sector Investment	**TOTAL**	**HA**	**Rail**	**Bus**	**explanation**
Investment Cost					
Year 1	£0.00	£0.00	£0.00	£0.00	
Year 2	-£16.73	-£14.77	£0.00	-£1.96	
Year 3	-£16.63	-£16.08	£0.00	-£0.55	
Year 4	-£7.46	-£7.46	£0.00	£0.00	
Year 5	-£36.72	-£36.72	£0.00	£0.00	
TOTAL	-£77.53	-£75.02	£0.00	-£2.51	-15
Private Sector Contributions	£0.00	£0.00	£0.00	£0.00	-16
Investment net of contributions	-£77.53	-£75.02	£0.00	-£2.51	(17) = (15) + (16)
Public Sector Operation					
Year 1					
Change in operator costs	£0.00	£0.00			-18
Change in operator revenue	£0.00	£0.00			-19
NET IMPACT	£0.00	£0.00			(20) = (19)-(18)
Subsidy	£0.00		£0.00		
Year 5					
Change in operator costs	£0.00	£0.00			-21
Change in operator revenue	-£4.07	-£4.07			-22
NET IMPACT	£0.00				(23) = (22)-(21)
Subsidy	£0.00		£0.00		
Year 10					
Change in operator costs	£0.00	£0.00			-24
Change in operator revenue	-£4.07	-£4.07			-25
NET IMPACT	-£4.07	-£4.07			(26) = (25)-(24)
Subsidy	£0.00				

Practicality and public acceptability

Feasibility

Technical

E.7.78 Discussions over the schemes in the strategy were held with local authorities, Highways Agency, sSRA, Railtrack and public transport operators. The proposed on-line dualling of the A21 between Tonbridge and Pembury has been based on a technical assessment, however it still requires the HA to confirm its feasibility. The selective bypasses along the A21 which are part of the improvements south of Pembury were only chosen to be indicative and therefore their full technical feasibility has not been evaluated. There is also concern over the ability to provide the improvements to the Hastings to Tunbridge Wells rail service due to track capacity constraints north of Tonbridge.

Legal

E.7.79 For the four remitted road schemes, the Orders from the Public Inquiries still stand and the alignments for the new road construction are protected. However, in order to proceed with the new proposed roundabout at Lamb Inn at the start of the Western bypass, a modification to the orders would be required. The Tonbridge-Pembury off-line dual-2 scheme would require new orders and powers to approve them. In addition, the three-year shelf life of the CPOs expired in May 1999. The A21 bypass schemes south of Pembury will require Public Inquiry Orders to be made.

Political

E.7.80 East Sussex County Council, Hastings Borough Council and Rother District Council support this strategy. There is support for the A21 schemes and Wadhurst to Tonbridge rail scheme from the local authorities in Kent.

Funding

E.7.81 The schemes in the strategy have been developed in cooperation with potential investment and operation funders. The remitted road schemes would come under Highways Agency responsibility, whilst the local transport authorities would be responsible for the local road schemes, including investment related to Quality Bus Partnerships. On the operations side of the Partnership are the bus companies. For the rail service, improvement funding would be provided by the sSRA and train operators. For rail infrastructure measures, Railtrack and the operator will provide funding, with scope for local authority involvement.

Enforcement

E.7.82 The only schemes proposed which will potentially require enforcement are the local road schemes for traffic management and Quality Bus Partnerships. The former will be largely self-enforcing.

'Breadth of Decision'

E.7.83 The study area extends north from Hastings along the A21 corridor to Tonbridge and west and east as far as Pevensey and Rye, respectively. The study seeks to provide a transport strategy at the strategic level within this area and related to the wider South-east.

E.7.84 Among the members of the Steering Group are representatives of the County Councils for East Sussex and Kent, the Borough Councils of Hastings, Tunbridge Wells, and Tonbridge and Malling, as well as Rother District Council. Alongside them sit a number of agencies (sSRA, SERPLAN, SEEDA and HA) in additional to local business and environmental interests.

Complexity ("depth" of the decision)

E.7.85 By its nature as a strategic study, the strategy comprises a number of schemes. These encompass a variety of complex inter-related issues, some of which have implications for transport services beyond the study area (e.g. timetabling Ashford-London rail services).

Time-scale

E.7.86 It is envisaged that the strategy will be fully in place by 2010.

Phasing

E.7.87 The majority of the schemes within the strategy will be implemented within the lifetime of current LTP. Whilst it is an integrated strategy, the schemes within it are scheduled to be completed in phases. These will be in the following order:

- The Quality Bus Partnerships.
- Rail improvements between Wadhurst and Tonbridge.
- The Bexhill-Ore Metro and integrated Public Transport Information and Ticketing Strategy.
- The Tonbridge-Pembury on-line dualling scheme.
- Hastings-Ashford rail improvement.
- The Western and Eastern bypasses
- Traffic Management measures.
- Beyond 2006, and reliant on a further decision making process, the off-line improvements between Pembury and Hastings would be constructed.

Partitioning

E.7.88 This strategy has clearly differentiated elements in terms of the north-south axis and coastal axis. However, there would be little merit in partitioning them due to their integrated nature, e.g. the Western bypass and A21 improvements.

Complementarity

E.7.89 A key objective in the study has been the development of a set of schemes, which are complementary to each other, to achieve a comprehensive integrated strategy. An example of this includes traffic management measures and Quality Bus Partnerships in Hastings.

Conflicts

E.7.90 The strategy has been developed in discussion with local authorities with regard to their LTP proposals and their housing requirements. Access to Hastings is a free-standing study in its own right. Whilst the South Coast MMS will also address the integration of the Hastings area into the wider South-east region the two studies are not in conflict.

Political nature of proposals

E.7.91 There is political agreement on the need for regeneration of the Hastings and Bexhill local economy and the role that transport can play in contributing to this. It is argued that the Hastings and Bexhill bypasses are required to enable land to be opened up for development.

Public Acceptability

E.7.92 This strategy was not presented at the public consultation stage. However, it has been developed to include a number of schemes which drew high support, most notably improvements to the A21, the Western bypass and investment in public transport, specifically the rail schemes.

APPENDIX F

ASSESSMENT OF RAIL SCHEMES

F.1. INTRODUCTION

F.1.1 This appendix summarises the transport model forecasts for rail schemes within the strategies and highlights the costs, revenues and benefits predicted directly for rail passengers. An outline appraisal is then undertaken for the rail elements of each strategy. However, further benefits to car users of decongestion resulting from mode split is out with this appraisal as is potential additional rail usage resulting from home or job relocation, as identified within the dynamic land use model.

F.1.2 Figures for the patronage benefits of specific schemes are presented and some initial conclusions drawn. The results are shown for the following tests:

- The core strategies (Strategies 1, 2, 3, 4 and 5);
- The preferred strategies (Strategies 12 and 13);
- Strategy 13 without any rail schemes (S13 NR).

F.2. TRANSPORT MODEL FORECASTS FOR RAIL

F.2.1 Table F.2.1 shows the overall rail passenger forecast from the transport model for the core strategies tested plus Strategies 12, 13 (preferred strategies) and 13 NR.

Table F.2.1 Rail Passenger Forecast

	Peak	Inter-peak	Annual	Change
Do-Minimum +	3748	2222	6,847,362	
Strategy 1	3856	2276	7,033,335	185,973
Strategy 2	3922	2276	7,108,791	261,429
Strategy 3	3721	2228	6,823,815	-23,546
Strategy 4	3713	2224	6,809,731	-37,630
Strategy 5	3716	2223	6,811,956	-35,405
Strategy 12	3951	2290	7,158,476	311,114
Strategy 13	3812	2255	6,957,569	110,208
S13 No-Rail	3723	2197	6,789,557	-57,805

Note: Annualisation factor from AM peak + Inter-peak to annual = 1,147

F.2.2 From the core strategies, it can be seen that Strategies 1 and 2 provide considerable increase in rail trips, with incremental patronage over twice as high in Strategy 1. This is because these strategies concentrate on public transport measures, with improvement to existing highway conditions without building new roads. The other strategies present a reduction in the number of rail trips due to the increased attractiveness provided by the construction of new roads. Strategies 12 and 13 include some additional public transport and highway schemes. In overall terms, the effect of public transport measures prevails, with substantial increases in rail trips. A significant

proportion of new rail trips (65%) are 'clawed back' as a result of the Hastings bypasses.

F.2.3 Table F.2.2 shows the changes in average journey time and distance travelled by rail under each strategy.

Table F.2.2 Changes in Average Journey Time and Distance

	Average Trip Time ***(generalised cost minutes)***		**Average Trip Distance** ***(in vehicle distance)***	
	Peak	Inter-peak	Peak	Inter-peak
Do-Minimum +	104.78	93.92	23.96	36.89
Strategy 1	103.52	92.93	23.41	36.34
Strategy 2	103.19	92.91	23.52	36.33
Strategy 3	104.66	93.72	24.18	36.80
Strategy 4	104.63	93.77	24.18	36.83
Strategy 5	104.56	93.96	24.23	36.92
Strategy 12	102.81	93.26	23.11	36.46
Strategy 13	104.14	93.36	23.69	36.59
S13 No-Rail	105.26	94.33	24.13	37.09

F.2.4 Strategies 1, 12, and 13 each exhibit shorter average trips, particularly in the inter-peak. This is because of the improvements to local services. Thus, these tests generate the most additional trips but they are of a shorter duration in both time and distance.

F.2.5 Table F.2.3 shows the changes in the number of rail passenger-km for the scenarios under consideration, using the results from the transport model.

Table F.2.3 Changes in Rail Passenger-km

Scenario	**Annual pass-km**	**Changes**
Do-Minimum +	197,019,505	
Strategy 1	198,420,928	1,401,423
Strategy 2	200,636,540	3,617,035
Strategy 3	197,226,582	207,077
Strategy 4	196,939,461	-80,044
Strategy 5	197,442,444	422,939
Strategy 12	200,485,914	3,466,409
Strategy 13	198,184,823	1,165,318
S13 No-Rail	196,489,444	-530,061

Note: Annualisation factor from AM peak + Inter-peak to annual = 1,147

F.2.6 It can be seen that the number of rail passenger-km increases for all scenarios, except for Strategy 4, with a small negative number, and Strategy 13 with no rail schemes, where there is a reduction by over half a million.

F.3. REVENUES AND BENEFITS

F.3.1 Table F.3.1 presents the revenue and passenger benefits from the rail measures proposed for each strategy tested.

Table F.3.1 Rail benefits (annual)

	Strategy 1	Strategy 2	Strategy 3	Strategy 4	Strategy 5	Strategy 12	Strategy 13	S13 NR
Revenue	£499,801	£712,725	-£69,823	-£108,631	-£102,061	£836,618	£298,631	-£155,844
Benefits to rail passengers								
Travel time	£825,399	£982,735	£109,950	£107,195	£88,231	£1,067,623	£430,824	-£316,847
Accident costs	-£17,880	-£25,135	£2,264	£3,618	£3,404	-£29,912	-£10,596	£5,558

F.3.2 The relative rail revenue growth for Strategies 1 and 2 backs up the comments made in Section 2 above, i.e. the revenue difference is proportionally less than the patronage difference. Travel time benefits are proportionally much greater, however, suggesting that the majority of benefits accrue to existing rail passengers. Strategy 12 presents even greater revenue and travel time benefits. Because of rail patronage loss, Strategy 13 NR presents revenue and travel time disbenefits.

F.4. COST

F.4.1 Table F.4.1 summarises the capital and operating costs associated with the rail schemes proposed within the core strategies and Strategies 12 and 13.

Table F.4.1 Capital and Operating Costs

	Rail scheme costs (£ m, 1999 prices)	
Scenario	**Capital**	**Operating (per annum)**
Strategy 1	31.5	4.7
Strategy 2	42.4	8.0
Strategy 3	36.1	5.7
Strategy 4	36.1	5.7
Strategy 5	36.1	5.7
Strategy 12	32.0	4.8
Strategy 13	31.5	4.7
S13 No-Rail	0.0	0.0

F.4.2 A large proportion of the capital cost is associated with the implementation of the improvements to the Hastings to Ashford line, which alone costs £23.9 million. This scheme, which includes electrification and line dualling, is considered in all the above scenarios. The scheme has also considerable net operating cost, at £1.6 million per year.

F.5. ECONOMIC APPRAISAL

F.5.1 The main economic indicators for rail are summarised in Table F.5.1 below. This table shows the total costs and benefits in terms of the Net Present Value for each scenario under consideration.

Table F.5.1 Rail Costs and Benefits Using Transport Model Forecasts

Impact	Strat. 1	Strat. 2	Strat. 3	Strat. 4	Strat. 5	Strat. 12	Strat. 13	Strat 13NR
User benefits								
Travel time	£5.6	£6.8	£0.8	£0.8	£0.7	£7.7	£3.1	-£2.3
Vehicle operating costs	£0.0	£0.0	£0.0	£0.0	£0.0	£0.0	£0.0	£0.0
User charges	-£3.4	-£5.0	£0.5	£0.8	£0.8	-£6.0	-£2.1	£1.1
Private Sector Provider Impacts								
Revenue	£3.4	£5.0	-£0.5	-£0.8	-£0.8	£6.0	£2.1	-£1.1
Operating costs	-£31.4	-£55.0	-£39.4	-£39.4	-£39.4	-£32.1	-£31.4	£0.0
Investment costs	-£15.1	-£20.8	-£17.6	-£17.6	-£17.6	-£15.4	-£15.1	£0.0
Net Present Values	-£40.8	-£69.0	-£56.2	-£56.2	-£56.3	-£39.8	-£43.4	-£2.3
Other Government Departments								
Grant/subsidy payments	-£43.1	-£70.8	-£57.5	-£57.8	-£57.7	-£41.5	-£44.3	-£1.1

F.5.2 These figures suggest that no rail strategy generates sufficient rail revenue to cover operating costs let alone total costs in present value terms.

F.5.3 When rail user benefits are considered, no strategy achieves a positive net present value, although Strategies 1, 12 and 13 are clearly preferable to Strategies 3, 4 and 5. However, this fails to consider benefits to non-users i.e. the time savings, vehicle operating cost savings and accident cost savings which accrue to those who remain in their cars. The aim of running Strategy 13 NR was to isolate these benefits from the overall highway benefits in the strategies.

F.6. REGENERATION MODEL FORECASTS FOR RAIL

F.6.1 The transport model is constrained to a starting point by the existing levels of demand on what is perceived as an inadequate service. The dynamic regeneration modelling removes these constraints and is a better measure of the long-term potential for rail travel.

F.6.2 The regeneration modelling process produced long-term mode shift figures, which include an element of the gradual changes in commuting patterns as a result of new job opportunities in the study area. Appendix C presents a detailed description of the economic regeneration as well as the model results.

F.6.3 Table F.6.1 shows the level of rail trips (in and out of the study area) from the regeneration approach for the core strategies and Strategies 12 and 13.

Table F.6.1 Rail Trips from Regeneration Approach

Scenario	In	Out	Total	Annual estimate	Changes
Do-Minimum +	1,190	789	1,979	2,270,273	
Strategy 1	1,143	912	2,054	2,356,051	85,778
Strategy 2	1,503	931	2,434	2,791,434	521,161
Strategy 3	1,651	849	2,500	2,866,786	596,514
Strategy 4	1,644	852	2,495	2,862,050	591,777
Strategy 5	1,641	852	2,493	2,859,331	589,059
Strategy 12	1,139	915	2,054	2,355,948	85,675
Strategy 13	1,236	852	2,088	2,395,069	124,796

Note: Annualisation factor from AM peak to annual = 1,147

F.6.4 These figures suggest that the long-term potential for rail demand is considerably greater than the effects predicted by the transport model, for all but Strategies 1 and 12. It also suggests that Strategy 2 would generate about 6 times more demand than Strategy 1, in contrast to about 1.4 times given by the transport model.

F.6.5 These figures related to the entire network. Similar figures have been produced for the main road and rail corridors in the study area.

F.6.6 It has been identified that both road and rail demand on the Hastings to Ashford corridor was drastically underestimated by the transport model, excluding the long-term potential rail demand identified above. In addition, from a very low base demand, the model was unable to sensibly represent generation or modal shift effects. The result was a negligible number of rail trips between Hastings and Ashford.

F.6.7 Table F.6.2 presents the number of commuting trips produced by the regeneration model between Ashford and Bexhill/Hastings in both directions.

Table F.6.2 Rail Trips between Hastings and Ashford

Scenario	From Ashford to Hastings	From Hastings to Ashford	Total trips	Changes
Do-Minimum +	26	80	106	
Strategy 1	53	147	201	94
Strategy 2	55	141	197	90
Strategy 3	59	128	187	81
Strategy 4	59	129	188	81
Strategy 5	59	129	188	81
Strategy 12	53	148	201	94
Strategy 13	56	138	194	87

F.6.8 Table F.6.3 shows the changes in total passenger-kilometre per direction for all the strategies tested.

Table F.6.3 Changes in Passenger-kilometre between Hastings and Ashford

Scenario	From Ashford to Hastings	Changes	From Hastings to Ashford	Changes	Total change
Do-Minimum +	1,198		3,718		
Strategy 1	2,467	1,268	6,788	3,071	4,339
Strategy 2	2,562	1,363	6,500	2,783	4,146
Strategy 3	2,733	1,535	5,911	2,194	3,728
Strategy 4	2,720	1,522	5,935	2,218	3,740
Strategy 5	2,716	1,518	5,933	2,215	3,733
Strategy 12	2,458	1,259	6,819	3,101	4,360
Strategy 13	2,579	1,380	6,362	2,644	4,025

F.6.9 A separate appraisal was undertaken using the regeneration model figures above for the Hastings to Ashford corridor instead of the transport model ones. Only half of such new trips were accounted for, assuming that these would take place in the AM peak hour. The overall economic impacts from the various road and rail schemes implemented in Strategies 1 to 5, 12 and 13, using the regeneration approach figures for the Hastings to Ashford rail trips, are presented in Table F.6.4.

Table F.6.4 Rail Costs and Benefits Using Regeneration Approach for Ashford-Hastings

Impact	Strat. 1	Strat. 2	Strat. 3	Strat. 4	Strat. 5	Strat. 12	Strat. 13
User benefits							
Travel time	£6.0	£7.2	£1.1	£1.1	£1.1	£8.1	£3.4
Vehicle operating costs	£0.0	£0.0	£0.0	£0.0	£0.0	£0.0	£0.0
User charges	-£5.3	-£6.8	-£1.3	-£1.0	-£1.0	-£8.0	-£4.0
Private Sector Provider Impacts							
Revenue	£5.3	£6.8	£1.3	£1.0	£1.0	£8.0	£4.0
Operating costs	-£31.4	-£55.0	-£39.4	-£39.4	-£39.4	-£32.1	-£31.4
Investment costs	-£15.1	-£20.8	-£17.6	-£17.6	-£17.6	-£15.4	-£15.1
Net Present Values	-£40.5	-£68.6	-£55.9	-£55.9	-£56.0	-£39.5	-£43.1
Other Government Departments							
Grant/subsidy payments	-£41.1	-£69.0	-£55.7	-£56.0	-£56.0	-£39.5	-£42.5

F.6.10 The impact upon the subsidy requirement is to reduce the level of public support for rail investments within each strategy option. For all strategies, revenue will increase but such increases would not be high enough to exceed annual operating costs. The relative change in rail user benefits is much smaller. This is because most of the benefits accrue to existing rail users.

F.7. SPECIFIC FORECASTS

F.7.1 Table F.7.1 shows the rail passenger forecasts for Strategies 12, 13 and 13NR for a selection of locations within the study area. The figures are given for the AM peak, inter-peak model periods and annual.

Table F.7.1 Rail Passenger Flow Forecast at Specific Locations (passengers per hour)

Location	Direction	DO MINIMUM +		S12		S13		S13 NR	
		Peak	Interpeak	Peak	Interpeak	Peak	Interpeak	Peak	Interpeak
Tunbridge Wells	Northbound	793	213	832	219	797	212	767	209
to High Brooms	Southbound	452	211	491	215	487	211	441	207
	Two-way	**1245**	**424**	**1323**	**434**	**1284**	**422**	**1208**	**416**
Tunbridge Wells	Northbound	270	60	292	66	276	16	249	15
to Frant	Southbound	191	58	194	62	191	57	181	55
	Two-way	**461**	**117**	**485**	**128**	**467**	**74**	**430**	**70**
Bexhill to Hastings	Eastbound	103	40	71	44	67	32	59	32
(Bexhill to Glyne Gap)	Westbound	35	55	48	56	31	45	29	45
	Two-way	**138**	**95**	**119**	**100**	**98**	**77**	**88**	**77**
Bexhill to Hastings	Eastbound	103	40	142	49	67	32	59	32
(Glyne Gap to St Leonards	Westbound	35	55	50	64	31	45	29	45
Warrior Square)	**Two-way**	**138**	**95**	**192**	**113**	**98**	**77**	**88**	**77**
Hastings to Ore	Eastbound	34	8	49	16	25	8	24	7
	Westbound	39	8	61	14	42	7	33	7
	Two-way	**74**	**16**	**111**	**30**	**67**	**15**	**57**	**14**
Rye to Ashford	Eastbound	6	17	8	27	5	17	5	16
	Westbound	2	18	5	29	2	17	2	17
	Two-way	**8**	**35**	**13**	**56**	**8**	**34**	**8**	**33**

F.7.2 The following tentative conclusions can be drawn from these figures.

F.7.3 For rail travel between Bexhill and Hastings, the patronage results are very different depending on whether the bypasses are built. Without the bypasses (Strategy 12), peak travel is forecast to grow by 39% in the peak and by 19% in the inter-peak. With the bypasses (Strategy 13), patronage falls by 29%in the peak and by 19% in the inter-peak. This implies that the advantages to highway travel offered by the bypasses outweigh the advantages of the Metro service in terms of patronage (and incremental revenue) between Bexhill and Hastings. Patronage falls further for Strategy 13 NR on the same route, considering the peak period.

F.7.4 There is a much greater service improvement between Hastings and Ore and this is reflected in the inter-peak patronage growth in particular (for Strategy 12). For the peak, the difference between Strategies 12 and 13 (without and with bypasses) is less marked than between Hastings and Bexhill.

F.7.5 Between Rye and Ashford, peak hour travel is projected to grow by 33% for Strategy 12, but on a very low base, and reduce by about 17% for Strategies 13 and 13 NR. Inter-peak travel would grow by 59% (Strategy 12) and no growth for the other scenarios. The bypasses make a lower difference to rail travel on this section.

F.7.6 In the Tonbridge Wells area the picture is much less clear-cut. On the face of it, there is little change projected apart from a reduction in the inter-peak in Strategies 13 and 13NR. There are clearly countervailing forces at work here with the benefits of a more frequent local service being counteracted by the highway investment on the A21. It is therefore very difficult to isolate the patronage and revenue benefits of the Wadhurst-Tonbridge enhancement.

F.8. CONCLUSIONS

F.8.1 The development of the rail investment proposals as part of a preferred transport strategy for the Hastings area has been in the context of the national policy objectives highlighted in NATA and specific local objectives, notably regeneration. This paper only considers the rail economics of the schemes and is therefore partial in this context: there are very good policy and wider objective reasons for investing in the schemes which go beyond the scope of this paper and need to be brought out in the main study report.

F.8.2 It is clear that there are important and complex relationships between the rail strategy and other elements of the transport strategy, and of the economic conditions which each would produce. This appears to be particularly the case for the relationship between the Hastings Bypasses and the Bexhill – Ore Metro. These can be seen to be complementary in achieving regeneration, integration and social inclusion objectives but the evidence from the demand model is that they are competitive investments. The bypasses *may* undermine the case for the Metro in pure patronage and revenue terms. Further analysis would be needed to be definitive about this statement.

F.8.3 Nevertheless, on the basis of the transport model results alone, it is not possible to make a definitive 'conventional' case for the rail strategy investments alone. The interrelationships of the strategy effects make the isolation of those highway transport benefits which result from mode shift difficult to achieve. The achievement of broader objectives is also a key relevant factor.

F.8.4 Finally, the regeneration modelling suggests that in the long term there is the potential for a noticeable growth in rail usage, particularly within the Hastings to Ashford corridor, as the Hastings/Bexhill economy expands and there is a growth in commuting by all modes.